District 1

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

July 21, 2008 For temporary pits, closed-loop sytems, and below-grade tanks, submit to the appropriate NMOCD District Office.

Form C-144

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriation CD District Office.

### Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:	X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
	Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
	Modification to an existing permit
	Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system,
	below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pil closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

Operator: Burlington Resources Oil & Gas Company, LP OGRID#: 14538
Address: PO Box 4289, Farmington, NM 87499
Facility or well name: CORNELL SRC 4
API Number: 3004508528 OCD Permit Number:
U/L or Qtr/Qtr: K Section: 12 Township: 29N Range: 12W County: San Juan
Center of Proposed Design: Latitude: 36.73917°N Longitude: -108.05212°W NAD: X 1927 1983
Surface Owner: X Federal State Private Tribal Trust or Indian Allotment
Pit: Subsection F or G of 19.15.17.11 NMAC  Temporary: Drilling Workover Permanent Emergency Cavitation P&A Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Other String-Reinforced Liner Seams: Welded Factory Other Volume: bbl Dimensions L x W x D
Closed-loop System: Subsection H of 19.15.17.11 NMAC   Type of Operation: P&A   Drilling a new well   Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)   Drying Pad   Above Ground Steel Tanks   Haul-off Bins   Other     Lined   Unlined Liner type: Thickness   mil   LLDPE   HDPE   PVD   Other     Liner Seams: Welded   Factory   Other
X   Below-grade tank:   Subsection   of 19.15.17.11 NMAC     Volume:   120   bb    Type of fluid:   Produced Water     Tank Construction material:   Metal     Secondary containment with leak detection   X   Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off     Visible sidewalls and liner   Visible sidewalls only   Other     Liner Type:   Thickness   mil   HDPE   PVC   X   Other   Unspecified
Alternative Method:  Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pit, temporary pits, and below-grade tanks)		
Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, so hook, hospital,	oistilition or c	luirch)
Fig. 1. (1) foot height, four strands of barbed wire evenly spaced between one and four feet		
X Alternate. Please specify 49 hog wire fencing topped with two strands barbed wire.		
Netting: Subsection F of 19-15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)  X Screen Netting Other  Monthly dispections (If netting or screening is not physically feasible)		
8		
Signs: Subsection C of 19.15.17.11 NMAC  12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  X Signed in compliance with 19.15.3.103 NMAC		
9 Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.		
Please check a box if one or more of the following is requested, if not leave blank:		
[X] Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Finvironmental Bureau office for co (Fencing/BGT Liner)	usideration of	approval.
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.		
Siting ('riteria (regarding permitting): 19.15.17.10 NMAC  Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.		
Ground water is less than 50 feet below the hottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes	XNo
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakehed, 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 below-grade tanks)	NA	
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	-	
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes	No
(Applied to permanent pits)  Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	XNA	
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
<ul> <li>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site.</li> </ul>		
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	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.	Yes	XNo
Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division Within an unstable area.		
Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	Yes	X No
Within a 100-year floodplain - FEMA man	Yes	XNo

1-11	
Temporary Pits, Emergency Pits and Below-grade Tanks P	Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC objection. Please indicate, by a check mark in the box, that the documents are attached.
	on the requirements of Paragraph (4) of Subsection B of 19.15, F7.9 NMAC
	based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9
X Siting Criteria Compliance Demonstrations - based upon	
X Design Plan - based upon the appropriate requirements o	
X Operating and Maintenance Plan - based upon the approp	
X Closure Plan (Please complete Boxes 14 through 18, if a	applicable) - based upon the appropriate requirements of Subsection C of
19.15.17.9 NMAC and 19.15.17.13 NMAC	
Previously Approved Design (attach copy of design)	API or Permit
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
Design Plan - based upon the appropriate requirements of	
Operating and Maintenance Plan - based upon the approp	
Closure Plan (Please complete Boxes 14 through 18, if ap 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
I)	
Permanent Pits Permit Application Checklist: Subsection E	B of 19.15.17,9 NMAC
Instructions: Each of the following items must be attached to the app	plication. Please indicate, by a check mark in the bax, that the documents are attached.
Hydrogeologic Report - based upon the requirements of P	
Siting Criteria Compliance Demonstrations - based upon	the appropriate requirements of 19.15.17.10 NMAC
Climatological Factors Assessment	
Certified Engineering Design Plans - based upon the appr	
Dike Protection and Structural Integrity Design: based up	ion the appropriate requirements of 19.15.17.11 NMAC
Leak Detection Design - based upon the appropriate requi	
Quality Control/Quality Assurance Construction and Insta	ed upon the appropriate requirements of 19.15.17.11 NMAC
Operating and Maintenance Plan - based upon the appropri	
Freeboard and Overtopping Prevention Plan - based upon	the appropriate requirements of 19.15.17.11 NMAC
Nuisance or Hazardous Odors, including H2S, Prevention	ı Plan
Emergency Response Plan	
Oil Field Waste Stream Characterization	
Monitoring and Inspection Plan	
Erosion Control Plan	
Costure Plan - based upon the appropriate requirements of	f Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19:15:17:13 NMAC	
Instructions: Please complete the applicable boxes, Boxes 14 through	
Type: Drilling Workover Emergency Cavitation  Alternative	n P&A Permanent Pit X Below-grade Tank Closed-loop System
Proposed Closure Method: X Waste Excavation and Removal	(Below-Grade Tank)
Waste Removal (Closed-loop syste	· · · · · · · · · · · · · · · · · · ·
On-site Closure Method (only for t	temporary pits and closed-loop systems)
	On-site Trench
Alternative Closure Method (Exce	eptions must be submitted to the Santa Fe Environmental Bureau for consideration)
15	
Wuste Excavation and Removal Closure Plan Checklist: {19.1; Please indicate, by a check mark in the box, that the documents are at	5.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan.
X Protocols and Procedures - based upon the appropriate requ	
X Confirmation Sampling Plan (if applicable) - based upon the	he appropriate requirements of Subsection F of 19.15.17.13 NMAC
X Disposal Facility Name and Permit Number (for liquids, dr	rilling fluids and drill cuttings)
	n the appropriate requirements of Subsection H of 19.15.17.13 NMAC
X Re-vegetation Plan - based upon the appropriate requirement	
X Site Reclamation Plan - based upon the appropriate require	ements of Subsection G of 19,15,17,13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Grou Instinctions: Please identify the facility or facilities for the disposal of liquids, a are required.	and Steel Tanks or Haul-off Bins Only: (1945-17-13.1) NMAC! drilling fluids and drill cuttings. Use attachment if more than two	o facilities
Disposal Facility Name:	Disposal Facility Permit #:	
Disposal Facility Name:		
Will any of the proposed closed-loop system operations and associated as  Yes (If yes, please provide the information No		
Required for impacted areas which will not be used for future 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	AC
17		
Siting Criteria (Regarding on-site closure methods only: 19,15,17,10 Instructions: Each sating criteria requires a demonstration of compliance in the closure certain sating criteria may require administrative approval from the appropriate district for consideration of approval. Justifications and/or demonstrations of equivalency are	plan. Recommendations of acceptable source material are provided be Loffice or may be considered an exception which must be submitted to the	low: Requests regarding changes to te Santa Fe Environmental Bureau office
Ground water is less than 50 feet below the bottom of the buried waste.		Yes No
<ul> <li>NM Office of the State Engineer - iWATERS database search; USGS: Da</li> </ul>	ita obtained from nearby wells	□N/A
Ground water is between 50 and 100 feet below the bottom of the buried	waste	Yes No
<ul> <li>NM Office of the State Engineer - iWATERS database search; USGS; Dat</li> </ul>	ta obtained from nearby wells	∏N/A
Ground water is more than 100 feet below the bottom of the buried waste		Yes No
- NM Office of the State Engineer - iWATERS database search; USGS; Dat	ta obtained from nearby wells	□N/A
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
<ul> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>		
Within 300 feet from a permanent residence, school, hospital, institution, or chur - Visual auspection (certification) of the proposed site; Aerial photo; satellite	Yes No	
Within 500 horizontal feet of a private, domestic fresh water well or spring that k 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 to	n existence at the time of the initial application.	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh war pursuant to NMSA 1978, Section 3-27-3, as amended.	ater well field covered under a municipal ordinance adopted	Yes No
Written confirmation or verification from the municipality; Written approve Within 500 feet of a wetland		Yes No
<ul> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visua Within the area overlying a subsurface mine.</li> </ul>	a inspection (certification) of the proposed site	n. n.
Written confirmation or verification or map from the NM EMNRD-Mining	and Mineral Division	Yes No
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology		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,	ach of the following items must bee attached to the closur	e plan. Please indicate,
Siting Criteria Compliance Demonstrations - based upon the approp	priate requirements of 19.15.17.10 NMAC	
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	9.15.17.11 NMAC
Protocols and Procedures - based upon the appropriate requirement		
Confirmation Sampling Plan (if applicable) - based upon the approp		
Waste Material Sampling Plan - based upon the appropriate require		270
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 Su	osection H of 19,15,17,13 NMAC	
Site Reclamation Plan - based upon the appropriate requirements of	Subsection G of 19.15.17.13 NMAC	

