Dist	M 87505 2009 FEB 16	State of New Mexico s and Natural Resources epartment ervation Division 220 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. 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-L	oop System, Below-Grade 7 Method Permit or Closure P	
Type of acti Existing BC	ion: Permit of a pit, cl Closure of a pit, c Modification to a	losed-loop system, below-grade tank, o closed-loop system, below-grade tank, in existing permit y submitted for an existing permitted or	r proposed alternative method
Instructions: Please st	ubmit one application (Form	C-144) per individual pit, closed-loop syste	em, below-grade tank or alternative request
Please be advised that approval of environment. Nor does approval re	this request does not relieve the elieve the operator of its response	operator of liability should operations result i sibility to comply with any other applicable go	n pollution of surface water, ground water or the overnmental authority's rules, regulations or ordinances.
1. Operator: <u>XTO Energy, Inc</u> .		OGRID #:	5380
Address: #382 County Re	oad 3100, Aztec, NM 87410		
	titude <u>36.565240</u>	Longitude <u>107.850370</u>	unty: <u>San Juan</u> NAD: 🔲 1927 🔀 1983
String-Reinforced	forkover Cavitation P&A type: Thicknessm	nil 🔲 LLDPE 🗍 HDPE 🗍 PVC 🔲 O	ther
3.			
intent)	Drilling a new well Wo ound Steel Tanks Haul-of pe: Thickness	orkover or Drilling (Applies to activities wh ff Bins  Other	ich require prior approval of a permit or notice of ] Other
4.			
	bbl Type of fluid:	Produced Water	
Tank Construction material:			<b>a</b> 1 <b>6</b>
		sidewalls, liner, 6-inch lift and automatic o	
		Cher <u>Visible sidewalls, vaulted, autor</u>	
5.			
Alternative Method:	est is required. Exceptions m	ust be submitted to the Santa Fe Environme	ental Bureau office for consideration of approval.

6. <b>Fencing:</b> 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,	hospital,
<i>institution or church)</i> 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	
9. Administrative Approvals and Exceptions:	
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank:	
Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau	office for
consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
10.	
Siting Criteria (regarding permitting): 19.15.17.10 NMAC	ntabla source
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accel material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appro-	
office 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 dry	
above-grade tanks associated with a closed-loop system.	ing paus or
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).	🗌 Yes 🛛 No
- Topographic map; Visual inspection (certification) of the proposed site	_
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)	☐ Yes ⊠ No ☐ NA
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits)	NA NA
- 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 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	
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	🗌 Yes 🛛 No
<ul> <li>adopted pursuant to NMSA 1978, Section 3-27-3, as amended.</li> <li>Written confirmation or verification from the municipality; Written approval obtained from the municipality</li> </ul>	
Within 500 feet of a wetland.	🗌 Yes 🛛 No
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	🗌 Yes 🛛 No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	🗌 Yes 🛛 No
Within a 100-year floodplain. - FEMA map	🗌 Yes 🛛 No

