

Well Name: JRU APACHE FEDERAL COM	Well Location: T22S / R30E / SEC 13 / NESE / 32.391932 / -103.828584	County or Parish/State: EDDY / NM
Well Number: 701H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM89051	Unit or CA Name:	Unit or CA Number:
US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Notice of Intent

Sundry ID: 2834093

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 01/28/2025	Time Sundry Submitted: 07:48
Date proposed operation will begin: 03/07/2025	

**Procedure Description:** XTO Permian Operating, LLC. respectfully requests approval to make the following changes to the approved APD. Changes to include SHL, KOP, FTP, LTP, BHL, casing design, cement program, mud circulation system and proposed total depth. FROM: TO: SHL: 2577' FSL & 927' FEL OF SECTION 13-T22S-R30E 2577' FSL & 967' FEL OF SECTION 13-T22S-R30E KOP: 2577' FSL & 927' FEL OF SECTION 13-T22S-R30E 330' FNL & 330' FEL OF SECTION 13-T22S-R30E FTP: 330' FNL & 330' FEL OF SECTION 13-T22S-R30E 330' FNL & 330' FEL OF SECTION 13-T22S-R30E LTP: 330' FNL & 100' FWL OF SECTION 14-T22S-R30E 330' FNL & 100' FWL OF SECTION 14-T22S-R30E BHL: 330' FNL & 50' FWL OF SECTION 14-T22S-R30E 330' FNL & 50' FWL OF SECTION 14-T22S-R30E The proposed total depth is changing from 20903' MD/9710' TVD to 20447.44' MD/9753' TVD XTO Permian Operating, LLC. respectfully requests permission for a primary and a contingency drilling program for this well. Primary will be a 4-string design with an engineered weak point (R-111-Q: Figure F) & the contingency will be a 3-string design with an open production casing annulus (R-111-Q: Figure B). See attached drilling program for the primary & contingency design with updated casing design, cement program & mud circulation system. There will be no new surface disturbance.

NOI Attachments

Procedure Description

Sundry\_Attachments\_\_\_James\_Ranch\_Unit\_Apache\_701H\_20250304082233.pdf

Received by OCD: 4/4/2025 8:23:10 AM

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US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Conditions of Approval

Additional

JRU\_Apache\_Fed\_Com\_701H\_COA\_20250329105701.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SRINIVAS LAGHUVARAPU	Signed on: MAR 04, 2025 08:22 AM
Name: XTO PERMIAN OPERATING LLC	
Title: REGULATORY ANALYST	
Street Address: 22777 SPRINGWOODS VILLAGE PARKWAY	
City: SPRING	State: TX
Phone: (720) 539-1673	
Email address: SRINIVAS.N.LAGHUVARAPU@EXXONMOBIL.COM	

Field

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

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 04/03/2025
Signature: Chris Walls	

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

**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.***

5. Lease Serial No.	
6. If Indian, Allottee or Tribe Name	
7. If Unit of CA/Agreement, Name and/or No.	
8. Well Name and No.	
9. API Well No.	
10. Field and Pool or Exploratory Area	
11. Country or Parish, State	

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well		
<input type="checkbox"/> Oil Well	<input type="checkbox"/> Gas Well	<input type="checkbox"/> Other
2. Name of Operator		
3a. Address	3b. Phone No. (include area code)	
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		

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

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> 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 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 recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

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

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

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

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

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

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

## NOTICES

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

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

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

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

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

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

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

Response to this request is mandatory.

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

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

## Additional Information

### Additional Remarks

XTO Permian Operating, LLC. respectfully requests permission for a primary and a contingency drilling program for this well. Primary will be a 4-string design with an engineered weak point (R-111-Q: Figure F) & the contingency will be a 3-string design with an open production casing annulus (R-111-Q: Figure B).

See attached drilling program for the primary & contingency design with updated casing design, cement program & mud circulation system.

There will be no new surface disturbance.

### Location of Well

0. SHL: NESE / 2577 FSL / 927 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.391932 / LONG: -103.828584 ( TVD: 0 feet, MD: 0 feet )

PPP: NWNE / 328 FNL / 2674 FWL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.398474 / LONG: -103.834248 ( TVD: 9767 feet, MD: 13300 feet )

PPP: NENE / 330 FNL / 330 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.398466 / LONG: -103.82665 ( TVD: 9788 feet, MD: 10600 feet )

BHL: NWNW / 330 FNL / 50 FWL / TWSP: 22S / RANGE: 30E / SECTION: 14 / LAT: 32.398501 / LONG: -103.860083 ( TVD: 9710 feet, MD: 20903 feet )

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	XTO
<b>LEASE NO.:</b>	NMNM89051
<b>LOCATION:</b>	Sec. 12, T.22 S, R 30 E
<b>COUNTY:</b>	Eddy County, New Mexico ▼
<b>WELL NAME &amp; NO.:</b>	JRU Apache Fed Com 701H
<b>SURFACE HOLE FOOTAGE:</b>	2577'/S & 967'/E
<b>BOTTOM HOLE FOOTAGE:</b>	330'/S & 50'/W

Changes approved through engineering via **Sundry 2834093** on 3-29-2025. Any previous COAs not addressed within the updated COAs still apply.

COA

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

### A. HYDROGEN SULFIDE

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

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

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **700** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch 1<sup>st</sup> Intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

3. The minimum required fill of cement behind the **7-5/8** inch 2<sup>nd</sup> 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 6377'**.
  - b. **Second stage:** Operator will perform bradenhead squeeze and top-out. Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office .

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

Operator has proposed to pump down **Intermediate 1 X Intermediate 2** 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 Intermediate 1 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.

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

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

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

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

- a. **Second stage above DV tool:** Cement should tie-back 500 feet into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**
- ❖ **A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String.** Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within **180 days**.
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** . Operator shall provide method of verification. Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office.

**OPEATOR IS APPROVED TO USE A 3 STRING DESIGN CASING PLAN. ALL R-111Q REQUIRIEMENTS ARE APPLY.**

### C. PRESSURE CONTROL

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

### D. SPECIAL REQUIREMENT (S)

#### Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**WIPP Requirements**

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

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

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

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

**BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted **(575-361-2822 Eddy County)** 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

**Offline Cementing**

Contact the BLM prior to the commencement of any offline cementing procedure. **Offline cementing for the production section is not approved.**

## 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 Lea County Petroleum Engineering Inspection Staff:

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

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 3/29/2025**  
575-234-5998 / [zstevens@blm.gov](mailto:zstevens@blm.gov)

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

WELL LOCATION INFORMATION			
API Number <b>30-015-</b>	Pool Code <b>40295</b>	Pool Name <b>LOS MEDANOS, BONE SPRING</b>	
Property Code	Property Name <b>JRU Apache Federal Com</b>	Well Number <b>701H</b>	
OGRID No. <b>373075</b>	Operator Name <b>XTO PERMIAN OPERATING, LLC.</b>	Ground Level Elevation <b>3,348'</b>	
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal		Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal	

Surface Hole Location									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
I	13	22S	30E		2,577 FSL	967 FEL	32.391934	-103.828714	EDDY

Bottom Hole Location									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
D	14	22S	30E		330 FNL	50 FWL	32.398503	-103.860074	EDDY


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

Kick Off Point (KOP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	13	22S	30E		330 FNL	330 FEL	32.398467	-103.826650	EDDY

First Take Point (FTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	13	22S	30E		330 FNL	330 FEL	32.398467	-103.826650	EDDY

Last Take Point (LTP)									
UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
D	14	22S	30E		330 FNL	100 FWL	32.398503	-103.859912	EDDY

