District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-144 Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.

For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application
Type of action:  Below grade tank registration  OIL CONS. DIV DIST. 3
Permit of a pit or proposed alternative method  Closure of a pit, below-grade tank, or proposed alternative method  JAN 1 2 2017
☐ Modification to an existing permit/or registration ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
Operator: Burlington Resources Oil & Gas Company, LP OGRID # 14538
Address: P.O. Box 4289, Farmington, New Mexico 87499
Facility or well name: SAN JUAN 29-7 UNIT 44C / SAN JUAN 29-7 UNIT 44E / SAN JUAN 29-7 UNIT 86N
API Number: 30-039-26051 / 30-039-29963 / 30-039-31000 OCD Permit Number:
U/L or Qtr/Qtr B Section 17 Township 29N Range 7W County: Rio Arriba
Center of Proposed Design: Latitude <u>36.731588</u> °N Longitude <u>- 107.592272</u> °W NAD: 1927 ☐ 1983 ⊠
Surface Owner: ☑ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment
2.
Pit: Subsection F, G or J of 19.15.17.11 NMAC
Temporary: Drilling Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management ☐ Low Chloride Drilling Fluid ☐ yes ☐ no
☐ Lined ☐ Unlined Liner type: Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
☐ String-Reinforced
Liner Seams: Welded Factory Other Volume: bbl Dimensions: Lx Wx D
3.
Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: Max 120 bbl Type of fluid: Produced Water
Tank Construction material: Metal
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness45mil
4.  Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.
5.  Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet ☐ Alternate. Please specify 4' hog wire fence with a single strand of barbed wire on top

institution or church)

Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital,

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
⊠ Screen □ Netting □ Other	
☐ Monthly inspections (If netting or screening is not physically feasible)	
7.	
Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
⊠ Signed in compliance with 19.15.16.8 NMAC	
8.	
Variances and Exceptions:	
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:	
Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.	
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
9.	
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acce,	ntahla sourca
material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.	plavie source
General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.  - □ NM Office of the State Engineer - iWATERS database search; □ USGS; □ Data obtained from nearby wells	☐ Yes ☑ No ☐ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.  NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. ( <b>Does not apply to below grade tanks</b> )  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine. (Does not apply to below grade tanks) - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
<ul> <li>Within an unstable area. (Does not apply to below grade tanks)</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	☐ Yes ☐ No
Within a 100-year floodplain. (Does not apply to below grade tanks) - FEMA map	☐ Yes ☐ No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☑ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;.  - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☑ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)  - Topographic map; Visual inspection (certification) of the proposed site	Yes No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.	☐ Yes ☐ No
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.  NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Within 100 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Temporary Pit Non-low chloride drilling fluid							
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No						
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Within 300 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Permanent Pit or Multi-Well Fluid Management Pit							
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No						
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No						
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 Natructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the docattached.    Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC     Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC     Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC     Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC     Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC     Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19. and 19.15.17.13 NMAC     Previously Approved Design (attach copy of design)   API Number: or Permit Number:	NMAC 15.17.9 NMAC						
Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the doc attached.  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  A List of wells with approved application for permit to drill associated with the pit.  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 and 19.15.17.13 NMAC  Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Previously Approved Design (attach copy of design) API Number: or Permit Number: or Permit Number:	.15.17.9 NMAC						

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the	documents are
attached.  Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Climatological Factors Assessment  Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC	
Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC  Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC  Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC  Quality Control/Quality Assurance Construction and Installation Plan	
<ul> <li>□ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC</li> <li>□ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC</li> <li>□ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan</li> </ul>	
<ul> <li>☐ Emergency Response Plan</li> <li>☐ Oil Field Waste Stream Characterization</li> <li>☐ Monitoring and Inspection Plan</li> <li>☐ Erosion Control Plan</li> </ul>	
Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC	
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.	
Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Multi-well F Alternative  Proposed Closure Method: Waste Excavation and Removal	luid Management Pit
<ul> <li>Waste Removal (Closed-loop systems only)</li> <li>On-site Closure Method (Only for temporary pits and closed-loop systems)</li> <li>In-place Burial ☐ On-site Trench Burial</li> </ul>	
Alternative Closure Method  14.	
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be closure plan. Please indicate, by a check mark in the box, that the documents are attached.  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC	
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC  Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sou provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. It 19.15.17.10 NMAC for guidance.	
Ground water is less than 25 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	
Within a 100-year floodplain.	Yes No
- FEMA map	☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC  Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.  Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC  Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC	11 NMAC 15.17.11 NMAC
Operator Application Certification:  I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and beling the control of the control of the control of the certification:  Name (Print):	ef.
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)  OCD Representative Signature: Approval Date: 333  Title: OCD Permit Number:	19017
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC  Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not section of the form until an approved closure plan has been obtained and the closure activities have been completed.  Closure Completion Date:	
20.  Closure Method:  Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-lo If different from approved plan, please explain.	op systems only)
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please incommark in the box, that the documents are attached.  Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure for private land only) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closure) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) On-site Closure Location: Latitude Longitude NAD: 1927	

