District I 1625 N French Dr , Hobbs, NM 88240 1301 W Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 1220 S St Francis Dr , Santa Fe, NM 87505

#### State of New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

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

157	7

#### Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances \_\_\_\_\_ OGRID# 5380 Operator XTO Energy, Inc Address #382 County Road 3100, Aztec, NM 87410 Facility or well name Breech D #240G OCD Permit Number API Number 30-039-31013 U/L or Qtr/Qtr D Section 15 Township 26N Range 6W County Rio Arriba \_\_\_\_\_Longitude \_\_\_\_\_107 46075 NAD ☐1927 🔀 1983 Center of Proposed Design Latitude 36 49197 Surface Owner K Federal State Private Tribal Trust or Indian Allotment X Pit: Subsection F or G of 19 15 17 11 NMAC Temporary X Drilling Workover ☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A X String-Reinforced Liner Seams X Welded X Factory Other Volume. \_\_ bbl Dimensions L 200 x W 80 x D 8-12 X Closed-loop System: Subsection H of 19.15.17 11 NMAC Type of Operation P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) To be used during completion operations ☐ Drying Pad X Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other □ Lined □ Unlined Liner type Thickness \_\_\_\_\_mil □ LLDPE □ HDPE □ PVC □ Other \_\_\_\_ Liner Seams Welded Factory Other 891011 Below-grade tank: Subsection I of 19 15 17 11 NMAC \_\_\_\_bbl Type of fluid \_\_\_\_\_\_ Volume Tank Construction material ☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off ☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other Liner type. Thickness mil HDPE PVC Other Alternative Method:

Submittal of an exception request is required Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Eencing: 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)  X Four foot height, four strands of barbed wire evenly spaced between one and four feet					
Alternate Please specify					
Netting: Subsection E of 19 15 17 11 NMAC (Applies to permanent pits and permanent open top tanks)  Screen Netting Other  Monthly inspections (If netting or screening is not physically feasible)					
Signs: Subsection C of 19 15 17 11 NMAC  ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  ☒ Signed in compliance with 19 15 3 103 NMAC					
Administrative Approvals and Exceptions:  Justifications and/or demonstrations of equivalency are required. Please refer to 19 15 17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:  Administrative approval(s). Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau consideration of approval. Fencing- Hogwire.  Exception(s). Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	office for				
Siting Criteria (regarding permitting): 19.15 17 10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the approoffice 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.	priate district pproval.				
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells	Yes No				
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)  - Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☐ No				
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application (Applies to temporary, emergency, or cavitation pits and below-grade tanks)  - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	☐ Yes ☐ No ☐ NA				
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application (Applies to permanent pits)  - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	☐ Yes ☐ No ☐ NA				
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application  NM Office of the State Engineer - iWATERS database search, Visual inspection (certification) of the proposed site	Yes No				
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended  - Written confirmation or verification from the municipality, Written approval obtained from the municipality	☐ Yes ☐ No				
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☐ No				
Within the area overlying a subsurface mine  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division					
Within an unstable area  - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources, USGS, NM Geological Society, Topographic map	☐ Yes ☐ No				
Within a 100-year floodplain FEMA map	☐ Yes ☐ No				

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19 15 17 9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Mac Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19 15 17 9 NMAC  Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19 15 17 9 NMAC  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15 17 10 NMAC  Design Plan - based upon the appropriate requirements of 19 15 17 11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17 12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC  and 19 15 17 13 NMAC
☐ Previously Approved Design (attach copy of design) API Number or Permit Number
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19 15 17 9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19 15 17 9  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19 15 17 10 NMAC  Design Plan - based upon the appropriate requirements of 19 15 17 11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17 12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19.15 17 13 NMAC
Previously Approved Design (attach copy of design) API Number
Previously Approved Operating and Maintenance Plan API Number. (Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19 15 17 9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.    Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19 15 17 9 NMAC   Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15 17 10 NMAC   Climatological Factors Assessment   Certified Engineering Design Plans - based upon the appropriate requirements of 19 15 17 11 NMAC   Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19 15 17 11 NMAC   Leak Detection Design - based upon the appropriate requirements of 19 15 17.11 NMAC   Quality Control/Quality Assurance Construction and Installation Plan   Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17.12 NMAC   Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19 15 17 11 NMAC   Nuisance or Hazardous Odors, including H <sub>2</sub> S, Prevention Plan   Emergency Response Plan   Oil Field Waste Stream Characterization   Monitoring and Inspection Plan   Erosion Control Plan   Closure Plan - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17 13 NMAC
<u>Proposed Closure</u> : 19 15 17 13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.
Type Morkover 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  Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19 15 17 13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.  Protocols and Procedures - based upon the appropriate requirements of 19 15 17 13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19 15 17 13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19 15 17 13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