Unitized Area of Area of Interest <b>NMMN-070965X</b>	Spacing Unit Type : <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Elevation <b>3,348'</b>
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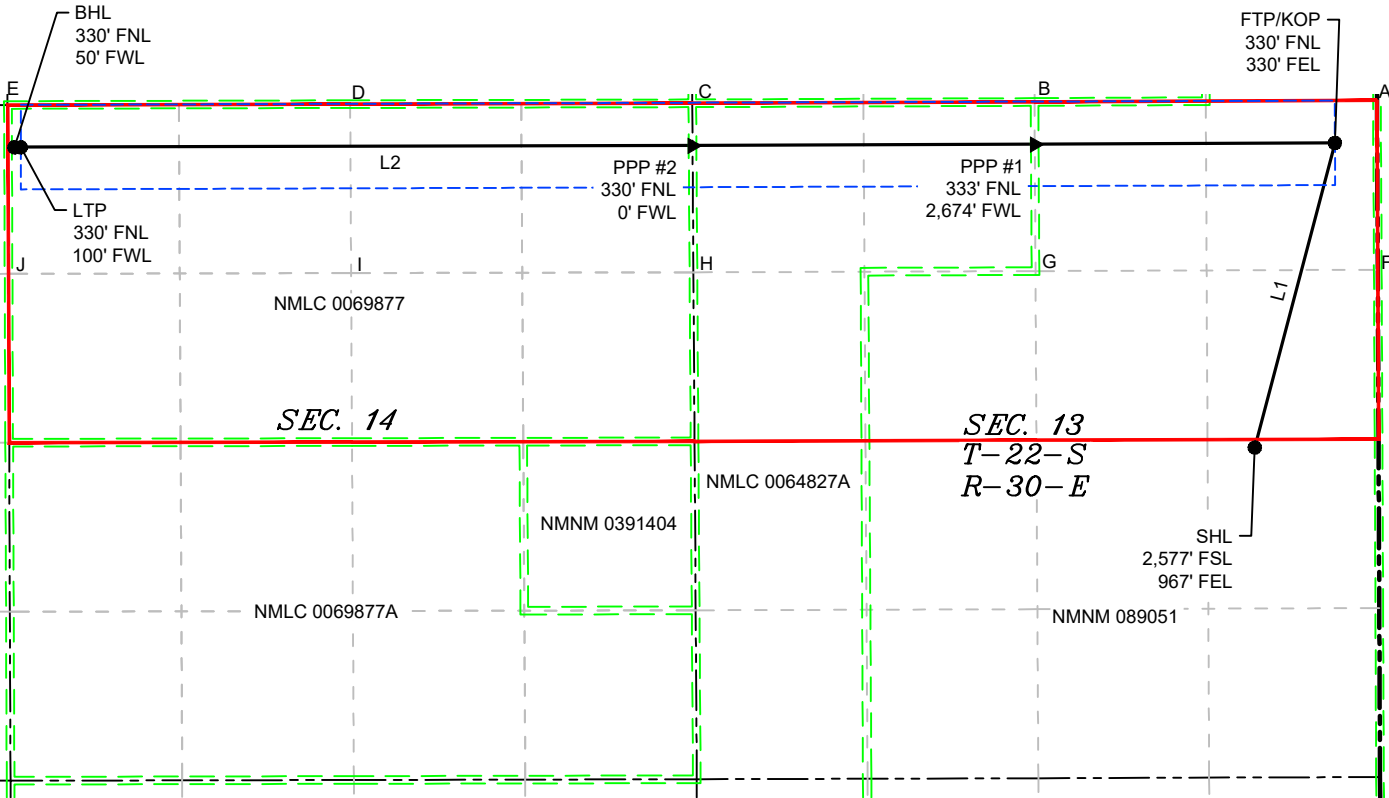
<div>OPERATOR CERTIFICATIONS</div> <div>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or a voluntary pooling agreement or a compulsory pooling order of heretofore entered by the division.</div> <div>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or information) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</div> <div><div>Srinivas Naveen</div><div>1/3/2025</div></div> <div>SignatureDate</div> <div>Srinivas Naveen Laghuvarapu</div> <div>Printed Name</div> <div>srinivas.n.laghuvarapu@exxonmobil.com</div> <div>Email Address</div>	<div>SURVEYOR CERTIFICATIONS</div> <div>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief</div> <div><div></div><div>Signature and Seal of Professional Surveyor</div></div> <div><div>MARK DILLON HARP 23786</div><div>12/9/2024</div></div> <div>Certificate NumberDate of Survey</div> <div><div>RP</div><div>618.013002.10-29</div></div>
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Note: No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

ACREAGE DEDICATION PLATS

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

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



LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	014°44'18.19"	2,460.33
L2	269°48'41.64"	10,316.53

LEGEND

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

COORDINATE TABLE

SHL (NAD 83 NME)		FTP/KOP (NAD 83 NME)		PPP1 (NAD 83 NME)		PPP2 (NAD 83 NME)		LTP (NAD 83 NME)	
Y =	506,684.6 N	Y =	509,064.0 N	Y =	509,052.9 N	Y =	509,042.8 N	Y =	509,030.2 N
X =	697,095.3 E	X =	697,721.2 E	X =	695,376.1 E	X =	692,702.5 E	X =	687,454.8 E
LAT. =	32.391934 °N	LAT. =	32.398467 °N	LAT. =	32.398466 °N	LAT. =	32.398473 °N	LAT. =	32.398503 °N
LONG. =	103.828714 °W	LONG. =	103.826650 °W	LONG. =	103.834248 °W	LONG. =	103.842910 °W	LONG. =	103.859912 °W

BHL (NAD 83 NME)	
Y =	509,030.1 N
X =	687,404.8 E
LAT. =	32.398503 °N
LONG. =	103.860074 °W

SHL (NAD 27 NME)		FTP/KOP (NAD 27 NME)		PPP1 (NAD 83 NME)		PPP2 (NAD 83 NME)		LTP (NAD 27 NME)	
Y =	506,623.9 N	Y =	509,003.3 N	Y =	508,992.2 N	Y =	508,982.1 N	Y =	508,969.4 N
X =	655,913.8 E	X =	656,539.8 E	X =	654,194.7 E	X =	651,521.2 E	X =	646,273.5 E
LAT. =	32.391812 °N	LAT. =	32.398344 °N	LAT. =	32.398344 °N	LAT. =	32.398350 °N	LAT. =	32.398380 °N
LONG. =	103.828220 °W	LONG. =	103.826155 °W	LONG. =	103.833753 °W	LONG. =	103.842415 °W	LONG. =	103.859417 °W

BHL (NAD 27 NME)	
Y =	508,969.3 N
X =	646,223.5 E
LAT. =	32.398381 °N
LONG. =	103.859579 °W

CORNER COORDINATES (NAD 83 NME)			
A - Y =	509,395.5 N	A - X =	698,049.7 E
B - Y =	509,382.9 N	B - X =	695,374.2 E
C - Y =	509,372.8 N	C - X =	692,700.3 E
D - Y =	509,366.4 N	D - X =	690,027.8 E
E - Y =	509,359.9 N	E - X =	687,353.5 E
F - Y =	508,072.9 N	F - X =	698,055.8 E
G - Y =	508,062.1 N	G - X =	695,381.7 E
H - Y =	508,052.6 N	H - X =	692,709.2 E
I - Y =	508,046.7 N	I - X =	690,034.9 E
J - Y =	508,040.4 N	J - X =	687,358.6 E

CORNER COORDINATES (NAD 27 NME)			
A - Y =	509,334.8 N	A - X =	656,868.3 E
B - Y =	509,322.2 N	B - X =	654,192.9 E
C - Y =	509,312.1 N	C - X =	651,519.0 E
D - Y =	509,305.6 N	D - X =	648,846.5 E
E - Y =	509,299.2 N	E - X =	646,172.2 E
F - Y =	508,012.2 N	F - X =	656,874.3 E
G - Y =	508,001.4 N	G - X =	654,200.3 E
H - Y =	507,991.9 N	H - X =	651,527.8 E
I - Y =	507,986.0 N	I - X =	648,853.5 E
J - Y =	507,979.7 N	J - X =	646,177.3 E

RP

618.013002.10-29

## Primary Design

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

JRU APACHE FEDERAL COM 701H

Projected TD: 20447' MD / 9753' TVD

SHL: 2577' FSL &amp; 967' FEL , Section 13, T22S, R30E

BHL: 330' FNL & 50' FWL, Section 14, T22S, R30E

EDDY County, NM

### 1. Geologic Name of Surface Formation

A. Quaternary

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

[illegible]

### Section 2 Summary:

\*\*\* Deepest Expected Groundwater Depth: 40' (per NM State Engineers Office).

