

**NM OIL CONSERVATION**  
WESTERN DISTRICT

MAR 28 2018

Form 3160-3  
(March 2012)

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

UNITED STATES **RECEIVED**  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMLC065705B
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator XTO ENERGY INCORPORATED		7. If Unit or CA Agreement, Name and No.
3a. Address 810 Houston St. Ft. Worth TX 76102		8. Lease Name and Well No. <b>321151</b> MUY WAYNO 18 FEDERAL 104H
3b. Phone No. (include area code) 5380 (432)620-6700		9. API Well No. 30-015-44839
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface NENW / 2310 FSL / 1990 FWL / LAT 32.129178 / LONG -103.922975 At proposed prod. zone NENW / 200 FNL / 2310 FWL / LAT 32.151496 / LONG -103.921973		10. Field and Pool, or Exploratory DELAWARE BASIN / PURPLE SAGE WO
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area SEC 18 / T25S / R30E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet		12. County or Parish EDDY
16. No. of acres in lease 401.04		13. State NM
17. Spacing Unit dedicated to this well 480		
18. Distance from proposed location* to nearest well, drilling, completed, 30 feet applied for, on this lease, ft.		19. Proposed Depth 10559 feet / 18421 feet
20. BLM/BIA Bond No. on file FED: UTB000138		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3173 feet		22. Approximate date work will start* 06/01/2018
		23. Estimated duration 90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Well plat certified by a registered surveyor.</li> <li>2. A Drilling Plan.</li> <li>3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).</li> </ol> | <ol style="list-style-type: none"> <li>4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).</li> <li>5. Operator certification</li> <li>6. Such other site specific information and/or plans as may be required by the BLM.</li> </ol> |
|---|---|

25. Signature (Electronic Submission)		Name (Printed/Typed) Kelly Kardos / Ph: (432)620-4374	Date 10/13/2017
Title Regulatory Coordinator			
Approved by (Signature) (Electronic Submission)		Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/01/2018
Title Supervisor Multiple Resources		Office CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instructions on page 2)

**APPROVED WITH CONDITIONS**  
Approval Date: 03/01/2018

NSP

RW 3-30-18.

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM 1:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications.

Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

### **Location of Well**

1. SHL: NENW / 2310 FSL / 1990 FWL / TWSP: 25S / RANGE: 30E / SECTION: 18 / LAT: 32.129178 / LONG: -103.922975 ( TVD: 0 feet, MD: 0 feet )  
PPP: SENW / 2310 FNL / 2310 FWL / TWSP: 25S / RANGE: 30E / SECTION: 18 / LAT: 32.131097 / LONG: -103.921946 ( TVD: 10559 feet, MD: 11000 feet )  
BHL: NENW / 200 FNL / 2310 FWL / TWSP: 25S / RANGE: 30E / SECTION: 7 / LAT: 32.151496 / LONG: -103.921973 ( TVD: 10559 feet, MD: 18421 feet )

### **BLM Point of Contact**

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: [jyeager@blm.gov](mailto:jyeager@blm.gov)

## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

---

**Approval Date: 03/01/2018**

(Form 3160-3, page 4)

**PECOS DISTRICT  
DRILLING OPERATIONS  
CONDITIONS OF APPROVAL**

<b>OPERATOR'S NAME:</b>	<b>XTO Energy Inc.</b>
<b>LEASE NO.:</b>	<b>NMLC-065705B</b>
<b>WELL NAME &amp; NO.:</b>	<b>Muy Wayno 18 Federal 102H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>2310' FSL &amp; 1115' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0200' FNL &amp; 0990' FWL Sec. 07, T. 25 S., R 30 E.</b>
<b>LOCATION:</b>	<b>Section 18, T. 25 S., R 30 E., NMPM</b>
<b>COUNTY:</b>	<b>County, New Mexico</b>

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

**Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

**Communitization Agreement**

The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**A. Hydrogen Sulfide**

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be activated 500 feet prior to drilling into the Delaware formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

#### A. CASING

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) for Water Basin:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

**Possibility of water flows in the Salado and Castile.**

**Possibility of lost circulation in the Red Beds, Rustler, and Delaware.**

**Abnormal pressures may be encountered when penetrating the 3<sup>rd</sup> Bone Spring Sandstone and subsequent formations.**

1. The 13-3/8 inch surface casing shall be set at approximately 890 feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

- 
- Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

## **B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi. **5M system**

**requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
  - b. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - c. The results of the test shall be reported to the appropriate BLM office.
  - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
  - f. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. **DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

**D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**JAM 011618**

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	XTO Energy Inc
LEASE NO.:	LC065705B
WELL NAME & NO.:	104H – Muy Wayno 18 Federal
SURFACE HOLE FOOTAGE:	2310'/S & 1990'/W
BOTTOM HOLE FOOTAGE:	200'/N & 2310'/W, sec. 7
LOCATION:	Section 18, T. 25 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

**TABLE OF CONTENTS**

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Watershed/Water Quality
  - Buried Pipeline(s)
  - Tank Battery
  - Playas
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### **Watershed/Water Quality:**

For all proposed actions; the entire perimeter of the well pad and CTB sites will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 24 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

### **Buried Pipeline(s):**

- A leak detection plan *will be submitted to the BLM Carlsbad Field Office for approval* prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event. Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.

### **Tank Battery:**

- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

### **Playas:**

Playas will be avoided by 200 feet to maintain the integrity of the recharge zone and the resource for water infiltration and wildlife habitat.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

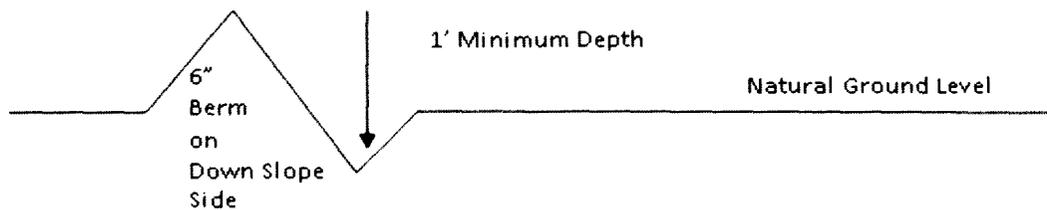
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out sloping and in sloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

### Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

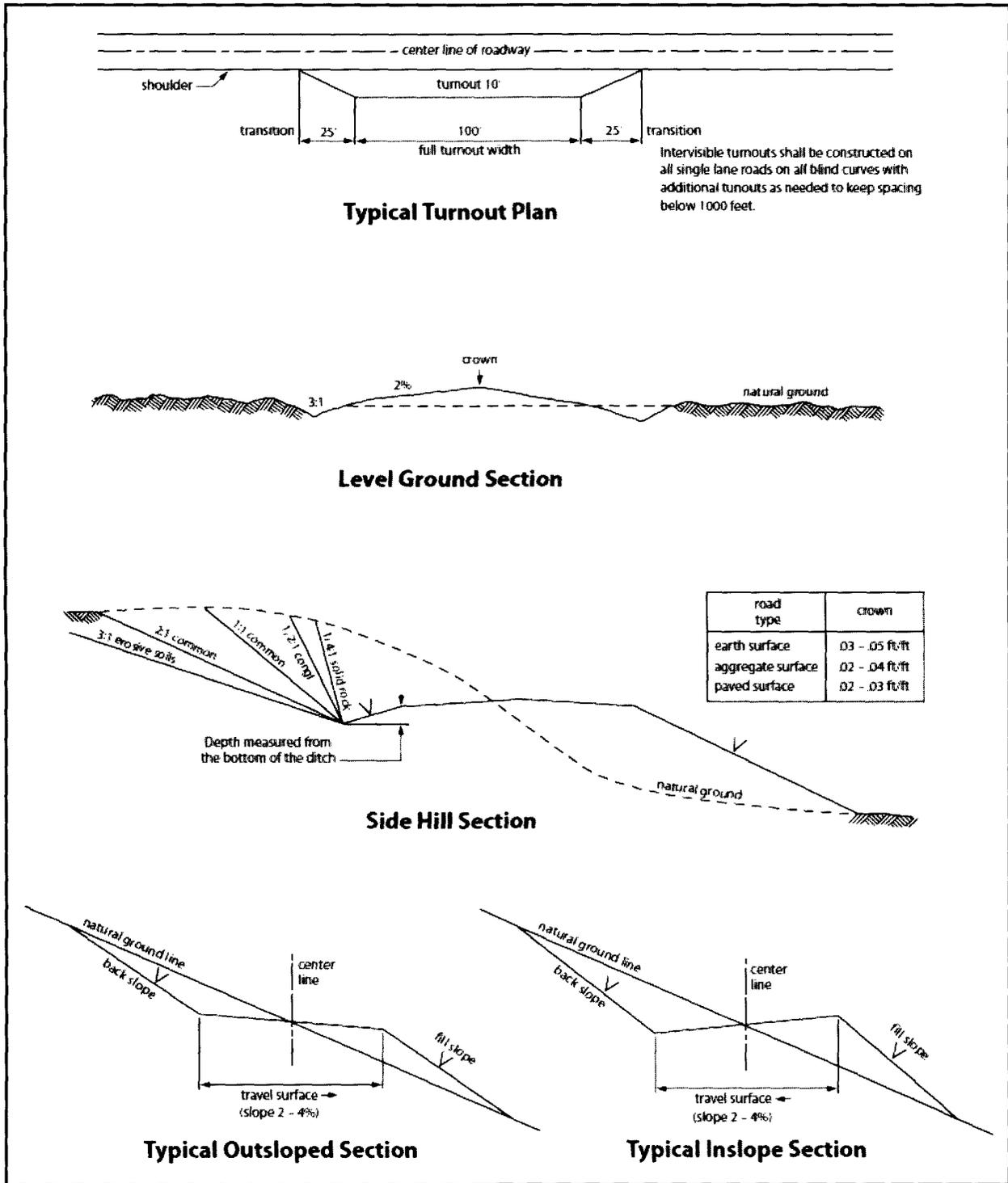


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **VII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **B. PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third

parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing
  - (2) Earth-disturbing and earth-moving work
  - (3) Blasting
  - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.
8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.
9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.
15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed

is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

#### BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately   6   inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2            | <input type="checkbox"/> seed mixture 4          |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates “Standard Environmental Colors” – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.

- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006"

Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrent shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

## **VIII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **IX. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

**Seed Mixture 1 for Loamy Sites**

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Operator Certification Data Report

03/06/2018

### Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Kelly Kardos

**Signed on:** 10/13/2017

**Title:** Regulatory Coordinator

**Street Address:**

**City:** Midland

**State:** TX

**Zip:** 79701

**Phone:** (432)620-4374

**Email address:** kelly\_kardos@xtoenergy.com

### Field Representative

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**



APD ID: 10400023355

Submission Date: 10/13/2017

Highlighted data reflects the most recent changes

Operator Name: XTO ENERGY INCORPORATED

Well Name: MUY WAYNO 18 FEDERAL

Well Number: 104H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400023355

Tie to previous NOS?

Submission Date: 10/13/2017

BLM Office: CARLSBAD

User: Kelly Kardos

Title: Regulatory Coordinator

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMLC065705B

Lease Acres: 401.04

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: XTO ENERGY INCORPORATED

Operator letter of designation: Muy\_Fed\_Op\_Rights\_20171013102529.pdf

### Operator Info

Operator Organization Name: XTO ENERGY INCORPORATED

Operator Address: 810 Houston St.

Zip: 76102

Operator PO Box:

Operator City: Ft. Worth

State: TX

Operator Phone: (432)620-6700

Operator Internet Address: Richard\_redus@xtoenergy.com

### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: MUY WAYNO 18 FEDERAL

Well Number: 104H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: DELWARE BASIN

Pool Name: PURPLE SAGE  
WOLFCAMP GAS

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL,OTHER

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Describe other minerals:** Produced Water

**Is the proposed well in a Helium production area?** N    **Use Existing Well Pad?** NO    **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL

**Multiple Well Pad Name:** MUY    **Number:** A

WAYNO

**Well Class:** HORIZONTAL

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** CONVENTIONAL GAS WELL

**Describe Well Type:**

**Well sub-Type:** DELINEATION

**Describe sub-type:**

**Distance to town:**

**Distance to nearest well:** 30 FT

**Distance to lease line:** 330 FT

**Reservoir well spacing assigned acres Measurement:** 480 Acres

**Well plat:** MUY\_Fed\_104H\_C102\_20171013102653.pdf

**Well work start Date:** 06/01/2018

**Duration:** 90 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NAVD88

**Survey number:**

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	IMD	TVD
SHL Leg #1	2310	FSL	1990	FWL	25S	30E	18	Aliquot NENW 8	32.129178	-103.922975	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 65705B	3173	00	0
KOP Leg #1	2310	FSL	1990	FWL	25S	30E	18	Aliquot NENW 8	32.129178	-103.922975	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 65705B	3173	00	0
PPP Leg #1	2310	FNL	2310	FWL	25S	30E	18	Aliquot SENW 7	32.131097	-103.921946	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 120898	-7386	11000	10559

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	300	FNL	231 0	FWL	25S	30E	7	Aliquot NENW 9	32.15113 9	- 103.9219 72	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	- 738 6	182 91	105 59
BHL Leg #1	200	FNL	231 0	FWL	25S	30E	7	Aliquot NENW 6	32.15149 6	- 103.9219 73	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	- 738 6	184 21	105 59



Stephanie Rabadue  
Regulatory Analyst  
XTO Energy Inc.  
500 W. Illinois St Ste 100  
Midland, Texas 79701  
(432) 620-6714  
stephanie\_rabadue@xtoenergy.com

September 1, 2017

Bureau of Land Management  
Carlsbad Field Office  
620 E. Greene Street  
Carlsbad, NM 88220

RE: Operating Agreement/Rights for:  
Muy Wayno 18 Federal #102H, 104H, 121H, 122H, 123H, 124H, 701H, 703H, 901H, 903H

To Whom It May Concern:

This is to hereby certify that XTO Energy, Inc. is has operating rights over leases: NMNM120898 through acreage trades and acquisitions.

Sincerely,

A handwritten signature in black ink that reads "Stephanie Rabadue". The signature is written in a cursive, flowing style.