Operator Closure Certification:	
	with this closure report is true, accurate and complete to the best of my knowledge and closure requirements and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

Burlington Resources Oil & Gas Company, LP requests a variance for the items listed below. The requested variance, per 19.15.17.15.A, provides equal or better protection of fresh water, public health & the environment.

#### 1. Fencing

Fencing as described in Section 5 under Alternate, BR will construct all new fences around
the below grade tank utilizing 48" steel mesh field-fence (hog-wire) on the bottom with a
single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall
be anchored utilizing a secondary T-post. Below grade tanks will be fenced, regardless of
location.

#### 2. Geo-membrane Liner

- The geo-membrane liner consists of a 45-mil flexible LLDPE material manufactured by Brawler Industries, LLC as SuperScrim H45. SuperScrim H45 is manufactured with LLDPE and is 45 mil inch thickness and is reinforced with polyester scrim. The geomembrane liner has a hydraulic conductivity of less than 5 X 10-14 cm/s and is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. The manufacturer specific sheet is attached.
- 3. BR will notify Public Entity Surface Owners by email in lieu of certified mail. Private Entity Surface Owners will still be notified via certified mail.



## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned,

C=the file is

(quarters are 1=NW 2=NE 3=SW 4=SE)

right file.)	closed)		(qu	arte	ers	are :	small	est to l	argest)	(NAD8	3 UTM in meter	rs) (In	feet)	
		POD Sub-				Q								Water
POD Number SJ 00039	Code	basin	RA RA	64		3			Rng 07W	X 268022	Y 4064208*	DepthWellDepth 585	Water C	olumn 150
SJ 00053			RA			3	13	29N	07W	274326	4067036*	536	460	76
SJ 00541			RA	4	4	1	06	29N	07W	266691	4070968*	360	360	0
SJ 00580			RA		3	2	05	29N	07W	268604	4071023*		160	
SJ 00807			SJ		4	2	06	29N	07W	267398	4071055*	290	255	35
SJ 01112			RA	4	4	2	28	29N	07W	270543	4064431*	2453	900	1553
SJ 01199			RA	4	2	3	09	29N	07W	269856	4068874*	265	125	140
SJ 01228			RA		1	2	23	29N	07W	273312	4066455*	285	205	80
SJ 02636			RA	2	1	3	05	29N	07W	267888	4070745*	300	200	100
SJ 02891			RA	2	3	2	24	29N	07W	275007	4066104*	210	160	50
SJ 03390			RA	4	2	1	13	29N	07W	274658	4067927*	320	120	200
SJ 03391			RA	2	3	2	24	29N	07W	275007	4066104*	210		
SJ 03453			RA	4	1	4	05	29N	07W	268692	4070519*	355	20	335
SJ 03573			RA	1	4	2	24	29N	07W	275209	4066091*	900		
SJ 03809 POD1			RA	3	2	2	24	29N	07W	275294	4066294	500	260	240
SJ 03981 POD1			RA	2	3	4	10	29N	07W	271851	4068541	500	250	250
SJ 04021 POD1			RA	2	2	1	09	29N	07W	269882	4069806	245	75	170
											Average Depth t		265 fee	
												m Depth:	20 fee	
											iviaxiiiiu	ш Берш.	900 Ie	д

Record Count: 17

PLSS Search:

