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 OIL CONS. DIV DIST.	3
JUL 1 9 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	s.
1. Operator: Burlington Resources Oil & Gas Company, LP OGRID # 14538	
Address: P.O. Box 4289, Farmington, New Mexico 87499	
Facility or well name: Allison Unit Com 60	
API Number: 30-045-25425 OCD Permit Number:	
U/L or Qtr/Qtr <u>G</u> Section <u>26</u> Township <u>32N</u> Range <u>7W</u> County: <u>San Juan</u>	
Center of Proposed Design: Latitude 36.954555°N Longitude - 107.532491°W NAD: 1927 [] 1983	
Surface Owner: State Private Tribal Trust or Indian Allotment	
	4
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: L x W x 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 \boxtimes Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off	
Visible sidewalls and liner Visible sidewalls only Other Liner type: Thickness 45 mil HDPE PVC Other LLDPE	
Liner type: Thickness45 mil _ HDPE _ PVC & OtherLLDPE	
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.	
s. Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)	
Chain link, six feet in height, two strands of barbed wire at top (<i>Required if located within 1000 feet of a permanent residence, school, hospital, institution or church</i>)	
Four foot height, four strands of barbed wire evenly spaced between one and four feet	
Alternate. Please specify <u>4' hog wire fence with a single strand of barbed wire on top</u>	
(36)	
Form C-144 Oil Conservation Division Page 1 of 6	

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) 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 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. Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks. **General siting** Yes 🛛 No 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 **NA** ☐ 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 Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance Yes No adopted pursuant to NMSA 1978, Section 3-27-3, as amended. (Does not apply to below grade tanks) Written confirmation or verification from the municipality; Written approval obtained from the municipality Within the area overlying a subsurface mine. (Does not apply to below grade tanks) Yes No Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division Within an unstable area. (Does not apply to below grade tanks) Yes No Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map Yes No Within a 100-year floodplain. (Does not apply to below grade tanks) FEMA map **Below Grade Tanks** Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured Yes No 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 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, Yes No 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 Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial Yes No application. 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

 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 					
 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				
 10. <u>Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist</u>: Subsection B of 19.15.17.9 N <i>Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the do attached.</i> 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 19.15.17.12 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: 	cuments are 9 NMAC 15.17.9 NMAC				
11.					
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 do attached.	.15.17.9 NMAC				
Previously Approved Design (attach copy of design) API Number: or Permit Number:					

 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 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 Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Dil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of 19.15.17.9 NMAC and 19.15.17.13 NMAC 	documents are
13. 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 Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method	luid Management Pit
 ^{14.} <u>Waste Excavation and Removal Closure Plan Checklist</u>: (19.15.17.13 NMAC) <i>Instructions: Each of the following items must be closure plan. Please indicate, by a check mark in the box, that the documents are attached.</i> 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 	
15	
15. <u>Siting Criteria (regarding on-site closure methods only)</u> : 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sour provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. F 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 ☐ NA
 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 □ NA
 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	
Form C-144 Oil Conservation Division Page 4 o	f 6

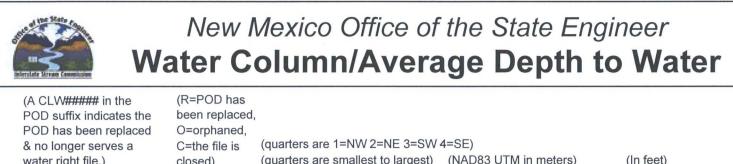
adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	🗌 Yes 🗌 No
 Within the area overlying a subsurface mine. Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division 	🗌 Yes 🗌 No
 Within an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological 	
Society; Topographic map	Yes No
Within a 100-year floodplain. - FEMA map	Yes No
 16. 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 cann 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 	11 NMAC 15.17.11 NMAC
17. 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 beli Name (Print): Larissa Farrell Signature: Date: Output e-mail address: Larissa.L.Farrell@conocophillip.com	ef
18. OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature:	19/17
19. 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.	
20. Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Closure Method If different from approved plan, please explain.	oop systems only)
21. Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please in mark in the box, that the documents are attached. Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure 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	

22. Operator Closure Certification:	
I hereby certify that the information and attachments submitted with this closure report belief. I also certify that the closure complies with all applicable closure requirements	
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

Allison Unit Com 60 (BELOW GRADE TANK)

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.



water right file.)	closed)	(quarters a	are small	estio	largest)	(INADO	5 O I W III Meters)		(in leet)
	POD								
	Sub-	QC	l Q					Depth	Depth Water
POD Number	Code basin C	County 64 1	6 4 Sec	Tws	Rng	Х	Y	Well	Water Column
SJ 01612		SJ	3 34	32N	07W	272046	4090671* 🌑	800	
							Average Depth to	Water:	
							Minimum	Depth:	
							Maximum	Depth:	
						an maka kaling kulan kulan m		men laune value mere in	

Record Count: 1

PLSS Search:

Section(s): 22-24, 34-36

Township: 32N

Range: 07W

*UTM location was derived from PLSS - see Help

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.