Stephanie Rabadue  
Regulatory Analyst  
XTO Energy, Inc



**APD ID:** 10400023355

**Submission Date:** 10/13/2017

Highlighted data reflects the most recent changes

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

[Show Final Text](#)

**Well Type:** CONVENTIONAL GAS WELL

**Well Work Type:** Drill

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	PERMIAN	3173	0	0	OTHER : Quaternary	NONE	No
2	RUSTLER	2503	669	669	SILTSTONE	USEABLE WATER	No
3	TOP SALT	2249	923	923	SALT	OTHER : Produced Water	No
4	BASE OF SALT	-69	3241	3241	SALT	OTHER : Produced Water	No
5	DELAWARE	-270	3442	3442	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
6	BONE SPRINGS	-4051	7223	7223	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
7	BONE SPRING 1ST	-5017	8189	8189	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
8	BONE SPRING 2ND	-5841	9013	9013	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
9	BONE SPRING 3RD	-6952	10124	10124	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
10	WOLFCAMP	-7298	10470	10470	SHALE	NATURAL GAS,OIL,OTHER : Produced Water	Yes

### Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M

**Rating Depth:** 10559

**Equipment:** The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 4647 psi

**Requesting Variance?** YES

**Variance request:** A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

**Testing Procedure:** All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When the 9-5/8" and 7" casing is set, the packoff seals will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Choke Diagram Attachment:**

Muy\_Fed\_104H\_5M\_Choke\_20171013104004.pdf

**BOP Diagram Attachment:**

Muy\_Fed\_104H\_5M\_BOP\_20171013104017.pdf

---

**Section 3 - Casing**

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	890	0	890			890	H-40	48	STC	1.89	1.7	DRY	7.54	DRY	7.54
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3270	0	3270			3270	J-55	36	LTC	1.96	1.24	DRY	3.85	DRY	3.85
3	PRODUCTION	8.75	7.0	NEW	API	N	0	18421	0	18421			18421	P-110	29	LTC	1.64	1.18	DRY	2.53	DRY	2.53

---

**Casing Attachments**

**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Muy\_Fed\_104H\_Csg\_20171013104117.pdf

---

Operator Name: XTO ENERGY INCORPORATED

Well Name: MUY WAYNO 18 FEDERAL

Well Number: 104H

### Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Muy\_Fed\_104H\_Csg\_20171013104136.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Muy\_Fed\_104H\_Csg\_20171013104246.pdf

### Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	890	430	1.87	12.9	804		EconoCem-HLTRRC	None
SURFACE	Tail		0	890	300	1.35	14.8	405		HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	3270	920	1.88	12.9	1729.6		HalCem-C	2% CaCl
INTERMEDIATE	Tail		0	3270	230	1.33	14.8	305.9		HalCem-C	2% CaCl
PRODUCTION	Lead		0	1842.1	820	1.88	12.9	1541.6		NeoCem	None

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		0	1842 1	1670	1.33	14.8	2221. 1		NeoCem	none

### Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** The necessary mud products for weight addition a fluid loss control will be on location at all times.

**Describe the mud monitoring system utilized:** A Pason or Totco will be used to detect changes in loss or gain of mud volume.

### Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
890	3270	OTHER : Brine/Gel Sweeps	9.8	10.2							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.
0	890	OTHER : FW/Native	8.4	8.8							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
3270	1842 1	OTHER : FW/Cut Brine	9.9	10.5							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.

### Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

Mud logging unit (2 man) on @ 3270'.  
Catch 20' Samples from 3270' to TD

**List of open and cased hole logs run in the well:**

CBL,CNL,GR,MUDLOG

**Coring operation description for the well:**

No coring will take place on this well.

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5655

**Anticipated Surface Pressure:** 3332.02

**Anticipated Bottom Hole Temperature(F):** 182

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Muy\_Fed\_H2S\_Dia\_20171013105436.pdf

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

Muy\_Fed\_104H\_HS2\_20171013105453.pdf

## **Section 8 - Other Information**

**Proposed horizontal/directional/multi-lateral plan submission:**

Muy\_Fed\_104H\_DD\_20171013105641.pdf

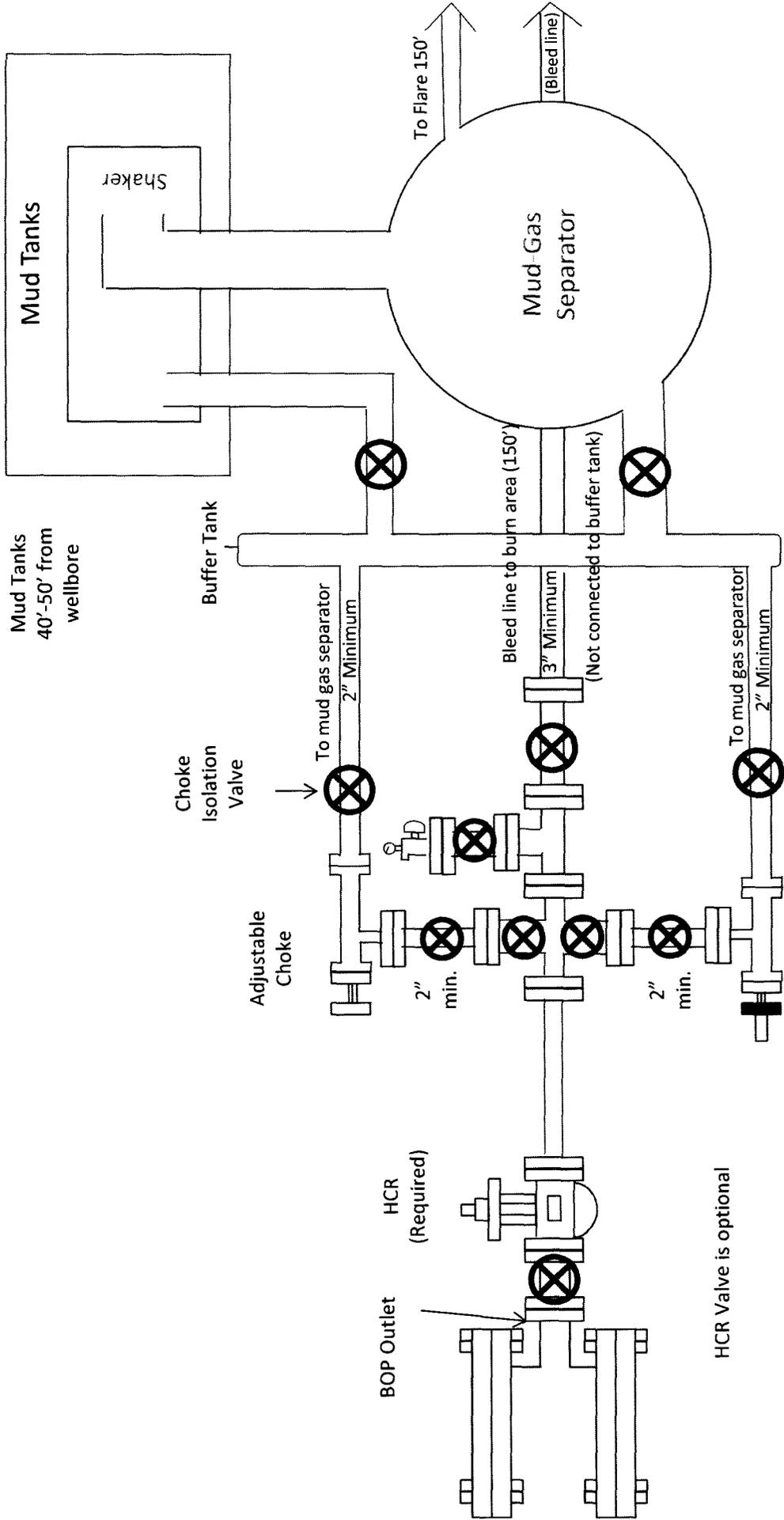
**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

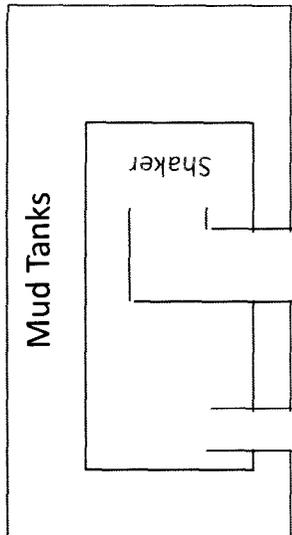
Muy\_Fed\_104H\_GCP\_20171013105721.pdf

**Other Variance attachment:**

Muy\_Fed\_Flex\_20171013105735.pdf



Mud Tanks  
40'-50' from  
wellbore

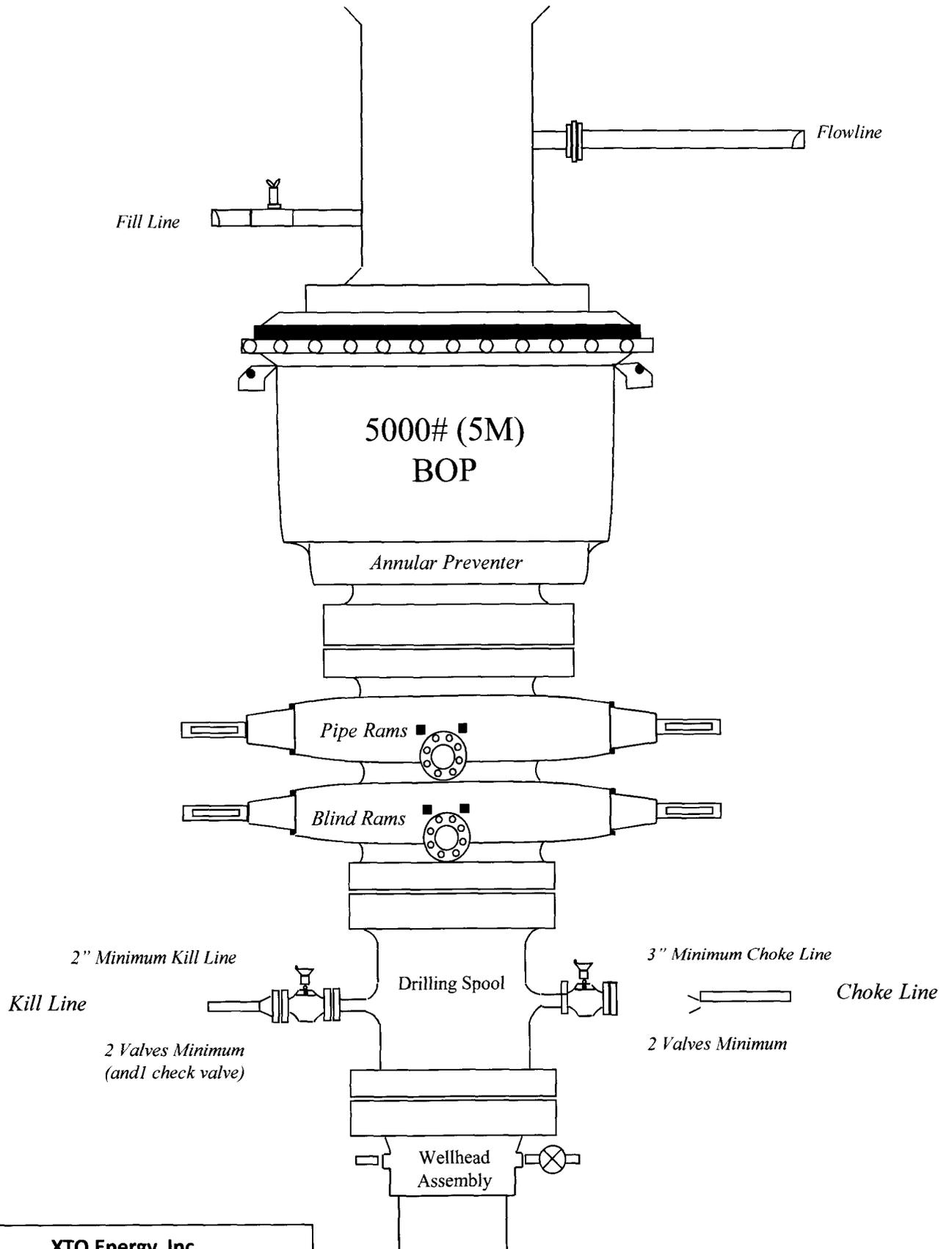


BOP Outlet  
HCR  
(Required)

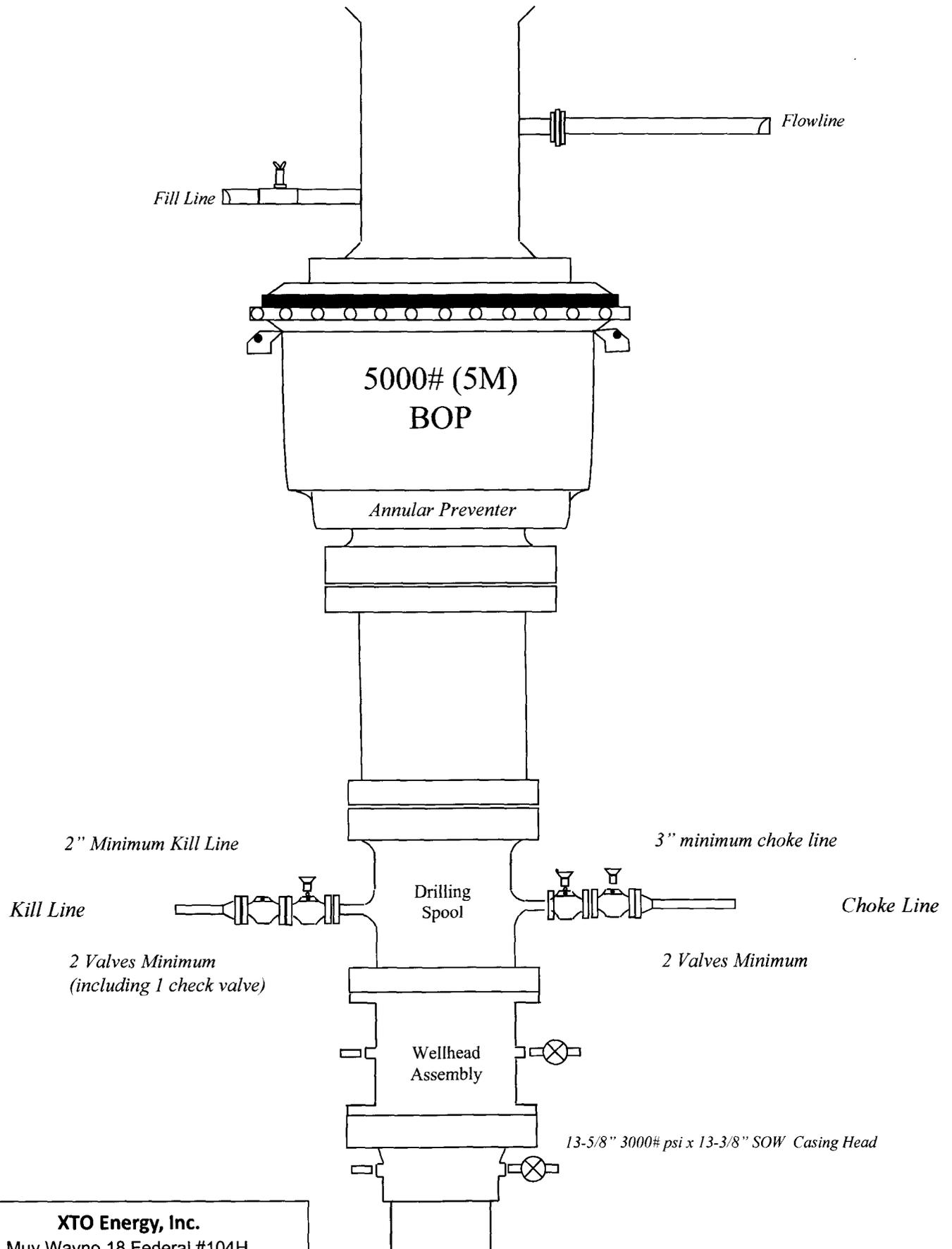
HCR Valve is optional

5M Choke Manifold Diagram  
Muy Wayno 18 Federal #104H  
XTO Energy, Inc.