Township: 29N

Range: 07W

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/10/17 5:42 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

<sup>\*</sup>UTM location was derived from PLSS - see Help

# TIERRA CORROSION CONTROL, INC. DRILLING LOG

COMPANY: Conoco Phillips LOCATION: San Juan 29-7 44E

STATE: NM BIT SIZE: 7 7/8"

LBS COKE BACKFILL: 2,600# ANODE TYPE: 2" X 60" Duriron DATE: June 13, 2008 LEGALS: S17 T29N R7W

DRILLER: Gilbert Peck
CASING SIZE/TYPE: 8" X 20' PVC

VENT PIPE: 300'

ANODE AMOUNT: 10

COUNTY: Rio Arriba

**DEPTH: 300'** 

COKE TYPE: Asbury PERF PIPE: 140'

**BOULDER DRILLING: None** 

DEPTH	DRILLER'S LOG	AMPS	DEPTH	DRILLER'S LOG	AMPS
20	Casing		310		
25	Sandstone		315		
30		.3	320		
35		.3	325		
40		.3	330		
45		.2	335		
50		.3	340		
55		.1	345		
60	*	.2	350		
65	Gray Shale	.2	355		
70	ĺ	.2	360		
75		.2	365		
80		.2	370		
85		.2	375		
90		.2	380		
95		.2	385		
100	Sandstone	.2	390		
105	Suildotoilo	.2	395		
110		.2	400		
115		.2	405		
120		.2	410		
125		.2	415		
130		.2	420		_
135		.2	425		
140		.2	430		
145		.2	435		
150		.2	440		
155		.1	445		_
160		.1	450		
165		.1	455		
170		.1	460		
175		.1	465		
180		.1	470		
185		.1	475		
190		.1	480		
195		.1	485		_
200		1.9	490		
205		1.3	495		
210		1.4	500		_
215		1.2			
220	0 01 1	1.2			
225	Gray Shale	1.0			
230		.8			
235		1.0			
240		1.9			
245		1.9			
250		2.4			
255		2.1			
260		2.0			
265		1.9			
270		1.9			
275		1.8			
280		1.7			
285	+	1.5			
290	Sandstone	1.0			
295		1.0			
300		td			
305					

ANODE #	DEPTH	NO COKE	COKE
1	290	1.0	2.5
2	280	1.7	9.3
3	270	1.9	4.9
4	260	2.0	5.6
5	250	2.4	5.7
6	240	1.9	4.6
7	230	.8	3.3
8	220	1.2	3.1
9	210	1.4	3.2
10	200	.9	3.9
11			
12			
13			
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29			
30			

