1220 S. St. Francis Dr., Santa Fe, NM 87505 Pit Proposed	Energy Minerals and Natural Resources rtment ution Division st. Francis Dr. NM 87505	July 21, 2 For temporary pits, closed-loop sytems, and below-grade tanks, submit to the appropriate NMOCD District Office.
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Pit Proposed	Description Division St. Francis Dr.	tanks, submit to the appropriate NMOCD District Office.
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Proposed	it. Francis Dr.	Providence and the second s
1220 S. St. Francis Dr., Santa Fe, NM 87505 Pit Proposed		Providence of the second secon
Proposed .		For permanent pits and exceptions submit to the Santa Fe
Pin Proposed		Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.
Proposed .		
	t, Closed-Loop System, Below-Grad	
Type of actions	Alternative Method Permit or Closur	e Plan Application
Type of action.	Permit of a pit, closed-loop system, below-grade ta	ank, 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 permit below-grade tank, or proposed alternative method	tted or non-permitted pit, closed-loop system,
Instructions: Please submit one appli	cation (Form C-144) per individual pit, closed-loo	op system, below-grade tank or alternative requ
	request does not relieve the operator of liability should operations re	
	e operator of its responsibility to comply with any other applicable	
 Operator: Burlington Decourses Off 0	Cas Company LP	OGRID#: 14538
Operator: Burlington Resources Oil & O		OGRID#: 14538
Address: <b>PO Box 4289, Farmington, N</b>		
Facility or well name: SAN JUAN 28-6		
API Number: 3003	920478 OCD Permit Number	r:
U/L or Qtr/Qtr: A Section:	30 Township: 28N Range:	6W County: Rio Arriba
Center of Proposed Design: Latitude:	36.63676°N Longitude:	-107.50291°W NAD: X 1927 19
Surface Owner: X Federal	State Private Tribal Trust or Indian	Allotment
String-Reinforced Liner Seams: Welded Factor	ype: Thickness mil LLDPE	HDPE PVC Other
	f of 19.15.17.11 NMAC illing a new well Workover or Drilling (Applies to notice of intent)	activities which require prior approval of a permit or
Drying Pad Above Ground St	teel Tanks 🔲 Haul-off Bins 🔲 Other	
Lined Unlined Liner type	e: Thicknessmil LLDPE H	IDPE PVD Other
Liner Seams: Welded Factor	y Other	
4         X       Below-grade tank:       Subsection I of I         Volume:       120       bbl         Tank Construction material:	Type of fluid:       Produced Water         Metal	omatic overflow shut-off
5		
Alternative Method:		
Submittal of an excention request is require	d. Exceptions must be submitted to the Santa Fe Environ	nmental Bureau office for consideration of approval.
contrait of an exception request is require		

<ul> <li>6 Encing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pit, temporary pits, and below-grade tanks)</li> <li>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)</li> <li>Four foot height, four strands of barbed wire evenly spaced between one and four feet</li> <li>X Alternate. Please specify <u>4' hog wire fencing topped with two strands barbed wire.</u></li> </ul>										
7         Netting:       Sübsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks).         X       Screen       Netting         Other										
8 Signs: Subsection C of 19.15.17.11 NMAC 12" X 24", 2" fettering, providing Operator's name, site location, and emergency telephone numbers Signed in compliance with 19.15.3.103 NMAC										
<ul> <li>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:         <ul> <li>X Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for c (Fencing/BGT Liner)             </li> <li>Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.</li> </ul> </li> </ul>	onsideration of	approval.								
10 <u>Siting Criteria (regarding permitting)</u> : 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.										
Ground water is less than 50 feet below the bottom 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	XNo								
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	XNo								
(Applies to temporary, emergency, or cavitation pits and helow-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	□ NA									
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applied to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes XNA	No								
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.	Yes	XNo								
- 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 unification from the municipality. We there are a boundaries of the section of	Yes	XNo								
<ul> <li>Written confirmation or verification from the municipality: Written approval obtained from the municipality</li> <li>Within 500 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	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								

.

