District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Ave., Artesia, NM 88210 District III 1000 Rio Brazos Rd., Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505	State of New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Pit, Closed-Loop System, Below-Grad	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 appropriate NMOCD District Office.
<u>Propos</u> Type of action: Instructions: Please submit one Please be advised that approval	<ul> <li>X Permit of a pit, closed-loop system, below-grade t</li> <li>Closure of a pit, closed-loop system, below-grade</li> <li>Modification to an existing permit</li> <li>Closure plan only submitted for an existing permit below-grade tank, or proposed alternative method</li> <li><i>application (Form C-144) per individual pit, closed-loop</i> of this request does not relieve the operator of liability should operations relieve the operator of liability should operat</li></ul>	The Plan Application ank, or proposed alternative method tank, or proposed alternative method tted or non-permitted pit, closed-loop system, <i>op system, below-grade tank or alternative request</i> esult in pollution of surface water, ground water or the
1         Operator:       Burlington Resources O         Address:       PO Box 4289, Farmingt         Facility or well name:       SAN JUAN         API Number:       U/L or Qtr/Qtr:       K       Sect         Center of Proposed Design:       Latitud         Surface Owner:       X       Federal	State         State         Private         Tribal Trust or Indian	OGRID#:       14538         r:
2       Pit: Subsection F or G of 19.15.         Temporary:       Drilling         Wo       Permanent         Emergency       Image: Clased-loan System:         3       Clased-loan System:	17.11 NMAC         rkover         Cavitation P&A         .iner type: Thickness mil LLDPE         Factory Other Volume:         .iner H of 19 15 17 11 NMAC	HDPE PVC Other
Type of Operation: P&A Drying Pad Above Gro	Drilling a new well Workover or Drilling (Applies to notice of intent) und Steel Tanks Haul-off Bins Other er type: Thickness mil LLDPE F factory Other	activities which require prior approval of a permit or
4       X       Below-grade tank:       Subsection         Volume:       120         Tank Construction material:	I of 19.15.17.11 NMAC bbl Type of fluid: <u>Produced Water</u> <u>Metal</u> detection X Visible sidewalls, liner, 6-inch lift and auto Visible sidewalls only Other Other <u>U</u>	omatic overflow shut-off
5 Alternative Method: Submittal of an exception request is re Form C-144	equired. Exceptions must be submitted to the Santa Fe Enviro Oil Conservation Division	nmental Bureau office for consideration of approval. Page 1 of 5

