

Well Name: JRU APACHE U FEDERAL COM	Well Location: T22S / R30E / SEC 13 / NESE / 32.39185 / -103.828586	County or Parish/State: EDDY / NM
Well Number: 702H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM89051	Unit or CA Name:	Unit or CA Number:
US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Notice of Intent

Sundry ID: 2834122

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 01/28/2025	Time Sundry Submitted: 08:58
Date proposed operation will begin: 02/07/2025	

**Procedure Description:** JRU APACHE U FEDERAL COM 702H APD ID# 10400081634 SUNDRY LANGUAGE XTO Permian Operating, LLC. respectfully requests approval to make the following changes to the approved APD. Changes to include SHL, KOP, FTP, LTP, BHL, casing design, cement program, mud circulation system and proposed total depth. FROM: TO: SHL: 2547' FSL & 927' FEL OF SECTION 13-T22S-R30E 2517' FSL & 968' FEL OF SECTION 13-T22S-R30E KOP: 2547' FSL & 927' FEL OF SECTION 13-T22S-R30E 1336' FNL & 330' FEL OF SECTION 13-T22S-R30E FTP: 990' FNL & 330' FEL OF SECTION 13-T22S-R30E 1336' FNL & 330' FEL OF SECTION 13-T22S-R30E LTP: 990' FNL & 100' FWL OF SECTION 14-T22S-R30E 1336' FNL & 100' FWL OF SECTION 14-T22S-R30E BHL: 990' FNL & 50' FWL OF SECTION 14-T22S-R30E 1336' FNL & 50' FWL OF SECTION 14-T22S-R30E The proposed total depth is changing from 20546' MD/9505' TVD to 20024.35' MD/9752' TVD There are no changes requested to the facilities/surface usage that was approved along with the APD. See attached drilling program for the updated casing design, cement program and the mud circulation system. Attachments: C-102, Drilling Program, Directional Plan, Choke Manifold Diagram, BOP Diagram, Spec documents for Non-API Casing, MBS diagram, Well Bore Diagram.

NOI Attachments

Procedure Description

Sundry\_Attachment\_\_\_James\_Ranch\_Unit\_Apache\_702H\_20250128085739.pdf

Received by OCD: 3/7/2025 9:56:30 AM

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US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Conditions of Approval

Additional

JRU\_Apache\_U\_Fed\_Com\_702H\_COA\_20250227082242.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SRINIVAS LAGHUVARAPU	Signed on: JAN 28, 2025 08:57 AM
Name: XTO PERMIAN OPERATING LLC	
Title: REGULATORY ANALYST	
Street Address: 22777 SPRINGWOODS VILLAGE PARKWAY	
City: SPRING	State: TX
Phone: (720) 539-1673	
Email address: SRINIVAS.N.LAGHUVARAPU@EXXONMOBIL.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 02/28/2025
Signature: Chris Walls	

Form 3160-5 (June 2019)	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2021
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> <b>Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.</b>		5. Lease Serial No.
		6. If Indian, Allottee or Tribe Name

<b>SUBMIT IN TRIPLICATE - Other instructions on page 2</b>		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No.
2. Name of Operator		9. API Well No.
3a. Address	3b. Phone No. (include area code)	10. Field and Pool or Exploratory Area
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)		
	Title	
Signature	Date	

<b>THE SPACE FOR FEDERAL OR STATE OFFICE USE</b>		
Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice 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.	Office	

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.

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The privacy Act of 1974 and the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

## Additional Information

### Additional Remarks

BHL: 990' FNL & 50' FWL OF SECTION 14-T22S-R30E 1336' FNL & 50' FWL OF SECTION 14-T22S-R30E

The proposed total depth is changing from 20546 MD/9505 TVD to 20024.35 MD/9752 TVD

There are no changes requested to the facilities/surface usage that was approved along with the APD.

See attached drilling program for the updated casing design, cement program and the mud circulation system.

Attachments: C-102, Drilling Program, Directional Plan, Choke Manifold Diagram, BOP Diagram, Spec documents for Non-API Casing, MBS diagram, Well Bore Diagram.

### Location of Well

0. SHL: NESE / 2547 FSL / 927 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.39185 / LONG: -103.828586 ( TVD: 0 feet, MD: 0 feet )

PPP: NWNE / 987 FNL / 2673 FWL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.39666 / LONG: -103.834246 ( TVD: 9569 feet, MD: 12900 feet )

PPP: NENE / 990 FNL / 330 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.396652 / LONG: -103.82665 ( TVD: 9590 feet, MD: 10300 feet )

BHL: NWNW / 990 FNL / 50 FWL / TWSP: 22S / RANGE: 30E / SECTION: 14 / LAT: 32.396686 / LONG: -103.860082 ( TVD: 9505 feet, MD: 20546 feet )

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	XTO
<b>LEASE NO.:</b>	NMNM89051
<b>LOCATION:</b>	Sec. 13, T.22 S, R 30 E
<b>COUNTY:</b>	Eddy County, New Mexico ▼
<b>WELL NAME &amp; NO.:</b>	JRU Apache U Fed Com 702H
<b>SURFACE HOLE FOOTAGE:</b>	2517'/S & 968'/E
<b>BOTTOM HOLE FOOTAGE:</b>	1336'/N & 50'/W

Changes approved through engineering via **Sundry 2834122** on 2-26-2025. Any previous COAs not addressed within the updated COAs still apply.

COA

H <sub>2</sub> S	<input checked="" type="radio"/> No <span style="margin-left: 100px;"><input type="radio"/> Yes</span>			
<b>Potash / WIPP</b>	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-Q	<input checked="" type="checkbox"/> Open Annulus <span style="color: red;">3-String Design: Open Production Casing Annulus</span>
<b>Cave / Karst</b>	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High	<input type="radio"/> Critical
<b>Wellhead</b>	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
<b>Cementing</b>	<input type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
<b>Special Req</b>	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
<b>Waste Prev.</b>	<input type="radio"/> Self-Certification	<input type="radio"/> Waste Min. Plan	<input checked="" type="radio"/> APD Submitted prior to 06/10/2024	
<b>Additional Language</b>	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input checked="" type="checkbox"/> Break Testing
	<input type="checkbox"/> Four-String	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Fluid-Filled	

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

**APD is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the updated order.**

## B. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **722** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) 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 will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
  - 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.
2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

Operator has proposed to pump down **Surface X Intermediate 1** annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus OR operator shall run a CBL from TD of the Surface casing to tieback requirements listed above after the second stage BH to verify TOC. Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

If cement does not reach surface, the next casing string must come to surface.

- ❖ **A monitored open annulus will be incorporated during completion by leaving the**
- ❖ **Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String.** Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within **180 days**.

Operator has proposed to pump down **intermediate x production** annulus post completion. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus OR operator shall run a CBL from TD of the production casing to surface after the second stage BH to verify TOC. Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry during second stage bradenhead when running Echo-meter if cement is required to surface. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.



Operator has proposed an open annulus completion in R-111-Q. Operator shall provide a method of verification pre-completion top of cement. **Submit results to the BLM. Pressure monitoring device and Pressure Safety Valves must be installed at surface on both the intermediate annulus and the production annulus for the life of the well.**

**In the event of a casing failure during completion, the operator must contact the BLM at (575-706-2779) and (575-361-2822 Eddy County).**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back **500 feet** into the previous casing but not higher than the **Engineering Weak Point**. Operator shall provide method of verification.

### **C. PRESSURE CONTROL**

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

### **D. SPECIAL REQUIREMENT (S)**

#### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, 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.



- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- 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.

### **WIPP Requirements**

The proposed surface well or bottom hole is located within 330 feet of the WIPP Land Withdrawal Area boundary. As a result, the operator is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management Engineering Department and the U.S. Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum, the depth of any excess mud returns (brine flows), the rate of penetration and a clearly marked section showing the deviation for each 500-foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

Any oil and gas well operator drilling within one mile of the WIPP Boundary must notify WIPP as soon as possible if any of the following conditions are encountered during oil and gas operations: R-111-Q Amendment - Notification to Operators (Potash)

- a) Indication of any well collision event,
- b) Suspected well fluid flow (oil, gas, or produced water) outside of casing,
- c) Sustained annulus pressure between the 1st intermediate and next innermost casing string in excess of 500 psi above the baseline pressure of the well, or above 1500 psi total,
- d) Increasing pressure buildup rates (psi/day) across multiple successive bleed-off cycles on the annulus between the 1st intermediate and next innermost casing during well production, or
- e) Sustained losses in excess of 50% through the salt formation during drilling.

The operator can email the required information to [OilGasReports@wipp.ws](mailto:OilGasReports@wipp.ws). Attached files must not be greater than 20 MB. Call WIPP Tech Support at 575-234-7422, during the hours 7:00am to 4:30pm, if there are any issues sending to this address.

### **BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.

- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 43 CFR 3172.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

### **Offline Cementing**

Contact the BLM prior to the commencement of any offline cementing procedure.

Engineer may elect to vary this language. Speak with Chris about implementing changes and whether that change seems reasonable.

### **Casing Clearance**

String does not meet 0.422" clearance requirement per 43 CFR 3172. Cement tieback requirement increased 100' for Production casing tieback. Operator may contact approving engineer to discuss changing casing set depth or grade to meet clearance requirement.

## GENERAL REQUIREMENTS

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)

### Contact Eddy County Petroleum Engineering Inspection Staff:

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;  
[BLM NM CFO DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV); (575) 361-2822

1. 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.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - i. Notify the BLM when moving in and removing the Spudder Rig.
    - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2<sup>nd</sup> Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

### A. CASING

1. 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.

