

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

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

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

2009 JAN 12 PM 1 42

**Pit, Closed-Loop System, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application**

- Type of action: Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
Existing BGT Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
 Modification to an existing permit
 Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: XTO Energy, Inc. OGRID #: 5380
Address: #382 County Road 3100, Aztec, NM 87410
Facility or well name: Valencia Canyon Unit #25
API Number: 30-039-21593 OCD Permit Number: _____
U/L or Qtr/Qtr N Section 15 Township 28N Range 04W County: Rio Arriba
Center of Proposed Design: Latitude 36.656580 Longitude 107.241150 NAD: 1927 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment

2.
 Pit: Subsection F or G of 19.15.17.11 NMAC
Temporary: Drilling Workover
 Permanent Emergency Cavitation P&A
 Lined Unlined Liner type: Thickness _____ mil LLDPE HDPE PVC Other _____
 String-Reinforced
Liner Seams: Welded Factory Other _____ Volume: _____ bbl Dimensions: L _____ x W _____ x D _____

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 which require prior approval of a permit or notice of intent)
 Drying Pad Above Ground Steel Tanks Haul-off Bins Other _____
 Lined Unlined Liner type: Thickness _____ mil LLDPE HDPE PVC Other _____
Liner Seams: Welded Factory Other _____

4.
 Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: 120 bbl Type of fluid: Produced Water
Tank Construction material: Steel
 Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
 Visible sidewalls and liner Visible sidewalls only Other Visible sidewalls, vaulted, automatic high-level shut off, no liner
Liner type: Thickness _____ mil HDPE PVC Other _____

5.
 Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

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

7.

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

- Screen Netting Other Expanded metal or solid vaulted top
- Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

- 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- Signed in compliance with 19.15.3.103 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

- Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.
- Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

11.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

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)*

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
- Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Nuisance or Hazardous Odors, including H₂S, 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

14.

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)

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.*

- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

Yes (If yes, please provide the information below) No

Required for impacted areas which will not be used for future service and operations:

Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection 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.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. 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. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

- 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 plan. Please indicate, 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 19.15.17.11 NMAC
- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.

Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Kim Champlin Title: Environmental Representative

Signature: *Kim Champlin* Date: 01/02/2009

e-mail address: kim_champlin@xtoenergy.com Telephone: (505) 333-3100

20.

OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)

OCD Representative Signature: _____ Approval Date: _____

Title: _____ OCD Permit Number: _____

21.

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: _____

22.

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.

23.

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

24.

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

25.

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: _____

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

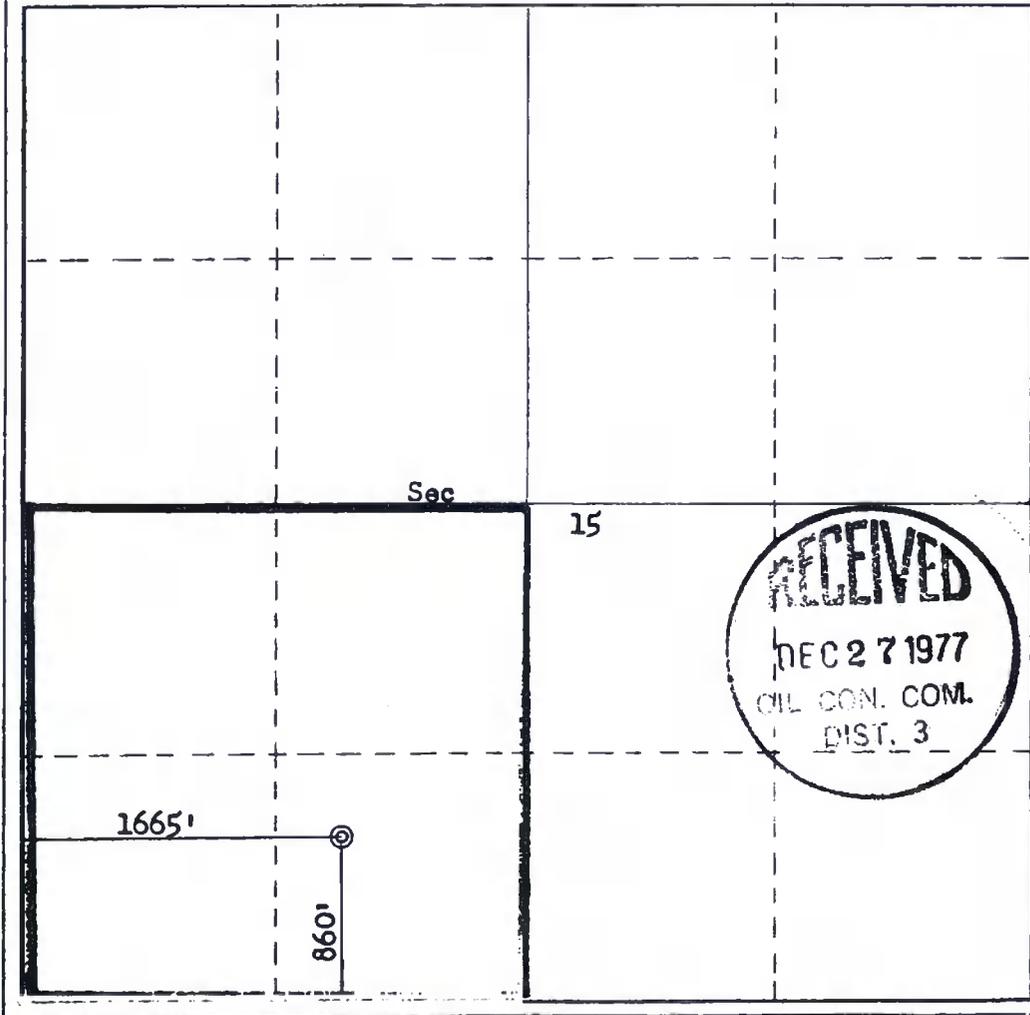
Operator Amoco Production Company			Lease Valencia Canyon Unit			Well No. 25		
Unit Letter N	Section 15	Township 28N	Range 4W	County Rio Arriba				
Actual Footage Location of Well: 860 feet from the South line and 1665 feet from the West line								
Ground Level Elev. 7281	Producing Formation Pictured Cliffs		Pool Choza Mesa Pictured Cliffs	Dedicated Acreage: 160 Acres				

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

[Signature]

Name
J. L. KRUPKA

Position
AREA ENGINEER

Company
AMOCO PRODUCTION COMPANY

Date
DECEMBER 9, 1977



I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
December 2, 1977

Registered Professional Engineer and/or Land Surveyor
[Signature]
Fred B. Kerr Jr.

