Jones, Brad A., EMNRD

From:

Kim_Champlin@xtoenergy.com

Sent:

Thursday, February 17, 2011 9:46 AM

To:

Jones; Brad A., EMNRD

Cc:

James_McDaniel@xtoenergy.com; Martin_Nee@xtoenergy.com

Subject:

Fw: BGT Closure Plans

I need approvals on the closure plan only for the below listed wells. These wells are scheduled for P&A. Any questions just let me know. Thanks Brad.

The first 3 don't have a submittal date. They would have been in the first boxes- I didn't think to keep track of dates until after the first set went out. I have checked with our local office and they don't have them.

Kim Champlin XTO Energy EHS Admin Supervisor San Juan Division (505) 333-3100 office (505) 213-0140 fax (505) 330-8357 cell



וופז גרבם-מרב (במב)

kim_champlin@xtoenergy.com

EH Pipken #26 30-045-26151

EH Pipken #4R 30-045-30873

Jack Frost B #11E(30,045;24356)

EE Martin B #1:R 30:045:34268 Submitted 11/25/08

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office. It is a proper to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office. It is a proper to the appropriate NMOCD

<u>Pit, Closed-Loop System, Below-Grade Tank, or</u> <u>Proposed Alternative Method Permit or Closure Plan Application</u>

Proposed Alternative Method Permit or Closure Plan Application
Type of action: Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Existing BGT 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 pit, 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.
1. Operator: XTO Energy, Inc. OGRID #: 5380
Address: #382 County Road 3100, Aztec, NM 87410
Facility or well name: Frost Jack B#1E
API Number: 3004524356 OCD Permit Number: U/L or Qtr/Qtr M Section 27 Township 27N Range 10W County: San Juan
Center of Proposed Design: Latitude 36.54062 Longitude 107.8885 NAD: ☐1927 ☐ 1983
Surface Owner: Sederal State Private Tribal Trust or Indian Allotment
State Cowner. Extraction of the Community of Median Attorners.
Pit: Subsection F or G of 19.15.17.11 NMAC 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 String-Reinforced 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 PVC Other Liner Seams: Welded Factory Other
Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off Visible sidewalls and liner Visible sidewalls only Other Visible sidewalls, vaulted, automatic high-level shut off, no liner Liner type: Thickness mil HDPE PVC Other Other
5. 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 pits, 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, school, institution or church) Four foot height, four strands of barbed wire evenly spaced between one and four feet Alternate. Please specify Four foot height, steel mesh field fence (hogwire) with pipe top railing	hospital,
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) Screen Netting Other Expanded metal or solid vaulted top 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 19.15.3.103 NMAC	
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: Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	office for
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 accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of a Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying above-grade tanks associated with a closed-loop system.	priate district pproval.
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ⊠ No
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 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☑ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☑ NA
Within 500 horizontal 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. - NM Office of the State Engineer - iWATERS database search; 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 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ 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