WATER DEPTH: 45' ISOLATION PLUGS: LOGING VOLTS: 12.6

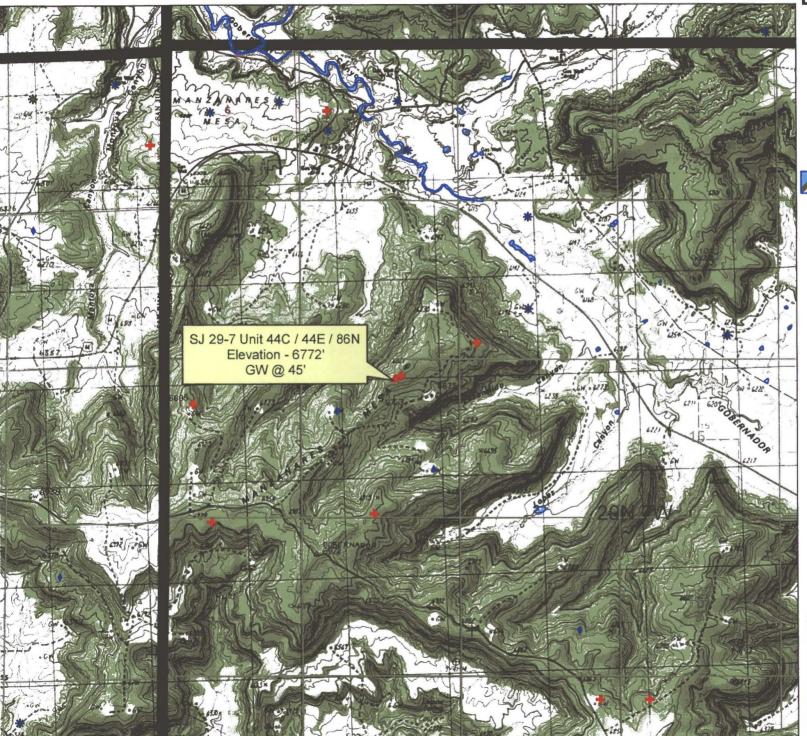
**VOLT SOURCE: AUTO BATTERY** 

TOTAL AMPS: 10.5

**TOTAL GB RESISTANCE: 1.20** 

REMARKS:

San. ua 1 29-7 Un' 44C / 44E / 86N egend



- DSM
- ★ CO Water Wells
- \* iWater
- Hydrogeologic
- + COP Cathodic

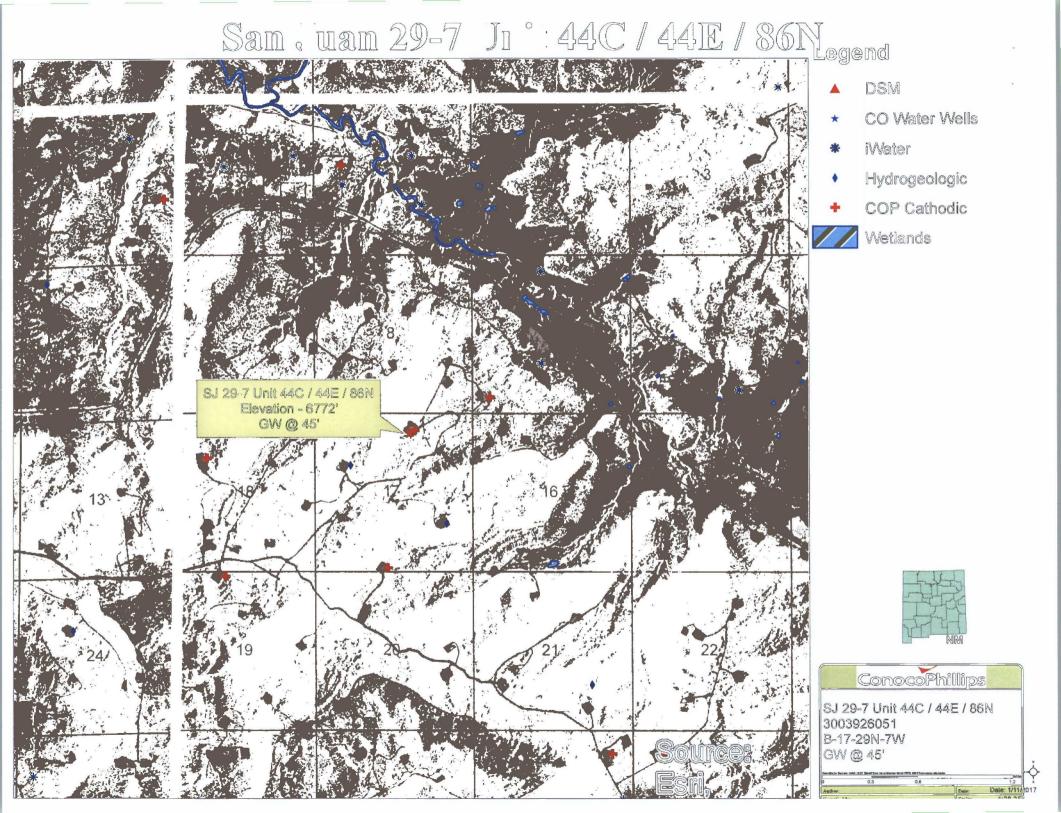


Wetlands



## ConocoPhillips

SJ 29-7 Unit 44C / 44E / 86N 3003926051 B-17-29N-7W GW @ 45'



#### **Below Grade Tank (BGT) Siting Criteria and Compliance Demonstrations**

Well Name: \_\_\_San Juan 29-7 Unit 44C / 44E / 86N

- Depth to groundwater (should not be less than 25 feet):
   The nearest recorded well with available water-depth information is the San Juan 29-7
   Unit 44E with groundwater @ 45' as indicated in the Cathodic Data Sheet attached.
- 2. <u>Distance to watercourse</u> (should not be within 100 feet of a continuously flowing watercourse, other significant watercourse, lakebed, sinkhole, wetland or playa lake [measured from the ordinary high-water mark]):
  - Aerial map attached indicates that there are **no** lakebeds, sinkholes, playa lakes, or watercourses within 100 feet of the proposed Below Grade Tank.
- 3. <u>Distance to springs or wells (should not be within 200 feet of a spring or a fresh water</u> well used for public or livestock consumption):
  - Aerial map attached indicates that the Below Grade Tank will **not** be within 200 feet of any recorded well or spring.

#### Hydrogeological report for San Juan 29-7 Unit 44C/44E/86N

#### Regional Hydrogeological context:

The San Jose Formation of Eocene age occurs in New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado-New Mexico State line and overlies the Animas Formation in the area generally north of the State line.

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

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

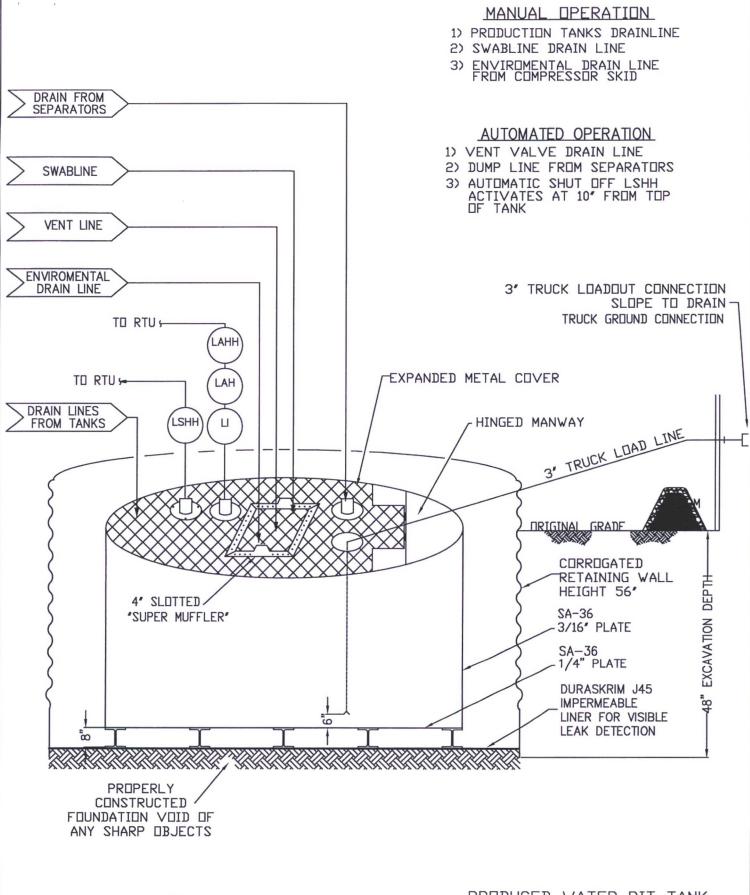
Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico: Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

#### **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, hereinafter known as BR, locations. This is BR's standard procedure for all below grade tanks (BGT). A separate plan will be submitted for any BGT which does not conform to this plan.

#### **General Plan:**

- 1. BR will design and construct a properly sized and approved BGT which will contain liquids and should prevent contamination of fresh water to protect the public health and environment.
- 2. BR signage will comply with 19.15.17.11.C NMAC.
- 3. BR is requesting approval of an alternative fencing to be used on BGT tank locations. BR requests to utilize 48" steel mesh field-fence (hog-wire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. BGTs will be fenced, regardless of location.
  - a. If the BGT is located within 1000' of an occupied permanent residence, school, hospital, institution or church, BR will construct A 6' chain link fence with two strands of barbed wire on top. The operator shall ensure 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 will ensure that a BGT is constructed of materials resistant to the BGT's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.
- 6. The BR BGT system will 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 BGT to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a BGT to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the BGT as shown on the design plan.
- 8. If BR needs to modify/retrofit the existing BGT it will meet the below specifications.
- 9. BR will construct and use a BGT that does not have double walls. The BGT's side walls will be open for visual inspection for leaks, the BGT's bottom is elevated a minimum of six inches above the underlying ground surface and the BGT is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.
- 10. BR will equip below grade tanks with a properly functioning, automatic high-level shut off control device, as well as manual controls, to prevent overflows.
- 11. BR will utilize a geomembrane liner manufactured by Brawler Industries, LLC as SuperScrim H45. SuperScrim H45 is manufactured with LLDPE and is 45 mil inch thickness and is reinforced with polyester scrim. The geomembrane liner has a hydraulic conductivity of less than 5 X 10<sup>-14</sup> cm/s and is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. The manufacturer specific sheet is attached.
- 12. The general specification for design and construction are attached



# ConocoPhillips

San Juan Business Unit

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



# SuperScrim™ H Product Specifications

This product meets GRI GM 25 Specifications

Properties	Test Method	Frequency	Minimu	m Average				
			H30	H36	H45			
Thickness, Nominal (mils) Min. Ave. (mils)	ASTM D5199	Per roll	30 27	36 32	45 40			
Weight Nominal (lb/1000, ft²) Min. Ave. (lb/1000, ft²)	ASTM D5261	Per roll	140 125	168 151	210 189			
Grab Tensile Strength (lb), min. ave. Elongation (%), min. ave.	ASTM D7004 (each direction) (each direction)	30,000 lb	300 25	310 25	320 25			
Tongue Tear (lb), min. ave.	ASTM D5884 (each direction)	30,000 lb	130	130	130			
Index Puncture (lb), min. ave.	ASTM D4833	30,000 lb	85	103	105			
Ply Adhesion (lb), min. ave. (1)	ASTM D6636	30,000 lb	20	25	25			
Oxidative Induction Time (OIT) (2) (a) Standard OIT Or	ASTM D3895	Formulation	>100	>100	>100			
(b) High Pressure OIT	ASTM D5885		>1000	>1000	>1000			
Standard Roll Dimensions								
Roll Width (3), ft			11.83	11.83	11.83			
Roll Length (3), ft			1500	1230	1000			
Roll Area, ft <sup>2</sup>			17,745	14,551	11,830			

(1) Alternatively, an acceptable ply adhesion is to have a film tearing bond occur within the sheet material.
(2) The Manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant effectiveness in the geomembrane.

 $^{(3)}$ Roll widths and lengths have a tolerance of  $\pm\,1\%$ 

\*Custom material thicknesses also available

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This is a preliminary data sheet based upon laboratory testing of initial manufacturing lots and may be changed without notice as additional product testing data becomes available.





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## SuperScrim™ WC Product Specifications

Properties	Test Method	Minimum Average Values							
		9 mil	12 mil	16 mil	20 mil	24 mil	30 mil		
Weight	D5261	5.4 oz/yd <sup>2</sup>	5.7 oz/yd <sup>2</sup>	7.2 oz/yd <sup>2</sup>	9.6 oz/yd <sup>2</sup>	11.5 oz/yd <sup>2</sup>	13.4 oz/yd <sup>2</sup>		
Thickness		9 mil	12 mil	16 mil	20 mil	24 mil	30 mil		
Grab Tensile (lbs.)	D751	MD 200 CD 135	MD 210 CD 176	MD 230 CD 210	MD 330 CD 286	MD 352 CD 300	MD 352 CD 300		
Mullen Burst	D6241	300 psi	350 psi	400 psi	600 psi	680 psi	780 psi		
Accelerated UV Weathering	D4355	>80% after 2000 hrs exposure	>90% after 2000 hrs exposure						
		Standard	Roll Dimension	าร					
Roll Length (2), Ft		3,000	3,000	4,000	3,000	2,250	2,250		
Roll Width (2), Ft		12	12	12	12	12	12		
-Roll Area, Ft <sup>2</sup>		36,000	36,000	48,000	36,000	27,000	27,000		

 $^{(1)}9$  of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.  $^{(2)}Roll$  widths and lengths have a tolerance of  $\pm\,1\%$ 