Operator Application Certi	fication:			
	tion submitted with this application is true, accu	urate and complete to the	pest of my knowledge and belief.	
Name (Print):	Crystal Tafqya	Title:	Regulatory Technician	
Signature:	Cristal Labora	Date:	12/22/2008	
e-mail address:	crystal lat ya@conocophimp() om	Telephone:	505-326-9837	
20	Application (including closure plan)			
_		Ciosure Plan (only)	OCD Conditions (see attachment)	,
OCD Representative Signate	ште Там		Approval Date: ///6/	114
Title: Niller	Znah	OCD Perm	St Normalism	
		GCD Ferm	it Number:	
21				
Closure Report (required wi	ithin 60 days of closure completion): Sub-	section K of 19.15.17.13 NMAC	re activities and submitting the closure report. The cl	
report is required to be submitted	I to the division within 60 days of the completic	on of the closure activities	e activities and submitting the closure report. The cli Please do not complete this section of the form until	osure an
approved closure plan has been o	obtained and the closure activities have been co	ompleted.	, ,, ,, ,, ,	1000
		Closure	Completion Date:	
22				
Closure Method:	_			
Waste Excavation and Re	moval On-site Closure Method	Alternative Closure I	Method Waste Removal (Closed-loop systems of	only)
If different from approved	l plan, please explain.			
23				
Closure Report Regarding Was	te Removal Closure For Closed-loop Systems	s That Utilize Above Gro	und Steel Tanks or Haul-off Bins Only:	
were utilized.	actiny or justimes for where the aquids, drill	ung fluids and drill cuttin	gs were disposed. Use attachment if more than two f	acilities
Disposal Facility Name:		Disposal Facility F	ermit Number:	
Disposal Facility Name:		Disposal Facility F	ermit Number:	_
	perations and associated activities performed o	on or in areas that will not	be used for future service and opeartions?	_
	_	No		
Site Reclamation (Photo E	chich will not be used for future service and open	verations:		
Soil Backfilling and Cove				
Re-vegetation Application	Rates and Seeding Technique			
24				
Closure Report Attachmer	at Checklist: Instructions: Each of the follo	wing items must be attacl	ned to the closure report. Please indicate, by a check	: mark in
the box, that the documents ar	re attached. (surface owner and division)			
	equired for on-site closure)			
	sures and temporary pits)			
	Analytical Results (if applicable)			
	g Analytical Results (if applicable)			
Disposal Facility Name				
Soil Backfilling and Cov	er Installation			
Re-vegetation Application	on Rates and Seeding Technique			
Site Reclamation (Photo	· ·			
On-site Closure Location	n: Latitude:	Longitude:	NAD	3
25 Operator Classes Cardiff at				
Operator Closure Certificatio				
the closure complies with all applie	cable closure requirements and conditions spec	repair is ture, accurate an cified in the approved clos	d complete to the best of my knowledge and belief. Laure plan.	ilso certify that
Name (Print):	·	Title:	•	
		Title;		-
Signature:		Date:		_
e-mail address:		Telephone:		

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

Township: 29N	Range: 11W	Sections:		
NAD27 X:	Y:	Zone:	Search Radius:	
County:	Basin:		Number:	Suffix:
Owner Name: (First)	(Li	ast) • All	O Non-Domestic	O Domestic
POD / Sur	face Data Report		Depth to Water Report	
(	Clear Form	iWATERS Me	enu Help	