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13-3/8" inch casing at 731' and circulating cement back to surface.

### 3. Casing Design

### Primary Casing Design:

[illegible]

### Section 3 Summary:

XTO will keep casing fluid filled to meet BLM's collapse requirement.

The planned kick off point is located at: 9722' MP / 9037' TVP.

**Wellhead:**

A multi-bowl wellhead system will be utilized. The well design chosen is: 4-String Slim Potash (Non-Capitan Reef)

Wellhead will be installed by manufacturer's representatives.

Manufacturer will monitor welding process to ensure appropriate temperature of seal.

**4. Cement Program**

Primary Cementing								
Casing	Slurry Type	No. Sacks	Density (ppg)	Yield (ft <sup>3</sup> /sack)	TOC (ft)	Casing Setting Depth (MD)	Excess (%)	Slurry Description
Surface 1	Lead	284	12.4	2.11	0	731	100%	Surface Class C Lead Cement
Surface 1	Tail	313	14.8	1.33	431	731	100%	Surface Class C Tail Cement
Intermediate 1	Lead	830	12.9	2.02	0	3868	50%	Intermediate Class C Lead Cement
Intermediate 1	Tail	87	14.8	1.45	3568	3868	35%	Intermediate Class C Tail Cement
Intermediate 2	Lead							
Intermediate 2	Tail	294	14.8	1.45	6377	9522	35%	Intermediate Class C Tail Cement
Production 1	Lead							
Production 1	Tail	861	13.2	1.44	9022	20447	30%	Production Class C Tail Cement
Remedial Cementing								
Casing	Slurry Type	No. Sacks	Density (ppg)	Yield (ft <sup>3</sup> /sack)	Cemented Interval	Excess (%)	Slurry Description	
Intermediate 2	Bradenhead Squeeze	313	14.8	1.45	3368 - 6377'	50%	Intermediate Class C Bradenhead Squeeze Cement	

**Remedial Cementing**

\*Bradenhead Squeeze 2nd Stage Offline

**5. Pressure Control Equipment****Section 5 Summary:**

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

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

**Requested Variances****4A) Offline Cementing Variance**

XOM 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. XOM 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. Offline cement operations will then be conducted after the rig is moved off the current well to the next well in the batch sequence. The TA cap will also be installed when applicable per wellhead manufacturer's procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

**5A) Break Test Variance**

A break testing variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead for the intermediate hole sections which is in compliance with API Standard 53.

**5B) Flex Hose Variance**

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

**8A) Open Hole Logging Variance**

Open hole logging will not be done on this well.

**10A) Spudder Rig Variance**

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

**10B) Batch Drilling Variance**

XOM requests a variance to be able to batch drill this well. In doing so, XOM will set casing and ensure that the well is cemented properly (unless approval is given for offline cementing) and the well is static. XOM will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XOM will begin drilling the production hole on each of the wells.

**6. Proposed Mud Circulation System**

INTERVAL	Hole Size	Mud Type	MW	Viscosity	Fluid Loss	Comments
			(ppg)	(sec/qt)	(cc)	
0' – 731'	17.5"	FW/Native	8.3 – 8.7	35-40	NC	Fresh Water or Native Water
731' – 3868'	12.25"	BDE/OBM or FW/Brine	9.5 – 10	30-32	NC	Fluid type will be based upon on well conditions. A fully saturated system will be used across the salt interval.
3868' – 3968'	8.75"	BDE/OBM or FW/Brine	9.5 – 10	30-32	NC	Fluid type will be based upon on well conditions. A fully saturated system will be used across the salt interval.
3968' – 9522'	8.75"	BDE/OBM or FW/Brine	9.5 – 10	30-32	NC	Fluid type will be based upon on well conditions. A fully saturated system will be used across the salt interval.
9522' – 20447'	6.75"	OBM	9 – 9.6	NC – 20	OBM	

**Section 6 Summary:**

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 a fully saturated brine 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. An EDR (Electronic Drilling Recorder) 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****Section 7 Summary:**

A Kelly cock will be in the drill string at all times.

A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.

H2S monitors will be on location when drilling below the 13-3/8" casing.

**8. Logging, Coring and Testing Program****Section 8 Summary:**

Open hole logging will not be done on this well.

**9. Abnormal Pressures and Temperatures / Potential Hazards****Section 9 Summary:**

The estimated bottom hole temperature of 163F to 183F. 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 is possible throughout the well.

**10. Anticipated Starting Date and Duration of Operations****Section 10 Summary:**

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

Contingency Design  
DRILLING PLAN: BLM COMPLIANCE  
(Supplement to BLM 3160-3)  
  
XTO Energy Inc.  
JRU Apache Federal Com 701H

Contingency Design

Contingency Casing Design:

Hole Size	MD	Casing TVD	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
17.5	0' – 731'	731'	13-3/8"	54.5	J55	BTC	New	12.22	3.57	6.34
12.25	0' – 3868'	3857'	9-5/8"	40	L80-IC	BTC	New	5.20	4.62	3.96
8.75" / 6.75"	0' – 20447'	9753'	5-1/2"	20	P110-IC	Tenaris Wedge 441	New	1.18	2.91	1.99

XTO will keep casing fluid filled to meet BLM's collapse requirement.

Wellhead:

A multi-bowl wellhead system will be utilized. The well design chosen is: 3-String Potash (Non-Capitan Reef) [2nd BSP or Shallower]

Wellhead will be installed by manufacturer's representatives.

Manufacturer will monitor welding process to ensure appropriate temperature of seal.

Cement Program

Primary Cementing								
Casing	Slurry Type	No. Sacks	Density (ppg)	Yield (ft3/sack)	TOC (ft)	Casing Setting Depth (MD)	Excess (%)	Slurry Description
Surface 1	Lead	284	12.4	2.11	0	731	100%	Surface Class C Lead Cement
Surface 1	Tail	313	14.8	1.33	431	731	100%	Surface Class C Tail Cement
Intermediate 1	Lead	830	12.9	2.02	0	3868	50%	Intermediate Class C Lead Cement
Intermediate 1	Tail	87	14.8	1.45	3568	3868	35%	Intermediate Class C Tail Cement
Production 1	Lead							
Production 1	Tail	3097	13.2	1.44	6868	20447	30%	Production Class C Tail Cement

Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW	Viscosity	Fluid Loss	Comments
			(ppg)	(sec/qt)	(cc)	
0' – 731'	17.5"	FW/Native	8.3 - 8.7	35-40	NC	Fresh Water or Native Water
731' – 3868'	12.25"	BDE/OBM or FW/Brine	9.5 - 10	30-32	NC	Fluid type will be based upon on well conditions. A fully saturated system will be used across the salt interval.
3868' – 20447'	8.75" / 6.75"	OBM	9 - 9.6	50-60	NC - 20	

## Well Plan Report

Measured Depth: 20447.44 ft

TVD RKB: 9753.00 ft

### Location

Cartographic Reference System: New Mexico East - NAD 27

Northing: 506623.90 ft

Easting: 655913.80 ft

RKB: 3380.00 ft

Ground Level: 3348.00 ft

North Reference: Grid

Convergence Angle: 0.27 Deg

Site: C

Slot:

