

Well Name: BIG EDDY UNIT DI 5 WEST 27-29	Well Location: T20S / R31E / SEC 27 / SWNE / 32.546396 / -103.855874	County or Parish/State: EDDY / NM
Well Number: 6H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMLC065431	Unit or CA Name: BIG EDDY	Unit or CA Number: NMNM68294X
US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Notice of Intent

Sundry ID: 2832708

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 01/20/2025	Time Sundry Submitted: 06:02
Date proposed operation will begin: 01/24/2025	

**Procedure Description:** Big Eddy Unit DI 5 West 27-29 6H APD ID# 10400093627 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, proposed total depth and pool. FROM: TO: SHL: 1870' FNL & 2290' FEL OF SECTION 27-T20S-R31E 1670' FNL & 2290' FEL OF SECTION 27-T20S-R31E KOP: 1870' FNL & 2290' FEL OF SECTION 27-T20S-R31E 2198' FNL & 1969' FEL OF SECTION 27-T20S-R31E FTP: 990' FNL & 2310' FWL OF SECTION 27-T20S-R31E 2200' FNL & 2583' FWL OF SECTION 27-T20S-R31E LTP: 990' FNL & 100' FWL OF SECTION 29-T20S-R31E 2200' FNL & 100' FWL OF SECTION 29-T20S-R31E BHL: 990' FNL & 50' FWL OF SECTION 29-T20S-R31E 2200' FNL & 50' FWL OF SECTION 29-T20S-R31E The proposed total depth is changing from 22770' MD/9518' TVD to 23170.9' MD/9577' TVD. The pool name is changing from WC-015 G-06 S203127G; Bone Spring to WC Williams Sink; Bone Spring. 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.

NOI Attachments

Procedure Description

Sundry\_Attachments\_\_\_BEU\_DI\_5\_West\_27\_29\_6H\_20250217072323.pdf

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US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Conditions of Approval

Additional

BIG\_EDDY\_UNIT\_DI\_5\_WEST\_27\_29\_6H\_COA\_20250228103055.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: FEB 17, 2025 07:23 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> <i>Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.</i>		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 29-T20S-R31E 2200' FNL & 50' FWL OF SECTION 29-T20S-R31E

The proposed total depth is changing from 22770 MD/9518 TVD to 23170.9 MD/9577 TVD.

The pool name is changing from WC-015 G-06 S203127G; Bone Spring to WC Williams Sink; Bone Spring.

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.

### Location of Well

0. SHL: SWNE / 1870 FNL / 2290 FEL / TWSP: 20S / RANGE: 31E / SECTION: 27 / LAT: 32.546396 / LONG: -103.855874 ( TVD: 0 feet, MD: 0 feet )

PPP: NENW / 990 FNL / 2310 FWL / TWSP: 20S / RANGE: 31E / SECTION: 27 / LAT: 32.548824 / LONG: -103.85803 ( TVD: 9518 feet, MD: 9900 feet )

PPP: NENE / 998 FNL / 0 FWL / TWSP: 20S / RANGE: 31E / SECTION: 28 / LAT: 32.548832 / LONG: -103.865527 ( TVD: 9518 feet, MD: 12500 feet )

BHL: NWNW / 990 FNL / 50 FWL / TWSP: 20S / RANGE: 31E / SECTION: 29 / LAT: 32.548864 / LONG: -103.899804 ( TVD: 9518 feet, MD: 22770 feet )

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	XTO
<b>LEASE NO.:</b>	NMLC065431
<b>LOCATION:</b>	Sec. 27, T.20 S, R 31 E
<b>COUNTY:</b>	Eddy County, New Mexico ▼
<b>WELL NAME &amp; NO.:</b>	Big Eddy Unit DI 5 West 27-20 6H
<b>SURFACE HOLE FOOTAGE:</b>	1670'N & 2290'E
<b>BOTTOM HOLE FOOTAGE:</b>	2200'N & 50'W

*Changes approved through engineering via **Sundry 2832708** on 2/28/2025. Any previous COAs not addressed within the updated COAs still apply.*

COA

H <sub>2</sub> S	<input checked="" type="radio"/> No		<input type="radio"/> Yes	
<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;">4-String Design: Open 1st Int x 2nd Annulus (ICP 2 below Relief Zone)</span> <input type="checkbox"/> WIPP
<b>Cave / Karst</b>	<input checked="" type="radio"/> Low	<input 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 checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" 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 checked="" 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 **13-3/8** inch surface casing shall be set at approximately **851** 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 **9-5/8** inch 1<sup>st</sup> Intermediate casing shall be set at **2700ft**:
    - 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.**

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:  
**(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the Capitan interval)**

    - Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
    - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
  3. The minimum required fill of cement behind the **7-5/8** inch 2<sup>nd</sup> Intermediate casing is:
    - Cement to surface. If cement does not circulate see B.1.a, c-d above. If cement does not circulate, contact the appropriate BLM office.

**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.**
  4. 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 **USGS Marker Bed No. 126**. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. Operator shall provide method of verification. **Excess calculates to -10%. Additional cement maybe required.**

## 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).
1. 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)

### Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

### Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months. **(This is not necessary for secondary recovery unit wells)**

### 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 2/28/2025**  
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>97650</b>	Pool Name <b>WC WILLIAMS SINK; BONE SPRING</b>	
Property Code	Property Name <b>BIG EDDY UNIT DI 5 WEST 27-29</b>	Well Number <b>6H</b>	
OGRID No. <b>373075</b>	Operator Name <b>XTO PERMIAN OPERATING, LLC.</b>	Ground Level Elevation <b>3,525'</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
G	27	20S	31E		1,670 FNL	2,290 FEL	32.546946	-103.855873	EDDY

Bottom Hole Location									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	29	20S	31E		2,200 FNL	50 FWL	32.545539	-103.899804	EDDY


Dedicated Acres <b>800.00</b>	Infill or Defining Well <b>INFILL</b>	Defining Well API	Overlapping Spacing Unit (Y/N) <b>N</b>	Consolidation Code <b>U</b>
Order Numbers.			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
G	27	20S	31E		2,198 FNL	1,969 FEL	32.545492	-103.854834	EDDY

First Take Point (FTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
F	27	20S	31E		2,200 FNL	2,583 FWL	32.545495	-103.857158	EDDY

Last Take Point (LTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	29	20S	31E		2,200 FNL	100 FWL	32.545539	-103.899641	EDDY

Unitized Area or Area of Interest <b>NMNM-105467880</b>	Spacing Unit Type : <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Elevation <b>3,525'</b>
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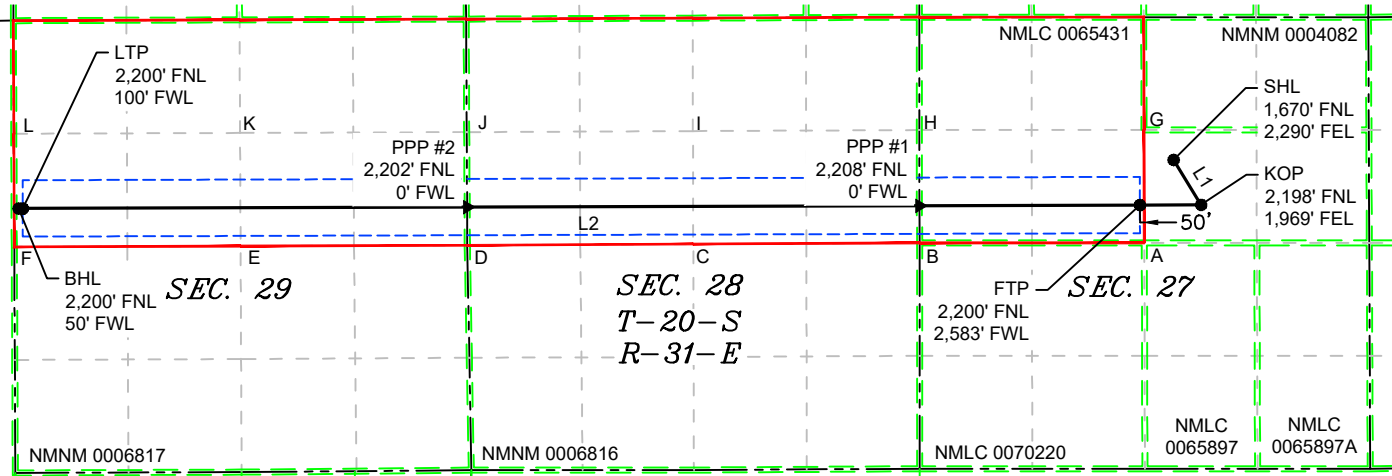
<div>OPERATOR CERTIFICATIONS</div> <div><p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land 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.</p><p>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.</p><div><div>Srinivas Naveen</div><div>1/6/25</div></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>	<div>SURVEYOR CERTIFICATIONS</div> <div><p>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</p><div><div></div><div>Signature and Seal of Professional Surveyor</div></div><div><div>MARK DILLON HARP 23786</div><div>1/3/2025</div></div><div>Certificate NumberDate of Survey</div><div><div>YH</div><div>618.013004.04-06</div></div></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.



LEGEND

LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	148°33'21"	618.19'
L2	269°49'31"	13,857.14'

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

COORDINATE TABLE

SHL (NAD 83 NME)			KOP (NAD 83 NME)			FTP (NAD 83 NME)			PPP #1 (NAD 83 NME)			PPP #2 (NAD 83 NME)		
Y =	563,039.4	N	Y =	562,512.0	N	Y =	562,509.8	N	Y =	562,501.9	N	Y =	562,485.8	N
X =	688,459.9	E	X =	688,782.4	E	X =	688,066.2	E	X =	685,483.0	E	X =	680,183.1	E
LAT. =	32.546946	°N	LAT. =	32.545492	°N	LAT. =	32.545495	°N	LAT. =	32.545505	°N	LAT. =	32.545523	°N
LONG. =	103.855873	°W	LONG. =	103.854834	°W	LONG. =	103.857158	°W	LONG. =	103.865541	°W	LONG. =	103.882741	°W
			LTP (NAD 83 NME)						BHL (NAD 83 NME)					
			Y =	562,469.9	N				Y =	562,469.7	N			
			X =	674,975.3	E				X =	674,925.3	E			
			LAT. =	32.545539	°N				LAT. =	32.545539	°N			
			LONG. =	103.899641	°W				LONG. =	103.899804	°W			
SHL (NAD 27 NME)			KOP (NAD 27 NME)			FTP (NAD 27 NME)			PPP #1 (NAD 27 NME)			PPP #2 (NAD 27 NME)		
Y =	562,977.7	N	Y =	562,450.3	N	Y =	562,448.1	N	Y =	562,440.2	N	Y =	562,424.0	N
X =	647,280.3	E	X =	647,602.8	E	X =	646,886.6	E	X =	644,303.4	E	X =	639,003.4	E
LAT. =	32.546825	°N	LAT. =	32.545372	°N	LAT. =	32.545374	°N	LAT. =	32.545384	°N	LAT. =	32.545403	°N
LONG. =	103.855371	°W	LONG. =	103.854333	°W	LONG. =	103.856657	°W	LONG. =	103.865040	°W	LONG. =	103.882239	°W
			LTP (NAD 27 NME)						BHL (NAD 27 NME)					
			Y =	562,408.1	N				Y =	562,408.0	N			
			X =	633,795.7	E				X =	633,745.7	E			
			LAT. =	32.545419	°N				LAT. =	32.545419	°N			
			LONG. =	103.899139	°W				LONG. =	103.899301	°W			
CORNER COORDINATES (NAD 83 NME)						CORNER COORDINATES (NAD 27 NME)								
A - Y =	562,065.8	N	A - X =	688,117.3	E	A - Y =	562,004.1	N	A - X =	646,937.7	E			
B - Y =	562,065.8	N	B - X =	685,483.4	E	B - Y =	562,004.1	N	B - X =	644,303.8	E			
C - Y =	562,052.2	N	C - X =	682,832.5	E	C - Y =	561,990.5	N	C - X =	641,653.0	E			
D - Y =	562,038.7	N	D - X =	680,185.6	E	D - Y =	561,976.9	N	D - X =	639,005.9	E			
E - Y =	562,029.1	N	E - X =	677,528.7	E	E - Y =	561,967.3	N	E - X =	636,349.1	E			
F - Y =	562,019.5	N	F - X =	674,877.1	E	F - Y =	561,957.8	N	F - X =	633,697.5	E			
G - Y =	563,387.8	N	G - X =	688,113.9	E	G - Y =	563,326.0	N	G - X =	646,934.3	E			
H - Y =	563,388.0	N	H - X =	685,482.2	E	H - Y =	563,326.3	N	H - X =	644,302.7	E			
I - Y =	563,375.5	N	I - X =	682,828.7	E	I - Y =	563,313.7	N	I - X =	641,649.2	E			
J - Y =	563,363.0	N	J - X =	680,178.2	E	J - Y =	563,301.2	N	J - X =	638,998.6	E			
K - Y =	563,353.9	N	K - X =	677,522.6	E	K - Y =	563,292.1	N	K - X =	636,343.0	E			
L - Y =	563,344.5	N	L - X =	674,871.8	E	L - Y =	563,282.8	N	L - X =	633,692.1	E			



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

XTO Energy Inc.  
BIG EDDY UNIT DI 5 WEST 27-29 6H  
Projected TD: 23170.9' MD / 9577' TVD  
SHL: 1670' FNL & 2290' FEL , Section 27, T20S, R31E  
BHL: 2200' FNL & 50' FWL , Section 29, T20S, R31E  
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	675'	Water
Top of Salt	951'	Water
Base of Salt	2203'	Water
Capitan	2863'	Water
Delaware	3938'	Water
Brushy Canyon	5895'	Water/Oil/Gas
Bone Spring	7471'	Water
Avalon	7666'	Water/Oil/Gas
1st Bone Spring	8404'	Water/Oil/Gas
2nd Bone Spring	9106'	Water/Oil/Gas
Target/Land Curve	9577'	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 @ 851' (100' above the salt) and circulating cement back to surface. The salt will be isolated by setting first intermediate casing at 2303' and circulating cement to surface. The second intermediate will isolate Capitan Reef to ~50' inside Delaware formation and cemented to surface a. A 6.75 inch curve and 6.75 inch lateral hole will be drilled to 23170.9 MD/TD and 5.5 inch production casing will be set at TD and cemented to a estimated TOC 7471 feet

**3. Casing Design**

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
17.5	0' – 851'	13.375	54.5	J-55	BTC	New	3.97	3.04	19.60
12.25	0' – 2303'	9.625	40	J-55	BTC	New	4.17	3.93	6.84
8.75	0' – 2403'	7.625	29.7	HC L-80	Flush Joint	New	2.20	5.05	3.43
8.75	2403' – 3988'	7.625	29.7	HC L-80	Flush Joint	New	2.20	8.53	9.21
6.75	0' – 3888'	5.5	20	RY P-110	Semi-Premium / Freedom	New	1.05	5.23	2.19
6.75	3888' - 23170.9'	5.5	20	RY P-110	Semi-Flush / Talon	New	1.05	2.12	2.98

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

**Wellhead:****Permanent Wellhead**

Multibowl System for 4 String desing as per attachment.