Custom material thicknesses also available

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

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

#### **General Plan:**

- 1. BR will operate and maintain a BGT to contain liquids and solids and maintain the integrity of the liner, liner system and secondary containment system to prevent contamination of fresh water and protect public health and the environment. BR will perform an inspection on a monthly basis, install 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 BGT to prevent the collection of surface water run-on. BR has built in shut-off devices that do not allow a BGT to overflow. BR constructs berms and corrugated retained walls at least 6" above grade to keep surface water run-on from entering the BGT as shown on the design plan.
- 4. As per 19.15.17.12.D(3), BR will inspect the BGT for leakage and damage at least monthly. The operator will document the integrity of each tank at least annually and maintain a written record for 5 years. Inspections may 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. BR shall remove any visible or measurable layer of oil from the fluid surface of the BGT in an effort to prevent significant accumulation of oil overtime.
- 5. BR shall maintain adequate freeboard to prevent overtopping of the BGT.
- If a BGT develops a leak, then BR shall removal all liquid above the damage or leak within 48 hours of discovery, notify the appropriate division office pursuant to 19.15.29 NMAC and repair the damage or replace BGT as applicable.
- 7. If BR discovers a BGT designed in accordance with 19.15.17.11.I(5) has lost integrity the BGT will promptly be drained and removed from service and BR will follow the approved closure plan. If BR discovers a retrofitted BGT designed in accordance with 19.15.17.11.I(4)(a-c), does not demonstrate integrity or that the BGT develops any of the conditions identified in Paragraph (5) of Subsection A of 19.15.17.12 NMAC shall repair the damage or close the existing BGT pursuant to the closure requirements of 19.15.17.13 NMAC.
- 8. If BR equips or retrofits the existing BGT to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, BR shall visually inspect the area beneath the BGT during the retrofit and document any areas that are wet, discolored or showing other evidence of a release on form C-141. BR shall measure and report to the division the concentration of contaminants in the wet or discolored soil with respect to the standards set forth in Table I of 19.15.17.13 NMAC. If there is no wet or discolored soil or if the concentration of contaminants in the wet or discolored soil is less than the standard set forth in Table I of 19.15.17.13 NMAC, then BR will proceed with the closure requirements of 19.15.17.13 NMAC prior to initiating the retrofit or replacement.

# Burlington Resources Oil & Gas Company, LP San Juan Asset Production BGT Closure Plan

In accordance with Rule 19.15.17.13 NMAC, the following plan describes the general closure requirements of a below-grade tank (BGT) on any Burlington Resources Oil & Gas Company, LP (BR) location in the San Juan Asset. This is BR's standard closure procedure for all BGT's regulated under Rule 19.15.17 NMAC and operated by BR. For those closures which do not conform to this standard closure plan, a separate BGT specific closure plan will be developed and utilized.

#### **Closure Conditions and Timing for BGT:**

- Within 60 days of cessation of operation BR will:
  - o Remove all liquids and sludge and dispose in a division approved manner.
- Within 72 hours or 1 week prior to closure BR will:
  - Give notice to surface owners by certified mail. For public entities by email as specified on the variance page.
  - o Give notice to Division District Office verbal or in writing/email.
- Within 6 months of cessation of operation BR will:
  - o Remove BGT and dispose, recycle, reuse, or reclaim in a division approved manner.
  - o Remove unused onsite equipment associated with the BGT.
- Within 60 days of closure BR will:
  - o Send the Division District Office a Closure Report per 19.15.17.13.F (1).