**Drilling Operations  
Choke Manifold  
5M Service**



**XTO Energy, Inc.**  
 Muy Wayno 18 Federal #104H  
**5000# BOP**



**XTO Energy, Inc.**  
 Muy Wayno 18 Federal #104H  
**5000# BOP**

XTO Energy Inc.  
 Muy Wayno 18 Federal 104H  
 Projected TD: 18421' MD / 10559' TVD  
 SHL: 2310' FSL & 1990' FWL , Section 18, T25S, R30E  
 BHL: 200' FNL & 2310' FWL , Section 7, T25S, R30E  
 Eddy County, NM

Casing Worksheet

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 890'	13-3/8"	48#	STC	H-40	New	4.25	1.89	7.54
12-1/4"	0' – 3270'	9-5/8"	36#	LTC	J-55	New	1.06	1.96	3.85
8-3/4" x 8-1/2"	0' – 18421'	5-1/2"	17#	BTC	P-110	New	1.12	1.32	2.37

XTO Energy Inc.  
 Muy Wayno 18 Federal 104H  
 Projected TD: 18421' MD / 10559' TVD  
 SHL: 2310' FSL & 1990' FWL , Section 18, T25S, R30E  
 BHL: 200' FNL & 2310' FWL , Section 7, T25S, R30E  
 Eddy County, NM

Casing Worksheet

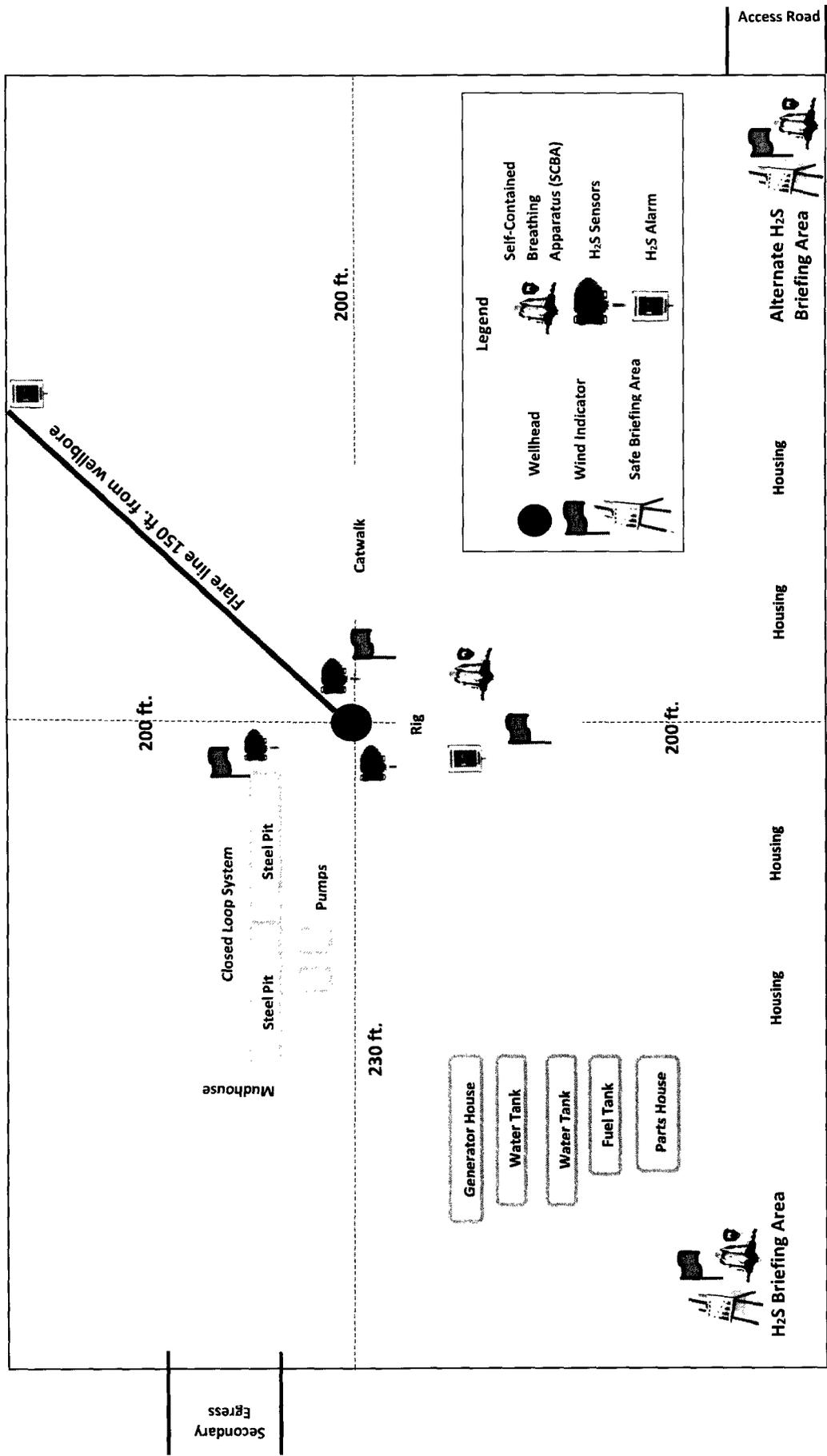
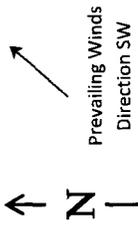
Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 890'	13-3/8"	48#	STC	H-40	New	4.25	1.89	7.54
12-1/4"	0' – 3270'	9-5/8"	36#	LTC	J-55	New	1.06	1.96	3.85
8-3/4" x 8-1/2"	0' – 18421'	5-1/2"	17#	BTC	P-110	New	1.12	1.32	2.37

XTO Energy Inc.  
 Muy Wayno 18 Federal 104H  
 Projected TD: 18421' MD / 10559' TVD  
 SHL: 2310' FSL & 1990' FWL , Section 18, T25S, R30E  
 BHL: 200' FNL & 2310' FWL , Section 7, T25S, R30E  
 Eddy County, NM

Casing Worksheet

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 890'	13-3/8"	48#	STC	H-40	New	4.25	1.89	7.54
12-1/4"	0' – 3270'	9-5/8"	36#	LTC	J-55	New	1.06	1.96	3.85
8-3/4" x 8-1/2"	0' – 18421'	5-1/2"	17#	BTC	P-110	New	1.12	1.32	2.37

# H2S Briefing Areas and Alarm Locations



**Legend**

	Wellhead		Self-Contained Breathing Apparatus (SCBA)
	Wind Indicator		H <sub>2</sub> S Sensors
	Safe Briefing Area		H <sub>2</sub> S Alarm

**H<sub>2</sub>S Briefing Area**

**Housing**

**Housing**

**Housing**

**Housing**

**Housing**

**Alternate H<sub>2</sub>S Briefing Area**



## HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

### Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

### Contacting Authorities

XTO Energy Inc's personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

## EUNICE OFFICE – EDDY & LEA COUNTIES

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175  
Eunice, NM

575-394-2089

### **XTO ENERGY INC PERSONNEL:**

Logan Farmar, Drilling Engineer	432-234-9872
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
Wes McSpadden, Production Foreman	575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County	575-887-7551
Lea County	575-396-3611

### **NEW MEXICO STATE POLICE:**

575-392-5588

### **FIRE DEPARTMENTS:**

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

### **HOSPITALS:**

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

### **AGENT NOTIFICATIONS:**

Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

### **CONTRACTORS:**

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305



September 1, 2017

Stephanie Rabadue  
XTO Energy Inc.  
500 W. Illinois St Ste 100  
Midland, TX 79701  
432-620-6714  
stephanie\_rabadue@xtoenergy.com

Bureau of Land Management  
620 E. Greene  
Carlsbad, NM 88220  
575-887-6544

Dear Sirs:

XTO Energy Inc. does not anticipate encountering H<sub>2</sub>S while drilling the Muy Wayno 18 Federal 104H located in Section 18, T25S, R30E, in Eddy County, New Mexico. As a precaution, I have attached an H<sub>2</sub>S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

A handwritten signature in cursive script that reads "Stephanie Rabadue".

Stephanie Rabadue  
Regulatory Analyst



## **XTO Energy**

**Eddy County, NM (NAD-27)**

**Muy Wayno 18 Federal**

**#1004H**

**OH**

**Plan: Plan #1**

# **Standard Planning Report**

**26 August, 2017**



Project: Eddy County, NM (NAD-27)  
 Site: Muy Wayno 18 Federal  
 Well: #1004H  
 Wellbore: OH  
 Design: Plan #1

PROJECT DETAILS: Eddy County, NM (NAD-27)  
 Geodetic System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: New Mexico East 3001  
 System Datum: Mean Sea Level

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Muy Wayno 18 Fed. #1004H SHL (2310' FSL/1990' FWL)	0.00	0.00	0.00	410914.50	627180.80	32.129054	-103.922491	Point
Muy Wayno 18 Fed. #1004H FTP	10559.00	699.10	316.10	411613.60	627496.90	32.130972	-103.921461	Point
Muy Wayno 18 Fed. #1004H LP	10559.00	599.10	316.59	411513.60	627497.39	32.130697	-103.921461	Point
Muy Wayno 18 Fed. #1004H LTP	10559.00	7990.00	280.20	418904.50	627461.00	32.151015	-103.921487	Point
Muy Wayno 18 Fed. #1004H PBHL (200' FNL/2310' FWL)	10559.00	8120.00	279.50	419034.50	627460.30	32.151372	-103.921488	Point

WELL DETAILS: #1004H

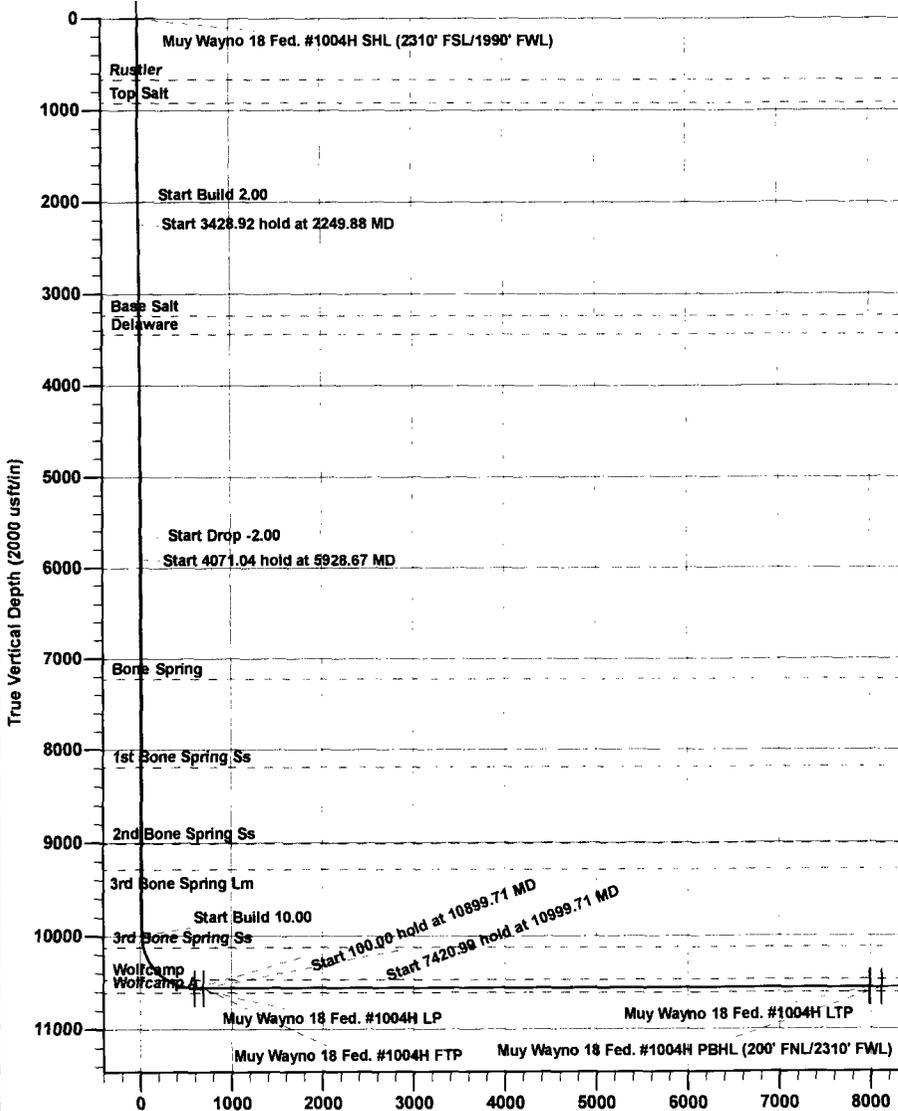
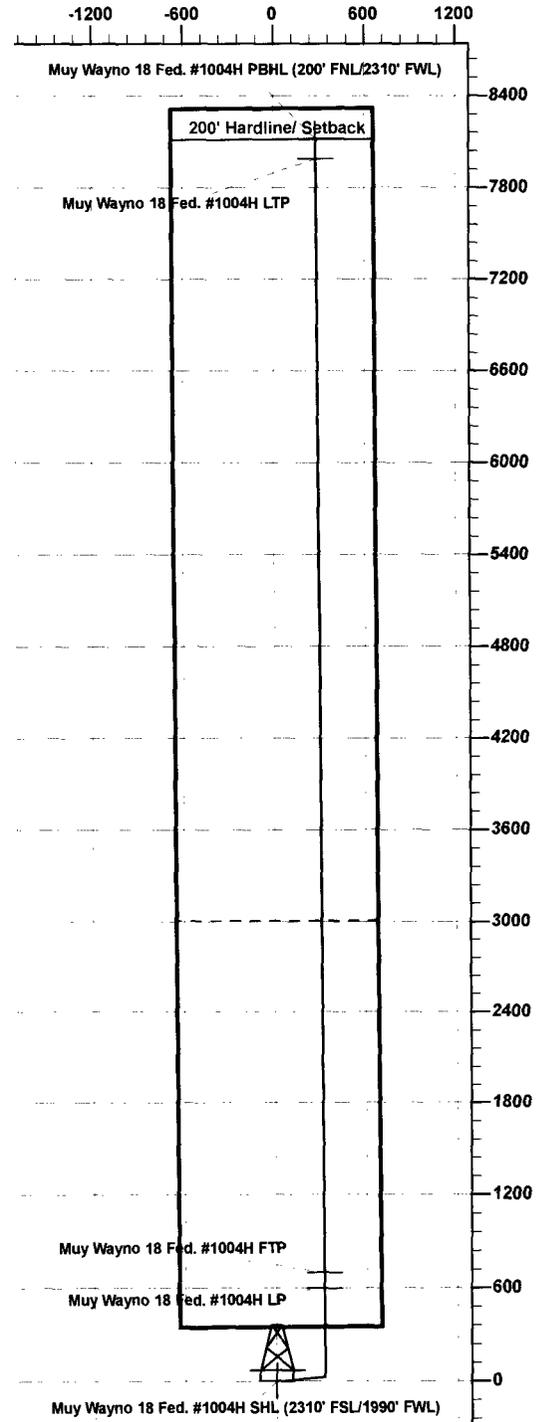
Rig Name: Unknown  
 RKB= 27' @ 3200.00usft (Unknown)  
 Ground Level: 3173.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	410914.50	627180.80	32.129054	-103.922491

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2249.88	5.00	85.32	2249.56	0.89	10.85	2.00	85.32	0.84
4	5678.79	5.00	85.32	5665.44	25.26	308.56	0.00	0.00	23.75
5	5928.67	0.00	359.72	5915.00	26.15	319.41	2.00	180.00	24.59
6	9999.71	0.00	359.72	9986.04	26.15	319.41	0.00	0.00	24.59
7	10899.71	90.00	359.72	10559.00	599.10	316.59	10.00	0.00	597.55
8	10999.71	90.00	359.72	10559.00	699.10	316.10	0.00	0.00	697.55
9	18420.70	90.00	359.72	10559.00	8120.00	279.56	0.00	0.00	8118.54

West(-)/East(+) (1200 usft/in)



Vertical Section at 359.72° (2000 usft/in)

Plan: Plan #1 (#1004H/OH)

Created By: Matthew May Date: 9:21, August 26 2017



**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Muy Wayno 18 Federal  
**Well:** #1004H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #1004H  
**TVD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**MD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	Eddy County, NM (NAD-27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