				-
11. <u>Temporary Pits, Emergency</u> Instructions: Each of the follo	Pits, and Below-grade Tanl owing items must be attache	ks Permit Application Attach d to the application. Please in	ment Checklist: Subsection B of 19.15.17.9 NMAC dicate, by a check mark in the box, that the documents are	
<ul> <li>Hydrogeologic Data (Ter</li> <li>Siting Criteria Compliant</li> <li>Design Plan - based upor</li> </ul>	nporary and Emergency Pits ce Demonstrations - based up the appropriate requirement	) - based upon the requirement oon the appropriate requirements of 19.15.17.11 NMAC		
Operating and Maintenar Closure Plan (Please corr and 19.15.17.13 NMAC	nce Plan - based upon the appropriate Boxes 14 through 18, i	propriate requirements of 19.15 if applicable) - based upon the	6.17.12 NMAC appropriate requirements of Subsection C of 19.15.17.9 NMAC	
Previously Approved Desig	gn (attach copy of design)	API Number:	or Permit Number:	
	Application Attachment Ch owing items must be attache	necklist: Subsection B of 19.1 d to the application. Please in	5.17.9 NMAC adicate, by a check mark in the box, that the documents are	
<ul> <li>Siting Criteria Complian</li> <li>Design Plan - based upo</li> <li>Operating and Maintena</li> </ul>	the Demonstrations (only for n the appropriate requirement nce Plan - based upon the ap	on-site closure) - based upon t its of 19.15.17.11 NMAC propriate requirements of 19.1	ements of Paragraph (3) of Subsection B of 19.15.17.9 the appropriate requirements of 19.15.17.10 NMAC 5.17.12 NMAC appropriate requirements of Subsection C of 19.15.17.9 NMAC	
Previously Approved Desig	gn (attach copy of design)	API Number:		
	-		(Applies only to closed-loop system that use	
above ground steel tanks or ha	ul-off bins and propose to im	plement waste removal for clo	sure)	
Climatological Factors / Certified Engineering D Dike Protection and Stru Leak Detection Design - Liner Specifications and Quality Control/Quality Operating and Maintena Freeboard and Overtopp Nuisance or Hazardous Emergency Response Pl Oil Field Waste Stream Monitoring and Inspecti Erosion Control Plan Closure Plan - based upo	Assessment esign Plans - based upon the actural Integrity Design - bas based upon the appropriate Compatibility Assessment - Assurance Construction and nce Plan - based upon the ap ing Prevention Plan - based Odors, including H <sub>2</sub> S, Preven an Characterization on Plan	Installation Plan propriate requirements of 19.1 upon the appropriate requiremention Plan	9.15.17.11 NMAC ements of 19.15.17.11 NMAC MAC quirements of 19.15.17.11 NMAC 5.17.12 NMAC	
Proposed Closure: 19.15.17. Instructions: Please complete Type: Drilling Workow Alternative Proposed Closure Method:	er the applicable boxes, Boxes ver Emergency Cavit Waste Excavation and Rem Waste Removal (Closed-lo On-site Closure Method (O In-place Burial	ation P&A Permanen noval pop systems only) only for temporary pits and clos On-site Trench Burial	t Pit 🖾 Below-grade Tank 🔲 Closed-loop System	
<ul> <li>closure plan. Please indicate,</li> <li>Protocols and Procedure</li> <li>Confirmation Sampling</li> <li>Disposal Facility Name</li> <li>Soil Backfill and Cover</li> <li>Re-vegetation Plan - bas</li> </ul>	by a check mark in the box, es - based upon the appropria Plan (if applicable) - based u and Permit Number (for liqu Design Specifications - base and upon the appropriate requ	, that the documents are attact te requirements of 19.15.17.13 upon the appropriate requirement ids, drilling fluids and drill cut	NMAC nts of Subsection F of 19.15.17.13 NMAC tings) ments of Subsection H of 19.15.17.13 NMAC 15.17.13 NMAC	

16. Waste Removal Closure For Closed-loop Systems That Utilize Above Ground S		
Instructions: Please indentify the facility or facilities for the disposal of liquids, d	rilling fluids and drill cuttings. Use attachment if more i	than two
facilities are required.	Disposal Facility Permit Number	
	Disposal Facility Permit Number:	
	Disposal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities occ Yes (If yes, please provide the information below) No	cur on or in areas that will not be used for future service an	nd operations?
<ul> <li>Required for impacted areas which will not be used for future service and operation</li> <li>Soil Backfill and Cover Design Specifications based upon the appropriate</li> <li>Re-vegetation Plan - based upon the appropriate requirements of Subsection</li> <li>Site Reclamation Plan - based upon the appropriate requirements of Subsection</li> </ul>	requirements of Subsection H of 19.15.17.13 NMAC of 19.15.17.13 NMAC	
<sup>17.</sup> Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the c provided below. Requests regarding changes to certain siting criteria may require considered an exception which must be submitted to the Santa Fe Environmental demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC fe	administrative approval from the appropriate district of Bureau office for consideration of approval. Justification	fice 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		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; Data		Yes 🗌 No NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data		Yes 🗌 No NA
<ul> <li>Within 300 feet of a continuously flowing watercourse, or 200 feet of any other sign lake (measured from the ordinary high-water mark).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	ificant watercourse or lakebed, sinkhole, or playa	Yes 🗌 No
Within 300 feet from a permanent residence, school, hospital, institution, or church - Visual inspection (certification) of the proposed site; Aerial photo; Satellite		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 spring - NM Office of the State Engineer - iWATERS database; Visual inspection (or	bring, in existence at the time of initial application.	Yes 🗌 No
Within incorporated municipal boundaries or within a defined municipal fresh water adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approva		Yes 🗌 No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visua		Yes 🗌 No
<ul> <li>Within the area overlying a subsurface mine.</li> <li>Written confirmation or verification or map from the NM EMNRD-Mining</li> </ul>		Yes 🗌 No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology Society; Topographic map</li> </ul>	& Mineral Resources; USGS; NM Geological	Yes 🗌 No
Within a 100-year floodplain. - FEMA map		Yes 🗌 No
<ul> <li>18.</li> <li>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.</li> <li>Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate of a drying pa Protocols and Procedures - based upon the appropriate requirements of 19.15</li> </ul>	irements of 19.15.17.10 NMAC Subsection F of 19.15.17.13 NMAC propriate requirements of 19.15.17.11 NMAC d) - based upon the appropriate requirements of 19.15.17.	