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 ( <i>Required if located within 1000 for all second</i> )									
Four 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.									
7									
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent ones top tople)									
X Screen Netting Other									
Monthly inspections (If netting or screening is not physically feasible)									
8									
Signs: Subsection C of 19.15.17.11 NMAC									
$12^{\circ} \times 24^{\circ}$ , $2^{\circ}$ lettering, providing Operator's name, site location, and emergency telephone numbers									
A signed in computative with 19.15.3.103 NMAC									
9 Administrative Annrovals and Excentioner									
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for anidance									
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	conviduration of								
(renting/b(r) Liner)	consideration of	approval.							
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Tonnana Dia Ras									
Instructions: Each of the j	rgency Pits and Below-grade Tanks following items must be attached to the at	Permit Application Please	ation Attachment Checklis	E Subsection B of 19.15.17.9 NMAC					
X Hydrogeologic R	(eport (Below-grade Tanks) - based up	on the requirem	ents of Paragraph (4) of Sol	ne box, that the documents are attached.					
Hydrogeologic D	ata (Temporary and Emergency Pits)	<ul> <li>based upon the</li> </ul>	requirements of Paragraph	Section B of 19.15.17.9 NMAC					
X Siting Criteria Co	ompliance Demonstrations - based unc	in the appropria	le requirements of 10.15.17	127 of Subsection B of 19:15,17,9					
X Design Plan - bas	X Design Plan - based upon the appropriate requirements of 10.15.17.10 NMAC								
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.11 NMAC									
X Closure Plan (PL)	the complete Dense 1 ( d	opriate requiren	ients of 19.15.17.12 NMAC						
19.15.17.9 NMA	C and 19.15.17.13 NMAC	applicable) - ba	sed upon the appropriate requ	irements of Subsection C of					
Previously Approved	Design (attach copy of design)	API		or Permit					
Closed-loop Systems P     Instructions: Each of the fi     Geologic and Hyce     Siting Criteria Co     Design Plan - base     Operating and Ma     Closure Plan (Plea     NMAC and 19.15     Previously Approved I     Previously Control Plan     Climatological Face     Certified Engineeri     Dike Protection and     Leak Detection Des     Liner Specification.     Quality Control/Qu     Operating and Mair     Freeboard and Over     Nuisance or Hazard     Emergency Response     Oil Field Waste Stree     Monitoring and Insee     Closure Plan - basece	ermit Application Attachment Chee dlowing items must be attached to the app lrogeologic Data (only for on-site closu mpliance Demonstrations (only for on- ed upon the appropriate requirements of intenance Plan - based upon the appro- ise complete Boxes 14 through 18, if a .17.13 NMAC Design (attach copy of design) Operating and Maintenance Plan Application Checklist: Subsection 1 allowing items must be attached to the ap- port - based upon the requirements of 1 npliance Demonstrations - based upon tors Assessment ing Design Plans - based upon the appro- d Structural Integrity Design: based upon tors Assessment - based upon the appropriate requi s and Compatibility Assessment - based ality Assurance Construction and Insta ntenance Plan - based upon the appropriate requi s Plan eam Characterization pection Plan n d upon the appropriate requirements of 17.13 NMAC e the applicable boxes, Boxes 14 through orkover Emergency Cavitation Structure Construction and Removal Waste Removal (Closed-loop syste	klist:       Subsection         oblication:       Please i         are)       - based upoi         -site closure)       - bof         of 19.15.17.11 N       N         optication:       Please         applicable)       - base         API       -         B of 19.15.17.9       pplicable)         pplicable)       - base         Paragraph (1) of       the appropriate         ropriate requirements of 19.1       requirement         on the appropriate       requirement         ropriate requirement       of 19.1         site of 19.1       and upon the appropriate         ropriate requirement       fean         site of 19.1       and upon the appropriate         Plan       -         Subsection C o       -         18. in regards to       -         (Below-Grims only)       -	a B of 19.15.17.9 NMAC indicate, by a check mark in the in the requirements of Paragra- ased upon the appropriate re- MAC ents of 19.15.17.12 NMAC ed upon the appropriate requi- NMAC indicate, by a check mark in the Subsection B of 19.15.17.10 ments of 19.15.17.11 NMAC interequirements of 19.15.17.10 ments of 19.15.17.11 NMAC opriate requirements of 19.15.17.11 its of 19.15.17.12 NMAC requirements of 19.15.17.11 its of 19.15.17.12 NMAC its of 19.15.17.12 NMAC requirements of 19.15.17.11 its of 19.15.17.12 NMAC its of 19.15.17.12 NMAC	thor, that the documents are attached. aph (3) of Subsection B of 19,15,17,9 quirements of 19,15,17,10 NMAC irements of Subsection C of 19,15,17 he box, that the documents are attached NMAC NMAC 11 NMAC 5.17.11 NMAC NMAC NMAC NMAC NMAC AC NMAC AC NMAC AC NMAC AC NMAC AC NMAC AC NMAC	.9				
	On-site Closure Method (only for te	emporary pits an	d closed-loop systems)						
	In-place Burial	On-site Trench							
	Alternative Closure Method (Excep	ptions must be su	bmitted to the Santa Fe Envir	onmental Bureau for consideration)					
15         Waste Excavation and Rep         Please indicate, by a check may         X       Protocols and Procedu         X       Confirmation Samplin         X       Disposal Facility Nam         X       Soil Backfill and Cover         X       Re-vegetation Plan - transmission	moval Closure Plan Checklist: (19:15 ark in the box, that the documents are atte ures - based upon the appropriate requi ng Plan (if applicable) - based upon the ne and Permit Number (for liquids, dri- er Design Specifications - based upon based upon the appropriate requiremen	17.13 NMAC) In ached. irements of 19.1 e appropriate reco lling fluids and o the appropriate i ts of Subsection	nstructions: Each of the follow 5.17.13 NMAC juirements of Subsection F o drill cuttings) requirements of Subsection F 1 of 19.15.17.13 NMAC	ing items must be attached to the closure f 19.15.17.13 NMAC 1 of 19.15.17.13 NMAC	e plan.				
X Site Reclamation Plan	- based upon the appropriate requirem	nents of Subsect	ion G of 19 15 17 13 NMAG						