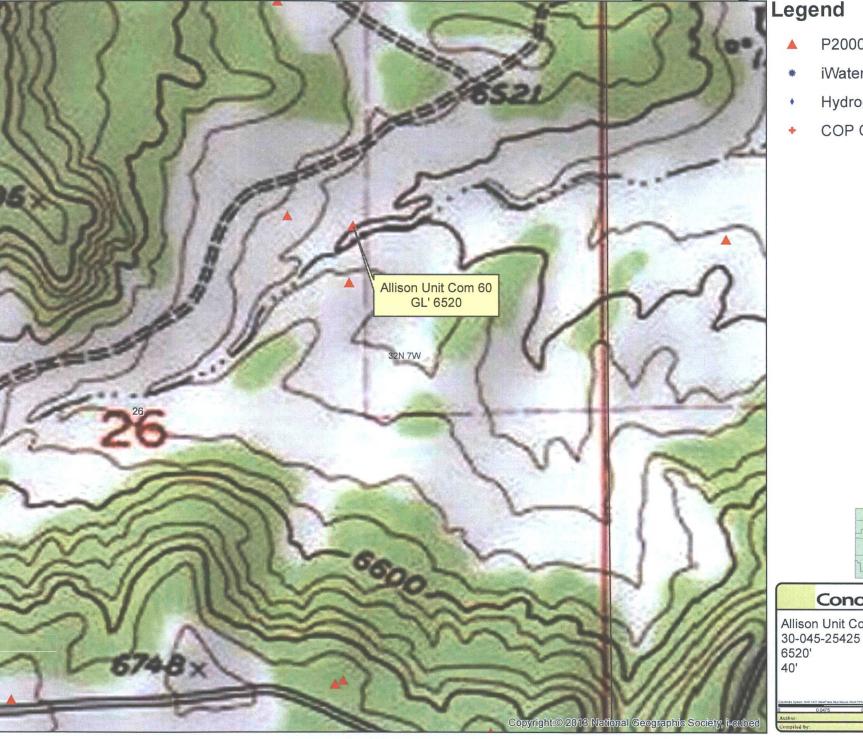
1071			E
	30-045-25425		
	FOR DEEP GROUND BE NORTHWESTERN Submit 3 copies to	NEW MEXICO	TION WELLS
Operator MERIDIAN OI	I	Location: Unit NE S	ec. ²⁶ Twp ³² Rng ⁷
Name of Well/Wells	or Pipeline Service	ALLISON UNIT CO	DM #60
			cps 1781w
Elevation 6520'Compl	etion Date 8/27/85	Total Depth 422'	Land Type* N/A
Casing, Sizes, Type	s & Depths	N/A	
If Casing is cement	ed, show amounts &	types used N/A	
If Cement or Benton. N/A	ite Plugs have been	n placed, show dep	ths & amounts used
Depths & thickness of			ater when possible:
Fresh, Clear, Salty	Sulphur, Ecc.	40 - 60	· · · · · · · · · · · · · · · · · · ·
Depths gas encounter	red:N/A		
Type & amount of col	e breeze used:	5250 lbs.	
Depths anodes placed	a: 395', 385', 370', 33	5', 325' phi	250', 235', 220'
Depths vent pipes pl	aced: 422'	LAD 5-0900	MEIN
Vent pipe perforatio	ons:	MAYY BIN	
Remarks: (gb #1)		DIST. 3	DIVJ

-

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee. If Federal or Indian, add Lease Number.

Al'ison Jr it Com 60 - ' 'opo N ap



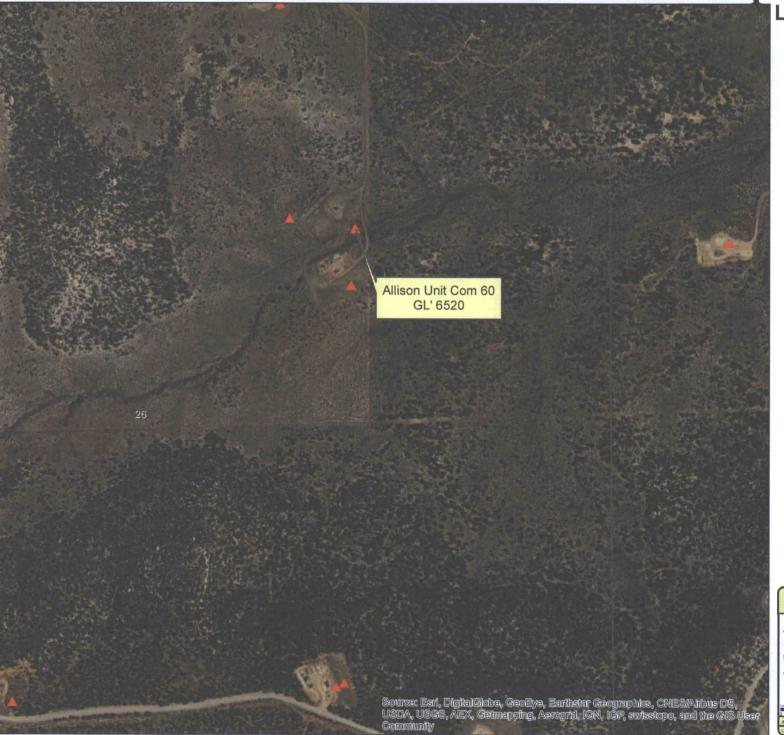
Legend

- P2000 All Wells
- iWater
- Hydrogeologic
- **COP** Cathodic





Alliso J 't Com 60 - Ae 'i: 1 Map



Legend

- P2000 All Wells
- iWater
- Hydrogeologic
- COP Cathodic



Allison Unit Com 60 30-045-25425 6520' 40'