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment 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 (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 19.15.17.9 NMAC and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number: or Permit Number:
Treviously Approved Besign (attach copy of design) Art Number.
Closed-loop Systems Permit Application Attachment 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. Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations (only for on-site closure) - 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 19.15.17.9 NMAC and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number:(Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
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 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 Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan 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 Closed-loop System 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 (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Maste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the 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 F 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 I of 19.15.17.13 NMAC ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for the disposal of liquids, facilities are required.	1 Steel Tanks or Haul-off Bins Only: (19.15.17.13.1 drilling fluids and drill cuttings. Use attachment if r	NMAC) nore than two
Disposal Facility Name:	Disposal Facility Permit Number:	
Disposal Facility Name:	Disposal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities of Yes (If yes, please provide the information below) \(\square\) No		
Required for impacted areas which will not be used for future service and operation Soil Backfill and Cover Design Specifications based upon the appropriate Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	e requirements of Subsection H of 19.15.17.13 NMA(n I of 19.15.17.13 NMAC	C
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the provided below. Requests regarding changes to certain siting criteria may requi considered an exception which must be submitted to the Santa Fe Environmenta demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC	re administrative approval from the appropriate dist al Bureau office for consideration of approval. Justi	rict office or may be
Ground water is less than 50 feet below the bottom of the buried waste NM Office of the State Engineer - iWATERS database search; USGS; Da	ta obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Da	ta 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; Database search; US	ta obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other signake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	gnificant watercourse or lakebed, sinkhole, or playa	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or churc - Visual inspection (certification) of the proposed site; Aerial photo; Satellit		☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or - NM Office of the State Engineer - iWATERS database; Visual inspection	spring, in existence at the time of initial application.	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh was adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approx		☐ Yes ☐ No
Within 500 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visu	al inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Minin	g and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geolog Society; Topographic map	gy & Mineral Resources; USGS; NM Geological	☐ Yes ☐ No
Within a 100-year floodplain FEMA map		☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Construction/Design Plan of Temporary Pit (for in-place burial of a drying Protocols and Procedures - based upon the appropriate requirements of 19.1 Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Disposal Facility Name and Permit Number (for liquids, drilling fluids and Soil Cover Design - based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	quirements of 19.15.17.10 NMAC of Subsection F of 19.15.17.13 NMAC appropriate requirements of 19.15.17.11 NMAC pad) - based upon the appropriate requirements of 19. 15.17.13 NMAC quirements of Subsection F of 19.15.17.13 NMAC of Subsection F of 19.15.17.13 NMAC drill cuttings or in case on-site closure standards cannother than 19.15.17.13 NMAC in 1 of 19.15.17.13 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 belief.
Name (Print): Kim Champlin Title: Environmental Representative
Signature: Date: 11/12/2008
e-mail address: kim_champlin@xtoenergy.com Telephone: (505) 333-3100
20.
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: Approval Date: 2/22/11
Title: OCD Permit Number:
Closure Report (required within 60 days of closure completion): Subsection K of 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. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed. Closure Completion Date:
Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only) If different from approved plan, please explain.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.
Disposal Facility Name: Disposal Facility Permit Number:
Disposal Facility Name: Disposal Facility Permit Number:
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations? Yes (If yes, please demonstrate compliance to the items below) No
Required for impacted areas which will not be used for future service and operations
☐ Site Reclamation (Photo Documentation) ☐ Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check 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) 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 ☐ 1983
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan. Name (Print): Title:
Signature: Date:
e-mail address: Telephone:

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

Form C-102 Revised 10-1-78

All distances must be from the cuter housdaries of the Section.

Operator			Lease Well No.					
AMOCO PROD	UCTION COMPAN	Y	JACK FROST	"B"		1-E		
Unit Letter	Section	Township	,3cmge	County				
M	27	27N	10W	San Ju	ian			
Actual Footage Loc	ation of Well:							
615	feet from the	South line and	810	leet from the . We	est	line		
Ground Level Elev.	Producing For	mation	Pool			ited Acreage:		
6158	Dakota		Basin Dakot	a		S 320 Acres		
1. Outline th	e acreage dedica	ted to the subject w	ell by colored pend	il or hachure me	arks on the plat	below.		
	nan one lease is nd royalty).	dedicated to the wel	ll, outline each and	identify the own	nership thereof	(both as to working		
		ifferent ownership is mitization, force-pool		ell, have the into	erests of all o	wners been consoli-		
XX Yes	No If a	nswer is "yes;" type (of consolidation _C	ommunitizati	on			
		owners and tract desc	criptions which hav	e actually been	consolidated. (Use reverse side of		
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Lodestar Services, Inc. P0 Box 4465, Durango, CO 81302

Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy
Project:	Pit Permits
Revised:	30-Oct-08
Prepared by:	Devin Hencmann

V .	Information Sheet	Prepared by:	Devin Hencmann
API#:	3004524356	USPLSS:	27N, 10W, 27M
Ar III.	3004324330	<u> </u>	2711, 1000, 27101
Name:	FROST JACK B #1E	Lat/Long:	36.54062/-107.8885
1	- 100	Geologic	Nacionale
Depth to groundwater:	>100'	formation:	Naciemento
Distance to closest			
continuously flowing	10.8 miles N to the 'San Juan		
watercourse:	River'		
Distance to closest			
significant watercourse,	1.15 miles NW to the east fork of		
lakebed, playa lake, or	Kutz Canyon wash		
sinkhole:			,
······································	·	Soil Type:	Entisols
Permanent residence,			
school, hospital,	No		
institution or church			·
within 300'		Annual	
	•	Precipitation:	Bloomfield: 8.71", Farmington: 8.21", Otis: 10.41"
Domestic fresh water		1 recipitation.	10.41
well or spring within	No	Precipitation	Historical daily max: Bloomfield (4.19")
500'		Notes:	
Any other fresh water			
well or spring within	No	1	
1000'		•	-
Within incorporated	A.	Attached	071144111111111111111111111111111111111
municipal boundaries	No	Documents:	27N 11W i-Waters pdf,27N 12W i-Waters pdf
Within defined			Topo map pdf, Aerial pdf, Mines and Quarries
municipal fresh water	No		Map pdf,i-Waters Ground Water Data Map
well field			pdf, FEMA flood zone map pdf
		<u> </u>	
Wetland within 500'	No	Mining Activity:	None
Within unstable area	No	·	
Within 100 year flood plain	No-FEMA Zone 'X'	•	
			·
Additional Notes:	· 		
•			.
			•