**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: 13.375, 54.5 New BTC, J-55 casing to be set at +/- 851'**

Optional Lead: 570 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 1.33 ft3/sx, 10.13 gal/sx water)

Tail: 310 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)

Top of Cement: Surface

Compressives: 12-hr = 250 psi 24 hr = 500 psi

**1st Intermediate Casing: 9.625, 40 New BTC, J-55 casing to be set at +/- 2303'**

Lead: 450 sxs Class C (mixed at 14.8 ppg, 2.06 ft3/sx, 10.13 gal/sx water)

Tail: 60 sxs Class C + 2% CaCl (mixed at 15.6 ppg, 2.06 ft3/sx, 6.39 gal/sx water)

Top of Cement: Surface

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

**2nd Intermediate Casing: 7.625, 29.7 New casing to be set at +/- 3988'**

Lead: 90 sxs Class C (mixed at 10.5 ppg, 2.77 ft3/sx, 15.59 gal/sx water)

TOC: 0

Tail: 210 sxs Class C (mixed at 14.8 ppg, 1.27 ft3/sx, 6.39 gal/sx water)

TOC: @ 2863

Compressives: 12-hr = 900 psi 24 hr = 1150 psi

XTO requests to pump a single stage cement job on the second intermediate casing string, with slurries pumped conventionally with the first slurry top of cement at Capitan Reef (2863') and the second slurry performed with planned cement from the Capitan Reef to surface.

**Production Casing: 5.5, 20 New Semi-Flush / Talon, RY P-110 casing to be set at +/- 23170.9'**

Lead: 50 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water) Top of Cement: 7471 feet

Tail: 900 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 8.38 gal/sx water) Top of Cement: 8921.6 feet

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

XTO requests to pump a single stage cement job on the 5.5" Production casing string with two slurries pumped conventionally, the first slurry with calculated top of cement at KOP @ 8922' MD, and the second slurry with planned cement from KOP base of brushy Canyon.

A post completion bradenhead squeeze will be performed to tied back the 2nd intermediate x production casing annulus TOC into the 2nd intermediate shoe but below of potash interval

**5. Pressure Control Equipment**

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

All BOP testing will be done by an independent service company. Operator will test as per CFR 43-3172

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 both intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

A break testing 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	Viscosity	Fluid Loss	<b>Additional Comments.</b>
			(ppg)	(sec/qt)	(cc)	
0' - 851'	17.5	FW/Native	8.4-8.9	35-40	NC	Fresh water or native water
851' - 2303'	12.25	Sat Brine	10-10.5	30-32	NC	Fully saturated brine across salado / salt
2303' to 3988'	8.75	FW	8.8-9.3	30-32	NC	FW across Cap Reef
3988' to 23170.9'	6.75	OBM	10.5-11	50-60	NC - 20	OBM or Brine depending well conditions.

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 a fully saturated brine 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 EDR system 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 13.375 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 160 to 180 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. The maximum anticipated bottom hole pressure for this well is 5229 psi.

**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 - BEU DI 5 27-29 6H

Measured Depth: 23170.29 ft

TVD RKB: 9577.00 ft

### Location

Cartographic Reference System: New Mexico East - NAD 27

Northing: 562977.70 ft

Easting: 647280.30 ft

RKB: 3557.00 ft

Ground Level: 3525.00 ft

North Reference: Grid

Convergence Angle: 0.26 Deg

### Plan Sections BEU DI 5 27-29 6H

Measured			TVD			Build	Turn	Dogleg	
Depth	Inclination	Azimuth	RKB	Y Offset	X Offset	Rate	Rate	Rate	Target
(ft)	(Deg)	(Deg)	(ft)	(ft)	(ft)	(Deg/100ft)	(Deg/100ft)	(Deg/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	
2902.67	12.05	148.56	2898.24	-53.88	32.95	2.00	0.00	2.00	
5258.13	12.05	148.56	5201.76	-473.53	289.55	0.00	0.00	0.00	
5860.80	0.00	0.00	5800.00	-527.41	322.49	-2.00	0.00	2.00	
8921.60	0.00	0.00	8860.80	-527.41	322.49	0.00	0.00	0.00	
10046.60	90.00	269.82	9577.00	-529.60	-393.70	8.00	0.00	8.00	FTP 7
23137.57	90.00	269.82	9577.00	-569.60	-13484.60	0.00	0.00	0.00	LTP 7
23170.29	90.00	269.82	9577.00	-569.70	-13517.33	0.00	0.00	0.00	BHL 7

### Position Uncertainty BEU DI 5 27-29 6H

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	XOMR2_OWSG MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.358	0.000	0.179	0.000	2.300	0.000	0.000	0.358	0.179	90.000	XOMR2_OWSG MWD+IFR1+MS
200.000	0.000	0.000	200.000	0.717	0.000	0.538	0.000	2.310	0.000	0.000	0.717	0.538	90.000	XOMR2_OWSG MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.075	0.000	0.896	0.000	2.326	0.000	0.000	1.075	0.896	90.000	XOMR2_OWSG MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.434	0.000	1.255	0.000	2.348	0.000	0.000	1.434	1.255	90.000	XOMR2_OWSG MWD+IFR1+MS
500.000	0.000	0.000	500.000	1.792	0.000	1.613	0.000	2.375	0.000	0.000	1.792	1.613	90.000	XOMR2_OWSG MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.151	0.000	1.972	0.000	2.408	0.000	0.000	2.151	1.972	90.000	XOMR2_OWSG MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.509	0.000	2.330	0.000	2.446	0.000	0.000	2.509	2.330	90.000	XOMR2_OWSG MWD+IFR1+MS
800.000	0.000	0.000	800.000	2.868	0.000	2.689	0.000	2.488	0.000	0.000	2.868	2.689	90.000	XOMR2_OWSG MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.226	0.000	3.047	0.000	2.534	0.000	0.000	3.226	3.047	90.000	XOMR2_OWSG MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	3.585	0.000	3.405	0.000	2.585	0.000	0.000	3.585	3.405	90.000	XOMR2_OWSG MWD+IFR1+MS
1100.000	0.000	0.000	1100.000	3.943	0.000	3.764	0.000	2.639	0.000	0.000	3.943	3.764	90.000	XOMR2_OWSG MWD+IFR1+MS
1200.000	0.000	0.000	1200.000	4.302	0.000	4.122	0.000	2.696	0.000	0.000	4.302	4.122	90.000	XOMR2_OWSG MWD+IFR1+MS
1300.000	0.000	0.000	1300.000	4.660	0.000	4.481	0.000	2.756	0.000	0.000	4.660	4.481	90.000	XOMR2_OWSG MWD+IFR1+MS
1400.000	0.000	0.000	1400.000	5.019	0.000	4.839	0.000	2.819	0.000	0.000	5.019	4.839	90.000	XOMR2_OWSG MWD+IFR1+MS
1500.000	0.000	0.000	1500.000	5.377	0.000	5.198	0.000	2.884	0.000	0.000	5.377	5.198	90.000	XOMR2_OWSG MWD+IFR1+MS
1600.000	0.000	0.000	1600.000	5.736	0.000	5.556	0.000	2.952	0.000	0.000	5.736	5.556	90.000	XOMR2_OWSG MWD+IFR1+MS
1700.000	0.000	0.000	1700.000	6.094	0.000	5.915	0.000	3.022	0.000	0.000	6.094	5.915	90.000	XOMR2_OWSG MWD+IFR1+MS
1800.000	0.000	0.000	1800.000	6.452	0.000	6.273	0.000	3.094	0.000	0.000	6.452	6.273	90.000	XOMR2_OWSG MWD+IFR1+MS



1900.000	0.000	0.000	1900.000	6.811	0.000	6.632	0.000	3.167	0.000	0.000	6.811	6.632	90.000	XOMR2_OWSG MWD+IFR1+MS
2000.000	0.000	0.000	2000.000	7.169	0.000	6.990	0.000	3.243	0.000	0.000	7.169	6.990	90.000	XOMR2_OWSG MWD+IFR1+MS
2100.000	0.000	0.000	2100.000	7.528	0.000	7.349	0.000	3.320	0.000	0.000	7.528	7.349	90.000	XOMR2_OWSG MWD+IFR1+MS
2200.000	0.000	0.000	2200.000	7.886	0.000	7.707	0.000	3.399	0.000	0.000	7.886	7.707	90.000	XOMR2_OWSG MWD+IFR1+MS
2300.000	0.000	0.000	2300.000	8.245	0.000	8.066	0.000	3.479	0.000	0.000	8.245	8.066	90.000	XOMR2_OWSG MWD+IFR1+MS
2400.000	2.000	148.556	2399.980	8.534	0.000	8.456	-0.000	3.560	0.000	0.000	8.587	8.407	90.015	XOMR2_OWSG MWD+IFR1+MS
2500.000	4.000	148.556	2499.838	8.846	0.000	8.782	-0.000	3.641	0.000	0.000	8.914	8.732	90.005	XOMR2_OWSG MWD+IFR1+MS
2600.000	6.000	148.556	2599.452	9.151	0.000	9.110	-0.000	3.722	0.000	0.000	9.243	9.060	90.054	XOMR2_OWSG MWD+IFR1+MS
2700.000	8.000	148.556	2698.702	9.448	0.000	9.440	-0.000	3.803	0.000	0.000	9.575	9.389	90.228	XOMR2_OWSG MWD+IFR1+MS
2800.000	10.000	148.556	2797.465	9.737	0.000	9.772	-0.000	3.885	0.000	0.000	9.907	9.719	90.586	XOMR2_OWSG MWD+IFR1+MS
2902.673	12.053	148.556	2898.237	10.024	0.000	10.116	-0.000	3.970	0.000	0.000	10.250	10.060	91.216	XOMR2_OWSG MWD+IFR1+MS
3000.000	12.053	148.556	2993.419	10.352	0.000	10.444	-0.000	4.056	0.000	0.000	10.576	10.386	92.183	XOMR2_OWSG MWD+IFR1+MS
3100.000	12.053	148.556	3091.214	10.693	0.000	10.785	-0.000	4.152	0.000	0.000	10.913	10.723	93.452	XOMR2_OWSG MWD+IFR1+MS
3200.000	12.053	148.556	3189.009	11.037	0.000	11.130	-0.000	4.250	0.000	0.000	11.253	11.064	94.732	XOMR2_OWSG MWD+IFR1+MS
3300.000	12.053	148.556	3286.805	11.383	0.000	11.477	-0.000	4.350	0.000	0.000	11.595	11.407	96.027	XOMR2_OWSG MWD+IFR1+MS
3400.000	12.053	148.556	3384.600	11.733	0.000	11.827	-0.000	4.453	0.000	0.000	11.940	11.753	97.340	XOMR2_OWSG MWD+IFR1+MS
3500.000	12.053	148.556	3482.395	12.084	0.000	12.179	-0.000	4.558	0.000	0.000	12.288	12.102	98.672	XOMR2_OWSG MWD+IFR1+MS
3600.000	12.053	148.556	3580.191	12.438	0.000	12.534	-0.000	4.665	0.000	0.000	12.638	12.452	100.023	XOMR2_OWSG MWD+IFR1+MS
3700.000	12.053	148.556	3677.986	12.794	0.000	12.890	-0.000	4.774	0.000	0.000	12.989	12.805	101.394	XOMR2_OWSG MWD+IFR1+MS
3800.000	12.053	148.556	3775.781	13.151	0.000	13.249	-0.000	4.885	0.000	0.000	13.343	13.159	102.783	XOMR2_OWSG MWD+IFR1+MS