2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. 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.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

## **B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.

3. 5M or higher 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. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - iii. Manufacturer representative shall install the test plug for the initial BOP test.
  - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
  - v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - i. 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 cement), 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).
  - ii. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve

- open. (only applies to single stage cement jobs, prior to the cement setting up.)
- iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - iv. 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.
  - v. The results of the test shall be reported to the appropriate BLM office.
  - vi. 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.
  - vii. 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.
  - viii. 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 **43 CFR 3172**.

### **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. 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.

**Approved by Zota Stevens on 2/27/2025**  
575-234-5998 / [zstevens@blm.gov](mailto:zstevens@blm.gov)



C-102  Sumbit electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONVERSION DIVISION	Revised July, 09 2024	
		Submittal Type:	<input type="checkbox"/> Initial Submittal
			<input checked="" type="checkbox"/> Amended Report
		<input type="checkbox"/> As Drilled	

WELL LOCATION INFORMATION			
API Number <b>30-015-</b>	Pool Code <b>40295</b>	Pool Name <b>LOS MEDANOS, BONE SPRING</b>	
Property Code	Property Name <b>JRU Apache U Federal Com</b>	Well Number <b>702H</b>	
OGRID No. <b>373075</b>	Operator Name <b>XTO PERMIAN OPERATING, LLC.</b>	Ground Level Elevation <b>3,347'</b>	
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal		Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal	

Surface Hole Location									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
I	13	22S	30E		2,517 FSL	968 FEL	32.391769	-103.828717	EDDY

Bottom Hole Location									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	14	22S	30E		1,336 FNL	50 FWL	32.395738	-103.860076	EDDY



Dedicated Acres <b>640.00</b>	Infill or Defining Well <b>INFILL</b>	Defining Well API	Overlapping Spacing Unit (Y/N) <b>Y</b>	Consolidation Code <b>U</b>
Order Numbers. <b>R-279-C</b>			Well Setbacks are under Common Ownership: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Kick Off Point (KOP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
H	13	22S	30E		1,336 FNL	330 FEL	32.395701	-103.826650	EDDY

First Take Point (FTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
H	13	22S	30E		1,336 FNL	330 FEL	32.395701	-103.826650	EDDY

Last Take Point (LTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	14	22S	30E		1,336 FNL	100 FWL	32.395738	-103.859914	EDDY

Unitized Area of Area of Interest <b>NMMN-070965X</b>	Spacing Unit Type : <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Elevation <b>3,347'</b>
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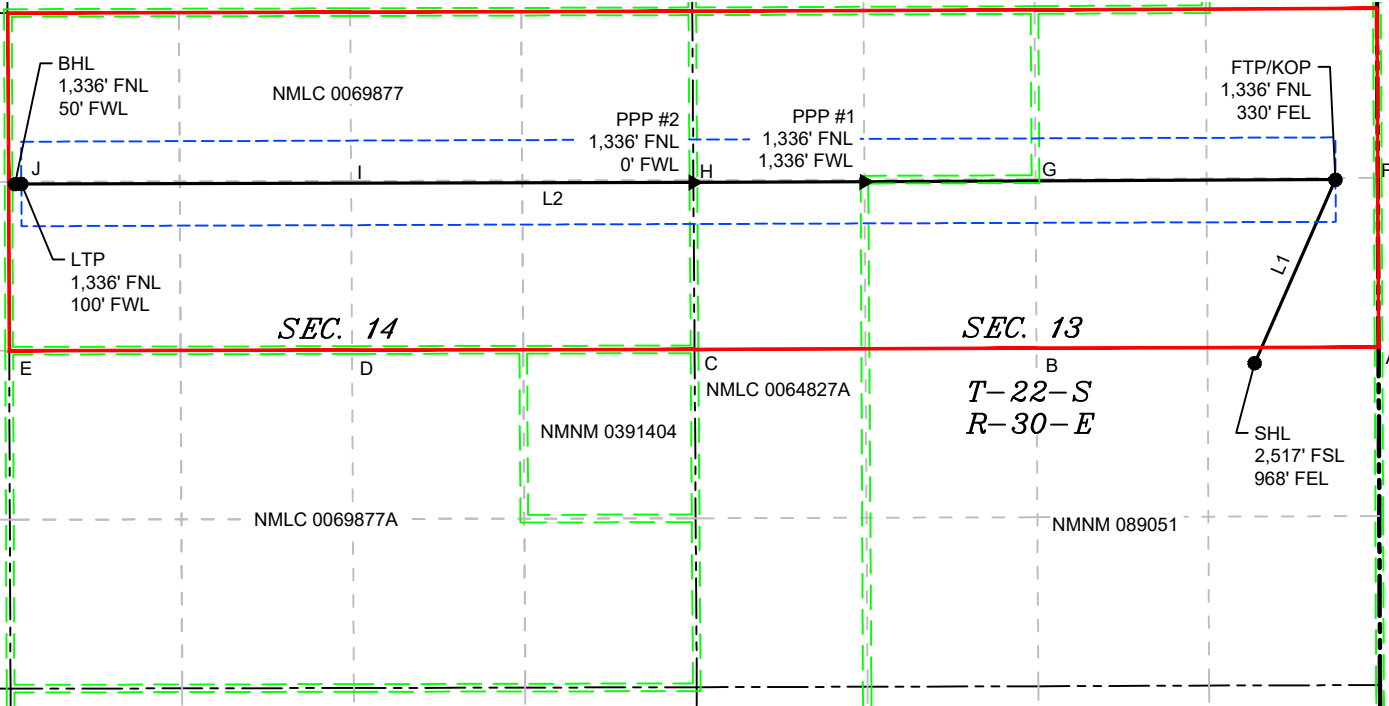
<div>OPERATOR CERTIFICATIONS</div> <div>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or a voluntary pooling agreement or a compulsory pooling order of heretofore entered by the division.</div> <div>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or information) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</div> <div>Srinivas Naveen1/3/25</div> <div>SignatureDate</div> <div>Srinivas Naveen Laghuvarapu</div> <div>Printed Name</div> <div>srinivas.n.laghuvarapu@exxonmobil.com</div> <div>Email Address</div>	<div>SURVEYOR CERTIFICATIONS</div> <div>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief</div> <div></div> <div>Signature and Seal of Professional Surveyor</div> <div></div> <div>MARK DILLON HARP 2378612/9/2024</div> <div>Certificate NumberDate of Survey</div> <div>KT618.013002.10-30</div>
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Note: No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is a directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other then the First Take Point and Last Take Point) that is closest to any outer boundary of the tract.

Surveyor shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land in not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	023°46'08.68"	1,566.24
L2	269°48'41.60"	10,317.17

LEGEND	
	SECTION LINE
	PROPOSED WELL BORE
	NEW MEXICO MINERAL LEASE
	330' BUFFER
	ALLOCATION AREA

COORDINATE TABLE									
SHL (NAD 83 NME)		FTP/KOP (NAD 83 NME)		PPP1 (NAD 83 NME)		PPP2 (NAD 83 NME)		LTP (NAD 83 NME)	
Y =	506,624.6 N	Y =	508,058.0 N	Y =	508,041.9 N	Y =	508,036.8 N	Y =	508,024.2 N
X =	697,094.5 E	X =	697,725.8 E	X =	694,045.5 E	X =	692,709.3 E	X =	687,458.7 E
LAT. =	32.391769 °N	LAT. =	32.395701 °N	LAT. =	32.395704 °N	LAT. =	32.395707 °N	LAT. =	32.395738 °N
LONG. =	103.828717 °W	LONG. =	103.826650 °W	LONG. =	103.838574 °W	LONG. =	103.842903 °W	LONG. =	103.859914 °W
BHL (NAD 83 NME)									
Y =	508,024.1 N								
X =	687,408.7 E								
LAT. =	32.395738 °N								
LONG. =	103.860076 °W								
SHL (NAD 27 NME)		FTP/KOP (NAD 27 NME)		PPP1 (NAD 83 NME)		PPP2 (NAD 83 NME)		LTP (NAD 27 NME)	
Y =	506,563.9 N	Y =	507,997.3 N	Y =	507,981.2 N	Y =	507,976.1 N	Y =	507,963.5 N
X =	655,913.1 E	X =	656,544.4 E	X =	652,864.1 E	X =	651,527.9 E	X =	646,277.4 E
LAT. =	32.391647 °N	LAT. =	32.395579 °N	LAT. =	32.395582 °N	LAT. =	32.395585 °N	LAT. =	32.395615 °N
LONG. =	103.828223 °W	LONG. =	103.826156 °W	LONG. =	103.838079 °W	LONG. =	103.842408 °W	LONG. =	103.859419 °W
BHL (NAD 27 NME)									
Y =	507,963.3 N								
X =	646,227.4 E								
LAT. =	32.395615 °N								
LONG. =	103.859581 °W								
CORNER COORDINATES (NAD 83 NME)				CORNER COORDINATES (NAD 27 NME)					
A - Y =	506,750.2 N	A - X =	698,061.8 E	A - Y =	506,689.5 N	A - X =	656,880.3 E		
B - Y =	506,741.3 N	B - X =	695,389.1 E	B - Y =	506,680.6 N	B - X =	654,207.6 E		
C - Y =	506,732.3 N	C - X =	692,717.9 E	C - Y =	506,671.6 N	C - X =	651,536.5 E		
D - Y =	506,727.2 N	D - X =	690,042.0 E	D - Y =	506,666.5 N	D - X =	648,860.6 E		
E - Y =	506,721.9 N	E - X =	687,363.8 E	E - Y =	506,661.2 N	E - X =	646,182.4 E		
F - Y =	508,072.9 N	F - X =	698,055.8 E	F - Y =	508,012.2 N	F - X =	656,874.3 E		
G - Y =	508,062.1 N	G - X =	695,381.7 E	G - Y =	508,001.4 N	G - X =	654,200.3 E		
H - Y =	508,052.6 N	H - X =	692,709.2 E	H - Y =	507,991.9 N	H - X =	651,527.8 E		
I - Y =	508,046.7 N	I - X =	690,034.9 E	I - Y =	507,986.0 N	I - X =	648,853.5 E		
J - Y =	508,040.4 N	J - X =	687,358.6 E	J - Y =	507,979.7 N	J - X =	646,177.3 E		

**DRILLING PLAN: BLM COMPLIANCE**  
(Supplement to BLM 3160-3)

XTO Energy Inc.