FROST JACK B #1E Below Ground Tank Hydrogeologic Report for Siting Criteria

General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology (Dane and Bachman, 1965). The proposed pit location will be located in the southernmost Kutz Canyon region of the San Juan Basin. The predominant geologic formation is the Nacimiento Formation of Tertiary age, which underlies surface soils and is often exposed (Dane and Bachman, 1965). Deposits of Quaternary alluvial and aeolian sands occur prominently near the surface of the area, especially near streams and washes.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits serve as the primary aquifers in the San Juan basin (Stone et al., 1983). In most of the proposed area, the Nacimiento Formation lies at the surface and grades into the Animas Formation to the west. Thickness of the Nacimiento ranges from 418 to 2232 feet (Stone et al., 1983). Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation are between 0 and 1000' deep in this section of the basin (Stone et al., 1983). Groundwater within these aquifers flows toward the San Juan River.

The prominent soil type at the proposed site are entisols and aridisols, which are defined as soils that exhibit little to no any profile development (www.emnrd.state.nm.us). Soils are basically unaltered from their parent rock. Miles of arroyos, washes and intermittent streams exist as part of the drainage network towards the San Juan River. These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes the soils that cover the area. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging 8 to 12 inches of rainfall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation falls from August through October. The heaviest rainfall occurs in the summer in isolated, intense cloudbursts. November through June is relatively dry. Snow generally falls from December to mid-February and averages less than one-half inch in depth. However, most recharge occurs during the winter months during snowmelt periods from the upper elevations (Western Regional Climate Center www.wrcc.dri.edu).

The predominant vegetation is sagebrush and grasses with a more restricted pinon-juniper association (Dick-Peddie, 1993). However, vegetation is very sparse and discontinuous.

Site Specific Hydrogeology

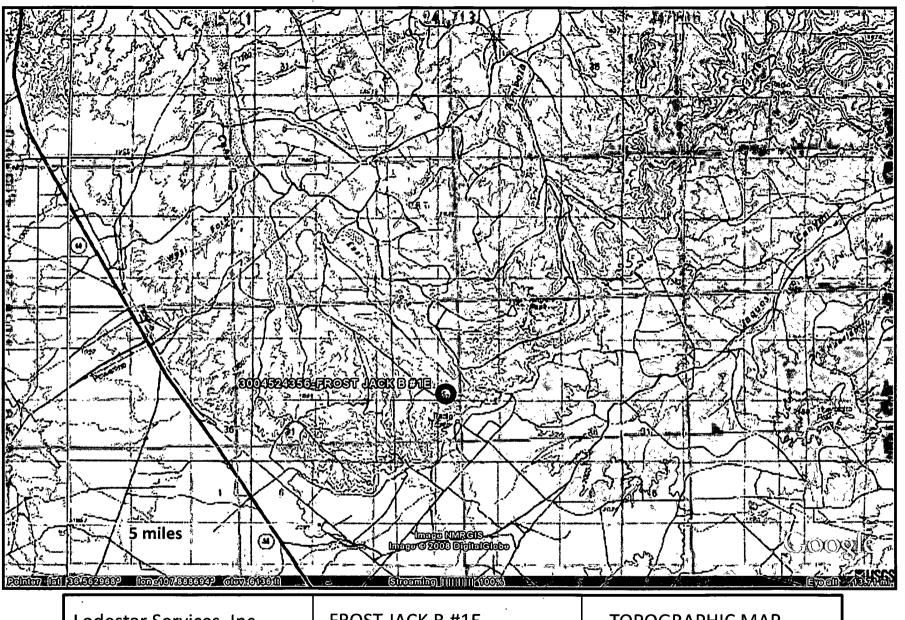
Depth to groundwater is estimated to be greater than 100'. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration.

Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983). Local aquifers exist within the Nacimiento Formation at depth s greater than 100 feet and thicknesses of the aquifer can be up to 3500 feet (USGS, Groundwater Atlas of the US).

The site in question is located near the edge of Kutz Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstones occur in a sparsely vegetated and arid badlands-type setting. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are evident on the attached aerial image.