Certificate No.
3950

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0



**Pit Permit
Siting Criteria
Information Sheet**

Client:	XTO Energy
Project:	tank permitting
Revised:	23-Nov-08
Prepared by:	Trevor Ycas

API#: 30-039-21593

USPLS: 28N 04W 15 N

Name: VALENCIA CANYON UNIT 25

Lat/Long: 36.656580°, -107.241150°

Depth to groundwater: depth >100'

Geologic formation: San Jose Formation (Tsj), alluvium

Distance to closest continuously flowing watercourse: 20.7 miles NW to 'San Juan River' at Navajo Reservoir

Site Elevation: 2216m/7270' groundwater depth estimation is based primarily on elevation of nearby springs

Distance to closest significant watercourse, lakebed, playa lake, or sinkhole: 7018' SE to Valencia Canyon

Permanent residence, school, hospital, institution or church within 300': NO

Soil Type: Rockland/ Aridisols

Domestic fresh water well or spring within 500': NO

Annual Precipitation: Navajo Dam: 12.95", Governador: 11.98", Capulin Rgr Stn.: 14.98", Otis: 10.41"

Any other fresh water well or spring within 1000': NO; ~2900' S to 'Mud Spring'(SP03620)

Precipitation Notes: Historical daily max. precip.: 4.19" (Bloomfield)

Within incorporated municipal boundaries: NO

Attached Documents: 27N03W_iWaters.pdf, 27N04W_iWaters.pdf, 27N05W_iWaters.pdf, 28N03W_iWaters.pdf, 28N04W_iwaters.pdf, 28N05W_iwaters.pdf, 29N03W_iWaters.pdf, 29N04W_iWaters.pdf, 29N05W_iWaters.pdf

Within defined municipal fresh water well field: NO

FM350049IND0_30-039-21593.jpg, 30-039-21593_gEarth-PLS.jpg, 30-039-21593_topo-PLS.jpg, 30-039-21593_gEarth-iWaters.jpg

Wetland within 500': NO

Mining Activity: None Near
NM_NRD-MMD_MinesMillQuarries_30-039-21593.jpg

Within unstable area: NO

Within 100 year flood plain: unmapped area

Additional Notes:

drains to 'Navajo Reservoir' via 'La Jara Canyon' iWaters: springs SP03811(elev. 2182m), SP03620(elev. 2211m) both supply livestock water; USGS:Horse Spring (elev.2234m) use unknown

located on 'Vigas Mesa', between 'Dry Lake Canyon' and 'Horse Canyon', & NW of 'Valencia Canyon'

Valencia Canyon Unit #25 Below Grade 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 central Cereza Canyon region of the San Juan Basin near the upper reaches of Valencia Canyon and near Vigas & Chosa Mesas. The predominant geologic formation is the San Jose 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 San Jose Formation lies at the surface and overlies the Nacimiento Formation. Thickness of the San Jose ranges from 200 to 2700 feet, thickening from west to east across the region of interest (Stone et al., 1983). Aquifers within the coarser and continuous sandstone bodies of the San Jose Formation are between 0 and 2700' deep in this section of the basin (Stone et al., 1983). Groundwater within these aquifers flows north, toward the San Juan River. Little specific hydrogeologic data is available for the San Jose Formation system, but "numerous wells and springs used for stock and domestic supplies" draw their water from the San Jose Formation (Stone et al, 1983).

The prominent soil type at the proposed site are entisols and aridisols, which are defined as soils exhibiting little to no 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.