Temporary Pits, Emergency Pits and Below-grade Tanks P Instructions: Each of the following items must be attached to the app	Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC olication. Please indicate, by a check mark in the box, that the documents are attached.									
X Hydrogeologic Report (Below-grade Tanks) - based upor	on 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										
X Closure Plan (Please complete Boxes 14 through 18, if a 19.15.17.9 NMAC and 19.15.17.13 NMAC	applicable) - based upon the appropriate requirements of Subsection C of									
Previously Approved Design (attach copy of design)	API or Permit									
12										
Closed-loop Systems Permit Application Attachment Check Instructions: Each of the following items must be attached to the appl Geologic and Hydrogeologic Data (only for on-site closur	dication. Please indicate, by a check mark in the box, that the documents are attached. are) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 -site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC									
Operating and Maintenance Plan - based upon the approp										
NMAC and 19.15.17.13 NMAC	pplicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9									
Previously Approved Design (attach copy of design)	API									
Previously Approved Operating and Maintenance Plan	API									
13										
Permanent Pits Permit Application Checklist:       Subsection B         Instructions: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Each of the following items must be attached to the applications: Chimatological Factors Assessment         Climatological Factors Assessment       Climatological Factors Assessment         Cutified Engineering Design Plans - based upon the appropriate requit       Licak Detection Design - based upon the appropriate requit         Liner Specifications and Compatibility Assessment - base       Quality Control/Quality Assurance Construction and Insta         Operating and Maintenance Plan - based upon the appropriate requires and Overtopping Prevention Plan - based upon       Nuisance or Hazardous Odors, including H2S, Prevention         Emergency Response Plan       Oil Field Waste Stream Characterization       Monitoring and Inspection Plan         Erosion Control Plan       Erosion Control Plan       Closure Plan - based upon the appropriate requirements of	plication. Please indicate, by a check mark in the box, that the documents are attached. Paragraph (1) of Subsection B of 19.15.17.9 NMAC the appropriate requirements of 19.15.17.10 NMAC ropriate requirements of 19.15.17.11 NMAC son the appropriate requirements of 19.15.17.11 NMAC irements of 19.15.17.11 NMAC ed upon the appropriate requirements of 19.15.17.11 NMAC allation Plan triate requirements of 19.15.17.12 NMAC the appropriate requirements of 19.15.17.11 NMAC									
14 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										
Proposed Closure Method: X Waste Excavation and Removal										
	temporary pits and closed-loop systems)									
	On-site Trench									
Atternative Closure Method (Excep	ptions must be submitted to the Santa Fe Environmental Bureau for consideration)									
<ul> <li>Protocols and Procedures - based upon the appropriate requirements</li> <li>X Protocols and Procedures - based upon the appropriate requirements</li> <li>X Confirmation Sampling Plan (if applicable) - based upon the Disposal Facility Name and Permit Number (for liquids, dr X)</li> <li>X Soil Backfill and Cover Design Specifications - based upon</li> <li>X Re-vegetation Plan - based upon the appropriate requirement</li> </ul>	uirements of 19.15.17.13 NMAC the appropriate requirements of Subsection F of 19.15.17.13 NMAC rilling fluids and drill cuttings) in the appropriate requirements of Subsection H of 19.15.17.13 NMAC ints of Subsection 1 of 19.15.17.13 NMAC									
X Site Reclamation Plan - based upon the appropriate requirer	ments of Subsection G of 19.15.17.13 NMAC									