16 <u>Waste Removal Closure For Closed-loop Systems That</u> Instructions: Please identify the facility or facilities for the are required.	Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17-13.D NMA disposal of liquids, drilling fluids and drift cuttings. Use attachment if more than,	C) wo facilities
Disposal Facility Name:	Disposal Facility Permit #-	
Disposal Facility Name:	Disposal Facility Permit #	
Will any of the proposed closed-loop system operation Yes (If yes, please provide the information	is and associated activities occur on or in areas that will not be used for futu	re service and operations?
Required for impacted areas which will not be used for fint         Soil Backfill and Cover Design Specification -         Re-vegetation Plan - based upon the appropriat         Site Reclamation Plan - based upon the appropriat	the service and operations: based upon the appropriate requirements of Subsection H of 19.15.17.13 NM le requirements of Subsection I of 19.15.17.13 NMAC raite requirements of Subsection G of 19.15.17.13 NMAC	ИАС
17		
Siting Criteria (Regarding on-site closure methods Instructions: Each siting criteria requires a demonstration of con- certain siting criteria may require administrative approval from t for consideration of approval. Justifications and/or demonstratio	only: 19.15.17.10 NMAC pliance in the closure plan. Recommendations of acceptable source material are provided i he appropriate district office or may be considered an exception which must be submitted to ms of equivalency are required. Please refer to 19.15.17.10 NMAC for enidance	below, Requests regarding changes to the Santa Fe Environmental Bareau office
Ground water is less than 50 feet below the bottom of	the buried waste	
- NM Office of the State Engineer - iWATERS databas	e search: USGS: Data obtained from nearby wells	Yes No
Ground water is between 50 and 100 feet below the bo	ttom of the buried waste	
- NM Office of the State Engineer - iWATERS database	e search; USGS: Data obtained from nearby wells	
Ground water is more than 100 feet below the bottom of	of the buried waste.	
- NM Office of the State Engineer - iWATERS database	e search; USGS; Data obtained from nearby wells	
Within 300 feet of a continuously flowing watercourse, or 20 (measured from the ordinary high-water mark).	00 feet of any other significant watercourse or lakebed, sinkhole, or playa lake	
<ul> <li>Topographic map; Visual inspection (certification) of t</li> </ul>	he proposed site	
Within 300 feet from a permanent residence, school, hospital - Visual inspection (certification) of the proposed site; Au	<ol> <li>institution, or church in existence at the time of initial application, erial photo; satellite image</li> </ol>	Yes No
Within 500 horizontal feet of a private, domestic fresh water purposes, or within 1000 horizontal fee of any other fresh wa - NM Office of the State Engineer - iWATERS database:	well or spring that less than five households use for domestic or stock watering ter well or spring. in existence at the time of the initial application. Visual inspection (certification) of the proposed site	Yes No
Within incorporated municipal boundaries or within a defined pursuant to NMSA 1978, Section 3-27-3, as amended. Written confirmation or verification from the municipal	I municipal fresh water well field covered under a municipal ordinance adopted	Yes No
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map: Topo	eraphic map: Visual inspection (contification of the	Yes No
Within the area overlying a subsurface mine.	is the map is well inspection (certification) of the proposed site	TYes No
Within an unstable area	4 EMNRD-Mining and Mineral Division	
- Engineering measures incorporated into the design: NM Topographic map	Bureau of Geology & Mineral Resources: USGS; NM Geological Society:	Yes No
Within a 100-year floodplain. - FEMA map		Yes No
18		
On-Site Closure Plan Checklist: (19.15.17.13 NMAC)	Instructions: Each of the following items must bee attached to the closur	e plan. Please indicate,
Siting Criteria Compliance Demonstrations base	cnea.	
Proof of Surface Owner Notice - based upon the a	u upon the appropriate requirements of 19.15.17.10 NMAC	
Construction/Design Plan of Burial Trench (if an	licable) based upon the exercic	
Construction/Design Plan of Temporary Pit (for in	place burget a feet to be appropriate requirements of 19.15.17.11 NMAC	
Protocols and Procedures - based upon the approx	place ourtait or a drying pad) - based upon the appropriate requirements of 19	0.15.17.11 NMAC
Confirmation Sampling Plan (if applicable) - based	unon the appropriate evolution of a local sector of a	
Waste Material Sampling Plan - based upon the an	propriate requirements of Subsection F of 19.15.17.13 NMAC	
Disposal Facility Name and Permit Number (for lie	uids drilling fluids and drill articles	
Soil Cover Design - based upon the appropriate rec	juices and any rules and arm cuttings or in case on-site closure standards can aurements of Subsection H of 19.15.17.13 NMAC	not be achieved)

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

Name (Print):	Crystal Tafoya	Title:	Regulatory Technician
Signature:	Constal Talana,	Date:	12/22/2008
e-mail.address:	Invital talovard conecochillos.com	Telephone:	505-326-9837
			505 (120-70) (1
0 DCD Approvat: Pe	mit Application (including closure plan)	Closure Plan (only)	
M D Renneventative Si		j Closure Flan (only)	OCD Conditions (see attachment)
Now Representative Su	jnature:		Approval Date:
l'itle:		OCD Permit	Number:
21			
Josure Report (require	d within 60 days of closure completion): Sut	bsection K of 19.15.17.13 NMAC	
nstructions: Operators are eport is required to be sub-	required to obtain an approved closure plan prior nitted to the division within 60 days of the complete	to implementing any closure	activities and submitting the closure report. The closure
pproved closure plan has b	een obtained and the closure activities have been o	completed,	Please do not complete this section of the form until an
		Closure C	ompletion Date:
2			
losure Method:			
Waste Excavation an	d Removal On-site Closure Method	Alternative Closure Me	thod Waste Removal (Closed-loop systems only)
If different from app	roved plan, please explain.		
osure Report Regarding	Waste Removal Closure For Closed-loop System	is That Utilize Above Groun	nd Steel Tanks or Haul-off Bins Only:
structions: Please identify re-utilized	the facility or facilities for where the liquids, dril	ling fluids and drill cuttings	were disposed. Use attachment if more than two facilities
Disposal Facility Name:		Disposal Engility Des	min Munich and
Disposal Facility Name:		Disposal Facility Per	
Were the closed-loop syst	em operations and associated activities performed	on or in areas that will not be	
Yes (If yes, please de	monstrate compliane to the items below)		used for future service and opeartions?
Required for impacted are	as which will not be used for future service and or		
Site Reclamation (Ph	oto Documentation)	erunons.	
Soil Backfilling and C	Cover Installation		
Re-vegetation Applica	ation Rates and Seeding Technique		
Closure Report Attach	ment Checklist: Instructions: Each of the follo	wing items must be attached	to the closure report. Please indicate, by a check mark in
Proof of Closure No	tice (surface owner and division)		
Proof of Deed Notic	e (required for on-site closure)		
Plot Plan (for on-site	Closures and temporary pits)		
Confirmation Sampl	ing Analytical Results (if analisable)		
Waste Material Som	ning Analytical Results (if applicable)		
Disposal Engility Ma	pling Analytical Results (If applicable)		
Soil Book Gilling Na			
Be-vegetation A	Cover Installation		
Site Reclamation (D)	ation Rates and Seeding Technique		
She Reclamation (Pr	loto Documentation)		
		Longitude:	NAD [] 1927 [] 1983
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erstor Closura Cartifia	ALIVE:		
erator Closure Certific	ution and attachments commenced at the	report is ture, accurate and co	amplete to the best of my knowledge and balled to be and at
erator Closure Certific reby certify that the inform losure complies with all a	ation and attachments submitted with this closure i oplicable closure requirements and conditions spec	"ified in the approved classes	nan
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erator Closure Certific reby certify that the inform closure complies with all a <sub>l</sub> ae (Print):	ation and attachments submitted with this closure s oplicable closure requirements and conditions spec	cified in the approved closureTitle:	plan.
erator Closure Certific reby certify that the inform closure complies with all a ne (Print):	ation and attachments submitted with this closure i oplicable closure requirements and conditions spec	cified in the approved closure Title: Date:	plan.

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Township: 28N Rang	ge: 06W Sections:
NAD27 X: Y:	Zone: Search Radius:
County: Basin:	Number: Suffix:
Owner Name: (First)	(Last) C Non-Domestic C Domestic & A
POD / Surface Data Report	Avg Depth to Water Report Water Column Report
Clear	r Form iWATERS Menu Help

#### WATER COLUMN REPORT 08/20/2008

	(quarter	s are	a 1=	NW	2:	=NE	3=SW -	4=SE)					
	(quarter	s ar	e bi	gg	est	t to	smal	lest)		Depth	Depth	Water	(in
POD Number	Tws	Rng	Sec	q	đ	P	Zone	х	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	

• New Mexico Office of the State Engineer

Township: 28N	Range: 07W Sections:				
NAD27 X:	Y: Zone:		Search Radiu	s:	
County: Basin:		Num	ber:	Suffix:	
wner Name: (First)	(Last)	C	Non-Domestic	← Domestic	• A
POD / Surface Data Report	Avg Depth to Wa	ter Report	Wat	er Column Repor	t
	Clear Form iWATERS	Menu	Help		

	(quarter	s are	e big	gge	est	t to	smallest)			Depth	Depth	Water	(in
POD Number	Tws	Rng	Sec	q	q	Q	Zone	x	Y	Well	Water	Column	
SJ 00002	28N	07W	14	1						375			
SJ 03116	28N	07W	21	3	3	3				98	20	78	

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New Mexico Office of the State Engineer POD Reports and Downloads								
Township: 27N	Range: 06W	Sections:						
NAD27 X:	Y:	Zone:	Search Radius:					
County: Ba	sin:		Number: Suffix:					
Owner Name: (First)	(Last)		C Non-Domestic C Domestic C A					
POD / Surface Data Rep	ort Avg	Depth to Water	er Report Water Column Report					
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#### WATER COLUMN REPORT 08/20/2008

	(qu (qu	arter arter	s are s are	a 1=1 a big	WW 99e	2: est	=NE t to	3=SW 4=SE) smallest)			Depth	Depth	Water	(in
POD Numbe	r	Tws	Rng	Sec	P	g	đ	Zone	х	Y	Well	Water	Column	
SJ 03001		27N	06W	07	2	2	1				141	41	100	
SJ 02403		27N	06W	30	3	1	3				505	300	205	
SJ 00213		27N	06W	32	1	4	4				1308	485	823	
SJ 00062		27N	06W	32	3	3	3				452	301	151	
SJ 00061		27N	06W	32	3	3	3				445	301	144	

New Mexico Office of the State Engineer

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New Mexico Office of the State Engineer POD Reports and Downloads								
Township: 27N R	ange: 07W Sections:							
NAD27 X:	Y: Zone:	Search Radius:						
County: Basin:		Number: Suffix:						
Owner Name: (First)	(Last)	C Non-Domestic C Domestic C All						
POD / Surface Data Report	Avg Depth to Wate	r Report Water Column Report						
	Clear Form iWATERS M	enu Help						

#### WATER COLUMN REPORT 08/20/2008

(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest)									Depth	h Depth	Water	(in	
POD Number	Tws	Rng	Sec	q	q	P	Zone	x	Y	Well	Water	Column	
RG 81025	27N	07W	35	4	3	3				560	465	95	
SJ 00195	27N	07W	15	2						1633	500	1133	
SJ 02314	27N	07W	17	3	3					355	320	35	
SJ 02408	27N	07W	21	2	1	3				400	300	100	
SJ 03274	27N	07W	35	3	4	4				450			
SJ 02404	27N	07W	35	4	3	3				550	250	300	



## ConocoPhillips

#### SAN JUAN 28-6 UNIT 210P AERIAL MAP



Aerial flown locally Sedgewick in 2005.

1000FT	

1:6,000

NAD\_1983\_SP\_ NM West\_FIPS\_3003 8/08

# Mines, Mills and Quarries Web Map

## SAN JUAN 28-6 UNIT 210P

Unit Letter: K, Section: 31, Town: 028N, Range: 006W



WILES

SAN JUAN 28-6 # UNIT # 210P



## SAN JUAN 28-6 UNIT 210P

#### Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'SAN JUAN 28-6 UNIT 210P', which is located at 36.61528 degrees North latitude and 107.50938 degrees West longitude. This location is located on the Gould Pass 7.5' USGS topographic quadrangle. This location is in section 31 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 17.8 miles to the northwest. The nearest large town (population greater than 10,000) is Farmington, located 39.5 miles to the west (National Atlas). The nearest highway is US Highway 64, located 5.9 miles to the north. The location is on BLM land and is 3,287 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 1967 meters or 6451 feet above sea level and receives 12.5 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Pinion-Juniper Woodland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 312 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 1,934 feet to the southeast and is classified by the USGS as an intermittent stream. The nearest perrenial stream is named Carrizo Creek and is 3,642 feet to the southwest. The nearest water body is 5,978 feet to the east. It is classified by the USGS as an intermittent lake and is 1.1 acres in size. The nearest spring is 8,400 feet to the northwest. 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 3,127 feet to the southwest. The nearest wetland is a 0.3 acre Freshwater Forested/Shrub Wetland located 2.438 feet to the east. The slope at this location is 14 degrees to the southeast 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 'Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes' and is well drained and not hydric with severe erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 17.9 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 aguifers. 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:

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- 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
- 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 J30BB J36BE J45BE Min. Roll Typical Roll Min. Roll Typical Roll Min. Roll Averages Typical Roll 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 ASTM D 5261 151 lbs 168 lbs (oz/yd²) 189 lbs 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 ibs 19 lbs 24 lbs 25 lbs 31 lbs 1" Tensile Strength 88 lbf MD 110 lbf MD **ASTM D 7003** 90 lbf MD 113 lbf MD 110 lbf MD 63 lbf DD 138 lbf MD 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 Break % (Film Break) 750 MD 550 MD 750 MD 550 DD 750 DD 550 DD 750 DD 550 DD 750 DD 1" Tensile Elongation @ 20 MD 33 MD **ASTM D 7003** 20 MD Peak % (Scrim Break) 30 MD 20 MD 36 MD 20 DD 33 DD 20 DD 31DD 20 DD 36 DD 75 lbf MD Tongue Tear Strength 97 lbf MD

90 lbf DD

218 lbf MD

210 lbf DD

146 lbf MD

141 lbf DD

< 0.5

64 lbf

180° F

-70° F

MD = Machine Direction

Grab Tensile

Trapezoid Tear

\* Dimensional Stability

Maximum Use Temperature

Minimum Use Temperature

Puncture Resistance

DD = Diagonal Directions

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

75 lbf MD

75 lbf DD

180 lbf MD

180 lbf DD

130 lbf MD

130 lbf DD

<1

65 lbf

180° F

-70° F

104 Ibf MD

92 lbf DD

222 lbf MD

223 Ibf DD

189 lbf MD

172 lbf DD

<0.5

83 lbf

180° F

-70° F

\*Dimensional Stability Maximum Value

75 lbf DD

180 lbf MD

180 lbf DD

120 lbf MD

120 lbf DD

<1

50 lbf

180° F

-70° F

**ASTM D 5884** 

ASTM D 7004

**ASTM D 4533** 

ASTM D 1204

ASTM D 4833

\*\*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: BAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no quarantee of satisfactory results from resance upon contained information or recommendations and



## PLANT LOCATION

Sioux Falls, South Dakota

## SALES OFFICE

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100 lbf MD

100 lbf DD

220 lbf MD

220 lbf DD

160 lbf MD

160 lbf DD

<1

80 lbf

180° F

-70° F

117 lbf MD

118 lbf DD

257 lbf MD

258 lbf DD

193 lbf MD

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

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.

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, at its 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 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:

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- 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 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 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; or other 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, nonwaste 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
  - 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 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