

<b>Well Name:</b> POKER LAKE UNIT 15 TWR	<b>Well Location:</b> T24S / R31E / SEC 22 / NWNW / 32.208748 / -103.77255	<b>County or Parish/State:</b> EDDY / NM
<b>Well Number:</b> 115H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM0506A	<b>Unit or CA Name:</b> POKER LAKE UNIT	<b>Unit or CA Number:</b> NMNM71016X
<b>US Well Number:</b> 3001554169	<b>Operator:</b> XTO PERMIAN OPERATING LLC	

### Notice of Intent

**Sundry ID:** 2823640

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 11/20/2024

**Time Sundry Submitted:** 01:41

**Date proposed operation will begin:** 12/18/2024

**Procedure Description:** Poker Lake Unit 15 TWR 115H 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, Proposed total Depth, and Pool Code. There is no new surface disturbance. There is a dedicated acreage change. FROM: TO: SHL: 490' FNL & 520' FWL OF SECTION 22-T24S-R31E 510' FNL & 520' FWL OF SECTION 22-T24S-R31E KOP: 490' FNL & 520' FWL OF SECTION 22-T24S-R31E 616' FSL & 984' FWL OF SECTION 15-T24S-R31E FTP: 330' FNL & 990' FWL OF SECTION 22-T24S-R31E 100' FNL & 985' FWL OF SECTION 22-T24S-R31E LTP: 2540' FNL & 990' FWL OF SECTION 34-T24S-R31E 2542' FNL & 982' FWL OF SECTION 34-T24S-R31E BHL: 2590' FNL & 990' FWL OF SECTION 34-T24S-R31E 2592' FNL & 982' FWL OF SECTION 34-T24S-R31E The proposed total depth is changing from 24027' MD; 10855' TVD (3rd Bone Spring Shale) to 22517' MD; 8911' TVD (Avalon). There is a Pool Code change from 96403/Wildcat; Bone Spring to 96546/ Cotton Draw; Bone Spring, South A saturated salt brine will be utilized while drilling through the salt formations.

### NOI Attachments

#### Procedure Description

PLU\_15\_TWR\_\_\_115H\_Sundry\_Attachments\_20241210105435.pdf

Well Name: POKER LAKE UNIT 15  
TRW

Well Location: T24S / R31E / SEC 22 /  
NWNW / 32.208748 / -103.77255

County or Parish/State: EDDY /  
NM

Well Number: 115H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0506A

Unit or CA Name: POKER LAKE UNIT

Unit or CA Number:  
NMNM71016X

US Well Number: 3001554169

Operator: XTO PERMIAN OPERATING  
LLC

### Conditions of Approval

#### Additional

PLU\_15\_TRW\_115H\_COA\_20241211104557.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: SAMANTHA WEIS

Signed on: DEC 10, 2024 10:55 AM

Name: XTO PERMIAN OPERATING LLC

Title: Permitting Advisor

Street Address: 22777 SPRINGWOODS VILLAGE PARKWAY

City: SPRING

State: TX

Phone: (832) 625-7361

Email address: SAMANTHA.R.BARTNIK@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: 02/04/2025

Signature: Chris Walls

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS  
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021

5. Lease Serial No.  
NMNM0506A

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well  
☒ Oil Well    ☐ Gas Well    ☐ Other

2. Name of Operator  
XTO PERMIAN OPERATING LLC

3a. Address 6401 HOLIDAY HILL ROAD BLDG 5, MIDLAND, 3b. Phone No. (include area code)  
(432) 683-2277

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)  
SEC 22/T24S/R31E/NMP

7. If Unit of CA/Agreement, Name and/or No.  
POKER LAKE UNIT/NMNM71016X

8. Well Name and No.  
POKER LAKE UNIT 15 TWR/115H

9. API Well No. 3001554169

10. Field and Pool or Exploratory Area  
Wildcat; Bone Spring

11. Country or Parish, State  
EDDY/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" 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"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<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 recomplete 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 performed 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.)

Poker Lake Unit 15 TWR 115H

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, Proposed total Depth, and Pool Code. There is no new surface disturbance. There is a dedicated acreage change.

FROM: TO:  
SHL: 490' FNL & 520' FWL OF SECTION 22-T24S-R31E 510 FNL & 520' FWL OF SECTION 22-T24S-R31E  
KOP: 490 FNL & 520 FWL OF SECTION 22-T24S-R31E 616 FSL & 984 FWL OF SECTION 15-T24S-R31E  
FTP: 330' FNL & 990' FWL OF SECTION 22-T24S-R31E 100' FNL & 985' FWL OF SECTION 22-T24S-R31E  
LTP: 2540' FNL & 990' FWL OF SECTION 34-T24S-R31E 2542' FNL & 982' FWL OF SECTION 34-T24S-R31E

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)  
SAMANTHA WEIS / Ph: (832) 625-7361

Permitting Advisor

Signature (Electronic Submission)

Date 12/10/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by  
CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

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.

Petroleum Engineer

Office CARLSBAD

Date 02/04/2025

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: 2590' FNL & 990' FWL OF SECTION 34-T24S-R31E 2592' FNL & 982' FWL OF SECTION 34-T24S-R31E

The proposed total depth is changing from 24027 MD; 10855 TVD (3rd Bone Spring Shale) to 22517 MD; 8911 TVD (Avalon).

There is a Pool Code change from 96403/Wildcat; Bone Spring to 96546/ Cotton Draw; Bone Spring, South

A saturated salt brine will be utilized while drilling through the salt formations.

### Location of Well

0. SHL: NWNW / 490 FNL / 520 FWL / TWSP: 24S / RANGE: 31E / SECTION: 22 / LAT: 32.208748 / LONG: -103.77255 ( TVD: 0 feet, MD: 0 feet )

PPP: NWNW / 330 FNL / 990 FWL / TWSP: 24S / RANGE: 31E / SECTION: 22 / LAT: 32.209191 / LONG: -103.771031 ( TVD: 10833 feet, MD: 11300 feet )

PPP: NWNW / 330 FNL / 990 FWL / TWSP: 24S / RANGE: 31E / SECTION: 27 / LAT: 32.203215 / LONG: -103.770991 ( TVD: 10842 feet, MD: 16600 feet )

BHL: SWNW / 2590 FNL / 990 FWL / TWSP: 24S / RANGE: 31E / SECTION: 34 / LAT: 32.173943 / LONG: -103.770969 ( TVD: 10855 feet, MD: 24027 feet )

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	XTO
<b>LEASE NO.:</b>	NMNM0506A
<b>LOCATION:</b>	Sec. 22, T.24 S, R 31 E
<b>COUNTY:</b>	Eddy County, New Mexico ▼
<b>WELL NAME &amp; NO.:</b>	Poker Lake Unit 15 TWR 115H
<b>SURFACE HOLE FOOTAGE:</b>	510'/N & 520'/W
<b>BOTTOM HOLE FOOTAGE:</b>	2592'/N & 982'/W

*Changes approved through engineering via **Sundry 2823640** on 12-11-2024\_. Any previous COAs not addressed within the updated COAs still apply.*

COA

H <sub>2</sub> S	<input checked="" type="radio"/> No <span style="margin-left: 100px;"><input type="radio"/> Yes</span>			
<b>Potash / WIPP</b>	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-Q	<input type="checkbox"/> Open Annulus <input type="checkbox"/> WIPP
	Choose an option (including blank option.)			
<b>Cave / Karst</b>	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High	<input type="radio"/> Critical
<b>Wellhead</b>	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
<b>Cementing</b>	<input checked="" type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input checked="" type="checkbox"/> Echo Meter	<input type="checkbox"/> DV Tool
<b>Special Req</b>	<input 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 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.

### B. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **775** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with

- surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is: Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.
- a. **First stage:** Operator will cement with intent to reach the top of the **Brushy Canyon at 7001'**
  - b. **Second stage:** Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

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

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

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

## C. PRESSURE CONTROL

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

## D. SPECIAL REQUIREMENT (S)

### 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 12/11/2024**  
575-234-5998 / [zstevens@blm.gov](mailto:zstevens@blm.gov)

C-102  Submit 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- 54169</b>	Pool Code <b>96546</b>	Pool Name <b>COTTON DRAW; BONE SPRING, SOUTH</b>
Property Code	Property Name <b>POKER LAKE UNIT 15 TWR</b>	Well Number <b>115H</b>
OGRID No. <b>373075</b>	Operator Name <b>XTO PERMIAN OPERATING, LLC.</b>	Ground Level Elevation <b>3,522'</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
<b>D</b>	<b>22</b>	<b>24S</b>	<b>31E</b>		<b>510 FNL</b>	<b>520 FWL</b>	<b>32.208693</b>	<b>-103.772550</b>	<b>EDDY</b>

## Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
<b>E</b>	<b>34</b>	<b>24S</b>	<b>31E</b>		<b>2,592 FNL</b>	<b>982 FWL</b>	<b>32.173938</b>	<b>-103.770994</b>	<b>EDDY</b>

Dedicated Acres <b>800.00</b>	Infill or Defining Well <b>INFILL</b>	Defining Well API <b>30-015-54173</b>	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
<b>M</b>	<b>15</b>	<b>24S</b>	<b>31E</b>		<b>616 FSL</b>	<b>984 FWL</b>	<b>32.211792</b>	<b>-103.771050</b>	<b>EDDY</b>

## First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
<b>D</b>	<b>22</b>	<b>24S</b>	<b>31E</b>		<b>100 FNL</b>	<b>985 FWL</b>	<b>32.209823</b>	<b>-103.771047</b>	<b>EDDY</b>

## Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
<b>E</b>	<b>34</b>	<b>24S</b>	<b>31E</b>		<b>2,542 FNL</b>	<b>982 FWL</b>	<b>32.174076</b>	<b>-103.770994</b>	<b>EDDY</b>

Unitized Area of Area of Interest <b>NMNM105422429</b>	Spacing Unit Type: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Elevation <b>3,522'</b>
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## OPERATOR CERTIFICATIONS

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.

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.

Samantha Weis 11/15/2024  
Signature Date

Samantha Weis  
Printed Name

samantha.r.bartnik@exxonmobil.com  
Email Address

## SURVEYOR CERTIFICATIONS

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

[Signature]  
Signature and Seal of Professional Surveyor



MARK DILLON HARP 23786 10/31/2024  
Certificate Number Date of Survey

DN

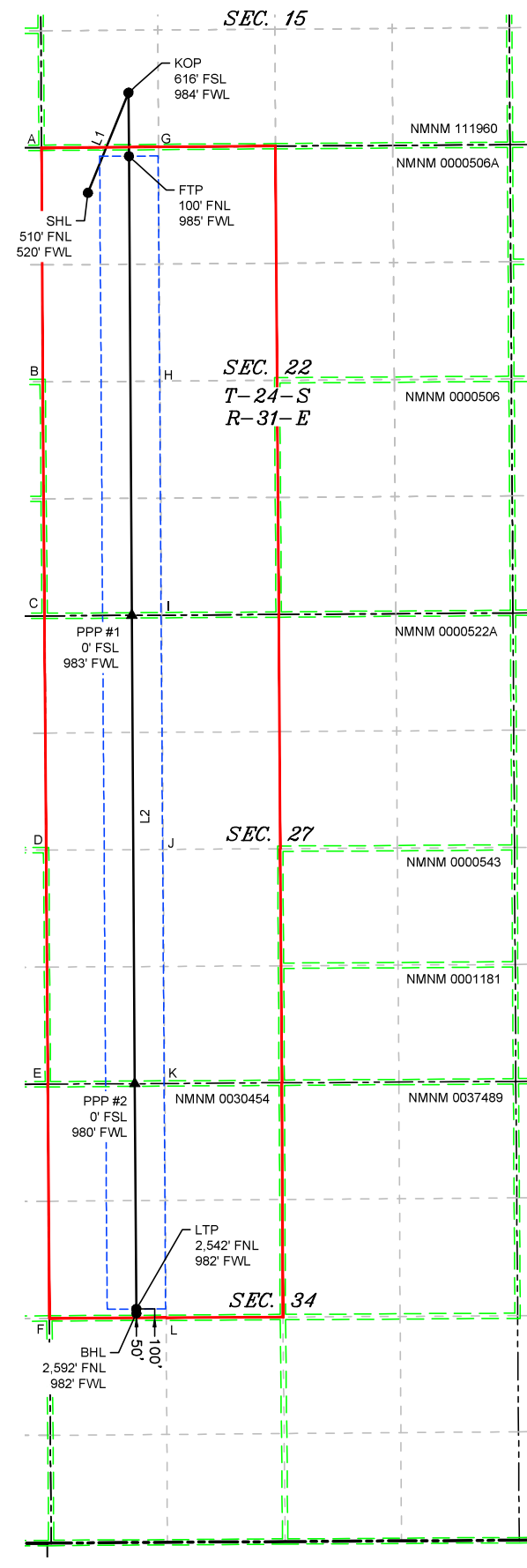
618,013003,14-18

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 than 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 is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



LEGEND

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

LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	022°04'11"	1,218.89'
L2	179°37'40"	13,770.79'

COORDINATE TABLE			
SHL (NAD 83 NME)		SHL (NAD 27 NME)	
Y =	440,109.2 N	Y =	440,050.4 N
X =	714,780.0 E	X =	673,596.0 E
LAT. =	32.208693 °N	LAT. =	32.208570 °N
LONG. =	103.772550 °W	LONG. =	103.772066 °W
KOP (NAD 83 NME)		KOP (NAD 27 NME)	
Y =	441,238.8 N	Y =	441,179.9 N
X =	715,238.0 E	X =	674,054.0 E
LAT. =	32.211792 °N	LAT. =	32.211668 °N
LONG. =	103.771050 °W	LONG. =	103.770567 °W
FTP (NAD 83 NME)		FTP (NAD 27 NME)	
Y =	440,522.7 N	Y =	440,463.8 N
X =	715,242.6 E	X =	674,058.6 E
LAT. =	32.209823 °N	LAT. =	32.209700 °N
LONG. =	103.771047 °W	LONG. =	103.770564 °W
PPP #1 (NAD 83 NME)		PPP #1 (NAD 27 NME)	
Y =	435,342.1 N	Y =	435,283.4 N
X =	715,274.7 E	X =	674,090.5 E
LAT. =	32.195583 °N	LAT. =	32.195459 °N
LONG. =	103.771031 °W	LONG. =	103.770548 °W
PPP #2 (NAD 83 NME)		PPP #2 (NAD 27 NME)	
Y =	430,060.2 N	Y =	430,001.7 N
X =	715,307.9 E	X =	674,123.5 E
LAT. =	32.181063 °N	LAT. =	32.180939 °N
LONG. =	103.771013 °W	LONG. =	103.770531 °W
LTP (NAD 83 NME)		LTP (NAD 27 NME)	
Y =	427,518.3 N	Y =	427,459.8 N
X =	715,327.0 E	X =	674,142.5 E
LAT. =	32.174076 °N	LAT. =	32.173952 °N
LONG. =	103.770994 °W	LONG. =	103.770512 °W
BHL (NAD 83 NME)		BHL (NAD 27 NME)	
Y =	427,468.3 N	Y =	427,409.8 N
X =	715,327.4 E	X =	674,142.9 E
LAT. =	32.173938 °N	LAT. =	32.173814 °N
LONG. =	103.770994 °W	LONG. =	103.770512 °W
CORNER COORDINATES (NAD 83 NME)			
A - Y =	440,615.7 N	A - X =	714,257.0 E
B - Y =	437,975.6 N	B - X =	714,270.8 E
C - Y =	435,336.0 N	C - X =	714,291.7 E
D - Y =	432,694.6 N	D - X =	714,308.9 E
E - Y =	430,053.9 N	E - X =	714,327.6 E
F - Y =	427,412.5 N	F - X =	714,345.3 E
G - Y =	440,625.1 N	G - X =	715,576.6 E
H - Y =	437,984.2 N	H - X =	715,592.6 E
I - Y =	435,344.2 N	I - X =	715,612.1 E
J - Y =	432,702.2 N	J - X =	715,629.4 E
K - Y =	430,062.2 N	K - X =	715,647.5 E
L - Y =	427,420.1 N	L - X =	715,662.6 E
CORNER COORDINATES (NAD 27 NME)			
A - Y =	440,556.9 N	A - X =	673,073.0 E
B - Y =	437,916.8 N	B - X =	673,086.7 E
C - Y =	435,277.3 N	C - X =	673,107.5 E
D - Y =	432,636.0 N	D - X =	673,124.6 E
E - Y =	429,995.3 N	E - X =	673,143.2 E
F - Y =	427,353.9 N	F - X =	673,160.8 E
G - Y =	440,566.2 N	G - X =	674,392.6 E
H - Y =	437,925.4 N	H - X =	674,408.5 E
I - Y =	435,285.5 N	I - X =	674,427.9 E
J - Y =	432,643.5 N	J - X =	674,445.1 E
K - Y =	430,003.6 N	K - X =	674,463.1 E
L - Y =	427,361.6 N	L - X =	674,478.1 E



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

XTO Energy Inc.  
POKER LAKE UNIT 15 TWR 115H  
Projected TD: 22516.67' MD / 8911' TVD  
SHL: 510' FNL & 520' FWL , Section 22, T24S, R31E  
BHL: 2592' FNL & 982' FWL , Section 34, T24S, 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	649'	Water
Top of Salt	974'	Water
Base of Salt	4211'	Water
Delaware	4434'	Water
Brushy Canyon	7001'	Water/Oil/Gas
Bone Spring	8274'	Water
Avalon	8411'	Water/Oil/Gas
<b>Target/Land Curve</b>	<b>8911'</b>	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 9.625 inch casing @ 749' (225' above the salt) and circulating cement back to surface. The intermediate will isolate from the top of salt down to the next casing seat by setting 7.625 inch casing at 8137.23' and cemented to surface. A 6.75 inch curve and 6.75 inch lateral hole will be drilled to 22516.67 MD/TD and 5.5 inch production casing will be set at TD and cemented back up in the intermediate shoe (estimated TOC 7837.23 feet).

**3. Casing Design**

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
12.25	0' – 749'	9.625	40	J-55	BTC	New	1.62	8.41	21.03
8.75	0' – 4000'	7.625	29.7	RY P-110	Flush Joint	New	4.28	2.57	2.31
8.75	4000' – 8137.23'	7.625	29.7	HC L-80	Flush Joint	New	3.11	2.34	3.30
6.75	0' – 8037.23'	5.5	20	RY P-110	Semi-Premium / Freedom	New	1.26	2.95	2.28
6.75	8037.23' - 22516.67'	5.5	20	RY P-110	Semi-Flush / Talon	New	1.26	2.66	2.28

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

**Wellhead:**

Operator will utilize Multi-Bowl System - See Attached

#### 4. Cement Program

##### **Surface Casing: 9.625, 40 New BTC, J-55 casing to be set at +/- 749'**

Lead: 150 sxs EconoCem-HLTRRC (mixed at 10.5 ppg, 1.87 ft<sup>3</sup>/sx, 10.13 gal/sx water)

Tail: 130 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sx, 6.39 gal/sx water)

Top of Cement: Surface

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

##### **Intermediate Casing: 7.625, 29.7 New casing to be set at +/- 8137.23'**

###### 1st Stage

Optional Lead: 380 sxs Class C (mixed at 10.5 ppg, 2.77 ft<sup>3</sup>/sx, 15.59 gal/sx water)

TOC: Surface

Tail: 100 sxs Class C (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sx, 6.39 gal/sx water)

TOC: Brushy Canyon @ 7001

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

###### 2nd Stage

Lead: 0 sxs Class C (mixed at 12.9 ppg, 2.16 ft<sup>3</sup>/sx, 9.61 gal/sx water)

Tail: 790 sxs Class C (mixed at 14.8 ppg, 1.33 ft<sup>3</sup>/sx, 6.39 gal/sx water)

Top of Cement: 0

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

XTO requests to pump a two stage cement job on the 7-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brush Canyon (7001') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If cement is not visually confirmed to circulate to surface, the final cement top after the second stage job will be verified by Echo-meter. If necessary, a top out consisting of 1,500 sack of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. If cement is still unable to circulate to surface, another Echo-meter run will be performed for cement top verification.

XTO will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

XTO requests to pump an Optional Lead if well conditions dictate in an attempt to bring cement inside the first intermediate casing. If cement reaches the desired height, the BLM will be notified and the second stage bradenhead squeeze and subsequent TOC verification will be negated.

XTO requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure the first stage cement job is cemented properly and the well is static with floats holding and 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 per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

##### **Production Casing: 5.5, 20 New Semi-Flush / Talon, RY P-110 casing to be set at +/- 22516.67'**

Lead: 20 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft<sup>3</sup>/sx, 15.00 gal/sx water) Top of Cement: 7837.23 feet

Tail: 1010 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft<sup>3</sup>/sx, 8.38 gal/sx water) Top of Cement: 8337.23 feet

Compressives: 12-hr = 800 psi 24 hr = 1500 psi

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.

## 5. Pressure Control Equipment

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

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

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

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

hole on each of the wells.

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. 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. 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. When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.

## 6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)	Additional Comments
0' - 749'	12.25	FW/Native	8.4-8.9	35-40	NC	Fresh water or native water
749' - 4434'	8.75	Saturated brine	10.0-10.5	30-32	NC	Fully saturated salt across salado / salt
4434' - 8137.23'	8.75	Brine or Direct Emulsion	10-10.5	30-32	NC	Depending on well conditions
8137.23' - 22516.67'	6.75	OBM	9-9.5	50-60	NC - 20	N/A

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

Spud with fresh water/native mud. Drill out from under surface casing with Saturated Salt. A saturated salt brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

## 7. Auxiliary Well Control and Monitoring Equipment

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

## 8. Logging, Coring and Testing Program

Open hole logging will not be done on this well.

## 9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 155 to 175 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

## 10. Anticipated Starting Date and Duration of Operations

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

Well Plan Report - PLU 15 Twin Wells Ranch-115H

Measured Depth: 22516.67 ft  
TVD RKB: 8911.00 ft  
Location  
Cartographic Reference System: New Mexico East - NAD 27  
Northing: 440050.40 ft  
Easting: 673596.00 ft  
RKB: 3554.00 ft  
Ground Level: 3522.00 ft  
North Reference: Grid  
Convergence Angle: 0.30 Deg

Site: Pad 1  
Slot: PLU 15 Twin Wells Ranch-115H

Plan Sections PLU 15 Twin Wells Ranch-115H

Measured	Depth (ft)	Inclination (Deg)	Azimuth (Deg)	RKB (ft)	TVD	Y Offset (ft)	X Offset (ft)	Build		Turn		Dogleg	
								Rate (Deg/100ft)	Rate (Deg/100ft)	Rate (Deg/100ft)	Rate (Deg/100ft)	Rate (Deg/100ft)	Target
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1100.00	0.00	0.00	1100.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1798.76	13.98	22.07	1791.85	1791.85	78.58	31.86	2.00	0.00	0.00	0.00	2.00	2.00
	6143.66	13.98	22.07	6008.15	6008.15	1051.00	426.12	0.00	0.00	0.00	0.00	0.00	0.00
	6842.42	0.00	0.00	6700.00	6700.00	1129.58	457.98	-2.00	0.00	0.00	0.00	2.00	2.00
	8337.23	0.00	0.00	8194.80	8194.80	1129.58	457.98	0.00	0.00	0.00	0.00	0.00	0.00
	9462.23	90.00	179.63	8911.00	8911.00	413.40	462.60	8.00	0.00	0.00	0.00	8.00	FTP 11
	22466.50	90.00	179.63	8911.00	8911.00	-12590.60	546.50	0.00	0.00	0.00	0.00	0.00	LTP 11
	22516.67	90.00	179.63	8911.00	8911.00	-12640.77	546.82	0.00	0.00	0.00	0.00	0.00	BHL 11

Position Uncertainty PLU 15 Twin Wells Ranch-115H

Measured	TVD	Highside	Lateral	Vertical	Magnitude	Semi-major	Semi-minor	Tool
----------	-----	----------	---------	----------	-----------	------------	------------	------

Depth (ft)	Inclination (°)	Azimuth (°)	RKB (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	Error (ft)	of Bias (ft)	Error (ft)	Error (ft)	Azimuth (°)	Used
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	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.310	0.000	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.326	0.000	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.348	0.000	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.375	0.000	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.408	0.000	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.446	0.000	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.488	0.000	0.000	0.000	3.642	2.775	128.423	MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.696	0.000	3.502	0.000	2.534	0.000	0.000	0.000	4.014	3.133	128.602	MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	4.058	0.000	3.865	0.000	2.585	0.000	0.000	0.000	4.384	3.491	128.744	MWD+IFR1+MS
1100.000	0.000	0.000	1100.000	4.419	0.000	4.228	0.000	2.638	0.000	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1200.000	2.000	22.070	1199.980	5.222	0.000	4.303	0.000	2.695	0.000	0.000	0.000	5.303	4.205	128.463	MWD+IFR1+MS
1300.000	4.000	22.070	1299.838	5.983	0.000	4.685	0.000	2.756	0.000	0.000	0.000	6.088	4.560	127.511	MWD+IFR1+MS
1400.000	6.000	22.070	1399.452	6.670	0.000	5.062	0.000	2.822	0.000	0.000	0.000	6.800	4.914	127.047	MWD+IFR1+MS
1500.000	8.000	22.070	1498.702	7.302	0.000	5.436	0.000	2.895	0.000	0.000	0.000	7.458	5.269	126.769	MWD+IFR1+MS
1600.000	10.000	22.070	1597.465	7.891	0.000	5.809	0.000	2.978	0.000	0.000	0.000	8.076	5.624	126.586	MWD+IFR1+MS
1700.000	12.000	22.070	1695.623	8.444	0.000	6.180	0.000	3.073	0.000	0.000	0.000	8.660	5.981	126.461	MWD+IFR1+MS
1798.758	13.975	22.070	1791.850	8.955	0.000	6.547	0.000	3.178	0.000	0.000	0.000	9.204	6.336	126.375	MWD+IFR1+MS
1800.000	13.975	22.070	1793.055	8.959	0.000	6.552	0.000	3.173	0.000	0.000	0.000	9.209	6.341	126.360	MWD+IFR1+MS
1900.000	13.975	22.070	1890.095	9.226	0.000	6.907	0.000	3.254	0.000	0.000	0.000	9.465	6.708	126.350	MWD+IFR1+MS
2000.000	13.975	22.070	1987.135	9.516	0.000	7.285	0.000	3.342	0.000	0.000	0.000	9.750	7.087	126.637	MWD+IFR1+MS
2100.000	13.975	22.070	2084.175	9.814	0.000	7.664	0.000	3.433	0.000	0.000	0.000	10.041	7.468	126.921	MWD+IFR1+MS
2200.000	13.975	22.070	2181.215	10.118	0.000	8.045	0.000	3.527	0.000	0.000	0.000	10.338	7.851	127.201	MWD+IFR1+MS
2300.000	13.975	22.070	2278.255	10.429	0.000	8.427	0.000	3.625	0.000	0.000	0.000	10.641	8.234	127.479	MWD+IFR1+MS
2400.000	13.975	22.070	2375.296	10.746	0.000	8.810	0.000	3.725	0.000	0.000	0.000	10.950	8.619	127.754	MWD+IFR1+MS
2500.000	13.975	22.070	2472.336	11.068	0.000	9.194	0.000	3.828	0.000	0.000	0.000	11.263	9.004	128.027	MWD+IFR1+MS
2600.000	13.975	22.070	2569.376	11.394	0.000	9.579	0.000	3.933	0.000	0.000	0.000	11.581	9.390	128.297	MWD+IFR1+MS
2700.000	13.975	22.070	2666.416	11.725	0.000	9.965	0.000	4.040	0.000	0.000	0.000	11.903	9.776	128.566	MWD+IFR1+MS
2800.000	13.975	22.070	2763.456	12.060	0.000	10.351	0.000	4.150	0.000	0.000	0.000	12.228	10.164	128.833	MWD+IFR1+MS
2900.000	13.975	22.070	2860.496	12.399	0.000	10.738	0.000	4.262	0.000	0.000	0.000	12.557	10.551	129.098	MWD+IFR1+MS



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3000.000	13.975	22.070	2957.536	12.741	0.000	11.125	0.000	4.376	0.000	0.000	12.890	10.939	129.362	MWD+IFR1+MS
3100.000	13.975	22.070	3054.576	13.086	0.000	11.513	0.000	4.491	0.000	0.000	13.225	11.328	129.625	MWD+IFR1+MS
3200.000	13.975	22.070	3151.616	13.434	0.000	11.902	0.000	4.609	0.000	0.000	13.563	11.717	129.887	MWD+IFR1+MS
3300.000	13.975	22.070	3248.656	13.784	0.000	12.290	0.000	4.728	0.000	0.000	13.904	12.106	130.148	MWD+IFR1+MS
3400.000	13.975	22.070	3345.696	14.138	0.000	12.679	0.000	4.849	0.000	0.000	14.247	12.495	130.409	MWD+IFR1+MS
3500.000	13.975	22.070	3442.736	14.493	0.000	13.069	0.000	4.971	0.000	0.000	14.592	12.885	130.670	MWD+IFR1+MS
3600.000	13.975	22.070	3539.776	14.851	0.000	13.458	0.000	5.095	0.000	0.000	14.940	13.275	130.930	MWD+IFR1+MS
3700.000	13.975	22.070	3636.816	15.210	0.000	13.848	0.000	5.221	0.000	0.000	15.289	13.665	131.191	MWD+IFR1+MS
3800.000	13.975	22.070	3733.856	15.572	0.000	14.239	0.000	5.348	0.000	0.000	15.640	14.055	131.451	MWD+IFR1+MS
3900.000	13.975	22.070	3830.896	15.935	0.000	14.629	0.000	5.477	0.000	0.000	15.993	14.446	131.712	MWD+IFR1+MS
4000.000	13.975	22.070	3927.936	16.299	0.000	15.020	0.000	5.607	0.000	0.000	16.347	14.837	131.973	MWD+IFR1+MS
4100.000	13.975	22.070	4024.976	16.666	0.000	15.410	0.000	5.739	0.000	0.000	16.703	15.228	132.235	MWD+IFR1+MS
4200.000	13.975	22.070	4122.016	17.033	0.000	15.801	0.000	5.872	0.000	0.000	17.060	15.619	132.498	MWD+IFR1+MS
4300.000	13.975	22.070	4219.056	17.402	0.000	16.193	0.000	6.007	0.000	0.000	17.418	16.010	132.762	MWD+IFR1+MS
4400.000	13.975	22.070	4316.097	17.772	0.000	16.584	0.000	6.143	0.000	0.000	17.778	16.401	133.027	MWD+IFR1+MS
4500.000	13.975	22.070	4413.137	18.143	0.000	16.975	0.000	6.281	0.000	0.000	18.139	16.793	133.294	MWD+IFR1+MS
4600.000	13.975	22.070	4510.177	18.516	0.000	17.367	0.000	6.420	0.000	0.000	18.501	17.184	133.561	MWD+IFR1+MS
4700.000	13.975	22.070	4607.217	18.889	0.000	17.759	0.000	6.561	0.000	0.000	18.864	17.576	133.831	MWD+IFR1+MS
4800.000	13.975	22.070	4704.257	19.264	0.000	18.151	0.000	6.703	0.000	0.000	19.228	17.968	134.102	MWD+IFR1+MS
4900.000	13.975	22.070	4801.297	19.639	0.000	18.542	0.000	6.847	0.000	0.000	19.592	18.360	134.375	MWD+IFR1+MS
5000.000	13.975	22.070	4898.337	20.015	0.000	18.934	0.000	6.992	0.000	0.000	19.958	18.752	134.651	MWD+IFR1+MS
5100.000	13.975	22.070	4995.377	20.392	0.000	19.327	0.000	7.139	0.000	0.000	20.325	19.144	134.928	MWD+IFR1+MS
5200.000	13.975	22.070	5092.417	20.769	0.000	19.719	0.000	7.288	0.000	0.000	20.692	19.536	-44.792	MWD+IFR1+MS
5300.000	13.975	22.070	5189.457	21.148	0.000	20.111	0.000	7.438	0.000	0.000	21.060	19.928	-44.510	MWD+IFR1+MS
5400.000	13.975	22.070	5286.497	21.527	0.000	20.504	0.000	7.589	0.000	0.000	21.429	20.320	-44.225	MWD+IFR1+MS
5500.000	13.975	22.070	5383.537	21.907	0.000	20.896	0.000	7.743	0.000	0.000	21.799	20.713	-43.937	MWD+IFR1+MS
5600.000	13.975	22.070	5480.577	22.287	0.000	21.289	0.000	7.898	0.000	0.000	22.169	21.105	-43.646	MWD+IFR1+MS
5700.000	13.975	22.070	5577.617	22.668	0.000	21.681	0.000	8.054	0.000	0.000	22.539	21.497	-43.352	MWD+IFR1+MS
5800.000	13.975	22.070	5674.657	23.049	0.000	22.074	0.000	8.212	0.000	0.000	22.911	21.890	-43.054	MWD+IFR1+MS
5900.000	13.975	22.070	5771.697	23.431	0.000	22.467	0.000	8.372	0.000	0.000	23.283	22.282	-42.754	MWD+IFR1+MS
6000.000	13.975	22.070	5868.737	23.814	0.000	22.859	0.000	8.534	0.000	0.000	23.655	22.675	-42.449	MWD+IFR1+MS
6100.000	13.975	22.070	5965.777	24.197	0.000	23.252	0.000	8.698	0.000	0.000	24.028	23.067	-42.141	MWD+IFR1+MS
6143.665	13.975	22.070	6008.150	24.362	0.000	23.421	0.000	8.769	0.000	0.000	24.187	23.238	-42.106	MWD+IFR1+MS

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6200.000	12.848	22.070	6062.948	24.596	0.000	23.637	0.000	8.863	0.000	0.000	24.394	23.457	-42.116	MWD+IFR1+MS
6300.000	10.848	22.070	6160.812	25.045	0.000	24.018	0.000	9.032	0.000	0.000	24.815	23.841	-42.911	MWD+IFR1+MS
6400.000	8.848	22.070	6259.333	25.498	0.000	24.393	0.000	9.198	0.000	0.000	25.273	24.217	-44.077	MWD+IFR1+MS
6500.000	6.848	22.070	6358.392	25.912	0.000	24.759	0.000	9.355	0.000	0.000	25.723	24.584	134.907	MWD+IFR1+MS
6600.000	4.848	22.070	6457.866	26.286	0.000	25.115	0.000	9.505	0.000	0.000	26.165	24.941	134.027	MWD+IFR1+MS
6700.000	2.848	22.070	6557.635	26.620	0.000	25.462	0.000	9.648	0.000	0.000	26.597	25.287	133.270	MWD+IFR1+MS
6800.000	0.848	22.070	6657.578	26.915	0.000	25.800	0.000	9.787	0.000	0.000	27.020	25.624	132.623	MWD+IFR1+MS
6842.423	0.000	0.000	6700.000	26.532	0.000	26.410	0.000	9.845	0.000	0.000	27.160	25.764	132.486	MWD+IFR1+MS
6900.000	0.000	0.000	6757.577	26.719	0.000	26.592	0.000	9.923	0.000	0.000	27.340	25.953	132.371	MWD+IFR1+MS
7000.000	0.000	0.000	6857.577	27.043	0.000	26.911	0.000	10.060	0.000	0.000	27.656	26.281	132.257	MWD+IFR1+MS
7100.000	0.000	0.000	6957.577	27.370	0.000	27.235	0.000	10.201	0.000	0.000	27.978	26.610	132.155	MWD+IFR1+MS
7200.000	0.000	0.000	7057.577	27.699	0.000	27.559	0.000	10.344	0.000	0.000	28.301	26.940	132.054	MWD+IFR1+MS
7300.000	0.000	0.000	7157.577	28.028	0.000	27.884	0.000	10.491	0.000	0.000	28.624	27.271	131.955	MWD+IFR1+MS
7400.000	0.000	0.000	7257.577	28.357	0.000	28.210	0.000	10.640	0.000	0.000	28.949	27.602	131.857	MWD+IFR1+MS
7500.000	0.000	0.000	7357.577	28.688	0.000	28.536	0.000	10.792	0.000	0.000	29.274	27.934	131.760	MWD+IFR1+MS
7600.000	0.000	0.000	7457.577	29.019	0.000	28.864	0.000	10.947	0.000	0.000	29.600	28.267	131.664	MWD+IFR1+MS
7700.000	0.000	0.000	7557.577	29.350	0.000	29.192	0.000	11.104	0.000	0.000	29.927	28.600	131.570	MWD+IFR1+MS
7800.000	0.000	0.000	7657.577	29.683	0.000	29.521	0.000	11.265	0.000	0.000	30.255	28.934	131.477	MWD+IFR1+MS
7900.000	0.000	0.000	7757.577	30.016	0.000	29.850	0.000	11.429	0.000	0.000	30.583	29.268	131.385	MWD+IFR1+MS
8000.000	0.000	0.000	7857.577	30.349	0.000	30.180	0.000	11.596	0.000	0.000	30.912	29.603	131.294	MWD+IFR1+MS
8100.000	0.000	0.000	7957.577	30.683	0.000	30.511	0.000	11.766	0.000	0.000	31.242	29.939	131.204	MWD+IFR1+MS
8200.000	0.000	0.000	8057.577	31.018	0.000	30.843	0.000	11.939	0.000	0.000	31.572	30.275	131.116	MWD+IFR1+MS
8300.000	0.000	0.000	8157.577	31.353	0.000	31.175	0.000	12.115	0.000	0.000	31.903	30.612	131.028	MWD+IFR1+MS
8337.226	0.000	0.000	8194.803	31.476	0.000	31.296	0.000	12.181	0.000	0.000	32.023	30.737	130.985	MWD+IFR1+MS
8400.000	5.022	179.630	8257.496	31.252	0.000	31.499	-0.000	12.291	0.000	0.000	32.238	30.955	129.972	MWD+IFR1+MS
8500.000	13.022	179.630	8356.179	31.290	0.000	31.783	-0.000	12.522	0.000	0.000	33.144	31.446	115.760	MWD+IFR1+MS
8600.000	21.022	179.630	8451.721	31.295	0.000	32.043	-0.000	12.958	0.000	0.000	34.425	31.812	106.594	MWD+IFR1+MS
8700.000	29.022	179.630	8542.262	30.859	0.000	32.276	-0.000	13.672	0.000	0.000	35.569	32.081	102.946	MWD+IFR1+MS
8800.000	37.022	179.630	8626.040	30.070	0.000	32.481	-0.000	14.701	0.000	0.000	36.520	32.301	101.209	MWD+IFR1+MS
8900.000	45.022	179.630	8701.424	29.040	0.000	32.660	-0.000	16.035	0.000	0.000	37.265	32.483	100.344	MWD+IFR1+MS
9000.000	53.022	179.630	8766.948	27.911	0.000	32.813	-0.000	17.626	0.000	0.000	37.811	32.633	99.967	MWD+IFR1+MS
9100.000	61.022	179.630	8821.336	26.851	0.000	32.942	-0.000	19.408	0.000	0.000	38.177	32.756	99.904	MWD+IFR1+MS
9200.000	69.022	179.630	8863.529	26.049	0.000	33.049	-0.000	21.307	0.000	0.000	38.392	32.852	100.057	MWD+IFR1+MS

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9300.000	77.022	179.630	8892.706	25.685	0.000	33.134	-0.000	23.252	0.000	0.000	38.492	32.926	100.350	MWD+IFR1+MS
9400.000	85.022	179.630	8908.298	25.895	0.000	33.199	-0.000	25.180	0.000	0.000	38.523	32.978	100.702	MWD+IFR1+MS
9462.226	90.000	179.630	8911.000	25.735	0.000	33.224	-0.000	25.735	0.000	0.000	38.528	32.997	100.887	MWD+IFR1+MS
9500.000	90.000	179.630	8911.000	25.838	0.000	33.238	-0.000	25.838	0.000	0.000	38.532	33.006	100.996	MWD+IFR1+MS
9600.000	90.000	179.630	8911.000	26.062	0.000	33.297	-0.000	26.062	0.000	0.000	38.542	33.053	101.329	MWD+IFR1+MS
9700.000	90.000	179.630	8911.000	26.312	0.000	33.381	-0.000	26.312	0.000	0.000	38.554	33.125	101.717	MWD+IFR1+MS
9800.000	90.000	179.630	8911.000	26.582	0.000	33.489	-0.000	26.582	0.000	0.000	38.568	33.218	102.160	MWD+IFR1+MS
9900.000	90.000	179.630	8911.000	26.872	0.000	33.619	-0.000	26.872	0.000	0.000	38.584	33.332	102.666	MWD+IFR1+MS
10000.000	90.000	179.630	8911.000	27.183	0.000	33.772	-0.000	27.183	0.000	0.000	38.603	33.467	103.241	MWD+IFR1+MS
10100.000	90.000	179.630	8911.000	27.512	0.000	33.947	-0.000	27.512	0.000	0.000	38.624	33.622	103.898	MWD+IFR1+MS
10200.000	90.000	179.630	8911.000	27.859	0.000	34.143	-0.000	27.859	0.000	0.000	38.648	33.796	104.649	MWD+IFR1+MS
10300.000	90.000	179.630	8911.000	28.223	0.000	34.362	-0.000	28.223	0.000	0.000	38.676	33.989	105.509	MWD+IFR1+MS
10400.000	90.000	179.630	8911.000	28.605	0.000	34.601	-0.000	28.605	0.000	0.000	38.708	34.199	106.498	MWD+IFR1+MS
10500.000	90.000	179.630	8911.000	29.003	0.000	34.861	-0.000	29.003	0.000	0.000	38.745	34.425	107.640	MWD+IFR1+MS
10600.000	90.000	179.630	8911.000	29.416	0.000	35.141	-0.000	29.416	0.000	0.000	38.788	34.665	108.964	MWD+IFR1+MS
10700.000	90.000	179.630	8911.000	29.845	0.000	35.440	-0.000	29.845	0.000	0.000	38.838	34.919	110.505	MWD+IFR1+MS
10800.000	90.000	179.630	8911.000	30.287	0.000	35.759	-0.000	30.287	0.000	0.000	38.898	35.183	112.306	MWD+IFR1+MS
10900.000	90.000	179.630	8911.000	30.744	0.000	36.097	-0.000	30.744	0.000	0.000	38.969	35.454	114.414	MWD+IFR1+MS
11000.000	90.000	179.630	8911.000	31.213	0.000	36.452	-0.000	31.213	0.000	0.000	39.055	35.730	116.882	MWD+IFR1+MS
11100.000	90.000	179.630	8911.000	31.695	0.000	36.826	-0.000	31.695	0.000	0.000	39.159	36.006	119.757	MWD+IFR1+MS
11200.000	90.000	179.630	8911.000	32.188	0.000	37.216	-0.000	32.188	0.000	0.000	39.286	36.277	123.068	MWD+IFR1+MS
11300.000	90.000	179.630	8911.000	32.694	0.000	37.623	-0.000	32.694	0.000	0.000	39.440	36.537	126.810	MWD+IFR1+MS
11400.000	90.000	179.630	8911.000	33.210	0.000	38.046	-0.000	33.210	0.000	0.000	39.627	36.781	130.915	MWD+IFR1+MS
11500.000	90.000	179.630	8911.000	33.736	0.000	38.485	-0.000	33.736	0.000	0.000	39.853	37.002	-44.753	MWD+IFR1+MS
11600.000	90.000	179.630	8911.000	34.272	0.000	38.938	-0.000	34.272	0.000	0.000	40.119	37.199	-40.385	MWD+IFR1+MS
11700.000	90.000	179.630	8911.000	34.818	0.000	39.406	-0.000	34.818	0.000	0.000	40.426	37.370	-36.183	MWD+IFR1+MS
11800.000	90.000	179.630	8911.000	35.372	0.000	39.888	-0.000	35.372	0.000	0.000	40.773	37.515	-32.303	MWD+IFR1+MS
11900.000	90.000	179.630	8911.000	35.936	0.000	40.383	-0.000	35.936	0.000	0.000	41.156	37.638	-28.836	MWD+IFR1+MS
12000.000	90.000	179.630	8911.000	36.507	0.000	40.892	-0.000	36.507	0.000	0.000	41.571	37.742	-25.806	MWD+IFR1+MS
12100.000	90.000	179.630	8911.000	37.086	0.000	41.413	-0.000	37.086	0.000	0.000	42.015	37.831	-23.193	MWD+IFR1+MS
12200.000	90.000	179.630	8911.000	37.673	0.000	41.945	-0.000	37.673	0.000	0.000	42.484	37.907	-20.953	MWD+IFR1+MS
12300.000	90.000	179.630	8911.000	38.267	0.000	42.490	-0.000	38.267	0.000	0.000	42.975	37.973	-19.035	MWD+IFR1+MS
12400.000	90.000	179.630	8911.000	38.867	0.000	43.045	-0.000	38.867	0.000	0.000	43.486	38.032	-17.388	MWD+IFR1+MS

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12500.000	90.000	179.630	8911.000	39.474	0.000	43.612	-0.000	39.474	0.000	44.013	38.084	-15.969	MWD+IFR1+MS
12600.000	90.000	179.630	8911.000	40.088	0.000	44.188	-0.000	40.088	0.000	44.557	38.132	-14.739	MWD+IFR1+MS
12700.000	90.000	179.630	8911.000	40.707	0.000	44.775	-0.000	40.707	0.000	45.115	38.175	-13.667	MWD+IFR1+MS
12800.000	90.000	179.630	8911.000	41.331	0.000	45.371	-0.000	41.331	0.000	45.686	38.215	-12.728	MWD+IFR1+MS
12900.000	90.000	179.630	8911.000	41.962	0.000	45.976	-0.000	41.962	0.000	46.269	38.253	-11.900	MWD+IFR1+MS
13000.000	90.000	179.630	8911.000	42.597	0.000	46.590	-0.000	42.597	0.000	46.864	38.289	-11.166	MWD+IFR1+MS
13100.000	90.000	179.630	8911.000	43.237	0.000	47.212	-0.000	43.237	0.000	47.469	38.323	-10.512	MWD+IFR1+MS
13200.000	90.000	179.630	8911.000	43.882	0.000	47.843	-0.000	43.882	0.000	48.084	38.356	-9.926	MWD+IFR1+MS
13300.000	90.000	179.630	8911.000	44.531	0.000	48.481	-0.000	44.531	0.000	48.709	38.388	-9.399	MWD+IFR1+MS
13400.000	90.000	179.630	8911.000	45.185	0.000	49.127	-0.000	45.185	0.000	49.342	38.419	-8.923	MWD+IFR1+MS
13500.000	90.000	179.630	8911.000	45.842	0.000	49.780	-0.000	45.842	0.000	49.984	38.449	-8.490	MWD+IFR1+MS
13600.000	90.000	179.630	8911.000	46.504	0.000	50.440	-0.000	46.504	0.000	50.633	38.479	-8.096	MWD+IFR1+MS
13700.000	90.000	179.630	8911.000	47.170	0.000	51.106	-0.000	47.170	0.000	51.290	38.509	-7.736	MWD+IFR1+MS
13800.000	90.000	179.630	8911.000	47.839	0.000	51.779	-0.000	47.839	0.000	51.955	38.538	-7.406	MWD+IFR1+MS
13900.000	90.000	179.630	8911.000	48.511	0.000	52.458	-0.000	48.511	0.000	52.626	38.567	-7.102	MWD+IFR1+MS
14000.000	90.000	179.630	8911.000	49.187	0.000	53.143	-0.000	49.187	0.000	53.303	38.596	-6.822	MWD+IFR1+MS
14100.000	90.000	179.630	8911.000	49.866	0.000	53.834	-0.000	49.866	0.000	53.987	38.625	-6.562	MWD+IFR1+MS
14200.000	90.000	179.630	8911.000	50.548	0.000	54.530	-0.000	50.548	0.000	54.677	38.653	-6.321	MWD+IFR1+MS
14300.000	90.000	179.630	8911.000	51.233	0.000	55.231	-0.000	51.233	0.000	55.373	38.682	-6.097	MWD+IFR1+MS
14400.000	90.000	179.630	8911.000	51.921	0.000	55.938	-0.000	51.921	0.000	56.074	38.711	-5.889	MWD+IFR1+MS
14500.000	90.000	179.630	8911.000	52.612	0.000	56.649	-0.000	52.612	0.000	56.780	38.740	-5.694	MWD+IFR1+MS
14600.000	90.000	179.630	8911.000	53.305	0.000	57.365	-0.000	53.305	0.000	57.491	38.770	-5.511	MWD+IFR1+MS
14700.000	90.000	179.630	8911.000	54.001	0.000	58.086	-0.000	54.001	0.000	58.208	38.799	-5.340	MWD+IFR1+MS
14800.000	90.000	179.630	8911.000	54.699	0.000	58.811	-0.000	54.699	0.000	58.928	38.829	-5.180	MWD+IFR1+MS
14900.000	90.000	179.630	8911.000	55.399	0.000	59.540	-0.000	55.399	0.000	59.654	38.859	-5.028	MWD+IFR1+MS
15000.000	90.000	179.630	8911.000	56.102	0.000	60.273	-0.000	56.102	0.000	60.383	38.889	-4.886	MWD+IFR1+MS
15100.000	90.000	179.630	8911.000	56.807	0.000	61.011	-0.000	56.807	0.000	61.117	38.919	-4.751	MWD+IFR1+MS
15200.000	90.000	179.630	8911.000	57.514	0.000	61.751	-0.000	57.514	0.000	61.854	38.950	-4.624	MWD+IFR1+MS
15300.000	90.000	179.630	8911.000	58.223	0.000	62.496	-0.000	58.223	0.000	62.596	38.981	-4.503	MWD+IFR1+MS
15400.000	90.000	179.630	8911.000	58.933	0.000	63.244	-0.000	58.933	0.000	63.341	39.012	-4.389	MWD+IFR1+MS
15500.000	90.000	179.630	8911.000	59.646	0.000	63.995	-0.000	59.646	0.000	64.089	39.044	-4.281	MWD+IFR1+MS
15600.000	90.000	179.630	8911.000	60.361	0.000	64.750	-0.000	60.361	0.000	64.841	39.076	-4.178	MWD+IFR1+MS
15700.000	90.000	179.630	8911.000	61.077	0.000	65.508	-0.000	61.077	0.000	65.596	39.108	-4.080	MWD+IFR1+MS

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15800.000	90.000	179.630	8911.000	61.795	0.000	66.269	-0.000	61.795	0.000	66.355	39.141	-3.986	MWD+IFR1+MS
15900.000	90.000	179.630	8911.000	62.514	0.000	67.032	-0.000	62.514	0.000	67.116	39.174	-3.897	MWD+IFR1+MS
16000.000	90.000	179.630	8911.000	63.235	0.000	67.799	-0.000	63.235	0.000	67.881	39.207	-3.812	MWD+IFR1+MS
16100.000	90.000	179.630	8911.000	63.958	0.000	68.568	-0.000	63.958	0.000	68.648	39.241	-3.731	MWD+IFR1+MS
16200.000	90.000	179.630	8911.000	64.682	0.000	69.340	-0.000	64.682	0.000	69.418	39.275	-3.653	MWD+IFR1+MS
16300.000	90.000	179.630	8911.000	65.407	0.000	70.115	-0.000	65.407	0.000	70.190	39.309	-3.579	MWD+IFR1+MS
16400.000	90.000	179.630	8911.000	66.134	0.000	70.892	-0.000	66.134	0.000	70.965	39.344	-3.508	MWD+IFR1+MS
16500.000	90.000	179.630	8911.000	66.862	0.000	71.671	-0.000	66.862	0.000	71.743	39.379	-3.440	MWD+IFR1+MS
16600.000	90.000	179.630	8911.000	67.591	0.000	72.453	-0.000	67.591	0.000	72.523	39.415	-3.374	MWD+IFR1+MS
16700.000	90.000	179.630	8911.000	68.322	0.000	73.237	-0.000	68.322	0.000	73.306	39.451	-3.311	MWD+IFR1+MS
16800.000	90.000	179.630	8911.000	69.053	0.000	74.023	-0.000	69.053	0.000	74.090	39.487	-3.251	MWD+IFR1+MS
16900.000	90.000	179.630	8911.000	69.786	0.000	74.811	-0.000	69.786	0.000	74.877	39.524	-3.193	MWD+IFR1+MS
17000.000	90.000	179.630	8911.000	70.520	0.000	75.602	-0.000	70.520	0.000	75.666	39.561	-3.137	MWD+IFR1+MS
17100.000	90.000	179.630	8911.000	71.255	0.000	76.394	-0.000	71.255	0.000	76.457	39.599	-3.083	MWD+IFR1+MS
17200.000	90.000	179.630	8911.000	71.991	0.000	77.188	-0.000	71.991	0.000	77.249	39.637	-3.031	MWD+IFR1+MS
17300.000	90.000	179.630	8911.000	72.729	0.000	77.984	-0.000	72.729	0.000	78.044	39.675	-2.981	MWD+IFR1+MS
17400.000	90.000	179.630	8911.000	73.467	0.000	78.782	-0.000	73.467	0.000	78.841	39.714	-2.933	MWD+IFR1+MS
17500.000	90.000	179.630	8911.000	74.206	0.000	79.582	-0.000	74.206	0.000	79.639	39.753	-2.886	MWD+IFR1+MS
17600.000	90.000	179.630	8911.000	74.946	0.000	80.383	-0.000	74.946	0.000	80.439	39.793	-2.841	MWD+IFR1+MS
17700.000	90.000	179.630	8911.000	75.687	0.000	81.186	-0.000	75.687	0.000	81.241	39.833	-2.798	MWD+IFR1+MS
17800.000	90.000	179.630	8911.000	76.429	0.000	81.990	-0.000	76.429	0.000	82.045	39.873	-2.756	MWD+IFR1+MS
17900.000	90.000	179.630	8911.000	77.171	0.000	82.796	-0.000	77.171	0.000	82.850	39.914	-2.715	MWD+IFR1+MS
18000.000	90.000	179.630	8911.000	77.915	0.000	83.604	-0.000	77.915	0.000	83.656	39.956	-2.676	MWD+IFR1+MS
18100.000	90.000	179.630	8911.000	78.659	0.000	84.413	-0.000	78.659	0.000	84.464	39.997	-2.638	MWD+IFR1+MS
18200.000	90.000	179.630	8911.000	79.404	0.000	85.224	-0.000	79.404	0.000	85.274	40.039	-2.601	MWD+IFR1+MS
18300.000	90.000	179.630	8911.000	80.150	0.000	86.035	-0.000	80.150	0.000	86.085	40.082	-2.565	MWD+IFR1+MS
18400.000	90.000	179.630	8911.000	80.896	0.000	86.849	-0.000	80.896	0.000	86.897	40.125	-2.530	MWD+IFR1+MS
18500.000	90.000	179.630	8911.000	81.644	0.000	87.663	-0.000	81.644	0.000	87.711	40.168	-2.496	MWD+IFR1+MS
18600.000	90.000	179.630	8911.000	82.392	0.000	88.479	-0.000	82.392	0.000	88.526	40.211	-2.464	MWD+IFR1+MS
18700.000	90.000	179.630	8911.000	83.140	0.000	89.296	-0.000	83.140	0.000	89.342	40.256	-2.432	MWD+IFR1+MS
18800.000	90.000	179.630	8911.000	83.890	0.000	90.114	-0.000	83.890	0.000	90.159	40.300	-2.401	MWD+IFR1+MS
18900.000	90.000	179.630	8911.000	84.640	0.000	90.933	-0.000	84.640	0.000	90.978	40.345	-2.371	MWD+IFR1+MS
19000.000	90.000	179.630	8911.000	85.390	0.000	91.754	-0.000	85.390	0.000	91.798	40.390	-2.342	MWD+IFR1+MS

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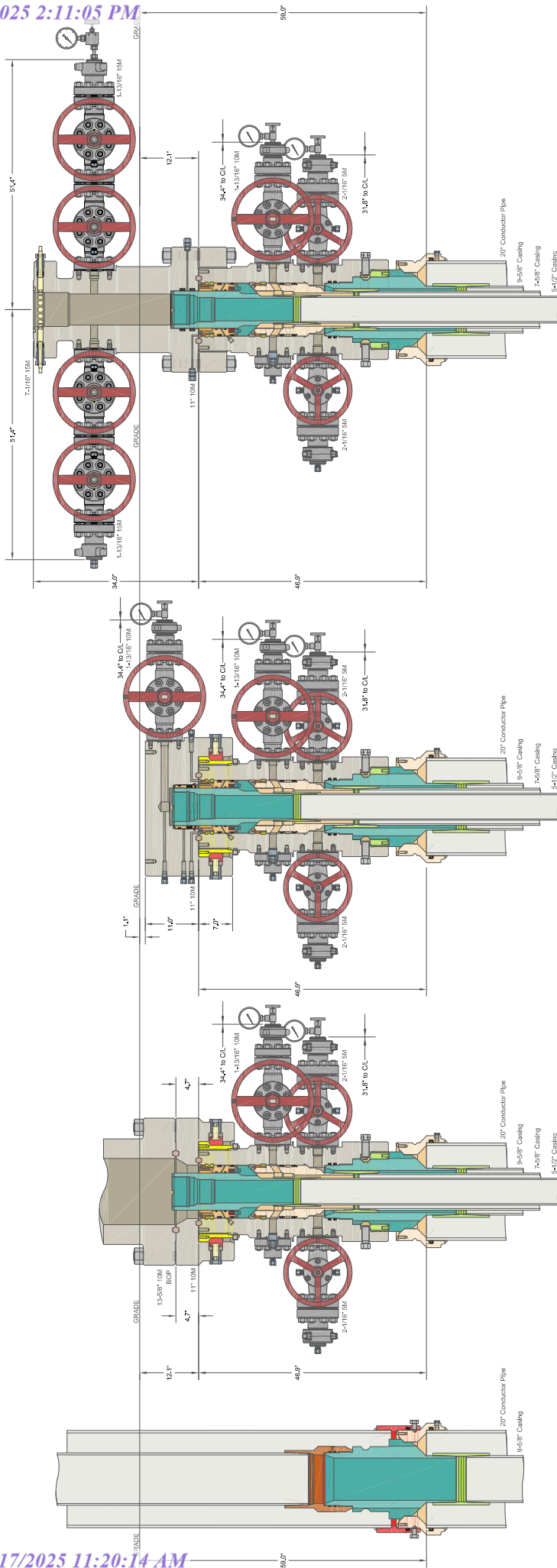
19100.000	90.000	179.630	8911.000	86.141	0.000	92.575	-0.000	86.141	0.000	92.619	40.436	-2.314	MWD+IFR1+MS
19200.000	90.000	179.630	8911.000	86.893	0.000	93.398	-0.000	86.893	0.000	93.441	40.482	-2.286	MWD+IFR1+MS
19300.000	90.000	179.630	8911.000	87.645	0.000	94.222	-0.000	87.645	0.000	94.264	40.529	-2.259	MWD+IFR1+MS
19400.000	90.000	179.630	8911.000	88.398	0.000	95.047	-0.000	88.398	0.000	95.088	40.575	-2.233	MWD+IFR1+MS
19500.000	90.000	179.630	8911.000	89.152	0.000	95.872	-0.000	89.152	0.000	95.913	40.623	-2.208	MWD+IFR1+MS
19600.000	90.000	179.630	8911.000	89.906	0.000	96.699	-0.000	89.906	0.000	96.739	40.670	-2.183	MWD+IFR1+MS
19700.000	90.000	179.630	8911.000	90.660	0.000	97.527	-0.000	90.660	0.000	97.566	40.719	-2.159	MWD+IFR1+MS
19800.000	90.000	179.630	8911.000	91.415	0.000	98.355	-0.000	91.415	0.000	98.394	40.767	-2.136	MWD+IFR1+MS
19900.000	90.000	179.630	8911.000	92.171	0.000	99.185	-0.000	92.171	0.000	99.223	40.816	-2.113	MWD+IFR1+MS
20000.000	90.000	179.630	8911.000	92.927	0.000	100.015	-0.000	92.927	0.000	100.053	40.865	-2.090	MWD+IFR1+MS
20100.000	90.000	179.630	8911.000	93.683	0.000	100.846	-0.000	93.683	0.000	100.883	40.915	-2.068	MWD+IFR1+MS
20200.000	90.000	179.630	8911.000	94.440	0.000	101.678	-0.000	94.440	0.000	101.715	40.965	-2.047	MWD+IFR1+MS
20300.000	90.000	179.630	8911.000	95.198	0.000	102.511	-0.000	95.198	0.000	102.547	41.016	-2.026	MWD+IFR1+MS
20400.000	90.000	179.630	8911.000	95.956	0.000	103.345	-0.000	95.956	0.000	103.380	41.066	-2.006	MWD+IFR1+MS
20500.000	90.000	179.630	8911.000	96.714	0.000	104.179	-0.000	96.714	0.000	104.214	41.118	-1.986	MWD+IFR1+MS
20600.000	90.000	179.630	8911.000	97.473	0.000	105.014	-0.000	97.473	0.000	105.049	41.169	-1.967	MWD+IFR1+MS
20700.000	90.000	179.630	8911.000	98.232	0.000	105.850	-0.000	98.232	0.000	105.884	41.221	-1.948	MWD+IFR1+MS
20800.000	90.000	179.630	8911.000	98.991	0.000	106.687	-0.000	98.991	0.000	106.721	41.274	-1.930	MWD+IFR1+MS
20900.000	90.000	179.630	8911.000	99.751	0.000	107.524	-0.000	99.751	0.000	107.557	41.327	-1.911	MWD+IFR1+MS
21000.000	90.000	179.630	8911.000	100.511	0.000	108.362	-0.000	100.511	0.000	108.395	41.380	-1.894	MWD+IFR1+MS
21100.000	90.000	179.630	8911.000	101.272	0.000	109.201	-0.000	101.272	0.000	109.233	41.434	-1.877	MWD+IFR1+MS
21200.000	90.000	179.630	8911.000	102.033	0.000	110.040	-0.000	102.033	0.000	110.072	41.488	-1.860	MWD+IFR1+MS
21300.000	90.000	179.630	8911.000	102.795	0.000	110.880	-0.000	102.795	0.000	110.912	41.542	-1.843	MWD+IFR1+MS
21400.000	90.000	179.630	8911.000	103.556	0.000	111.721	-0.000	103.556	0.000	111.752	41.597	-1.827	MWD+IFR1+MS
21500.000	90.000	179.630	8911.000	104.318	0.000	112.562	-0.000	104.318	0.000	112.593	41.652	-1.811	MWD+IFR1+MS
21600.000	90.000	179.630	8911.000	105.081	0.000	113.404	-0.000	105.081	0.000	113.434	41.707	-1.796	MWD+IFR1+MS
21700.000	90.000	179.630	8911.000	105.843	0.000	114.246	-0.000	105.843	0.000	114.276	41.763	-1.780	MWD+IFR1+MS
21800.000	90.000	179.630	8911.000	106.607	0.000	115.089	-0.000	106.607	0.000	115.119	41.820	-1.765	MWD+IFR1+MS
21900.000	90.000	179.630	8911.000	107.370	0.000	115.933	-0.000	107.370	0.000	115.962	41.876	-1.751	MWD+IFR1+MS
22000.000	90.000	179.630	8911.000	108.134	0.000	116.777	-0.000	108.134	0.000	116.806	41.933	-1.737	MWD+IFR1+MS
22100.000	90.000	179.630	8911.000	108.898	0.000	117.622	-0.000	108.898	0.000	117.650	41.991	-1.723	MWD+IFR1+MS
22200.000	90.000	179.630	8911.000	109.662	0.000	118.467	-0.000	109.662	0.000	118.495	42.048	-1.709	MWD+IFR1+MS
22300.000	90.000	179.630	8911.000	110.426	0.000	119.312	-0.000	110.426	0.000	119.340	42.106	-1.695	MWD+IFR1+MS



22400.000	90.000	179.630	8911.000	111.191	0.000	120.159	-0.000	111.191	0.000	0.000	120.186	42.165	-1.682	MWD+IFR1+MS
22466.497	90.000	179.630	8911.000	111.699	0.000	120.721	-0.000	111.699	0.000	0.000	120.748	42.204	-1.674	MWD+IFR1+MS
22500.000	90.000	179.630	8911.000	111.955	0.000	121.003	-0.000	111.955	0.000	0.000	121.031	42.224	-1.669	MWD+IFR1+MS
22516.670	90.000	179.630	8911.000	112.083	0.000	121.144	-0.000	112.083	0.000	0.000	121.171	42.234	-1.667	MWD+IFR1+MS

PLU 15 Twin Wells Ranch-115H

Plan Targets														
Target Name	Measured Depth			Grid Northing			Grid Easting			TVD MSL			Target Shape	
FTP 11	(ft)			(ft)			(ft)			(ft)				
LTP 11	9462.21			440463.80			674058.60			5357.00			CIRCLE	
BHL 11	22466.50			427459.80			674142.50			5357.00			CIRCLE	
	22516.50			427409.80			674142.90			5357.00			CIRCLE	



CACTUS WELLHEAD LLC

20" x 9-5/8" x 7-5/8" x 5-1/2" MBU-T-CFL-R-DBLO Wellhead  
With 11" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head  
And 9-5/8", 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers

ALL DIMENSIONS APPROXIMATE			
XTO ENERGY INC DELAWARE BASIN		DRAWN VJK	31MAR22
		APPROV	
		DRAWING NO.	HBE0000479

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U. S. Steel Tubular Products  
5.500" 20.00lb/ft (0.361" Wall) P110 RY USS-FREEDOM HTQ®

11/8/2023 1:08:50 PM



MECHANICAL PROPERTIES	Pipe	USS-FREEDOM HTQ®		--
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	125,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-FREEDOM HTQ®		--
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®		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	--
PERFORMANCE	Pipe	USS-FREEDOM HTQ®		--
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®		--
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

- 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).
- Uniaxial bending rating shown is structural only, and equal to compression efficiency.
- Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
- Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.

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U. S. Steel Tubular Products  
460 Wildwood Forest Drive, Suite 300S  
Spring, Texas 77380

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connections@uss.com  
www.usstubular.com



U. S. Steel Tubular Products

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

11/29/2021 4:16:04 PM



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]

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.

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.

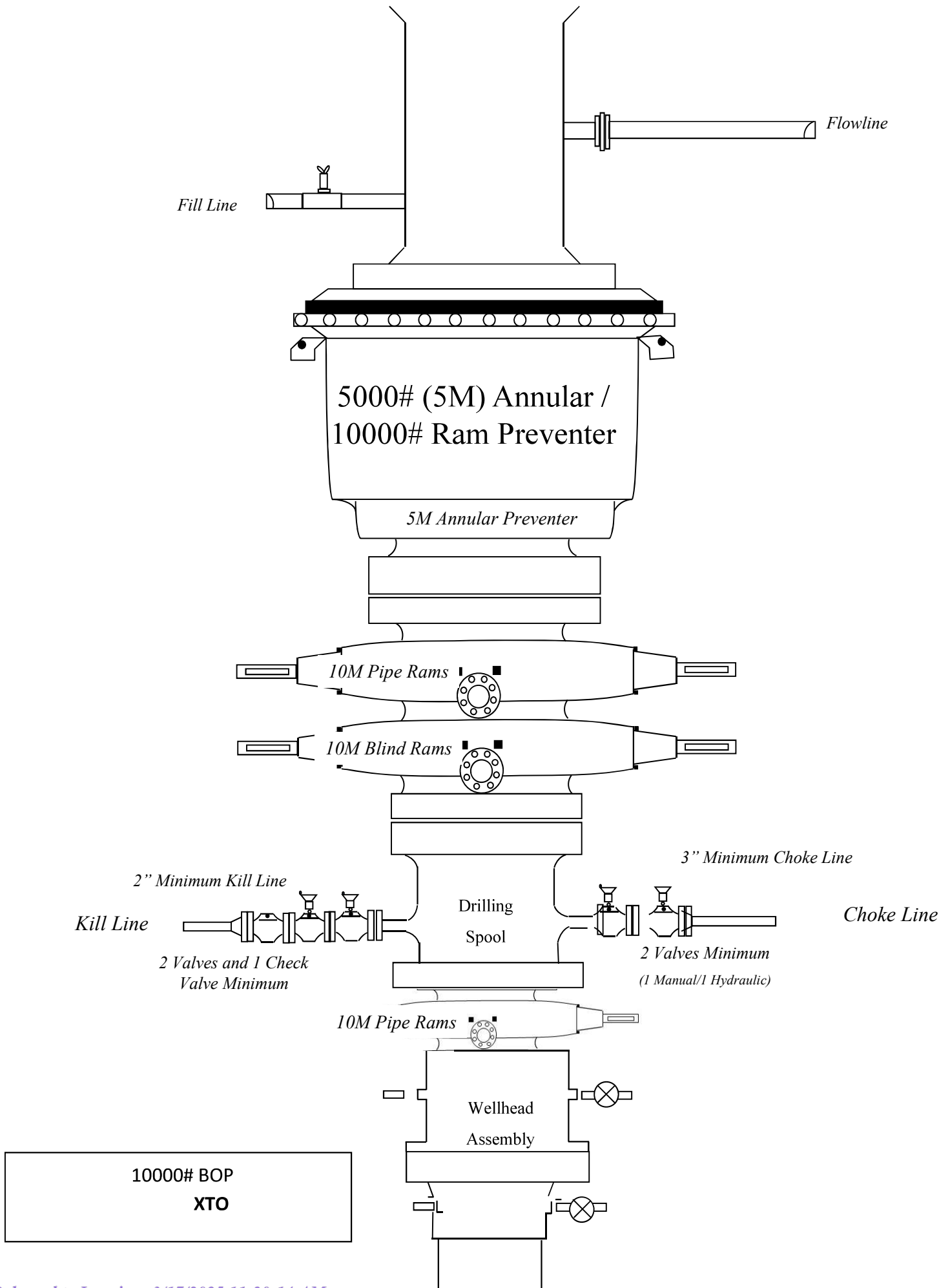
Coupling must meet minimum mechanical properties of the pipe.

Legal Notice

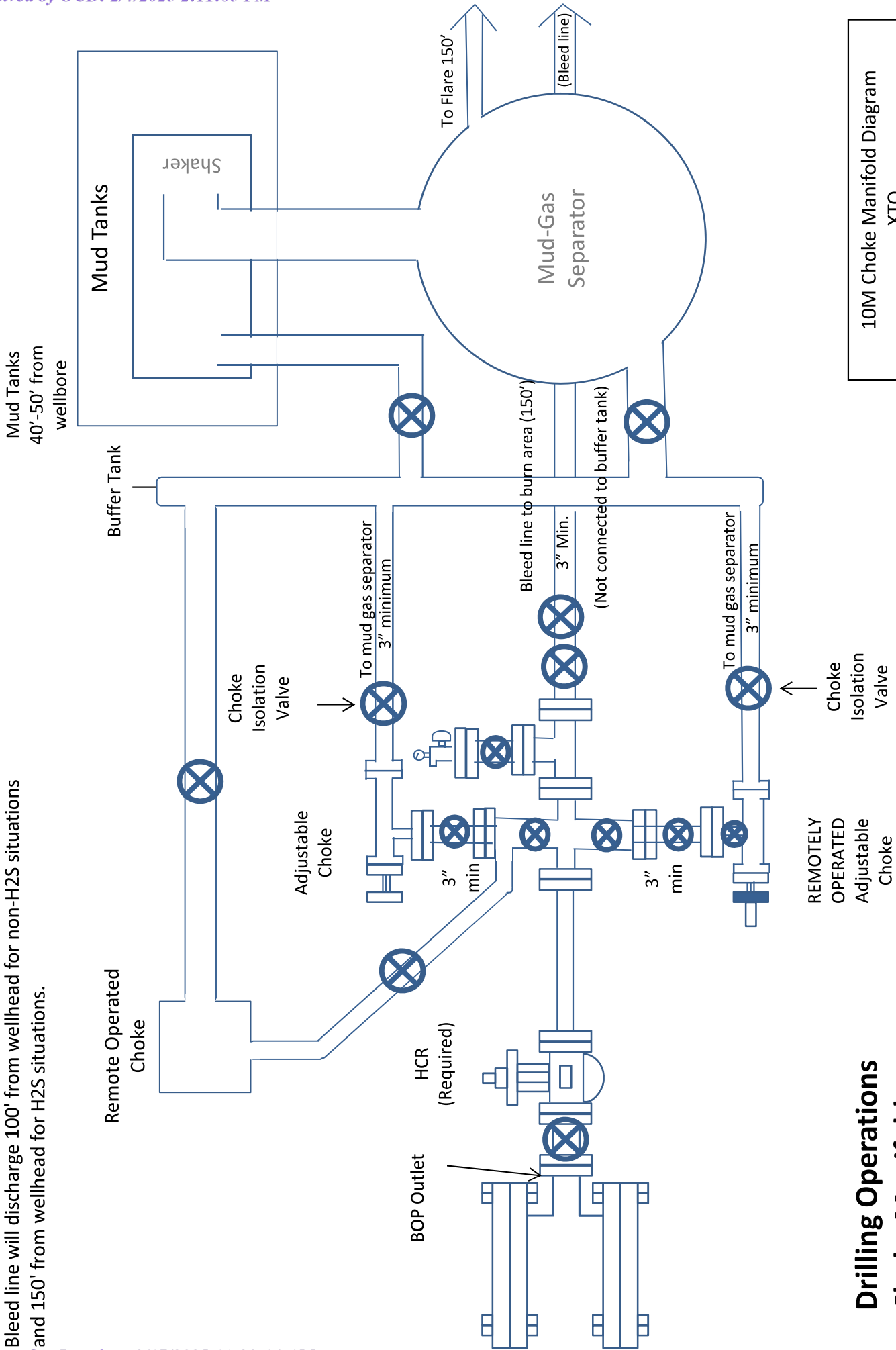
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460 Wildwood Forest Drive, Suite 300S  
Spring, Texas 77380

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connections@uss.com  
www.usstubular.com



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



10M Choke Manifold Diagram  
XTO

**Drilling Operations  
Choke Manifold  
10M Service**

**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



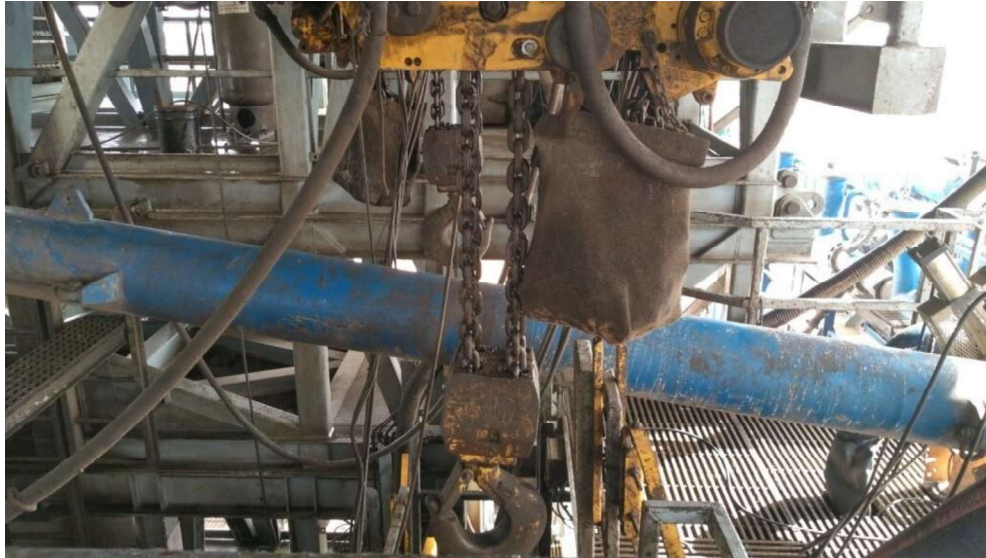


Figure 2: BOP Winch System

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

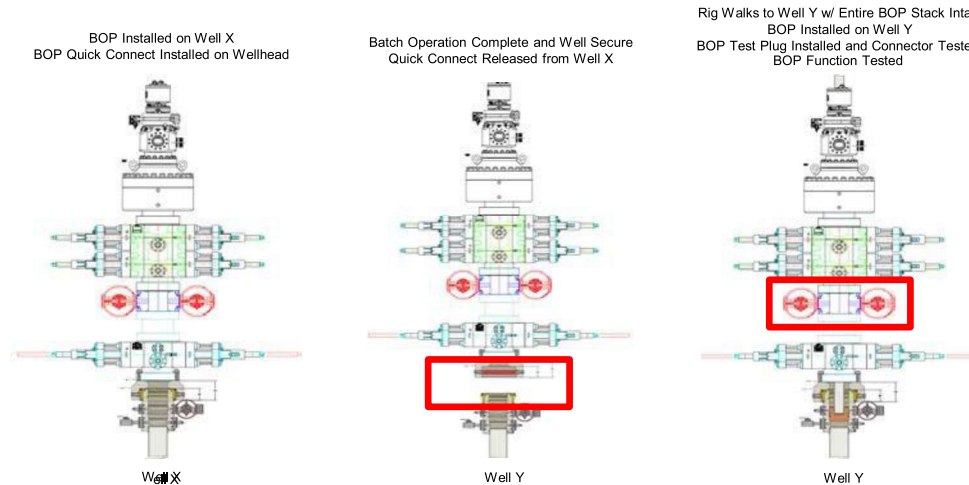
each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the CFR Title 43 Part 3170.

### **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*



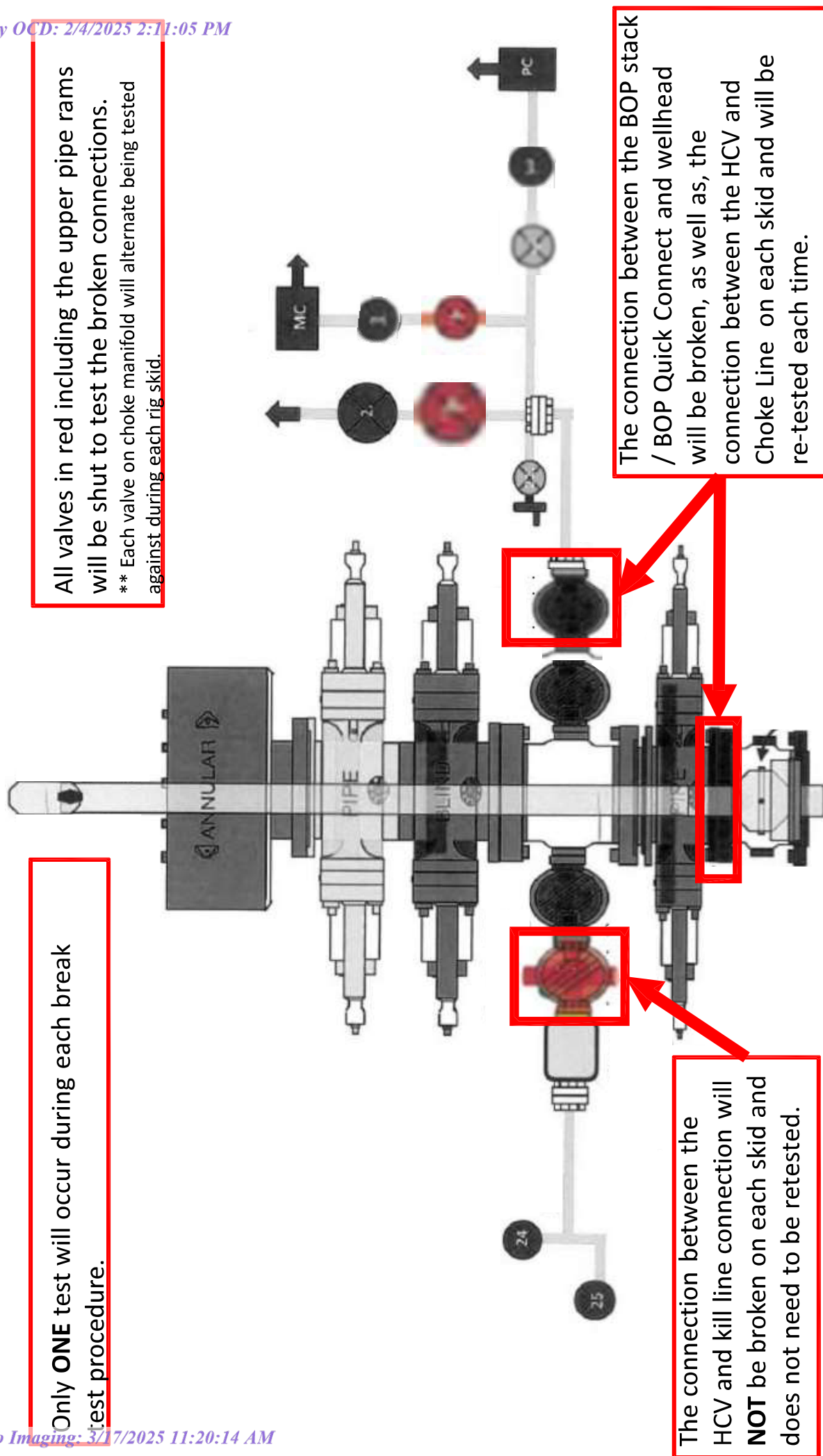
### Summary

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.



**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.

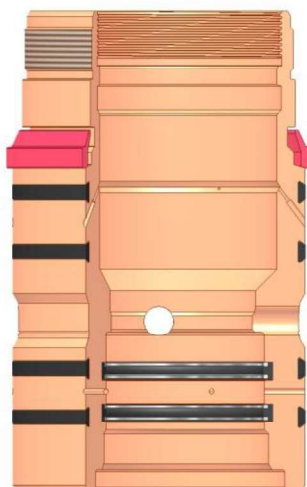
**1. Cement Program**

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.

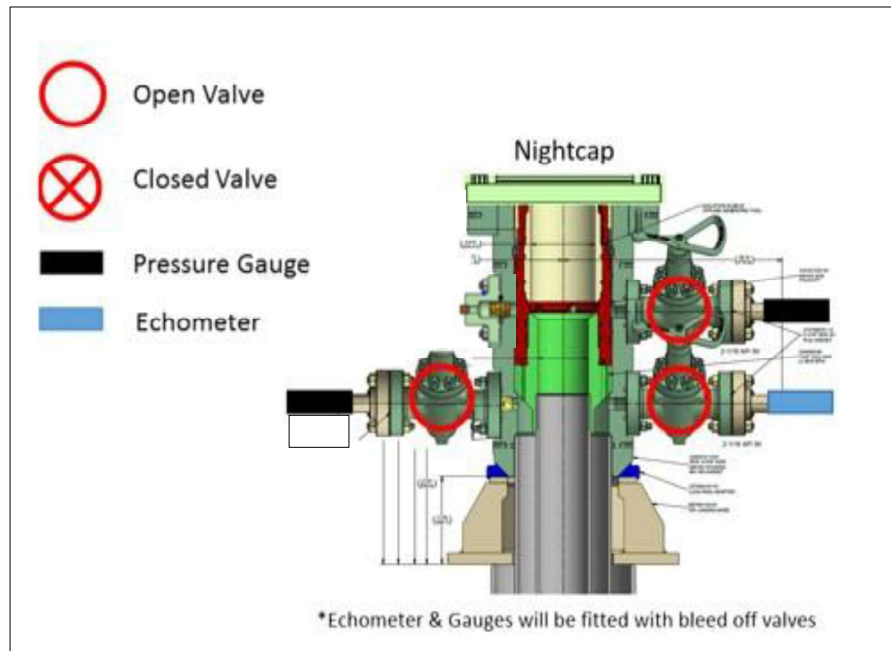
1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular 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

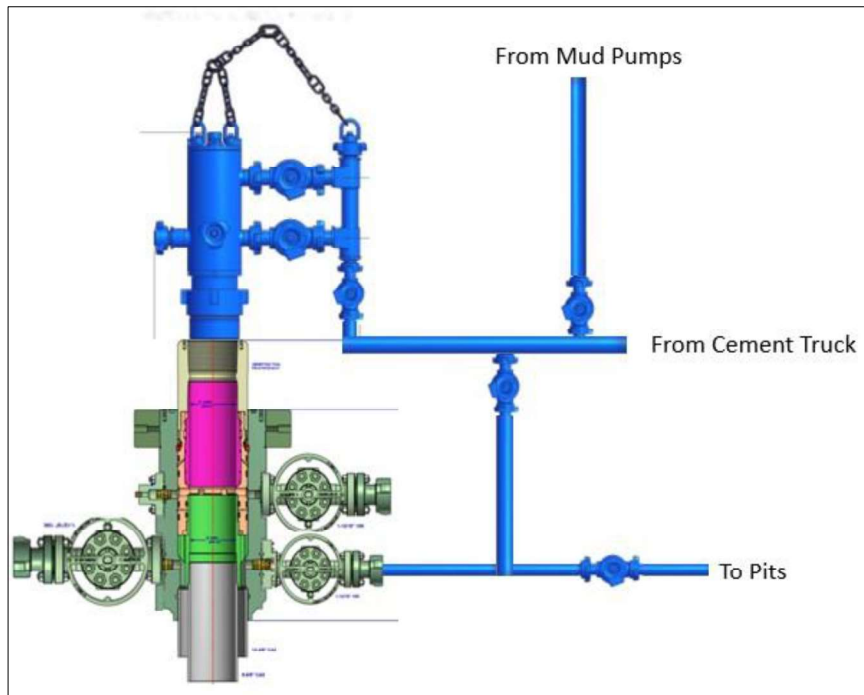


## XTO Permian Operating, LLC Offline Cementing Variance Request



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.



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.

**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. OSMOS***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:

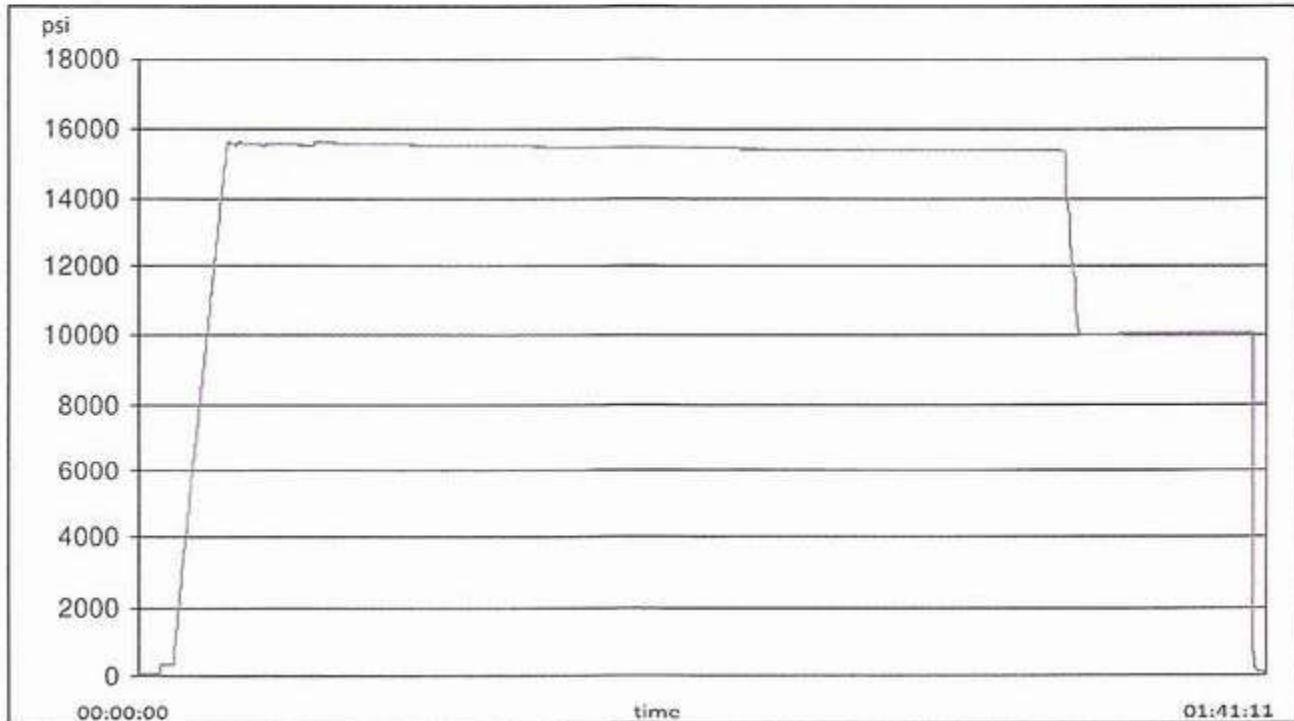
Visual check:

Pressure test result: PASS

Length measurement result:

Length: 45 feet

Test operator: Travis





H3-15/1b

1/25/2024 11:48:06 AM

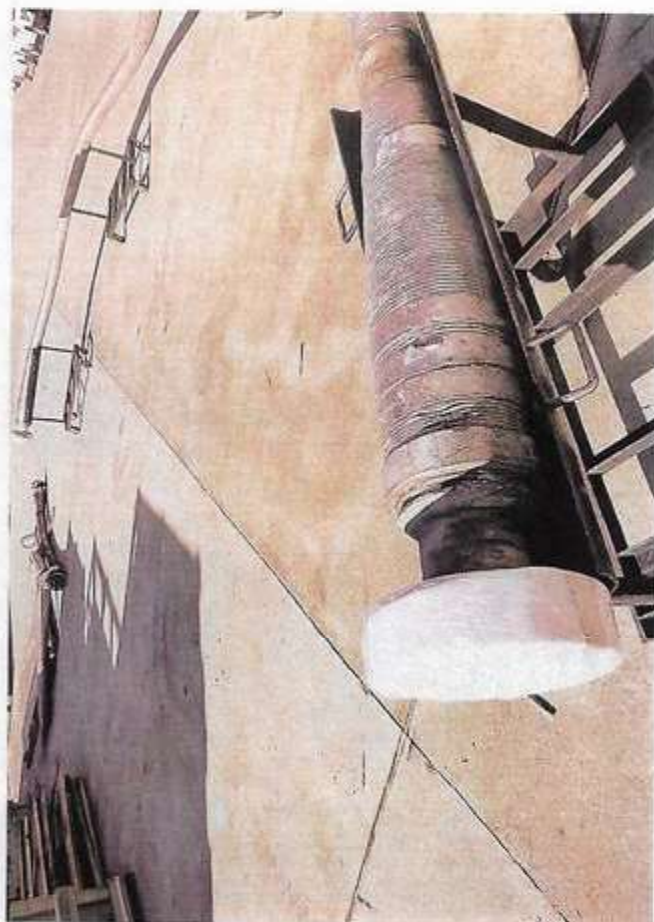
## TEST REPORT

### GAUGE TRACEABILITY

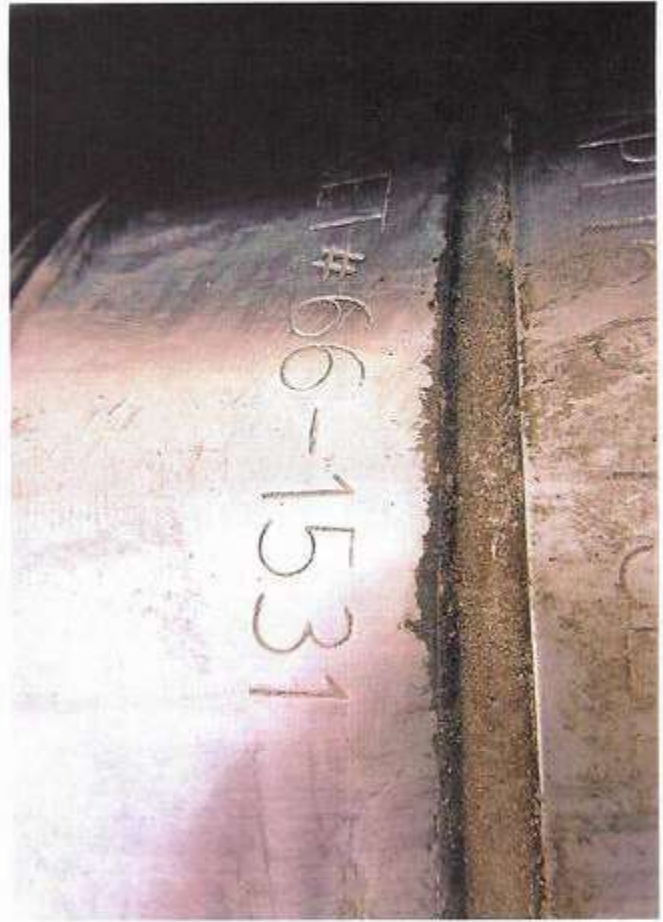
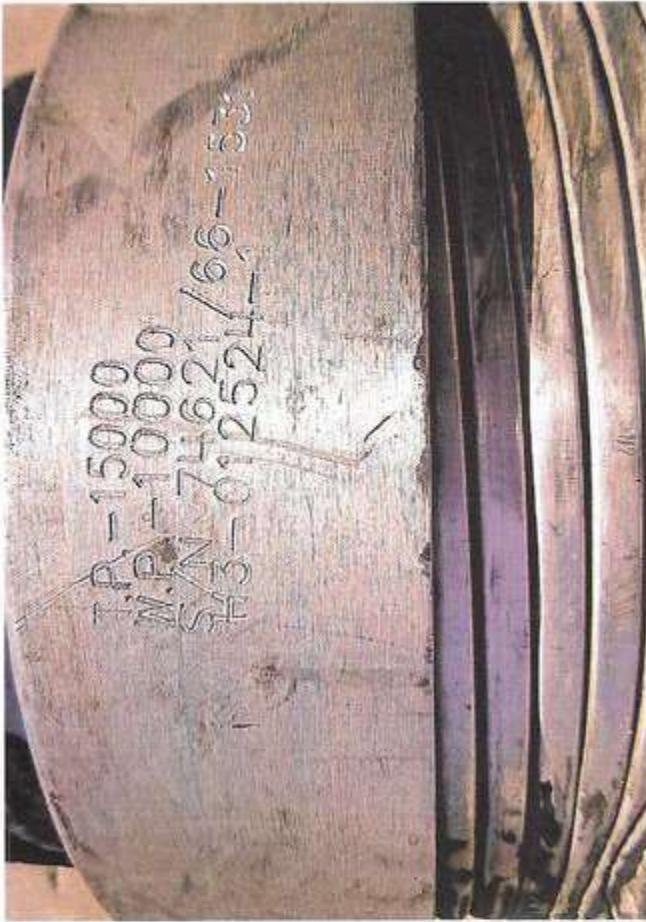
Description	Serial number	Calibration date	Calibration due date
S-25-A-W	110D3PHO	2023-06-06	2024-06-06
S-25-A-W	110IQWDG	2023-05-16	2024-05-16

Comment













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

General Information  
Phone: (505) 629-6116

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

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

CONDITIONS

Action 428184

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 428184
	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