JRU Apache U Federal Com 702H

Projected TD: 20024.35' MD / 9752' TVD

SHL: 2517' FSL & 968' FEL , Section 13, T22S, R30E

BHL: 1336' FNL & 50' FWL , Section 14, T22S, R30E

EDDY County, NM

**1. Geologic Name of Surface Formation**

A. Quaternary

**2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas**

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	455'	Water
Top of Salt	755'	Water
MB 126	1439'	Water
Base of Salt	3607'	Water
Delaware	3868'	Water/Oil/Gas
Brushy Canyon	6376'	Water
Bone Spring	7785'	Water/Oil/Gas
Avalon	7850'	Water/Oil/Gas
1st Bone Spring	8632'	Water/Oil/Gas
2nd Bone Spring	9240'	Water/Oil/Gas
<b>Target/Land Curve</b>	9752'	Water/Oil/Gas

\*\*\* Hydrocarbons @ Brushy Canyon

\*\*\* Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting surface casing casing @ 655' (100' above the salt) and circulating cement back to surface. The intermediate will isolate from the top of salt down to the next casing seat by setting 7.625 inch casing at 3853' and cemented to surface. A 6.75 inch curve and 6.75 inch lateral hole will be drilled to 20024.35 MD/TD and 5.5 inch production casing will be set at TD.

**3. Casing Design**

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
12.25	0' – 655'	9.625	40	J-55	BTC	New	3.74	9.61	24.05
8.75	0' – 3853'	7.625	29.7	RY P-110	Flush Joint	New	3.83	2.89	4.88
6.75	0' – 3753'	5.5	20	RY P-110	Semi-Premium / Freedom	New	1.26	6.25	2.33
6.75	3753' - 20024.35'	5.5	20	RY P-110	Semi-Flush / Talon	New	1.26	2.41	2.33

· XTO requests the option to utilize a spudder rig (Atlas Copco RD20 or Equivalent) to set and cement surface casing

Wellhead:

Permanent Wellhead  
Multibowl System for 3 String desing as per attachement.

4. Cement Program

XTO requests the option to offline cement and remediate (if needed) surface and intermediate casing strings where batch drilling is approved and if unplanned remediation is needed. XTO will ensure well is static with no pressure on the csg annulus, as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed when applicable per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops. Offline cement operations will then be conducted after the rig is moved off the current well to the next well in the batch sequence.

Surface Casing: 9.625, 40 New BTC, J-55 casing to be set at +/- 655'

Lead: 110 sxs EconoCem-HLTRRC (mixed at 10.5 ppg, 1.87 ft3/sx, 10.13 gal/sx water)  
Tail: 130 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)  
Top of Cement: Surface  
Compressives:           12-hr =           900 psi           24 hr = 1500 psi

1St Intermediate Casing: 7.625, 29.7 New casing to be set at +/- 3853'

Lead: 190 sxs Class C (mixed at 10.5 ppg, 2.77 ft3/sx, 15.59 gal/sx water)  
TOC: Surface  
Tail: 30 sxs Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)  
TOC:@ 3553  
Compressives:           12-hr =           900 psi           24 hr = 1150 psi

Production Casing: 5.5, 20 New Semi-Flush / Talon, RY P-110 casing to be set at +/- 20024.35'

Lead: 110 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)	Top of Cement:	6376 feet
Tail: 770 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 8.38 gal/sx water)	Top of Cement:	9298.48 feet
Compressives:	12-hr =           800 psi           24 hr = 1500 psi	

## 5. Pressure Control Equipment

Once the permanent WH is installed on the casing, the blow out preventer equipment (BOP) will consist of 5M Hydril and 10M 3-Ram BOP.

All BOP testing will be done by an independent service company. Operator will test as per CFR43-3172

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold.

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set casing and ensure that the well is cemented properly (unless approval is given for offline cementing) and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per Cactus recommendations, XTO will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53.

**6. Proposed Mud Circulation System**

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)	Additional Comments
0' - 655'	12.25	FW/Native	8.4-8.9	35-40	NC	Fresh water or native water
655' - 3853'	8.75	Saturated brine for salt	9.5-10.5	30-32	NC	Fully saturated salt across salado
3853' - 20024.35'	6.75	OBM	9.1-9.6	50-60	NC - 20	N/A

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under surface casing with Saturated Salt. A saturated salt brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. 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 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

**7. Auxiliary Well Control and Monitoring Equipment**

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 9.625 casing.

**8. Logging, Coring and Testing Program**

Open hole logging will not be done on this well.

**9. Abnormal Pressures and Temperatures / Potential Hazards**

None Anticipated. BHT of 165 to 185 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

**10. Anticipated Starting Date and Duration of Operations**

Anticipated spud date will be after BLM approval. Move in operations and drilling is expected to take 40 days.

## Well Plan Report

Measured Depth: 20024.35 ft

TVD RKB: 9752.00 ft

### Location

Cartographic Reference System: New Mexico East - NAD 27

Northing: 506563.90 ft

Easting: 655913.10 ft

RKB: 3379.00 ft

Ground Level: 3347.00 ft

North Reference: Grid

Convergence Angle: 0.27 Deg

Site: B

Slot: James Ranch Unit  
Apache 702H

### Plan Sections

Measured				TVD				Build	Turn	Dogleg
Depth	Inclination	Azimuth		RKB	Y Offset	X Offset		Rate	Rate	Rate
(ft)	(Deg)	(Deg)		(ft)	(ft)	(ft)	(Deg/100ft)	(Deg/100ft)	(Deg/100ft)	Target
0.00	0.00	0.00		0.00	-0.00	-0.00	0.00	0.00	0.00	
3700.00	0.00	0.00		3700.00	-0.00	-0.00	0.00	0.00	0.00	
4732.43	20.65	23.77		4710.23	168.42	74.18	2.00	0.00	2.00	
8130.25	20.65	23.77		7889.77	1264.98	557.12	0.00	0.00	0.00	
9162.68	0.00	0.00		8900.00	1433.40	631.30	-2.00	0.00	2.00	
9298.48	0.00	0.00		9035.80	1433.40	631.30	0.00	0.00	0.00	
10423.48	90.00	269.81		9752.00	1431.04	-84.89	8.00	0.00	8.00	
19975.55	90.00	269.81		9752.00	1399.53	-9636.91	0.00	0.00	0.00	LTP 7
20024.35	90.00	269.81		9752.00	1399.37	-9685.70	0.00	0.00	0.00	BHL 7

### Position Uncertainty

Measured	TVD	Highside	Lateral	Vertical	Magnitude	Semi-major	Semi-minor	Semi-minor	Tool
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Depth	Inclination	Azimuth	RKB	Error	Bias	Error	Bias	Error	Bias	of Bias	Error	Error	Azimuth	Used
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.310	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.325	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.347	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.374	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.406	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.443	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.485	0.000	0.000	3.642	2.775	128.423	MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.696	0.000	3.502	0.000	2.531	0.000	0.000	4.014	3.133	128.602	MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	4.058	0.000	3.865	0.000	2.581	0.000	0.000	4.384	3.491	128.744	MWD+IFR1+MS
1100.000	0.000	0.000	1100.000	4.419	0.000	4.228	0.000	2.634	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1200.000	0.000	0.000	1200.000	4.779	0.000	4.589	0.000	2.691	0.000	0.000	5.119	4.207	128.954	MWD+IFR1+MS
1300.000	0.000	0.000	1300.000	5.140	0.000	4.950	0.000	2.750	0.000	0.000	5.484	4.565	129.034	MWD+IFR1+MS
1400.000	0.000	0.000	1400.000	5.500	0.000	5.311	0.000	2.813	0.000	0.000	5.849	4.924	129.102	MWD+IFR1+MS
1500.000	0.000	0.000	1500.000	5.860	0.000	5.672	0.000	2.878	0.000	0.000	6.213	5.282	129.161	MWD+IFR1+MS
1600.000	0.000	0.000	1600.000	6.219	0.000	6.032	0.000	2.945	0.000	0.000	6.577	5.640	129.212	MWD+IFR1+MS
1700.000	0.000	0.000	1700.000	6.579	0.000	6.392	0.000	3.015	0.000	0.000	6.939	5.999	129.257	MWD+IFR1+MS
1800.000	0.000	0.000	1800.000	6.938	0.000	6.752	0.000	3.086	0.000	0.000	7.302	6.357	129.297	MWD+IFR1+MS
1900.000	0.000	0.000	1900.000	7.298	0.000	7.112	0.000	3.160	0.000	0.000	7.664	6.715	129.333	MWD+IFR1+MS
2000.000	0.000	0.000	2000.000	7.657	0.000	7.471	0.000	3.236	0.000	0.000	8.026	7.074	129.365	MWD+IFR1+MS
2100.000	0.000	0.000	2100.000	8.016	0.000	7.831	0.000	3.313	0.000	0.000	8.387	7.432	129.394	MWD+IFR1+MS
2200.000	0.000	0.000	2200.000	8.375	0.000	8.190	0.000	3.391	0.000	0.000	8.748	7.791	129.420	MWD+IFR1+MS
2300.000	0.000	0.000	2300.000	8.734	0.000	8.550	0.000	3.472	0.000	0.000	9.109	8.149	129.444	MWD+IFR1+MS
2400.000	0.000	0.000	2400.000	9.093	0.000	8.909	0.000	3.554	0.000	0.000	9.470	8.507	129.466	MWD+IFR1+MS
2500.000	0.000	0.000	2500.000	9.452	0.000	9.268	0.000	3.637	0.000	0.000	9.831	8.866	129.486	MWD+IFR1+MS
2600.000	0.000	0.000	2600.000	9.811	0.000	9.627	0.000	3.721	0.000	0.000	10.191	9.224	129.505	MWD+IFR1+MS
2700.000	0.000	0.000	2700.000	10.170	0.000	9.986	0.000	3.807	0.000	0.000	10.552	9.583	129.522	MWD+IFR1+MS
2800.000	0.000	0.000	2800.000	10.529	0.000	10.345	0.000	3.895	0.000	0.000	10.912	9.941	129.538	MWD+IFR1+MS
2900.000	0.000	0.000	2900.000	10.888	0.000	10.705	0.000	3.984	0.000	0.000	11.272	10.299	129.552	MWD+IFR1+MS
3000.000	0.000	0.000	3000.000	11.247	0.000	11.063	0.000	4.074	0.000	0.000	11.632	10.658	129.566	MWD+IFR1+MS