16 Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Stee		
Instructions: Please indentify the facility or facilities for the disposal of liquids, drilli facilities are required.	ng fluids and drill cuttings. Use atta	ichment if more than two
Disposal Facility Name Envirotech Disp	oosal Facility Permit Number	NM01-0011
Disposal Facility Name IEI Dis	oosal Facility Permit Number	NM01-0010B
Will any of the proposed closed-loop system operations and associated activities occur of Yes (If yes, please provide the information below) ☒ No	on or in areas that will not be used for	r future service 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 I of  Site Reclamation Plan - based upon the appropriate requirements of Subsection Countries.	19 15 17 13 NMAC	7.13 NMAC
Siting Criteria (regarding on-site closure methods only): 19 15 17 10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closs provided below. Requests regarding changes to certain siting criteria may require ad considered an exception which must be submitted to the Santa Fe Environmental Bus demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for g	ministrative approval from the appro reau office for consideration of appr	opriate district office or may be
Ground water is less than 50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search, USGS, Data obt	ained 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 obt	ained from nearby wells	X 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 obt	ained from nearby wells	X Yes ☐ No☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other signific lake (measured from the ordinary high-water mark)  - Topographic map, Visual inspection (certification) of the proposed site	ant watercourse or lakebed, sinkhole,	, or playa Yes X No
Within 300 feet from a permanent residence, school, hospital, institution, or church in e  - Visual inspection (certification) of the proposed site, Aerial photo, Satellite ima		tion Yes 🛛 No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less that 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 (certification)	g, in existence at the time of initial ap	
Within incorporated municipal boundaries or within a defined municipal fresh water we adopted pursuant to NMSA 1978, Section 3-27-3, as amended  - Written confirmation or verification from the municipality, Written approval ob-	•	rdinance Yes X No
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map, Topographic map, Visual ins	spection (certification) of the propose	☐ 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 & ! Society, Topographic map	Mineral Resources, USGS, NM Geol	logical Yes 🛛 No
Within a 100-year floodplain - FEMA map		☐ Yes ☒ No
On-Site Closure Plan Checklist: (19 15 17 13 NMAC) Instructions: Each of the followy a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Sub Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - Protocols and Procedures - based upon the appropriate requirements of 19 15 17  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection Market Material Sampling Plan - based upon the appropriate requirements of Subsection Hoff Soil Cover Design - based upon the appropriate requirements of Subsection Hoff	nents of 19 15 17 10 NMAC section F of 19 15 17 13 NMAC briate requirements of 19 15 17 11 NN based upon the appropriate requirem 13 NMAC ments of Subsection F of 19 15.17 13 section F of 19 15.17 13 NMAC cuttings or in case on-site closure stan 19 15 17 13 NMAC	MAC nents of 19 15 17 11 NMAC NMAC
Re-vegetation Plan - based upon the appropriate requirements of Subsection 1 of		

Operator Application Certification:
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print) Malia Villers Title Permitting Tech
Signature Malia Villera Date 1/14/2011
e-mail address malia_villers@xtoenergy com Telephone. (505) 333-3100
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: Approval Date:/26/1/
Title:OCD Permit Number:
Closure Report (required within 60 days of closure completion): Subsection K of 19 15 17 13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.
Closure Completion Date:
Closure Method:  Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)  If different from approved plan, please explain
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.
Disposal Facility Name Disposal Facility Permit Number
Disposal Facility Name Disposal Facility Permit Number
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?  Yes (If yes, please demonstrate compliance to the items below)  No
Required for impacted areas which will not be used for future service and operations  Site Reclamation (Photo Documentation)
Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.
Proof of Closure Notice (surface owner and division)
Proof of Deed Notice (required for on-site closure)
☐ Plot Plan (for on-site closures and temporary pits) ☐ Confirmation Sampling Analytical Results (if applicable)
Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number☐ Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
Site Reclamation (Photo Documentation)
On-site Closure Location Latitude Longitude NAD 1927 1983
Operator Closure Certification:
I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.
Name (Print) Title
Signature Date ·
e-mail address Telephone



### Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy
Project:	Pıt Permits
Revised:	11/17/2010
Prepared by:	Ashley Ager

F 970 385	Information Sheet	Prepared by:	Ashley Ager
<u>-</u>			
API#:	NA	USPLSS:	T26N, R6W, S15D
Name:	Breech D #240G	Lat/Long:	36.49197, -107.46075
Depth to groundwater:	Greater than 100 feet	Geologic formation:	San Jose Formation
Distance to closest continuously flowing watercourse:	26 miles NE to San Juan River		,
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	677 feet northwest of Dogie Canyon		
		Soil Type:	Entisols
Permanent residence, school, hospital, institution or church within 300'	NO		
		Annual Precipitation:	8.21" - Farmington, 10 41" Otis, 8 71" Bloomfield
Domestic fresh water well or spring within 500'	NO	Precipitation Notes:	no significant precipitation events on record
Any other fresh water well or spring within 1000'	NO	•	
Within incorporated municipal boundaries	NO	Attached Documents:	Hydrogeologic Report Figure 1. Topographic Map Figure 2 <sup>.</sup> Aerial Photo
Within defined municipal fresh water well field	NO	;	Figure 3 Mines, Mills and Quarries Map Figure 4' Water Well and Surface Water Features Figure 5 Municipal Boundaries Map Figure 6 FEMA Flood Zone Map iWaters Data
Wetland within 500'	NO - 900 feet southeast of wetlands	Mining Activity:	None identified in the vicinity
Within unstable area	NO	t.	
Within 100 year flood plain	NO		
Additional Notes:		-	

DISTRICT I 1625 N Fench Dr , Hobbs, N M 88240

### State of New Mexico Energy, Minerals & Natural Resources Department

Form C-102 Revised October 12, 2005 Instructions on back

DISTRICT II 1301 W Grand Avenue, Artesia, N.M. 88210 DISTRICT III 1000 Rio Brazos Rd , Aztec, N.M. 87410

OIL CONSERVATION DIVISION 1220 South St Francis Dr Santa Fe, NM 87504-2088

Submit to Appropriate District Office State Lease — 4 Copies Fee Lease — 3 Copies