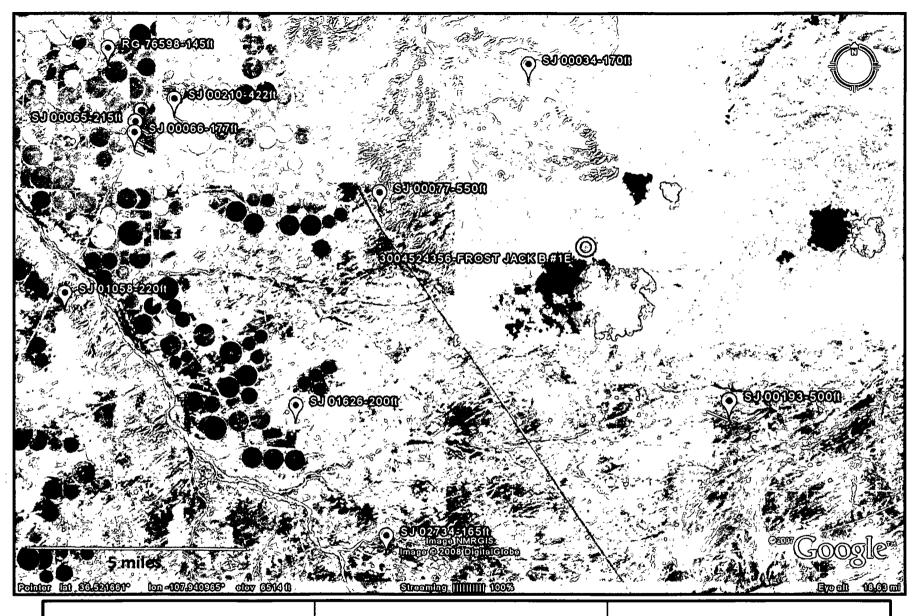
The pit will be located on a relatively flat mesa top at an elevation of approximately 6187 feet near the head of Kutz Wash. It is located within the Kutz Canyon tributary system 1.15 miles northwest of the east fork of Kutz Wash. Groundwater is expected to be shallow within Kutz Wash. But the significant distance between the Canyon and the site, as well as an elevation difference of over 110 feet suggest groundwater is greater than 100 feet at the proposed site.

State iWaters data points are sparsely distributed in this region, but there is an iWaters data point approximately 3.9 miles to the northwest of the site. Depth to groundwater at the site is 170 feet. A map showing the location of wells in reference to the proposed pit location is attached (SJ00034).



Lodestar Services, Inc PO Box 4465 Durango, CO 81302

FROST JACK B #1E T27N, R10W, S27M San Juan county, NM **TOPOGRAPHIC MAP**



Lodestar Services, Inc PO Box 4465 Durango, CO 81302 FROST JACK B #1E T27N, R10W, S27M San Juan county, NM i-Waters Ground Water Data Map

New Mexico Office of the State Engineer POD Reports and Downloads

POD / Surface Data ReportAvg Depth to Water ReportWater Column Report

WATER COLUMN REPORT 03/22/2008

POD Number SJ 01787	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest)						Depth	Depth	Water	(in feet)
POD Number	Tws	Rng Sec	. व व व	Zone	X	y	Well	Water	Column	
SJ 01787	27N	11W 07	2 2				650			
SJ 00077	2711	11W 26	2 1 3				1102	550	552	

Record Count: 2

WATER COLUMN REPORT 09/23/2008

	(quarter	s ar	5 T=1	NW	2=	=NE	3=5W 4=5E)							
	(quarter	s ar	e big	gge	st	t t	o smallest)			Depth	Depth	Water	(in	feet)
POD Number	Tws	Rng	Sec	ą	Ŧ	q	Zone	X	Y	Well	Water	Column		
SJ 00034	27%	10%	80	2	2	3				235	170	€5		