3100.000	0.000	0.000	3100.000	11.606	0.000	11.422	0.000	4.165	0.000	0.000	11.992	11.016	129.579	MWD+IFR1+MS
3200.000	0.000	0.000	3200.000	11.965	0.000	11.781	0.000	4.258	0.000	0.000	12.352	11.375	129.591	MWD+IFR1+MS
3300.000	0.000	0.000	3300.000	12.323	0.000	12.140	0.000	4.352	0.000	0.000	12.712	11.733	129.603	MWD+IFR1+MS
3400.000	0.000	0.000	3400.000	12.682	0.000	12.499	0.000	4.447	0.000	0.000	13.071	12.092	129.613	MWD+IFR1+MS
3500.000	0.000	0.000	3500.000	13.041	0.000	12.858	0.000	4.544	0.000	0.000	13.431	12.450	129.623	MWD+IFR1+MS
3600.000	0.000	0.000	3600.000	13.400	0.000	13.217	0.000	4.642	0.000	0.000	13.790	12.809	129.633	MWD+IFR1+MS
3700.000	0.000	0.000	3700.000	13.758	0.000	13.576	0.000	4.741	0.000	0.000	14.150	13.167	129.642	MWD+IFR1+MS
3800.000	2.000	23.770	3799.980	14.492	0.000	13.604	0.000	4.842	0.000	0.000	14.575	13.524	129.538	MWD+IFR1+MS
3900.000	4.000	23.770	3899.838	14.986	0.000	13.969	0.000	4.945	0.000	0.000	15.099	13.879	129.189	MWD+IFR1+MS
4000.000	6.000	23.770	3999.452	15.453	0.000	14.332	0.000	5.050	0.000	0.000	15.613	14.234	128.927	MWD+IFR1+MS
4100.000	8.000	23.770	4098.702	15.896	0.000	14.693	0.000	5.159	0.000	0.000	16.115	14.587	128.725	MWD+IFR1+MS
4200.000	10.000	23.770	4197.465	16.315	0.000	15.053	0.000	5.274	0.000	0.000	16.606	14.938	128.568	MWD+IFR1+MS
4300.000	12.000	23.770	4295.623	16.709	0.000	15.410	0.000	5.395	0.000	0.000	17.086	15.289	128.447	MWD+IFR1+MS
4400.000	14.000	23.770	4393.055	17.080	0.000	15.767	0.000	5.524	0.000	0.000	17.556	15.638	128.356	MWD+IFR1+MS
4500.000	16.000	23.770	4489.643	17.429	0.000	16.122	0.000	5.662	0.000	0.000	18.015	15.987	128.291	MWD+IFR1+MS
4600.000	18.000	23.770	4585.268	17.755	0.000	16.476	0.000	5.810	0.000	0.000	18.465	16.334	128.252	MWD+IFR1+MS
4700.000	20.000	23.770	4679.816	18.059	0.000	16.829	0.000	5.969	0.000	0.000	18.904	16.682	128.236	MWD+IFR1+MS
4732.434	20.649	23.770	4710.230	18.112	0.000	16.941	0.000	6.005	0.000	0.000	19.008	16.795	128.211	MWD+IFR1+MS
4800.000	20.649	23.770	4773.456	18.331	0.000	17.174	0.000	6.090	0.000	0.000	19.213	17.030	128.213	MWD+IFR1+MS
4900.000	20.649	23.770	4867.032	18.660	0.000	17.528	0.000	6.221	0.000	0.000	19.522	17.385	128.333	MWD+IFR1+MS
5000.000	20.649	23.770	4960.608	18.996	0.000	17.888	0.000	6.358	0.000	0.000	19.838	17.745	128.521	MWD+IFR1+MS
5100.000	20.649	23.770	5054.184	19.336	0.000	18.250	0.000	6.499	0.000	0.000	20.157	18.107	128.709	MWD+IFR1+MS
5200.000	20.649	23.770	5147.760	19.680	0.000	18.615	0.000	6.644	0.000	0.000	20.480	18.471	128.899	MWD+IFR1+MS
5300.000	20.649	23.770	5241.336	20.027	0.000	18.982	0.000	6.792	0.000	0.000	20.806	18.837	129.089	MWD+IFR1+MS
5400.000	20.649	23.770	5334.912	20.378	0.000	19.351	0.000	6.945	0.000	0.000	21.135	19.206	129.281	MWD+IFR1+MS
5500.000	20.649	23.770	5428.488	20.732	0.000	19.721	0.000	7.101	0.000	0.000	21.467	19.577	129.473	MWD+IFR1+MS
5600.000	20.649	23.770	5522.064	21.090	0.000	20.094	0.000	7.261	0.000	0.000	21.802	19.949	129.667	MWD+IFR1+MS
5700.000	20.649	23.770	5615.640	21.450	0.000	20.469	0.000	7.424	0.000	0.000	22.140	20.324	129.862	MWD+IFR1+MS
5800.000	20.649	23.770	5709.216	21.813	0.000	20.845	0.000	7.590	0.000	0.000	22.480	20.700	130.058	MWD+IFR1+MS
5900.000	20.649	23.770	5802.792	22.179	0.000	21.223	0.000	7.759	0.000	0.000	22.822	21.077	130.255	MWD+IFR1+MS
6000.000	20.649	23.770	5896.368	22.547	0.000	21.603	0.000	7.932	0.000	0.000	23.167	21.457	130.454	MWD+IFR1+MS
6100.000	20.649	23.770	5989.944	22.918	0.000	21.984	0.000	8.107	0.000	0.000	23.514	21.837	130.653	MWD+IFR1+MS
6200.000	20.649	23.770	6083.520	23.291	0.000	22.366	0.000	8.286	0.000	0.000	23.863	22.219	130.854	MWD+IFR1+MS