Maste Removal Closure For Closed-loop Systems That Utilize Above Grou Instructions: Please identify the facility or facilities for the disposal of liquids.	ind Steel Tanks or Haul-off Bins Only: (19.15.17-13.D NMAC	3
are required.	arming future and arm cuttings. Use altochment if more than fw	o facilities
Disposal Facility Name:	Disposal Facility Permit #:	
Disposal Facility Name:	Disposal Facility Permit #:	
Will any of the proposed closed-loop system operations and associated a	activities occur on or in areas that will not be used for future	e service and operations?
Required for impacted areas which will not be used for finure service and open     Soil Backfill and Cover Design Specification - based upon the ap     Re-vegetation Plan - based upon the appropriate requirements of     Site Reclamation Plan - based upon the appropriate requirements	propriate requirements of Subsection H of 19.15.17.13 NM Subsection I of 19.15.17.13 NMAC	IAC
17 <u>Siting Criteria (Regarding on-site closure methods only:</u> 19.45.17.10 Instructions: Each siting criteria requires a demonstration of compliance in the closure certain sating criteria may require administrative approval from the appropriate distric for consideration of approval. Justifications and/or demonstrations of equivalency are	Plan. Recommendations of acceptable source material are provided b t office or may be considered on exemption which must be a be in the source of the source of the source of the source of the source of the source of the sou	elow: Requests regarding changes to he Santa Fe Environmental <b>B</b> ureau office
Ground water is less than 50 feet below the bottom of the buried waste.		Yes No
NM Office of the State Engineer - iWATERS database search; USGS: D	ata obtained from nearby wells	
Ground water is between 50 and 100 feet below the bottom of the buried	wate	
NM Office of the State Engineer - iWATERS database search; USGS; Da		Yes No
Ground water is more than 100 feet below the bottom of the buried waste	e .	
- NM Office of the State Engineer - iWATERS database search; USGS: Da		
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other (measured from the ordinary high-water mark).	significant watercourse or lakebed, sinkhole, 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 chu - Visual inspection (certification) of the proposed site: Aerial photo: satellite	rch in existence at the time of initial application. image	Yes No
<ul> <li>Within 500 horizontal feet of a private, domestic fresh water well or spring that I purposes, or within 1000 horizontal fee of any other fresh water well or spring, in - NM Office of the State Engineer - iWATERS database: Visual inspection () Within incorporated municipal boundaries or within a defined municipal fresh w pursuant to NMSA 1978. Section 3-27-3, as amended.</li> </ul>	n existence at the time of the initial application. certification) of the proposed site	Yes No
Written confirmation or verification from the municipality; Written approv	al obtained from the municipality	
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map: Topographic map: Visua		Yes No
Within the area overlying a subsurface mine.	in inspection (certification) of the proposed site	
- Written confirantion 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 Topographic measures	& Mineral Resources; USGS; NM Geological Society;	Yes No
Topographic map Within a 100-year floodplain. - FEMA map		Yes No
18 On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: E by a check mark in the box, that the documents are attached.	Each of the following items must bee attached to the closur	e plan. Please indicate,
Siting Criteria Compliance Demonstrations - based upon the appropriate require Proof of Surface Owner Notice - based upon the appropriate require		
Construction/Design Plan of Burial Trench (if applicable) based up		
Construction/Design Plan of Temporary Pit (for in place burial of a	drying pad) - based upon the appropriate requirements of 19	0.15.17.11 NMAC
Protocols and Procedures - based upon the appropriate requirement	s of 19.15.17.13 NMAC	
Confirmation Sampling Plan (if applicable) - based upon the approp	riate requirements of Subsection F of 19.15.17.13 NMAC	
Waste Material Sampling Plan - based upon the appropriate require		
Disposal Facility Name and Permit Number (for liquids, drilling flu	ids and drill cuttings or in case on-site closure standards can	not be achieved)
Soil Cover Design - based upon the appropriate requirements of Sul		

Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

39			
<b>Operator Application</b>			
Thereby certify that the in	formation submitted with this application is true.	accurate and complete to the h	est of my knowledge and belief.
Name (Print):	Crystal Tafoya	Title:	Regulatory Technician
Signature:	Austal Loon	Date:	12/22/2008
e-mail address:	rystal.theyus9concconnilip.Com	Telephone:	505-326-9837
20		_	
OCD Approval:	Permit Application (including closure plan)	Closure Plan (only)	OCD Conditions (see attachment)
OCD Representative S	Signature:		Amazonal Datas
			Approval Date:
Title:		OCD Permi	t Number:
21			
	red within 60 days of closure completion):		
mstructions: Operators ar	re required to obtain an approved closure plan pri	for to implementing any closure	e activities and submitting the closure report. The closure
repart is required to be su	omitted to the division within 60 days of the comp	letion of the closure activities	Please do not complete this section of the form until an
approved closure plan has	s been obtained and the closure activities have bee	en completed.	
		Closure (	Completion Date:
22			
Closure Method:			
Waste Excavation	and Removal On-site Closure Method	Alternative Closure M	lethod Waste Removal (Closed-loop systems only)
If different from ap	pproved plan, please explain.		
23			
Closure Report Regardin	g Waste Removal Closure For Closed-loop Syst	tems That Utilize Above Grou	Ind Steel Tanks or Haul of Ring Only
Instructions: Please identi	fy the facility or facilities for where the liquids, a	drilling fluids and drill cutting	is were disposed. Use attachment if more than two facilities
were anniea.			
Disposal Facility Name Disposal Facility Name		Disposal Facility Pe	
		Disposal Facility Pe	ermit Number:
Yes (If yes, please)	stem operations and associated activities perform demonstrate complilane to the items below)	No	be used for future service and opeartions?
	ireas which will not be used for future service and		
	Photo Documentation)	operations:	
Soil Backfilling and	Cover Installation		
Re-vegetation Appl	ication Rates and Seeding Technique		
24			
Closure Report Atta	chment Checklist: Instructions: Each of the fo	ollowing items must be attache	ed to the closure report. Please indicate, by a check mark in
the oox, that the docum	enis are allachea.		
	Notice (surface owner and division)		
	tice (required for on-site closure) ite closures and temporary pits)		
protein and a second se	pling Analytical Results (if applicable)		
	mpling Analytical Results (if applicable)		
	Name and Permit Number		
	d Cover Installation		
	lication Rates and Seeding Technique Photo Documentation)		
On-site Closure Lo			
	cation: Latitude:	Longitude:	NAD [ 1927 [ 1983
25 Operator Closure Certif	ication.		
the closure complies with all	applicable closure requirements and conditions s	specified in the approved class.	complete to the best of my knowledge and belief. I also certify that re plan
			in pain
Name (Print):		Title:	
Signature:		Date:	
e-mail address:		Telephone:	