**Site** Muy Wayno 18 Federal

**Site Position:** **Northing:** 410,905.90 usft **Latitude:** 32.129047  
**From:** Map **Easting:** 625,541.00 usft **Longitude:** -103.927788  
**Position Uncertainty:** 0.00 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.22 °

**Well** #1004H

**Well Position** **+N/-S** 8.60 usft **Northing:** 410,914.50 usft **Latitude:** 32.129054  
**+E/-W** 1,639.80 usft **Easting:** 627,180.80 usft **Longitude:** -103.922491  
**Position Uncertainty** 0.00 usft **Wellhead Elevation:** 0.00 usft **Ground Level:** 3,173.00 usft

**Wellbore** OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/23/2017	7.09	59.92	47,827

**Design** Plan #1

**Audit Notes:**

**Version:** **Phase:** PROTOTYPE **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.72

**Plan Sections**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,249.88	5.00	85.32	2,249.56	0.89	10.85	2.00	2.00	0.00	85.32	
5,678.79	5.00	85.32	5,665.44	25.26	308.56	0.00	0.00	0.00	0.00	
5,928.67	0.00	359.72	5,915.00	26.15	319.41	2.00	-2.00	0.00	180.00	
9,999.71	0.00	359.72	9,986.04	26.15	319.41	0.00	0.00	0.00	0.00	
10,899.71	90.00	359.72	10,559.00	599.10	316.59	10.00	10.00	0.00	0.00	
10,999.71	90.00	359.72	10,559.00	699.10	316.10	0.00	0.00	0.00	0.00	Muy Wayno 18 Fed
18,420.70	90.00	359.72	10,559.00	8,120.00	279.56	0.00	0.00	0.00	0.00	Muy Wayno 18 Fed



Database: EDM 5000.1 Single User Db  
 Company: XTO Energy  
 Project: Eddy County, NM (NAD-27)  
 Site: Muy Wayno 18 Federal  
 Well: #1004H  
 Wellbore: OH  
 Design: Plan #1

Local Co-ordinate Reference: Well #1004H  
 TVD Reference: RKB= 27' @ 3200.00usft (Unknown)  
 MD Reference: RKB= 27' @ 3200.00usft (Unknown)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	85.32	2,099.98	0.14	1.74	0.13	2.00	2.00	0.00
2,200.00	4.00	85.32	2,199.84	0.57	6.96	0.54	2.00	2.00	0.00
2,249.88	5.00	85.32	2,249.56	0.89	10.85	0.84	2.00	2.00	0.00
2,300.00	5.00	85.32	2,299.49	1.24	15.21	1.17	0.00	0.00	0.00
2,400.00	5.00	85.32	2,399.11	1.96	23.89	1.84	0.00	0.00	0.00
2,500.00	5.00	85.32	2,498.73	2.67	32.57	2.51	0.00	0.00	0.00
2,600.00	5.00	85.32	2,598.35	3.38	41.25	3.18	0.00	0.00	0.00
2,700.00	5.00	85.32	2,697.97	4.09	49.93	3.84	0.00	0.00	0.00
2,800.00	5.00	85.32	2,797.59	4.80	58.62	4.51	0.00	0.00	0.00
2,900.00	5.00	85.32	2,897.21	5.51	67.30	5.18	0.00	0.00	0.00
3,000.00	5.00	85.32	2,996.83	6.22	75.98	5.85	0.00	0.00	0.00
3,100.00	5.00	85.32	3,096.45	6.93	84.66	6.52	0.00	0.00	0.00
3,200.00	5.00	85.32	3,196.07	7.64	93.35	7.19	0.00	0.00	0.00
3,300.00	5.00	85.32	3,295.69	8.35	102.03	7.85	0.00	0.00	0.00
3,400.00	5.00	85.32	3,395.31	9.06	110.71	8.52	0.00	0.00	0.00
3,500.00	5.00	85.32	3,494.93	9.77	119.39	9.19	0.00	0.00	0.00
3,600.00	5.00	85.32	3,594.55	10.49	128.07	9.86	0.00	0.00	0.00
3,700.00	5.00	85.32	3,694.17	11.20	136.76	10.53	0.00	0.00	0.00
3,800.00	5.00	85.32	3,793.79	11.91	145.44	11.20	0.00	0.00	0.00
3,900.00	5.00	85.32	3,893.41	12.62	154.12	11.86	0.00	0.00	0.00
4,000.00	5.00	85.32	3,993.03	13.33	162.80	12.53	0.00	0.00	0.00
4,100.00	5.00	85.32	4,092.65	14.04	171.49	13.20	0.00	0.00	0.00
4,200.00	5.00	85.32	4,192.27	14.75	180.17	13.87	0.00	0.00	0.00
4,300.00	5.00	85.32	4,291.89	15.46	188.85	14.54	0.00	0.00	0.00
4,400.00	5.00	85.32	4,391.51	16.17	197.53	15.21	0.00	0.00	0.00
4,500.00	5.00	85.32	4,491.13	16.88	206.21	15.87	0.00	0.00	0.00
4,600.00	5.00	85.32	4,590.75	17.59	214.90	16.54	0.00	0.00	0.00
4,700.00	5.00	85.32	4,690.37	18.30	223.58	17.21	0.00	0.00	0.00
4,800.00	5.00	85.32	4,789.99	19.02	232.26	17.88	0.00	0.00	0.00
4,900.00	5.00	85.32	4,889.61	19.73	240.94	18.55	0.00	0.00	0.00
5,000.00	5.00	85.32	4,989.23	20.44	249.63	19.22	0.00	0.00	0.00
5,100.00	5.00	85.32	5,088.85	21.15	258.31	19.89	0.00	0.00	0.00
5,200.00	5.00	85.32	5,188.47	21.86	266.99	20.55	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db  
 Company: XTO Energy  
 Project: Eddy County, NM (NAD-27)  
 Site: Muy Wayno 18 Federal  
 Well: #1004H  
 Wellbore: OH  
 Design: Plan #1

Local Co-ordinate Reference: Well #1004H  
 TVD Reference: RKB= 27' @ 3200.00usft (Unknown)  
 MD Reference: RKB= 27' @ 3200.00usft (Unknown)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	5.00	85.32	5,288.09	22.57	275.67	21.22	0.00	0.00	0.00
5,400.00	5.00	85.32	5,387.71	23.28	284.35	21.89	0.00	0.00	0.00
5,500.00	5.00	85.32	5,487.33	23.99	293.04	22.56	0.00	0.00	0.00
5,600.00	5.00	85.32	5,586.95	24.70	301.72	23.23	0.00	0.00	0.00
5,678.79	5.00	85.32	5,665.44	25.26	308.56	23.75	0.00	0.00	0.00
5,700.00	4.57	85.32	5,686.57	25.41	310.32	23.89	2.00	-2.00	0.00
5,800.00	2.57	85.32	5,786.37	25.91	316.53	24.37	2.00	-2.00	0.00
5,900.00	0.57	85.32	5,886.33	26.14	319.27	24.58	2.00	-2.00	0.00
5,928.67	0.00	359.72	5,915.00	26.15	319.41	24.59	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,986.33	26.15	319.41	24.59	0.00	0.00	0.00
6,100.00	0.00	0.00	6,086.33	26.15	319.41	24.59	0.00	0.00	0.00
6,200.00	0.00	0.00	6,186.33	26.15	319.41	24.59	0.00	0.00	0.00
6,300.00	0.00	0.00	6,286.33	26.15	319.41	24.59	0.00	0.00	0.00
6,400.00	0.00	0.00	6,386.33	26.15	319.41	24.59	0.00	0.00	0.00
6,500.00	0.00	0.00	6,486.33	26.15	319.41	24.59	0.00	0.00	0.00
6,600.00	0.00	0.00	6,586.33	26.15	319.41	24.59	0.00	0.00	0.00
6,700.00	0.00	0.00	6,686.33	26.15	319.41	24.59	0.00	0.00	0.00
6,800.00	0.00	0.00	6,786.33	26.15	319.41	24.59	0.00	0.00	0.00
6,900.00	0.00	0.00	6,886.33	26.15	319.41	24.59	0.00	0.00	0.00
7,000.00	0.00	0.00	6,986.33	26.15	319.41	24.59	0.00	0.00	0.00
7,100.00	0.00	0.00	7,086.33	26.15	319.41	24.59	0.00	0.00	0.00
7,200.00	0.00	0.00	7,186.33	26.15	319.41	24.59	0.00	0.00	0.00
7,300.00	0.00	0.00	7,286.33	26.15	319.41	24.59	0.00	0.00	0.00
7,400.00	0.00	0.00	7,386.33	26.15	319.41	24.59	0.00	0.00	0.00
7,500.00	0.00	0.00	7,486.33	26.15	319.41	24.59	0.00	0.00	0.00
7,600.00	0.00	0.00	7,586.33	26.15	319.41	24.59	0.00	0.00	0.00
7,700.00	0.00	0.00	7,686.33	26.15	319.41	24.59	0.00	0.00	0.00
7,800.00	0.00	0.00	7,786.33	26.15	319.41	24.59	0.00	0.00	0.00
7,900.00	0.00	0.00	7,886.33	26.15	319.41	24.59	0.00	0.00	0.00
8,000.00	0.00	0.00	7,986.33	26.15	319.41	24.59	0.00	0.00	0.00
8,100.00	0.00	0.00	8,086.33	26.15	319.41	24.59	0.00	0.00	0.00
8,200.00	0.00	0.00	8,186.33	26.15	319.41	24.59	0.00	0.00	0.00
8,300.00	0.00	0.00	8,286.33	26.15	319.41	24.59	0.00	0.00	0.00
8,400.00	0.00	0.00	8,386.33	26.15	319.41	24.59	0.00	0.00	0.00
8,500.00	0.00	0.00	8,486.33	26.15	319.41	24.59	0.00	0.00	0.00
8,600.00	0.00	0.00	8,586.33	26.15	319.41	24.59	0.00	0.00	0.00
8,700.00	0.00	0.00	8,686.33	26.15	319.41	24.59	0.00	0.00	0.00
8,800.00	0.00	0.00	8,786.33	26.15	319.41	24.59	0.00	0.00	0.00
8,900.00	0.00	0.00	8,886.33	26.15	319.41	24.59	0.00	0.00	0.00
9,000.00	0.00	0.00	8,986.33	26.15	319.41	24.59	0.00	0.00	0.00
9,100.00	0.00	0.00	9,086.33	26.15	319.41	24.59	0.00	0.00	0.00
9,200.00	0.00	0.00	9,186.33	26.15	319.41	24.59	0.00	0.00	0.00
9,300.00	0.00	0.00	9,286.33	26.15	319.41	24.59	0.00	0.00	0.00
9,400.00	0.00	0.00	9,386.33	26.15	319.41	24.59	0.00	0.00	0.00
9,500.00	0.00	0.00	9,486.33	26.15	319.41	24.59	0.00	0.00	0.00
9,600.00	0.00	0.00	9,586.33	26.15	319.41	24.59	0.00	0.00	0.00
9,700.00	0.00	0.00	9,686.33	26.15	319.41	24.59	0.00	0.00	0.00
9,800.00	0.00	0.00	9,786.33	26.15	319.41	24.59	0.00	0.00	0.00
9,900.00	0.00	0.00	9,886.33	26.15	319.41	24.59	0.00	0.00	0.00
9,999.71	0.00	359.72	9,986.04	26.15	319.41	24.59	0.00	0.00	0.00
10,050.00	5.03	359.72	10,036.27	28.36	319.40	26.79	10.00	10.00	0.00
10,100.00	10.03	359.72	10,085.82	34.91	319.37	33.34	10.00	10.00	0.00
10,150.00	15.03	359.72	10,134.61	45.75	319.32	44.19	10.00	10.00	0.00
10,200.00	20.03	359.72	10,182.28	60.80	319.24	59.24	10.00	10.00	0.00



**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Muy Wayno 18 Federal  
**Well:** #1004H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #1004H  
**TVD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**MD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,250.00	25.03	359.72	10,228.45	79.95	319.15	78.39	10.00	10.00	0.00
10,300.00	30.03	359.72	10,272.77	103.06	319.03	101.50	10.00	10.00	0.00
10,350.00	35.03	359.72	10,314.91	129.93	318.90	128.37	10.00	10.00	0.00
10,400.00	40.03	359.72	10,354.55	160.38	318.75	158.82	10.00	10.00	0.00
10,450.00	45.03	359.72	10,391.39	194.17	318.59	192.61	10.00	10.00	0.00
10,500.00	50.03	359.72	10,425.14	231.04	318.40	229.48	10.00	10.00	0.00
10,550.00	55.03	359.72	10,455.55	270.71	318.21	269.15	10.00	10.00	0.00
10,600.00	60.03	359.72	10,482.38	312.88	318.00	311.32	10.00	10.00	0.00
10,650.00	65.03	359.72	10,505.44	357.22	317.78	355.67	10.00	10.00	0.00
10,700.00	70.03	359.72	10,524.55	403.41	317.56	401.86	10.00	10.00	0.00
10,750.00	75.03	359.72	10,539.55	451.09	317.32	449.53	10.00	10.00	0.00
10,800.00	80.03	359.72	10,550.35	499.89	317.08	498.34	10.00	10.00	0.00
10,850.00	85.03	359.72	10,556.85	549.45	316.84	547.90	10.00	10.00	0.00
10,899.71	90.00	359.72	10,559.00	599.10	316.59	597.55	10.00	10.00	0.00
10,999.71	90.00	359.72	10,559.00	699.10	316.10	697.55	0.00	0.00	0.00
11,100.00	90.00	359.72	10,559.00	799.39	315.61	797.84	0.00	0.00	0.00
11,200.00	90.00	359.72	10,559.00	899.39	315.11	897.84	0.00	0.00	0.00
11,300.00	90.00	359.72	10,559.00	999.39	314.62	997.84	0.00	0.00	0.00
11,400.00	90.00	359.72	10,559.00	1,099.38	314.13	1,097.84	0.00	0.00	0.00
11,500.00	90.00	359.72	10,559.00	1,199.38	313.64	1,197.84	0.00	0.00	0.00
11,600.00	90.00	359.72	10,559.00	1,299.38	313.14	1,297.84	0.00	0.00	0.00
11,700.00	90.00	359.72	10,559.00	1,399.38	312.65	1,397.84	0.00	0.00	0.00
11,800.00	90.00	359.72	10,559.00	1,499.38	312.16	1,497.84	0.00	0.00	0.00
11,900.00	90.00	359.72	10,559.00	1,599.38	311.67	1,597.84	0.00	0.00	0.00
12,000.00	90.00	359.72	10,559.00	1,699.38	311.17	1,697.84	0.00	0.00	0.00
12,100.00	90.00	359.72	10,559.00	1,799.38	310.68	1,797.84	0.00	0.00	0.00
12,200.00	90.00	359.72	10,559.00	1,899.37	310.19	1,897.84	0.00	0.00	0.00
12,300.00	90.00	359.72	10,559.00	1,999.37	309.70	1,997.84	0.00	0.00	0.00
12,400.00	90.00	359.72	10,559.00	2,099.37	309.21	2,097.84	0.00	0.00	0.00
12,500.00	90.00	359.72	10,559.00	2,199.37	308.71	2,197.84	0.00	0.00	0.00
12,600.00	90.00	359.72	10,559.00	2,299.37	308.22	2,297.84	0.00	0.00	0.00
12,700.00	90.00	359.72	10,559.00	2,399.37	307.73	2,397.84	0.00	0.00	0.00
12,800.00	90.00	359.72	10,559.00	2,499.37	307.24	2,497.84	0.00	0.00	0.00
12,900.00	90.00	359.72	10,559.00	2,599.37	306.74	2,597.84	0.00	0.00	0.00
13,000.00	90.00	359.72	10,559.00	2,699.37	306.25	2,697.84	0.00	0.00	0.00
13,100.00	90.00	359.72	10,559.00	2,799.36	305.76	2,797.84	0.00	0.00	0.00
13,200.00	90.00	359.72	10,559.00	2,899.36	305.27	2,897.84	0.00	0.00	0.00
13,300.00	90.00	359.72	10,559.00	2,999.36	304.77	2,997.84	0.00	0.00	0.00
13,400.00	90.00	359.72	10,559.00	3,099.36	304.28	3,097.84	0.00	0.00	0.00
13,500.00	90.00	359.72	10,559.00	3,199.36	303.79	3,197.84	0.00	0.00	0.00
13,600.00	90.00	359.72	10,559.00	3,299.36	303.30	3,297.84	0.00	0.00	0.00
13,700.00	90.00	359.72	10,559.00	3,399.36	302.80	3,397.84	0.00	0.00	0.00
13,800.00	90.00	359.72	10,559.00	3,499.36	302.31	3,497.84	0.00	0.00	0.00
13,900.00	90.00	359.72	10,559.00	3,599.35	301.82	3,597.84	0.00	0.00	0.00
14,000.00	90.00	359.72	10,559.00	3,699.35	301.33	3,697.84	0.00	0.00	0.00
14,100.00	90.00	359.72	10,559.00	3,799.35	300.83	3,797.84	0.00	0.00	0.00
14,200.00	90.00	359.72	10,559.00	3,899.35	300.34	3,897.84	0.00	0.00	0.00
14,300.00	90.00	359.72	10,559.00	3,999.35	299.85	3,997.84	0.00	0.00	0.00
14,400.00	90.00	359.72	10,559.00	4,099.35	299.36	4,097.84	0.00	0.00	0.00
14,500.00	90.00	359.72	10,559.00	4,199.35	298.86	4,197.84	0.00	0.00	0.00
14,600.00	90.00	359.72	10,559.00	4,299.35	298.37	4,297.84	0.00	0.00	0.00
14,700.00	90.00	359.72	10,559.00	4,399.34	297.88	4,397.84	0.00	0.00	0.00
14,800.00	90.00	359.72	10,559.00	4,499.34	297.39	4,497.84	0.00	0.00	0.00
14,900.00	90.00	359.72	10,559.00	4,599.34	296.90	4,597.84	0.00	0.00	0.00