### WATER COLUMN REPORT 09/10/2008

	(qu	arters	are	1=1	W	2=	NE :	3=\$W	4=SE)						
	(qu	artera	are	big	gge	st	: to	smal	lest)				Depth	Depth	Wat€
POD Nun	ber	Tws	Rng	Sec	P	P	P	Zone		x	•	Y	Well	Water	Colum
SJ_0086	i <b>7</b>	29N	11W	07	4								77	55	2
SJ 0130	2	29N	11W		4	1							250	210	4
SJ 0189	1	29N	11W	07	4	1	3						157		
SJ 0185		29N	11W	10	4	4							125	48	5
SJ 0246	6 S	29N	11W		4	-	3						65		
SJ 0246	6	29N	11W		4	3	3						66		
SJ 0299		29N	11W		3	4	2						60		
SJ 0313	6	29N	11W		3	4	4						20		
SJ 0098	17	29N	11W		4								415	300	11
SJ 0142	16	29N	11W		1	4							155	10	14
SJ 0000	7	29N	11W		2	2	3						752		
SJ 0355	0	29N	11W		3	2	1						10		
SJ 0177	4	29N	11W		3	4	2						82	6	7
SJ 0336	50	29N	11W		3	4	2						40		
SJ 0317	5	29N	11W		4	2	1						60	24	3
SJ 0316	14	29N	11W		4	2	1						75	56	1
SJ 0373	3 POD1	29N	11W	15	4	2	1						64	20	4
SJ 0237	18	29N	11W		4	3	2						75	12	€
SJ 0357	9	29N	11W	15	4	4	1						83	30	E
SJ 0214	1	29N	11W	16	4	3	4						110	40	7
SJ 0292	6	29N	11W		2	4	3						375	80	25
SJ 0339	9	29N	11W	17	4	2							100		
SJ 0048	17	29N	11W		4	4							60	6	5
SJ 0286	8	29N	11W	17	4	4	4						50		
SJ 0164		29N	11W		2	2	3						120	55	E
SJ 0202	16	29N	11W	19	3	1			4400	00	207770	0	27	6	2
SJ 0297	0	29N	11W	19	4	3	2						100	18	3
SJ 0125	0	29N	11W	19	4	4							60	20	4

SJ 02869	29N	11W 20	2		1	50		
SJ 00583	29N	11W 20	3		2	150	30	12
SJ 01355	29N	11W 20	4	4		36	3	:
SJ 00452	29N	11W 21				42	10	3
SJ 01969	29N	11W 21	2			65	55	1
SJ 00701 CLW312190	29N	11W 21	2	2		70	14	E
SJ 00701	29N	11W 21	2	2	1	73		
SJ 03350	29N	11W 21	2	2	3	50		
SJ 01090	29N	11W 21	2	4		31	12	1
SJ 02863	29N	11W 21	2	4	1	52	20	
SJ 03659	29N	11W 21	3	2	2	45	10	-
SJ 01888	29N	11W 21	4		2	47	8	2
SJ 02200	29N	11W 22				60	22	3
SJ 01557	29N	11W 22	1	2		70	11	64 th 64 th 64 th
SJ 00796	29N	11W 22	1			50	8	7
SJ 00704	29N	11W 22	1	2		55	20	1
SJ 01703	29N	11W 22	1	2		68	3	$\epsilon$
SJ 03747 POD1	29N	11W 22	1		3	47	27	2
SJ 02813	29N	11W 22	1		3	59	16	4
SJ 01214	29N	11W 22	1		-	49	12	3
SJ 00484	29N	11W 22	1		1	37	10	3
SJ 00320	29N	11W 22	1		1	38	10	2 -
SJ 03532	29N	11W 22		3	3			4
		11W 22	1	3	4	49	14	3 12 12 13 12
SJ 00151 SJ 02721	29N		1	-	4	45	18	4
	29N	11W 22	1	4	-	70	59	
SJ 03503	29N	11W 22	2	3	3	72	18	= =
SJ 02578	29N	11W 22	2	3	3	58	24	01 (2) (3) (4) (4) (4) (4) (4) (4)
SJ 03093	29N	11W 22	2	3	4	42	22	4
SJ_03189	29N	11W 22	3	2	1	45	20	2
SJ 03188	29N	11W 22	3	2	2	45	11	3
SJ 02020	29N	11W 22	3	3		27	6	2
SJ 02138	29N	11W 22	4	2	_	40	7	3
SJ 02529	29N	11W 22	4	2	3	30	9	2
SJ 03479	29N	11W 22	4	2	3	43	4	3
SJ 03049	29N	11W 22	4	2	4	33	10	2
SJ 00696	29N	11W 22	4	3	_	34	12	2
SJ 01974	29N	11W 22	4	3	3	47	11	3
SJ 03567	29N	11W 23	1		3	50	22	
SJ 03557	29N	11W 23	1		1	50	15	3
SJ 03558	29N	11W 23	1		1	50	15	3
SJ 03559	29N	11W 23	1	3	4	45	15	3
SJ 00812	29N	11W 23	1	4		44		
SJ 03546	29N	11W 23	1	4	2	50	15	NI ED NI NI ED ED
SJ 03591	29N	11W 23	1	4	4	55	20	3
SJ 01870	29N	11W 23	2			58	30	2
SJ 03130	29N	11W 23	2			50	30	2
SJ 03201	29N	11W 23	2			60	30	3
SJ 03353	29N	11W 23	2		3	45	25	2
SJ 01610	29N	11W 23	2	2		52	25	2
SJ_01573	29N	11W 23	2	3		41	21	2
SJ 03073	29N	11W 23	2	3	1	30		
SJ 03286	29N	11W 23	3	3	1	38	28	1
SJ 02799	29N	11W 23	4	1	1	56	15	4
SJ_03548	29N	11W 23	4	1	1	50	15	
SJ 01962	29N	11W 24	1			45	12	9
SJ 03343	29N	11W 24	1			35	18	1
SJ 00804	29N	11W 25	1			37	25	1
SJ 01808 0-5	29N	11W 26	3		1	52	43	_
SJ 02121	29N	11W 27		1	_	30	6	2
			-	-		30	•	-