6300.000	20.649	23.770	6177.096	23.666	0.000	22.749	0.000	8.467	0.000	0.000	24.214	22.602	131.056	MWD+IFR1+MS
6400.000	20.649	23.770	6270.672	24.043	0.000	23.134	0.000	8.651	0.000	0.000	24.568	22.987	131.260	MWD+IFR1+MS
6500.000	20.649	23.770	6364.248	24.422	0.000	23.520	0.000	8.838	0.000	0.000	24.923	23.372	131.464	MWD+IFR1+MS
6600.000	20.649	23.770	6457.824	24.804	0.000	23.907	0.000	9.027	0.000	0.000	25.280	23.759	131.670	MWD+IFR1+MS
6700.000	20.649	23.770	6551.400	25.187	0.000	24.295	0.000	9.219	0.000	0.000	25.639	24.147	131.878	MWD+IFR1+MS
6800.000	20.649	23.770	6644.976	25.571	0.000	24.684	0.000	9.414	0.000	0.000	25.999	24.536	132.086	MWD+IFR1+MS
6900.000	20.649	23.770	6738.552	25.958	0.000	25.074	0.000	9.611	0.000	0.000	26.361	24.925	132.296	MWD+IFR1+MS
7000.000	20.649	23.770	6832.128	26.346	0.000	25.465	0.000	9.811	0.000	0.000	26.725	25.316	132.507	MWD+IFR1+MS
7100.000	20.649	23.770	6925.704	26.735	0.000	25.857	0.000	10.013	0.000	0.000	27.090	25.707	132.719	MWD+IFR1+MS
7200.000	20.649	23.770	7019.280	27.126	0.000	26.249	0.000	10.218	0.000	0.000	27.457	26.100	132.933	MWD+IFR1+MS
7300.000	20.649	23.770	7112.856	27.519	0.000	26.643	0.000	10.424	0.000	0.000	27.825	26.493	133.147	MWD+IFR1+MS
7400.000	20.649	23.770	7206.432	27.912	0.000	27.037	0.000	10.634	0.000	0.000	28.194	26.887	133.363	MWD+IFR1+MS
7500.000	20.649	23.770	7300.008	28.307	0.000	27.432	0.000	10.845	0.000	0.000	28.565	27.281	133.580	MWD+IFR1+MS
7600.000	20.649	23.770	7393.584	28.703	0.000	27.828	0.000	11.059	0.000	0.000	28.937	27.677	133.798	MWD+IFR1+MS
7700.000	20.649	23.770	7487.160	29.101	0.000	28.224	0.000	11.275	0.000	0.000	29.310	28.073	134.018	MWD+IFR1+MS
7800.000	20.649	23.770	7580.736	29.499	0.000	28.621	0.000	11.494	0.000	0.000	29.685	28.469	134.238	MWD+IFR1+MS
7900.000	20.649	23.770	7674.312	29.899	0.000	29.018	0.000	11.715	0.000	0.000	30.060	28.867	134.459	MWD+IFR1+MS
8000.000	20.649	23.770	7767.888	30.299	0.000	29.417	0.000	11.938	0.000	0.000	30.437	29.265	134.681	MWD+IFR1+MS
8100.000	20.649	23.770	7861.464	30.701	0.000	29.815	0.000	12.163	0.000	0.000	30.814	29.663	134.904	MWD+IFR1+MS
8130.248	20.649	23.770	7889.770	30.821	0.000	29.934	0.000	12.231	0.000	0.000	30.926	29.783	134.911	MWD+IFR1+MS
8200.000	19.254	23.770	7955.333	31.211	0.000	30.208	0.000	12.391	0.000	0.000	31.190	30.059	134.901	MWD+IFR1+MS
8300.000	17.254	23.770	8050.296	31.790	0.000	30.601	0.000	12.629	0.000	0.000	31.618	30.452	134.565	MWD+IFR1+MS
8400.000	15.254	23.770	8146.295	32.351	0.000	30.991	0.000	12.865	0.000	0.000	32.067	30.841	134.106	MWD+IFR1+MS
8500.000	13.254	23.770	8243.211	32.868	0.000	31.376	0.000	13.093	0.000	0.000	32.513	31.225	133.662	MWD+IFR1+MS
8600.000	11.254	23.770	8340.928	33.342	0.000	31.756	0.000	13.312	0.000	0.000	32.956	31.603	133.242	MWD+IFR1+MS
8700.000	9.254	23.770	8439.326	33.770	0.000	32.129	0.000	13.524	0.000	0.000	33.393	31.974	132.855	MWD+IFR1+MS
8800.000	7.254	23.770	8538.285	34.153	0.000	32.496	0.000	13.731	0.000	0.000	33.823	32.340	132.506	MWD+IFR1+MS
8900.000	5.254	23.770	8637.685	34.491	0.000	32.856	0.000	13.932	0.000	0.000	34.247	32.697	132.197	MWD+IFR1+MS
9000.000	3.254	23.770	8737.405	34.783	0.000	33.208	0.000	14.129	0.000	0.000	34.662	33.048	131.931	MWD+IFR1+MS
9100.000	1.254	23.770	8837.322	35.029	0.000	33.553	0.000	14.323	0.000	0.000	35.068	33.391	131.709	MWD+IFR1+MS
9162.683	0.000	0.000	8900.000	34.556	0.000	34.353	0.000	14.443	0.000	0.000	35.286	33.603	131.541	MWD+IFR1+MS
9200.000	0.000	0.000	8937.317	34.678	0.000	34.474	0.000	14.515	0.000	0.000	35.404	33.728	131.513	MWD+IFR1+MS
9298.483	0.000	0.000	9035.800	34.999	0.000	34.796	0.000	14.706	0.000	0.000	35.718	34.058	131.499	MWD+IFR1+MS

9300.000	0.121	269.811	9037.317	34.801	-0.000	34.998	0.000	14.709	0.000	0.000	35.722	34.063	131.499	MWD+IFR1+MS
9400.000	8.121	269.811	9136.978	34.792	-0.000	35.301	0.000	14.917	0.000	0.000	36.138	34.564	-43.034	MWD+IFR1+MS
9500.000	16.121	269.811	9234.669	35.150	-0.000	35.598	0.000	15.232	0.000	0.000	37.128	35.294	-23.947	MWD+IFR1+MS
9600.000	24.121	269.811	9328.489	34.987	-0.000	35.882	0.000	15.748	0.000	0.000	38.226	35.737	-13.908	MWD+IFR1+MS
9700.000	32.121	269.811	9416.613	34.367	-0.000	36.151	0.000	16.527	0.000	0.000	39.230	36.073	-9.009	MWD+IFR1+MS
9800.000	40.121	269.811	9497.324	33.380	-0.000	36.404	0.000	17.592	0.000	0.000	40.070	36.359	-6.318	MWD+IFR1+MS
9900.000	48.121	269.811	9569.052	32.141	-0.000	36.641	0.000	18.929	0.000	0.000	40.726	36.614	-4.716	MWD+IFR1+MS
10000.000	56.121	269.811	9630.402	30.797	-0.000	36.863	0.000	20.492	0.000	0.000	41.203	36.845	-3.758	MWD+IFR1+MS
10100.000	64.121	269.811	9680.177	29.524	-0.000	37.072	0.000	22.221	0.000	0.000	41.514	37.059	-3.260	MWD+IFR1+MS
10200.000	72.121	269.811	9717.411	28.518	-0.000	37.269	0.000	24.047	0.000	0.000	41.689	37.257	-3.156	MWD+IFR1+MS
10300.000	80.121	269.811	9741.378	27.972	-0.000	37.454	0.000	25.905	0.000	0.000	41.764	37.439	-3.439	MWD+IFR1+MS
10400.000	88.121	269.811	9751.612	28.039	-0.000	37.624	0.000	27.734	0.000	0.000	41.785	37.604	-4.124	MWD+IFR1+MS
10423.483	90.000	269.811	9751.997	27.822	0.000	37.660	0.000	27.822	0.000	0.000	41.788	37.637	-4.344	MWD+IFR1+MS
10500.000	90.000	269.811	9751.997	28.028	0.000	37.787	0.000	28.028	0.000	0.000	41.797	37.756	-5.119	MWD+IFR1+MS
10600.000	90.000	269.811	9751.997	28.295	0.000	37.986	0.000	28.295	0.000	0.000	41.811	37.940	-6.240	MWD+IFR1+MS
10700.000	90.000	269.811	9751.997	28.583	0.000	38.217	0.000	28.583	0.000	0.000	41.830	38.154	-7.519	MWD+IFR1+MS
10800.000	90.000	269.811	9751.997	28.889	0.000	38.479	0.000	28.889	0.000	0.000	41.853	38.394	-9.005	MWD+IFR1+MS
10900.000	90.000	269.811	9751.997	29.213	0.000	38.772	0.000	29.213	0.000	0.000	41.883	38.659	-10.771	MWD+IFR1+MS
11000.000	90.000	269.811	9751.997	29.555	0.000	39.096	0.000	29.555	0.000	0.000	41.922	38.946	-12.914	MWD+IFR1+MS
11100.000	90.000	269.811	9751.997	29.913	0.000	39.448	0.000	29.913	0.000	0.000	41.972	39.250	-15.570	MWD+IFR1+MS
11200.000	90.000	269.811	9751.997	30.287	0.000	39.829	0.000	30.287	0.000	0.000	42.040	39.567	-18.920	MWD+IFR1+MS
11300.000	90.000	269.811	9751.997	30.676	0.000	40.237	0.000	30.676	0.000	0.000	42.131	39.887	-23.183	MWD+IFR1+MS
11400.000	90.000	269.811	9751.997	31.081	0.000	40.673	0.000	31.081	0.000	0.000	42.259	40.198	-28.558	MWD+IFR1+MS
11500.000	90.000	269.811	9751.997	31.500	0.000	41.134	0.000	31.500	0.000	0.000	42.437	40.486	-35.061	MWD+IFR1+MS
11600.000	90.000	269.811	9751.997	31.933	0.000	41.620	0.000	31.933	0.000	0.000	42.680	40.734	-42.300	MWD+IFR1+MS
11700.000	90.000	269.811	9751.997	32.379	0.000	42.131	0.000	32.379	0.000	0.000	42.996	40.934	130.523	MWD+IFR1+MS
11800.000	90.000	269.811	9751.997	32.837	0.000	42.665	0.000	32.837	0.000	0.000	43.383	41.086	124.171	MWD+IFR1+MS
11900.000	90.000	269.811	9751.997	33.308	0.000	43.221	0.000	33.308	0.000	0.000	43.832	41.200	118.975	MWD+IFR1+MS
12000.000	90.000	269.811	9751.997	33.791	0.000	43.799	0.000	33.791	0.000	0.000	44.331	41.286	114.885	MWD+IFR1+MS
12100.000	90.000	269.811	9751.997	34.284	0.000	44.398	0.000	34.284	0.000	0.000	44.870	41.352	111.691	MWD+IFR1+MS
12200.000	90.000	269.811	9751.997	34.789	0.000	45.017	0.000	34.789	0.000	0.000	45.444	41.406	109.180	MWD+IFR1+MS
12300.000	90.000	269.811	9751.997	35.303	0.000	45.655	0.000	35.303	0.000	0.000	46.046	41.449	107.177	MWD+IFR1+MS
12400.000	90.000	269.811	9751.997	35.828	0.000	46.312	0.000	35.828	0.000	0.000	46.674	41.487	105.552	MWD+IFR1+MS