### Plan Sections

Measured			TVD			Build	Turn	Dogleg	
Depth	Inclination	Azimuth	RKB	Y Offset	X Offset	Rate	Rate	Rate	Target
(ft)	(Deg)	(Deg)	(ft)	(ft)	(ft)	(Deg/100ft)	(Deg/100ft)	(Deg/100ft)	
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	-0.00	0.00	0.00	0.00	
5535.98	36.72	14.74	5412.85	549.75	144.63	2.00	0.00	2.00	
7749.49	36.72	14.74	7187.15	1829.65	481.37	0.00	0.00	0.00	
9585.47	0.00	0.00	8900.00	2379.40	626.00	-2.00	0.00	2.00	
9722.27	0.00	0.00	9036.80	2379.40	626.00	0.00	0.00	0.00	
10847.27	90.00	269.81	9753.00	2377.04	-90.19	8.00	0.00	8.00	
20396.43	90.00	269.81	9753.00	2345.54	-9639.30	0.00	0.00	0.00	LTP 9
20447.44	90.00	269.81	9753.00	2345.37	-9690.31	0.00	0.00	0.00	BHL 9

### Position Uncertainty

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

Depth	Inclination	Azimuth	RKB	Error	Bias	Error	Bias	Error	Bias	of Bias	Error	Error	Azimuth	Used
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.310	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.325	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.347	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.374	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.406	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.444	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.485	0.000	0.000	3.642	2.775	128.423	MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.696	0.000	3.502	0.000	2.531	0.000	0.000	4.014	3.133	128.602	MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	4.058	0.000	3.865	0.000	2.581	0.000	0.000	4.384	3.491	128.744	MWD+IFR1+MS
1100.000	0.000	0.000	1100.000	4.419	0.000	4.228	0.000	2.634	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1200.000	0.000	0.000	1200.000	4.779	0.000	4.589	0.000	2.691	0.000	0.000	5.119	4.207	128.954	MWD+IFR1+MS
1300.000	0.000	0.000	1300.000	5.140	0.000	4.950	0.000	2.750	0.000	0.000	5.484	4.565	129.034	MWD+IFR1+MS
1400.000	0.000	0.000	1400.000	5.500	0.000	5.311	0.000	2.813	0.000	0.000	5.849	4.924	129.102	MWD+IFR1+MS
1500.000	0.000	0.000	1500.000	5.860	0.000	5.672	0.000	2.878	0.000	0.000	6.213	5.282	129.161	MWD+IFR1+MS
1600.000	0.000	0.000	1600.000	6.219	0.000	6.032	0.000	2.945	0.000	0.000	6.577	5.640	129.212	MWD+IFR1+MS
1700.000	0.000	0.000	1700.000	6.579	0.000	6.392	0.000	3.015	0.000	0.000	6.939	5.999	129.257	MWD+IFR1+MS
1800.000	0.000	0.000	1800.000	6.938	0.000	6.752	0.000	3.086	0.000	0.000	7.302	6.357	129.297	MWD+IFR1+MS
1900.000	0.000	0.000	1900.000	7.298	0.000	7.112	0.000	3.160	0.000	0.000	7.664	6.715	129.333	MWD+IFR1+MS
2000.000	0.000	0.000	2000.000	7.657	0.000	7.471	0.000	3.236	0.000	0.000	8.026	7.074	129.365	MWD+IFR1+MS
2100.000	0.000	0.000	2100.000	8.016	0.000	7.831	0.000	3.313	0.000	0.000	8.387	7.432	129.394	MWD+IFR1+MS
2200.000	0.000	0.000	2200.000	8.375	0.000	8.190	0.000	3.391	0.000	0.000	8.748	7.791	129.420	MWD+IFR1+MS
2300.000	0.000	0.000	2300.000	8.734	0.000	8.550	0.000	3.472	0.000	0.000	9.109	8.149	129.444	MWD+IFR1+MS
2400.000	0.000	0.000	2400.000	9.093	0.000	8.909	0.000	3.554	0.000	0.000	9.470	8.507	129.466	MWD+IFR1+MS
2500.000	0.000	0.000	2500.000	9.452	0.000	9.268	0.000	3.637	0.000	0.000	9.831	8.866	129.486	MWD+IFR1+MS
2600.000	0.000	0.000	2600.000	9.811	0.000	9.627	0.000	3.722	0.000	0.000	10.191	9.224	129.505	MWD+IFR1+MS
2700.000	0.000	0.000	2700.000	10.170	0.000	9.986	0.000	3.808	0.000	0.000	10.552	9.583	129.522	MWD+IFR1+MS
2800.000	0.000	0.000	2800.000	10.529	0.000	10.345	0.000	3.895	0.000	0.000	10.912	9.941	129.538	MWD+IFR1+MS
2900.000	0.000	0.000	2900.000	10.888	0.000	10.705	0.000	3.984	0.000	0.000	11.272	10.299	129.552	MWD+IFR1+MS
3000.000	0.000	0.000	3000.000	11.247	0.000	11.063	0.000	4.074	0.000	0.000	11.632	10.658	129.566	MWD+IFR1+MS