SJ 02210	29N	11W 27	1 1				32	8	2
SJ 03588	29N	11W 27	1 1	2					
SJ 02227	29N	11W 27	1 1	4			27	6	2
SJ 00700	29N	11W 27	1 3				20	7	1
SJ 01808 0-4	29N	11W 27	2 3	3			32	25	
SJ 01808 0-1	29N	11W 27	2 4	2			25	17	
SJ 01808 0-2	29N	11W 27	2 4	3			27	19	
SJ 01808 0-3	29N	11W 27	2 4	4			39	34	
SJ 02664	29N	11W 27	3 2				40	26	1
SJ 02664 S	29N	11W 27	3 2				38	23	1
SJ 02664 S-2	29N	11W 27	3 2				34	19	1
SJ 02664 S-3	_ 29N	11W 27	3 2				41	30	1
SJ 02664 S-9	_ 29N	11W 27	3 2				33	19	1
SJ 02664 S-4	29N	11W 27	3 2				42	30	1
SJ 02664 S-10	29N	11W 27	3 2				33	19	1
SJ 02664 S-5	_ 29N	11W 27	3 2				41	30	1
SJ 02664 S-6	29N	11W 27	3 2				40	28	1
SJ 02664 S-7	_ 29N	11W 27	3 2				37	23	1
SJ 02664 S-8	_ 29N	11W 27	3 2				35	25	1
SJ 02148	_ 29N	11W 27	4 2				305	186	11
SJ 01808 0-6	29N	11W 27	4 2	1			50		
SJ 03762 POD1	29N	11W 28	1 1		267348	2075529	27	15	1
SJ 03476	_ 29N	11W 28	1 1	2			65		
SJ 03415	29N	11W 28	1 2	1			60	20	4
SJ 02559	_ 29N	11W 28	1 2	4			15	7	
SJ 02330	_ 29N	11W 28	2 1				128	115	1
SJ 03021	29N	11W 28		3			16	5	1
SJ 01606	29N	11W 28	2 2				35	8	2
SJ 03468	29N	11W 28	2 4		367704	2073506	50		
SJ 03469	_ 29N	11W 28	2 4	3			50		
SJ 02713	_ 29N	11W 28	3 1	1			26	12	1
SJ 02858	_ 29N	11W 28	3 1	3			40		
SJ 02714	_ 29N	11W 28	3 2				43	28	1
SJ 02708	_ 29N	11W 28	3 2				26	12	1
SJ 03149	_ 29N	11W 28	4 2	2			60	35	2
SJ 03475	_ 29N	11W 29	1 1	3			40	20	2
SJ 00292	_ 29N	11W 29	2 1	4			24	9	1
SJ 01554	_ 29N	11W 29	2 2				35	18	1
SJ 02038	_ 29N	11W 29	4 1	1			14	4	1
SJ 03298 SJ 02023	_ 29N 29N	11W 29 11W 29	4 1 4 2	1			70	6	6
SJ 02182	- 29N	11W 29	4 2				24	7	1
SJ 00822	29N	11W 29	4 3				27	11 15	1
SJ 03421	29N	11W 29		3			34		1 2
SJ 01391	29N	11W 29	2	3			50	28	1
SJ 03348	29N	11W 30		3			40 60	25	1
SJ 01260	_ 29N	11W 30	2 2	J			42	16	2
SJ 01264	29N	11W 30	2 2				27	12	1
SJ 01328	29N	11W 30	2 2				28	15	1
SJ 01821	29N	11W 30	2 4				70	6	E
SJ 00875	29N	11W 30	4 1				37	20	1
SJ 02922	29N	11W 30	3 2	2			37 75	20	1
SJ 03795 POD1	29N	11W 31	3 2	4	266438	2067001	75 75	ΛE	-
SJ 03541	29N	11W 31		1	200430	2007001	80	45 40	3 4
SJ 00441	29N	11W 31	2 2	_			00	40	-
SJ 00103	29N	11W 32		4			263		
SJ 00103	29N	11W 32		4			254		
SJ 03666	29N	11W 32	2 1				49	30	1
20 03000	Z J IV	TTM 33	2 I	,			4.7	30	1

- Record Count: 145

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

Township: 29N	Range: 12W	Sections:		
NAD27 X:	Y:	Zone:	Search Radius:	
County:	Basin:		Number:	Suffix:
Owner Name: (First)		Last)	Non-Domestic	ODomestic
POD/S	urface Data Rep	ort Av	g Depth to Water Report	
	Clear Form	iWATERS M	enu Help	

### WATER COLUMN REPORT 09/10/2008

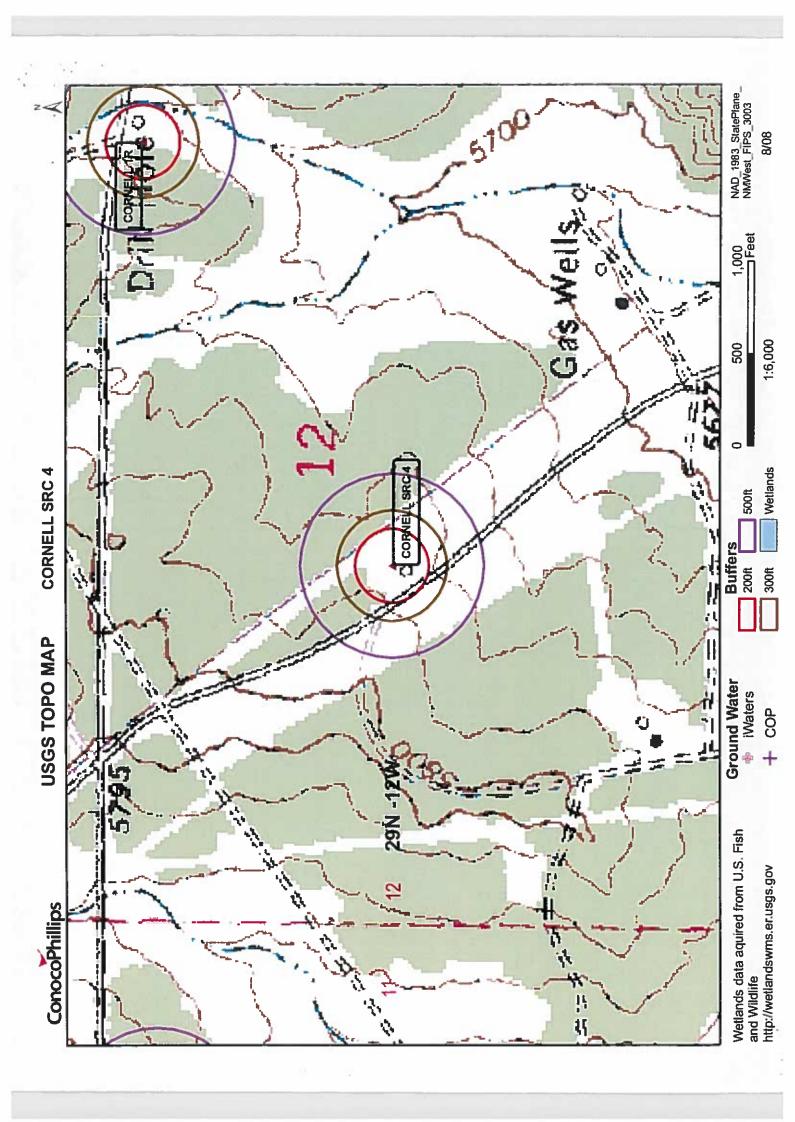
(qr	larter	s are	1=1	WM	2:	=NE	3=SW 4=SE)					
	arter	s are	bi:	gge	est	t to	smallest)			Depth	Depth	Wat∈
POD Number	Tws	Rng	Sec	q	q	q	Zone	x	Y	Well	Water	Colun
RG 13104	_ 29N	12W	01	1	4					70	35	3
RG 42195	29N	12W	01	2	2	2				100	40	$\epsilon$
RG 27250	_ 29N	12W	02	1						85	40	4
RG_36980	29N	12W	02	1						113	40	7
RG 42665	29N	12W	13							140	105	3
SJ 03277	29N	12W	01	1	2	4				180	120	$\epsilon$
SJ_01031	29N	12W	04	2	1					275	172	10
SJ 01504	29N	12W	04	2	1					180	155	2
SJ 02851	29N	12W	04	2	1	1				370	310	E
SJ 03293	29N	12W	05	1	1	4				68	45	2
SJ 00881	29N	12W		1	2	2				137	18	11
SJ 03528	29N	12W	06	1	2	4				21	5	1
SJ 01894	29N	12W	06	1	3					29	28	
SJ 01385	29N	12W	06	1	3	4				31	4	2
SJ 03529	29N	12W	06	1	4	1				21	5	1
SJ 03186	29N	12W	06	2	4	1				21	8	1
SJ 01662	29N	12W	06	3	3	1				25	8	1
SJ 00254	29N	12W	06	3	3	2				90	26	€
SJ 03205	29N	12W	06	3	3	4				127	118	
SJ 01383	29N	12W	07	1						125	80	4
SJ 00121	29N	12W	07	1	1					160	90	7
SJ_03553	29N	12W	07	1	2	2				150		
SJ 03061	29N	12W	07	3	1	2				280	180	10
SJ 01566 CLW227534	29N	12W	80	3	1	2				105	60	4
SJ 01566	29N	12W	80	3	1	3				105	60	4
SJ 01839	29N	12W	10	1	4					212	175	3
SJ 03410	29N	12W	11	3	3	4				75		
SJ 00548	29N	12W	14	1	1					180	60	12
6' 17 302	26											