12500.000	90.000	269.811	9751.997	36.362	0.000	46.986	0.000	36.362	0.000	0.000	47.324	41.520	104.214	MWD+IFR1+MS
12600.000	90.000	269.811	9751.997	36.904	0.000	47.676	0.000	36.904	0.000	0.000	47.995	41.549	103.095	MWD+IFR1+MS
12700.000	90.000	269.811	9751.997	37.456	0.000	48.383	0.000	37.456	0.000	0.000	48.685	41.576	102.146	MWD+IFR1+MS
12800.000	90.000	269.811	9751.997	38.015	0.000	49.106	0.000	38.015	0.000	0.000	49.393	41.602	101.332	MWD+IFR1+MS
12900.000	90.000	269.811	9751.997	38.583	0.000	49.843	0.000	38.583	0.000	0.000	50.117	41.626	100.626	MWD+IFR1+MS
13000.000	90.000	269.811	9751.997	39.158	0.000	50.594	0.000	39.158	0.000	0.000	50.857	41.649	100.008	MWD+IFR1+MS
13100.000	90.000	269.811	9751.997	39.740	0.000	51.359	0.000	39.740	0.000	0.000	51.612	41.672	99.462	MWD+IFR1+MS
13200.000	90.000	269.811	9751.997	40.329	0.000	52.137	0.000	40.329	0.000	0.000	52.381	41.694	98.976	MWD+IFR1+MS
13300.000	90.000	269.811	9751.997	40.924	0.000	52.927	0.000	40.924	0.000	0.000	53.162	41.715	98.540	MWD+IFR1+MS
13400.000	90.000	269.811	9751.997	41.526	0.000	53.728	0.000	41.526	0.000	0.000	53.957	41.737	98.148	MWD+IFR1+MS
13500.000	90.000	269.811	9751.997	42.134	0.000	54.541	0.000	42.134	0.000	0.000	54.763	41.759	97.792	MWD+IFR1+MS
13600.000	90.000	269.811	9751.997	42.747	0.000	55.365	0.000	42.747	0.000	0.000	55.580	41.780	97.468	MWD+IFR1+MS
13700.000	90.000	269.811	9751.997	43.367	0.000	56.199	0.000	43.367	0.000	0.000	56.408	41.802	97.171	MWD+IFR1+MS
13800.000	90.000	269.811	9751.997	43.991	0.000	57.043	0.000	43.991	0.000	0.000	57.247	41.824	96.899	MWD+IFR1+MS
13900.000	90.000	269.811	9751.997	44.621	0.000	57.897	0.000	44.621	0.000	0.000	58.095	41.846	96.647	MWD+IFR1+MS
14000.000	90.000	269.811	9751.997	45.255	0.000	58.759	0.000	45.255	0.000	0.000	58.953	41.868	96.415	MWD+IFR1+MS
14100.000	90.000	269.811	9751.997	45.894	0.000	59.630	0.000	45.894	0.000	0.000	59.819	41.891	96.198	MWD+IFR1+MS
14200.000	90.000	269.811	9751.997	46.537	0.000	60.509	0.000	46.537	0.000	0.000	60.694	41.914	95.997	MWD+IFR1+MS
14300.000	90.000	269.811	9751.997	47.185	0.000	61.396	0.000	47.185	0.000	0.000	61.577	41.937	95.809	MWD+IFR1+MS
14400.000	90.000	269.811	9751.997	47.837	0.000	62.291	0.000	47.837	0.000	0.000	62.468	41.961	95.633	MWD+IFR1+MS
14500.000	90.000	269.811	9751.997	48.493	0.000	63.193	0.000	48.493	0.000	0.000	63.366	41.984	95.468	MWD+IFR1+MS
14600.000	90.000	269.811	9751.997	49.152	0.000	64.102	0.000	49.152	0.000	0.000	64.271	42.009	95.312	MWD+IFR1+MS
14700.000	90.000	269.811	9751.997	49.815	0.000	65.017	0.000	49.815	0.000	0.000	65.183	42.033	95.166	MWD+IFR1+MS
14800.000	90.000	269.811	9751.997	50.482	0.000	65.939	0.000	50.482	0.000	0.000	66.102	42.058	95.027	MWD+IFR1+MS
14900.000	90.000	269.811	9751.997	51.152	0.000	66.867	0.000	51.152	0.000	0.000	67.027	42.084	94.896	MWD+IFR1+MS
15000.000	90.000	269.811	9751.997	51.825	0.000	67.801	0.000	51.825	0.000	0.000	67.957	42.110	94.772	MWD+IFR1+MS
15100.000	90.000	269.811	9751.997	52.502	0.000	68.740	0.000	52.502	0.000	0.000	68.894	42.136	94.655	MWD+IFR1+MS
15200.000	90.000	269.811	9751.997	53.181	0.000	69.685	0.000	53.181	0.000	0.000	69.836	42.163	94.543	MWD+IFR1+MS
15300.000	90.000	269.811	9751.997	53.863	0.000	70.635	0.000	53.863	0.000	0.000	70.783	42.190	94.436	MWD+IFR1+MS
15400.000	90.000	269.811	9751.997	54.548	0.000	71.590	0.000	54.548	0.000	0.000	71.736	42.218	94.335	MWD+IFR1+MS
15500.000	90.000	269.811	9751.997	55.236	0.000	72.549	0.000	55.236	0.000	0.000	72.693	42.246	94.238	MWD+IFR1+MS
15600.000	90.000	269.811	9751.997	55.926	0.000	73.513	0.000	55.926	0.000	0.000	73.655	42.274	94.145	MWD+IFR1+MS
15700.000	90.000	269.811	9751.997	56.619	0.000	74.482	0.000	56.619	0.000	0.000	74.621	42.303	94.056	MWD+IFR1+MS



15800.000	90.000	269.811	9751.997	57.314	0.000	75.455	0.000	57.314	0.000	0.000	75.592	42.333	93.972	MWD+IFR1+MS
15900.000	90.000	269.811	9751.997	58.011	0.000	76.432	0.000	58.011	0.000	0.000	76.566	42.363	93.890	MWD+IFR1+MS
16000.000	90.000	269.811	9751.997	58.710	0.000	77.413	0.000	58.710	0.000	0.000	77.545	42.393	93.812	MWD+IFR1+MS
16100.000	90.000	269.811	9751.997	59.412	0.000	78.397	0.000	59.412	0.000	0.000	78.528	42.424	93.737	MWD+IFR1+MS
16200.000	90.000	269.811	9751.997	60.116	0.000	79.385	0.000	60.116	0.000	0.000	79.514	42.455	93.665	MWD+IFR1+MS
16300.000	90.000	269.811	9751.997	60.821	0.000	80.377	0.000	60.821	0.000	0.000	80.504	42.487	93.596	MWD+IFR1+MS
16400.000	90.000	269.811	9751.997	61.529	0.000	81.372	0.000	61.529	0.000	0.000	81.497	42.519	93.529	MWD+IFR1+MS
16500.000	90.000	269.811	9751.997	62.239	0.000	82.371	0.000	62.239	0.000	0.000	82.494	42.552	93.465	MWD+IFR1+MS
16600.000	90.000	269.811	9751.997	62.950	0.000	83.372	0.000	62.950	0.000	0.000	83.493	42.585	93.403	MWD+IFR1+MS
16700.000	90.000	269.811	9751.997	63.663	0.000	84.376	0.000	63.663	0.000	0.000	84.496	42.619	93.343	MWD+IFR1+MS
16800.000	90.000	269.811	9751.997	64.377	0.000	85.384	0.000	64.377	0.000	0.000	85.502	42.653	93.285	MWD+IFR1+MS
16900.000	90.000	269.811	9751.997	65.094	0.000	86.394	0.000	65.094	0.000	0.000	86.510	42.687	93.229	MWD+IFR1+MS
17000.000	90.000	269.811	9751.997	65.811	0.000	87.407	0.000	65.811	0.000	0.000	87.522	42.722	93.175	MWD+IFR1+MS
17100.000	90.000	269.811	9751.997	66.531	0.000	88.422	0.000	66.531	0.000	0.000	88.536	42.758	93.123	MWD+IFR1+MS
17200.000	90.000	269.811	9751.997	67.252	0.000	89.440	0.000	67.252	0.000	0.000	89.552	42.794	93.072	MWD+IFR1+MS
17300.000	90.000	269.811	9751.997	67.974	0.000	90.461	0.000	67.974	0.000	0.000	90.571	42.830	93.023	MWD+IFR1+MS
17400.000	90.000	269.811	9751.997	68.697	0.000	91.484	0.000	68.697	0.000	0.000	91.593	42.867	92.976	MWD+IFR1+MS
17500.000	90.000	269.811	9751.997	69.422	0.000	92.509	0.000	69.422	0.000	0.000	92.616	42.904	92.930	MWD+IFR1+MS
17600.000	90.000	269.811	9751.997	70.148	0.000	93.536	0.000	70.148	0.000	0.000	93.642	42.942	92.885	MWD+IFR1+MS
17700.000	90.000	269.811	9751.997	70.876	0.000	94.566	0.000	70.876	0.000	0.000	94.671	42.980	92.842	MWD+IFR1+MS
17800.000	90.000	269.811	9751.997	71.605	0.000	95.597	0.000	71.605	0.000	0.000	95.701	43.019	92.800	MWD+IFR1+MS
17900.000	90.000	269.811	9751.997	72.334	0.000	96.631	0.000	72.334	0.000	0.000	96.733	43.058	92.759	MWD+IFR1+MS
18000.000	90.000	269.811	9751.997	73.065	0.000	97.666	0.000	73.065	0.000	0.000	97.767	43.098	92.719	MWD+IFR1+MS
18100.000	90.000	269.811	9751.997	73.797	0.000	98.703	0.000	73.797	0.000	0.000	98.804	43.138	92.680	MWD+IFR1+MS
18200.000	90.000	269.811	9751.997	74.531	0.000	99.743	0.000	74.531	0.000	0.000	99.842	43.179	92.643	MWD+IFR1+MS
18300.000	90.000	269.811	9751.997	75.265	0.000	100.783	0.000	75.265	0.000	0.000	100.881	43.220	92.606	MWD+IFR1+MS
18400.000	90.000	269.811	9751.997	76.000	0.000	101.826	0.000	76.000	0.000	0.000	101.923	43.261	92.570	MWD+IFR1+MS
18500.000	90.000	269.811	9751.997	76.736	0.000	102.870	0.000	76.736	0.000	0.000	102.966	43.303	92.536	MWD+IFR1+MS
18600.000	90.000	269.811	9751.997	77.473	0.000	103.916	0.000	77.473	0.000	0.000	104.011	43.346	92.502	MWD+IFR1+MS
18700.000	90.000	269.811	9751.997	78.211	0.000	104.964	0.000	78.211	0.000	0.000	105.057	43.388	92.469	MWD+IFR1+MS
18800.000	90.000	269.811	9751.997	78.950	0.000	106.013	0.000	78.950	0.000	0.000	106.105	43.432	92.437	MWD+IFR1+MS
18900.000	90.000	269.811	9751.997	79.690	0.000	107.063	0.000	79.690	0.000	0.000	107.155	43.476	92.405	MWD+IFR1+MS
19000.000	90.000	269.811	9751.997	80.431	0.000	108.115	0.000	80.431	0.000	0.000	108.206	43.520	92.375	MWD+IFR1+MS