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
 Waste Material Sampling Plan - 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 or in case on-site closure standards cannot be achieved)
 Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
 Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
 Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

<ul> <li>Operator Application Certification:</li> <li>I hereby certify that the information submitted with this application in</li> </ul>	s true, accurate and complete to th	e best of my knowledge and belief.
	Title:	Environmental Representative
Signature: Kim Champlin	Date: 0	2/04/2009
		(505) 333-3100
20. OCD Approval: Permit Application (including closure plan)	Closure Plan (only) OCD	Conditions (see attachment)
OCD Representative Signature:		Approval Date:
Title:	OCD Permit Num	ber:
21. <u>Closure Report (required within 60 days of closure completion)</u> : Instructions: Operators are required to obtain an approved closure The closure report is required to be submitted to the division within section of the form until an approved closure plan has been obtaine	plan prior to implementing any of 60 days of the completion of the d and the closure activities have be	closure activities and submitting the closure report. closure activities. Please do not complete this
<ul> <li>22.</li> <li>Closure Method:</li> <li>Waste Excavation and Removal On-Site Closure Method</li> <li>If different from approved plan, please explain.</li> </ul>	Alternative Closure Method	Waste Removal (Closed-loop systems only)
23. <u>Closure Report Regarding Waste Removal Closure For Closed-lo</u> Instructions: Please indentify the facility or facilities for where the two facilities were utilized.	oop Systems That Utilize Above liquids, drilling fluids and drill c	Ground Steel Tanks or Haul-off Bins Only: uttings were disposed. Use attachment if more than
Disposal Facility Name:	Disposal Facility Po	ermit Number:
Disposal Facility Name:	Disposal Facility Po	ermit Number:
Were the closed-loop system operations and associated activities perf Yes (If yes, please demonstrate compliance to the items below)	ormed on or in areas that will not	
Required for impacted areas which will not be used for future service         Site Reclamation (Photo Documentation)         Soil Backfilling and Cover Installation         Re-vegetation Application Rates and Seeding Technique	and operations:	
<ul> <li>24.</li> <li>Closure Report Attachment Checklist: Instructions: Each of the mark in the box, that the documents are attached.</li> <li>Proof of Closure Notice (surface owner and division)</li> <li>Proof of Deed Notice (required for on-site closure)</li> <li>Plot Plan (for on-site closures and temporary pits)</li> <li>Confirmation Sampling Analytical Results (if applicable)</li> <li>Waste Material Sampling Analytical Results (required for on-side Disposal Facility Name and Permit Number</li> <li>Soil Backfilling and Cover Installation</li> <li>Re-vegetation Application Rates and Seeding Technique</li> <li>Site Reclamation (Photo Documentation)</li> <li>On-site Closure Location: Latitude</li> </ul>	ite closure)	to the closure report. Please indicate, by a check NAD: 1927 [1983]
25.		
Operator Closure Certification: I hereby certify that the information and attachments submitted with the belief. I also certify that the closure complies with all applicable closed	his closure report is true, accurate are requirements and conditions s	and complete to the best of my knowledge and pecified in the approved closure plan.
Name (Print):	Title:	
Signature:	Date:	
e-mail address:	Telephone:	

\*

OIL C	ONSERVATION CONSERVATION CONSERVATION	Ga	s Wei Min
Contator			
Normal of Producing Form No. A residual ted to so in up sto (and state) and si SECTION Muff 24	ie Well 160		
SECTION Muy 22	TOW/SHIP		
SF. 0779=	52		
	1		****

••

7

Thereby cartify that the information given above is the arc complete to the best of my knowledge.