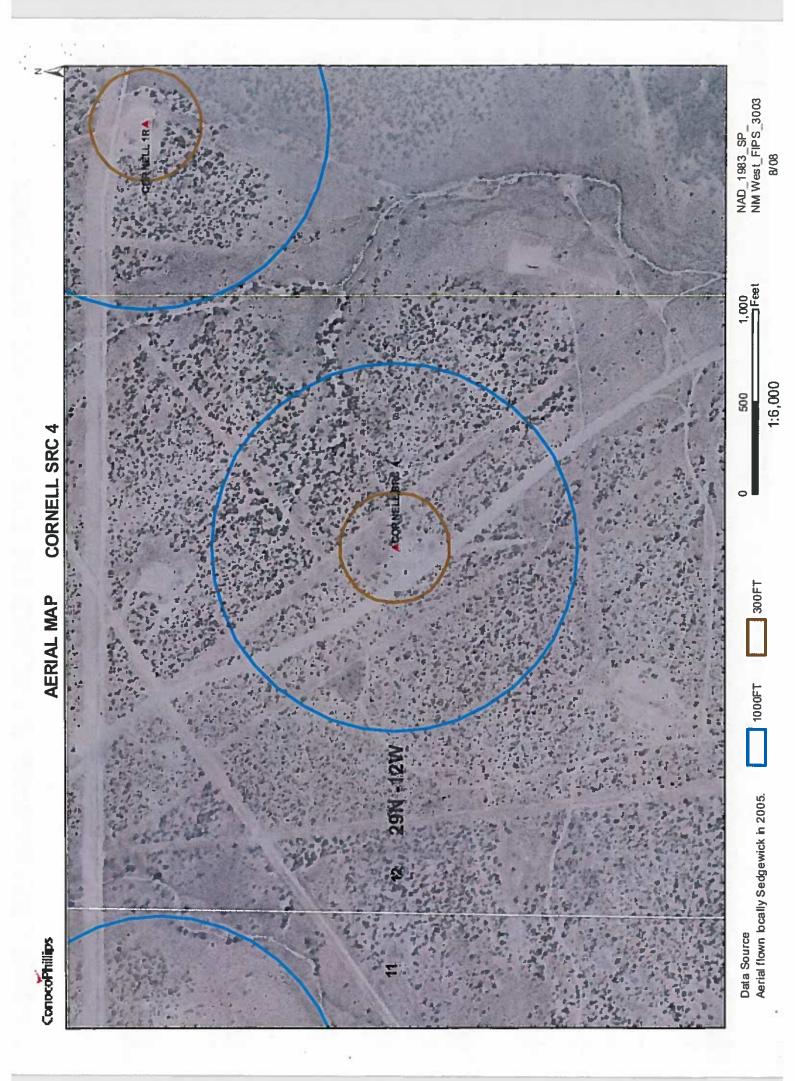
	0.000	4044	-			0.550.55		0.5		
SJ 03414	29N	12W 14	1	1	2	265266	2086208	25		- 1
SJ 01510	29N	12W 15	1	4	3			155	75	3
SJ 03569	29N	12W 15	2	1	2			150		
SJ 03370	29N	12W 15	2	2	2			166	86	3
SJ 03388	29N	12W 15	2	2	2			159	80	7
SJ 02070	29N	12W 19	3	3	4			21	6	1
SJ 00567	29N	12W 19	3	4	4			28	28	
SJ 03564	29N	12W 19	4	1	3			100		
SJ 03563	29N	12W 19	4	1	3			100		
SJ 00657	29N	12W 19	4	1	4			85	38	4
SJ 03363	29N	12W 19	4	3	-			19	3	1
SJ 01070	29N	12W 19	4	3	1			38	14	2
SJ 03151	29N	12W 19	4	3	1			50	14	2
SJ 03270	29N	12W 19	4	3	2			43	24	1
									24	3
SJ 03255	29N	12W 19	4	3	4			17	5	1
SJ 00952	29N	12W 19	4	4	-			76	40	3
SJ 03372	29N	12W 19	4	4	3			10	2	
SJ 00338	29N	12W 20	3	3	3			28	10	1
SJ 02131 S	29N	12W 22	3	3	2			400		
SJ 02363	29N	12W 22	4	4				300	185	11
SJ 01597	29N	12W 24	3	2				40	15	2
SJ 02555	29N	12W 24	3	3				21	6	3
SJ 00400	29N	12W 24	3	4				83	35	4
SJ 03735 POD1	29N	12W 24	3	4	1			100	15	3
SJ 03507	29N	12W 24	3	4	1			60		
SJ 03786 POD1	29N	12W 24	3	4	1	265819	2077065	35	11	2
SJ 02082	29N	12W 25	1	1				30	3	2
SJ 00938	29N	12W 25	1	2				80	40	4
SJ 00706	29N	12W 25	1					49	20	2
SJ 00652	29N	12W 25	1					42	20	2
SJ 01322	29N	12W 25	1					42	20	2
SJ 00617	29N	12W 25	1	4	2			47	20	2
SJ 01466	29N	12W 25	2	4	٦			27		1
SJ 00570	29N	12W 25	3	1					14	1
111		12W 25	3	3	2			36	18	
SJ 03340	29N		_	4	3			45	12	3
SJ 03173	29N	12W 25	3		2			60	10	Ē
SJ 03580	29N	12W 25	3	4	4			20	4	1
SJ 00763	29N	12W 25	4	3				60	20	4
SJ 02132	29N	12W 25	4	3	1			40	12	2
SJ 02496	29N	12W 26	1		4			35	20	1
SJ 03337	29N	12W 26	1		2			50		
SJ 03339	29N	12W 26	1		2			50		
SJ 03338	29N	12W 26	1		2			50		
SJ 00777	29N	12W 26	2	1				47	20	2
SJ 01109	29N	12W 26	2					100	70	3
SJ 01194	29N	12W 26	2	4				38	12	3 2 3
SJ 01954	29N	12W 26	3	1				55	20	3
SJ 01956	29N	12W 26	3	1				50	18	3
SJ 03052	29N	12W 26	3	1	4			29	15	1
SJ 01996	29N	12W 26	3	2				75	17	
SJ_00112	29N	12W 26	3					47	26	2
SJ 01326	29N	12W 26	4	2				50	27	2
SJ 01802	29N	12W 26	4	2				70	18	
SJ 00399	29N	12W 26	4		2			45	25	2
SJ 01802 POD2	29N	12W 26				265542	2072216			2
			4		3	265547	2072216	34	11	4
SJ 03789 POD1	29N	12W 26	4	2	3	265592	2072287	40	14	2
SJ 03325	29N	12W 26	4		1			45	14	3
SJ 03327	29N	12W 26	4	4				95	70	2
SJ 03104	29N	12W 26	4	4	2			50		