. . .

New Mexico Office of the State Engineer POD Reports and Downloads
Township: 28N Range: 07W Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) CNon-Domestic CDomestic CAll
POD / Surface Data Report Avg Depth to Water Report Water Column Report
Clear Form iWATERS Menu Help
WATER COLUMN REPORT 08/20/2008 (quarters are 1=NW 2=NE 3=SW 4=SE)

	-					smallest)			Depth	Depth	Water (in
POD Number	Tws	Rng	Sec	a ·	a a	Zone	x	Y	Well	Water	Column
SJ 00002	28N	07W	14	1					375		
SJ 03116	28N	07W	21	3	3 3				98	20	78

Record Count: 2

New Mexico Office of the State Engineer

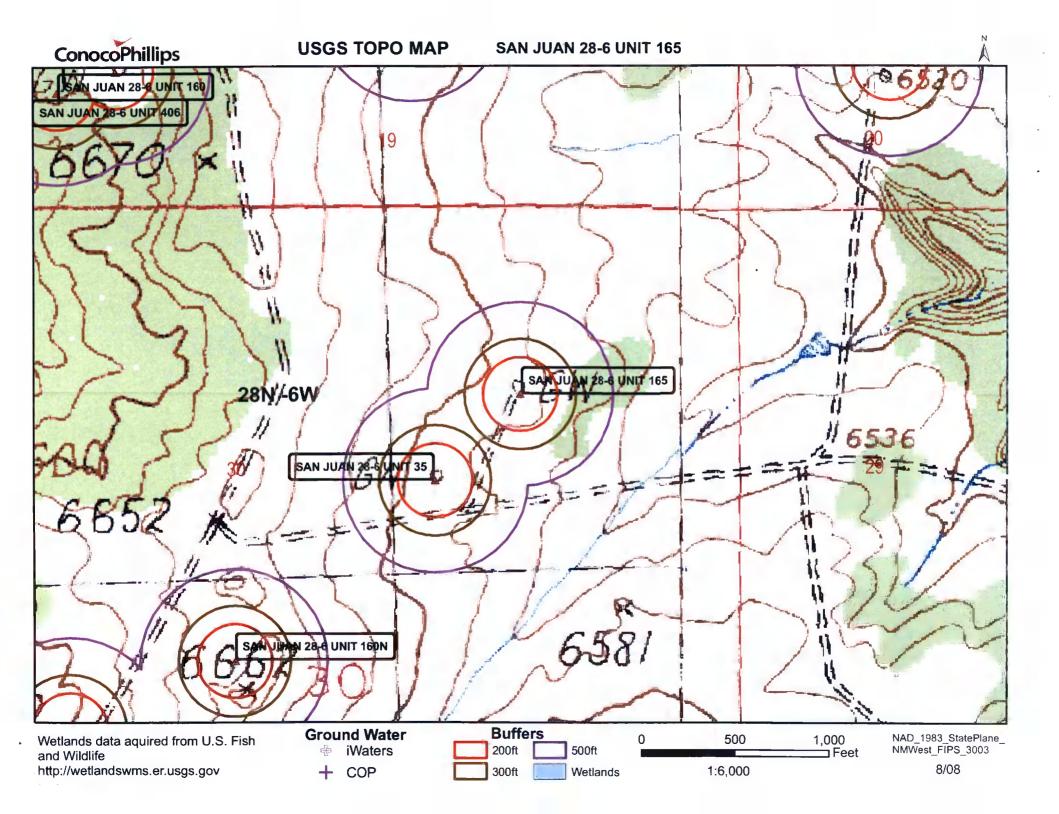
# New Mexico Office of the State Engineer POD Reports and Downloads