DISTRICT IV

☐ AMENDED REPORT

					N AND A	CREAGE DED				
¹ API	Number			<sup>2</sup> Pool Code			<sup>3</sup> Pool Nam	e		
*Property Co	ode			<sup>3</sup> Property Name <sup>6</sup> Well Numb BREECH D 240G						
<sup>7</sup> OGRID No	,			Operator Name SEI						
					XTO ENERGY INC 6493'					
					<sup>10</sup> Surface	e Location				
UL or lot no D	Section 15	Township 26-N	Range 6→W	Lot Idn	Feet from the 915	North/South line NORTH	Feet from the	East/West line WEST	County RIO ARRIBA	
	1 13	20-14		om Hole	L	If Different Fr			INO ANNOA	
UL or lot no	Section	Township	Ronge	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
				,		,			,	
Dedicated Acre	s	13	loint or Infill		14 Consolidation	Code	15 Order No	*		
NO ALLOV	WABLE W					TION UNTIL ALL			CONSOLIDATE	
		OR A 1	NON-STA	ANDARD	UNIT HAS	BEEN APPROVE	D BY THE D	IVISION		
1010' (W) . 1010'	915,	N 89*50 2649 4	1' (M)		JRFACE:	7* N. (NAD 83)	I hereby of its true and belief, and interest or including tright to discontract we interest, or	OPERATOR ( certify that the inform d complete to the be in that this organization r unleased mineral int the proposed bottom rill this well at this te with an owner of such or to a voluntary pool y pooling order hereta	ation contained hereings to finy knowledge on either owns a work erest in the land hole location or has acation pursuant to a a mineral or working ng agreement or a fore entered by the	
7.04				l l		0 <b>75° W. (NAD 83</b> 3204" N (NAD 27)	) Signature		Date	
268						5204 N (NAD 27) 553085" W (NAD 2	7) Printed No	me		
0				  -			18 5	URVEYOR CE	RTIFICATION	
D 3 1/4" BC 957 BLM							I hereby cert was plotted f or under my	ify that the well local rom field notes of act	ion shown on this pla ual surveys made by m the same is true and	
							Date of Su	nd Sed ON PHOTOSES	NOSURVE DO SURVE DO S	

NAD 83 LAT. = 36.49197° N LONG. = 107.46075° W 'XTO ENERGY INC. BREECH D No. 240G, 915 FNL 1010 FWL NAD 27 SECTION 15, T26N, R6W, N.M.P.M., RIO ARRIBA COUNTY, N.M. LAT = 36°29'31.06204" N GROUND ELEVATION: 6493' DATE: NOVEMBER 26, 2008 LONG. = 107°27'36.53085" © ℃ В CONSTRUCTION ZONE A (5) C 40 C 62 C 18 NAD 83 LAT: 36.49212° N LONG: 107.46095° W NAD 27 LAT: 36\*29'31.59319" N LONG: 107\*27'37.25737" W C.OP PIT 200' x 80' 8' DEEP 12' DEEP 4 LAYDOWN N 42°08' E Wellhead to Back Wellhead to Front F 2 1 1 REAR 145 C 08 145 18 С METER RUN side --- --35' WELL HEAD PIT TANK PIT TANK (FENCE)  $_{\text{COMPRESSOR}}$ (FENCE) 2 ② C' 3 SHED A' F 24 F 59 B, EDGE OF DISTURBANCE F 31 255' X 290' 355' X 390' = 3 18 ACRES RESERVE PIT DIKE TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE)
BLOW PIT OVERFLOW PIPE HALFWAY BETWEEN TOP AND BOTTOM AND TO EXTEND OVER PLASTIC LINER AND INTO BLOW PIT DAGGETT ENTERPRISES, INC IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION NOTE C/L ELEV A-A 6500 6490 6480 6470 ELEV B-B' 6500 6490 Surveying and Oil Field Services
P O Box 510 Farmington, NM 87499
Phone (505) 326-1772 - Fox (505) 326-6019
NEW MEXICO L S No 8894 6480 Enterprises, I and Oil Field Serv 6470 08/26/ ELEV C-C' C/L 6500 6490 6480 6470 CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION





#### Breech D #240G

#### 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 the surficial geology (Dane and Bachman, 1965). The proposed pit location will be situated on the undulating surface of Ensenada Mesa near the head of Ice Canyon (Figure 1). The predominant geologic formation is the San Jose Formation, which underlies surface soils or is exposed as sandstone outcrops. The San Jose Formation occurs in both New Mexico and Colorado and its outcrop forms the land surface over much of the eastern half of the central basin.

Cretaceous and Tertiary sandstones and Quaternary alluvial deposits serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). In the proposed area, the San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and shale. Groundwater is associated with alluvial and fluvial sandstone aquifers. Porous sandstones form the principal aquifers, while relatively impermeable shales and mudstones form confining units between the aquifers (Stone et al., 1983). The aquifers are found between 0 and 2700 feet deep (Stone et al., 1983). The reported or measured discharge from numerous water wells completed in the formation range from 0.15 to 61 gallons per minute (gpm) of production, with a median of 5 gpm. Most of the wells provide water for livestock and domestic purposes.