3100.000	0.000	0.000	3100.000	11.606	0.000	11.422	0.000	4.165	0.000	0.000	11.992	11.016	129.579	MWD+IFR1+MS
3200.000	0.000	0.000	3200.000	11.965	0.000	11.781	0.000	4.258	0.000	0.000	12.352	11.375	129.591	MWD+IFR1+MS
3300.000	0.000	0.000	3300.000	12.323	0.000	12.140	0.000	4.352	0.000	0.000	12.712	11.733	129.603	MWD+IFR1+MS
3400.000	0.000	0.000	3400.000	12.682	0.000	12.499	0.000	4.447	0.000	0.000	13.071	12.092	129.613	MWD+IFR1+MS
3500.000	0.000	0.000	3500.000	13.041	0.000	12.858	0.000	4.544	0.000	0.000	13.431	12.450	129.623	MWD+IFR1+MS
3600.000	0.000	0.000	3600.000	13.400	0.000	13.217	0.000	4.642	0.000	0.000	13.790	12.809	129.633	MWD+IFR1+MS
3700.000	0.000	0.000	3700.000	13.758	0.000	13.576	0.000	4.741	0.000	0.000	14.150	13.167	129.642	MWD+IFR1+MS
3800.000	2.000	14.740	3799.980	14.395	0.000	13.707	0.000	4.842	0.000	0.000	14.573	13.525	128.948	MWD+IFR1+MS
3900.000	4.000	14.740	3899.838	14.893	0.000	14.070	0.000	4.945	0.000	0.000	15.094	13.886	127.230	MWD+IFR1+MS
4000.000	6.000	14.740	3999.452	15.365	0.000	14.430	0.000	5.050	0.000	0.000	15.605	14.244	125.980	MWD+IFR1+MS
4100.000	8.000	14.740	4098.702	15.813	0.000	14.789	0.000	5.159	0.000	0.000	16.107	14.599	125.039	MWD+IFR1+MS
4200.000	10.000	14.740	4197.465	16.235	0.000	15.145	0.000	5.274	0.000	0.000	16.597	14.952	124.313	MWD+IFR1+MS
4300.000	12.000	14.740	4295.623	16.634	0.000	15.501	0.000	5.395	0.000	0.000	17.078	15.303	123.743	MWD+IFR1+MS
4400.000	14.000	14.740	4393.055	17.009	0.000	15.854	0.000	5.524	0.000	0.000	17.548	15.652	123.292	MWD+IFR1+MS
4500.000	16.000	14.740	4489.643	17.361	0.000	16.206	0.000	5.662	0.000	0.000	18.009	15.999	122.936	MWD+IFR1+MS
4600.000	18.000	14.740	4585.268	17.691	0.000	16.558	0.000	5.810	0.000	0.000	18.459	16.346	122.657	MWD+IFR1+MS
4700.000	20.000	14.740	4679.816	17.999	0.000	16.908	0.000	5.969	0.000	0.000	18.900	16.692	122.442	MWD+IFR1+MS
4800.000	22.000	14.740	4773.169	18.286	0.000	17.259	0.000	6.141	0.000	0.000	19.332	17.037	122.286	MWD+IFR1+MS
4900.000	24.000	14.740	4865.215	18.553	0.000	17.609	0.000	6.326	0.000	0.000	19.754	17.383	122.180	MWD+IFR1+MS
5000.000	26.000	14.740	4955.841	18.800	0.000	17.960	0.000	6.525	0.000	0.000	20.167	17.729	122.124	MWD+IFR1+MS
5100.000	28.000	14.740	5044.937	19.030	0.000	18.313	0.000	6.740	0.000	0.000	20.571	18.077	122.114	MWD+IFR1+MS
5200.000	30.000	14.740	5132.394	19.241	0.000	18.667	0.000	6.972	0.000	0.000	20.967	18.425	122.151	MWD+IFR1+MS
5300.000	32.000	14.740	5218.107	19.436	0.000	19.023	0.000	7.221	0.000	0.000	21.353	18.775	122.236	MWD+IFR1+MS
5400.000	34.000	14.740	5301.970	19.615	0.000	19.381	0.000	7.488	0.000	0.000	21.731	19.128	122.372	MWD+IFR1+MS
5500.000	36.000	14.740	5383.881	19.780	0.000	19.743	0.000	7.774	0.000	0.000	22.101	19.483	122.563	MWD+IFR1+MS
5535.978	36.720	14.740	5412.854	19.795	0.000	19.871	0.000	7.842	0.000	0.000	22.207	19.611	122.634	MWD+IFR1+MS
5600.000	36.720	14.740	5464.172	20.019	0.000	20.100	0.000	7.969	0.000	0.000	22.386	19.841	122.824	MWD+IFR1+MS
5700.000	36.720	14.740	5544.329	20.376	0.000	20.470	0.000	8.179	0.000	0.000	22.672	20.209	123.231	MWD+IFR1+MS
5800.000	36.720	14.740	5624.487	20.745	0.000	20.849	0.000	8.401	0.000	0.000	22.966	20.585	123.724	MWD+IFR1+MS
5900.000	36.720	14.740	5704.644	21.123	0.000	21.235	0.000	8.633	0.000	0.000	23.266	20.965	124.256	MWD+IFR1+MS
6000.000	36.720	14.740	5784.801	21.507	0.000	21.626	0.000	8.873	0.000	0.000	23.572	21.352	124.831	MWD+IFR1+MS
6100.000	36.720	14.740	5864.958	21.899	0.000	22.022	0.000	9.121	0.000	0.000	23.884	21.743	125.455	MWD+IFR1+MS
6200.000	36.720	14.740	5945.115	22.298	0.000	22.423	0.000	9.376	0.000	0.000	24.200	22.138	126.130	MWD+IFR1+MS

6300.000	36.720	14.740	6025.272	22.703	0.000	22.830	0.000	9.638	0.000	0.000	24.522	22.538	126.861	MWD+IFR1+MS
6400.000	36.720	14.740	6105.429	23.115	0.000	23.241	0.000	9.907	0.000	0.000	24.850	22.941	127.655	MWD+IFR1+MS
6500.000	36.720	14.740	6185.587	23.532	0.000	23.656	0.000	10.181	0.000	0.000	25.182	23.348	128.516	MWD+IFR1+MS
6600.000	36.720	14.740	6265.744	23.955	0.000	24.075	0.000	10.460	0.000	0.000	25.519	23.758	129.451	MWD+IFR1+MS
6700.000	36.720	14.740	6345.901	24.383	0.000	24.499	0.000	10.745	0.000	0.000	25.862	24.171	130.465	MWD+IFR1+MS
6800.000	36.720	14.740	6426.058	24.816	0.000	24.926	0.000	11.034	0.000	0.000	26.209	24.587	131.567	MWD+IFR1+MS
6900.000	36.720	14.740	6506.215	25.254	0.000	25.356	0.000	11.328	0.000	0.000	26.562	25.004	132.762	MWD+IFR1+MS
7000.000	36.720	14.740	6586.372	25.696	0.000	25.790	0.000	11.626	0.000	0.000	26.919	25.424	134.057	MWD+IFR1+MS
7100.000	36.720	14.740	6666.530	26.143	0.000	26.227	0.000	11.928	0.000	0.000	27.282	25.845	-44.543	MWD+IFR1+MS
7200.000	36.720	14.740	6746.687	26.594	0.000	26.668	0.000	12.234	0.000	0.000	27.650	26.267	-43.031	MWD+IFR1+MS
7300.000	36.720	14.740	6826.844	27.048	0.000	27.111	0.000	12.543	0.000	0.000	28.023	26.690	-41.406	MWD+IFR1+MS
7400.000	36.720	14.740	6907.001	27.506	0.000	27.557	0.000	12.855	0.000	0.000	28.402	27.114	-39.668	MWD+IFR1+MS
7500.000	36.720	14.740	6987.158	27.968	0.000	28.005	0.000	13.170	0.000	0.000	28.786	27.537	-37.819	MWD+IFR1+MS
7600.000	36.720	14.740	7067.315	28.432	0.000	28.456	0.000	13.488	0.000	0.000	29.175	27.961	-35.866	MWD+IFR1+MS
7700.000	36.720	14.740	7147.473	28.900	0.000	28.909	0.000	13.809	0.000	0.000	29.571	28.383	-33.821	MWD+IFR1+MS
7749.495	36.720	14.740	7187.146	29.131	0.000	29.132	0.000	13.967	0.000	0.000	29.765	28.592	-32.819	MWD+IFR1+MS
7800.000	35.709	14.740	7227.894	29.513	0.000	29.359	0.000	14.130	0.000	0.000	29.964	28.805	-31.820	MWD+IFR1+MS
7900.000	33.709	14.740	7310.095	30.290	0.000	29.810	0.000	14.476	0.000	0.000	30.391	29.234	-30.658	MWD+IFR1+MS
8000.000	31.709	14.740	7394.232	31.065	0.000	30.261	0.000	14.830	0.000	0.000	30.843	29.671	-30.346	MWD+IFR1+MS
8100.000	29.709	14.740	7480.205	31.796	0.000	30.708	0.000	15.163	0.000	0.000	31.297	30.109	-30.292	MWD+IFR1+MS
8200.000	27.709	14.740	7567.907	32.483	0.000	31.150	0.000	15.476	0.000	0.000	31.751	30.547	-30.470	MWD+IFR1+MS
8300.000	25.709	14.740	7657.232	33.124	0.000	31.587	0.000	15.770	0.000	0.000	32.204	30.983	-30.850	MWD+IFR1+MS
8400.000	23.709	14.740	7748.072	33.720	0.000	32.017	0.000	16.046	0.000	0.000	32.655	31.416	-31.405	MWD+IFR1+MS
8500.000	21.709	14.740	7840.314	34.267	0.000	32.439	0.000	16.305	0.000	0.000	33.103	31.844	-32.104	MWD+IFR1+MS
8600.000	19.709	14.740	7933.848	34.767	0.000	32.854	0.000	16.548	0.000	0.000	33.547	32.267	-32.920	MWD+IFR1+MS
8700.000	17.709	14.740	8028.559	35.218	0.000	33.260	0.000	16.776	0.000	0.000	33.986	32.683	-33.822	MWD+IFR1+MS
8800.000	15.709	14.740	8124.332	35.620	0.000	33.657	0.000	16.991	0.000	0.000	34.420	33.091	-34.784	MWD+IFR1+MS
8900.000	13.709	14.740	8221.049	35.973	0.000	34.045	0.000	17.192	0.000	0.000	34.847	33.490	-35.778	MWD+IFR1+MS
9000.000	11.709	14.740	8318.594	36.276	0.000	34.423	0.000	17.383	0.000	0.000	35.267	33.879	-36.780	MWD+IFR1+MS
9100.000	9.709	14.740	8416.848	36.529	0.000	34.790	0.000	17.564	0.000	0.000	35.678	34.257	-37.770	MWD+IFR1+MS
9200.000	7.709	14.740	8515.689	36.733	0.000	35.147	0.000	17.736	0.000	0.000	36.081	34.624	-38.729	MWD+IFR1+MS
9300.000	5.709	14.740	8615.000	36.887	0.000	35.494	0.000	17.902	0.000	0.000	36.474	34.980	-39.643	MWD+IFR1+MS
9400.000	3.709	14.740	8714.657	36.992	0.000	35.829	0.000	18.061	0.000	0.000	36.857	35.323	-40.500	MWD+IFR1+MS