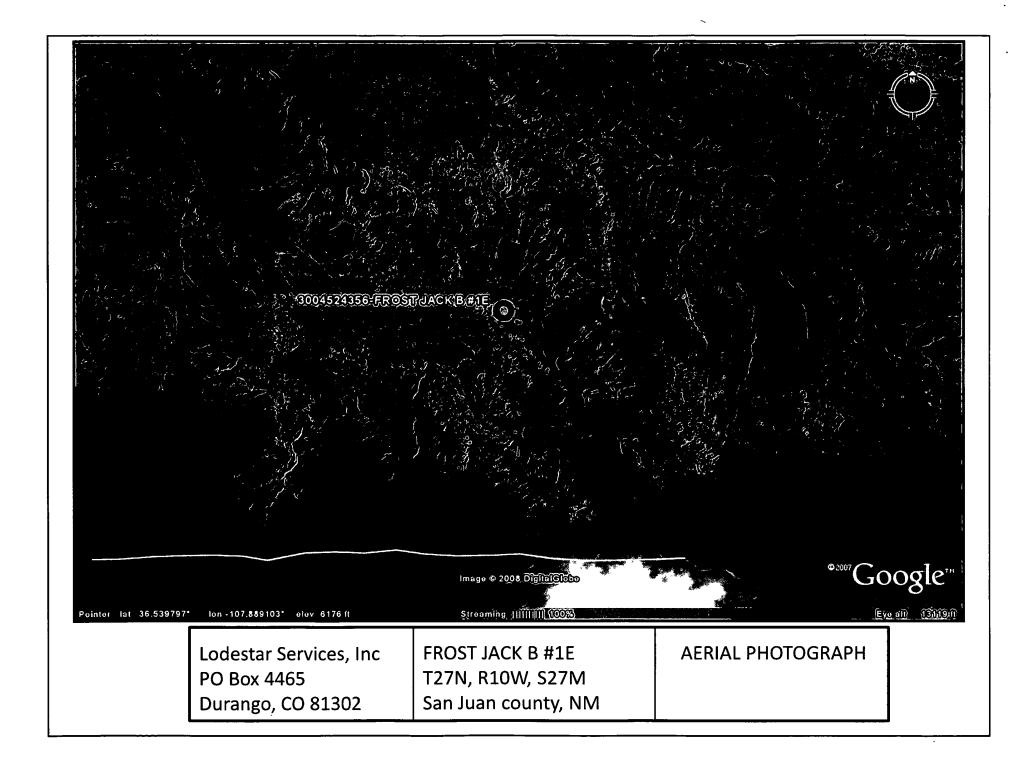
New Mexico Office of the State Engineer POD Reports and Downloads