Auto Folmington, Neur Musico . . . . .

log ze

	Lodestar Services, Inc. PO Box 4465, Durango, CO 81302 Si		Client: Project:	XTO Energy tank permitting		
PO Box 4465, Durang	io, CO 81302	Siting Criteria Information	Revised: Prepared by:	25-Jan-09 Trevor Ycas		
API#:	30	0-045-06426	USPLSS:	27N 10W 24 C		
Name:	J C GORDON	B No. 001	Lat/Long:	36.565240°, -107.850370°		
Depth to groundwater:	(	depth < 50'	Geologic formation:	Nacimiento Formation (Tn)		
Distance to closest continuously flowing watercourse:	9.5 miles l	N to 'San Juan River';	site elevation: 1878m/6161'			
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	~410' W to 'A	'410' W to 'Armenta Canyon' channel;				
	51.51 1		Soil Type:	Alfisol / Entisol		
Permanent residence, school, hospital, institution or church within 300'		NO				
			Annual Precipitation:	Navajo Reservoir: 11.90", Aztec: 9.77", Farmington (FAA): 8.21", Bloomfield: 8.71		
Domestic fresh water well or spring within 500'		NO	Precipitation Notes:	Historical daily max. precip.: 4.0" (Bloomfield)		
Any other fresh water well or spring within 1000'		NO				
Í	1	<u>x</u>	Annah ad	26N09W_iWaters.pdf, 26N10W_iWaters.pdf,		
Within incorporated municipal boundaries		NO	Attached Documents:	26N11W_iWaters.pdf, 27N09W_iWaters.pdf, 27N10W_iwaters.pdf, 27N11W_iwaters.pdf, 28N09W_iWaters.pdf, 28N10W_iWaters.pdf, 28N11W_iWaters.pdf		
Within defined municipal fresh water well field		NO	FM3500640550B_30- 045-06426.jpg	30-045-06426_gEarth-iWaters.jpg, 30-045-06426_gEarth PLS.jpg ,30-045-06426_topo-PLS.jpg		
Wetland within 500'		NO	Mining Activity:	None Near		
				NM_NRD-MMD_MinesMillQuarries_30-045-06426.jpg		
Within unstable area	1 - T	NO	later and a second s			
Within 100 year flood plain		NO				
Additional Notes:				<u></u>		
drains to 'San Juan River' via 'Armenta Canyon'		a canyon, <2m above st stream channel		headwaters of Armenta Canyon, NE of Angel Peak & W of Harris Mesa		

# JC GORDON B No.001 API#: 30-045-06426 Below Ground Tank Hydrogeologic Report for Siting Criteria

#### **General Geology and Hydrology**

14

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 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 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 <u>www.wrcc.dri.edu</u>). 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

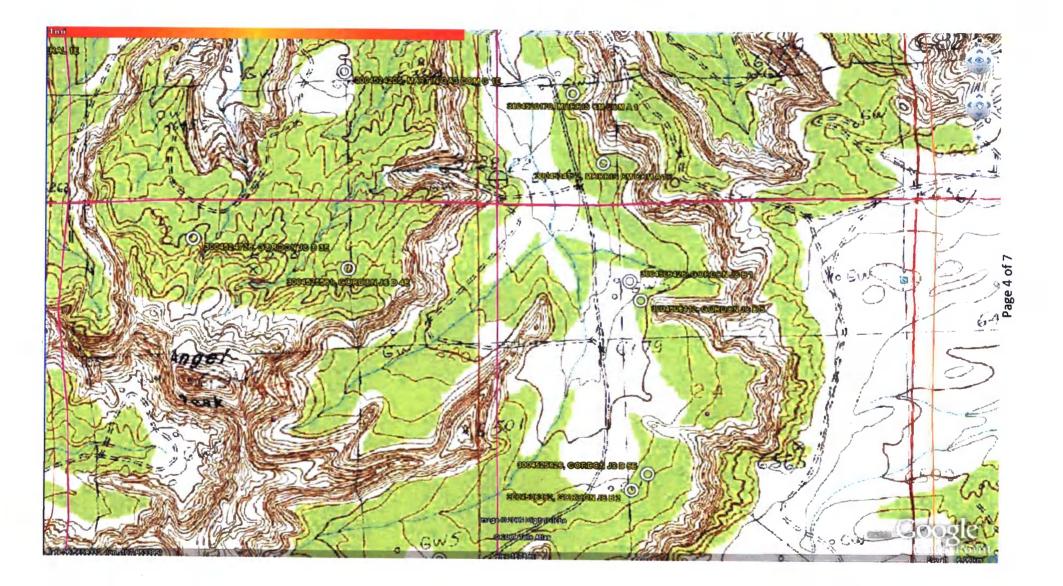
. . .

