District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410State of New Mexico Energy Minerals and Natural Resources DepartmentDistrict IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 COULD ED 16 AT 11 41Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505	For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office. 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-Loop System, Below-Grade T Proposed Alternative Method Permit or Closure P Type of action: Permit of a pit, closed-loop system, below-grade tank, or Closure of a pit, closed-loop system, below-grade tank, or Modification to an existing permit Closure plan only submitted for an existing permitted or	<u>Cank, or</u> <u>Plan Application</u> r proposed alternative method or proposed alternative method • non-permitted pit, closed-loop system,
below-grade tank, or proposed alternative method <i>Instructions: Please submit one application (Form C-144) per individual pit, closed-loop syste</i> . Please be advised that approval of this request does not relieve the operator of liability should operations result ir environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable go	em, below-grade tank or alternative request n pollution of surface water, ground water or the overnmental authority's rules, regulations or ordinances.
1. Operator: XTO Energy, Inc. OGRID #: Address: #382 County Road 3100, Aztec, NM 87410 OGRID #: Facility or well name: Federal F #2E OCD Permit Number: API Number: 30-045-30356 OCD Permit Number: U/L or Qtr/Qtr O Section 04 Township 27N Range 10W Could Center of Proposed Design: Latitude 36.59959 Surface Owner: Federal State Private Tribal Trust or Indian Allotment	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	ther 1 Dimensions: L x W x D
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 activities whi intent) Drying Pad Above Ground Steel Tanks Haul-off Bins Other Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Liner Seams: Welded Factory Other	ich require prior approval of a permit or notice of] Other
4. Subsection I of 19.15.17.11 NMAC Volume: <u>120</u> bbl Type of fluid: <u>Produced Water</u> Tank Construction material: <u>Steel</u> Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic ov Visible sidewalls and liner Visible sidewalls only Other <u>Visible sidewalls, vaulted, autom</u> Liner type: Thicknessmil HDPE PVC Other	verflow shut-off natic high-level shut off, no liner
 Alternative Method: Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environme 	ental 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, hospital, institution or church)

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify Four foot height, steel mesh field fence (hogwire) with pipe top railing

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)

Screen Netting Other Expanded metal or solid vaulted top

Monthly inspections (If netting or screening is not physically feasible)

Signs: Subsection C of 19.15.17.11 NMAC

7.

9

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 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

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

 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

11.
<u>Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist</u> : 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. Mydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC 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:
12.
<u>Closed-loop Systems Permit Application Attachment Checklist</u> : 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)
13. 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 Luner 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 Sing of the appropriate requirements of 19.15.17.11 NMAC Sing of the appropriate requirements of 19.15.17.11 NMAC Detraing and Maintenance Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Sing of the appropriate requirements of 19.15.17.12 NMAC Sing of the appropriate requirements of 19.15.17.11 NMAC Sing of the appropriate requirements of 19.15.17.11 NMAC Sing of the appropriate requirements of 19.15.17.11 NMAC Sing of the appropriate requirements of 19.15.17.12 NMAC Sing of the appropriate requirements of 19.15.17.13 NMAC Sing of the appropriate re
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) Image: Proposed Closure Method (Consideration)
15. 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.

^{16.} <u>Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only</u> : (19.15.17.13.1 Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if the second states of the second states tates of the second states of the second states of the	D NMAC) more than two								
facilities are required.									
Disposal Facility Name: Disposal Facility Permit Number:									
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that <i>will not</i> be used for future ser Yes (If yes, please provide the information below) No	vice and operations?								
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 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									
^{17.} <u>Siting Criteria (regarding on-site closure methods only)</u> : 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sour provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate dist considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Just demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	rce material are rict office or may be fications and/or								
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 obtained from nearby wells	□ Yes □ No □ NA								
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA								
 Ground water is more than 100 feet below the bottom of the buried waste. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells 	□ Yes □ No □ NA								
 Within 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. 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; 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								
 18. On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure planet by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - 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 	an. Please indicate, 15.17.11 NMAC								

 Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on
 Soil Cover Design - based upon the appropriate requirements of Subsection H 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)

Re-vegetation Plan - based upon the appropriate requirements of Subsection For Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