SJ 03329	29N	12W 26	4		3			40	12	2
SJ 03341	29N	12W 26	4	4	3			50		
SJ 02169	29N	12W 27						36	19	1
SJ 02058	29N	12W 27						60	25	2
SJ 02118	29N	12W 27	1					29	6	2
SJ 02131	29N	12W 27	1	1				80		
SJ 01590	29N	12W 27	1	3				63	30	3
SJ 02654	29N	12W 27	1	3	1			62	32	3
SJ 00726	29N	12W 27	1	3	1			50	30	2
SJ 03422	29N	12W 27	1	3	2			41	31	1
SJ_01008	29N	12W 27	1	3	3			51	20	3
SJ 00827	29N	12W 27	1	3	3			55	30	2
SJ 01828	29N	12W 27	1	3	4			45	25	2
SJ 02870	29N	12W 27	1	3	4			39	24	1
SJ 00666	29N	12W 27	1	3	4			35	17	1
SJ 03384	29N	12W 27	1	_	4			41	30	1
SJ 02041	29N	12W 27	2	3	7			37	8	2
SJ 02074	29N	12W 27	2	3				60	25	1
SJ 01643	29N	12W 27	2	3	4			65	30	143
SJ 02274	29N	12W 27	2	3	4			47	22	2
SJ 03394	29N	12W 27	2	4	4			59	15	
	29N	12W 27	3	1	4			87		4
SJ 01700			-	1					48	3
SJ 00572	29N	12W 27	3	_				35	28	-1
SJ 01728	29N	12W 27	3	1	4			25	11	1
SJ 01690	29N	12W 27	3	1	1			25	10	1
SJ 00904	29N	12W 27	3	1	1			32	14	1
SJ 00901	29N	12W 27	3	1	3	064600	0004040	32	15	1
SJ 03792 POD1	29N	12W 27	3	3	1	264678	2071912	21	10	1
SJ 03105	29N	12W 27	3	3	2			19	9	1
SJ 02183	29N	12W 27	4	1				40	26	1
SJ 02506	29N	12W 27	4	1	2			44	20	2
SJ 02502	29N	12W 27	4	1	3			40		
SJ 02640	29N	12W 27	4	1	3			31	18	1
SJ 03376	29N	12W 27	4	1	3			27	13	1
SJ 01133	29N	12W 27	4	1	4			24	7	1
SJ 02969	29N	12W 27	4	1	4			40		
SJ 01991	29N	12W 27	4	2				50	13	■3
SJ 02061	29N	12W 28	4	2				39	23	1
SJ 02047	29N	12W 28	4	2				40	25	1
SJ 02658	29N	12W 28	4	2	1			42	24	1
SJ 02864	29N	12W 28	4	2	2			50		
SJ 02228	29N	12W 29	1					19	8	1
SJ 02299	29N	12W 29	1	1	3			27	7	2
SJ 00799	29N	12W 29	1	1	4			20	8	1
SJ 00786	29N	12W 29	1	1	4			21	8	1
SJ 00842	29N	12W 29	1	1	4			15	5	1
SJ 01431	29N	12W 29	1	1	4			19	7	1
SJ 03171	29N	12W 29	1	2	1			21	10	1
SJ 03167	29N	12W 29	1	2	1			21	10	1
SJ 03170	29N	12W 29	1	2	1			21	10	1
SJ 03168	29N	12W 29	1		1			21	10	1
SJ 03169	29N	12W 29	1		1			21	10	1
SJ 03634	29N	12W 29	1	2	2			18	10	
SJ 02370	29N	12W 29	1	2	2			16	5	1
SJ 00711	29N	12W 29	1		4			20	8	1
SJ 00833	29N	12W 29	1		2			17	9	_
SJ_02497	29N	12W 29		3	2			17	8	
SJ 02501	29N	12W 29	1		2			17	17	
SJ 00961	29N	12W 29		3				21	2.5	
			-4-	-	-					