Township: 28N Range: 06W Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) CNon-Domestic CDomestic All
POD / Surface Data Report Avg Depth to Water Report Water Column Report
Clear Form iWATERS Menu Help

### WATER COLUMN REPORT 08/20/2008

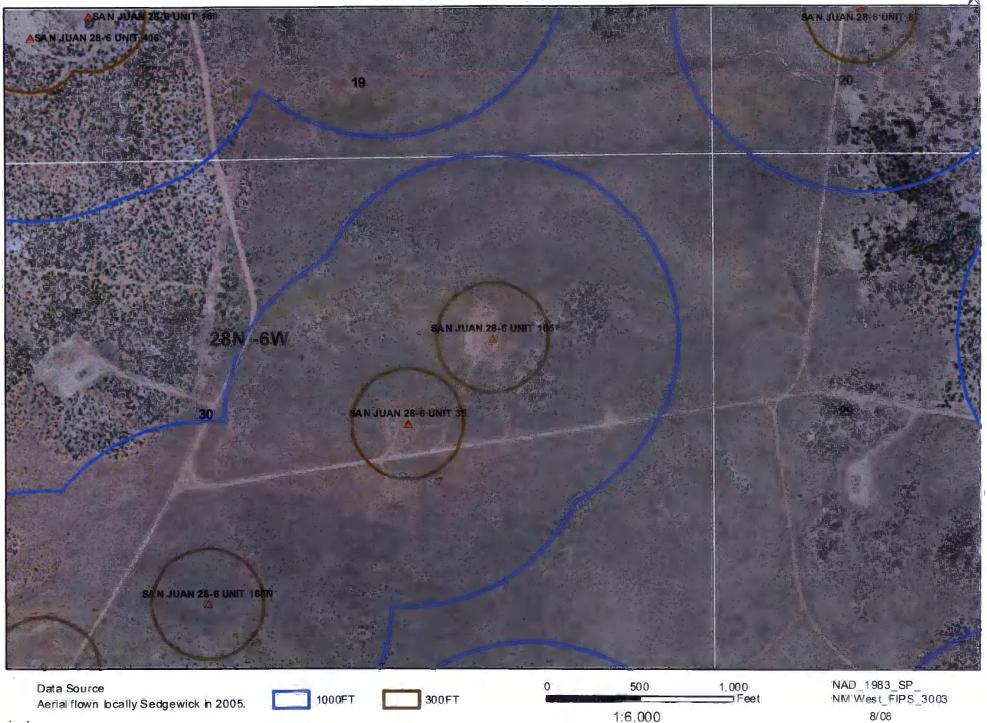
	(quarter (quarter									Depth	Depth	Water (in	1
POD Number	Tws	Rng	Sec	q	P	P	Zone	х	Y Y	Well	Water	Column	
SJ 03700 POD1	28N	06W	12	2	2	4				450	200	250	
SJ 03675	28N	06W	14	4	3	4	С	153167	2059732	420	100	320	
SJ 03700	28N	06W	21	2	4	4				450	200	250	
SJ 03043	28N	06W	21	4	2	2				290	240	50	
SJ 03005	28N	06W	21	4	2	2				245	175	70	
SJ 03443	28N	06W	22	3	3	3				300			
SJ 00200	28N	06W	23	3	3					1551			
SJ 03091	28N	06W	29	2	2	3				150	90	60	

Record Count: 8



ConocoPhillips

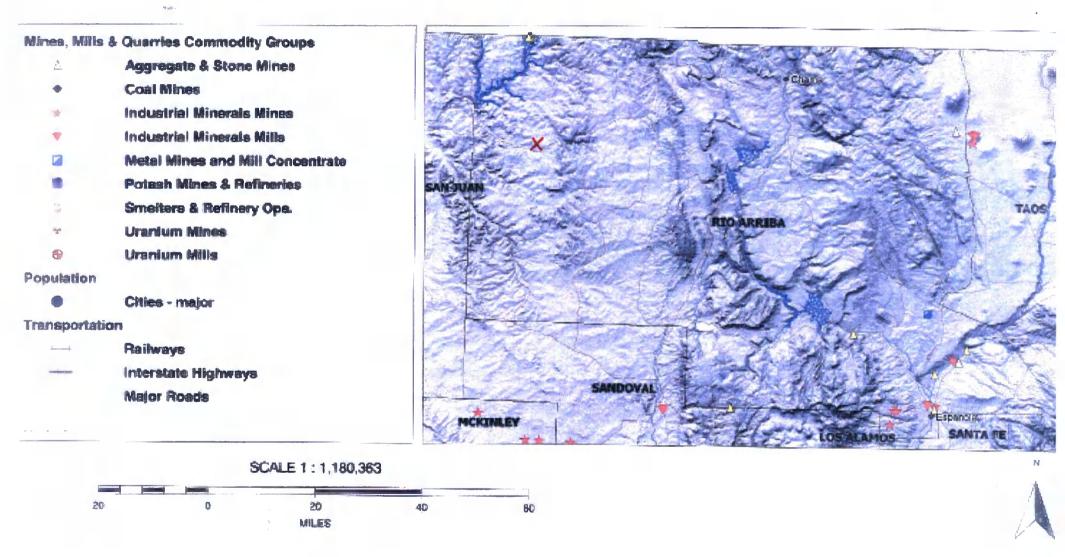
# AERIAL MAP SAN JUAN 28-6 UNIT 165

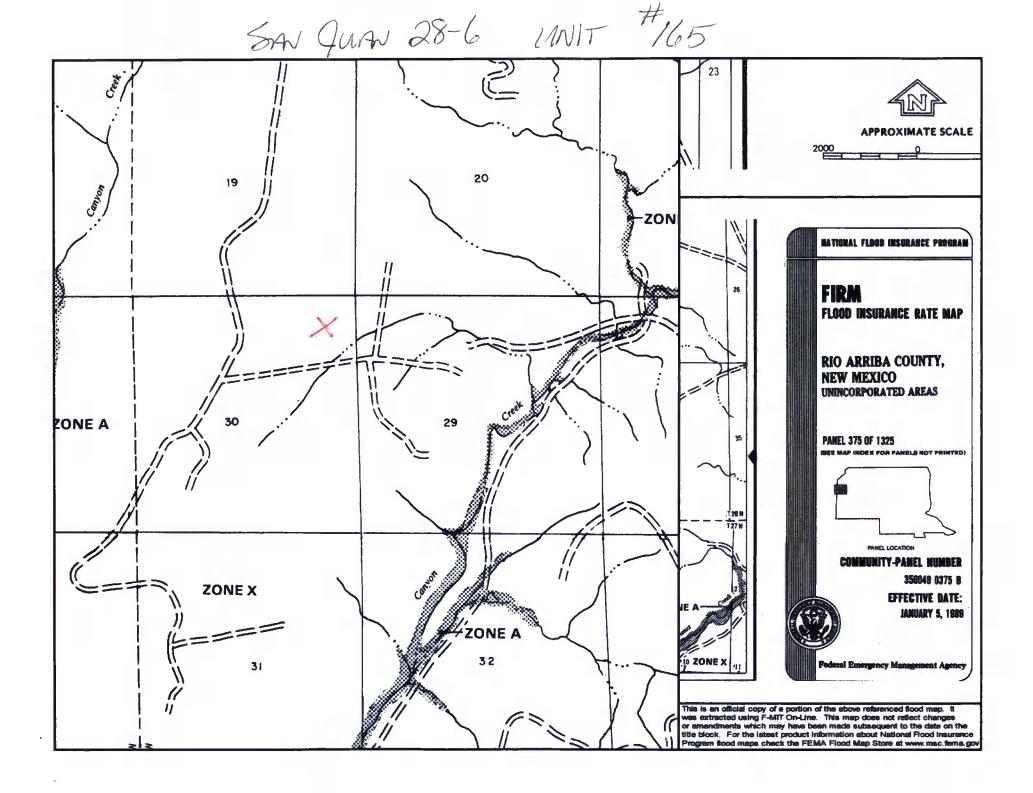


# Mines, Mills and Quarries Web Map

**SAN JUAN 28-6 UNIT 165** 

Unit Letter: A, Section: 30, Town: 028N, Range: 006W





# **SAN JUAN 28-6 UNIT 165**

### Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'SAN JUAN 28-6 UNIT 165', which is located at 36.63676 degrees North latitude and 107.50291 degrees West longitude. This location is located on the Delgadito Mesa 7.5' USGS topographic quadrangle. This location is in section 30 of Township 28 North Range 6 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in Rio Arriba County, New Mexico. The nearest town is Turley, located 17.3 miles to the northwest. The nearest large town (population greater than 10,000) is Farmington, located 39.6 miles to the west (National Atlas). The nearest highway is US Highway 64, located 4.4 miles to the north. The location is on BLM land and is 3,678 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Blanco Canyon. New Mexico, Sub-basin. This location is located as Inter-Mountain Basins Big Sagebrush Shrubland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 335 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 668 feet to the southeast and is classified by the USGS as an intermittent stream. The nearest perrenial stream is 1,345 feet to the east. The nearest water body is 1,345 feet to the east. It is classified by the USGS as an intermittent lake and is 0.3 acres in size. The nearest spring is 5,921 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 5,278 feet to the east. The nearest wetland is a 2.9 acre Freshwater Forested/Shrub Wetland located 7,333 feet to the south. The slope at this location is 4 degrees 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 SAN JOSE FORMATION--Siltstone, shale, and sandstone with a Sandstone dominated formations of all ages substrate. The soil at this location is 'Orlie fine sandy loam, 1 to 8 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 16.5 miles to the northeast as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

### 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.

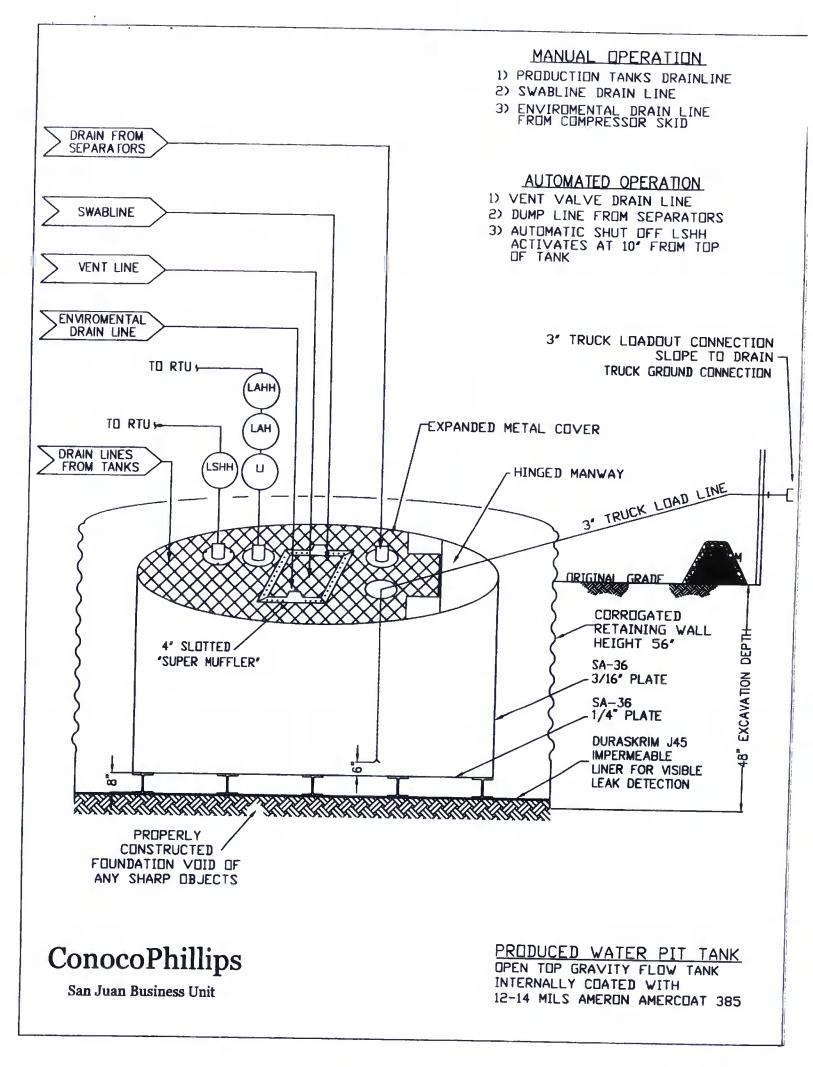
# Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Design and Construction

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:

- 1. 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.
- 2. 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.
- 6. 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 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.
- 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.



### PROPERTIES TEST METHOD J30BE J36BE **J45BE** Min. Roll Typical Roll Min. Roll Typical Roll Min. Roll Typical Roll Averages Averages Averages Averages Averages 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 126 lbs 140 lbs 151 lbs ASTM D 5261 168 lbs 189 lbs (oz/yd²) 210 lbs (18.14)(20.16)(21.74)(24.19)(27.21)(30.24)Construction \*\*Extrusion laminated with encapsulated tri-directional scrim reinforcement Ply Adhesion **ASTM D 413** 16 lbs 20 lbs 19 lbs 24 lbs 25 lbs 31 ibs 88 lbf MD 1" Tensile Strength 110 lbf MD 90 lbf MD **ASTM D 7003** 113 lbf MD 110 lbf MD 138 lbf MD 63 lbf DD 79 lbf DD 70 lbf DD 87 lbf DD 84 lbf DD 105 lbf DD 1" Tensile Elongation @ 550 MD 750 MD **ASTM D 7003** 550 MD 750 MD Break % (Film Break) 550 MD 750 MD 550 DD 750 DD 550 DD 750 DD 550 DD 750 DD 1" Tensile Elongation @ 20 MD 33 MD 20 MD **ASTM D 7003** 30 MD Peak % (Scrim Break) 20 MD 36 MD 20 DD 33 DD 20 DD 31**DD** 20 DD 36 DD 75 lbf MD Tongue Tear Strength 97 lbf MD 75 lbf MD ASTM D 5884 104 lbf MD 100 lbf MD 117 lbf MD 75 lbf DD 90 lbf DD 75 lbf DD 92 lbf DD 100 lbf DD 118 lbf DD 180 lbf MD Grab Tensile 218 lbf MD 180 lbf MD ASTM D 7004 222 lbf MD 220 lbf MD 257 lbf MD 180 lbf DD 210 lbf DD 180 lbf DD 223 lbf DD 220 lbf DD 258 lbf DD 120 lbf MD Trapezoid Tear 146 lbf MD 130 lbf MD **ASTM D 4533** 189 lbf MD 160 lbf MD 193 lbf MD 120 lbf DD 141 lbf DD 130 lbf DD

< 0.5

64 lbf

180° F

-70° F

Maximum Use Temperature Minimum Use Temperature

ASTM D 1204

ASTM D 4833

MD = Machine Direction

\* Dimensional Stability

Puncture Resistance

DD = Diagonal Directions

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

<1

65 lbf

180° F

-70° F

172 lbf DD

< 0.5

83 lbf

180° F

-70° F

\*Dimensional Stability Maximum Value

<1

50 lbf

180° F

-70° F

\*\*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 quarantee of patistactory results from verance upon contained information or recommendations and ase aims all tablety for resulting loss or damage

# PLANT LOCATION

Sioux Falls, South Dakota

# SALES OFFICE

160 lbf DD

<1

80 lbf

180° F

-70° F

191 lbf DD

<0.5

99 lbf

180° F

-70° F

P.O. Box 5107 Sioux Falls, SD 57117-5107 (605) 335-0174 (605) 331-0333 FAX 800-635-3456



# 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.

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 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 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.

RAVEN INDUSTRIES' WARRANTY BECOMES AN OBLIGATION OF RAVEN INDUSTRIES INC. TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT AND EXECUTION BY A DULY AUTHORIZED OFFICER OF RAVEN INDUSTRIES INC.

# 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:

- 1. 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 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.
- 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:

- 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 o f19.15.17.11 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 50 mg/kg; the TPH division approves, does not exceed 100 mg/kg; and the chloride concentration, as determined by 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:
  - i. Operator's name
  - ii. 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 below-grade 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