**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Muy Wayno 18 Federal  
**Well:** #1004H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #1004H  
**TVD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**MD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	90.00	359.72	10,559.00	4,699.34	296.40	4,697.84	0.00	0.00	0.00
15,100.00	90.00	359.72	10,559.00	4,799.34	295.91	4,797.84	0.00	0.00	0.00
15,200.00	90.00	359.72	10,559.00	4,899.34	295.42	4,897.84	0.00	0.00	0.00
15,300.00	90.00	359.72	10,559.00	4,999.34	294.93	4,997.84	0.00	0.00	0.00
15,400.00	90.00	359.72	10,559.00	5,099.34	294.43	5,097.84	0.00	0.00	0.00
15,500.00	90.00	359.72	10,559.00	5,199.33	293.94	5,197.84	0.00	0.00	0.00
15,600.00	90.00	359.72	10,559.00	5,299.33	293.45	5,297.84	0.00	0.00	0.00
15,700.00	90.00	359.72	10,559.00	5,399.33	292.96	5,397.84	0.00	0.00	0.00
15,800.00	90.00	359.72	10,559.00	5,499.33	292.46	5,497.84	0.00	0.00	0.00
15,900.00	90.00	359.72	10,559.00	5,599.33	291.97	5,597.84	0.00	0.00	0.00
16,000.00	90.00	359.72	10,559.00	5,699.33	291.48	5,697.84	0.00	0.00	0.00
16,100.00	90.00	359.72	10,559.00	5,799.33	290.99	5,797.84	0.00	0.00	0.00
16,200.00	90.00	359.72	10,559.00	5,899.33	290.49	5,897.84	0.00	0.00	0.00
16,300.00	90.00	359.72	10,559.00	5,999.33	290.00	5,997.84	0.00	0.00	0.00
16,400.00	90.00	359.72	10,559.00	6,099.32	289.51	6,097.84	0.00	0.00	0.00
16,500.00	90.00	359.72	10,559.00	6,199.32	289.02	6,197.84	0.00	0.00	0.00
16,600.00	90.00	359.72	10,559.00	6,299.32	288.52	6,297.84	0.00	0.00	0.00
16,700.00	90.00	359.72	10,559.00	6,399.32	288.03	6,397.84	0.00	0.00	0.00
16,800.00	90.00	359.72	10,559.00	6,499.32	287.54	6,497.84	0.00	0.00	0.00
16,900.00	90.00	359.72	10,559.00	6,599.32	287.05	6,597.84	0.00	0.00	0.00
17,000.00	90.00	359.72	10,559.00	6,699.32	286.56	6,697.84	0.00	0.00	0.00
17,100.00	90.00	359.72	10,559.00	6,799.32	286.06	6,797.84	0.00	0.00	0.00
17,200.00	90.00	359.72	10,559.00	6,899.31	285.57	6,897.84	0.00	0.00	0.00
17,300.00	90.00	359.72	10,559.00	6,999.31	285.08	6,997.84	0.00	0.00	0.00
17,400.00	90.00	359.72	10,559.00	7,099.31	284.59	7,097.84	0.00	0.00	0.00
17,500.00	90.00	359.72	10,559.00	7,199.31	284.09	7,197.84	0.00	0.00	0.00
17,600.00	90.00	359.72	10,559.00	7,299.31	283.60	7,297.84	0.00	0.00	0.00
17,700.00	90.00	359.72	10,559.00	7,399.31	283.11	7,397.84	0.00	0.00	0.00
17,800.00	90.00	359.72	10,559.00	7,499.31	282.62	7,497.84	0.00	0.00	0.00
17,900.00	90.00	359.72	10,559.00	7,599.31	282.12	7,597.84	0.00	0.00	0.00
18,000.00	90.00	359.72	10,559.00	7,699.30	281.63	7,697.84	0.00	0.00	0.00
18,100.00	90.00	359.72	10,559.00	7,799.30	281.14	7,797.84	0.00	0.00	0.00
18,200.00	90.00	359.72	10,559.00	7,899.30	280.65	7,897.84	0.00	0.00	0.00
18,300.00	90.00	359.72	10,559.00	7,999.30	280.15	7,997.84	0.00	0.00	0.00
18,400.00	90.00	359.72	10,559.00	8,099.30	279.66	8,097.84	0.00	0.00	0.00
18,420.70	90.00	359.72	10,559.00	8,120.00	279.56	8,118.54	0.00	0.00	0.00



**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Muy Wayno 18 Federal  
**Well:** #1004H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #1004H  
**TVD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**MD Reference:** RKB= 27' @ 3200.00usft (Unknown)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Design Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Muy Wayno 18 Fed. # - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	410,914.50	627,180.80	32.129054	-103.922491
Muy Wayno 18 Fed. # - plan hits target center - Point	0.00	0.00	10,559.00	699.10	316.10	411,613.60	627,496.90	32.130972	-103.921461
Muy Wayno 18 Fed. # - plan hits target center - Point	0.00	0.00	10,559.00	599.10	316.59	411,513.60	627,497.40	32.130698	-103.921461
Muy Wayno 18 Fed. # - plan misses target center by 0.06usft at 18420.70usft MD (10559.00 TVD, 8120.00 N, 279.56 E) - Point	0.00	0.00	10,559.00	8,120.00	279.50	419,034.50	627,460.30	32.151373	-103.921488
Muy Wayno 18 Fed. # - plan hits target center - Point	0.00	0.00	10,559.00	7,990.00	280.20	418,904.50	627,461.00	32.151015	-103.921487

**Formations**

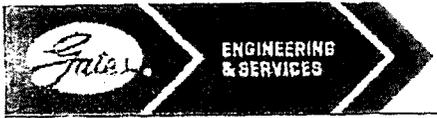
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
669.00	669.00	Rustler			
923.00	923.00	Top Salt			
3,245.10	3,241.00	Base Salt			
3,446.87	3,442.00	Delaware			
7,236.67	7,223.00	Bone Spring			
8,202.67	8,189.00	1st Bone Spring Ss			
9,026.67	9,013.00	2nd Bone Spring Ss			
9,300.67	9,287.00	3rd Bone Spring Lm			
10,139.04	10,124.00	3rd Bone Spring Ss			
10,576.07	10,470.00	Wolfcamp			

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### **Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



GATES E & S NORTH AMERICA, INC  
 DU-TEX  
 134 44TH STREET  
 CORPUS CHRISTI, TEXAS 78405

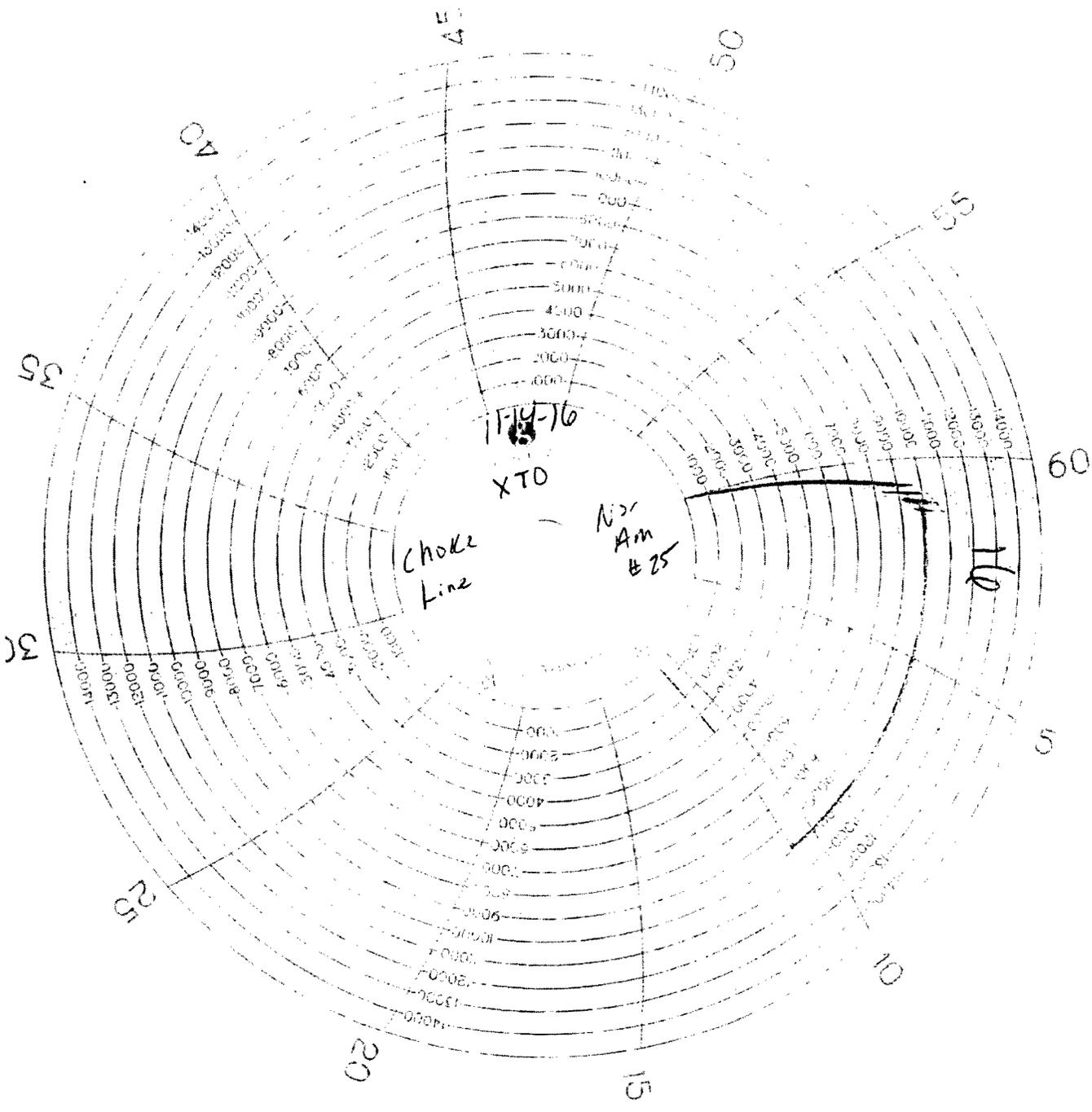
PHONE: 361-887-9807  
 FAX: 361-887-0812  
 EMAIL: crpe&s@gates.com  
 WEB: www.gates.com

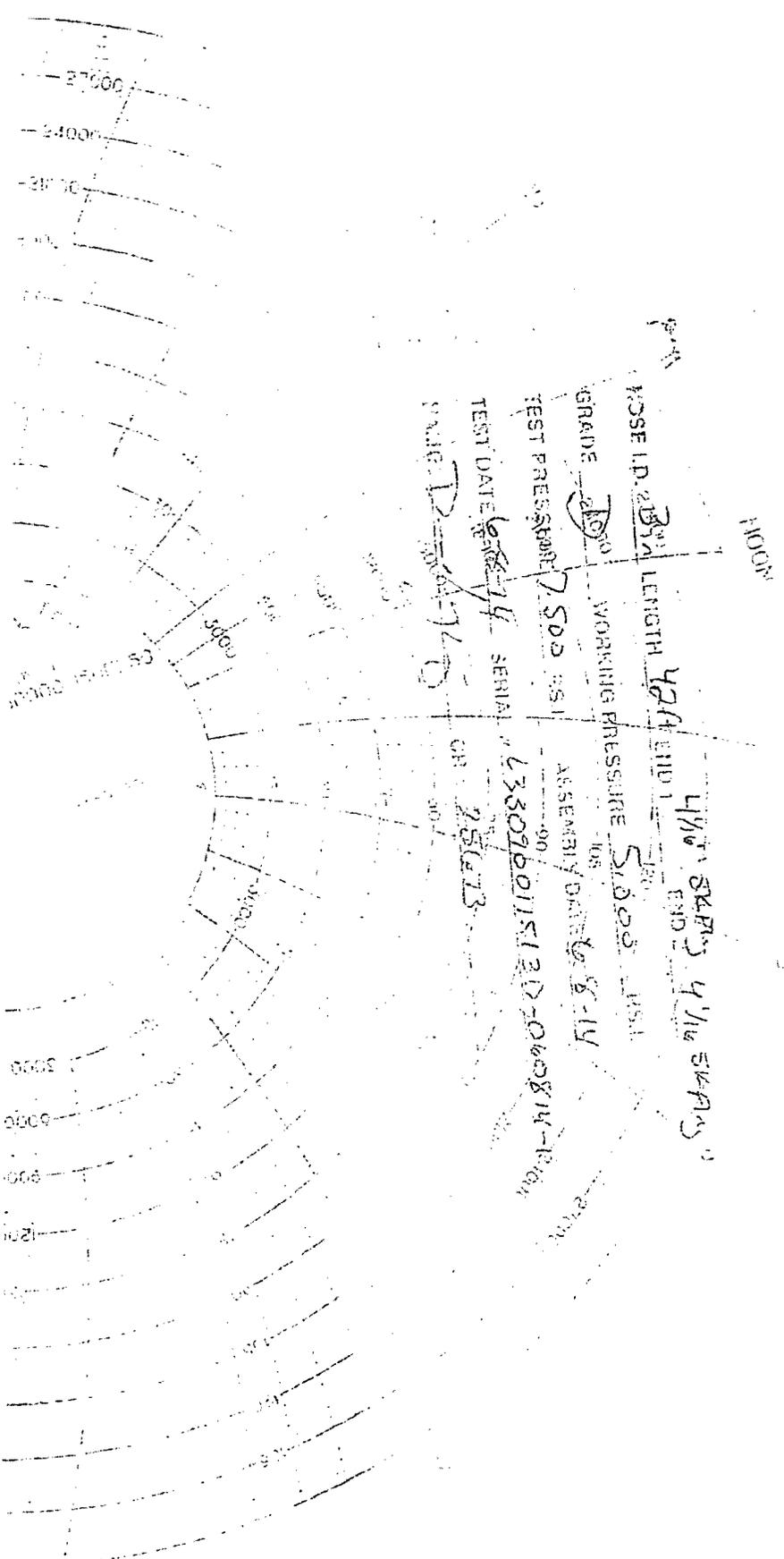
**GRADE D PRESSURE TEST CERTIFICATE**

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORI-IA
Product Description:	FDJ.042.0R41/16.5KFLGE;E LE		
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :	<i>[Signature]</i>	Signature :	<i>[Signature]</i>