SJ 00966	29N	12W 29	1	3	3	18	3	1
SJ 03711 POD1	29N	12W 29	1	4	1	20	8	1
SJ 01517	29N	12W 20	2	1	<u> </u>	20	8	1
SJ 01695	29N	12W 30	2	2		13	4	
SJ 00872	29N	12W 30	2	2		25	8	1
SJ 01442	29N	12W 30	2	2		35	6	1 2
SJ 01565	29N	12W 30	2	2		27	4	2
SJ 02875	29N	12W 30	2		2	35	-2	2
SJ 01677	29N	12W 30	2	4	2	51	35	- 1
SJ 02973	29N	12W 33	2	1	2	130	50	1 E
SJ 01775	29N	12W 33	1		4	150	30	ζ
SJ 03312	29N	12W 34	2	1	1	13	2	-
	29N	12W 34	2	1	4		2	1
SJ 03405	29N	12W 35	2	4	1	54	16	3
SJ 03501	29N			4	4	20	6	1
SJ 03509	•	12W 35	2	1	3	50	1.0	_
SJ 03537	29N	12W 35	_	3		35	10	2
SJ 03335	29N	12W 35	3	_	4	60		
SJ 03244	29N	12W 35	3	4	3	60	5.0	12
SJ 03451	29N	12W 35	3	4	4	85	50	3
SJ 02638	29N	12W 35	4	1	1	21	4	1
SJ 03192	29N	12W 36	1	3	1	50		- 2
SJ 02830	29N	12W 36	1	4	1	50		Ē
SJ 03299	29N	12W 36	2	4	3	20	0.1	
SJ 03686 POD1	29N	12W 36	2	4	3	41	21	3 5
SJ 03439	29N	12W 36	3	2	4	46	10	-
SJ 02950	29N	12W 36	4	1	3	38	11	
SJ 02849	29N	12W 36	4	2	1	40	20	2
SJ 02872	29N	12W 36	4	2	1	15	10	
SJ 03024	29N	12W 36	4	2	1	38	18	2
SJ 03011	29N	12W 36	4	2	1	40	20	2
SJ 03007	29N	12W 36	4	2	3	37	10	2
SJ 02850	29N	12W 36	4	2	3	65		_
SJ 02338	29N	12W 36	4	3	2	64	40	2
SJ 02633	29N	12W 36	4	4	1	85	19	$\epsilon$

Record Count: 180

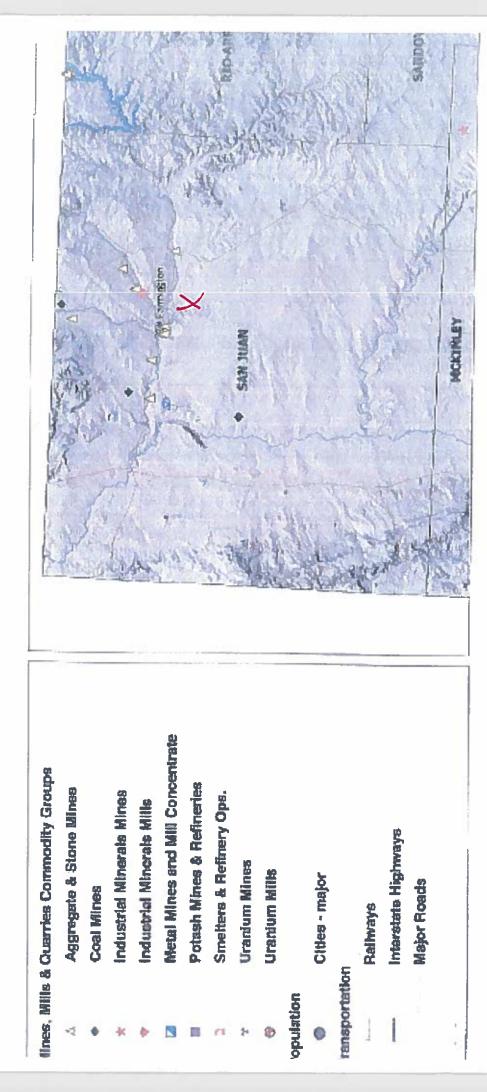




# Mines, Mills and Quarries Web Map

**CORNELL SRC 4** 

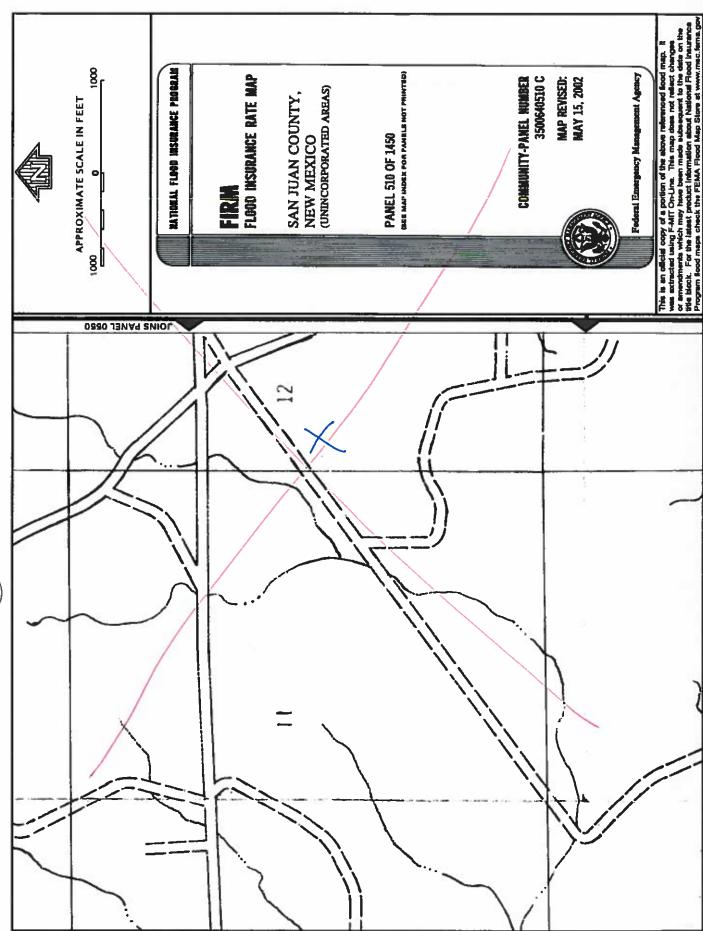
Unit Letter: K, Section: 12, Town: 029N, Range: 012W



SCALE 1:1,180,383



Cornell SRC #4



### **CORNELL SRC 4**

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'CORNELL SRC 4', which is located at 36.73917 degrees North latitude and 108.05212 degrees West longitude. This location is located on the Horn Canyon 7.5' USGS topographic quadrangle. This location is in section 12 of Township 29 North Range 12 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is Flora Vista, located 3.8 miles to the north. The nearest large town (population greater than 10,000) is Farmington, located 8.5 miles to the west (National Atlas). The nearest highway is US Highway 64, located 2.6 miles to the south. The location is on BLM land and is 3,691 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Upper San Juan. Colorado. New Mexico, Sub-basin. This location is located 1756 meters or 5759 feet above sea level and receives 10 inches of rain each year. The vegetation at this location is classified as Inter-Mountain Basins Semi-Desert Grassland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 107 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 1,284 feet to the east and is classified by the USGS as an intermittent stream. The nearest perennial stream is 4,994 feet to the east. The nearest water body is 6,616 feet to the west. It is classified by the USGS as an intermittent lake and is 0.4 acres in size. The nearest spring is 20,295 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 4,725 feet to the south. The nearest wetland is a 0.5 acre other located 5,473 feet to the west. The slope at this location is 0 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 NACIMIENTO FORMATION-Shale and sandstone with a Shale dominated formations of all ages substrate. The soil at this location is 'Gypsiorthids-Badland-Stumble complex, moderately steep' and is somewhat excessively drained and not hydric with severe erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 11.5 miles to the west as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

### Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval. Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone e al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones. Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3.500 feet.