9500.000	1.709	14.740	8814.540	37.049	0.000	36.154	0.000	18.216	0.000	0.000	37.229	35.655	-41.292	MWD+IFR1+MS
9585.473	0.000	0.000	8900.000	36.646	0.000	36.820	0.000	18.346	0.000	0.000	37.518	35.931	-41.857	MWD+IFR1+MS
9600.000	0.000	0.000	8914.527	36.689	0.000	36.863	0.000	18.368	0.000	0.000	37.560	35.976	-41.839	MWD+IFR1+MS
9700.000	0.000	0.000	9014.527	36.984	0.000	37.165	0.000	18.522	0.000	0.000	37.850	36.283	-41.683	MWD+IFR1+MS
9722.273	0.000	0.000	9036.800	37.050	0.000	37.233	0.000	18.556	0.000	0.000	37.915	36.352	-41.647	MWD+IFR1+MS
9800.000	6.218	269.811	9114.375	37.061	-0.000	37.267	0.000	18.681	0.000	0.000	38.177	36.639	-39.613	MWD+IFR1+MS
9900.000	14.218	269.811	9212.709	37.147	-0.000	37.540	0.000	18.906	0.000	0.000	38.995	37.229	-24.755	MWD+IFR1+MS
10000.000	22.218	269.811	9307.619	36.989	-0.000	37.803	0.000	19.304	0.000	0.000	40.062	37.657	-14.246	MWD+IFR1+MS
10100.000	30.218	269.811	9397.258	36.410	-0.000	38.053	0.000	19.934	0.000	0.000	41.057	37.976	-9.116	MWD+IFR1+MS
10200.000	38.218	269.811	9479.881	35.499	-0.000	38.288	0.000	20.833	0.000	0.000	41.904	38.244	-6.324	MWD+IFR1+MS
10300.000	46.218	269.811	9553.880	34.373	-0.000	38.510	0.000	22.004	0.000	0.000	42.578	38.483	-4.694	MWD+IFR1+MS
10400.000	54.218	269.811	9617.815	33.173	-0.000	38.718	0.000	23.417	0.000	0.000	43.079	38.700	-3.765	MWD+IFR1+MS
10500.000	62.218	269.811	9670.440	32.062	-0.000	38.915	0.000	25.024	0.000	0.000	43.418	38.901	-3.352	MWD+IFR1+MS
10600.000	70.218	269.811	9710.733	31.215	-0.000	39.102	0.000	26.761	0.000	0.000	43.619	39.087	-3.400	MWD+IFR1+MS
10700.000	78.218	269.811	9737.909	30.796	-0.000	39.278	0.000	28.562	0.000	0.000	43.716	39.258	-3.916	MWD+IFR1+MS
10800.000	86.218	269.811	9751.438	30.927	-0.000	39.442	0.000	30.364	0.000	0.000	43.751	39.411	-4.927	MWD+IFR1+MS
10847.273	90.000	269.811	9752.997	30.707	0.000	39.513	0.000	30.707	0.000	0.000	43.761	39.473	-5.585	MWD+IFR1+MS
10900.000	90.000	269.811	9752.997	30.927	0.000	39.593	0.000	30.927	0.000	0.000	43.772	39.542	-6.384	MWD+IFR1+MS
11000.000	90.000	269.811	9752.997	31.310	0.000	39.774	0.000	31.310	0.000	0.000	43.799	39.694	-8.002	MWD+IFR1+MS
11100.000	90.000	269.811	9752.997	31.711	0.000	39.987	0.000	31.711	0.000	0.000	43.834	39.872	-9.782	MWD+IFR1+MS
11200.000	90.000	269.811	9752.997	32.126	0.000	40.230	0.000	32.126	0.000	0.000	43.879	40.070	-11.764	MWD+IFR1+MS
11300.000	90.000	269.811	9752.997	32.554	0.000	40.503	0.000	32.554	0.000	0.000	43.935	40.287	-13.994	MWD+IFR1+MS
11400.000	90.000	269.811	9752.997	32.995	0.000	40.805	0.000	32.995	0.000	0.000	44.005	40.518	-16.527	MWD+IFR1+MS
11500.000	90.000	269.811	9752.997	33.450	0.000	41.135	0.000	33.450	0.000	0.000	44.092	40.761	-19.416	MWD+IFR1+MS
11600.000	90.000	269.811	9752.997	33.916	0.000	41.493	0.000	33.916	0.000	0.000	44.201	41.009	-22.710	MWD+IFR1+MS
11700.000	90.000	269.811	9752.997	34.393	0.000	41.878	0.000	34.393	0.000	0.000	44.338	41.258	-26.433	MWD+IFR1+MS
11800.000	90.000	269.811	9752.997	34.882	0.000	42.289	0.000	34.882	0.000	0.000	44.508	41.499	-30.566	MWD+IFR1+MS
11900.000	90.000	269.811	9752.997	35.382	0.000	42.725	0.000	35.382	0.000	0.000	44.718	41.726	-35.021	MWD+IFR1+MS
12000.000	90.000	269.811	9752.997	35.892	0.000	43.187	0.000	35.892	0.000	0.000	44.973	41.934	-39.640	MWD+IFR1+MS
12100.000	90.000	269.811	9752.997	36.411	0.000	43.672	0.000	36.411	0.000	0.000	45.276	42.117	-44.220	MWD+IFR1+MS
12200.000	90.000	269.811	9752.997	36.940	0.000	44.180	0.000	36.940	0.000	0.000	45.628	42.276	131.435	MWD+IFR1+MS
12300.000	90.000	269.811	9752.997	37.478	0.000	44.711	0.000	37.478	0.000	0.000	46.026	42.410	127.465	MWD+IFR1+MS
12400.000	90.000	269.811	9752.997	38.024	0.000	45.263	0.000	38.024	0.000	0.000	46.467	42.523	123.939	MWD+IFR1+MS

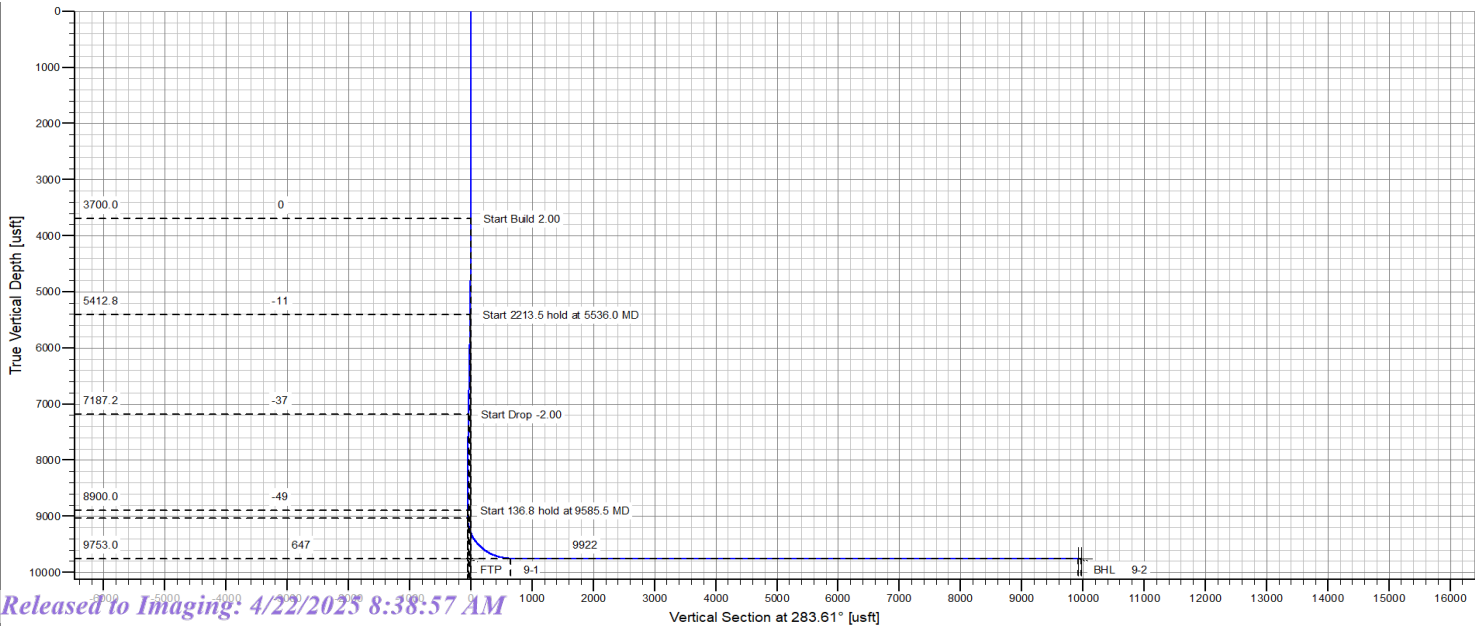
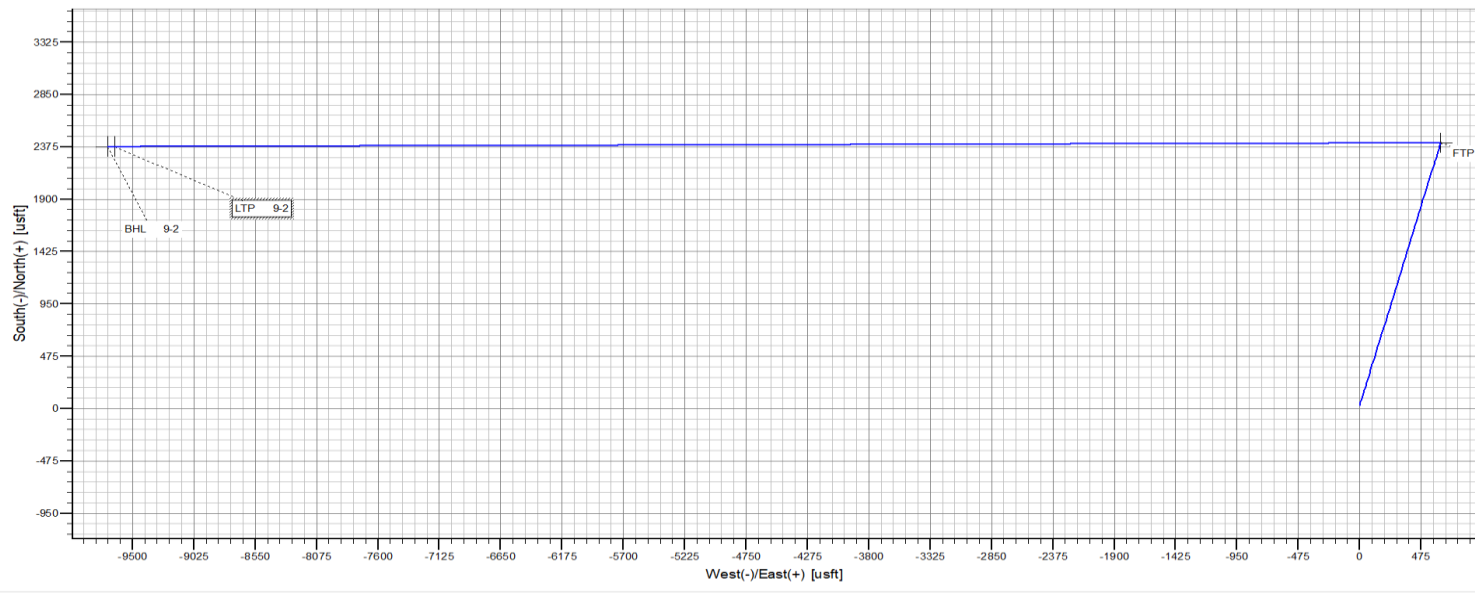
12500.000	90.000	269.811	9752.997	38.579	0.000	45.836	0.000	38.579	0.000	0.000	46.948	42.619	120.863	MWD+IFR1+MS
12600.000	90.000	269.811	9752.997	39.141	0.000	46.429	0.000	39.141	0.000	0.000	47.464	42.699	118.205	MWD+IFR1+MS
12700.000	90.000	269.811	9752.997	39.712	0.000	47.041	0.000	39.712	0.000	0.000	48.011	42.768	115.916	MWD+IFR1+MS
12800.000	90.000	269.811	9752.997	40.289	0.000	47.672	0.000	40.289	0.000	0.000	48.586	42.828	113.941	MWD+IFR1+MS
12900.000	90.000	269.811	9752.997	40.873	0.000	48.321	0.000	40.873	0.000	0.000	49.187	42.880	112.233	MWD+IFR1+MS
13000.000	90.000	269.811	9752.997	41.464	0.000	48.986	0.000	41.464	0.000	0.000	49.811	42.927	110.746	MWD+IFR1+MS
13100.000	90.000	269.811	9752.997	42.061	0.000	49.668	0.000	42.061	0.000	0.000	50.457	42.968	109.445	MWD+IFR1+MS
13200.000	90.000	269.811	9752.997	42.664	0.000	50.366	0.000	42.664	0.000	0.000	51.123	43.007	108.299	MWD+IFR1+MS
13300.000	90.000	269.811	9752.997	43.273	0.000	51.079	0.000	43.273	0.000	0.000	51.808	43.042	107.283	MWD+IFR1+MS
13400.000	90.000	269.811	9752.997	43.888	0.000	51.806	0.000	43.888	0.000	0.000	52.509	43.075	106.378	MWD+IFR1+MS
13500.000	90.000	269.811	9752.997	44.508	0.000	52.548	0.000	44.508	0.000	0.000	53.227	43.106	105.567	MWD+IFR1+MS
13600.000	90.000	269.811	9752.997	45.133	0.000	53.302	0.000	45.133	0.000	0.000	53.961	43.135	104.835	MWD+IFR1+MS
13700.000	90.000	269.811	9752.997	45.763	0.000	54.069	0.000	45.763	0.000	0.000	54.708	43.164	104.172	MWD+IFR1+MS
13800.000	90.000	269.811	9752.997	46.398	0.000	54.849	0.000	46.398	0.000	0.000	55.470	43.191	103.569	MWD+IFR1+MS
13900.000	90.000	269.811	9752.997	47.037	0.000	55.640	0.000	47.037	0.000	0.000	56.244	43.218	103.018	MWD+IFR1+MS
14000.000	90.000	269.811	9752.997	47.681	0.000	56.442	0.000	47.681	0.000	0.000	57.031	43.244	102.513	MWD+IFR1+MS
14100.000	90.000	269.811	9752.997	48.329	0.000	57.255	0.000	48.329	0.000	0.000	57.830	43.270	102.047	MWD+IFR1+MS
14200.000	90.000	269.811	9752.997	48.981	0.000	58.078	0.000	48.981	0.000	0.000	58.639	43.295	101.617	MWD+IFR1+MS
14300.000	90.000	269.811	9752.997	49.636	0.000	58.911	0.000	49.636	0.000	0.000	59.460	43.320	101.218	MWD+IFR1+MS
14400.000	90.000	269.811	9752.997	50.296	0.000	59.754	0.000	50.296	0.000	0.000	60.290	43.345	100.847	MWD+IFR1+MS
14500.000	90.000	269.811	9752.997	50.959	0.000	60.606	0.000	50.959	0.000	0.000	61.130	43.370	100.501	MWD+IFR1+MS
14600.000	90.000	269.811	9752.997	51.625	0.000	61.466	0.000	51.625	0.000	0.000	61.979	43.396	100.177	MWD+IFR1+MS
14700.000	90.000	269.811	9752.997	52.295	0.000	62.334	0.000	52.295	0.000	0.000	62.838	43.421	99.874	MWD+IFR1+MS
14800.000	90.000	269.811	9752.997	52.968	0.000	63.211	0.000	52.968	0.000	0.000	63.704	43.446	99.590	MWD+IFR1+MS
14900.000	90.000	269.811	9752.997	53.643	0.000	64.095	0.000	53.643	0.000	0.000	64.579	43.471	99.322	MWD+IFR1+MS
15000.000	90.000	269.811	9752.997	54.322	0.000	64.986	0.000	54.322	0.000	0.000	65.461	43.497	99.069	MWD+IFR1+MS
15100.000	90.000	269.811	9752.997	55.004	0.000	65.885	0.000	55.004	0.000	0.000	66.351	43.523	98.830	MWD+IFR1+MS
15200.000	90.000	269.811	9752.997	55.688	0.000	66.790	0.000	55.688	0.000	0.000	67.248	43.549	98.605	MWD+IFR1+MS
15300.000	90.000	269.811	9752.997	56.375	0.000	67.702	0.000	56.375	0.000	0.000	68.151	43.575	98.390	MWD+IFR1+MS
15400.000	90.000	269.811	9752.997	57.064	0.000	68.619	0.000	57.064	0.000	0.000	69.062	43.602	98.187	MWD+IFR1+MS
15500.000	90.000	269.811	9752.997	57.756	0.000	69.543	0.000	57.756	0.000	0.000	69.978	43.629	97.994	MWD+IFR1+MS
15600.000	90.000	269.811	9752.997	58.451	0.000	70.473	0.000	58.451	0.000	0.000	70.900	43.656	97.810	MWD+IFR1+MS
15700.000	90.000	269.811	9752.997	59.147	0.000	71.408	0.000	59.147	0.000	0.000	71.828	43.684	97.635	MWD+IFR1+MS