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

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

Site Specific Hydrogeology

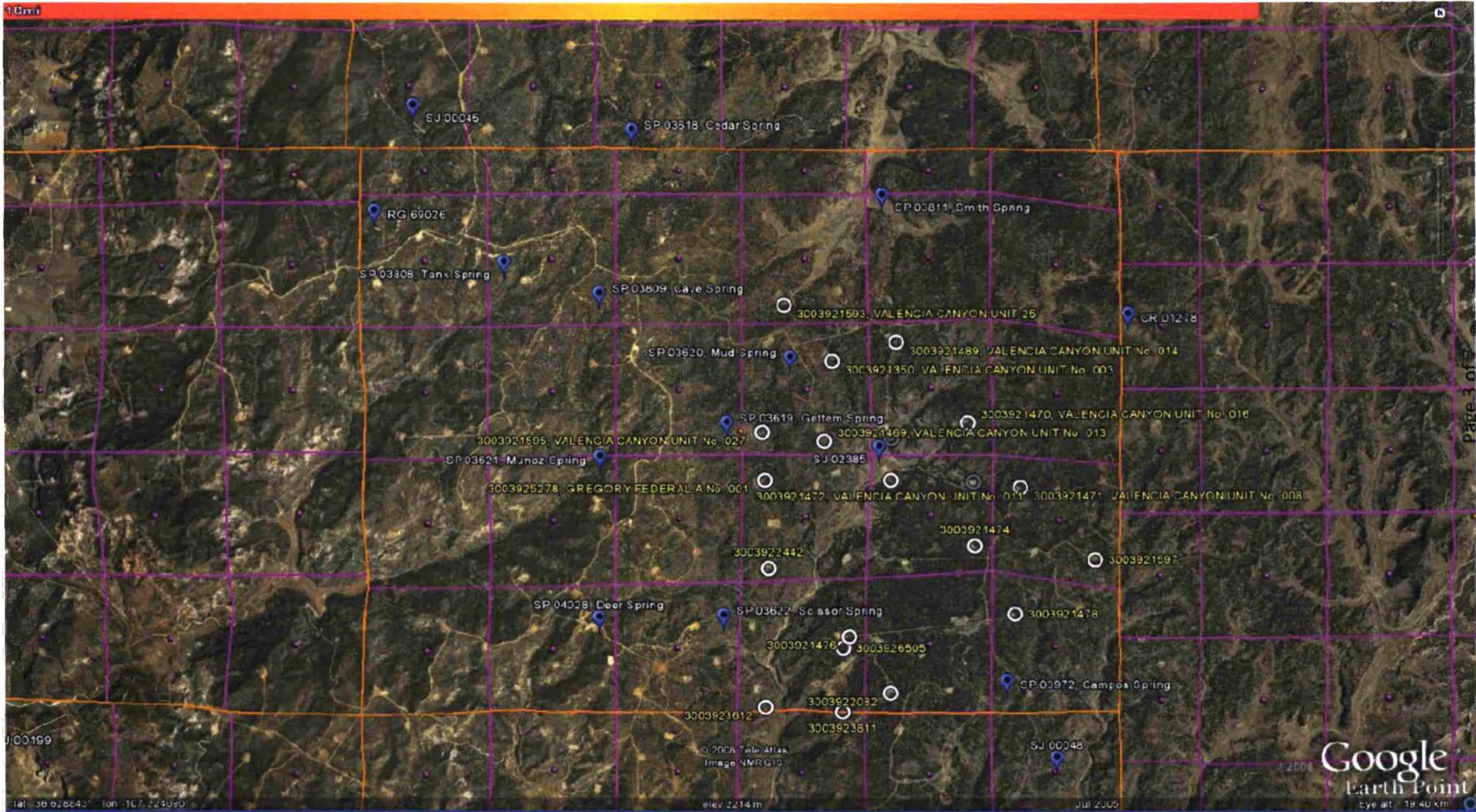
Depth to groundwater is estimated to be greater than 100'. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography, proximity to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

Beds of water-yielding sandstone are present in the San Jose Formation, which are fluvial in origin and are interbedded with mudstone, siltstone & shale. "Extensive intertonguing" of different members of this formation is reported (Stone et al, 1983). Porous sandstones form the principal aquifers, while relatively impermeable shales and mudstones form confining units between the aquifers (Stone et al., 1983). Local aquifers exist within the San Jose Formation at depths greater than 100 feet and thicknesses of the aquifer can be up to several hundred feet (USGS, Groundwater Atlas of the US) (Stone et al, 1983).

The site in question is located on relatively flat ground on Vigas Mesa, overlooking Horse Canyon at an elevation of approximately 7330 feet and approximately 4.6 miles south of the main La Jara Canyon wash channel, the nearest significant watercourse. This site drains to La Jara Canyon via Dry Lake Canyon. This region is deeply incised by canyons, washes, gullies and arroyos, with large, flat-topped mesas the predominant topographic feature. The mesas are composed of cliff-forming sandstone, and systems of dry washes and their tributaries composed of alluvium are evident on the attached aerial image. Groundwater is expected to be shallow within Largo and Blanco Canyons and within major tributary systems. Additionally, the Valencia Canyon area has many surface springs at varying elevations, including at least 6 within 5 miles of this site.

Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. Groundwater data is extremely limited in this region; the nearest iWaters data point, 'Mud Spring', lies ~2800 feet south (SP 03620); this spring is used for livestock watering, as are many others in the surrounding area. A spring named 'Horse Spring' appears on the USGS topographic map ~2900' SE of the site in question. Additionally, there is 'Gettem Spring' located approx. 1.1 miles west-southwest (SP 03619) of the site in question.

Wells located at similar elevations nearby contain groundwater at depths of 45 feet and deeper, occasionally in excess of 200 feet. However, there exist numerous surface springs in the PLSS section 28N, 04W. The exact topography (proximity to a confined drainage), numerous springs, and elevation relative to nearby surface spring features (approx. 100' higher) is enough to be certain that groundwater is greater than 100 feet. A map showing the location of wells in reference to the proposed pit location is attached.



New Mexico Office of the State Engineer
POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 10/11/2008

DB File Nbr	Use	Diversion	Owner	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE)				X Y are in Feet			UTM are in Meters			Start Date	Finish Date	Depth Well
					Source	Tws	Rng	Sec	q	q	q	q	Zone	X			
<u>SD 07850</u>	PDL	3	ROSA B. MARTINEZ	<u>SD 07850</u>		28N	05W	18	2	3	4	13	285663	4060122			
<u>SD 07851</u>	PDL	3	ROSA B. MARTINEZ	<u>SD 07851</u>		28N	05W	18	1	2	1	13	285228	4060731			
<u>SD 07852</u>	PDL	3	ROSA B. MARTINEZ	<u>SD 07852</u>		28N	05W	18	2	1	1	13	285579	4060759			
<u>SJ 00036</u>	IND	65	BURLINGTON RESOURCES OIL & GAS	<u>SJ 00036</u>	Shallow	28N	05W	28	3			13	288156	4056298	06/27/1953	06/27/1953	303
<u>SJ 00047</u>	NOT	0	MAMIE MANGUM	<u>SJ 00047</u>	Shallow	28N	05W	28				13	288558	4056700	07/30/1953	08/04/1953	465
<u>SJ 01893</u>	STK	3	ROSA B. OR JUAN L. MARTINEZ	<u>SJ 01893</u>	Shallow	28N	05W	18	4			13	285827	4059576	09/14/1984	10/12/1984	390
<u>SJ 03806</u>	STK	3	ROSA B. MARTINEZ	<u>SJ 03806 POD1</u>		28N	05W	07	4	4	2	130509	2065482	286111	4061033		

Record Count: 7

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 28N Range: 04W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 10/19/2008

DB File Nbr	Use	Diversion	Owner	POD Number	Source	(quarters are 1=NW 2=NE 3=SW 4=SE)				X Y are in Feet			UTM are in Meters			Start Date	Finish Date	Depth Well
						Tws	Rng	Sec	q	q	Zone	X	Y	UTM Zone	Easting			
<u>SJ 00045</u>	IND	0	U.S. GOVERNMENT	<u>SJ 00045</u>	Shallow	28N	04W	07				13	295235	4061453	09/04/1952	09/10/1952	600	
<u>SJ 02385</u>	STK	3	CARSON NATIONAL FOREST	<u>SJ 02385</u>	Shallow	28N	04W	26	1	1		13	300818	4057064			160	
<u>SP 03618</u>	STK	1.88	UNITED STATES OF AMERICA	<u>SP 03618</u>		28N	04W	09	3	1		13	297832	4061209				
<u>SP 03619</u>	STK	0.36	UNITED STATES OF AMERICA	<u>SP 03619</u>		28N	04W	21	4	4		13	298924	4057416				
<u>SP 03620</u>	STK	0.36	UNITED STATES OF AMERICA	<u>SP 03620</u>		28N	04W	22	1	4		13	299736	4058240				
<u>SP 03621</u>	STK	0.58	UNITED STATES OF AMERICA	<u>SP 03621</u>		28N	04W	29	2	2		13	297324	4057019				
<u>SP 03622</u>	STK	0.36	UNITED STATES OF AMERICA	<u>SP 03622</u>		28N	04W	33	2	4		13	298821	4054927				
<u>SP 03808</u>	STK	1.67	CARSON NATIONAL FOREST	<u>SP 03808</u>		28N	04W	17	3	1		13	296199	4059551				
<u>SP 03809</u>	STK	1.67	CARSON NATIONAL FOREST	<u>SP 03809</u>		28N	04W	17	4	4		13	297370	4059116				
<u>SP 03811</u>	STK	1.67	CARSON NATIONAL FOREST	<u>SP 03811</u>		28N	04W	14	1	1		13	300944	4060310				
<u>SP 03972</u>	STK	0	CARSON NATIONAL FOREST	<u>SP 03972</u>		28N	04W	36	3	3		13	302344	4053996				
<u>SP 04028</u>	STK	0.85	CARSON NATIONAL FOREST	<u>SP 04028</u>		28N	04W	32	2	4		13	297271	4054953				

Record Count: 12

New Mexico Office of the State Engineer
 POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 10/19/2008

DB File Nbr	(acre ft per annum)		POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE)				X Y are in Feet			UTM are in Meters)			Start	Finish	Depth	
	Use	Diversion		Owner	Source	Qws	Qrng	Qsec	Qqq	Zone	X	Y	UTM_Zone	Easting	Northing	Date	Date
No Records found, try again																	

New Mexico Office of the State Engineer
 POD Reports and Downloads

Township: 27N Range: 05W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 09/16/2008

DB File Nbr	Use	Diversion	Owner	POD Number	Source	Tws	Rng	Sec	q	q	q	X Y are in Feet			UTM are in Meters			Start Date	Finish Date	Depth Well
												Zone	X	Y	UTM Zone	Easting	Northing			
<u>RG 81026</u>	STK	3	BUREAU OF LAND MANAGEMENT	<u>RG 81026</u>	Shallow	27N	05W	27	4	4	3	13	290530	4046294	09/12/2003	09/16/2003	460			
<u>SJ 00046</u>	IND	16	BURLINGTON RESOURCES OIL & GAS	<u>SJ 00046</u>	Shallow	27N	05W	04	4	4		13	289133	4052788	01/13/1954	01/13/1954	506			
<u>SJ 00199</u>	OFM	4	BURLINGTON RESOURCES OIL & GAS	<u>SJ 00199</u>	Artesian	27N	05W	03	2	1		13	290409	4053971		05/02/1967	1640			

Record Count: 3

New Mexico Office of the State Engineer
 POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 09/16/2008

DB File Mbr	(acre ft per annum)			POD Number	Source	(quarters are 1=NW 2=NE 3=SW 4=SE)				X Y are in Feet			UTM are in Meters			Start Date	Finish Date	Depth Well
	Use	Diversion	Owner			(quarters are biggest to smallest)				Zone	X	Y	UTM Zone	Easting	Northing			
<u>SJ 00048</u>	IND	48	BURLINGTON RESOURCES OIL & GAS	<u>SJ 00048</u>	Shallow	27N	04W	01				13	302928	4052997	07/28/1953	07/31/1953	143	
<u>SJ 01049</u>	IND	30.55	BURLINGTON RESOURCES OIL & GAS	<u>SJ 01049</u>		27N	04W	18	4	2	2	13	295646	4049831	06/30/1967		15	
<u>SJ 01205</u>	OIL	60	MERIDIAN OIL PRODUCTION, INC.	<u>SJ 01205</u>	Artesian	27N	04W	34	4	4	4	13	300255	4044335	10/18/1980	10/25/1980	3054	
<u>SP 03616</u>	STK	0.58	UNITED STATES OF AMERICA	<u>SP 03616</u>		27N	04W	24	2	4		13	303452	4048375				
<u>SP 03617</u>	STK	0.58	UNITED STATES OF AMERICA	<u>SP 03617</u>		27N	04W	25	4	4		13	303396	4045974				
<u>SP 03810</u>	PLS	1.24	CARSON NATIONAL FOREST	<u>SP 03810</u>		27N	04W	30	1	2		13	294693	4047368				
<u>SP 03971</u>	STK	0	CARSON NATIONAL FOREST	<u>SP 03971</u>		27N	04W	12	2	3		13	303116	4051580				

Record Count: 7

New Mexico Office of the State Engineer
 POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / SURFACE DATA REPORT 10/19/2008

DB File Nbr	(acre ft per annum) Use Diversion Owner	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest)				X Y are in Feet			UTM are in Meters)			Start Date	Finish Date	Depth Well
			Source	Tws	Rng	Sec	q	q	q	q	UTM_Zone	Easting			

No Records found, try again

**New Mexico Office of the State Engineer
POD Reports and Downloads**

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

[POD / Surface Data Report](#) | [Avg Depth to Water Report](#) | [Water Column Report](#)

[Clear Form](#) | [iWATERS Menu](#) | [Help](#)

WATER COLUMN REPORT 08/12/2008

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

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column
<u>SJ 02339</u>	29N	05W	29	3	3	3				350	108	242
<u>SJ 00422</u>	29N	05W	31	2						239	135	104
<u>SJ 00056</u>	29N	05W	31	2	3	1				142	50	92
<u>SJ 00057</u>	29N	05W	31	2	3	1				158	57	101
<u>SJ 03208</u>	29N	05W	31	3	3	3				220	160	60
<u>SJ 02383</u>	29N	05W	32	1	1	1				300	100	200

Record Count: 6

**New Mexico Office of the State Engineer
POD Reports and Downloads**

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

WATER COLUMN REPORT 08/12/2008

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

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water (in feet) Column
<u>SJ 00037</u>	29N	04W	04	2						373		

Record Count: 1

**New Mexico Office of the State Engineer
POD Reports and Downloads**

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

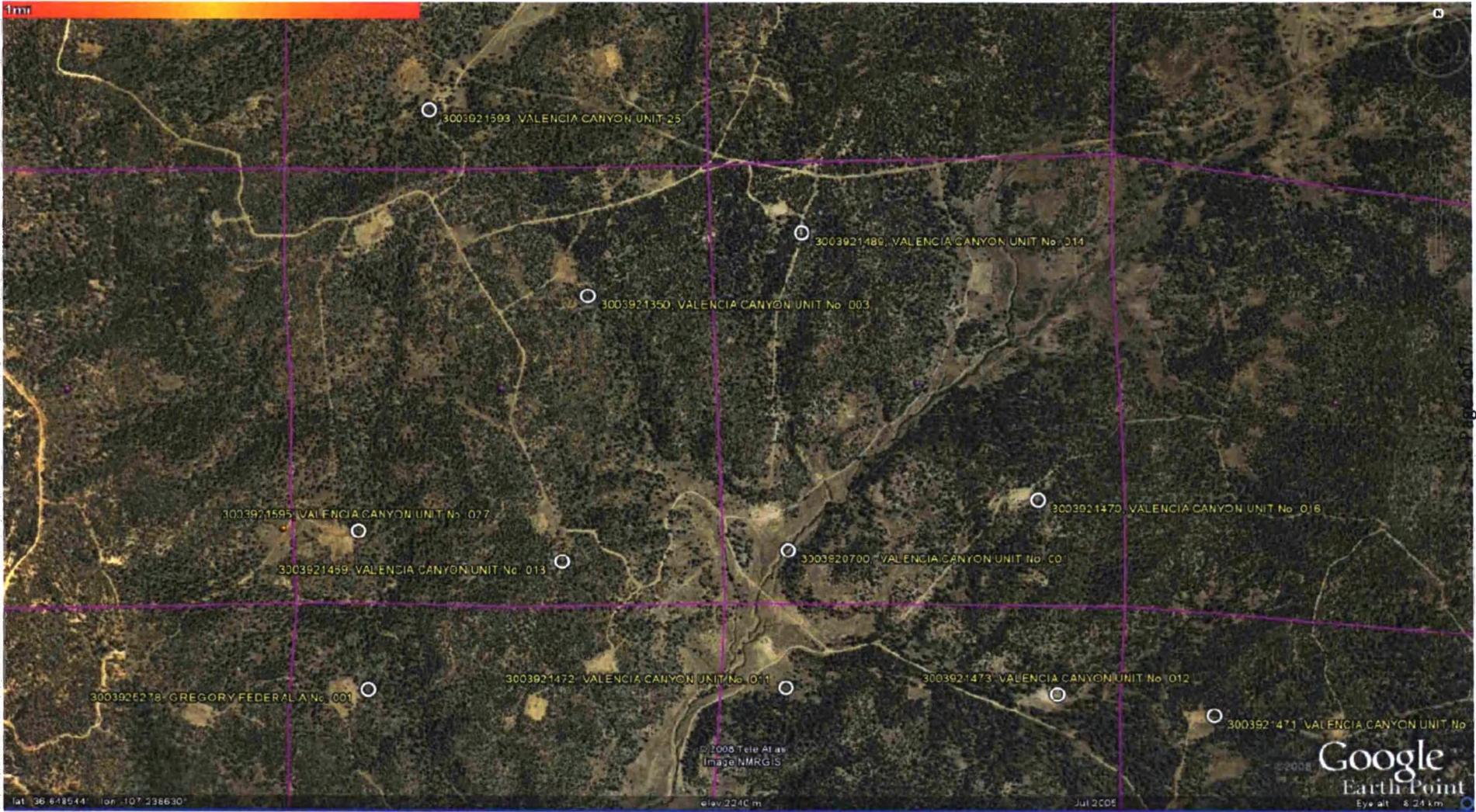
Owner Name: (First) (Last) Non-Domestic Domestic All

WATER COLUMN REPORT 08/12/2008

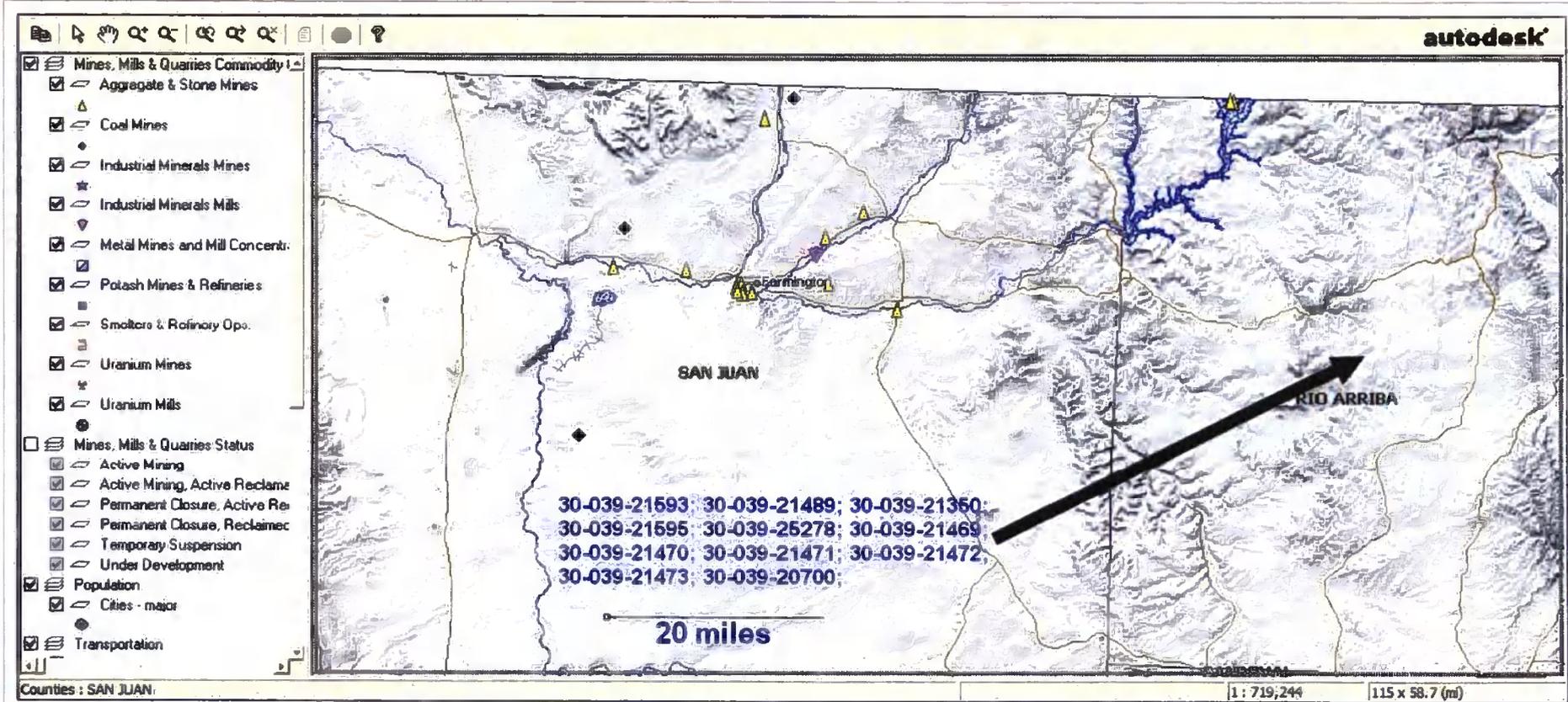
(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

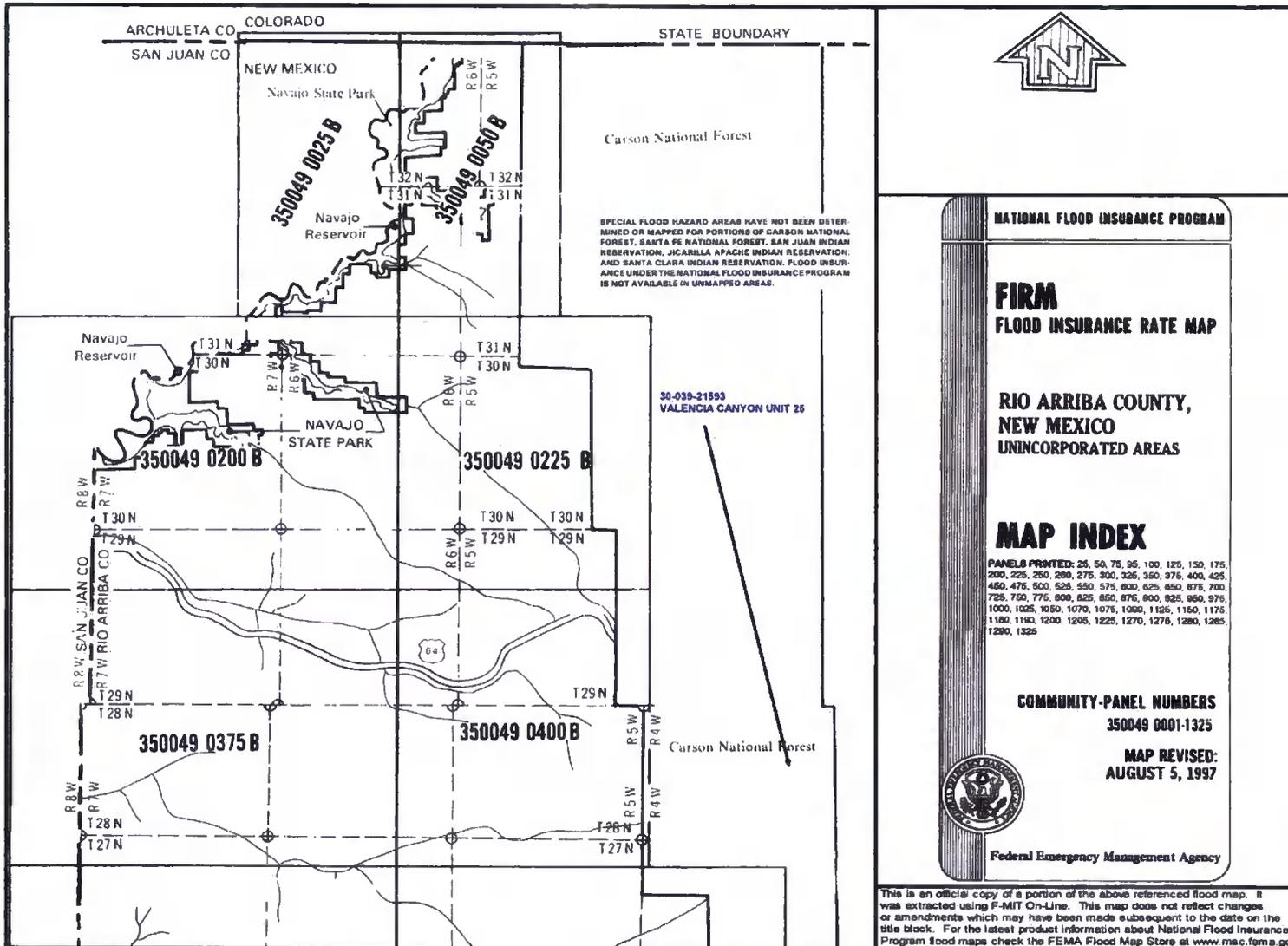
POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water (in feet) Column
<u>SJ 01575</u>	29N	03W	08	4	4	2				306		

Record Count: 1



Mines, Mills and Quarries Web Map





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

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

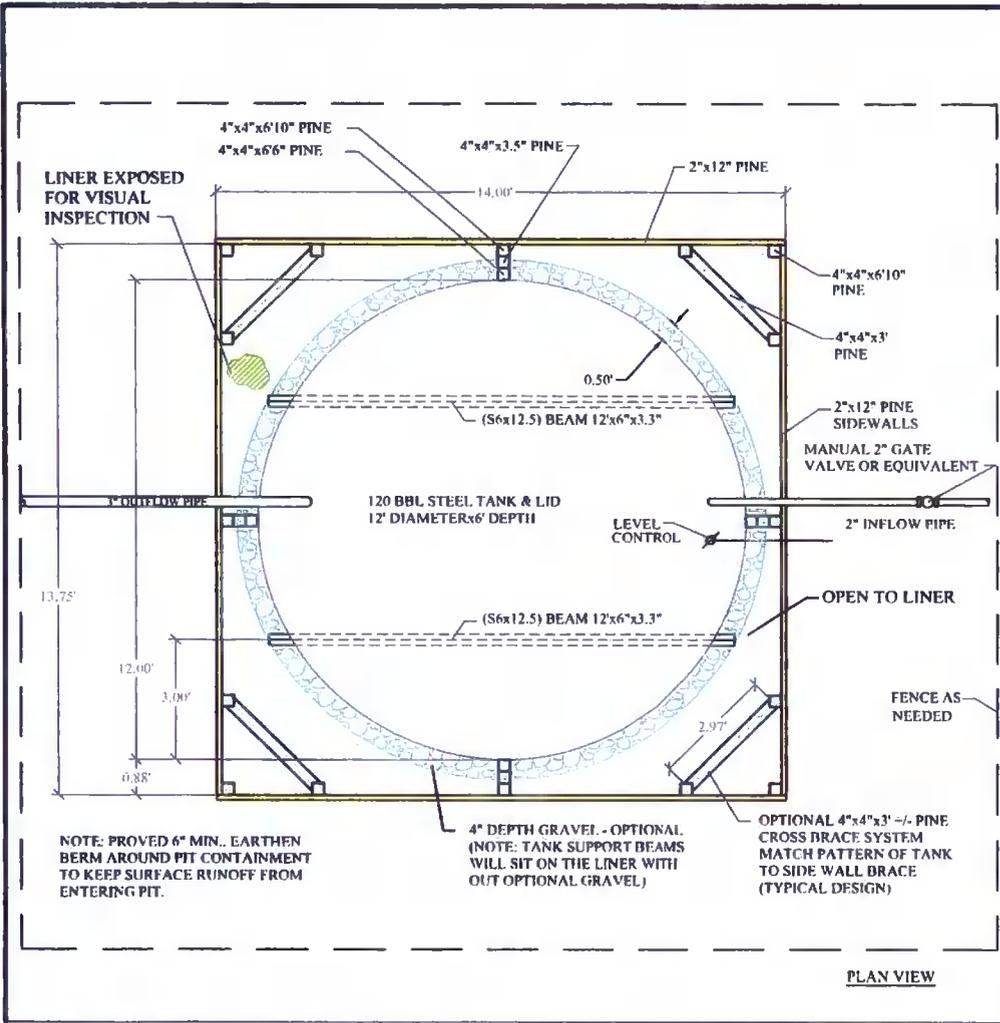
General Plan

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

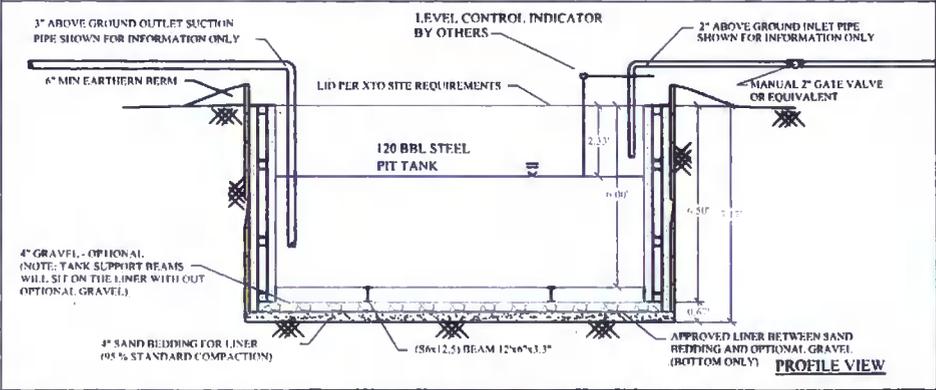
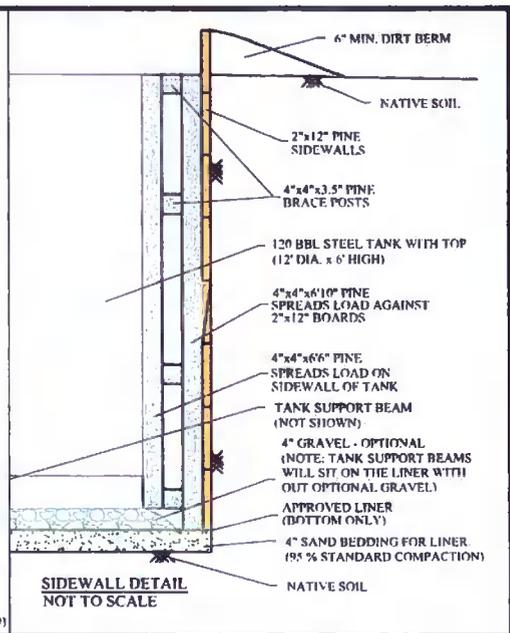
XTO Energy Inc.
San Juan Basin (Northwest New Mexico)
General Design and Construction Plan
For Below-Grade Tanks
Page 2

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

9. XTO will equip below-grade tanks designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows. (See attached drawing).
10. XTO will demonstrate to the OCD that the geomembrane liner complies with the specifications of Subparagraph (a) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC and obtain approval from OCD prior to the installation of the design. The geomembrane liner shall have a hydraulic conductivity no greater than 1×10^{-9} cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acids 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.



- *DESIGN INFORMATION***
- THE TANK WILL HAVE AN EXPANDED METAL OR SOLID VAULTED TOP WITH VENT PER XTO SITE SPECIFIC DESIGN REQUIREMENTS, BUILT BY TANK SUPPLIER.
 - GEOMEMBRANE LINER WILL COMPLY WITH SUBPARAGRAPH (a) OF PARAGRAPH (4) OF SUBSECTION I OF 19.15.17.11 NMAC.
 - BASE WILL BE LEVEL AND FREE OF ROCKS, DEBRIS, SHARP EDGES, OR IRREGULARITIES PRIOR TO SAND PLACEMENT.
 - THE LEVEL INDICATOR WILL HAVE AN AUTOMATIC SHUT OFF CONTROL FOR THE INLET PIPE AT 28" BELOW TOP OF TANK.
- WOOD PARTS LIST FOR SIDEWALLS**
- 16 EA 2"x12"x14'
 - 16 EA 2"x12"x13'-9"
 - 8 EA 4"x4"x10"
 - 4 EA 4"x4"x6'6"
 - 16 EA 4"x4"x3.5"
- OPTIONAL CROSS BRACES**
- 8 EA 4"x4"x6'10"
 - 16 EA 4"x4"x3' +/-
- LINER**
- BOTTOM 13' 6"x13' 6"
- TANK A36 CARBON STEEL**
- 1/2" SIDES
 - 1/2" BOTTOM
- 6" PEDESTAL**
- 2 EA (S6x12.5) BEAM 12'x6"x3.3" (MORE MAY BE NEEDED IF REQUIRED IN THE FIELD)



NOTE

DRAFTED PER XTO DESIGN.

HIGH LEVEL SHUT OFF WILL BE SET AT 28" BENEATH TOP OF TANK (AT 73.95 BBL @ SHUT OFF).

OUTER EDGE OF LINER WILL BE LEFT OPEN AND UNOBSTRUCTED TO ALLOW FOR VISUAL INSPECTION OF LINER FOR EVIDENCE OF SPILLS.

ADJUST DIMENSIONS AS NEED TO FIELD FIT TANK IF DIFFERENT THAN SHOWN, IF REQUIRED.

OWNER / OPERATOR:
XTO ENERGY

**TYPICAL DESIGN
 120 BBL PIT TANK
 CONTAINMENT**

XTO ENERGY

PIVOT NUMBER: 40-012
 DRAWING NUMBER: XTO PIT TANK
 SCALE: AS SHOWN
 DATE: 10/15/15

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.

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

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

General Plan

1. XTO will close below-grade tanks within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment
2. XTO will close a below-grade tank that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.
3. XTO will close a permitted below-grade tank within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on form C-144.
4. XTO will remove liquids and sludge from below-grade tanks prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility. Approved facilities and waste streams include:
 - Envirotech Permit No. NM01-0011 and IEI Permit No. NM 01-0010B
 - Soil contaminated by exempt petroleum hydrocarbons
 - Produced sand, pit sludge and contaminated bottoms from storage of exempt wastes
 - 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

analyzed for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. XTO will notify the division of its results on form C-141.

8. If XTO or the division determines that a release has occurred, XTO will comply with 19.15.3.116 NMAC and 19.15.1.19NMAC as appropriate.
9. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, XTO will backfill the excavation with compacted, non-waste containing, earthen material; construct a division prescribed soil cover; recontour and re-vegetate the site.
10. Notice of Closure operations will be given to the Aztec Division District III office between 72 hours and one week prior to the start of closure activities via email or verbally. The notification will include the following:
 - i. Operator's name
 - ii. Well Name and API Number
 - iii. Location by Unit Letter, Section, Township, and Range

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

11. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
12. A minimum of 4 feet of cover shall be achieved and the cover shall include 1 foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater. Soil cover will be constructed to the site's existing grade and ponding of water and erosion of the cover material will be prevented with drainage control, natural drainages and silt traps where needed.
13. XTO will seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will be used on federal lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs.

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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.