Below Grade Tank (BGT) Siting Criteria and Compliance Demonstrations

Well Name: _____ Allison Unit Com 60

- <u>Depth to groundwater (should not be less than 25 feet</u>): The nearest recorded well with available water-depth information is the Allison Unit Com 60 with groundwater @ 40' as indicated in the Cathodic Data Sheet attached.
- 2. <u>Distance to watercourse (should not be within 100 feet of a continuously flowing</u> <u>watercourse, other significant watercourse, lakebed, sinkhole, wetland or playa lake</u> [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 Allison Unit Com 60

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.

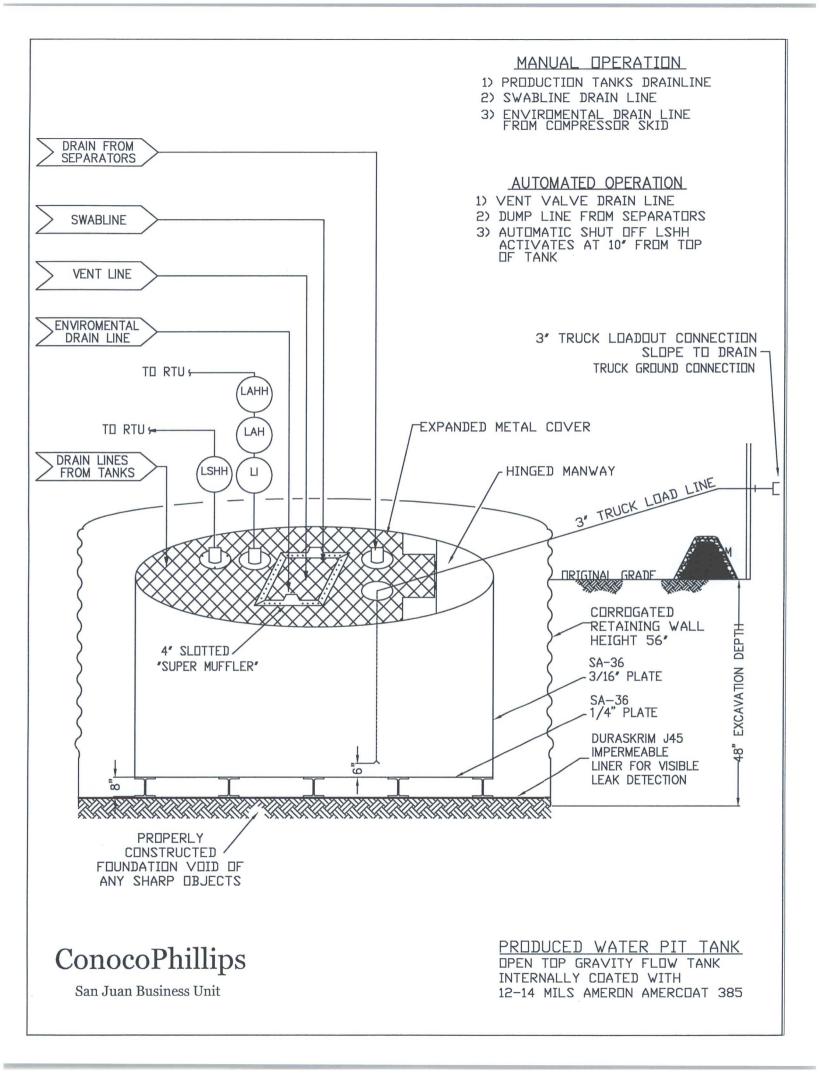
Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico: Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

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.
- 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 10⁻¹⁴ 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





SuperScrim[™] WC Product Specifications

Properties	Test Method	Minimum Average Values					
and a start of the start of the	AT FRANK STR	9 mil	12 mil	16 mil	20 mil	24 mil	30 mil
Weight	D5261	5.4 oz/yd ²	5.7 oz/yd ²	7.2 oz/yd ²	9.6 oz/yd ²	11.5 oz/yd ²	13.4 oz/yd ²
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 Dimensions							
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 ²		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.
- 6. 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 or are lease that the standard set forth in Table I of 19.15.17.13 NMAC. If there is that 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:
 - 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.
 - 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:
 - 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.

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- 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.

		Table I						
Closure Criteria for Soils Beneat	h Below-Grade Ta	nks, Drying Pads Associated with Closed-Loop	Systems and Pits					
where Contents are Removed								
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	ТРН	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					
F	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg					

*Or other test methods approved by the division

**Numerical limits or natural background level, whichever is greater

(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.

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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