11000

HOSE I.D. 2 3/4"

LENGTH 100'

4 1/2" STEEL 1/2" SWAPS

GRADE 200

WORKING PRESSURE 5000 PSI

TEST PRESSURE 7500 PSI

TEST DATE 6-8-14

ASSEMBLY DATE 6-14

SIZE D-304-140

OR 25473

OR 30

**APD ID:** 10400023355**Submission Date:** 10/13/2017Highlighted data  
reflects the most  
recent changes**Operator Name:** XTO ENERGY INCORPORATED**Well Name:** MUY WAYNO 18 FEDERAL**Well Number:** 104H[Show Final Text](#)**Well Type:** CONVENTIONAL GAS WELL**Well Work Type:** Drill

## Section 1 - Existing Roads

**Will existing roads be used?** NO

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES**New Road Map:**

Muy\_Fed\_Access\_Rd\_20171013111148.pdf

**New road type:** RESOURCE**Length:** 4243 Feet**Width (ft.):** 30**Max slope (%):** 2**Max grade (%):** 3**Army Corp of Engineers (ACOE) permit required?** NO**ACOE Permit Number(s):****New road travel width:** 14**New road access erosion control:** The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route**New road access plan or profile prepared?** NO**New road access plan attachment:****Access road engineering design?** NO**Access road engineering design attachment:****Access surfacing type:** OTHER**Access topsoil source:** ONSITE**Access surfacing type description:** Surface material will be native caliche

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM

**Access other construction information:** Construction, reclamation, and/or routine maintenance will not be conducted during periods when the soil conditions for construction could lead to impacts to the surrounding environment, or when watershed damage is likely to occur as a result of these activities.

**Access miscellaneous information:**

**Number of access turnouts:** 1

**Access turnout map:**

## Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) description:** No DCS were identified at onsite. DCS will be applied for as-needed and be in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

**Additional Attachment(s):**

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

Muy\_Fed\_1Mile\_20171013111253.pdf

**Existing Wells description:**

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** A separate 600' x 600' pad was staked with the BLM for construction and use as a Central Tank Battery (Muy Wayno Central Tank Battery). The pad is located in the Northwest of the Southwest quarter of Section 18-T25S-R30E NMPM, Eddy County, New Mexico. A plat of the proposed facility is attached. Only the area necessary to maintain facilities will be disturbed. 600'x600' location is anticipated for full area development and includes plans for 10 wells in the area in addition to the flare stack. Flowlines. In the event the wells are found productive, 4" composite flexpipe or steel flowlines with a maximum safety pressure rating of 750psi (operating pressure: 125psi) will be laid on the surface within proposed lease road corridors from the proposed wells to the Muy Wayno Central Tank Battery where

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

the oil, gas, and water will be metered and appropriately separated. High pressure gas lines will be buried beneath the flowlines per well pad within the proposed lease road corridors for gas lift. Oil will be hauled from the location by truck following existing and proposed lease roads. The distance of proposed flowlines per well will be approximately 2000' or less per well based on the location of the well pad in conjunction with the facility location. All flowlines will follow proposed lease road corridors. A plat of the proposed flowline route for the lease is attached. Gas Pipeline. A gas purchaser has been identified and will be building to XTO Energy, Inc's Muy Wayno Central Tank Battery. The gas purchaser will be responsible for permitting their own gas lines and compressor station, where applicable, through private, state, and federal lands. Disposal Facilities. Produced water will be hauled from location to a commercial disposal facility as needed. Flare. The flare stack will be 50'x50', located on the proposed Muy Wayno Central Tank Battery facility pad and will be sized for 10 to 15mmscf/d with 150' of distance between all facility equipment, road and well pad locations for safety purposes. Aboveground Structures. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment. Containment Berms. Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas. Electrical. All electrical poles and lines will be placed within existing and proposed lease roads corridors. The electrical provider is anticipated to be Excel Energy. All electrical lines will be primary 12,740 volt to properly run expected production equipment. Approximately 3243' of electrical will be run from the anticipated tie-in point following existing and proposed road corridors with a request for 30' ROW construction and maintenance buffer; 15' on either side of the electrical centerline. This distance is a maximum approximation and may vary based on the lease road corridors, varying elevations and terrain in the area. A plat of the proposed electrical is attached.

**Production Facilities map:**

Muy\_Fed\_Facilities\_20171013111354.pdf

Muy\_Fed\_Flowline\_20171013111407.pdf

Muy\_Fed\_\_Elec\_20171013111419.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source use type:** INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

**Water source type:** GW WELL

**Describe type:**

**Source latitude:**

**Source longitude:**

**Source datum:** NAD83

**Water source permit type:** PRIVATE CONTRACT,PRIVATE CONTRACT,PRIVATE CONTRACT,PRIVATE CONTRACT,PRIVATE CONTRACT

**Source land ownership:** FEDERAL

**Water source transport method:**

TRUCKING,TRUCKING,TRUCKING,TRUCKING,TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 35000

**Source volume (acre-feet):** 4.511258

**Source volume (gal):** 1470000

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUJ WAYNO 18 FEDERAL

**Well Number:** 104H

**Water source and transportation map:**

Muy\_Fed\_104H\_Wtr\_20171013111508.pdf

**Water source comments:** The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from a 3rd party vendor and hauled to the anticipated pit in Section 7 by transport truck using the existing and proposed roads depicted in the attached exhibits. No water well will be drilled on the location. Water for drilling, completion and dust control will be purchased from the following company: Texas Pacific Water Resources Water for drilling, completion and dust control will be supplied by Texas Pacific Water Resources for sale to XTO Energy, Inc from Section 27, T25S-R30E, Eddy County, New Mexico. In the event that Texas Pacific Water Resources does not have the appropriate water for XTO at time of drilling and completion, then XTO water will come from Intrepid Potash Company with the location of the water being in Section 6, T25S-R29E, Eddy County, New Mexico. Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbbls per foot of hole drilled with excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation. Temporary water flowlines will be permitted via ROW approval letter and proper grants as-needed based on drilling and completion schedules as needed. Well completion is expected to require approximately 300,000 barrels of water per horizontal well. Actual water volumes used during operations will depend on the depth of the well and length of horizontal sections.

**New water well?** NO

**New Water Well Info**

**Well latitude:**

**Well Longitude:**

**Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):**

**Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):**

**Well casing type:**

**Well casing outside diameter (in.):**

**Well casing inside diameter (in.):**

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

**Section 6 - Construction Materials**

**Construction Materials description:** Native caliche. Source 1: Federal Caliche Pit, Section 17-T25S-R30E Source 2: Federal Caliche Pit, Section 34-T25S-R29E

**Construction Materials source location attachment:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Cuttings

**Amount of waste:** 2100 pounds

**Waste disposal frequency :** One Time Only

**Safe containment description:** The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes.

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** R360 Environmental Solutions, 4507 W Carlsbad HWY, Hobbs, NM 88240, 575-393-1079

**Waste type:** GARBAGE

**Waste content description:** Garbage, junk and non-flammable waste materials

**Amount of waste:** 250 pounds

**Waste disposal frequency :** Weekly

**Safe containment description:** All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approve sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** A licensed 3rd party contractor will be used to haul and safely dispose garbage, junk and non-flammable waste materials.

**Waste type:** DRILLING

**Waste content description:** Fluid

**Amount of waste:** 500 barrels

**Waste disposal frequency :** One Time Only

**Safe containment description:** Steel mud pits

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** R360 Environmental Solutions, 4507 W Carlsbad HWY, Hobbs, NM 88240, 575-393-1079

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Waste type:** SEWAGE

**Waste content description:** Human Waste

**Amount of waste:** 250 gallons

**Waste disposal frequency :** Weekly

**Safe containment description:** Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste.

### Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)**                      **Reserve pit width (ft.)**

**Reserve pit depth (ft.)**    **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

### Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** YES

**Description of cuttings location** Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site.

**Cuttings area length (ft.)**    **Cuttings area width (ft.)**

**Cuttings area depth (ft.)**    **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

Muy\_Fed\_104H\_Maps\_20171108081316.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** MUY WAYNO

**Multiple Well Pad Number:** A

**Recontouring attachment:**

Muy\_Fed\_A\_Int\_Rec\_20171108081433.pdf

**Drainage/Erosion control construction:** All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches.

**Drainage/Erosion control reclamation:** Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gulying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.

<b>Well pad proposed disturbance (acres):</b> 4.51	<b>Well pad interim reclamation (acres):</b> 1.82	<b>Well pad long term disturbance (acres):</b> 2.69
<b>Road proposed disturbance (acres):</b> 2.92	<b>Road interim reclamation (acres):</b> 1.56	<b>Road long term disturbance (acres):</b> 1.36
<b>Powerline proposed disturbance (acres):</b> 2.23	<b>Powerline interim reclamation (acres):</b> 1.19	<b>Powerline long term disturbance (acres):</b> 1.04
<b>Pipeline proposed disturbance (acres):</b> 0	<b>Pipeline interim reclamation (acres):</b> 0	<b>Pipeline long term disturbance (acres):</b> 0
<b>Other proposed disturbance (acres):</b> 0	<b>Other interim reclamation (acres):</b> 0	<b>Other long term disturbance (acres):</b> 0
<b>Total proposed disturbance:</b> 9.66	<b>Total interim reclamation:</b> 4.57	<b>Total long term disturbance:</b> 5.09

**Reconstruction method:** The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.

**Topsoil redistribution:** The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.

**Soil treatment:** A self-sustaining, vigorous, diverse, native (or otherwise approved) plan community will be established on the site with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

desirable species occurring in the surrounding natural vegetation.

**Existing Vegetation at the well pad:** Soils are classified as Simona Gravelly Fine Sandy Loam and Simona-Bippus Complex. Simona soils are found on alluvial fans and plans and form in mixed alluvium and/or Aeolian sands. Bippus soils are found on alluvial fans and floodplains and form in mixed alluvium. The Simona-Bippus soils are dominant to the east and the Simona Gravelly Fine Sandy Loams are dominant to the West. Dominant vegetation species include: mesquite, sumac snakeweed, and various forbs and grasses. Ground cover is minimal, offering 90 percent visibility.

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** Soils are classified as Simona Gravelly Fine Sandy Loam and Simona-Bippus Complex. Simona soils are found on alluvial fans and plans and form in mixed alluvium and/or Aeolian sands. Bippus soils are found on alluvial fans and floodplains and form in mixed alluvium. The Simona-Bippus soils are dominant to the east and the Simona Gravelly Fine Sandy Loams are dominant to the West. Dominant vegetation species include: mesquite, sumac snakeweed, and various forbs and grasses. Ground cover is minimal, offering 90 percent visibility.

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:** Soils are classified as Simona Gravelly Fine Sandy Loam and Simona-Bippus Complex. Simona soils are found on alluvial fans and plans and form in mixed alluvium and/or Aeolian sands. Bippus soils are found on alluvial fans and floodplains and form in mixed alluvium. The Simona-Bippus soils are dominant to the east and the Simona Gravelly Fine Sandy Loams are dominant to the West. Dominant vegetation species include: mesquite, sumac snakeweed, and various forbs and grasses. Ground cover is minimal, offering 90 percent visibility.

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** Soils are classified as Simona Gravelly Fine Sandy Loam and Simona-Bippus Complex. Simona soils are found on alluvial fans and plans and form in mixed alluvium and/or Aeolian sands. Bippus soils are found on alluvial fans and floodplains and form in mixed alluvium. The Simona-Bippus soils are dominant to the east and the Simona Gravelly Fine Sandy Loams are dominant to the West. Dominant vegetation species include: mesquite, sumac snakeweed, and various forbs and grasses. Ground cover is minimal, offering 90 percent visibility.

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

### Seed Summary

**Total pounds/Acre:**

Seed Type	Pounds/Acre
-----------	-------------

**Seed reclamation attachment:**

### Operator Contact/Responsible Official Contact Info

**First Name:** Jeff

**Last Name:** Raines

**Phone:** (432)620-4349

**Email:** jeffrey\_raines@xtoenergy.com

**Seedbed prep:** Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.

**Seed BMP:** If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4-6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

**Seed method:** Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used. If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** Weed control for all phases will be through the use of approved pesticides and herbicides according to applicable State, Federal and local laws.

**Weed treatment plan attachment:**

**Monitoring plan description:** Monitoring of invasive and noxious weeds will be visual and as-needed. If it is determined additional methods are required to monitor invasive and noxious weeds, appropriate BLM authorities will be contacted with a plan of action for approval prior to implementation.

**Monitoring plan attachment:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Success standards:** 100% compliance with applicable regulations.

**Pit closure description:** There will be no reserve pit as each well will be drilled utilizing a closed loop mud system. The closed loop mud system will meet the NMOC requirements 19.15.17.

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** PIPELINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** OTHER

**Describe:** Facility & Flowline

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** OTHER

**Describe:** Electrical

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

## Section 12 - Other Information

**Right of Way needed?** YES

**Use APD as ROW?** YES

**ROW Type(s):** 281001 ROW - ROADS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW- O&G Well Pad,FLPMA (Powerline)

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** MUY WAYNO 18 FEDERAL

**Well Number:** 104H

## **ROW Applications**

**SUPO Additional Information:** XTO Energy, Inc requests a variance from interim reclamation until all drilling and completion activities have been finished on the drill island due to these wells being an 3-well pad. Once activities are completed, XTO will coordinate interim reclamation with the appropriate BLM personnel.

**Use a previously conducted onsite?** NO

**Previous Onsite information:**

## **Other SUPO Attachment**

Muy\_Fed\_SUPO\_20171108081327.pdf

Muy\_Wayno\_Lease\_Flow\_20171108081342.PDF

**MUY WAYNO 18 PROPOSED ACCESS ROAD DESCRIPTION:**  
 SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 4,242.85 FEET, 257.14 RODS OR .80 MILES IN LENGTH IN SECTIONS 18 OF TOWNSHIP 25 RANGE 30 EAST N.M.P.M. EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY, COMPRISING OF 2.90 ACRES AND IS DIVIDED IN EACH QUARTER-QUARTER SECTION IS AS FOLLOWS:

**ROAD A**

NE/4 SW/4 = 1,062.76 FEET - 62.89 RODS - 0.72 OF AN ACRE  
 SE/4 NW/4 = 869.30 FEET - 40.56 RODS - 0.46 OF AN ACRE  
 SW/4 NE/4 = 1,335.35 FEET - 80.93 RODS - 0.92 OF AN ACRE  
 SW/4 NW/4 = 790.53 FEET - 47.81 RODS - 0.55 OF AN ACRE

**ROAD WELL CONNECT**

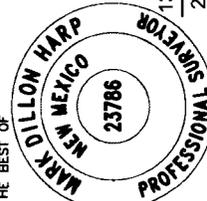
SW/4 NW/4 = 196.30 FEET - 11.90 RODS - 0.13 OF AN ACRE  
 SW/4 NW/4 = 100.02 FEET - 6.06 RODS - 0.06 OF AN ACRE  
 SW/4 NE/4 = 98.60 FEET - 5.98 RODS - 0.06 OF AN ACRE

**GENERAL NOTES**

- BEARINGS AND COORDINATES SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.
- LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM (NAD83).