19100.000	90.000	269.811	9751.997	81.172	0.000	109.168	0.000	81.172	0.000	0.000	109.258	43.565	92.345	MWD+IFR1+MS
19200.000	90.000	269.811	9751.997	81.915	0.000	110.223	0.000	81.915	0.000	0.000	110.311	43.610	92.315	MWD+IFR1+MS
19300.000	90.000	269.811	9751.997	82.658	0.000	111.278	0.000	82.658	0.000	0.000	111.366	43.655	92.287	MWD+IFR1+MS
19400.000	90.000	269.811	9751.997	83.402	0.000	112.336	0.000	83.402	0.000	0.000	112.423	43.701	92.259	MWD+IFR1+MS
19500.000	90.000	269.811	9751.997	84.146	0.000	113.394	0.000	84.146	0.000	0.000	113.480	43.748	92.232	MWD+IFR1+MS
19600.000	90.000	269.811	9751.997	84.892	0.000	114.454	0.000	84.892	0.000	0.000	114.539	43.795	92.205	MWD+IFR1+MS
19700.000	90.000	269.811	9751.997	85.638	0.000	115.514	0.000	85.638	0.000	0.000	115.599	43.842	92.179	MWD+IFR1+MS
19800.000	90.000	269.811	9751.997	86.384	0.000	116.576	0.000	86.384	0.000	0.000	116.660	43.890	92.154	MWD+IFR1+MS
19900.000	90.000	269.811	9751.997	87.132	0.000	117.639	0.000	87.132	0.000	0.000	117.722	43.938	92.129	MWD+IFR1+MS
19975.548	90.000	269.811	9751.997	87.696	0.000	118.442	0.000	87.696	0.000	0.000	118.524	43.975	92.111	MWD+IFR1+MS
20000.000	90.000	269.811	9751.997	87.879	0.000	118.702	0.000	87.879	0.000	0.000	118.784	43.987	92.105	MWD+IFR1+MS
20024.346	90.000	269.811	9751.997	88.061	0.000	118.960	0.000	88.061	0.000	0.000	119.042	43.999	92.099	MWD+IFR1+MS

Plan Targets

Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
FTP 7	10200.27	507997.30	656544.40	6373.00	CIRCLE
LTP 7	19974.34	507963.50	646277.40	6373.00	CIRCLE
BHL 7	20024.34	507963.30	646227.40	6373.00	CIRCLE

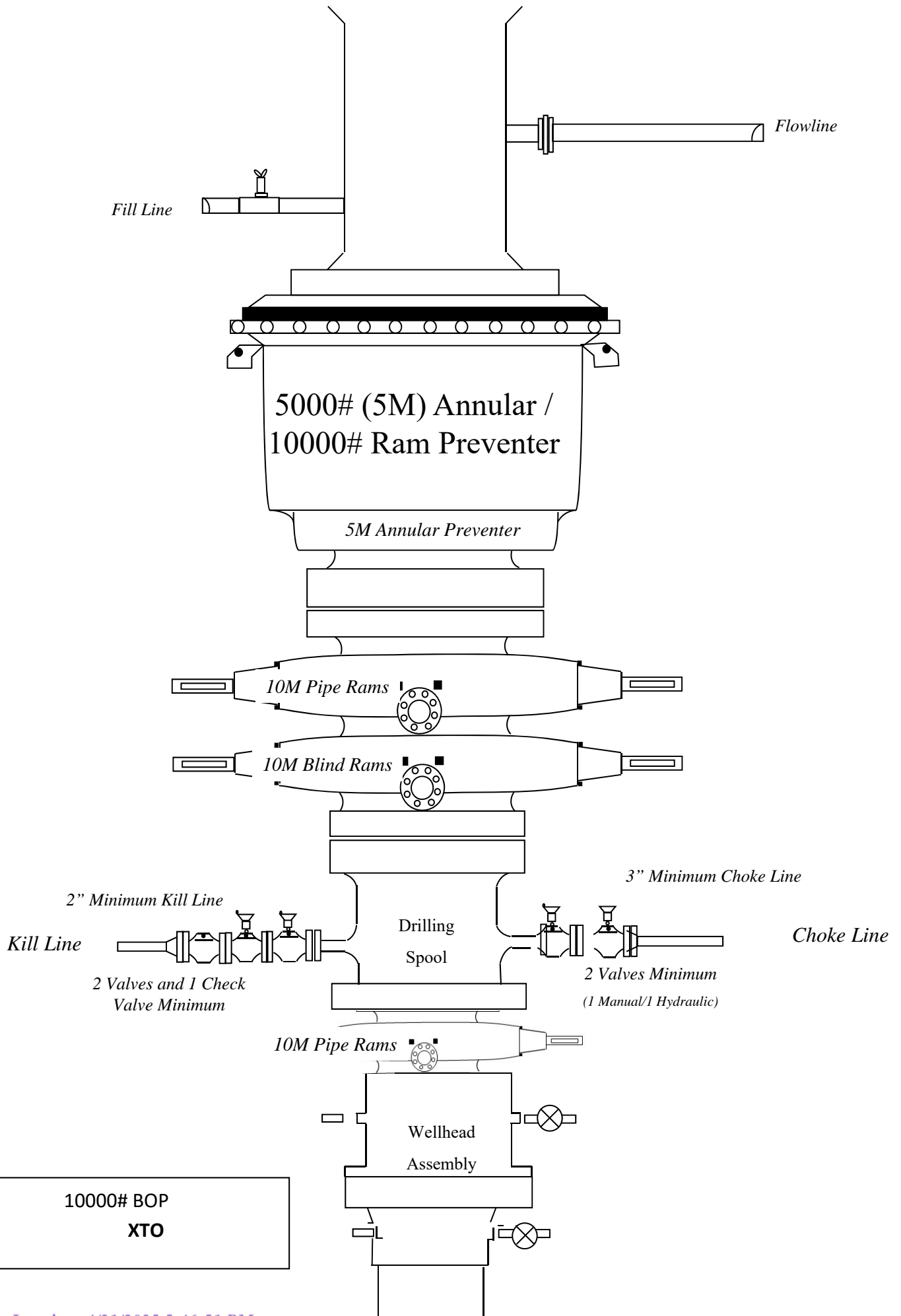


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## 10M Choke Manifold Diagram





U. S. Steel Tubular Products

5.500" 20.00lb/ft (0.361" Wall) P110 RY USS-FREEDOM HTQ<sup>®</sup>

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MECHANICAL PROPERTIES	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	125,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Outside Diameter	5.500	6.300	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	--
PERFORMANCE	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Minimum Collapse Pressure	11,100	11,100	psi	--
Minimum Internal Yield Pressure	12,640	12,640	psi	--
Minimum Pipe Body Yield Strength	641,000	--	lb	--
Joint Strength	--	641,000	lb	--
Compression Rating	--	641,000	lb	--
Reference Length [4]	--	21,370	ft	--
Maximum Uniaxial Bend Rating [2]	--	91.7	deg/100 ft	--
MAKE-UP DATA	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Make-Up Loss	--	4.13	in.	--
Minimum Make-Up Torque [3]	--	15,000	ft-lb	--
Maximum Make-Up Torque [3]	--	21,000	ft-lb	--
Maximum Operating Torque[3]	--	29,500	ft-lb	--

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Notes

1.

Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
2.

Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3.

Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4.

Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.