The formation is suitable for recharge from precipitation due to the sandy nature of overlying soils, which are highly permeable and absorbent. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the formation by the San Juan River and its main tributaries all tend to reduce the effective recharge to the formation. Most recharge occurs during the winter months during snowmelt periods within the upper elevations (Western Regional Climate Center, www.wrcc.dri.edu).

The predominant vegetation is sagebrush and grasses with a more restricted piñon-juniper association (Dick-Peddie, 1993).

#### Site-Specific Hydrology

Ensenada Mesa lies to the north of Largo Canyon. It consists of shales and sandstones of the San Jose Formation (Dane and Bachman, 1965). The site in question is located on the western flank of Dogie Canyon at an elevation of approximately 6,495 feet above sea level (Figures 1 and 2). The immediate surrounding area consists of shallow washes and canyons that have eroded through the sandstone into underlying shale units. The washes drain to Dogie Canyon, a major tributary of Largo Canyon.



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, as well as test wells drilled in the vicinity by XTO Energy, Inc (XTO).

Groundwater data available from the New Mexico State Engineer's iWaters Database for wells near the proposed site are attached. The wells are more than four miles away and may not be representative of site conditions. However, the data suggest that wells located within surrounding canyons contain shallow groundwater between 10 and 25 feet beneath ground surface. Wells that exist on top of mesas at similar elevations to Ensenada Mesa contain groundwater at 100 to 450 feet depth.

More locally, standing water and wetland vegetation are present in shallow surface depressions on top of Ensenada Mesa. The presence of these features suggests groundwater is perched just beneath the ground surface nearby. In order to verify depth to groundwater in the area, XTO drilled several test wells in 2008. An air rotary drill with a 5½ -inch drag bit was used to advance holes at several locations on Ensenada Mesa. Holes were drilled to 65 feet below ground surface and allowed to sit for one hour before being measured. If, after one hour, the hole was dry, it was advanced to 115 feet below ground surface. Once total depth was reached, XTO waited another hour before measuring for water. One such borehole was drilled approximately 2,700 feet east and at the same elevation of the proposed pit location. Depth to water was determined to be greater than 115 feet deep in the well. Based on this information, groundwater is estimated to be greater than 100 feet deep at the proposed site.