1		
19. Operator Application Certification: I hereby certify that the information submitted with this application is true, accurately accurately applied to the information of the second	urate and complete to	the best of my knowledge and belief.
Name (Print): Kim Champlin	Title:	Environmental Representative
Signature: Kim Champlin	Date:	02/02/2009
e-mail address: kim_champlin@xtoenergy.com	Telephone:	(505) 333-3100
20. OCD Approval: Permit Application (including closure plan) Closure	Plan (only)	Conditions (see attachment)
OCD Representative Signature:		Approval Date: 2/27/13
Title: Senor Haleologist	OCD Permit Nun	nber:
^{21.} Closure Report (required within 60 days of closure completion): Subsection Instructions: Operators are required to obtain an approved closure plan prior The closure report is required to be submitted to the division within 60 days of section of the form until an approved closure plan has been obtained and the	n K of 19.15.17.13 Nl r to implementing any f the completion of the closure activities have Closure Con	MAC closure activities and submitting the closure report. e closure activities. Please do not complete this e been completed. apletion Date:
22		
Closure Method: Waste Excavation and Removal On-Site Closure Method If different from approved plan, please explain.	native Closure Metho	d 🗌 Waste Removal (Closed-loop systems only)
^{23.} Closure Report Regarding Waste Removal Closure For Closed-loop System Instructions: Please indentify the facility or facilities for where the liquids, du two facilities were utilized.	ns That Utilize Above Filling fluids and drill	e Ground Steel Tanks or Haul-off Bins Only: cuttings were disposed. Use attachment if more than
Disposal Facility Name:	Disposal Facility l	Permit Number:
Disposal Facility Name:	Disposal Facility	Permit Number:
Were the closed-loop system operations and associated activities performed on Yes (If yes, please demonstrate compliance to the items below) No	or in areas that will no	t be used for future service and operations?
Required for impacted areas which will not be used for future service and operation Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique	ttions:	
 24. Closure Report Attachment Checklist: Instructions: Each of the following mark in the box, that the documents are attached. Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closure Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) 	items must be attache)	d to the closure report. Please indicate, by a check
On-site Closure Location: Latitude Long	gitude	NAD: 1927 1983
 25. Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure required 	e report is true, accurate ments 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:	

Dis nuct I State of New Mexico Form C-102 PO Box 1980, Hobbs. NM 83241-1980 Revised February 21, 1994 Energy, Minerals & Natural Resources Department Instructions on back District II PO Drawer DD, Antesia, NM 88211-0719 Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies OIL CONSERVATION DIVISION 1: 77 PO Box 2088 District III 1000 Rib Brazos Rd., Aztec. NM 87410 Santa Fe, NM 87504-2088 AMENDED REPORT District IV PO Box 2058, Santa Fe, NM 87504-2088



Permit Criteria tion Sheet Pro	Project: Revised: epared by: USPLSS: Lat/Long: Geologic formation: N	Pit Permits 1/22/2009 Daniel Newman T27N,R10W,040 36.59959 / -107.8976 Jacimiento Formation
Criteria Intion Sheet Pro	Revised: epared by: USPLSS: Lat/Long: Geologic formation: N	1/22/2009 Daniel Newman T27N,R10W,040 36.59959 / -107.8976 Jacimiento Formation
e San Juan	epared by: USPLSS: Lat/Long: Geologic formation: N	Daniel Newman T27N,R10W,04O 36.59959 / -107.8976 Jacimiento Formation
6 E e San Juan	USPLSS: Lat/Long: Geologic formation: N	T27N,R10W,040 36.59959 / -107.8976 lacimiento Formation
6 E e San Juan	USPLSS: Lat/Long: Geologic formation: N	T27N,R10W,040 36.59959 / -107.8976 Jacimiento Formation
E1 e San Juan	Lat/Long: Geologic formation: N	36.59959 / -107.8976 Jacimiento Formation
e San Juan	Geologic formation: N	lacimiento Formation
e San Juan		
unnamed		
	Soil Type:	Entisols & Aridsoils
Pre	Annual cipitation:	Bloomfield 8.71", Farmington 8.21", Otis 10.41"average
Pre	ecipitation Notes:	Historical daily max: Bloomfield 4.19"
Dr	Attached ocuments:	
		Fopo map, ground water data map, ariel photo, mines and quarries map, FEMA map
Minii	ng Activity:	No
X'		
	x'	x,

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

General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology (Dane and Bachman, 1965). The proposed pit location will be located in the southern Kutz 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 mate 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 pinionjuniper 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 Kutz Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstone occur in a sparsely vegetated and arid 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 Kutz Canyon at an elevation of approximately 6,111 feet and approximately 2.96 miles west of Kutz Canyon. Ground water is expected to be shallow within Kutz Canyon. The floor of Kutz Canyon sits at 5,736 feet, an elevation difference of approximately 370 feet exists between the site and the floor of Kutz Canyon. The elevation difference of almost 370 feet between the proposed site and the floor of Kutz 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 4,500 feet to the west 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.