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## U. S. Steel Tubular Products

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5.500" 20.00lb/ft (0.361" Wall) P110 RY USS-TALON HTQ™ RD

MECHANICAL PROPERTIES	Pipe	USS-TALON HTQ™ RD		[6]
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	125,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-TALON HTQ™ RD		--
Outside Diameter	5.500	5.900	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	Pipe	USS-TALON HTQ™ RD		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	[2]
PERFORMANCE	Pipe	USS-TALON HTQ™ RD		--
Minimum Collapse Pressure	11,100	11,100	psi	--
Minimum Internal Yield Pressure	12,640	12,640	psi	--
Minimum Pipe Body Yield Strength	641,000	--	lb	--
Joint Strength	--	641,000	lb	--
Compression Rating	--	641,000	lb	--
Reference Length	--	21,370	ft	[5]
Maximum Uniaxial Bend Rating	--	91.7	deg/100 ft	[3]
MAKE-UP DATA	Pipe	USS-TALON HTQ™ RD		--
Make-Up Loss	--	5.58	in.	--
Minimum Make-Up Torque	--	17,000	ft-lb	[4]
Maximum Make-Up Torque	--	20,000	ft-lb	[4]
Maximum Operating Torque	--	39,500	ft-lb	[4]

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## Notes

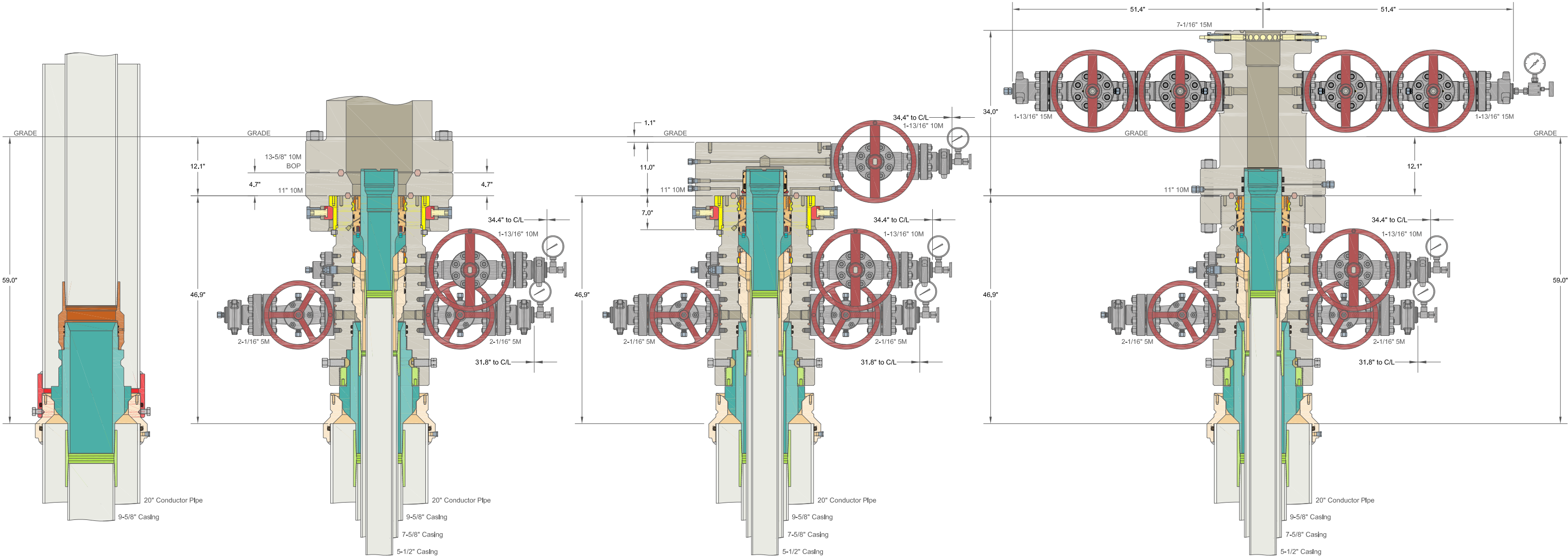
- Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
- Joint efficiencies are calculated by dividing the connection critical area by the pipe body area.
- Uniaxial bend rating shown is structural only.
- Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
- Reference length is calculated by Joint Strength divided by Nominal Linear Weight, T&C with a 1.5 Safety factor.
- Coupling must meet minimum mechanical properties of the pipe.

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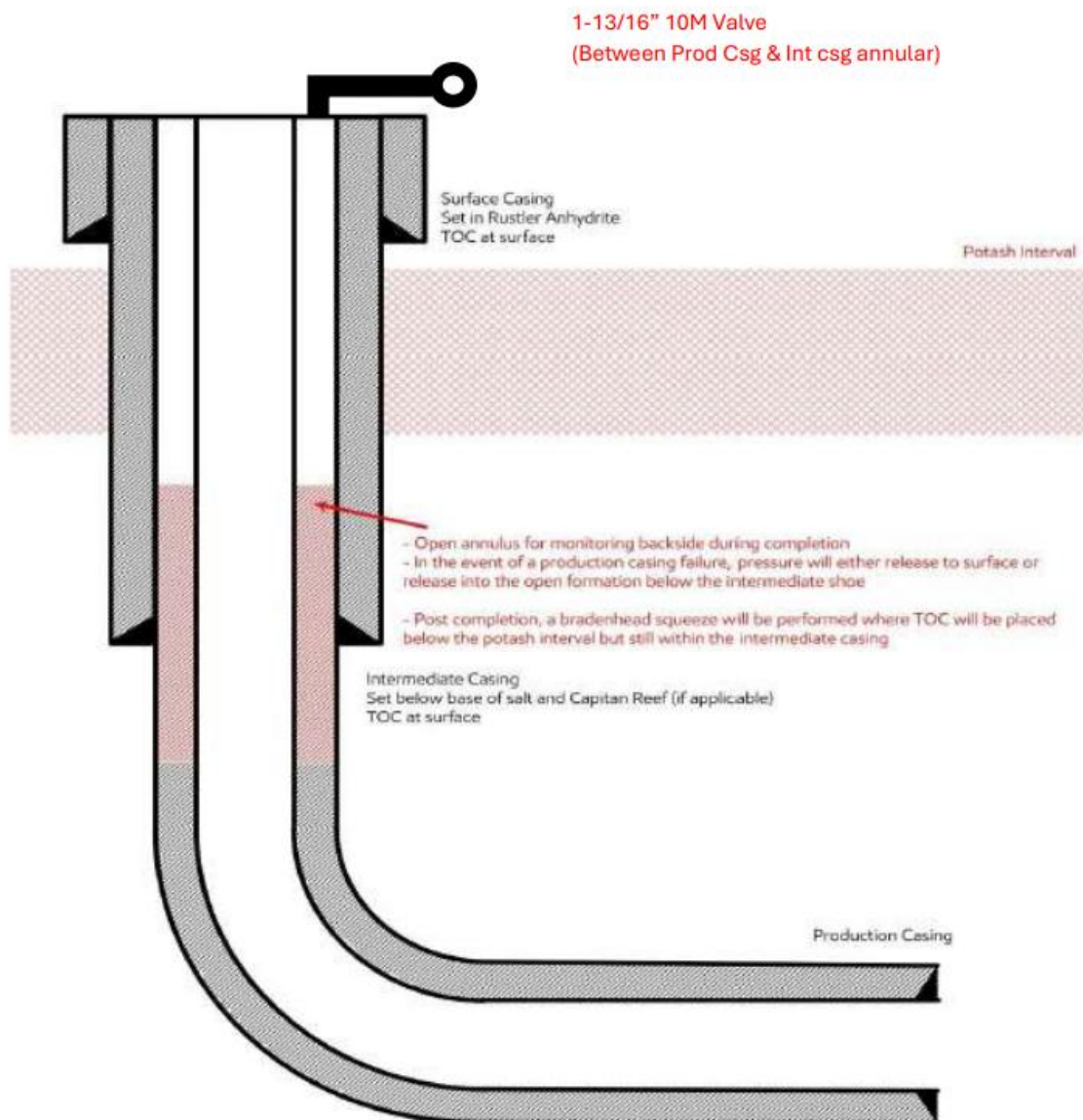
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ALL DIMENSIONS APPROXIMATE			
CACTUS WELLHEAD LLC		XTO ENERGY INC DELAWARE BASIN	
20" x 9-5/8" x 7-5/8" x 5-1/2" MBU-T-CFL-R-DBLO Wellhead With 11" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head And 9-5/8", 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers		DRAWN	VJK
		APPRV	31MAR22
		DRAWING NO.	HBE0000479



**Figure B – 3 String Design – Open Production Casing Annulus (Updated May 2024):**

XTO is aware of the R-111-Q update & will comply with these requirements including (but not limited to):

1. Alignment with KPLA requirements per schematic above, leaving open annulus for pressure monitoring during frac and utilizing new casing that meets API standards
2. Contingency plans in place to divert formation fluids away from salt interval in event of production casing failure
3. TOC in the annulus between intermediate & production casing string shall stand uncemented at least 500 feet below the intermediate casing shoe
4. Bradenhead squeeze to be completed within 180 days after hydraulic frac operations have been concluded to ensure at least a 500 feet tie-back has been established inside salt string but with top below MB 126

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 440291

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 440291
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Operator must comply with all of the R-111-Q requirements.	4/21/2025
ward.rikala	Administrative order required for non-standard spacing unit prior to production.	4/21/2025
ward.rikala	Administrative order required for non-standard location prior to production.	4/21/2025
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	4/21/2025