Depth to groundwater is estimated to be less than 50 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 depths 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 in the upper reaches of Armenta Canyon, near the stream channel, 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 is situated at an elevation of approximately 6160 feet. The proposed site is located approximately 410 feet east of Armenta Canyon Wash.

Groundwater is expected to be shallow within Armenta Wash. The elevation change of approximately 5-5 feet from the wash to the pit suggests that groundwater at the proposed site is shallower than 50 feet. State iWaters data points are sparsely distributed in this region. There are two iWaters data points approximately 4.1 miles to the northwest of the site, at an elevation of approximately 5985 feet. Depth to groundwater within the wells is 60 feet and 170 feet below ground surface. A map showing the location of wells in reference to the proposed pit location is attached.





2

Township: 28N	Range: 10W	Sections:		
NAD27 X:	Y:	Zone:	Search Radius:	
County: Ba	sin:	1	Number: Suffix:	
Owner Name: (First)	(Last)		- Non-Domestic ODomestic	All
POD / Surface D	ata Report Avg	Depth to Water Re	eport Water Column Report	
	Clear Form	iWATERS Menu	Help	

	(quarters are 1=NW 2=NE 3=SW 4=SE)				
POD Number	(quarters are biggest to smallest) Tws Rng Sec q q q Zone X	: у	Depth Well	Depth Water	Water (in feet) Column

No Records found, try again

	Fownship: 28N	Range: 09W	Sections:		
NA	D27 X:	Y:	Zone:	Search Radius:	
County:	Bas	sin:		Number: Suffix:	
Owner Name:	(First)	(Last)		ONOn-Domestic ODomestic	Al
-	POD / Surface Da	ata Report Avg	Depth to Water	Report Water Column Report	

## WATER COLUMN REPORT 08/06/2008

POD Number		s are	e big	gge	st	to	3=SW 4=SE) smallest)			Depth	Depth	Water	(in feet)
SJ 03746 POD1		09W					Zone	x	Y	Well 190	Water 40	Column 150	
SJ 00018 SJ 02800	28N 28N	09W 09W	20 24	-	-					135 200	71	64	

Record Count: 3

:

,	Fownship: 27N	Range: 11W	Sections:		
NA	D27 X:	Y:	Zone:	Search Radius:	
County:	Ba	sin:		Number: Suffix:	
Owner Name:	(First)	(Last)			estic 💿 All
_	POD / Surface D	Data Report Avg	Depth to Water F	Report Water Column Report	

# WATER COLUMN REPORT 08/06/2008

						3=SW 4=SE) smallest)			Depth	Depth	Water	(in feet)
POD Number SJ 01787	<b>Tws</b> 27N	-				Zone	x	Y	Well 650	Water	Column	(in idet)
SJ 00077	27N	11W	26	2 :	L 3				1102	550	552	

Record Count: 2

2

2

То	wnship: 27N	Range: 10W	Sections:		
NAD	27 X:	Y:	Zone:	Search Radiu	s:
County:	Bas	in:		Number:	Suffix:
Owner Name: (	First)	(Last)		- ONOn-Domestic	O Domestic  All
P	OD / Surface Da	ata Report Avg	Depth to Water F	Report Water Column	Report

## WATER COLUMN REPORT 08/06/2008

POD Number	(quarter (quarter Tws	s are	big	<u>jges</u>	t to	3=SW 4=SE) smallest)			Depth		Water	(in feet)
SJ 00032		100				Zone	x	Y	<b>Well</b> 235	Water 60	<b>Column</b> 175	
SJ 00033		10W		-	0				204	00	1/5	
SJ 00034	27N	10W	08	2 2	3				235	170	65	

Record Count: 3

New Mexico Office of the State Engineer POD Reports and Downloads
Township: 27N Range: 09W Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Suffix: Suffix:
Owner Name: (First) (Last) Own-Domestic Omestic All
POD / Surface Data Report Avg Depth to Water Report Water Column Report
Clear Form IWATERS Menu Help
POD / SURFACE DATA REPORT 08/12/2008

(acre ft per annum) DB File Nor Use Diversion Owner (quarters are 1=NW 2=NE 3=SW 4=SE)

DB File Nbr Use Diversion Owner	POD Number	(quarters are biggest to smallest XY are in Feet Source Twa Rng Sec q q q Zone X Y	UTM are in Meters) Start UTM_Zone Easting Northing Date	Finish Date	Depth Dept Well Water
No Records found, try again				Dates	Mett Mater

1

Tow	nship: 26N Ra	nge: 11W	Sections:		
NAD27	X:	Y:	Zone:	Search Radius:	
County:	Basin:		Para and Para	Number: Suffix:	
Owner Name: (Fin	st)	(Last)		− ○Non-Domestic ○Domest	ic 🔘 All
POL	/ Surface Data Re	port Avg De	pth to Water Re	eport Water Column Report	

## WATER COLUMN REPORT 08/11/2008

POD Number	(quarter	s are	• big	gge	est	to	3=SW 4=SE) smallest)			Depth	Depth	Water	(in feet)
SJ 01626	<b>Tws</b> 26N					ł	Zone	х	Y	Well	Water	Column	( 1000)
SJ 02734		11W		_	-	2				255 275	200 165	55 110	

Record Count: 2

Township: 20	N Range: 10W	Sections:		·
NAD27 X:	Y:	Zone:	Search Ra	dius:
County:	Basin:		Number:	Suffix:
Owner Name: (First)	(Last)		ONon-Dome	stic ODomestic  All
POD / Surfac	Data Report Avg	Depth to Water	Report   Water Col	umn Report

## WATER COLUMN REPORT 08/08/2008

POD Number	(quarter	s are	big	gge	est to	3=SW 4=SE smallest	)		Depth	Depth	Water	(in feet)
SJ 00193 SJ 00194		<b>Rng</b> 10W 10W	13	4	2	Zone	x	Y	<b>Well</b> 2287 2105	Water 500 500	<b>Column</b> 1787 1605	(0000)

Record Count: 2

Towns	ship: 26N Range: 09W	Sections:	
NAD27	X: Y:	Zone:	Search Radius:
County:	Basin:	Nur	nber: Suffix:
Owner Name: (First	t) (Last)	(	Non-Domestic ODomestic • Al
POD	Surface Data Report Avg	Depth to Water Report	Water Column Report

## WATER COLUMN REPORT 08/08/2008

	(quarter (quarter	s are	≥ 1= ≥ bi	NW :	2=NE st to	3=SW 4=SE) smallest)			Depth	Depth	Water	(i= 61)
POD Number	Tws	Rng	Sec	q	PF	Zone	x	Y	Well	Water	Column	(in feet)
SJ 02961	26N	09W		2				-	1500	Hater	COLUMN	
SJ 02962	26N	09W	01	3	2 3				1500			
SJ 01756	26N	09W	11	2 2	2 3				75	10	25	
SJ 03811 POD1	26N	09W	12	3 :	3 3				348	40	35	
SJ 00412	26N	09W	16	4 2	)				202	175	173	
SJ 00214	2.6N	09W	26	2 4	2					65	137	
SJ 00064	26N	09W		4 2	2 1				946	230	716	
SJ 00063	26N	09W		4 2					490	215	275	
*		0.011	20	-1 2					479	234	245	

Record Count: 8

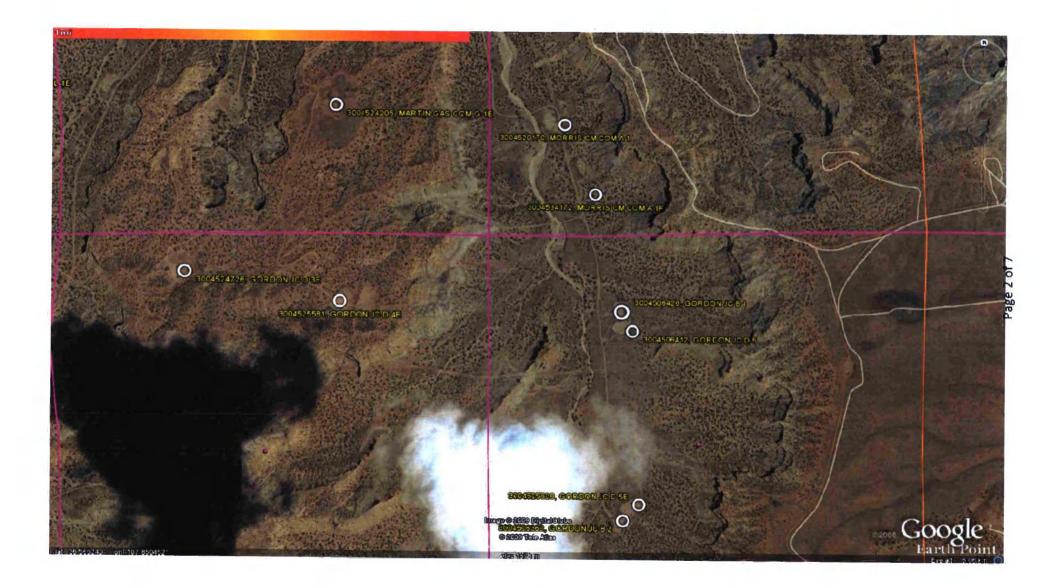
.

	ownship: 28N	Range: 11W	Sections:		-
NAI	027 X:	Y:	Zone:	Search Radius:	
County:	Bas	sin:		Number: Suffix:	
Owner Name:	(First)	(Last)		○Non-Domestic ○Do	mestic  All
	POD / Surface Da	ata Report Avg	Depth to Water I	Report Water Column Report	1

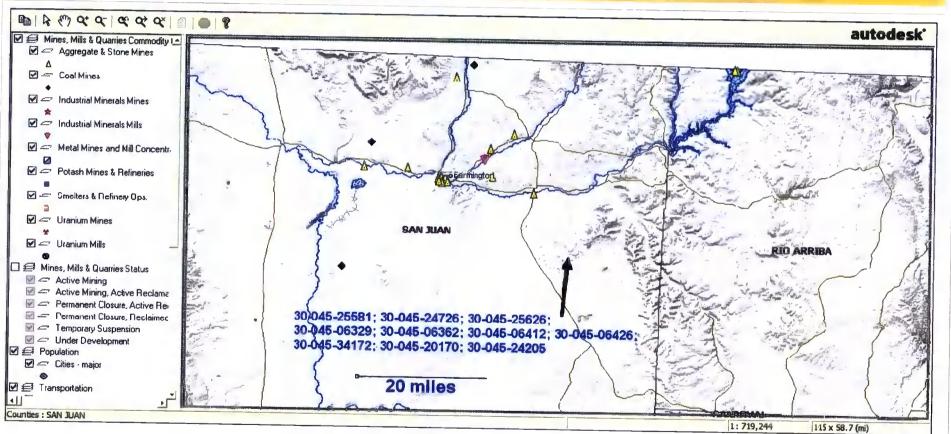
## WATER COLUMN REPORT 08/06/2008

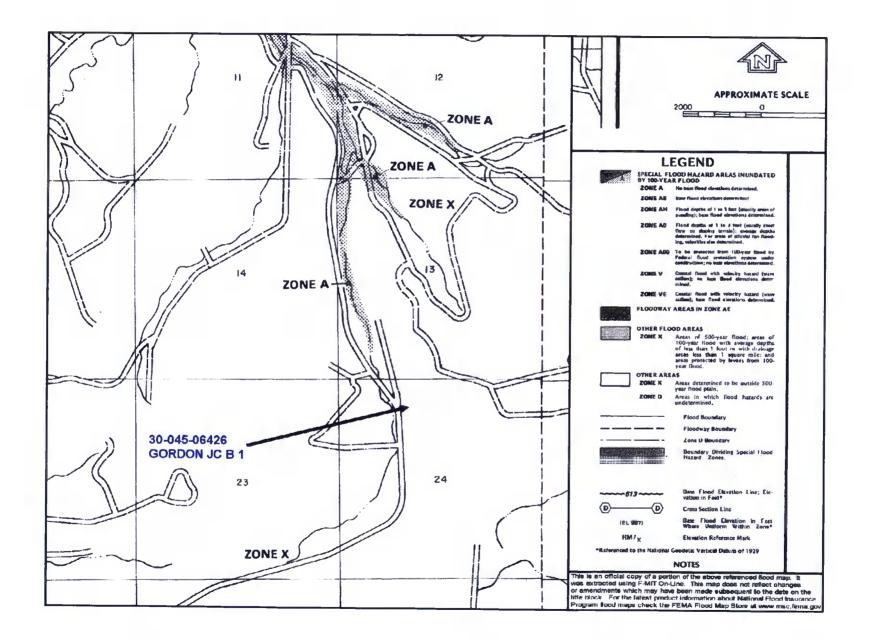
				3=SW 4=SE) smallest)		Depth	Depth	Water	(in feet)			
POD Number SJ 03193 SJ 02916	<b>Tws</b> 2.8N	<b>Rng</b> 11W	<b>Sec</b> 07	<b>q q q q q</b>	<b>9</b>		x	Y	Well 8.0	Water 35	Column 45	(In Idd()
30 02916	28N	11W	07	34	4				98	70	28	

Record Count: 2



# Mines, Mills and Quarries Web 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.

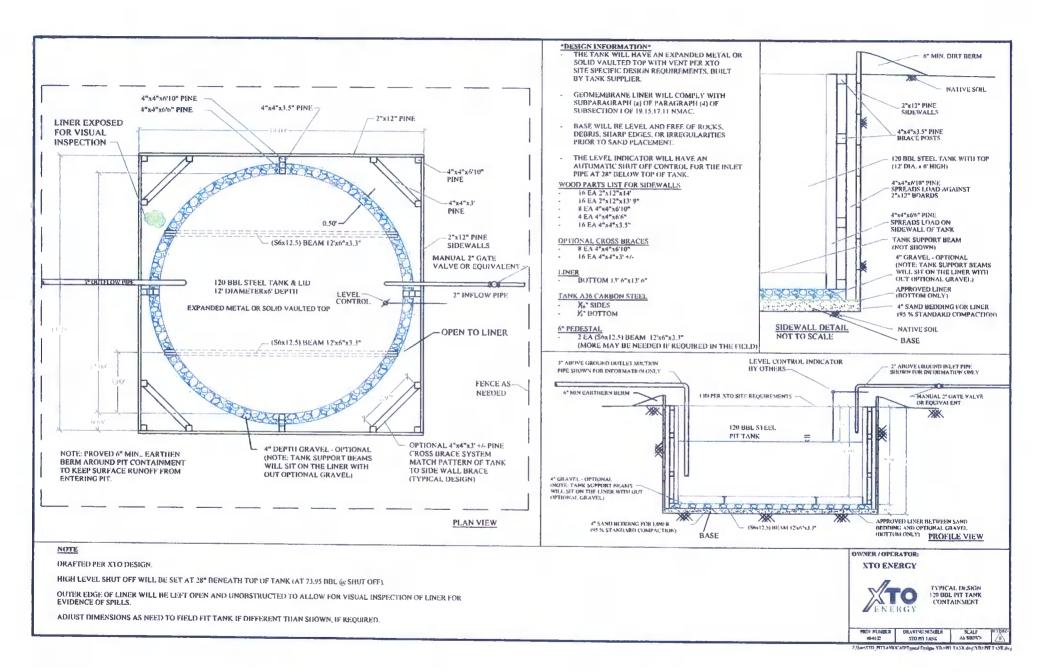
#### General Plan

- 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 ¼" 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.
- 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).

- 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. 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 Name: API No.:										
					API No.:					
gals	Sec:		Township:		Range:					
XTO Inspector's	Inspection	Inspection	Any visible liner	Any visible signs of	Collection of surface	Visible layer	Any visible signs	Freeboard		
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. (ft)		
	_									
						·				
					<u> </u>	-				
otes:	Provide De	tailed Descrip	ption:							
SC:										

:

# 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.
- 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.

- 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.
- 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

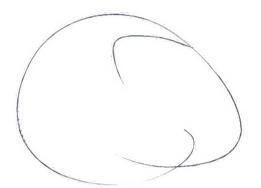
The surface owner shall also be notified prior to the implementation of any closure operations of below-grade tanks as per the approved closure plan using certified mail, return receipt requested.

- 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 divisionapproved 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.



5