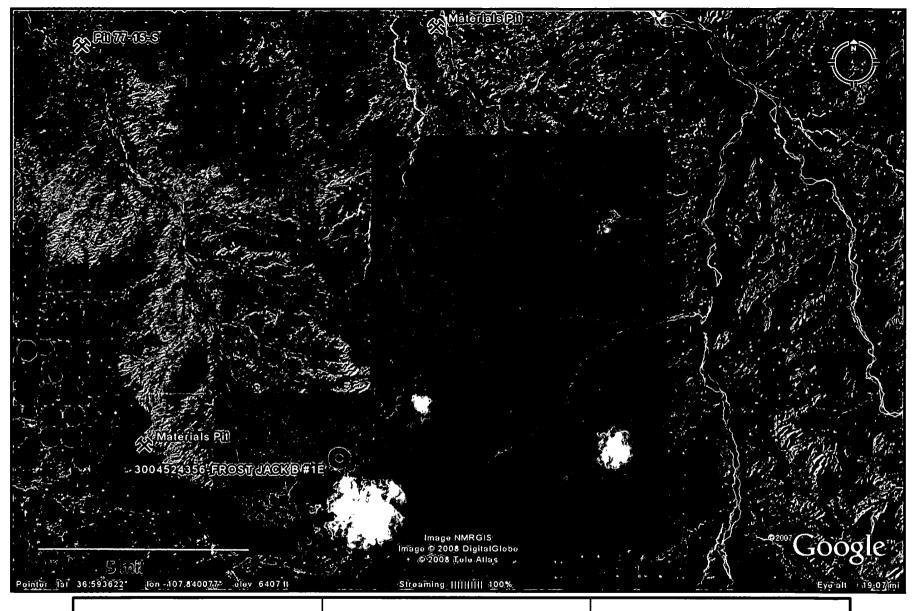
WATER COLUMN REPORT 08/22/2008

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

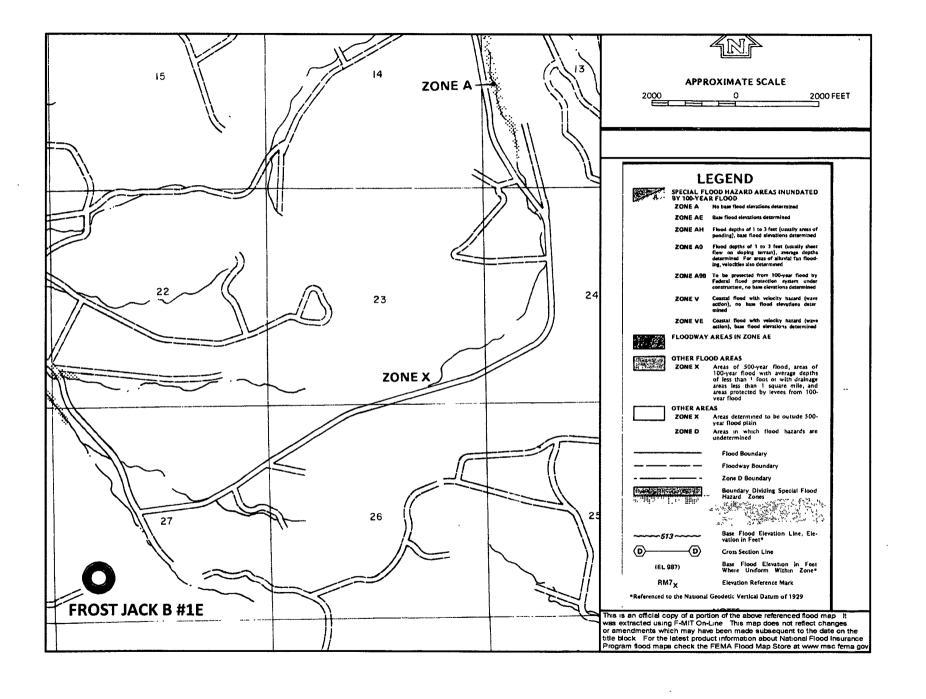
	(quarter	arters are biggest to smallest)							Depth	Depth	Water	(in feet)
POD Number	Tws	Rng	Sec	qq	q.	Zone	X	Y	Well	Water	Column	
RG 76598	27N	12W	02	3 4	1				225	145	80	
SJ 00076	27N	12W	13	1 3	2				641	408	233	
SJ 00210	27N	12W	13	2 2	2				717	422	295	
SJ 00065	27N	12W	13	3 1	1				671	215	456	
SJ 00066	27N	12N	13	3 3	1				750	177	573	

Record Count: 5





Lodestar Services, Inc PO Box 4465 Durango, CO 81302 FROST JACK B #1E T27N, R10W, S27M San Juan county, NM Mines and Quarries Map



XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Closure Plan For Below-Grade Tanks

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of below-grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below-grade tanks. A separate plan will be submitted for any below-grade tank which does not conform to this plan

General Plan

- 1. XTO will close below-grade tanks within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.
- 2. XTO will close a below-grade tank that does 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 after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC
- 3. XTO will close a permitted below-grade tank within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on form C-144.
- 4 XTO will remove liquids and sludge from below-grade tanks prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility. Approved facilities and waste streams include:

Envirotech Permit No. NM01-0011 and IEI Permit No. NM 01-0010B Soil contaminated by exempt petroleum hydrocarbons Produced sand, pit sludge and contaminated bottoms from storage of exempt wastes

Basın Disposal Permit No. NM01-005 Produced water

- 5. XTO will 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 has approved prior to removal. Any associated liners will be removed, properly cleaned and disposed of per 19.15.9.712 NMAC at San Juan County Landfill. Documentation of the final disposition will be included in the closure report.
- 6. XTO will remove any on-site equipment associated with a below-grade tank unless the equipment is required for some other purpose.
- 7. XTO will test the soils beneath the below-grade tank to determine whether a release has occurred. At a minimum 5 point composite sample will be collected along with individual grab samples from any area that is wet, discolored or showing other evidence of a release. Samples will be

XTO Energy Inc. San Juan Basın (Northwest New Mexico) General Closure Plan For Below-Grade Tanks Page 2

analyzed for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or 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 100mg/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. XTO will notify the division of its results on form C-141.

- 8. If XTO or the division determines that a release has occurred, XTO will comply with 19 15.3 116 NMAC and 19 15.1.19NMAC as appropriate.
- 9. 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, XTO will backfill the excavation with compacted, non-waste containing, earthen material; construct a division prescribed soil cover, recontour and re-vegetate the site.
- 10. Notice of Closure operations will be given to the Aztec Division District III office between 72 hours and one week prior to the start of closure activities via email or verbally.

The notification will include the following:

- i. Operator's name
- 11. Well Name and API Number
- 111. Location by Unit Letter, Section, Township, and Range

The surface owner shall also be notified prior to the implementation of any closure operations of below-grade tanks as per the approved closure plan using certified mail, return receipt requested.