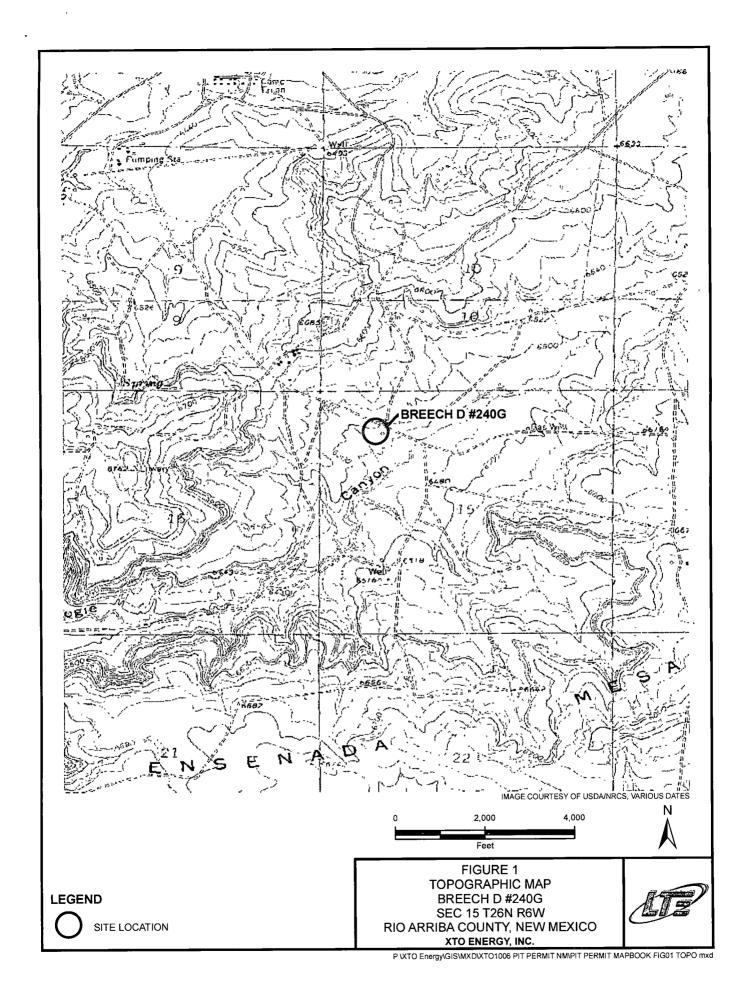
#### References

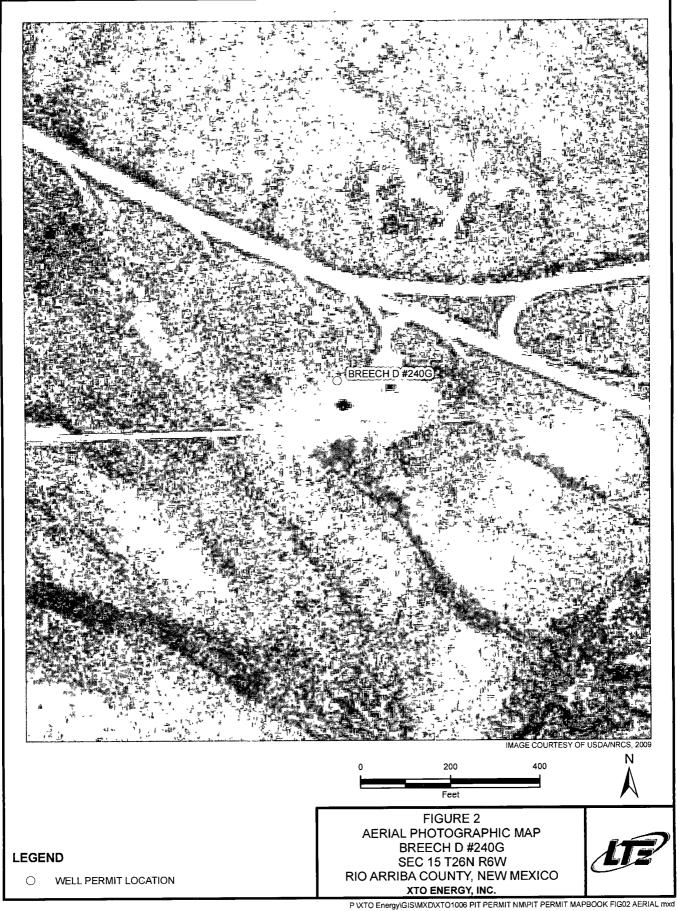
Dane, C.H. and Bachman, G. O., 1965, Geologic Map of New Mexico: U.S. Geological Survey, 1 sheet, scale 1:500,000.

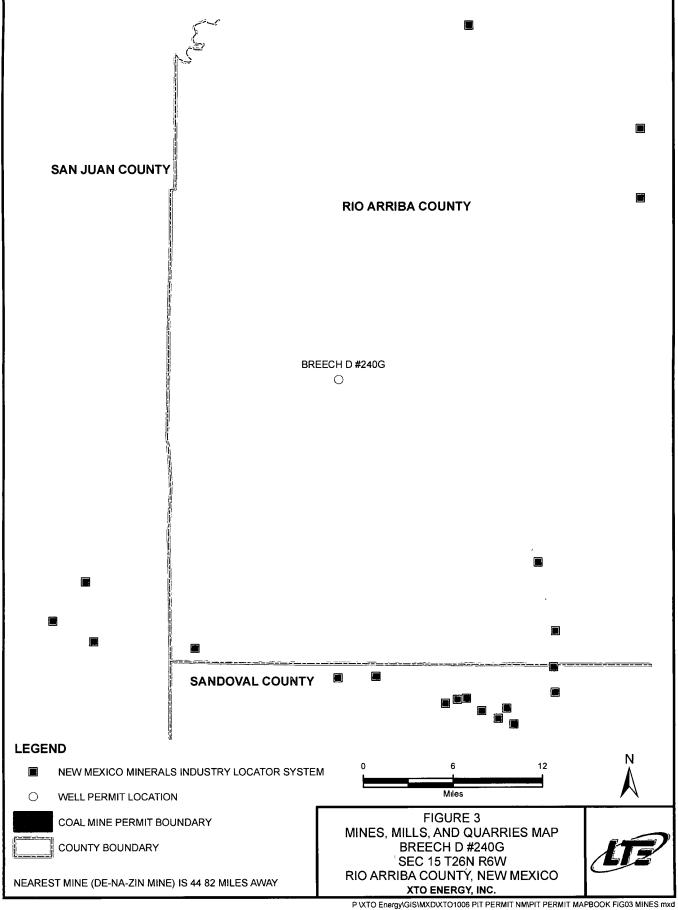
Dick-Peddie, W.A., 1993, New Mexico Vegetation – Past, Present and Future: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

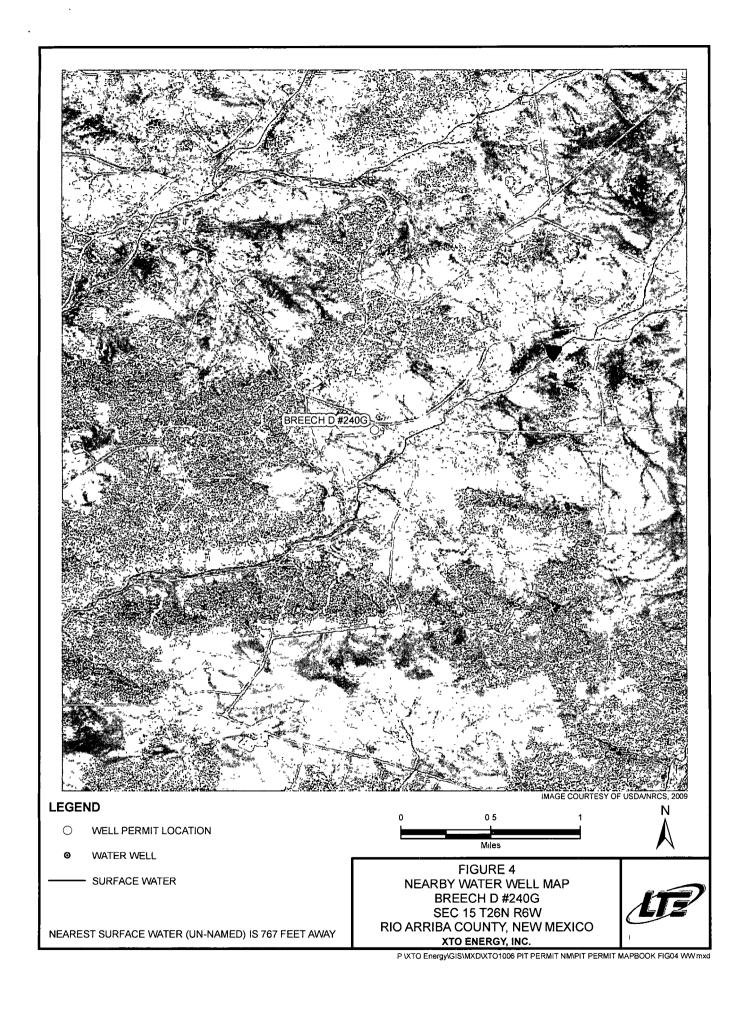
Stone, W.J., Lyford, F. P., Frenzel, P.F., Mizell, N.H. and Padgett, E.T., 1983, Hydrogeology and water resources of the San Juan Basin, New Mexico: HR-6 New Mexico Bureau of Geology and Mineral Resources Hydrology Report 6.

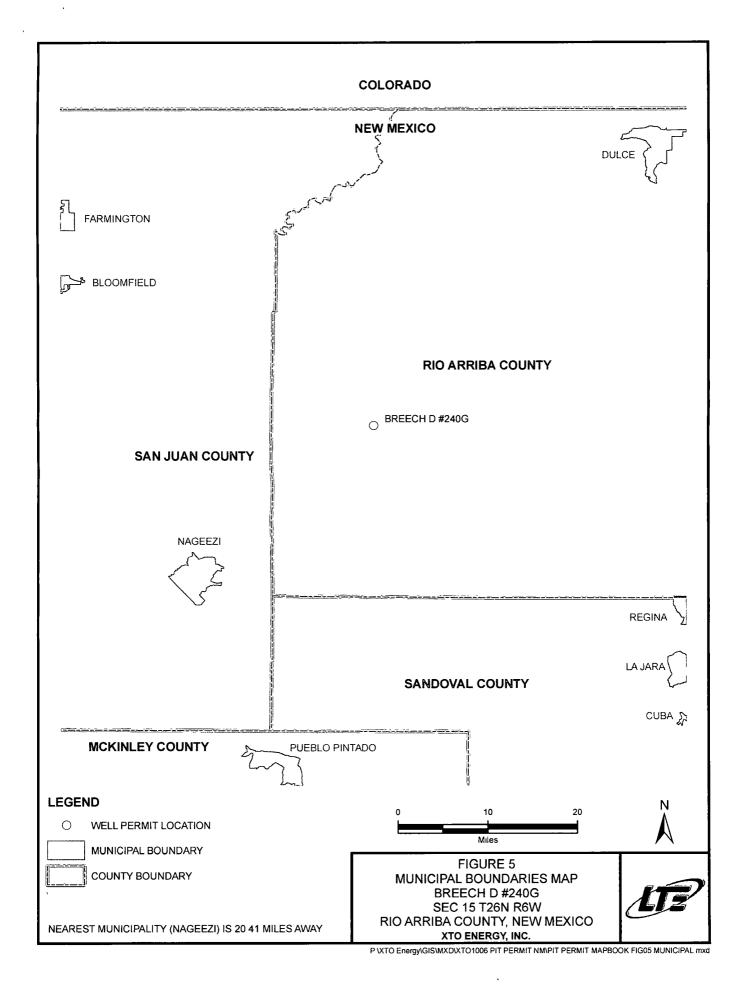
USGS, Groundwater Atlas of the United States: Arizona, Colorado, New Mexico, Utah, HA 730-C: (<a href="http://www.pubs.usgs.gov">http://www.pubs.usgs.gov</a>).











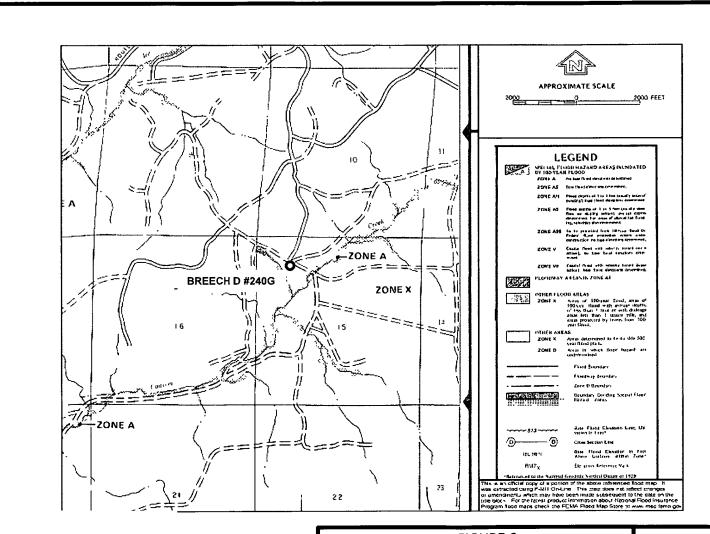


FIGURE 6
FEMA FLOOD ZONE MAP
BREECH D #240G
SEC 15 T26N R6W
RIO ARRIBA COUNTY, NEW MEXICO
XTO ENERGY, INC.





## New Mexico Office of the State Engineer Wells with Well Log Information

et)
Depth
Water
301
301
41

Record Count: 3

PLSS Search:

Township: 27N Range: 06W

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data



## New Mexico Office of the State Engineer Wells with Well Log Information

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(in feet)

			\ \ \			_	, ,		,				•	•
~	Sub			qqq								Log File	Depth	Depth
POD Number	basın	Use Cou	nty Source	6416 4	Sec	Tws	Rng	Х	Υ	Start Date	Finish Date	Date	Well	Water
<u>SJ 00070</u>		DOM RA	Shallov	3 2 4	15	26 <b>N</b>	07 <b>W</b>	270886	4040617*	06/14/1957	06/28/1957	05/08/1958	335	22
SJ 00071		IND RA	A Shallov	214	15	26N	07W	270686	4040839*	05/13/1957	06/05/1957	05/08/1958	365	26

Record Count: 2

PLSS Search:

Township: 26N Range: 07W

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data



### New Mexico Office of the State Engineer **Wells with Well Log Information**

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

a a a

(quarters are smallest to largest) (NAD83 UTM in meters)

(in feet) Depth Depth

**POD Number** RG 81025

Sub

basin Use County Source 6416 4 Sec Tws Rng STK RA Shallow 3 3 4 35 27N 07W

Y Start Date Finish Date Date 4044920\* 09/03/2003 09/11/2003 10/01/2003 Well Water 465

SJ 02314

STK RA Shallow 3 3 17 27N 07W

266864 4050051\* 07/20/1991 08/29/1991 03/20/1992

Log File

355 320

**Record Count: 2** 

PLSS Search:

Township: 27N

Range: 07W

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data



To Mark Kelly

CC

bcc

Subject Breech D #240G Revision

RE: Breech D #240G

Sec. 15 (D), T26N-R6W, Rio Arriba County

Dear Mr. Kelly,

This submittal is pursuant to Rule 19.15.17.13 requiring operators to notify surface owners of on site burial of temporary pits. XTO Energy Inc. (XTO) is hereby providing written documentation of our intention to close the temporary pit associated with the aforementioned location by means of in place burial

Should you have any questions or require additional information please feel free to contact me at your earliest convenience (505) 333-3100.

Malia Villers
Permitting Tech
XTO Energy Inc.
505-333-3100
Direct: 505-333-3698
malia\_villers@xtoenergy.com



### XTO Energy Inc. San Juan Basin Pit Design and Construction Plan

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

#### **General Plan**

- 1. XTO will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public heath and environment.
- 2. Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
- 3. XTO will post a well sign, in compliance with 19 15.3 103 NMAC, on the well site prior to construction of the temporary pit. 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
- 4. XTO shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.
- 5. XTO shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure.
- XTO shall construct the pit so that the slopes are no steeper than two horizontal feet to one vertical foot
- 7. Pit walls will be walked down by a crawler type tractor following construction.
- 8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements
- 9. Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.
- 10. All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.
- 11. XTO will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used when possible. XTO will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. XTO will minimize the number of field seams in corners and irregularly shaped areas.
- 12. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
- 13. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some areas.
- 14. The volume of the pit shall not exceed 10 acre-feet, including freeboard.

### XTO Energy Inc. San Juan Basin Maintenance and Operating Plan

In accordance with Rule 19 15.17.12 NMAC the following information describes the operation and maintenance of temporary pits on XTO Energy Inc locations. This is XTO's standard procedure for all temporary pits A separate plan will be submitted for any temporary pit which does not conform to this plan.

#### General Plan

- 1. XTO will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
- 2 XTO will conserve drilling fluids by transmitting liquids to pits ahead of the rigs whenever possible. All drilling fluids will be disposed at Basin Disposal Inc, Permit # NM-01-005.
- 3. XTO will not discharge or store any hazardous waste in any temporary pit.
- 4. If any pit liner integrity is compromised, or if any penetration of the liner occurs above the liquid surface, then XTO shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.
- 5. If a leak develops below the liquid level, XTO shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. XTO shall notify the Aztec Division office by phone or email within 48 hours of the discovery for leaks less than 25 barrels XTO shall notify the Aztec Division office as required pursuant to Subsection B of 19.15 3.116 NMAC within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19 15 3 116 NMAC shall be reported to the division's Environmental Bureau Chief.
- 6. The liner shall be protected from any fluid force or mechanical damage through the use of mud pits slides, or a manifold system.
- 7. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
- 8. XTO shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from pits surface. An oil absorbent boom will be stored on-site until closure of pit.
- 9. Only fluids generated during the drilling or workover process will be discharged into a temporary pit.
- 10. XTO will maintain the temporary pit free of miscellaneous solid waste or debris.
- During drilling or workover operations, XTO will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged and logs maintained for review. XTO will file this log with the Aztec Division office upon closure of the pit.
- 12. After drilling or workover operations, XTO will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at XTO's office electronically and will be filed with the Aztec Division office upon closure of the pit.
- 13. XTO shall maintain at least two feet of freeboard for a temporary pit
- 14. XTO shall remove all free liquids from a temporary pit within 30 days from the date the operator releases the drilling or workover rig.

#### XTO Energy Inc. San Juan Basin Closure Plan

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

All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of pit closure. Closure report will be filed on C-144 and incorporate the following:

- Details on Capping and Covering, where applicable.
- Plot Plan (Pit Diagram)
- Inspection Reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk

#### General Plan:

- 1. All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycled, reused, or reclaimed in a manner that the Aztec Division office approves.
- 2. The preferred method of closure for all temporary pits will be on-site, in-place burial, assuming that all criteria listed in sub-section (B) of 19.15.17.13 are met
- 3. The surface owner shall be notified of XTO proposed closure plan using a means that provides proof of notice i.e., Certified mail, return receipt requested
- 4. Within 6 months of the Rig Off status occurring XTO will ensure that temporary pits are closed, re-contoured, and reseeded.
- 5. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally. The notification of closure will include the following:
  - i. Operators Name
  - Location by Unit Letter, Section, Township, and Range. Well name and API number.
- 6. Liner of temporary pit shall be removed above "mud level" after stabilization. Removal of liner will consist of manually or mechanically cutting liner at mud level and removing all remaining liner. Care will be taken to remove "ALL" of the liner i.e., edges of liner entrenched or buried. All excessive liver will be disposed of at a licensed disposal facility.
- 7. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve appropriate solidification. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed a safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents
- 8. A five point composite sample will be taken of the pit using sampling tools and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul. Disposal facility to be utilized should this method be required will be Envirotech, Permit No. NM01-0011 or IEI, Permit No. NM01-0010B.

Components	Test Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0 2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	500 or background

- 9. Upon completion of solidification and testing, the pit area will be backfield with compacted, non-waste containing, earthen material. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, ponding prevention, and erosion prevention. 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
- 11. Notification will be sent to OCD when the reclaimed area is seeded.
- 12. XTO shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM of 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.
- 13. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be flush with the ground to allow access of the active well pad and for safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12" square plate that indicates the onsite burial of the temporary pit. The plate will be easily removable and a four foot tall riser will be threaded into the top of the collar marker and welded around the base with the operator's information at the time all wells on the pad are abandoned The operator's information will include the following: Operators Name, Lease Name, Well Name and Number, Unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.

### XTO Energy Inc. San Juan Basin Closed-Loop System Design and Construction Plan

In accordance with Rule 19.15 17.11 NMAC the following information describes the design and construction of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

#### **General Plan**

7

Our closed-loop system will not entail a drying pad, temporary pit, below grade tank or sump. It will entail an above ground tank suitable for holding the cuttings and fluids for rig operations. The tank will be of sufficient volume to maintain a safe free board between disposal of the liquids and solids from rig operations.

- 1. Fencing is not required for an above ground closed-loop system.
- 2. It will be signed in compliance with 19.15.3.103 NMAC.

### XTO Energy Inc. San Juan Basin Closed-Loop Systems Maintenance and Operating Plan

In accordance with Rule 19.15 17.11 NMAC the following information describes the operation and maintenance of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

#### General Plan

The closed-loop tank will be operated and maintained; to contain liquids and solids, to aid in the prevention of contamination of fresh water sources, in order to protect public health and the environment To attain the goal the following steps will be followed.

- 1. The liquids will be vacuumed out and disposed of at the Basin Disposal, Inc. facility (Permit Number NM01-005). An alternative if available for liquids disposal, will be to move the liquids forward to a XTO temporary pit constructed in accordance with all specifications in NMAC Rule 19.15.17 for a well yet to be drilled All specifications, limitations, and rules within the New Mexico Administrative Code regulating this transfer of liquids will be strictly adhered to. As a third alternative, if Basin Disposal turns away the fluids because of capacity reasons, and the second transfer option is not available, XTO may elect to haul fluids to IEI (Permit Number NM01-0010B) for final disposition.
- 2 Solids in the closed-loop tank will be vacuumed out and disposed of at Envirotech (Permit Number NM01-0011) or IEI (Permit Number NM01-0010B) on a periodic basis to prevent over topping.
- 3. No hazardous waste, miscellaneous solids, waste, or debris will be discharged into, or stored in the tank. Only fluids or cutting used or generated by rig operations will be placed or stored in the tank.
- 4. The division district office will be notified within 48 hours of the discovery of compromised integrity of the closed-loop tank. Upon discovery of the compromised tank, repairs will be enacted immediately
- 5. All of the above operations will inspected and a log will be signed and dated daily during rig operations.

# XTO Energy Inc. San Juan Basin Closed-Loop System Closure Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the closure requirements of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

#### **General Plan**

XTO will close a drying pad used for a closed-loop system within six months from the date that XTO released the drilling or workover rig. XTO will not the date of the drilling or workover rig's release on form C-105 or C-103, riled with the division, upon the well's or workover's completion.

The closed-loop tank will be closed in accordance with 19.15.17.13 NMAC. This will be done by transporting cuttings and all remaining sludges to Envirotech (Permit Number NM01-0011) or IEI (Permit Number NM01-0010B) immediately following rig operations.

All remaining liquids will be transported and disposed of at the Basin Disposal, Inc facility (Permit Number NM 01-005). As an alternative (in the event Basin Disposal refused liquids because of capacity considerations, and if proper inventory space is available for liquids transfer while meeting free board requirements), the liquids will be moved forward to a XTO temporary pit constructed in accordance with all specifications in NMAC Rule 19.15.17 for a well yet to be drilled. All specifications, limitations, and rules within the New Mexico Administrative Codes regulating this transfer of liquids will be strictly adhered to. As a third alternative, if Basin Disposal turns away the fluids because of capacity reasons, and the second transfer option is not available, XTO may elect to haul the fluids to IEI (Permit Number 01-0010B) for final disposition.

The tanks will be removed from the location as part of the rig move. At the time of well abandonment the site will be reclaimed and re-vegetated to pre-existing conditions when possible.