		AVER/	AGE I	DEPTH OF	WATER RE	PORT 1	1/11/20	08		
								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	х	Y	Wells	Min	Max	Avg
SJ	26N	09W	11				1	40	40	40
SJ	26N	09W	12				1	175	175	175
SJ	26N	09W	16				1	65	65	65
SJ	26N	09W	26				3	215	234	226

		AVER/	AGE	DEPTH	OF	WATER	REPORT	1	1/10/200	08			
										(Depth	Water	in	Feet)
Bsn	Tws	Rng	Sec	Zone	3	Х	3	C	Wells	Min	Max	c	Avg
SJ	27N	10W	08						2	60	170)	115

		AVER/	AGE	DEPTH	OF	WATER	REPORT	1	1/03/200	8			
										(Depth	Water	in	Feet)
Bsn	Tws	Rng	Sec	Zone	3	х	3	Y	Wells	Min	Max	c	Avg
SJ	27N	11W	26						1	550	550)	550

AVERAGE DEPTH OF WATER REPORT 11/03/2008

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	х	Y	Wells	Min	Max	Avg
RG	27N	12W	02				1	145	145	
5J	27N	12W	13				4	177	422	306

AVERAGE DEPTH OF WATER REPORT 01/21/2009

		AVER	HOE L	EFIN OF	WAIER RE.	FORI U	1/21/200	09		
								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	х	Y	Wells	Min	Max	Avg
SJ	28N	08W	14				1	480	480	480
SJ	28N	08W	17				1			
SJ	28N	08W	18				1	800	800	500

Record Count: 3

*

		A	ERAG	S DEPIN	Ur	WAIER	REPUR.	1 01/09	(Depth	Water in	Feet)
Bsn	Tws 25N	Rng 09W	Sec 20	Zone		х	Y	Wells 2	Min 40	Max 71	Avg
Re co	rd Ca	unt:	2								

. .

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	09W	02				28	3	71	11
SJ	29N	09W	03				10	2	40	11
SJ	29N	09W	04				2	5	20	13
SJ	29N	09W	05				3	16	20	18
SJ	29N	09W	06				1	40	40	40
SJ	29N	09W	07				1	6	6	6
SJ	29N	09W	80				3	24	100	65
SJ	29N	09W	09				2	5	6	6
SJ	29N	09W	09		273716	2090921	1	250	250	250
SJ	29N	09W	16				2	87	100	94
SJ	29N	09W	18				9	1	5	4

AVERAGE DEPTH OF WATER REPORT 01/05/2009

5

6

4

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AVERAGE DEPTH OF WATER REPORT 11/15/2008 (Depth Water in Feet) Rng Sec Y Wells Min Max Bsn Tws Zone х Avg 450 29N 10W 25 450 450 1 RG 3 10 17 SJ 29N 10W 13 20 1 65 65 65 SJ 29N 10W 18 3 SJ 29N 10W 19 2 9 4 2 12 10W 20 SJ 29N 5 7 30 17 29N 10W 21 SJ 1 20 20 SJ 29N 10W 22 20 29N 10W 23 1 16 16 16 SJ 3 20 34 28 SJ 29N 10W 24 1 12 12 10W 25 12 SJ 29N 1 4 4 29N 10W 26 SJ 1 31 31 31 SJ 29N 10W 27 23 9 10W 28 4 70 SJ 29N 1 20 20 SJ 29N 10W 28 W 484600 2075600 20 29N 10W 29 1 35 35 35 SJ 1 50 50 29N 10W 29 270344 2071311 50 SJ 29N 10W 30 1 10 10 10 SJ 1 140 140 140 SJ 29N 10W 33

1

1

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SJ

SJ

29N

10W 35

29N 10W 36

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	11W	07				2	55	210	133
SJ	29N	11W	10				1	48	48	48
SJ	29N	11W	13				1	300	300	300
SJ	29N	11W	14				4	6	56	24
SJ	29N	11W	15				3	12	30	21
SJ	29N	11₩	16				1	40	40	40
SJ	29N	11W	17				2	6	80	43
SJ	29N	11W	19				3	18	55	31
SJ	29N	11W	19		440000	2077700	1	6	6	6
SJ	29N	11W	20				2	3	30	17
SJ	29N	11W	21				7	8	55	18
SJ	29N	11W	22				25	3	59	15
SJ	29N	11W	23				15	15	30	21
SJ	29N	11W	24				2	12	18	15
SJ	29N	11W	25				1	25	25	25
SJ	29N	11W	26				1	43	43	43
SJ	29N	11W	27				20	6	186	29
SJ	29N	11W	28				9	5	115	27
SJ	29N	11W	28		267348	2075529	1	15	15	15
SJ	29N	11W	29				9	4	28	13
SJ	29N	11W	30				6	6	25	16
SJ	29N	11W	31				1	40	40	40
SJ	29N	11W	31		266438	2067001	1	45	45	45
SJ	29N	11W	33				1	30	30	30

Record Count: 119







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.
- 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).

- 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.



^{7.} SnexTD_PITANKCADETypical Designs YTO PIT TASK dog XTO PIT T SSK dog

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.

		MONT	ILT BELO	W GRADE TANK	INSPECTIC	NFURM		
Well Nam	ne:							
Legals	Sec:		Township:		Range:			
XTO Inspector's Name	Inspection Date	Inspection Time	Any visible liner tears (Y/N)	Any visible signs of tank overflows (Y/N)	Collection of surface run on (Y/N)	Visible layer of oil (Y/N)	Any visible signs of a tank leak (Y/N)	Freeboard Est. (ft)
Notes:	Provide De	tailed Descri	ption:					
Misc:								

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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.