3900.000	12.053	148.556	3873.577	13.510	0.000	13.609	-0.000	4.998	0.000	0.000	13.699	13.515	104.188	XOMR2_OWSG MWD+IFR1+MS
4000.000	12.053	148.556	3971.372	13.871	0.000	13.971	-0.000	5.113	0.000	0.000	14.056	13.872	105.608	XOMR2_OWSG MWD+IFR1+MS
4100.000	12.053	148.556	4069.167	14.233	0.000	14.334	-0.000	5.230	0.000	0.000	14.415	14.231	107.038	XOMR2_OWSG MWD+IFR1+MS
4200.000	12.053	148.556	4166.963	14.597	0.000	14.699	-0.000	5.349	0.000	0.000	14.775	14.590	108.474	XOMR2_OWSG MWD+IFR1+MS
4300.000	12.053	148.556	4264.758	14.961	0.000	15.064	-0.000	5.470	0.000	0.000	15.136	14.951	109.912	XOMR2_OWSG MWD+IFR1+MS
4400.000	12.053	148.556	4362.553	15.327	0.000	15.432	-0.000	5.593	0.000	0.000	15.499	15.313	111.347	XOMR2_OWSG MWD+IFR1+MS
4500.000	12.053	148.556	4460.348	15.694	0.000	15.800	-0.000	5.717	0.000	0.000	15.863	15.676	112.775	XOMR2_OWSG MWD+IFR1+MS
4600.000	12.053	148.556	4558.144	16.062	0.000	16.169	-0.000	5.844	0.000	0.000	16.229	16.040	114.189	XOMR2_OWSG MWD+IFR1+MS
4700.000	12.053	148.556	4655.939	16.431	0.000	16.539	-0.000	5.972	0.000	0.000	16.595	16.404	115.586	XOMR2_OWSG MWD+IFR1+MS
4800.000	12.053	148.556	4753.734	16.801	0.000	16.910	-0.000	6.103	0.000	0.000	16.963	16.770	116.961	XOMR2_OWSG MWD+IFR1+MS
4900.000	12.053	148.556	4851.530	17.171	0.000	17.282	-0.000	6.235	0.000	0.000	17.331	17.135	118.309	XOMR2_OWSG MWD+IFR1+MS
5000.000	12.053	148.556	4949.325	17.542	0.000	17.654	-0.000	6.369	0.000	0.000	17.701	17.502	119.627	XOMR2_OWSG MWD+IFR1+MS
5100.000	12.053	148.556	5047.120	17.914	0.000	18.028	-0.000	6.505	0.000	0.000	18.071	17.869	120.911	XOMR2_OWSG MWD+IFR1+MS
5200.000	12.053	148.556	5144.916	18.287	0.000	18.402	-0.000	6.643	0.000	0.000	18.442	18.237	122.159	XOMR2_OWSG MWD+IFR1+MS
5258.128	12.053	148.556	5201.763	18.504	0.000	18.619	-0.000	6.724	0.000	0.000	18.658	18.450	122.857	XOMR2_OWSG MWD+IFR1+MS
5300.000	11.216	148.556	5242.773	18.682	0.000	18.776	-0.000	6.784	0.000	0.000	18.814	18.604	123.368	XOMR2_OWSG MWD+IFR1+MS
5400.000	9.216	148.556	5341.183	19.091	0.000	19.147	-0.000	6.925	0.000	0.000	19.183	18.969	124.430	XOMR2_OWSG MWD+IFR1+MS
5500.000	7.216	148.556	5440.152	19.474	0.000	19.514	-0.000	7.065	0.000	0.000	19.548	19.332	125.279	XOMR2_OWSG MWD+IFR1+MS
5600.000	5.216	148.556	5539.559	19.832	0.000	19.876	-0.000	7.202	0.000	0.000	19.908	19.691	125.939	XOMR2_OWSG MWD+IFR1+MS
5700.000	3.216	148.556	5639.283	20.162	0.000	20.233	-0.000	7.336	0.000	0.000	20.264	20.046	126.471	XOMR2_OWSG MWD+IFR1+MS

5800.000	1.216	148.556	5739.203	20.464	0.000	20.585	-0.000	7.468	0.000	0.000	20.614	20.395	126.927	XOMR2_OWSG MWD+IFR1+MS
5860.801	0.000	0.000	5800.000	20.743	0.000	20.682	0.000	7.547	0.000	0.000	20.822	20.603	126.901	XOMR2_OWSG MWD+IFR1+MS
5900.000	0.000	0.000	5839.199	20.876	0.000	20.813	0.000	7.598	0.000	0.000	20.954	20.734	126.701	XOMR2_OWSG MWD+IFR1+MS
6000.000	0.000	0.000	5939.199	21.214	0.000	21.147	0.000	7.728	0.000	0.000	21.291	21.070	126.206	XOMR2_OWSG MWD+IFR1+MS
6100.000	0.000	0.000	6039.199	21.553	0.000	21.482	0.000	7.861	0.000	0.000	21.628	21.406	125.731	XOMR2_OWSG MWD+IFR1+MS
6200.000	0.000	0.000	6139.199	21.892	0.000	21.818	0.000	7.996	0.000	0.000	21.967	21.743	125.276	XOMR2_OWSG MWD+IFR1+MS
6300.000	0.000	0.000	6239.199	22.232	0.000	22.155	0.000	8.134	0.000	0.000	22.305	22.081	124.839	XOMR2_OWSG MWD+IFR1+MS
6400.000	0.000	0.000	6339.199	22.573	0.000	22.492	0.000	8.274	0.000	0.000	22.645	22.420	124.419	XOMR2_OWSG MWD+IFR1+MS
6500.000	0.000	0.000	6439.199	22.914	0.000	22.830	0.000	8.417	0.000	0.000	22.985	22.758	124.016	XOMR2_OWSG MWD+IFR1+MS
6600.000	0.000	0.000	6539.199	23.256	0.000	23.168	0.000	8.562	0.000	0.000	23.326	23.098	123.629	XOMR2_OWSG MWD+IFR1+MS
6700.000	0.000	0.000	6639.199	23.598	0.000	23.507	0.000	8.709	0.000	0.000	23.667	23.438	123.257	XOMR2_OWSG MWD+IFR1+MS
6800.000	0.000	0.000	6739.199	23.941	0.000	23.847	0.000	8.859	0.000	0.000	24.009	23.779	122.899	XOMR2_OWSG MWD+IFR1+MS
6900.000	0.000	0.000	6839.199	24.284	0.000	24.187	0.000	9.012	0.000	0.000	24.351	24.120	122.555	XOMR2_OWSG MWD+IFR1+MS
7000.000	0.000	0.000	6939.199	24.628	0.000	24.528	0.000	9.167	0.000	0.000	24.694	24.461	122.223	XOMR2_OWSG MWD+IFR1+MS
7100.000	0.000	0.000	7039.199	24.972	0.000	24.869	0.000	9.325	0.000	0.000	25.037	24.803	121.904	XOMR2_OWSG MWD+IFR1+MS
7200.000	0.000	0.000	7139.199	25.316	0.000	25.211	0.000	9.485	0.000	0.000	25.381	25.146	121.597	XOMR2_OWSG MWD+IFR1+MS
7300.000	0.000	0.000	7239.199	25.661	0.000	25.553	0.000	9.648	0.000	0.000	25.725	25.489	121.301	XOMR2_OWSG MWD+IFR1+MS
7400.000	0.000	0.000	7339.199	26.006	0.000	25.895	0.000	9.814	0.000	0.000	26.069	25.832	121.015	XOMR2_OWSG MWD+IFR1+MS
7500.000	0.000	0.000	7439.199	26.352	0.000	26.238	0.000	9.983	0.000	0.000	26.414	26.176	120.740	XOMR2_OWSG MWD+IFR1+MS
7600.000	0.000	0.000	7539.199	26.698	0.000	26.582	0.000	10.154	0.000	0.000	26.759	26.520	120.474	XOMR2_OWSG MWD+IFR1+MS

7700.000	0.000	0.000	7639.199	27.044	0.000	26.926	0.000	10.328	0.000	0.000	27.105	26.864	120.217	XOMR2_OWSG MWD+IFR1+MS
7800.000	0.000	0.000	7739.199	27.391	0.000	27.270	0.000	10.505	0.000	0.000	27.451	27.209	119.969	XOMR2_OWSG MWD+IFR1+MS
7900.000	0.000	0.000	7839.199	27.737	0.000	27.614	0.000	10.684	0.000	0.000	27.797	27.554	119.729	XOMR2_OWSG MWD+IFR1+MS
8000.000	0.000	0.000	7939.199	28.085	0.000	27.959	0.000	10.866	0.000	0.000	28.143	27.900	119.498	XOMR2_OWSG MWD+IFR1+MS
8100.000	0.000	0.000	8039.199	28.432	0.000	28.304	0.000	11.051	0.000	0.000	28.490	28.246	119.273	XOMR2_OWSG MWD+IFR1+MS
8200.000	0.000	0.000	8139.199	28.780	0.000	28.650	0.000	11.239	0.000	0.000	28.837	28.592	119.057	XOMR2_OWSG MWD+IFR1+MS
8300.000	0.000	0.000	8239.199	29.128	0.000	28.996	0.000	11.430	0.000	0.000	29.185	28.938	118.847	XOMR2_OWSG MWD+IFR1+MS
8400.000	0.000	0.000	8339.199	29.476	0.000	29.342	0.000	11.624	0.000	0.000	29.533	29.285	118.643	XOMR2_OWSG MWD+IFR1+MS
8500.000	0.000	0.000	8439.199	29.824	0.000	29.688	0.000	11.820	0.000	0.000	29.880	29.632	118.446	XOMR2_OWSG MWD+IFR1+MS
8600.000	0.000	0.000	8539.199	30.173	0.000	30.035	0.000	12.020	0.000	0.000	30.229	29.979	118.255	XOMR2_OWSG MWD+IFR1+MS
8700.000	0.000	0.000	8639.199	30.522	0.000	30.382	0.000	12.222	0.000	0.000	30.577	30.327	118.070	XOMR2_OWSG MWD+IFR1+MS
8800.000	0.000	0.000	8739.199	30.871	0.000	30.730	0.000	12.427	0.000	0.000	30.926	30.674	117.891	XOMR2_OWSG MWD+IFR1+MS
8900.000	0.000	0.000	8839.199	31.220	0.000	31.077	0.000	12.635	0.000	0.000	31.275	31.022	117.716	XOMR2_OWSG MWD+IFR1+MS
8921.604	0.000	0.000	8860.803	31.296	0.000	31.152	0.000	12.681	0.000	0.000	31.350	31.098	117.679	XOMR2_OWSG MWD+IFR1+MS
9000.000	6.272	269.825	8939.042	31.151	-0.000	31.563	0.000	12.844	0.000	0.000	31.618	31.363	117.538	XOMR2_OWSG MWD+IFR1+MS
9100.000	14.272	269.825	9037.360	30.683	-0.000	31.891	0.000	13.044	0.000	0.000	31.947	31.682	117.211	XOMR2_OWSG MWD+IFR1+MS
9200.000	22.272	269.825	9132.240	29.715	-0.000	32.206	0.000	13.233	0.000	0.000	32.263	31.976	116.329	XOMR2_OWSG MWD+IFR1+MS
9300.000	30.272	269.825	9221.838	28.282	-0.000	32.505	0.000	13.409	0.000	0.000	32.563	32.238	114.671	XOMR2_OWSG MWD+IFR1+MS
9400.000	38.272	269.825	9304.409	26.440	-0.000	32.787	0.000	13.577	0.000	0.000	32.842	32.464	112.311	XOMR2_OWSG MWD+IFR1+MS
9500.000	46.272	269.825	9378.345	24.272	-0.000	33.052	0.000	13.740	0.000	0.000	33.103	32.653	109.471	XOMR2_OWSG MWD+IFR1+MS

9600.000	54.272	269.825	9442.208	21.898	-0.000	33.302	0.000	13.907	0.000	0.000	33.346	32.802	106.414	XOMR2_OWSG MWD+IFR1+MS
9700.000	62.272	269.825	9494.755	19.487	-0.000	33.540	0.000	14.087	0.000	0.000	33.576	32.913	103.380	XOMR2_OWSG MWD+IFR1+MS
9800.000	70.272	269.825	9534.962	17.284	-0.000	33.767	0.000	14.288	0.000	0.000	33.795	32.989	100.542	XOMR2_OWSG MWD+IFR1+MS
9900.000	78.272	269.825	9562.048	15.620	-0.000	33.985	0.000	14.515	0.000	0.000	34.004	33.035	97.992	XOMR2_OWSG MWD+IFR1+MS
10000.000	86.272	269.825	9575.484	14.865	-0.000	34.193	0.000	14.771	0.000	0.000	34.205	33.059	95.749	XOMR2_OWSG MWD+IFR1+MS
10046.604	90.000	269.825	9577.000	14.900	0.000	34.284	0.000	14.900	0.000	0.000	34.294	33.066	94.805	XOMR2_OWSG MWD+IFR1+MS
10100.000	90.000	269.825	9577.000	15.056	0.000	34.393	0.000	15.056	0.000	0.000	34.399	33.071	93.808	XOMR2_OWSG MWD+IFR1+MS
10200.000	90.000	269.825	9577.000	15.374	0.000	34.624	0.000	15.374	0.000	0.000	34.627	33.080	92.256	XOMR2_OWSG MWD+IFR1+MS
10300.000	90.000	269.825	9577.000	15.725	0.000	34.891	0.000	15.725	0.000	0.000	34.891	33.087	91.074	XOMR2_OWSG MWD+IFR1+MS
10400.000	90.000	269.825	9577.000	16.107	0.000	35.191	0.000	16.107	0.000	0.000	35.191	33.094	90.187	XOMR2_OWSG MWD+IFR1+MS
10500.000	90.000	269.825	9577.000	16.517	0.000	35.524	0.000	16.517	0.000	0.000	35.524	33.101	89.528	XOMR2_OWSG MWD+IFR1+MS
10600.000	90.000	269.825	9577.000	16.954	0.000	35.889	0.000	16.954	0.000	0.000	35.890	33.107	89.040	XOMR2_OWSG MWD+IFR1+MS
10700.000	90.000	269.825	9577.000	17.415	0.000	36.285	0.000	17.415	0.000	0.000	36.286	33.115	88.681	XOMR2_OWSG MWD+IFR1+MS
10800.000	90.000	269.825	9577.000	17.898	0.000	36.712	0.000	17.898	0.000	0.000	36.714	33.122	88.417	XOMR2_OWSG MWD+IFR1+MS
10900.000	90.000	269.825	9577.000	18.403	0.000	37.167	0.000	18.403	0.000	0.000	37.170	33.130	88.224	XOMR2_OWSG MWD+IFR1+MS
11000.000	90.000	269.825	9577.000	18.926	0.000	37.650	0.000	18.926	0.000	0.000	37.654	33.139	88.086	XOMR2_OWSG MWD+IFR1+MS
11100.000	90.000	269.825	9577.000	19.467	0.000	38.161	0.000	19.467	0.000	0.000	38.165	33.148	87.988	XOMR2_OWSG MWD+IFR1+MS
11200.000	90.000	269.825	9577.000	20.025	0.000	38.697	0.000	20.025	0.000	0.000	38.702	33.158	87.921	XOMR2_OWSG MWD+IFR1+MS
11300.000	90.000	269.825	9577.000	20.597	0.000	39.258	0.000	20.597	0.000	0.000	39.264	33.169	87.877	XOMR2_OWSG MWD+IFR1+MS
11400.000	90.000	269.825	9577.000	21.182	0.000	39.842	0.000	21.182	0.000	0.000	39.850	33.180	87.851	XOMR2_OWSG MWD+IFR1+MS

11500.000	90.000	269.825	9577.000	21.781	0.000	40.450	0.000	21.781	0.000	0.000	40.458	33.192	87.839	XOMR2_OWSG MWD+IFR1+MS
11600.000	90.000	269.825	9577.000	22.390	0.000	41.079	0.000	22.390	0.000	0.000	41.087	33.205	87.837	XOMR2_OWSG MWD+IFR1+MS
11700.000	90.000	269.825	9577.000	23.011	0.000	41.729	0.000	23.011	0.000	0.000	41.738	33.218	87.844	XOMR2_OWSG MWD+IFR1+MS
11800.000	90.000	269.825	9577.000	23.641	0.000	42.398	0.000	23.641	0.000	0.000	42.408	33.232	87.856	XOMR2_OWSG MWD+IFR1+MS
11900.000	90.000	269.825	9577.000	24.280	0.000	43.087	0.000	24.280	0.000	0.000	43.097	33.247	87.873	XOMR2_OWSG MWD+IFR1+MS
12000.000	90.000	269.825	9577.000	24.927	0.000	43.793	0.000	24.927	0.000	0.000	43.804	33.262	87.893	XOMR2_OWSG MWD+IFR1+MS
12100.000	90.000	269.825	9577.000	25.582	0.000	44.517	0.000	25.582	0.000	0.000	44.528	33.278	87.916	XOMR2_OWSG MWD+IFR1+MS
12200.000	90.000	269.825	9577.000	26.245	0.000	45.257	0.000	26.245	0.000	0.000	45.268	33.295	87.941	XOMR2_OWSG MWD+IFR1+MS
12300.000	90.000	269.825	9577.000	26.914	0.000	46.012	0.000	26.914	0.000	0.000	46.023	33.312	87.968	XOMR2_OWSG MWD+IFR1+MS
12400.000	90.000	269.825	9577.000	27.589	0.000	46.782	0.000	27.589	0.000	0.000	46.794	33.330	87.995	XOMR2_OWSG MWD+IFR1+MS
12500.000	90.000	269.825	9577.000	28.269	0.000	47.566	0.000	28.269	0.000	0.000	47.578	33.348	88.022	XOMR2_OWSG MWD+IFR1+MS
12600.000	90.000	269.825	9577.000	28.955	0.000	48.364	0.000	28.955	0.000	0.000	48.376	33.368	88.051	XOMR2_OWSG MWD+IFR1+MS
12700.000	90.000	269.825	9577.000	29.646	0.000	49.174	0.000	29.646	0.000	0.000	49.186	33.388	88.079	XOMR2_OWSG MWD+IFR1+MS
12800.000	90.000	269.825	9577.000	30.341	0.000	49.996	0.000	30.341	0.000	0.000	50.008	33.408	88.107	XOMR2_OWSG MWD+IFR1+MS
12900.000	90.000	269.825	9577.000	31.041	0.000	50.830	0.000	31.041	0.000	0.000	50.842	33.429	88.134	XOMR2_OWSG MWD+IFR1+MS
13000.000	90.000	269.825	9577.000	31.745	0.000	51.675	0.000	31.745	0.000	0.000	51.687	33.451	88.162	XOMR2_OWSG MWD+IFR1+MS
13100.000	90.000	269.825	9577.000	32.452	0.000	52.530	0.000	32.452	0.000	0.000	52.542	33.473	88.189	XOMR2_OWSG MWD+IFR1+MS
13200.000	90.000	269.825	9577.000	33.163	0.000	53.395	0.000	33.163	0.000	0.000	53.408	33.497	88.216	XOMR2_OWSG MWD+IFR1+MS
13300.000	90.000	269.825	9577.000	33.877	0.000	54.269	0.000	33.877	0.000	0.000	54.282	33.520	88.242	XOMR2_OWSG MWD+IFR1+MS
13400.000	90.000	269.825	9577.000	34.594	0.000	55.153	0.000	34.594	0.000	0.000	55.166	33.545	88.268	XOMR2_OWSG MWD+IFR1+MS



13500.000	90.000	269.825	9577.000	35.314	0.000	56.045	0.000	35.314	0.000	0.000	56.058	33.569	88.293	XOMR2_OWSG MWD+IFR1+MS
13600.000	90.000	269.825	9577.000	36.037	0.000	56.945	0.000	36.037	0.000	0.000	56.958	33.595	88.317	XOMR2_OWSG MWD+IFR1+MS
13700.000	90.000	269.825	9577.000	36.762	0.000	57.853	0.000	36.762	0.000	0.000	57.866	33.621	88.341	XOMR2_OWSG MWD+IFR1+MS
13800.000	90.000	269.825	9577.000	37.490	0.000	58.768	0.000	37.490	0.000	0.000	58.781	33.648	88.365	XOMR2_OWSG MWD+IFR1+MS
13900.000	90.000	269.825	9577.000	38.220	0.000	59.691	0.000	38.220	0.000	0.000	59.704	33.675	88.388	XOMR2_OWSG MWD+IFR1+MS
14000.000	90.000	269.825	9577.000	38.952	0.000	60.620	0.000	38.952	0.000	0.000	60.633	33.703	88.410	XOMR2_OWSG MWD+IFR1+MS
14100.000	90.000	269.825	9577.000	39.686	0.000	61.556	0.000	39.686	0.000	0.000	61.569	33.732	88.432	XOMR2_OWSG MWD+IFR1+MS
14200.000	90.000	269.825	9577.000	40.422	0.000	62.498	0.000	40.422	0.000	0.000	62.510	33.761	88.453	XOMR2_OWSG MWD+IFR1+MS
14300.000	90.000	269.825	9577.000	41.160	0.000	63.446	0.000	41.160	0.000	0.000	63.458	33.791	88.474	XOMR2_OWSG MWD+IFR1+MS
14400.000	90.000	269.825	9577.000	41.899	0.000	64.399	0.000	41.899	0.000	0.000	64.411	33.821	88.494	XOMR2_OWSG MWD+IFR1+MS
14500.000	90.000	269.825	9577.000	42.640	0.000	65.358	0.000	42.640	0.000	0.000	65.370	33.853	88.514	XOMR2_OWSG MWD+IFR1+MS
14600.000	90.000	269.825	9577.000	43.383	0.000	66.322	0.000	43.383	0.000	0.000	66.334	33.884	88.533	XOMR2_OWSG MWD+IFR1+MS
14700.000	90.000	269.825	9577.000	44.127	0.000	67.290	0.000	44.127	0.000	0.000	67.303	33.916	88.552	XOMR2_OWSG MWD+IFR1+MS
14800.000	90.000	269.825	9577.000	44.873	0.000	68.264	0.000	44.873	0.000	0.000	68.276	33.949	88.570	XOMR2_OWSG MWD+IFR1+MS
14900.000	90.000	269.825	9577.000	45.619	0.000	69.242	0.000	45.619	0.000	0.000	69.254	33.983	88.588	XOMR2_OWSG MWD+IFR1+MS
15000.000	90.000	269.825	9577.000	46.367	0.000	70.224	0.000	46.367	0.000	0.000	70.237	34.017	88.605	XOMR2_OWSG MWD+IFR1+MS
15100.000	90.000	269.825	9577.000	47.117	0.000	71.211	0.000	47.117	0.000	0.000	71.223	34.051	88.622	XOMR2_OWSG MWD+IFR1+MS
15200.000	90.000	269.825	9577.000	47.867	0.000	72.202	0.000	47.867	0.000	0.000	72.214	34.086	88.638	XOMR2_OWSG MWD+IFR1+MS
15300.000	90.000	269.825	9577.000	48.619	0.000	73.196	0.000	48.619	0.000	0.000	73.208	34.122	88.654	XOMR2_OWSG MWD+IFR1+MS
15400.000	90.000	269.825	9577.000	49.371	0.000	74.194	0.000	49.371	0.000	0.000	74.206	34.159	88.670	XOMR2_OWSG MWD+IFR1+MS

15500.000	90.000	269.825	9577.000	50.125	0.000	75.195	0.000	50.125	0.000	0.000	75.207	34.195	88.685	XOMR2_OWSG MWD+IFR1+MS
15600.000	90.000	269.825	9577.000	50.879	0.000	76.200	0.000	50.879	0.000	0.000	76.212	34.233	88.700	XOMR2_OWSG MWD+IFR1+MS
15700.000	90.000	269.825	9577.000	51.635	0.000	77.209	0.000	51.635	0.000	0.000	77.220	34.271	88.715	XOMR2_OWSG MWD+IFR1+MS
15800.000	90.000	269.825	9577.000	52.391	0.000	78.220	0.000	52.391	0.000	0.000	78.231	34.310	88.729	XOMR2_OWSG MWD+IFR1+MS
15900.000	90.000	269.825	9577.000	53.148	0.000	79.234	0.000	53.148	0.000	0.000	79.246	34.349	88.743	XOMR2_OWSG MWD+IFR1+MS
16000.000	90.000	269.825	9577.000	53.906	0.000	80.251	0.000	53.906	0.000	0.000	80.263	34.389	88.757	XOMR2_OWSG MWD+IFR1+MS
16100.000	90.000	269.825	9577.000	54.664	0.000	81.271	0.000	54.664	0.000	0.000	81.283	34.429	88.770	XOMR2_OWSG MWD+IFR1+MS
16200.000	90.000	269.825	9577.000	55.424	0.000	82.294	0.000	55.424	0.000	0.000	82.305	34.470	88.783	XOMR2_OWSG MWD+IFR1+MS
16300.000	90.000	269.825	9577.000	56.184	0.000	83.319	0.000	56.184	0.000	0.000	83.330	34.512	88.795	XOMR2_OWSG MWD+IFR1+MS
16400.000	90.000	269.825	9577.000	56.944	0.000	84.347	0.000	56.944	0.000	0.000	84.358	34.554	88.808	XOMR2_OWSG MWD+IFR1+MS
16500.000	90.000	269.825	9577.000	57.706	0.000	85.377	0.000	57.706	0.000	0.000	85.388	34.596	88.820	XOMR2_OWSG MWD+IFR1+MS
16600.000	90.000	269.825	9577.000	58.468	0.000	86.409	0.000	58.468	0.000	0.000	86.420	34.639	88.832	XOMR2_OWSG MWD+IFR1+MS
16700.000	90.000	269.825	9577.000	59.230	0.000	87.444	0.000	59.230	0.000	0.000	87.455	34.683	88.843	XOMR2_OWSG MWD+IFR1+MS
16800.000	90.000	269.825	9577.000	59.993	0.000	88.481	0.000	59.993	0.000	0.000	88.492	34.727	88.854	XOMR2_OWSG MWD+IFR1+MS
16900.000	90.000	269.825	9577.000	60.757	0.000	89.520	0.000	60.757	0.000	0.000	89.530	34.772	88.866	XOMR2_OWSG MWD+IFR1+MS
17000.000	90.000	269.825	9577.000	61.521	0.000	90.560	0.000	61.521	0.000	0.000	90.571	34.818	88.876	XOMR2_OWSG MWD+IFR1+MS
17100.000	90.000	269.825	9577.000	62.286	0.000	91.603	0.000	62.286	0.000	0.000	91.614	34.863	88.887	XOMR2_OWSG MWD+IFR1+MS
17200.000	90.000	269.825	9577.000	63.051	0.000	92.648	0.000	63.051	0.000	0.000	92.658	34.910	88.897	XOMR2_OWSG MWD+IFR1+MS
17300.000	90.000	269.825	9577.000	63.817	0.000	93.694	0.000	63.817	0.000	0.000	93.705	34.957	88.907	XOMR2_OWSG MWD+IFR1+MS
17400.000	90.000	269.825	9577.000	64.583	0.000	94.743	0.000	64.583	0.000	0.000	94.753	35.004	88.917	XOMR2_OWSG MWD+IFR1+MS

17500.000	90.000	269.825	9577.000	65.350	0.000	95.793	0.000	65.350	0.000	0.000	95.803	35.052	88.927	XOMR2_OWSG MWD+IFR1+MS
17600.000	90.000	269.825	9577.000	66.117	0.000	96.844	0.000	66.117	0.000	0.000	96.854	35.101	88.937	XOMR2_OWSG MWD+IFR1+MS
17700.000	90.000	269.825	9577.000	66.884	0.000	97.897	0.000	66.884	0.000	0.000	97.907	35.150	88.946	XOMR2_OWSG MWD+IFR1+MS
17800.000	90.000	269.825	9577.000	67.652	0.000	98.952	0.000	67.652	0.000	0.000	98.962	35.200	88.955	XOMR2_OWSG MWD+IFR1+MS
17900.000	90.000	269.825	9577.000	68.420	0.000	100.008	0.000	68.420	0.000	0.000	100.018	35.250	88.964	XOMR2_OWSG MWD+IFR1+MS
18000.000	90.000	269.825	9577.000	69.189	0.000	101.066	0.000	69.189	0.000	0.000	101.075	35.301	88.973	XOMR2_OWSG MWD+IFR1+MS
18100.000	90.000	269.825	9577.000	69.958	0.000	102.125	0.000	69.958	0.000	0.000	102.134	35.352	88.981	XOMR2_OWSG MWD+IFR1+MS
18200.000	90.000	269.825	9577.000	70.727	0.000	103.185	0.000	70.727	0.000	0.000	103.195	35.404	88.990	XOMR2_OWSG MWD+IFR1+MS
18300.000	90.000	269.825	9577.000	71.497	0.000	104.247	0.000	71.497	0.000	0.000	104.256	35.456	88.998	XOMR2_OWSG MWD+IFR1+MS
18400.000	90.000	269.825	9577.000	72.267	0.000	105.309	0.000	72.267	0.000	0.000	105.319	35.509	89.006	XOMR2_OWSG MWD+IFR1+MS
18500.000	90.000	269.825	9577.000	73.037	0.000	106.374	0.000	73.037	0.000	0.000	106.383	35.562	89.014	XOMR2_OWSG MWD+IFR1+MS
18600.000	90.000	269.825	9577.000	73.808	0.000	107.439	0.000	73.808	0.000	0.000	107.448	35.616	89.022	XOMR2_OWSG MWD+IFR1+MS
18700.000	90.000	269.825	9577.000	74.579	0.000	108.505	0.000	74.579	0.000	0.000	108.515	35.670	89.030	XOMR2_OWSG MWD+IFR1+MS
18800.000	90.000	269.825	9577.000	75.350	0.000	109.573	0.000	75.350	0.000	0.000	109.582	35.725	89.037	XOMR2_OWSG MWD+IFR1+MS
18900.000	90.000	269.825	9577.000	76.121	0.000	110.642	0.000	76.121	0.000	0.000	110.651	35.780	89.045	XOMR2_OWSG MWD+IFR1+MS
19000.000	90.000	269.825	9577.000	76.893	0.000	111.711	0.000	76.893	0.000	0.000	111.720	35.836	89.052	XOMR2_OWSG MWD+IFR1+MS
19100.000	90.000	269.825	9577.000	77.665	0.000	112.782	0.000	77.665	0.000	0.000	112.791	35.893	89.059	XOMR2_OWSG MWD+IFR1+MS
19200.000	90.000	269.825	9577.000	78.437	0.000	113.854	0.000	78.437	0.000	0.000	113.863	35.949	89.066	XOMR2_OWSG MWD+IFR1+MS
19300.000	90.000	269.825	9577.000	79.210	0.000	114.927	0.000	79.210	0.000	0.000	114.936	36.007	89.073	XOMR2_OWSG MWD+IFR1+MS
19400.000	90.000	269.825	9577.000	79.982	0.000	116.000	0.000	79.982	0.000	0.000	116.009	36.065	89.080	XOMR2_OWSG MWD+IFR1+MS

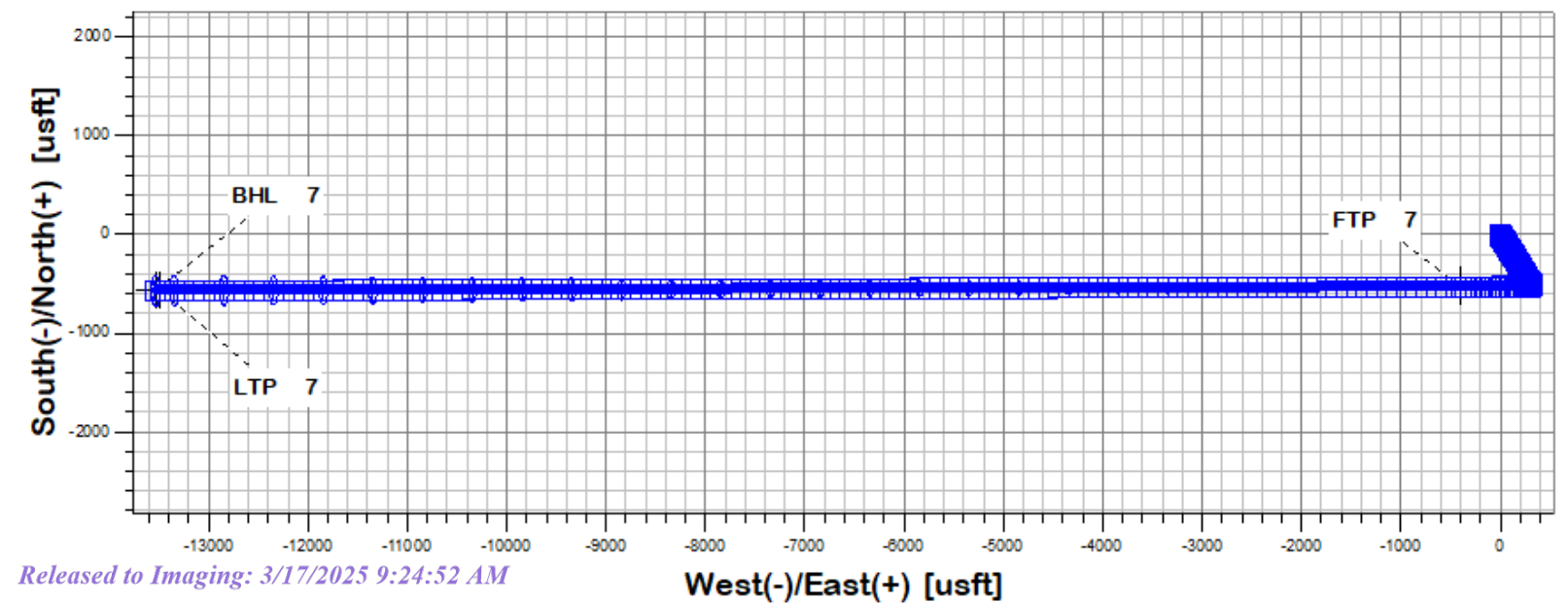
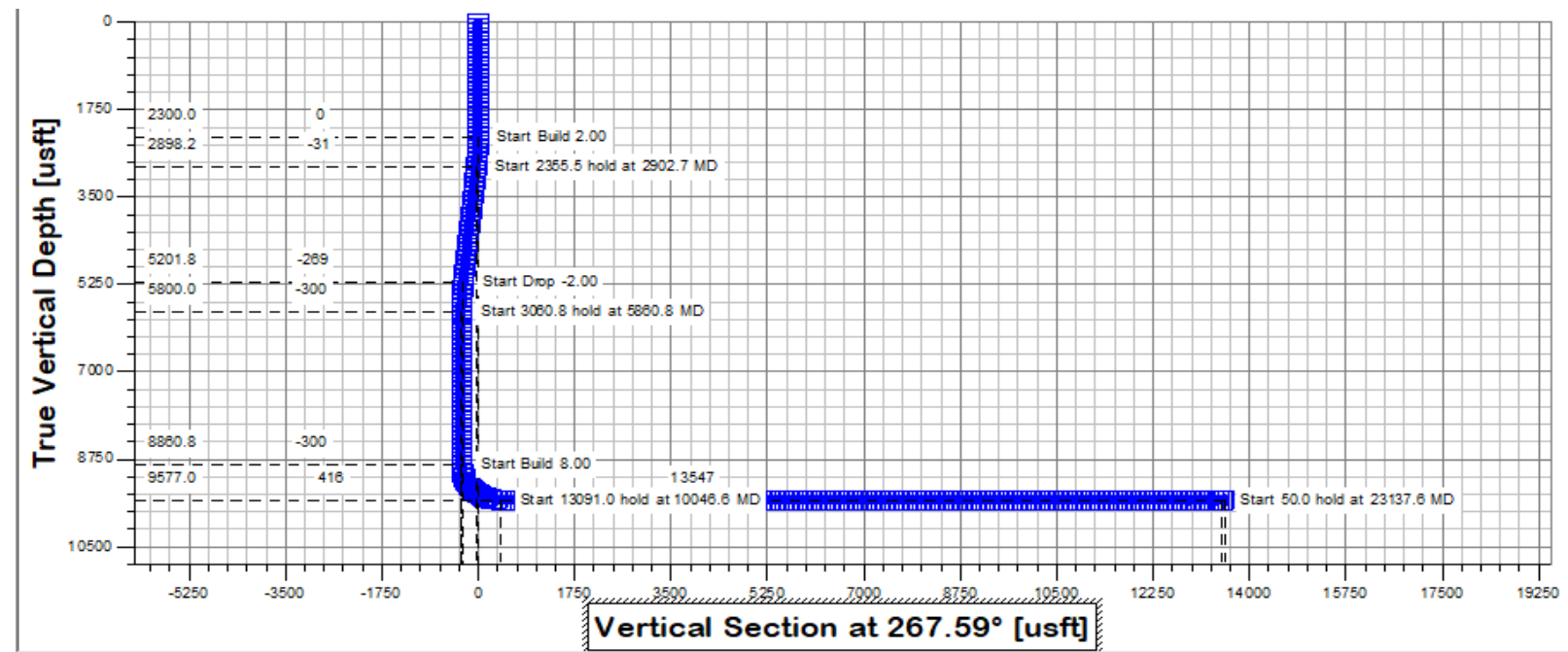
19500.000	90.000	269.825	9577.000	80.755	0.000	117.075	0.000	80.755	0.000	0.000	117.084	36.123	89.086	XOMR2_OWSG MWD+IFR1+MS
19600.000	90.000	269.825	9577.000	81.529	0.000	118.151	0.000	81.529	0.000	0.000	118.159	36.182	89.093	XOMR2_OWSG MWD+IFR1+MS
19700.000	90.000	269.825	9577.000	82.302	0.000	119.227	0.000	82.302	0.000	0.000	119.236	36.241	89.099	XOMR2_OWSG MWD+IFR1+MS
19800.000	90.000	269.825	9577.000	83.076	0.000	120.304	0.000	83.076	0.000	0.000	120.313	36.301	89.105	XOMR2_OWSG MWD+IFR1+MS
19900.000	90.000	269.825	9577.000	83.849	0.000	121.382	0.000	83.849	0.000	0.000	121.391	36.361	89.112	XOMR2_OWSG MWD+IFR1+MS
20000.000	90.000	269.825	9577.000	84.623	0.000	122.461	0.000	84.623	0.000	0.000	122.470	36.422	89.118	XOMR2_OWSG MWD+IFR1+MS
20100.000	90.000	269.825	9577.000	85.398	0.000	123.541	0.000	85.398	0.000	0.000	123.549	36.483	89.124	XOMR2_OWSG MWD+IFR1+MS
20200.000	90.000	269.825	9577.000	86.172	0.000	124.621	0.000	86.172	0.000	0.000	124.630	36.544	89.130	XOMR2_OWSG MWD+IFR1+MS
20300.000	90.000	269.825	9577.000	86.947	0.000	125.702	0.000	86.947	0.000	0.000	125.711	36.607	89.135	XOMR2_OWSG MWD+IFR1+MS
20400.000	90.000	269.825	9577.000	87.721	0.000	126.784	0.000	87.721	0.000	0.000	126.793	36.669	89.141	XOMR2_OWSG MWD+IFR1+MS
20500.000	90.000	269.825	9577.000	88.496	0.000	127.867	0.000	88.496	0.000	0.000	127.875	36.732	89.147	XOMR2_OWSG MWD+IFR1+MS
20600.000	90.000	269.825	9577.000	89.271	0.000	128.950	0.000	89.271	0.000	0.000	128.958	36.796	89.152	XOMR2_OWSG MWD+IFR1+MS
20700.000	90.000	269.825	9577.000	90.047	0.000	130.034	0.000	90.047	0.000	0.000	130.042	36.860	89.158	XOMR2_OWSG MWD+IFR1+MS
20800.000	90.000	269.825	9577.000	90.822	0.000	131.119	0.000	90.822	0.000	0.000	131.127	36.924	89.163	XOMR2_OWSG MWD+IFR1+MS
20900.000	90.000	269.825	9577.000	91.598	0.000	132.204	0.000	91.598	0.000	0.000	132.212	36.989	89.168	XOMR2_OWSG MWD+IFR1+MS
21000.000	90.000	269.825	9577.000	92.374	0.000	133.290	0.000	92.374	0.000	0.000	133.298	37.054	89.173	XOMR2_OWSG MWD+IFR1+MS
21100.000	90.000	269.825	9577.000	93.150	0.000	134.376	0.000	93.150	0.000	0.000	134.384	37.120	89.179	XOMR2_OWSG MWD+IFR1+MS
21200.000	90.000	269.825	9577.000	93.926	0.000	135.463	0.000	93.926	0.000	0.000	135.471	37.186	89.184	XOMR2_OWSG MWD+IFR1+MS
21300.000	90.000	269.825	9577.000	94.702	0.000	136.551	0.000	94.702	0.000	0.000	136.559	37.253	89.189	XOMR2_OWSG MWD+IFR1+MS
21400.000	90.000	269.825	9577.000	95.478	0.000	137.639	0.000	95.478	0.000	0.000	137.647	37.320	89.193	XOMR2_OWSG MWD+IFR1+MS

21500.000	90.000	269.825	9577.000	96.255	0.000	138.728	0.000	96.255	0.000	0.000	138.736	37.388	89.198	XOMR2_OWSG MWD+IFR1+MS
21600.000	90.000	269.825	9577.000	97.031	0.000	139.817	0.000	97.031	0.000	0.000	139.825	37.456	89.203	XOMR2_OWSG MWD+IFR1+MS
21700.000	90.000	269.825	9577.000	97.808	0.000	140.907	0.000	97.808	0.000	0.000	140.915	37.524	89.208	XOMR2_OWSG MWD+IFR1+MS
21800.000	90.000	269.825	9577.000	98.585	0.000	141.997	0.000	98.585	0.000	0.000	142.005	37.593	89.212	XOMR2_OWSG MWD+IFR1+MS
21900.000	90.000	269.825	9577.000	99.362	0.000	143.088	0.000	99.362	0.000	0.000	143.096	37.662	89.217	XOMR2_OWSG MWD+IFR1+MS
22000.000	90.000	269.825	9577.000	100.139	0.000	144.179	0.000	100.139	0.000	0.000	144.187	37.732	89.221	XOMR2_OWSG MWD+IFR1+MS
22100.000	90.000	269.825	9577.000	100.916	0.000	145.271	0.000	100.916	0.000	0.000	145.279	37.802	89.226	XOMR2_OWSG MWD+IFR1+MS
22200.000	90.000	269.825	9577.000	101.694	0.000	146.364	0.000	101.694	0.000	0.000	146.371	37.873	89.230	XOMR2_OWSG MWD+IFR1+MS
22300.000	90.000	269.825	9577.000	102.471	0.000	147.456	0.000	102.471	0.000	0.000	147.464	37.944	89.234	XOMR2_OWSG MWD+IFR1+MS
22400.000	90.000	269.825	9577.000	103.249	0.000	148.549	0.000	103.249	0.000	0.000	148.557	38.015	89.238	XOMR2_OWSG MWD+IFR1+MS
22500.000	90.000	269.825	9577.000	104.026	0.000	149.643	0.000	104.026	0.000	0.000	149.650	38.087	89.242	XOMR2_OWSG MWD+IFR1+MS
22600.000	90.000	269.825	9577.000	104.804	0.000	150.737	0.000	104.804	0.000	0.000	150.744	38.160	89.247	XOMR2_OWSG MWD+IFR1+MS
22700.000	90.000	269.825	9577.000	105.582	0.000	151.832	0.000	105.582	0.000	0.000	151.839	38.232	89.251	XOMR2_OWSG MWD+IFR1+MS
22800.000	90.000	269.825	9577.000	106.360	0.000	152.926	0.000	106.360	0.000	0.000	152.934	38.305	89.255	XOMR2_OWSG MWD+IFR1+MS
22900.000	90.000	269.825	9577.000	107.138	0.000	154.022	0.000	107.138	0.000	0.000	154.029	38.379	89.258	XOMR2_OWSG MWD+IFR1+MS
23000.000	90.000	269.825	9577.000	107.916	0.000	155.117	0.000	107.916	0.000	0.000	155.124	38.453	89.262	XOMR2_OWSG MWD+IFR1+MS
23100.000	90.000	269.825	9577.000	108.695	0.000	156.213	0.000	108.695	0.000	0.000	156.220	38.527	89.266	XOMR2_OWSG MWD+IFR1+MS
23137.566	90.000	269.825	9577.000	108.987	0.000	156.625	0.000	108.987	0.000	0.000	156.632	38.555	89.268	XOMR2_OWSG MWD+IFR1+MS
23170.293	90.000	269.825	9577.000	109.242	0.000	156.984	0.000	109.242	0.000	0.000	156.991	38.579	89.269	XOMR2_OWSG MWD+IFR1+MS

Plan Targets

BEU DI 5 27-29 6H

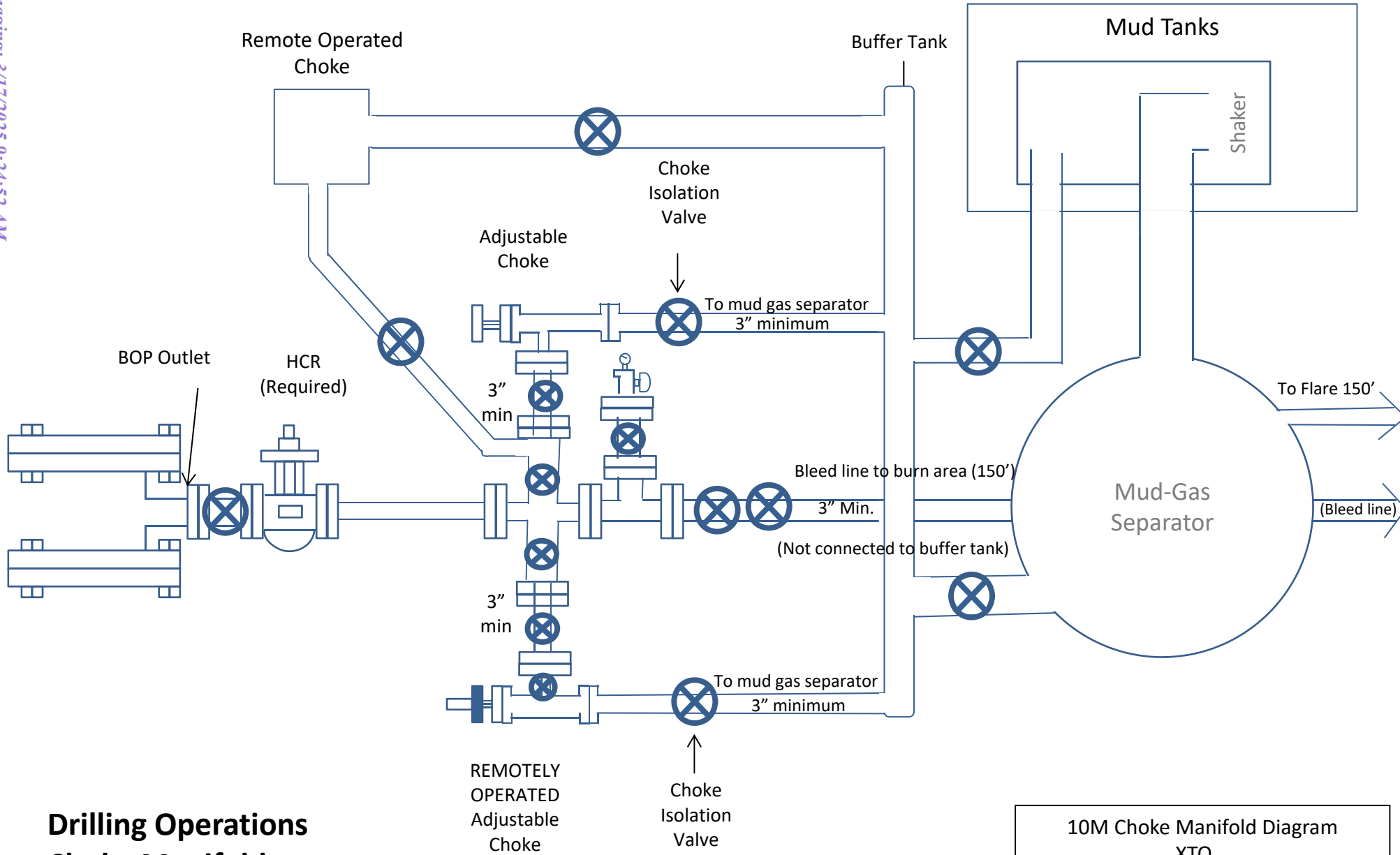
Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
FTP 7	10046.60	562448.10	646886.60	6020.00	CIRCLE
LTP 7	23137.57	562408.10	633795.70	6020.00	CIRCLE
BHL 7	23187.57	562408.00	633745.70	6020.00	CIRCLE



Formation	TVDSS (feet)	TVD (feet)
Rustler	2,882'	675'
Salado	2,606'	951'
Base Salt	1,354'	2,203'
Capitan Reef	694'	2,863'
Delaware Ss.	-381'	3,938'
Brushy Canyon Ss.	-2,338'	5,895'
Basal Brushy Canyon Ss.	-3,727'	7,284'
Bone Spring Lime	-3,914'	7,471'
Avalon Shale Upper SH	-4,109'	7,666'
Avalon Mid Carb	-4,453'	8,010'
Avalon Shale Lower SH	-4,612'	8,169'
1st Bone Spring Lime	-4,847'	8,404'
1st Bone Spring Sand	-5,188'	8,745'
2nd Bone Spring Lime	-5,549'	9,106'
2nd Bone Spring Sand	-5,649'	9,206'
2nd Bone Spring B Sand	-5,833'	9,390'
Landing Point	-6,020'	9,577'
2nd Bone Spring C Sand	-6,044'	9,601'
3rd Bone Spring Lime	-6,259'	9,816'



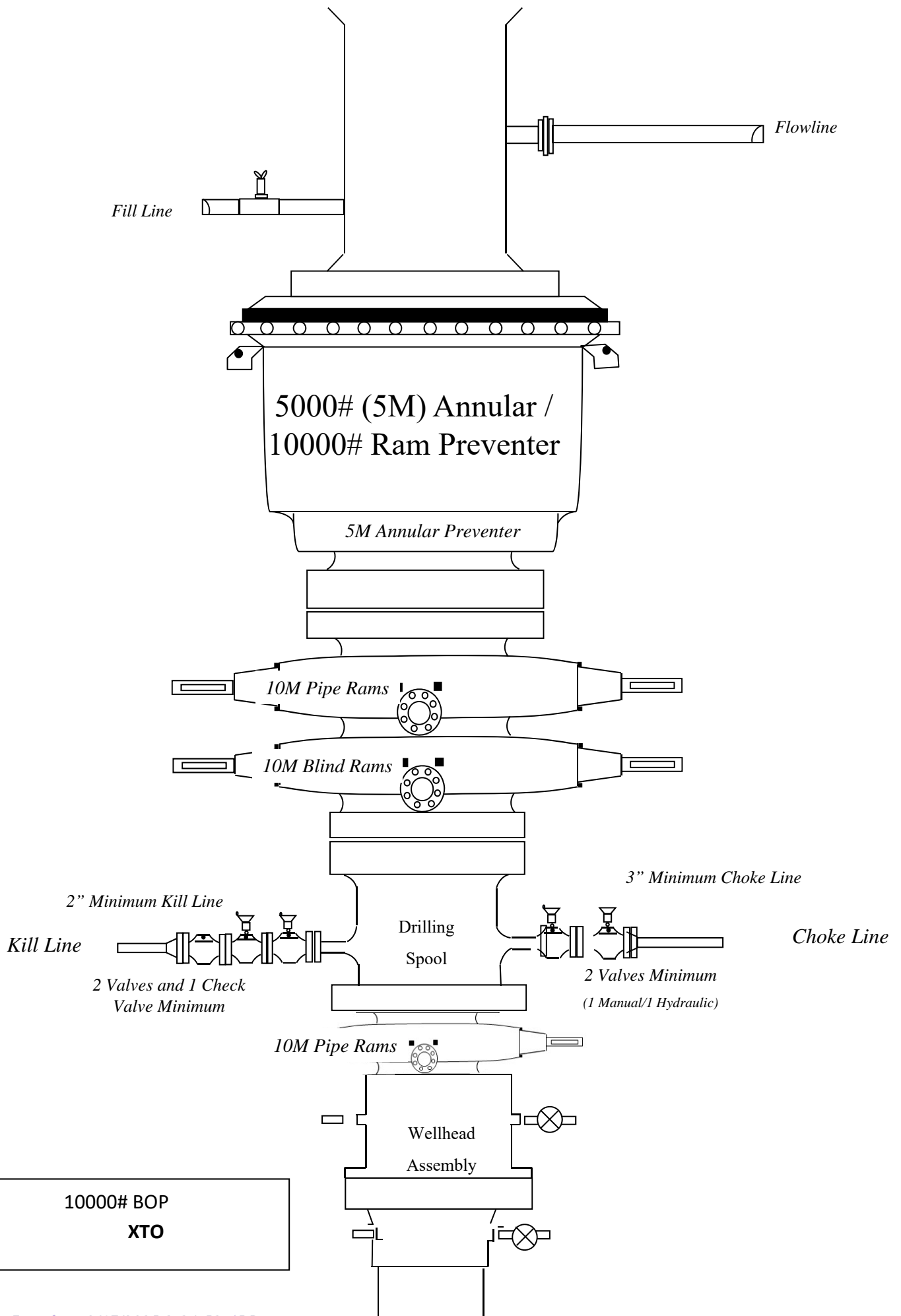
Bleed line will discharge 100' from wellhead for non-H2S situations and 150' from wellhead for H2S situations.



## Drilling Operations Choke Manifold 10M Service

10M Choke Manifold Diagram  
XTO







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	--

UNCONTROLLED

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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Spring, Texas 77380

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www.usstubular.com



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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]

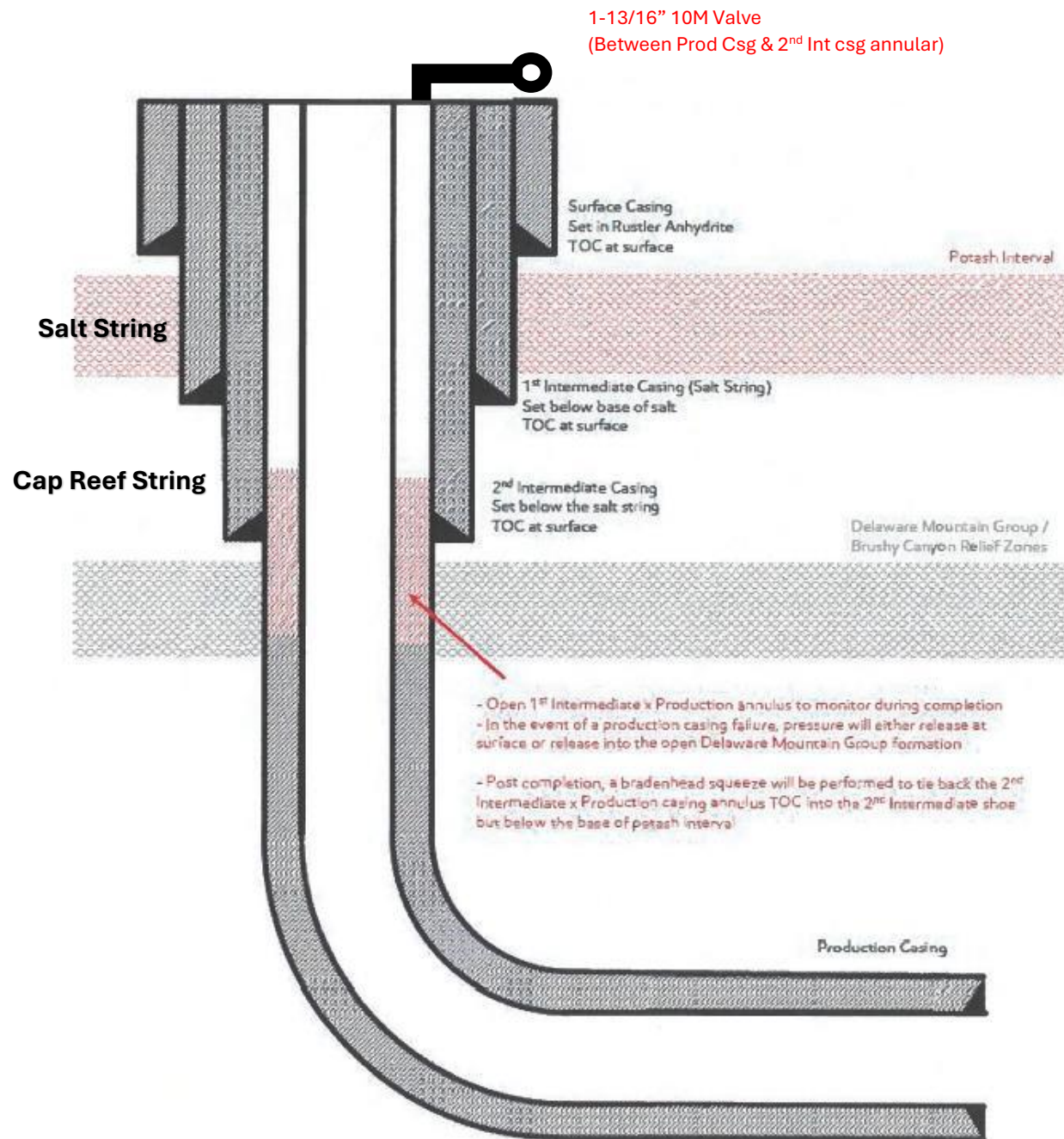
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Notes

- 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. Joint efficiencies are calculated by dividing the connection critical area by the pipe body area.
- 3. Uniaxial bend rating shown is structural only.
- 4. 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.).
- 5. Reference length is calculated by Joint Strength divided by Nominal Linear Weight, T&C with a 1.5 Safety factor.
- 6. Coupling must meet minimum mechanical properties of the pipe.

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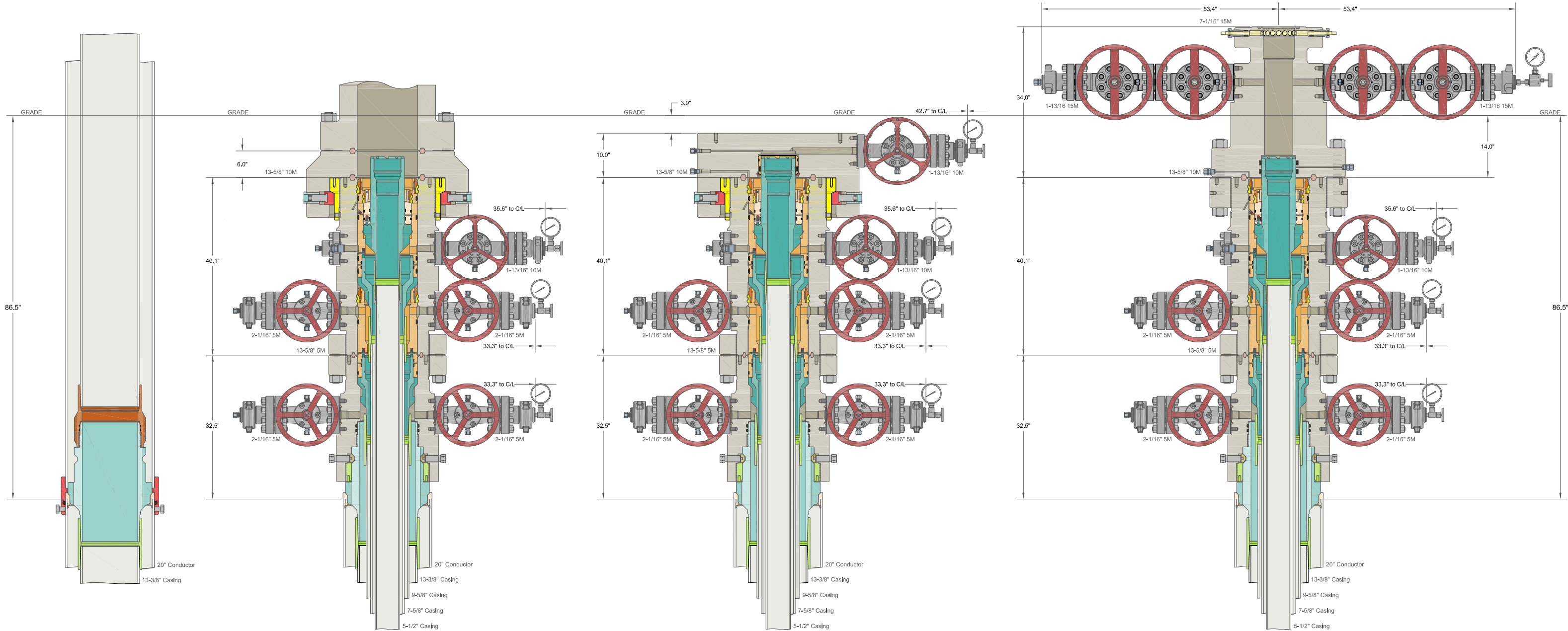
**Figure E**

Updated May 2024:

XTO is aware of the R-111-Q update and 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 even of production casing failure.
3. Bradenhead squeeze to be completed within 180 days to tie back TOC to salt string at least 500ft but with top below Marker Bed 126.
4. Production Cement to be tied back no less than 500ft inside previous casing shoe

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ALL DIMENSIONS APPROXIMATE			
CACTUS WELLHEAD LLC			
(20") x 13-3/8" x 9-5/8" x 7-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head And Drilling & Skid Configurations			
XTO ENERGY INC DELAWARE BASIN			
DRAWN	VJK	31MAR22	
APPRV			
DRAWING NO.		SDT-3301	



**BLACK GOLD®**

**GATES ENGINEERING & SERVICES NORTH AMERICA**  
**7603 Prairie Oak Dr.**  
**Houston, TX. 77086**

**PHONE: +1 (281) 602-4100****FAX: +1 (281) 602-4147****EMAIL: gesna.quality@gates.com****WEB: www.gates.com/oilandgas**

*NEW CHOKE HOSE  
INSTALLED 02-10-2024*

## CERTIFICATE OF CONFORMANCE

This is to verify that the items detailed below meet the requirements of the Customer's Purchase Order referenced herein, and are in Conformance with applicable specifications, and that Records of Required Tests are on file and subject to examination. The following items were inspected and hydrostatically tested at **Gates Engineering & Services North America** facilities in Houston, TX, USA.

**CUSTOMER:** NABORS DRILLING TECHNOLOGIES USA DBA NABORS DRILLING USA  
**CUSTOMER P.O.#:** 15582803 (TAG NABORS PO #15582803 SN 74621 ASSET 66-1531)  
**CUSTOMER P/N:** IMR RETEST SN 74621 ASSET #66-1531

**PART DESCRIPTION:** RETEST OF CUSTOMER 3" X 45 FT 16C CHOKE & KILL HOSE ASSEMBLY C/W 4 1/16" 10K FLANGES

**SALES ORDER #:** 529480  
**QUANTITY:** 1  
**SERIAL #:** 74621 H3-012524-1

**SIGNATURE:***F. Cismos***TITLE:****QUALITY ASSURANCE****DATE:****1/25/2024**



H3-15/16

1/25/2024 11:48:06 AM

# TEST REPORT

**CUSTOMER**

Company: Nabors Industries Inc.

Production description: 74621/66-1531

Sales order #: 529480

Customer reference: FG1213

**TEST OBJECT**

Serial number: H3-012524-1

Lot number:

Description: 74621/66-1531

Hose ID: 3" 16C CK

Part number:

**TEST INFORMATION**

Test procedure: GTS-04-053

Test pressure: 15000.00 psi

Test pressure hold: 3600.00 sec

Work pressure: 10000.00 psi

Work pressure hold: 900.00 sec

Length difference: 0.00 %

Length difference: 0.00 inch

Fitting 1: 3.0 x 4-1/16 10K

Part number:

Description:

Fitting 2: 3.0 x 4-1/16 10K

Part number:

Description:

Visual check:

Pressure test result: PASS

Length measurement result:

Length: 45 feet

Test operator: Travis





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# TEST REPORT

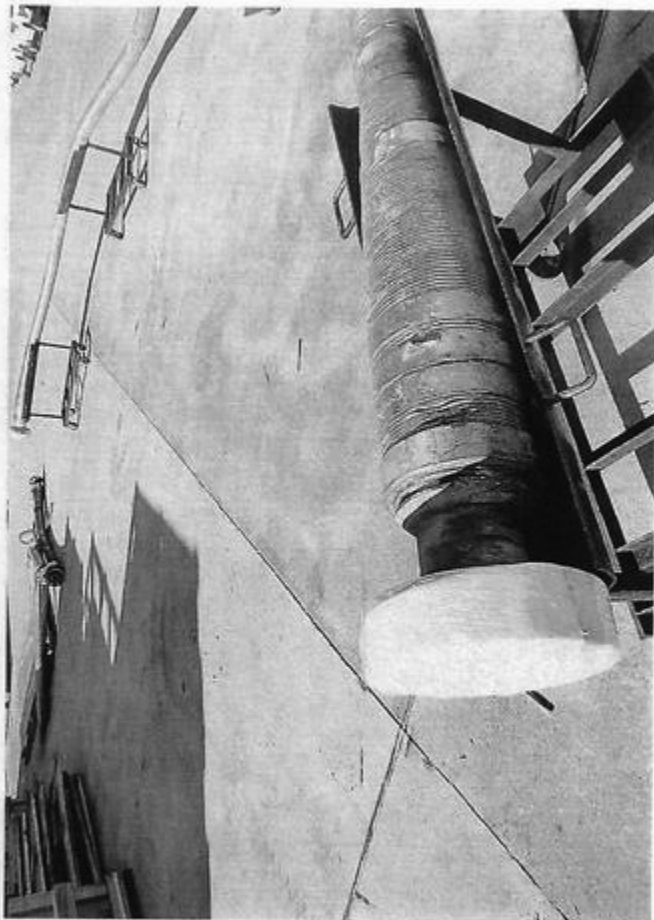
## GAUGE TRACEABILITY

Description	Serial number	Calibration date	Calibration due date
S-25-A-W	110D3PHO	2023-06-06	2024-06-06
S-25-A-W	110IQWDG	2023-05-16	2024-05-16

**Comment**

--







XTO respectfully requests approval to utilize a spudder rig to pre-set surface casing.

Description of Operations:

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
  - a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
  - b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wing valves.
  - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling Operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nipped up and tested on the wellhead before drilling operations resume on each well.
  - a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
  - b. The BLM will be notified 24 hours before the larger rig moves back on the pre-set locations
7. XTO will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, XTO will secure the wellhead area by placing a guard rail around the cellar area.



**Subject:** Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE)

XTO Energy requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

**Background**

Onshore Oil and Gas Order CFR Title 43 Part 3170, Drilling Operations, Sections III.A.2.i.iv.B states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. CFR Title 43 Part 3170 states, "Some situation may exist either on a well-by-well basis or field-wide basis whereby it is commonly accepted practice to vary a particular minimum standard(s) established in this order. This situation can be resolved by requesting a variance...". XTO Energy feels the break testing the BOPE is such a situation. Therefore, as per CFR Title 43 Part 3170, XTO Energy submits this request for the variance.