I, MARK DILLON HARR, NEW MEXICO PROFESSIONAL SURVEYOR NO. 23786, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

MARK DILLON HARR  
 REGISTERED PROFESSIONAL LAND SURVEYOR  
 STATE OF NEW MEXICO NO. 23786



**FSC INC**  
 SURVEYORS & ENGINEERS  
 550 Bailey Ave., 205 - Fort Worth, TX 76107 PROJECT NO: 2017040531  
 Ph: 817-349-9800 - Fax: 979-732-5271 SCALE: 1" = 600'  
 TBPE Form 1-9557 | TBPLS Form 100195887 SHEET: 1 OF 1  
 www.fscinc.net REVISION: 0



**P.O.B.**  
 NAD 83 NME  
 Y = 412,377.91  
 X = 689,086.50

ACCESS ROAD A LINE TABLE

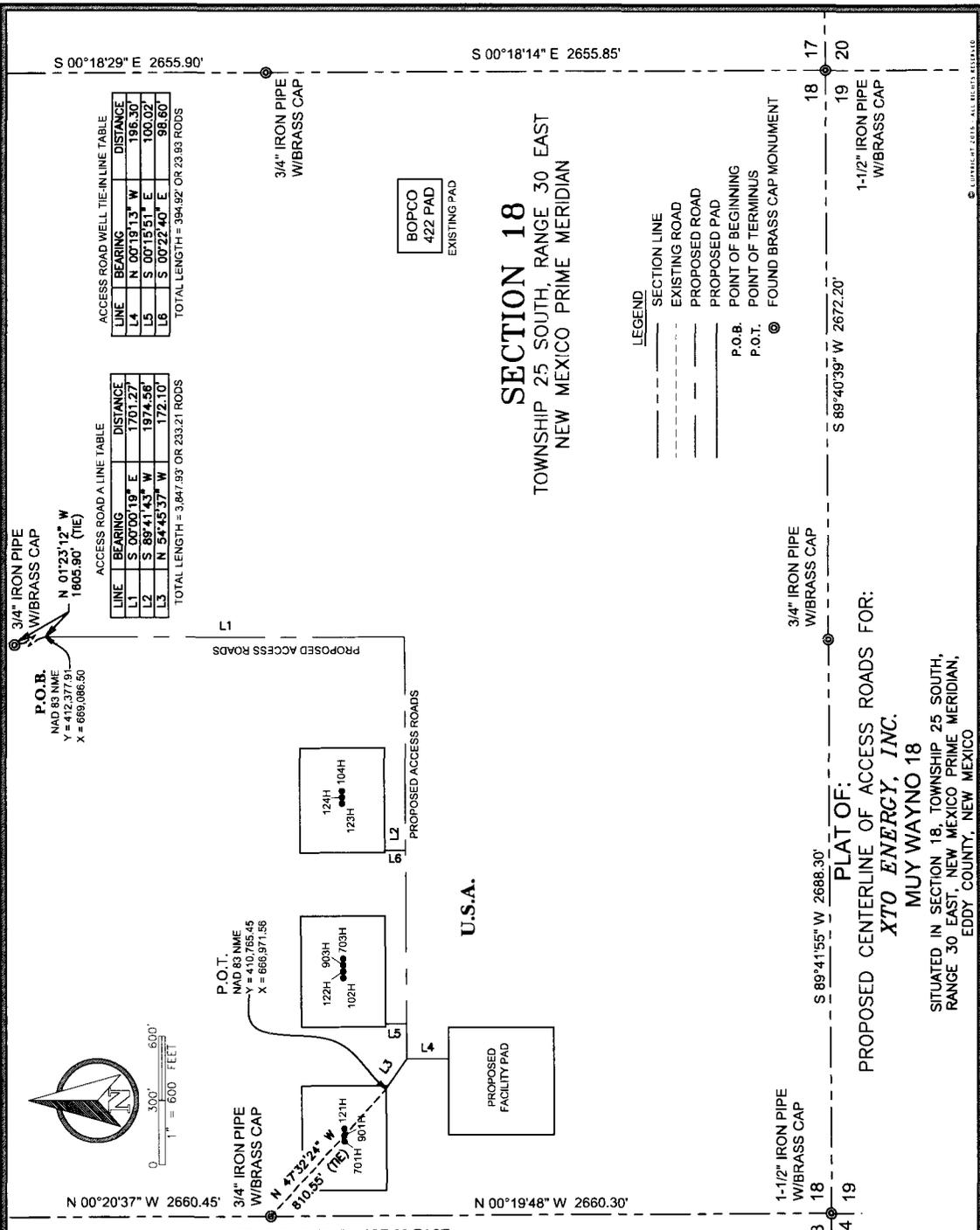
LINE	BEARING	DISTANCE
L1	N 00°00'18" E	1701.27
L2	S 89°41'43" W	1974.56
L3	N 54°45'37" W	172.10'

TOTAL LENGTH = 3,847.93' OR 233.21 RODS

ACCESS ROAD WELL TIE-IN LINE TABLE

LINE	BEARING	DISTANCE
L4	N 00°18'13" W	196.30
L5	S 00°15'51" E	100.02
L6	S 00°22'40" E	98.60'

TOTAL LENGTH = 394.92' OR 23.93 RODS

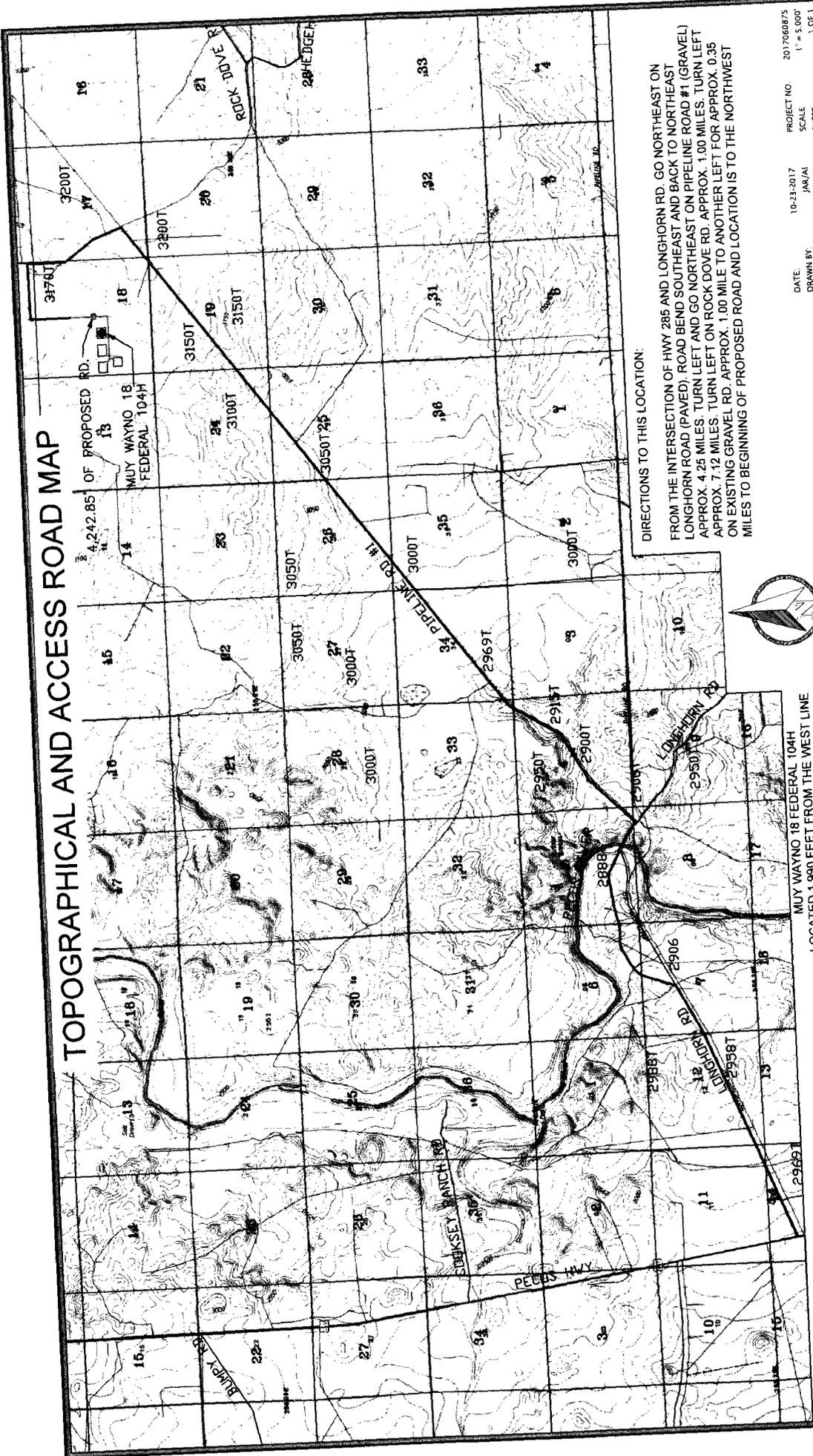


**SECTION 18**  
 TOWNSHIP 25 SOUTH, RANGE 30 EAST  
 NEW MEXICO PRIME MERIDIAN

- LEGEND**
- SECTION LINE
  - EXISTING ROAD
  - PROPOSED ROAD
  - PROPOSED PAD
  - P.O.B. POINT OF BEGINNING
  - P.O.T. POINT OF TERMINUS
  - FOUND BRASS CAP MONUMENT

**PLAT OF:**  
 PROPOSED CENTERLINE OF ACCESS ROADS FOR:  
**XTO ENERGY, INC.**  
 MUY WAYNO 18  
 SITUATED IN SECTION 18, TOWNSHIP 25 SOUTH,  
 RANGE 30 EAST, NEW MEXICO PRIME MERIDIAN,  
 EDDY COUNTY, NEW MEXICO

# TOPOGRAPHICAL AND ACCESS ROAD MAP



DIRECTIONS TO THIS LOCATION:  
 FROM THE INTERSECTION OF HWY 285 AND LONGHORN RD. GO NORTHEAST ON  
 LONGHORN ROAD (PAVED). ROAD BEND SOUTHEAST AND BACK TO NORTHEAST  
 APPROX. 4.25 MILES. TURN LEFT AND GO NORTHEAST ON PIPELINE ROAD #1 (GRAVEL)  
 APPROX. 7.12 MILES. TURN LEFT ON ROCK DOVE RD. APPROX. 1.00 MILES. TURN LEFT  
 ON EXISTING GRAVEL RD. APPROX. 1.00 MILE TO ANOTHER LEFT FOR APPROX. 0.35  
 MILES TO BEGINNING OF PROPOSED ROAD AND LOCATION IS TO THE NORTHWEST



DATE:	10-23-2017	PROJECT NO.	2017060875
DRAWN BY:	JAN/AI	SCALE	1" = 5,000'
CHECKED BY:	DH	SHEET	1 OF 1
FIELD CREW:	RE/R	REVISION	

MUY WAYNO 18 FEDERAL 104H  
 LOCATED 1,990 FEET FROM THE WEST LINE OF  
 AND 2,310 FEET FROM THE SOUTH LINE OF  
 SECTION 18, TOWNSHIP 25 SOUTH, RANGE 30  
 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

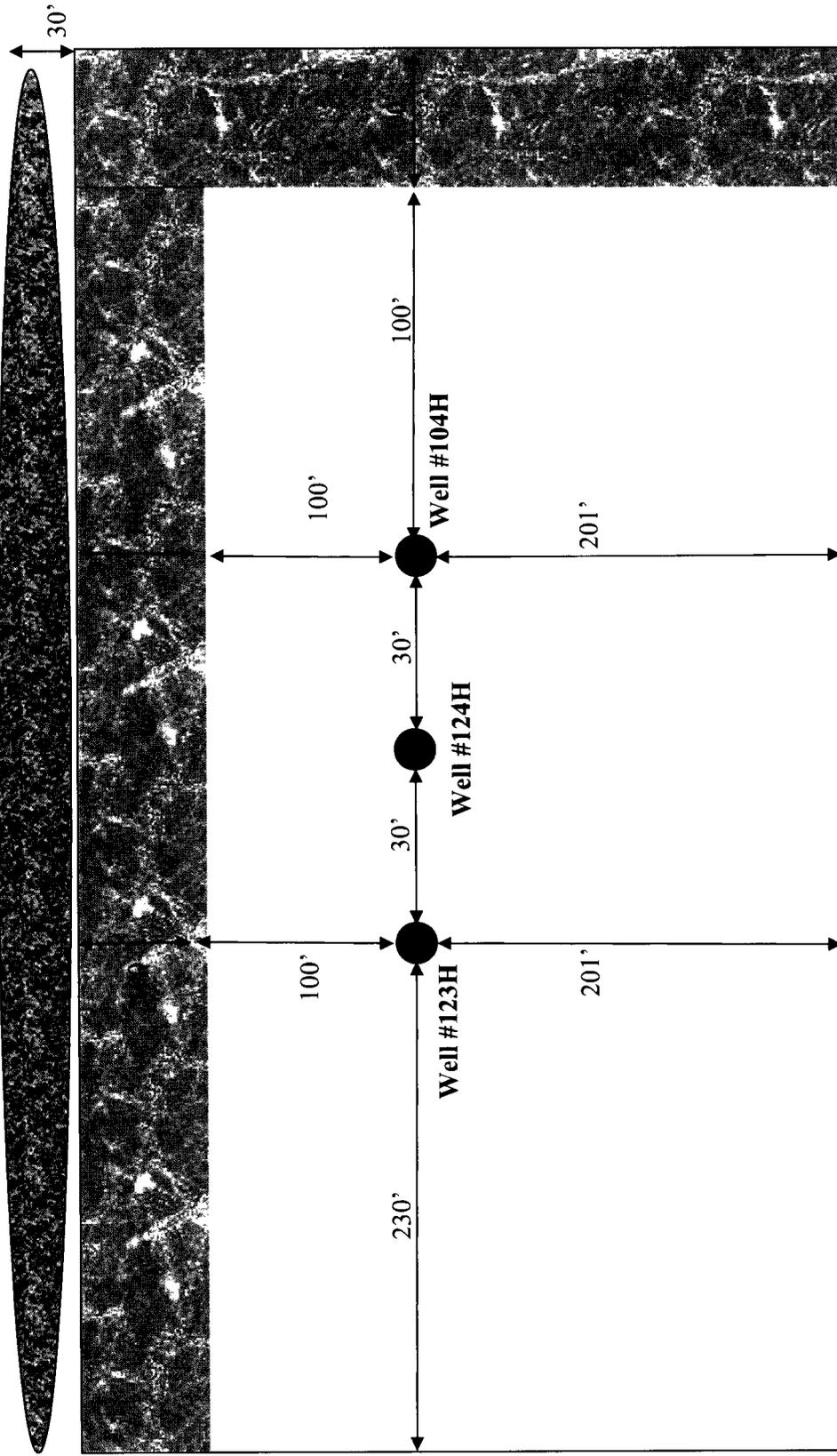
550 Bailey Ave., 205 - Fort Worth, TX 76107  
 Ph: 817.349.9800 - Fax: 979.732.5271  
 TBPE Firm 17957 | TBPE's Firm 10195867  
 www.tbpeinc.com  
 © COPYRIGHT 2017 BY TBPE INC.