- 11. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. 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 placed 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.
- 12. A minimum of 4 feet of cover shall be achieved and the cover shall include 1 foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater. Soil cover will be constructed to the site's existing grade and ponding of water and erosion of the cover material will be prevented with drainage control, natural drainages and silt traps where needed.
- 13. XTO will 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 or Forest Service stipulated seed mixes will be used on federal 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. Repeat seeding or planting will be continued until successful vegetative growth occurs.

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Closure Plan For Below-Grade Tanks Page 3

- 14. All closure activities will include proper documentation and be available for review upon request and will be submitted in closure report form to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on form C-144 and incorporate the following:
 - 1. Proof of closure notice to division and surface owner,
 - 11. Details on capping and covering, where applicable;
 - III. Inspection reports;
 - iv. Confirmation sampling analytical results;
 - v. Disposal facility name(s) and permit number(s);
 - vi Soil backfilling and cover installation;
 - vii. Re-vegetation application rates and seeding techniques, (or approved alternative to re-vegetation requirements if applicable);
 - viii. Photo documentation of the site reclamation.

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Design and Construction Plan For Below-Grade Tanks

In accordance with Rule 19.15.17.11 NMAC the following information describes the design and construction of below-grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below-grade tanks. A separate plan will be submitted for any below-grade tank which does not conform to this plan.

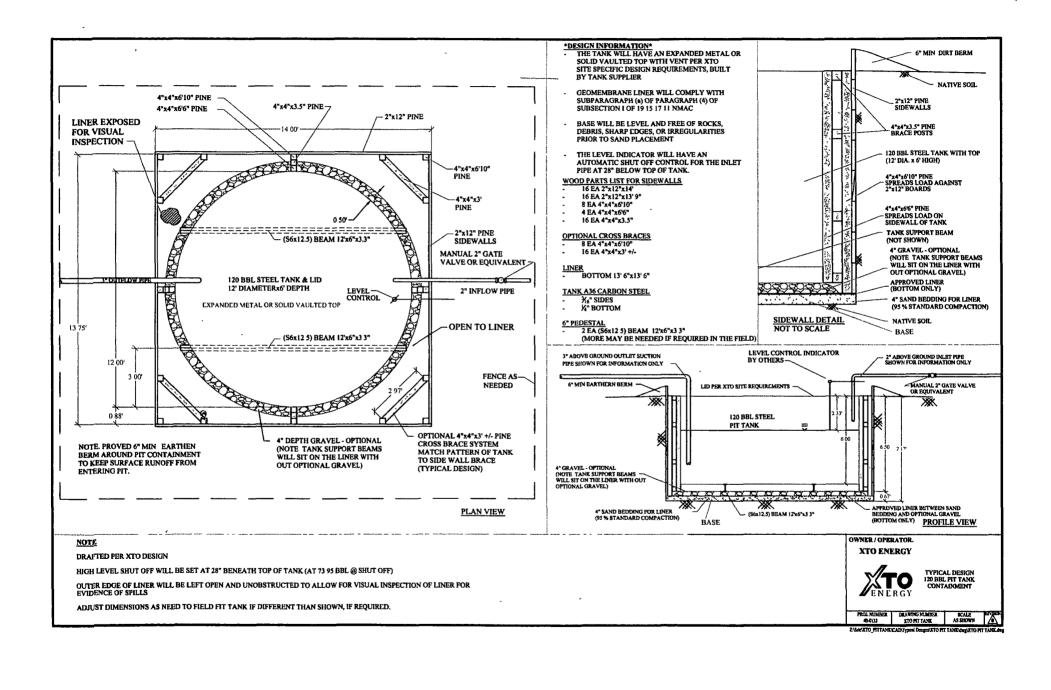
General Plan

- 1 XTO will design and construct below-grade tanks to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
- 2. XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the existing well site operated by XTO where the existing below-grade tank is located. The sign will list the Operator on record as the operator, the location of the well site by unit letter, section, township, range, and emergency telephone numbers.
- 3. XTO is requesting approval of an alternative fencing to be used on below-grade tank locations. Below-grade tank locations will be fenced utilizing 48" steel mesh field-fence (hogwire) with pipe railing along the top. A 6' chain link fence will be utilized around the well pad if the well site is within a city limits or ¼ mile of a permanent residence, school, hospital, institution or church. Below-grade tanks located within 1000' of a permanent residence, school, hospital, institution or church will be fenced by 6' chain link fence with at least two strands of barbed wire at the top. All gates associated with below-grade tanks will remain closed and locked when responsible individuals are not on site.
- 4. XTO shall construct below-grade tanks with an expanded metal covering or solid vaulted top on the top of the below-grade tank
- 5. XTO will ensure that below-grade tanks are constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight Tanks will be constructed of A36 carbon steel with 3/16" sides and \(\frac{1}{2} \)" bottom. (See attached drawing).
- The below-grade tank 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. Sand bedding (4") will be placed on top of a level foundation to ensure prevention of punctures, cracks or indentations of the liner or tank bottom.
- 7. XTO will construct a berm and/or diversion ditch in a manner that prevents the collection of surface water run-on. Below-grade tanks will be equipped with automatic high level shut-off devices as well as manually operated shut-off valves. (See attached drawing).
- 8. XTO will construct and use below-grade tanks that do not have double walls. The below-grade tank sidewalls will be open for visual inspection for leaks. The sidewalls of the cellar will be constructed with 2" X 12" pine sidewalls and 4" X 4" pine brace posts. The below-grade tank

XTO Energy Inc.
San Juan Basin (Northwest New Mexico)
General Design and Construction Plan
For Below-Grade Tanks
Page 2

bottom will be elevated a minimum of 6" above the underlying ground surface and the below-grade tank will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected. (See attached drawing)

- 9. XTO will equip below-grade tanks designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows. (See attached drawing)
- 10. XTO will demonstrate to the OCD that the geomembrane liner complies with the specifications of Subparagraph (a) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC and obtain approval from OCD prior to the installation of the design. The geomembrane liner shall have a hydraulic conductivity no greater than 1 x 10-9 cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidics and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A. (See attached drawing)
- 11. The general specifications for design and construction are attached.



XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Maintenance and Operating Plan For Below-Grade Tanks

In accordance with Rule 19.15 17.12 NMAC the following information describes the operation and maintenance of below-grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below-grade tanks. A separate plan will be submitted for any below-grade tank which does not conform to this plan.

General Plan

- 1. XTO will operate and maintain below-grade tanks to contain liquids and solids, maintain the integrity of the liner and secondary containment system, prevent contamination of fresh water and protect public health and the environment. Fluid levels will be monitored weekly and high levels will be removed as necessary. Monthly inspections will be conducted to monitor integrity of below-grade tank systems and below-grade tanks will be equipped with automatic high-level shut-off devices.
- 2. XTO will not allow below-grade tanks to overflow and will use berms and/or diversion ditch to prevent surface run on to enter the below-grade tank. Below-grade tanks will be equipped with automatic high-level shut-off control devices as well as manually operated shut-off valves. See attached drawing for vault design and placement of diversion berms and shut-off devices.
- 3. XTO will continuously remove any visible or measurable layer of oil from the fluid surface of below-grade tanks in order to prevent significant accumulation of oil.
 - 4. XTO will inspect the below-grade tank monthly and maintain written records for five years. Monthly inspections will consist of documenting the following: (see attached template).

Well Name API #

Sec., Twn., Rng.

XTO Inspector's name

Inspection date and time

Visible tears in liner

Visible signs of tank overflow

Collection of surface run on

Visible layer of oil

Visible signs of tank leak

Estimated freeboard

- 5. XTO will maintain adequate freeboard to prevent over topping of the below-grade tank. High level shut-off devices control the freeboard at an average of 28" beneath the top of the tank.
- 6. XTO will not discharge into or store any hazardous waste in any below-grade tank.
- 7. If a below-grade tank develops a leak, or if any penetration of a below-grade tank occurs below the liquids surface, XTO will remove all liquids above the damage or leak line within 48 hours,

XTO Energy Inc.
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General Maintenance and Operating Plan
For Below-Grade Tanks
Page 2

notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the below-grade tank. If an existing below-grade tank does not meet current requirements of Paragraphs 1-4 of Subsection I of 19.15.17.11 NMAC the tank will be modified or retrofitted to comply If compliance can not be achieved XTO will implement the approved closure plan

		MONT	HLY BELO	W GRADE TANK	INSPECTIO	N FORM		
Well Nar	ne:				API No.:			1
_egals	Sec:		Township:		. Range:		-	
XTO Inspector's Name	Inspection Date	Inspection Time	Any visible liner tears (Y/N)	Any visible signs of tank overflows (Y/N)	Collection of surface run on (Y/N)	Visible layer	Any visible signs of a tank leak (Y/N)	Freeboard Est. (ft)
	•							
					-			
						-		
Notes:	Provide De	tailed Descri	iptıon					
Misc								