#### **General Plan Requirements:**

- Prior to initiating any BGT closure, except in the case of an emergency, BR will notify the surface owner of the
  intent to close the BGT by certified mail no later than 72 hours or 1 week before closure and a copy of this
  notification will be included in the closure report. In the case of an emergency, the surface owner will be
  notified as soon as practical.
- 2. Notice of closure will be given to the Division District office between 72 hours and 1 week of the scheduled closure via email or phone. The notification of closure will include the following:
  - a. Operators Name
  - b. Well Name and API Number
  - c. Location
- 3. All liquids will be removed from the BGT following cessation of operation. Produced water will be disposed of at one of COP's approved Salt Water Disposal facilities or at a Division District Office approved facility.
- 4. Solids and sludge's will be shoveled and/or vacuumed out for disposal at one of the Division District Office approved facilities, depending on the proximity of the BGT site: Envirotech Land Farm (Permit #NM-01-011), Industrial Ecosystems Inc. JFJ Land Farm (Permit #NM-01-0010B), and Basin Disposal (Permit #NM-01-005).
- 5. BR will obtain prior approval from the Division District Office to dispose, recycle, reuse, or reclaim the BGT and provide documentation of the disposition of the BGT in the closure report. Steel materials will be recycled or reused as approved by the Division District Office. Fiberglass tanks will be empty, cut up or shredded, and EPA cleaned for disposal as solid waste. Liner materials will be cleaned without soils or contaminated material for disposal as solid waste. Fiberglass tanks and liner materials will meet the conditions of 19.15.35 NMAC. Disposal will be at a licensed disposal facility, presently San Juan County Landfill operated by Waste Management under NMED Permit SWM-052426.
- 6. Any equipment associated with the BGT that is no longer required for some other purpose, following the closure, will be removed.

- 7. Following removal of the tank and any liner material, BR will test the soils beneath the BGT as follows:
  - a. At a minimum, a five-point composite sample will be taken to include any obvious stained or wet soils or any other evidence of contamination.
  - b. The laboratory sample shall be analyzed for the constituents listed in Table I of 19.15.17.13.

Clasura Critaria for Sails Banaat	h Balow-Grada Ta	Table I nks, Drying Pads Associated with Closed-Loop	Systems and Pit
Closure Citteria for 30115 beneat		ontents are Removed	Systems and Fit.
Depth below bottom of pit to	Constituent	Limit**	
groundwater less than 10,000			
mg/I TDS			
	Chloride	EPA 300.0	600 mg/kg
≤50 feet	TPH	EPA SW-846 Method 418.1	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
	Chloride	EPA 300.0	10,000 mg/kg
51 feet-100 feet	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
	Chloride	EPA 300.0	20,000 mg/kg
> 100 feet	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
. 200.000	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

<sup>\*</sup>Or other test methods approved by the division

(19.15.17.13 NMAC-Ro, 19.15.17.13 NMAC 3/28/2013)

- 8. If the Division District Office and/or BR determine there is a release, BR will comply with 19.15.17.13.C.3b.
- 9. Upon completion of the tank removal, pursuant to 19.15.17.13.C.3c, if all contaminant concentrations are less than or equal to the parameters listed in Table I of 19.15.17.13 NMAC, the excavation will be backfilled with non-waste containing earthen material compacted and covered with a minimum of one foot top soil, or background thickness of top soil, whichever is greater. The surface will then be re-contoured to match the native grade, prevent ponding of water, and prevent erosion of cover material.
- 10. For those portions of the former BGT area no longer required for production activities, BR will seed the disturbed area in the first favorable growing season following the closure of the BGT. Seeding will be accomplished via drilling on the contour whenever practical, or by other Division District Office approved methods. BR will notify the Division District Office when reclamation and re-vegetation is complete.

Reclamation of the BGT shall be considered complete when:

- Established vegetative cover reflects a life form ratio of +/- 50% of pre disturbance levels.
- Total plant cover is at least 70% of pre-disturbance levels (Excluding noxious weeds) OR
- Pursuant to 19.15.17.13.H.5d BR will comply with obligations imposed by other applicable federal or tribal agencies in which there re-vegetation and reclamation requirements provide equal or better protection of fresh water, human health and the environment.

<sup>\*\*</sup>Numerical limits or natural background level, whichever is greater

11. For those portions of the former BGT area required for production activities, reseeding will be done at well abandonment, and following the procedure noted above.

#### **Closure Report:**

All closure activities will include proper documentation and will be submitted to OCD within 60 days of the BGT closure on a Closure Report using Division District Office Form C-144. The Report will include the following:

- Proof of Closure Notice (surface owner and Division District Office)
- · Backfilling & cover installation
- Confirmation Sampling Analytical Results
- Application Rate & Seeding techniques
- Photo Documentation of Reclamation