### **Hydraulic Properties:**

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).

1 1 1 1 1 1 1

" in the interest of

u Est villew textico ann

The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conductive to runoff than retention of precipitation.

### References:

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.

Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p. Levings, G.W., Craigg, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

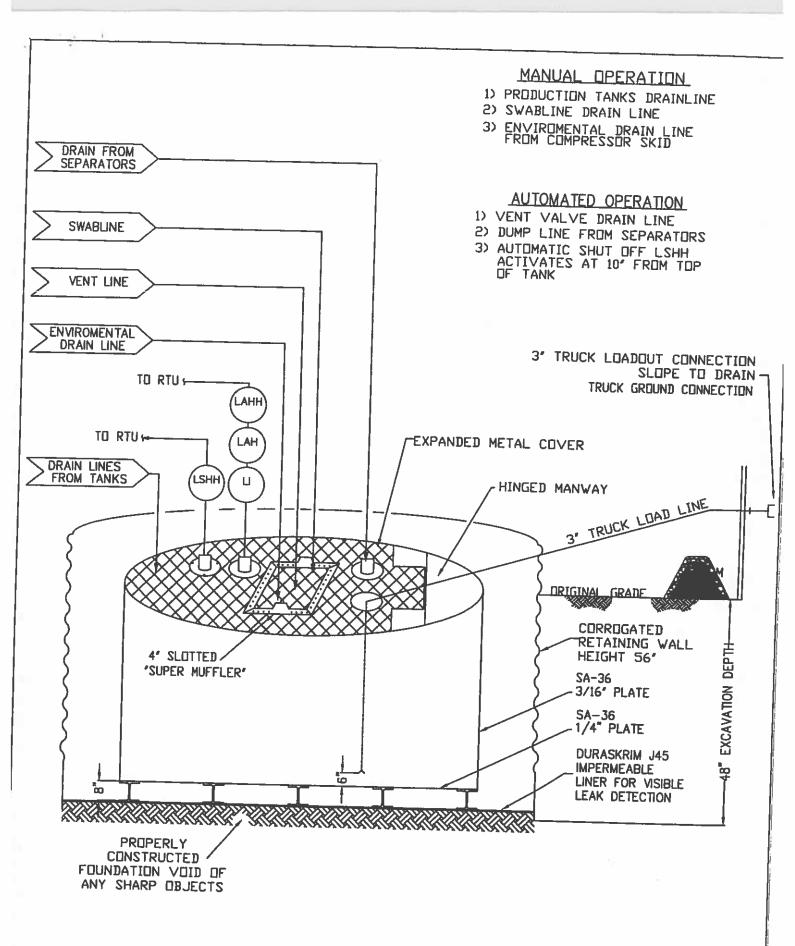
### Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Design and Construction

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

### General Plan:

- BR will design and construct a properly sized and approved BGT which will contain liquids and should prevent contamination of fresh water to protect the public health and environment.
- 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.
- The BR below-grade tank system shall have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom as shown on design drawing.
- 7. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 8. BR will construct and use a below-grade tank that does not have double walls. The below-grade tank's side walls will be open for visual inspection for leaks, the below-grade tank's bottom is elevated a minimum of six inches above the underlying ground surface and the below-grade tank is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.

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



## ConocoPhillips

San Juan Business Unit

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

# DURA-SKRIM®

# J30, J36 & J45

PROPERTIES	TEST METHOD	J	30BB	J3	6B8	J45BB		
			Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Control of the Contro	Typical Roll Averages	
Appearance		Blac	ck/Black	Black	k/Black	Black/Black		
Thickness	ASTM D 5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil	
Weight Lbs Per MSF (oz/yd²)	ASTM D 5261	126 lbs (18,14)	140 lbs (20,16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs	
Construction	2	**Ext	rusion laminate	d with encapsula	1 ' '		(30.24)	
Ply Adhesion	ASTM D 413	16 lbs	20 lbs	19 lbs	24 ibs	25 lbs		
1" Tensile Strength	ASTM D 7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	31 lbs 138 lbf MD 105 lbf DD	
1" Tensile Elongation @ Break % (Film Break)	ASTM D 7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	
1" Tensile Elongation @ Peak % (Scrim Break)	ASTM D 7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31DD	20 MD 20 DD	36 MD 36 DD	
Tongue Tear Strength	ASTM D 5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	104 lbf MD 92 lbf DD	100 lbf MD 100 lbf DD	117 lbf MD 118 lbf DD	
Grab Tensile	ASTM D 7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	222 lbf MD 223 lbf DD	220 lbf MD 220 lbf DD	257 lbf MD 258 lbf DD	
Trapezoid Tear	ASTM D 4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD	
Dimensional Stability	ASTM D 1204	<1	<0.5	<1	<0.5	<1	<0.5	
ouncture Resistance	ASTM D 4833	50 lbf	64 lbf	65 lbf	83 lbf			
Maximum Use Temperature		180° F	180° F	180° F		80 lbf	99 lbf	
/linimum Use Temperature		-70° F	-70° F		180° F	180° F	180° F	
D = Machine Circuit		70 1	-/U F	-70° F	-70° F	-70° F	-70° F	

MD = Machine Direction DD = Diagonal Directions



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

\*Dimensional Stability Maximum Value

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

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

**PLANT LOCATION** 

Sioux Falls, South Dakota

SALES OFFICE

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. These dates will be updated prior to December 31, 2008.

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

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

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

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:

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

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

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

### **General Requirements:**

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

- 7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.
- 8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
  - i. Operator's name
  - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
- 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

### Lowe, Leonard, EMNRD

From:

Busse, Dollie L <Dollie.L.Busse@conocophillips.com>

Sent:

Thursday, November 06, 2014 1:53 PM

To:

Lowe, Leonard, EMNRD

Subject:

BR\_COZZENS 4\_3004508035\_CLOSURE PLAN APPROVAL REQUEST

Burlington Resources requests to have the BGT approved for closure on the following well(s):

Cozzens 4 / 30-045-08035 / Box 5

Thank you for your assistance.

**Dollie L. Busse** | Staff Regulatory Technician | ConocoPhillips | San Juan Business Unit | P.O. Box 4289 | Farmington, NM 87499 | Office: 505-324-6104 | Cell: 505-215-3069 | E-mail: dollie.l.busse@cop.com