**Supporting Documentation**

CFR Title 43 Part 3170 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time there have been significant changes in drilling technology. BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since CFR Title 43 Part 3170 was originally released. The XTO Energy drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

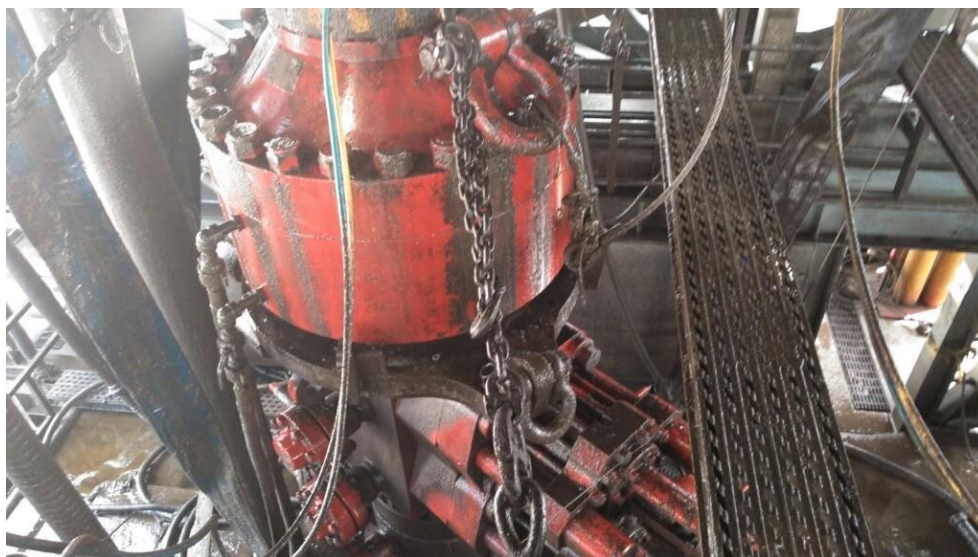


Figure 1: Winch System attached to BOP Stack

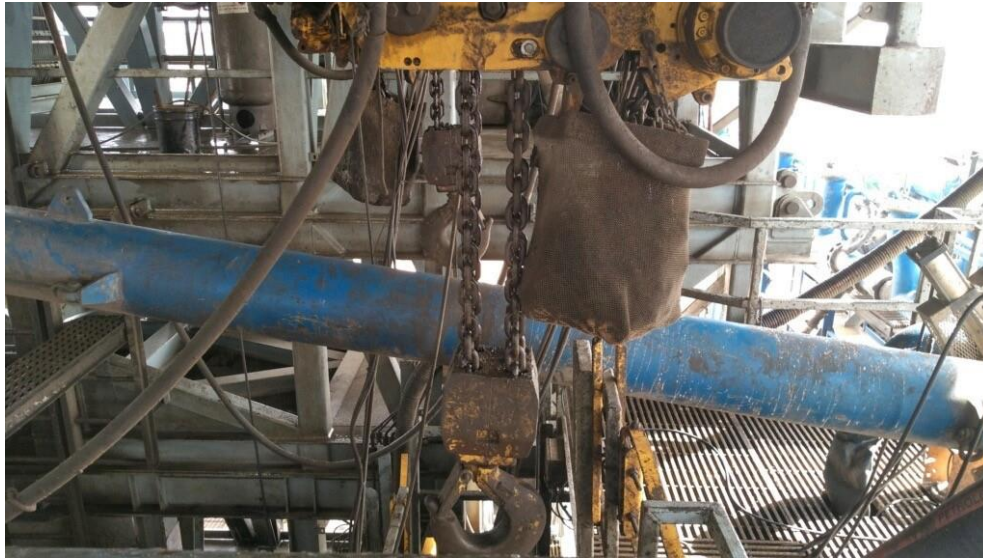


Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. CFR Title 43 Part 3170 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states “A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component.” See Table C.4 below for reference.

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API STANDARD 53

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure <sup>a,c</sup> psig (MPa)	Pressure Test—High Pressure <sup>a,c</sup>	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer <sup>b</sup>	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers <sup>b,d</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

<sup>a</sup> Pressure test evaluation periods shall be a minimum of five minutes.

No visible leaks.

The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

<sup>b</sup> Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

<sup>c</sup> For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

<sup>d</sup> For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

<sup>e</sup> Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

XTO Energy feels break testing and our current procedures meet the intent of CFR Title 43 Part 317 0and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. XTO Energy's internal standards requires complete BOPE tests more often than that of CFR Title 43 Part 3170 (Every 21 days). In addition to function testing the annular, pipe rams and blind rams after

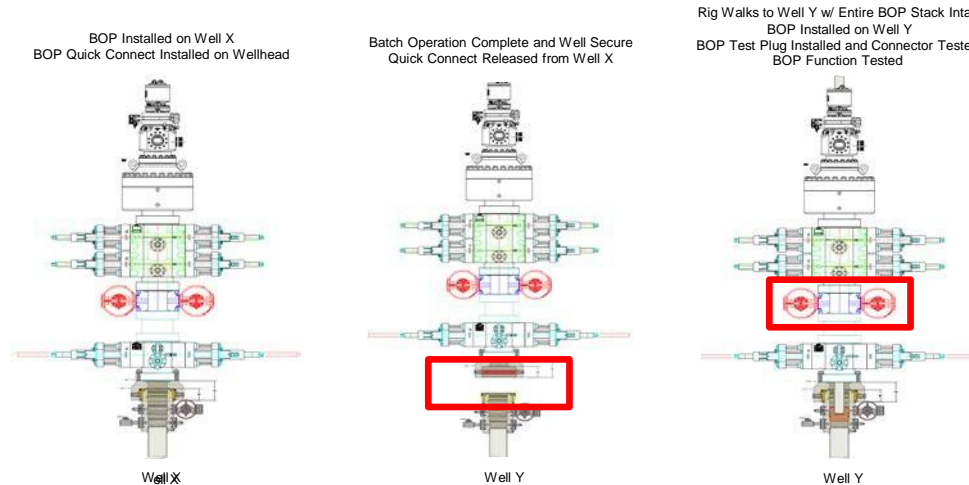
each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the CFR Title 43 Part 3170.

### **Procedures**

1. XTO Energy will use this document for our break testing plan for New Mexico Delaware basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2. XTO Energy will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
  - a. A full BOP test will be conducted on the first well on the pad.
  - b. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.
    - i. Our Lower WC targets set the intermediate casing shoe no deeper than the Wolfcamp B.
    - ii. Our Upper WC targets set the intermediate casing shoe shallower than the Wolfcamp B.
  - c. A Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
  - d. A full BOP test will be required prior to drilling any production hole.
3. After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
  - a. Between the HCV valve and choke line connection
  - b. Between the BOP quick connect and the wellhead
4. The BOP is then lifted and removed from the wellhead by a hydraulic system.
5. After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6. The connections mentioned in 3a and 3b will then be reconnected.
7. Install test plug into the wellhead using test joint or drill pipe.
8. A shell test is performed against the upper pipe rams testing the two breaks.
9. The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10. Function test will be performed on the following components: lower pipe rams, blind rams, and annular.

11. For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12. A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

*Note: Picture below highlights BOP components that will be tested during batch operations*



### **Summary**

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. API Standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

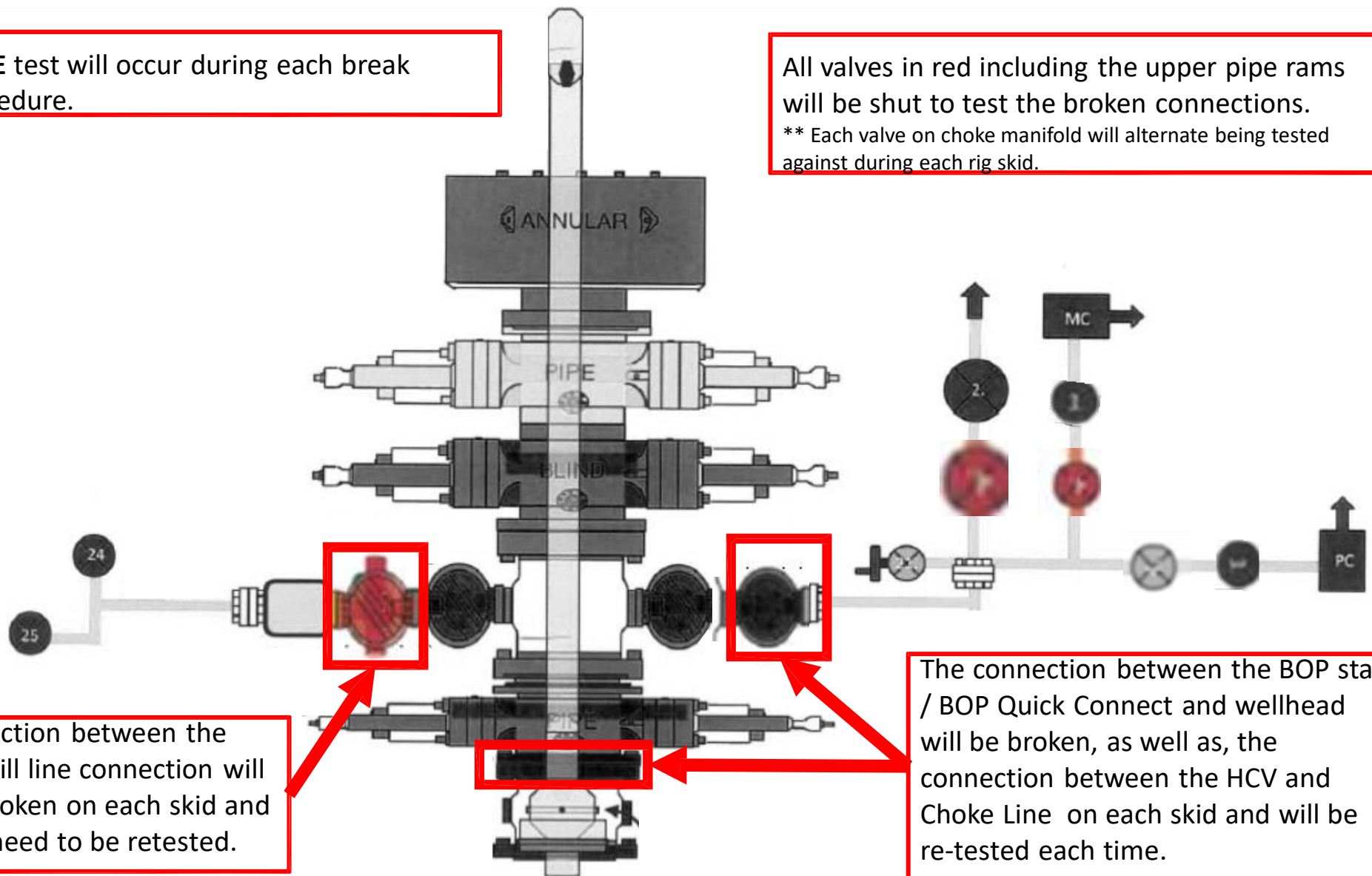
Based on discussions with the BLM on February 27th 2020 and the supporting documentation submitted to the BLM, we will request permission to **ONLY** retest broken pressure seals if the following conditions are met:

1. After a full BOP test is conducted on the first well on the pad.
2. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.
3. Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
4. Full BOP test will be required prior to drilling the production hole.



Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.  
\*\* Each valve on choke manifold will alternate being tested against during each rig skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.

**XTO Permian Operating, LLC Offline Cementing Variance Request**

XTO requests the option to cement the surface and intermediate casing strings offline as a prudent batch drilling efficiency of acreage development.

**1. Cement Program**

No changes to the cement program will take place for offline cementing.

**2. Offline Cementing Procedure**

The operational sequence will be as follows. If a well control event occurs, the BLM will be contacted for approval prior to conducting offline cementing operations.

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal. Pressure ratings of wellhead components and valves is 5,000 psi.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
  - a. If any barrier fails to test, the BOP stack will not be nippedled down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50-psi compressive strength if kill weight fluid cannot be verified.



Annular packoff with both external and internal seals

## XTO Permian Operating, LLC Offline Cementing Variance Request



Wellhead diagram during skidding operations

6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange, flange will not be removed and offline cementing operations will not commence until well is under control. If well is not static, casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing or nipping up for further remediation.
  - a. Well Control Plan
    - i. The Drillers Method will be the primary well control method to regain control of the wellbore prior to cementing, if wellbore conditions do not permit the drillers method other methods of well control may be used
    - ii. Rig pumps or a 3<sup>rd</sup> party pump will be tied into the upper casing valve to pump down the casing ID
    - iii. A high pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    - iv. Once influx is circulated out of the hole, kill weight mud will be circulated
    - v. Well will be confirmed static
    - vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment

**XTO Permian Operating, LLC Offline Cementing Variance Request**

Wellhead diagram during offline cementing operations

10. Circulate bottoms up with cement truck
  - a. If gas is present on bottoms up, well will be shut in and returns rerouted through gas buster to handle entrained gas
  - b. Max anticipated time before circulating with cement truck is 6 hrs
11. Perform cement job taking returns from the annulus wellhead valve
12. Confirm well is static and floats are holding after cement job
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

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

CONDITIONS

Action 437880

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 437880
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	3/17/2025