**Interim Reclamation Diagram**

Muy Wayno 18 Federal 104H, 123H, 124H

V-Door East (All Wells)



Proposed Road

**LEGEND**

- Wellbore
- Interim Reclamation
- Ditch & Berm
- Topsoil



## Well Site Locations

---

The results of the Muy Wayno Development Program will determine whether economic quantities of oil and gas can be produced in the 'Muy Wayno' area with two primary formations targeted. Well locations are determined based on cross-section variations and details. Locations will be selected to minimize the likelihood of encountering faults and/or drilling hazards while still targeting suitably productive zones.

If drilling results in an unproductive well, the well will be plugged and abandoned as soon as practical after the conclusion of production testing. Productive wells may be shut-in temporarily for BLM authorization for production activities and facilities.

## Surface Use Plan

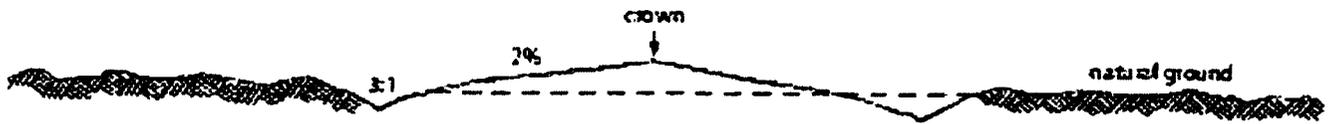
---

### 1. Existing Roads

- A. The Muy Wayno 18 Federal area is accessed by existing U.S. Hwy 285 and Longhorn Road. Go Northeast on Longhorn Road (paved). Road bend Southeast and back to Northeast approximately 4.25 miles. Turn left and go Northeast on Pipeline Road #1 (Gravel) approximately 7.12 miles. Turn left on Rock Dove Road approximately 1 mile. Turn left on existing gravel road approximately 1 mile to another left for approximately .35 miles to beginning of proposed road for approximately 1686.27 feet. Turn right on proposed road for approximately 1810.13 feet, right approximately 100' to the Southwest corner of Muy Wayno 18 Federal. Transportation Plan identifying existing roads that will be used to access the project area is included from Frank's Surveying marked as, 'Vicinity Map.'
- B. There are no existing access roads to the proposed Muy Wayno 18 Federal well locations. All equipment and vehicles will be confined to the routes shown on the Vicinity Map as provided by Frank's Surveying. Maintenance of the access roads will continue until abandonment and reclamation of the well pads is completed.

### 2. New or Upgraded Access Roads

- A. **New Roads.** There is a total of 4243' or .8 miles of proposed and staked access roads in the Muy Wayno 18 Federal lease area.
- B. **Well Pads.** The well pads selected for development will determine which existing roads will be upgraded and which new roads will be built. The lease flow diagram shows the location of proposed roads that will need to be constructed to access the well pads.
- C. **Anticipated Traffic.** After well completion, travel to each well site will include one lease operator truck and two oil trucks per day until the Central Tank Battery is completed. Upon completion of the Central Tank Battery, one lease operator truck will continue to travel to each well site to monitor the working order of the wells and to check well equipment for proper operation. Two oil trucks will continue to travel to the Central Tank Battery only for oil hauling. Additional traffic will include one maintenance truck periodically throughout the year for pad upkeep and weed removal. Well service trips will include only the traffic necessary to work on the wells or provide chemical treatments periodically and as needed throughout the year.
- D. **Routing.** All equipment and vehicles will be confined to the travel routes laid out in the vicinity map provided by Frank's Surveying unless otherwise approved by the BLM and applied for by XTO Energy.
- E. **Road Dimensions.** The maximum width of the driving surface of new roads will be 14 feet. The roads will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



## Level Ground Section

- F. **Surface Material.** Surface material will be native caliche. The average grade of all roads will be approximately 3%.
- G. **Fence Cuts:** No.
- H. **Fences:** No.
- I. **Cattle Guards:** No.
- J. **Turnouts:** No.
- K. **Culverts:** No.
- L. **Cuts and Fills:** Not significant.
- M. **Topsoil.** Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.
- N. **Maintenance.** The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route.
- O. **Drainage.** The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

### 3. Location of Existing Wells

- A. See attached 1-mile radius well map.

### 4. Location of Proposed Production Facilities

- A. **Ancillary Facilities.** No off-pad ancillary facilities are planned during the exploration phase including, but not limited to: campsites, airstrips or staging areas.
- B. **Production Facilities.** A separate 600' x 600' pad was staked with the BLM for construction and use as a Central Tank Battery (Muy Wayno Central Tank Battery). The pad is located in the Northwest of the Southwest quarter of Section 18-T25S-R30E NMPM, Eddy County, New Mexico. A plat of the proposed facility is attached. Only the area necessary to maintain facilities will be disturbed. 600'x600' location is anticipated for full area development and includes plans for 10 wells in the area in addition to the flare stack.
- C. **Flowlines.** In the event the wells are found productive, 4" composite flexpipe or steel flowlines with a maximum safety pressure rating of 750psi (operating pressure: 125psi) will be laid on the surface within proposed lease road corridors from the proposed wells to the Muy Wayno Central Tank Battery where the oil, gas, and water will be metered and appropriately separated. High pressure gas lines will be buried beneath the flowlines per well pad within the proposed lease road corridors for gas lift. Oil will be hauled from the location by truck following existing and proposed lease roads. The distance of proposed flowlines per well will be approximately 2000' or less per well based on the location of the well pad in conjunction with the facility location. All flowlines will follow proposed lease road corridors. A plat of the proposed flowline route for the lease is attached.

- D. **Gas Pipeline.** A gas purchaser has been identified and will be building to XTO Energy, Inc's Muy Wayno Central Tank Battery. The gas purchaser will be responsible for permitting their own gas lines and compressor station, where applicable, through private, state, and federal lands.
- E. **Disposal Facilities.** Produced water will be hauled from location to a commercial disposal facility as needed.
- F. **Flare.** The flare stack will be 50'x50', located on the proposed Muy Wayno Central Tank Battery facility pad and will be sized for 10 to 15mmscf/d with 150' of distance between all facility equipment, road and well pad locations for safety purposes.
- G. **Aboveground Structures.** All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment.
- H. **Containment Berms.** Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.
- I. **Electrical.** All electrical poles and lines will be placed within existing and proposed lease roads corridors. The electrical provider is anticipated to be Excel Energy. All electrical lines will be primary 12,740 volt to properly run expected production equipment. Approximately 3243' of electrical will be run from the anticipated tie-in point following existing and proposed road corridors with a request for 30' ROW construction and maintenance buffer; 15' on either side of the electrical centerline. This distance is a maximum approximation and may vary based on the lease road corridors, varying elevations and terrain in the area. A plat of the proposed electrical is attached.

## 5. Location and Types of Water Supply

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from a 3<sup>rd</sup> party vendor and hauled to the anticipated pit in Section 7 by transport truck using the existing and proposed roads depicted in the attached exhibits. No water well will be drilled on the location.

Water for drilling, completion and dust control will be purchased from the following company:

Texas Pacific Water Resources

Water for drilling, completion and dust control will be supplied by Texas Pacific Water Resources for sale to XTO Energy, Inc from Section 27, T25S-R30E, Eddy County, New Mexico. In the event that Texas Pacific Water Resources does not have the appropriate water for XTO at time of drilling and completion, then XTO water will come from Intrepid Potash Company with the location of the water being in Section 6, T25S-R29E, Eddy County, New Mexico.

Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbls per foot of hole drilled with excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation.

Temporary water flowlines will be permitted via ROW approval letter and proper grants as-needed based on drilling and completion schedules as needed. Well completion is expected to require approximately 300,000 barrels of water per horizontal well. Actual water volumes used during operations will depend on the depth of the well and length of horizontal sections.

## 6. Construction Activities

- A. Construction, reclamation, and/or routine maintenance will not be conducted during periods when the soil conditions for construction could lead to impacts to the surrounding environment, or when watershed damage is likely to occur as a result of these activities.
- B. Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. No construction materials will be removed from federal lands without prior approval from the appropriate surface management agency. All roads and well pads will be constructed of 6" rolled and compacted caliche.
- C. Anticipated Caliche Locations:
  - a. Pit 1: Federal Caliche Pit, Section 17-T25S-R30E
  - b. Pit 2: Federal Caliche Pit, Section 34-T25S-R29E

## 7. Methods for Handling Waste

- **Cuttings.** The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site.
- **Drilling Fluids.** These will be contained in steel mud pits and then taken to a NMOCD approved commercial disposal facility.
- **Produced Fluids.** Water produced from the well during completion will be held temporarily in steel tanks and then taken to a NMOCD approved commercial disposal facility. Oil produced during operations will be stored in tanks until sold.
- **Sewage.** Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly

maintained during the drilling and completion operations and will be removed when all operations are complete.

- **Garbage and Other Waste Materials.** All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.
- **Debris.** Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned and removed from the well location. No potential adverse materials or substances will be left on location.
- **Hazardous Materials.**
  - i. All drilling wastes identified as hazardous substances by the Comprehensive Environmental Response Compensation Liability Act (CERCLA) removed from the location and not reused at another drilling location will be disposed of at a hazardous waste facility approved by the U.S. Environmental Protection Agency (EPA).
  - ii. XTO Energy, Incorporated and its contractors will comply with all applicable Federal, State and local laws and regulations, existing or hereafter enacted promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on the oil and gas lease. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the CERCLA of 1980, as amended, 42 U.S.C 9601 et seq., and its regulation. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the RCRA of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous material also includes any nuclear or nuclear by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101 (14) U.S.C. 9601 (14) nor does the term include natural gas.
  - iii. No hazardous substances or wastes will be stored on the location after completion of the well.
  - iv. Chemicals brought to location will be on the Toxic Substance Control Act (TSCA) approved inventory list.
  - v. All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in Notice to Lessees (NTL) 3A will be reported to the BLM Carlsbad Field Office. Major events will be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days.

## 8. Well Site Layout

- A. **Rig Plat Diagrams:** There are 3 multi-well pads in the Muy Wayno 18 lease anticipated. Pad A, the Eastern most pad, is a 3-well pad expected to be 490'x400'. Pad B, the Center pad, is a 4-well pad expected to be 520'x400'. Pad C, the Western most pad, is a 3-well pad expected to be: 490'x401'. This will allow enough space for cuts and fills, topsoil storage, and storm water control.
- B. **Closed-Loop System:** There will be no reserve pit as each well will be drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17.
- C. **V-Door Orientation:** This well was staked with a v-door orientation East as agreed upon with Fernando Banos, BLM Natural Resource Specialist, present at on-site inspection.
- D. A 600' x 600' area has been staked and flagged around each well pad. A plat for the well has been attached.
- E. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad and topsoil storage areas).

## 9. Plans for Surface Reclamation:

XTO Energy, Inc requests a variance from interim reclamation until all drilling and completion activities have been finished on the pads as these are multi-well pads where drilling and completion will be consecutive with the other

wells on the pad. Once activities are completed, XTO will coordinate interim reclamation with the appropriate BLM personnel or use the following plan:

*Non-Commercial Well (Not Productive), Interim & Final Reclamation:*

*Definition:* Reclamation includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be disturbed for future development.

*Reclamation Standards:*

The portions of the pad not essential to production facilities or space required for workover operations will be reclaimed and seeded as per BLM requirements for interim reclamation. (See Interim Reclamation plans attached).

All equipment and trash will be removed, and the surfacing material will be removed from the well pad and road and transported to the original caliche pit or used to maintain other roads. The location will then be ripped and seeded.

The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded

A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.

Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.

The site will be free of State-or County-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds will be controlled.

**Seeding:**

- **Seedbed Preparation:** Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
- If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4-6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- **Seed Application.** Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used.
- If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

**10. Surface Ownership**

- A. Within the Muy Wayno 18 Federal project area 100% of the surface is under the administrative jurisdiction of the Bureau of Land Management.

- B. The surface is multiple-use with the primary uses of the region for grazing and for the production of oil and gas.

**12. Other Information**

Changes from Onsite

- **Well Numbers.** The 1000 and 1200 series well numbers have changed from 4-digit to 3-digit due to NMOCD requirements from the original Notice of Staking. This was done by dropping the 3<sup>rd</sup> '0' out of the well number. The 700 and 900 wells, being originally 3-digits, remain unchanged.

See reference table for appropriate well number changes.

Notice of Staking Well Number	APD Well Number
1002H	102H
1004H	104H
1201H	121H
1202H	122H
1203H	123H
1204H	124H

- **Facility.** XTO Energy, Inc. originally performed an onsite with 2 400'x400' facility locations. After the onsite, it was decided that only 1-600'x600' battery was needed. Therefore, application is for 1 CTB location instead of 2 CTB locations with the 1 CTB location expanded from the onsite by 200'x200' which is an overall decrease in surface disturbance.

Surveying

- **Well Sites.** Well pad locations have been staked. Surveys of the proposed access roads and well pad locations have been completed by Frank Surveying, a registered professional land surveyor. Center stake surveys with access roads have been completed on State and Federal lands with Fernando Banos, Bureau of Land Management Natural Resource Specialist in attendance.
- **Cultural Resources – Archaeology:** A Class III Cultural Resources Examination has been completed on all wells by Boone Archaeological Services and the results will be forwarded to the BLM Office. A copy of the report is also included as an attachment to this APD.
- **Dwellings and Structures.** There are no dwellings or structures within 2 miles of this location.

Soils and Vegetation

- **Environmental Setting.** Soils are classified as Simona Gravelly Fine Sandy Loam and Simona-Bippus Complex. Simona soils are found on alluvial fans and plans and form in mixed alluvium and/or Aeolian sands. Bippus soils are found on alluvial fans and floodplains and form in mixed alluvium. The Simona-Bippus soils are dominant to the east and the Simona Gravelly Fine Sandy Loams are dominant to the West. Dominant vegetation species include: mesquite, sumac snakeweed, and various forbs and grasses. Ground cover is minimal, offering 90 percent visibility.
- **Traffic.** No truck traffic will be operated during periods or in areas of saturated ground when surface rutting could occur. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.
- **Water.** There is no permanent or live water in the immediate or within the project area.

**13. Bond Coverage**

Bond Coverage is Nationwide. Bond Number: UTB000138

**Operator's Representatives:**

The XTO Energy, Incorporated representatives for ensuring compliance of the surface use plan are listed below:

**Surface:**

Jimie Scott  
Contract Construction Lead  
XTO Energy, Incorporated  
500 W. Illinois St., Suite 100  
Midland, Texas 79701  
432-488-9955  
james\_scott@xtoenergy.com

Jeff Raines  
Construction Superintendent  
XTO Energy, Incorporated  
500 W. Illinois St., Suite 100  
Midland, Texas 79701  
432-620-4349  
jeff\_raines@xtoenergy.com





## Section 1 - General

Would you like to address long-term produced water disposal? NO

## Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

### **Section 3 - Unlined Pits**

**Would you like to utilize Unlined Pit PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

### **Section 4 - Injection**

**Would you like to utilize Injection PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## **Section 5 - Surface Discharge**

**Would you like to utilize Surface Discharge PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## **Section 6 - Other**

**Would you like to utilize Other PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Bond Info Data Report

03/06/2018

### Bond Information

Federal/Indian APD: FED

BLM Bond number: UTB000138

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: