167 Dis 13(-Dis District ...
1220 S. St. Francis Dr., Santa Fg. NM 87505 CLUS FEB 16

State of New Mexico ıls and Natural Resources __Department servation Division Juth St. Francis Dr. Santa Fe, NM 87505

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

Pit Closed-Loon System Relow-Grade Tank or

Proposed Alternative Method Permit or	
Type of action: Existing BGT Permit of a pit, closed-loop system, below Closure of a pit, closed-loop system, below Modification to an existing permit	grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, clo	osed-loop system, below-grade tank or alternative request
Please be advised that approval of this request does not relieve the operator of liability should open environment. Nor does approval relieve the operator of its responsibility to comply with any other	
1.	applicable governmental authority's fules, regulations of ordinances.
Operator: XTO Energy, Inc.	OGRID #:5380
Address: #382 County Road 3100, Aztec, NM 87410	
Facility or well name: Federal F #2	
API Number: 30-045-06867 OCD Permit Nu	
U/L or Qtr/Qtr H Section 04 Township 27N Range	
Center of Proposed Design: Latitude 36.60622 Longitude	107.8941 NAD: ☐1927 🔀 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment	
Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: Drilling Workover Permanent Emergency Cavitation P&A Lined Unlined Liner type: Thicknessmil LLDPE HDPE String-Reinforced Liner Seams: Welded Factory Other Volume:	
3. 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 intent)	activities which require prior approval of a permit or notice of
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other	
Lined Unlined Liner type: Thicknessmil LLDPE HDP.	E PVC Other
Liner Seams: Welded Factory Other	
4. Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume: 120 bbl Type of fluid: Produced Water Tank Construction material: Steel Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and Visible sidewalls and liner Visible sidewalls only Other Visible sidewalls, Visi	
Liner type: Thicknessmil HDPE PVC Other	

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, hinstitution or church)	nospital,
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	
7. 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)	
8. Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
☑ 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 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

Form C-144

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:
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 19.15.17.19 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)
Waste 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 G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel T Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling	anks or Haul-off Bins Only: (19.15.17.13.D fluids and drill cuttings. Use attachment if n	NMAC) nore than two						
facilities are required. Disposal Facility Name: Dispos	sal Facility Permit Number:							
Disposal Facility Name: Disposal Facility Permit Number:								
Will any of the proposed closed-loop system operations and associated activities occur on Yes (If yes, please provide the information below) No								
Required for impacted areas which will not be used for future service and operations: Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection I of 19 Site Reclamation Plan - based upon the appropriate requirements of Subsection G of	.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 provided below. Requests regarding changes to certain siting criteria may require admic considered an exception which must be submitted to the Santa Fe Environmental Burea demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guid	nistrative approval from the appropriate distr in office for consideration of approval. Justij	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; Data obtain	ned from nearby wells	Yes No						
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; Data obtain	ned 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 obtain	ned from nearby wells	Yes No						
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	t watercourse or lakebed, sinkhole, or playa	Yes No						
Within 300 feet from a permanent residence, school, hospital, institution, or church in exis - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image		Yes No						
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than f watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, i NM Office of the State Engineer - iWATERS database; Visual inspection (certifice)	n existence at the time of initial application.	Yes No						
Within incorporated municipal boundaries or within a defined municipal fresh water well adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtain	•	Yes No						
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspe	ction (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 M	ineral Division	Yes No						
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mis Society; Topographic map	neral 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 followard by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Subsection/Design Plan of Burial Trench (if applicable) based upon the appropriate Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 Confirmation Sampling Plan (if applicable) - based upon the appropriate requirement waste Material Sampling Plan - based upon the appropriate requirements of Subsection Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cut Soil Cover Design - based upon the appropriate requirements of Subsection H of 19 Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19. Site Reclamation Plan - based upon the appropriate requirements of Subsection I of 19.	nts of 19.15.17.10 NMAC ction F of 19.15.17.13 NMAC atter requirements of 19.15.17.11 NMAC ased upon the appropriate requirements of 19.1 NMAC attention F of 19.15.17.13 NMAC tion F of 19.15.17.13 NMAC tings or in case on-site closure standards cannot 15.17.13 NMAC	5.17.11 NMAC						

1 Y.		
Operator Application Certification: I hereby certify that the information submitted with this application	n is true, accurate and complete to t	he best of my knowledge and belief.
	Title:	Environmental Representative
Signature: Kim Champlin	Date:	_02/02/2009
e-mail address: kim_champlin@xtoenergy.com	Telephone:	(505) 333-3100
OCD Approval: Permit Application (including closure plan)	Closure Plan (only) OCC	Conditions (see attachment)
OCD Representative Signature:		Approval Date:
Title:		ber:
Closure Report (required within 60 days of closure completion) Instructions: Operators are required to obtain an approved closu The closure report is required to be submitted to the division with section of the form until an approved closure plan has been obtain	rre plan prior to implementing any in 60 days of the completion of the ned and the closure activities have	closure activities and submitting the closure report. closure activities. Please do not complete this
		pietion Date
22. Closure Method: Waste Excavation and Removal On-Site Closure Method If different from approved plan, please explain.	Alternative Closure Method	Waste Removal (Closed-loop systems only)
Closure Report Regarding Waste Removal Closure For Closed- Instructions: Please indentify the facility or facilities for where the two facilities were utilized.		
Disposal Facility Name:	Disposal Facility P	Permit Number:
Disposal Facility Name:	Disposal Facility P	Permit Number:
Were the closed-loop system operations and associated activities per Yes (If yes, please demonstrate compliance to the items belo		be used for future service and operations?
Required for impacted areas which will not be used for future servi Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique	ce and operations:	
24.		
Closure Report Attachment Checklist: Instructions: Each of the 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 Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation)	n-site closure)	
On-site Closure Location: Latitude	Longitude	NAD: ∐1927 ☐ 1983
Operator Closure Certification: I hereby certify that the information and attachments submitted with belief. I also certify that the closure complies with all applicable closure.	h this closure report is true, accurate osure requirements and conditions	e and complete to the best of my knowledge and specified in the approved closure plan.
Name (Print):	Title:	
Signature:	Date:	
e-mail address:	Telephone:	

NEW MEXICO OIL CONSERVATION COMMISSION

Well Location and Acreage Dedication Plat

Section A.			D:	April 2	2, 1959	
Operator description	national Patrolous.	Cen_Lease_	AF AFTICE			
Well MoUni	t Letter Sect	ion 4	Township		Range 10 W	NMPN
Located 1810	_Feet From	Line, MAG	Feet		Fact = 404	Line
County		tion gras a	Pool A		E 320.	MACTES
Name of Producing Follows Is the Operator	the only owner* i	n the dedicat			he plat below	1?
Yes No_			ou don days out.	200	pro	•
2. If the answer to	o question one is	"no," have th	e interests of	all the o	wners been	
consolidated by	communitization a	greement or o	therwise? Yes	No	If answe	ris
"yes," Type of		151116				
3. If the answer t below:		ON CON				erests
		CON	59		Cio	
		- Car	4		TEU	
AMENDED REPO	ORT TO CORRECT	acerage ded	MEATROM PLAT	FROM 166	ACRES TO N	DACRE
Section B		-		REF. GL	O Plat dated 1	9 July 19
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				Engineer	and/or Land S	nineAor.
390 660 990 1320 4	660 1980 2310 2640	2000 1500	1000 500 0			
			-	Certifica	te No. 1468	
	(See instructions	for completing	ig this form on	the rever	se side)	

	,	f	Client:	XTO Energy
Lodestar Service	as Inc	Pit Permit	Project:	Pit Permits
		Siting Criteria	Revised:	1/22/2009
PV Dat 4103, viseq	go, CO 81302	Information Sheet	_	Daniel Newman
V		IIIIVIIIIation 3	Fieparet	Daniel Newman
API#:[30-045-06867	USPLSS:	T27N,R10W,04H
Name:		Federal F #2	Lat/Long:	36.60622 / -107.8941
Depth to groundwater:		> 100 feet	Geologic formation: N	Nacimiento Formation
Distance to closest continuously flowing watercourse:	6.52 miles	es south of the San Juan River		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	587 feet	t north of an unnamed arroyo		
			Soil Type:	Entisols & Aridsoils
Permanent residence, school, hospital, institution or church within 300'		No		
		10 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m	Annual Precipitation:	Bloomfield 8.71" , Farmington 8.21" , Otis 10.41"average
Domestic fresh water well or spring within 500'		No	Precipitation Notes:	Historical daily max: Bloomfield 4.19"
Any other fresh water well or spring within 1000'		No		
Within incorporated municipal boundaries		No	Attached Documents:	
Within defined municipal fresh water well field		No		Topo map, ground water data map, ariel photo, mines and quarries map, FEMA map
Wetland within 500'		No	Mining Activity:	No
Within unstable area		No	L	
Within 100 year flood plain		FEMA Zone 'X'		
Additional Notes:			and the second second	And you have been a second

Federal F #2 Below Ground Tank Hydrogeologic Report for Siting Criteria

Well Site Location

Legals: T27N, R10W, Section 04H

Latitude/Longitude: approximately 36.60622 / -107.8941

County: San Juan County, NM

General Description: near the San Juan River

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 southern Armenta Canyon region of San Juan County. 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 aridsoils, 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 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 rain fall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation fall 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 pinion-juniper association (Dick-Peddie, 1993). However, vegetation is very sparse and discontinuous.

Site Specific Hydrogeology

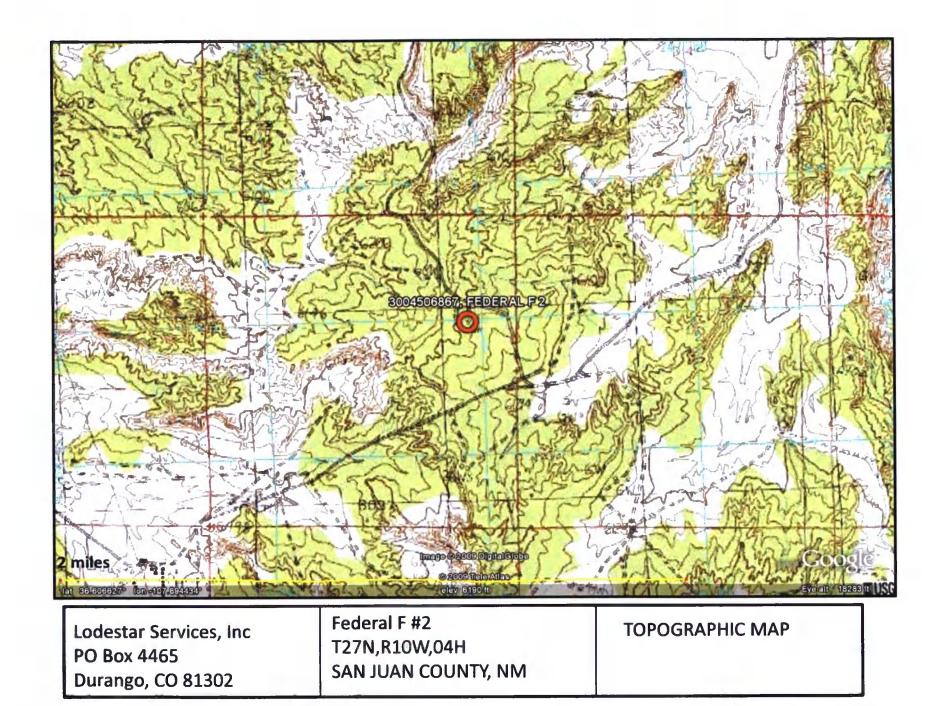
Depth to groundwater is estimated to be greater than 100 feet. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity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

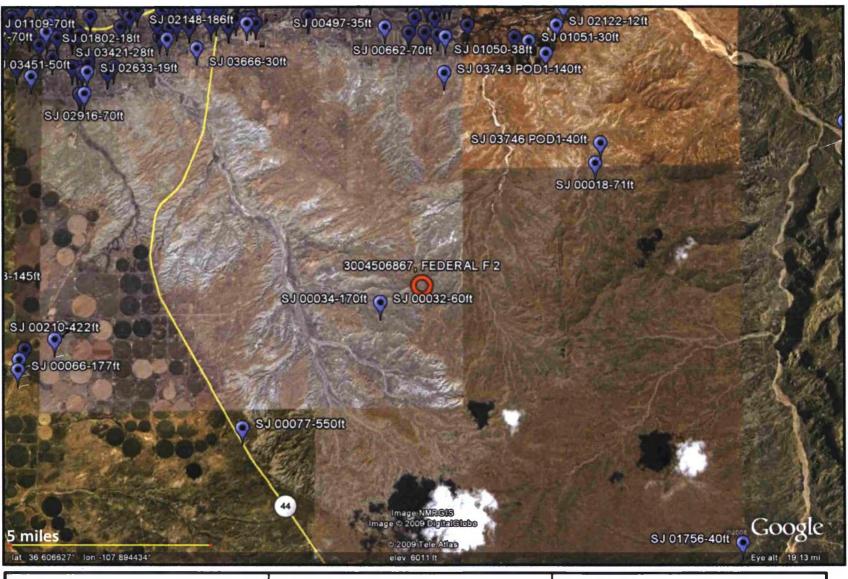
Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983). 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 Armenta Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstone occur in a sparsely vegetated and aird badlands-type setting. Broad shaley 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 near to Armenta Canyon at an elevation of approximately 6,198 feet. Ground water is expected to be shallow within Armenta Canyon. The floor of Armenta Canyon sits at 5,939 feet an elevation difference of approximately 260 feet exists between the site and the floor of Armenta Canyon. The elevation difference of almost 260 feet between the proposed site and the floor of Armenta Canyon, suggests that depth to groundwater to be greater than 100 feet at the proposed site.

Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. A map showing the locations of wells in reference to the proposed pit location is also attached. Water drops show locations of wells and the labels for each water drop indicate depth to groundwater in feet. The closest well to the site (SJ00032) is at an elevation of approximately 5,983 feet and is located 1.26 miles to the southwest this well puts depth to groundwater at 60 feet below the surface. This iWaters well data combined with the large elevation difference between the proposed site and the floor of Kutz Canyon place depth to groundwater at greater than 100 feet. The observations made within this report suggest that groundwater is greater than 100 feet deep at the proposed location.





Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Federal F #2 T27N,R10W,04H SAN JUAN COUNTY, NM

i-Waters Ground Water Data Map

AVERAGE DEPTH OF WATER REPORT 11/11/2008

								(Depth	Water in	Feet)
Bsn	Tws	Rng S	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	26N	09W 1	11				1	40	40	40
SJ	26N	09W 1	12				1	175	175	175
SJ	2 6 N	09W 1	L 6				1	65	€5	65
SJ	2.6N	09W 2	2.6				3	215	234	226

AVERAGE DEPTH OF WATER REPORT 11/10/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	27N	10W 08				2	60	170	115

AVERAGE DEPTH OF WATER REPORT 11/03/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	X	Y	Wells	Min	Max	Avg
ST	27N	1.11 26				1	550	550	550

AVERAGE DEPTH OF WATER REPORT 11/03/2008

								(Debru	water 11	reet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
RG	27N	12W	02				.1	145	145	145
SJ	27N	12W	13				4	177	422	30€

AVERAGE DEPTH OF WATER REPORT 01/21/2009

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	28N	081	14				1	480	480	480
SJ	28N	08W	17				1			
SJ	28N	OBW	18				1	800	800	500

Record Count: 3

AVERAGE DEPTH OF WATER REPORT 01/09/2009

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	28N	09W, 20				2	40	71	56

Record Count: 2

AVERAGE DEPTH OF WATER REPORT 01/05/2009

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	09W	02				28	3	71	11
5J	2.9N	0 9 W	03				10	2	40	11
SJ	29N	0 9 W	04				2	5	20	13
SJ	29N	09W	05				3	16	20	18
SJ	29N	0 9W	06				1	40	40	40
SJ	29N	09W	07				1	€	€	5
SJ	29N	09W	08				3	24	100	65
SJ	29N	09W	0.9				2	5	ϵ	6
SJ	29N	09W	09		273716	2090921	1	250	250	250
SJ	29N	09W	16				2	87	100	94
SJ	29N	0 9 W	18				9	1	5	4

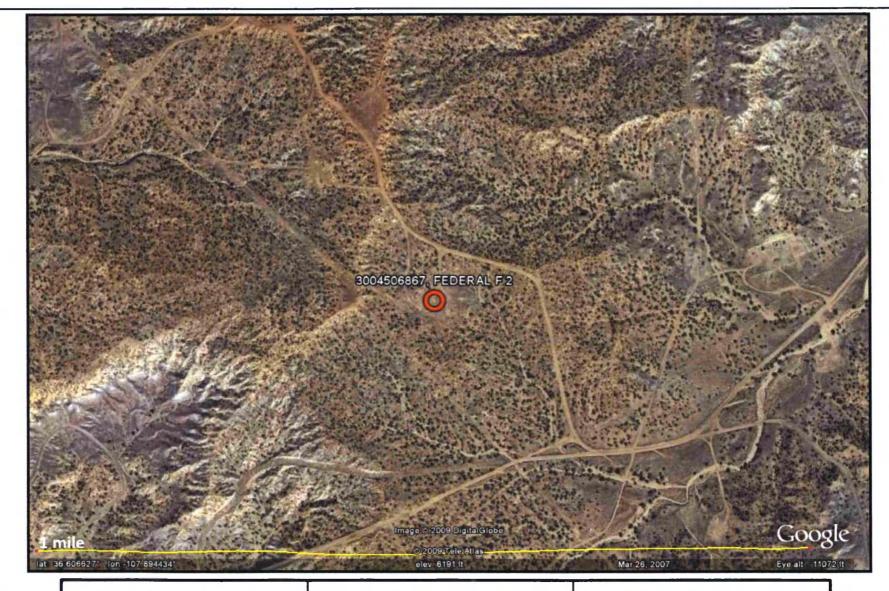
AVERAGE DEPTH OF WATER REPORT 11/15/2008

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
RG	29N	100	25.				1	450	450	450
SJ	29N	1077	13.				3	10	20	17
SJ	29N	1097	18				1	65	€5	€5
SJ	29N	100	19				3	2	9	5
SJ	29N	100	20				4	2	12	6
SJ	29N	109	21				5	7	30	17
SJ	29N	1000	22				1	20	20	20
SJ	29N	10W	23				1	16	16	1€
SJ	29N	107	24				3	20	34	28
SJ	29N	107	25				1	12	12	12
SJ	29N	100	2.6				1	4	4	4
SJ	29N	107	27				1	31	31	31
SJ	29N	107	28				9	4	70	23
SJ	29N	107	28	77	484600	2075600	1	20	20	20
SJ	29N	10W	29				1	35	35	35
SJ	29N	LOW	29		270344	2071311	1	50	50	50
SJ	29N	100	30				1	10	10	10
SJ	29N	LOW	33				1	140	140	140
SJ	29N	10W	35				1	30	30	3.0
SĴ	29N	10W	36				1	38	38	38

AVERAGE DEPTH OF WATER REPORT 11/10/2008

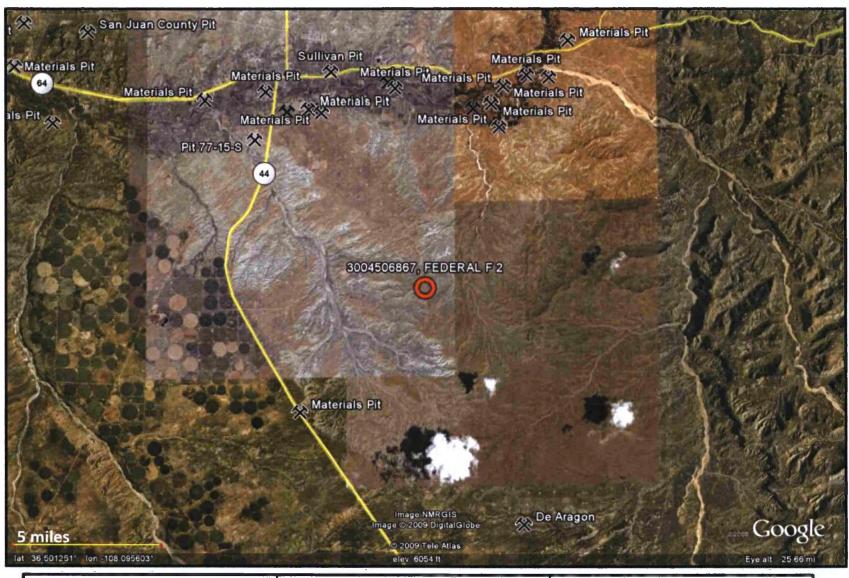
								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	1197	07				2	55	210	133
SJ	29N	1177	10				1	48	48	48
SJ	29N	117	13				1	300	300	300
SJ	29N	1197	14				4	ϵ	56	24
SJ	29N	11%	15				3	12	3,0	21
SJ	29N	1199	16				1	40	40	4 Ü
SJ	29N	1177	17				2	€	80	43
SJ	29N	1197	19				3	18	5.5	31
SJ	29N	1177	19		440000	2077700	1	€	ε	€
SJ	29N	1197	20				2	3	30	17
SJ	29N	1197	21				7	8	5.5	18
SJ	29N	1177	22				2'5	3.	59	15
SJ	29N	117	23				15	15	30	21
SJ	29N	11W	24				2	12	18	15
SJ	29N	1177	25				1	25	25	25
SJ	29N	11W	26				1	43	43	4.3
SJ	29N	1107	27				20	3	18€	29
SJ	29N	1177	28				9	5	115	27
SJ	29N	1177	28		267348	2075529	1	15	15	15
SJ	29N	1100	29				9	4	28	13
SJ	29N	1100	30				6	ϵ	25	16
SJ	29N	117	31				1	40	40	40
SJ	29N	110	31		2,66438	2067,001	1	45	45	45
SJ	29N	1177	33				1	30	30	3.0

Record Count: 119



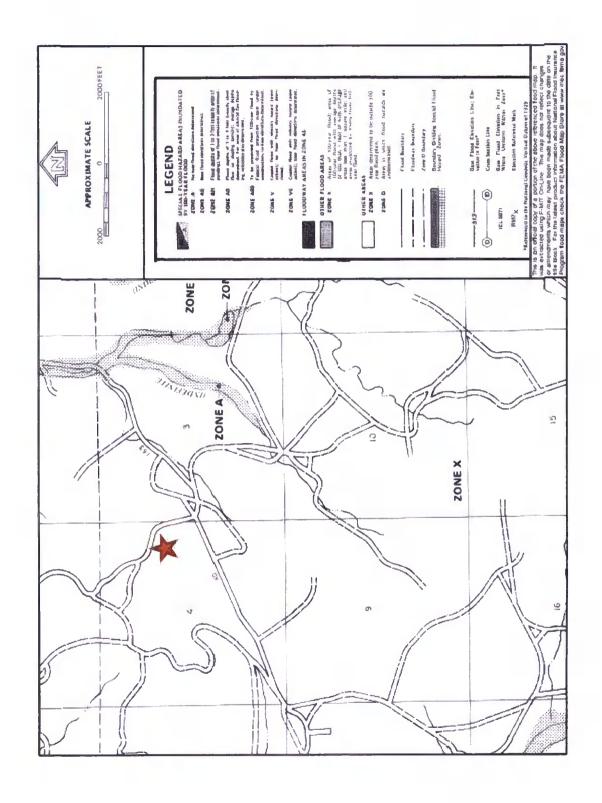
Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Federal F #2 T27N,R10W,04H SAN JUAN COUNTY, NM

AERIAL PHOTOGRAPH



Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Federal F #2 T27N,R10W,04H SAN JUAN COUNTY, NM

Mines and Quarries Map



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.

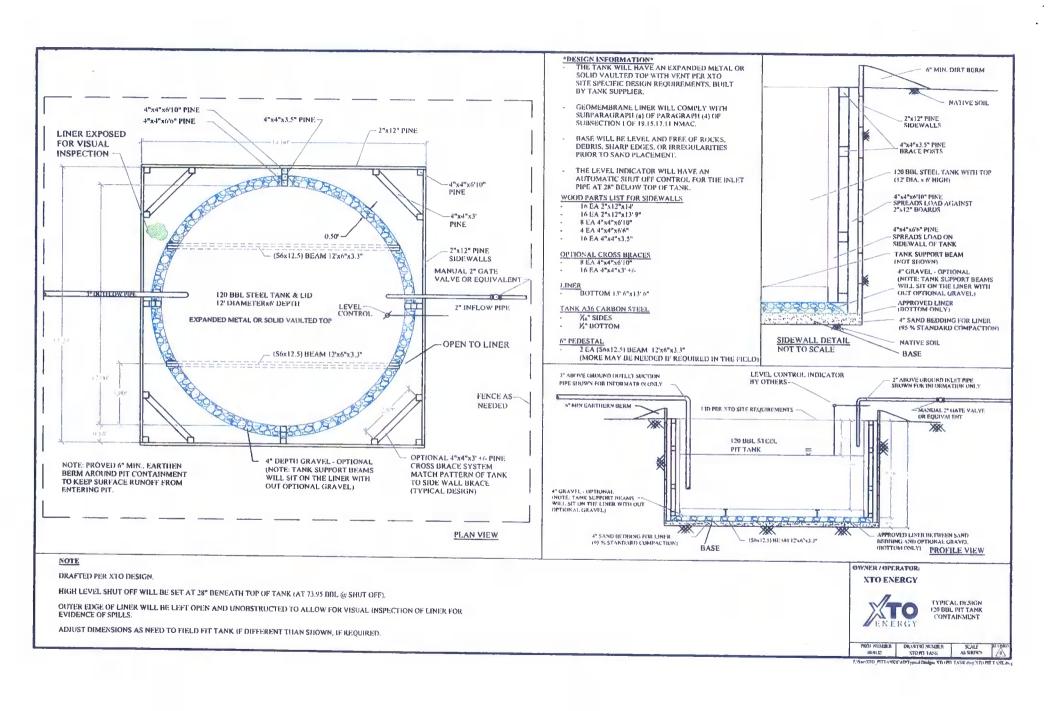
General Plan

- 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).
- 6. 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 belowgrade 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

- 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. San Juan Basin (Northwest New Mexico) 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.

Well Nar Legals					AFT 140						
Legals				API No.:							
	Sec:		Township:		Range:						
XTO Inspector's	Inspection	Inspection		Any visible signs of	Collection of surface	Visible layer	Any visible signs	Freeb			
Name Name	Date	Time	tears (Y/N)	tank overflows (Y/N)	run on (Y/N)	of oil (Y/N)	of a tank leak (Y/N)	Est.			
Notes:	Provide De	tailed Descri	ption:								
		-									
Misc:											

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

- 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

Basin 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 Basin (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
 - ii. Well Name and API Number
 - iii. 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:
 - i. Proof of closure notice to division and surface owner;
 - ii. 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.