15800.000	90.000	269.811	9752.997	59.846	0.000	72.348	0.000	59.846	0.000	0.000	72.762	43.711	97.467	MWD+IFR1+MS
15900.000	90.000	269.811	9752.997	60.547	0.000	73.294	0.000	60.547	0.000	0.000	73.701	43.740	97.307	MWD+IFR1+MS
16000.000	90.000	269.811	9752.997	61.249	0.000	74.244	0.000	61.249	0.000	0.000	74.645	43.768	97.154	MWD+IFR1+MS
16100.000	90.000	269.811	9752.997	61.954	0.000	75.199	0.000	61.954	0.000	0.000	75.594	43.797	97.007	MWD+IFR1+MS
16200.000	90.000	269.811	9752.997	62.661	0.000	76.159	0.000	62.661	0.000	0.000	76.548	43.827	96.867	MWD+IFR1+MS
16300.000	90.000	269.811	9752.997	63.369	0.000	77.123	0.000	63.369	0.000	0.000	77.506	43.856	96.732	MWD+IFR1+MS
16400.000	90.000	269.811	9752.997	64.080	0.000	78.091	0.000	64.080	0.000	0.000	78.469	43.887	96.602	MWD+IFR1+MS
16500.000	90.000	269.811	9752.997	64.792	0.000	79.063	0.000	64.792	0.000	0.000	79.436	43.917	96.478	MWD+IFR1+MS
16600.000	90.000	269.811	9752.997	65.505	0.000	80.039	0.000	65.505	0.000	0.000	80.406	43.948	96.358	MWD+IFR1+MS
16700.000	90.000	269.811	9752.997	66.221	0.000	81.019	0.000	66.221	0.000	0.000	81.381	43.980	96.242	MWD+IFR1+MS
16800.000	90.000	269.811	9752.997	66.938	0.000	82.002	0.000	66.938	0.000	0.000	82.360	44.011	96.131	MWD+IFR1+MS
16900.000	90.000	269.811	9752.997	67.656	0.000	82.989	0.000	67.656	0.000	0.000	83.342	44.044	96.024	MWD+IFR1+MS
17000.000	90.000	269.811	9752.997	68.376	0.000	83.980	0.000	68.376	0.000	0.000	84.328	44.076	95.920	MWD+IFR1+MS
17100.000	90.000	269.811	9752.997	69.097	0.000	84.973	0.000	69.097	0.000	0.000	85.317	44.109	95.820	MWD+IFR1+MS
17200.000	90.000	269.811	9752.997	69.820	0.000	85.970	0.000	69.820	0.000	0.000	86.309	44.143	95.724	MWD+IFR1+MS
17300.000	90.000	269.811	9752.997	70.544	0.000	86.970	0.000	70.544	0.000	0.000	87.304	44.177	95.630	MWD+IFR1+MS
17400.000	90.000	269.811	9752.997	71.269	0.000	87.973	0.000	71.269	0.000	0.000	88.303	44.211	95.540	MWD+IFR1+MS
17500.000	90.000	269.811	9752.997	71.995	0.000	88.978	0.000	71.995	0.000	0.000	89.304	44.246	95.452	MWD+IFR1+MS
17600.000	90.000	269.811	9752.997	72.723	0.000	89.987	0.000	72.723	0.000	0.000	90.309	44.281	95.367	MWD+IFR1+MS
17700.000	90.000	269.811	9752.997	73.452	0.000	90.997	0.000	73.452	0.000	0.000	91.316	44.316	95.285	MWD+IFR1+MS
17800.000	90.000	269.811	9752.997	74.182	0.000	92.011	0.000	74.182	0.000	0.000	92.325	44.352	95.205	MWD+IFR1+MS
17900.000	90.000	269.811	9752.997	74.913	0.000	93.027	0.000	74.913	0.000	0.000	93.338	44.389	95.128	MWD+IFR1+MS
18000.000	90.000	269.811	9752.997	75.645	0.000	94.045	0.000	75.645	0.000	0.000	94.352	44.426	95.053	MWD+IFR1+MS
18100.000	90.000	269.811	9752.997	76.378	0.000	95.066	0.000	76.378	0.000	0.000	95.369	44.463	94.980	MWD+IFR1+MS
18200.000	90.000	269.811	9752.997	77.113	0.000	96.089	0.000	77.113	0.000	0.000	96.389	44.501	94.909	MWD+IFR1+MS
18300.000	90.000	269.811	9752.997	77.848	0.000	97.114	0.000	77.848	0.000	0.000	97.410	44.539	94.840	MWD+IFR1+MS
18400.000	90.000	269.811	9752.997	78.584	0.000	98.141	0.000	78.584	0.000	0.000	98.434	44.578	94.774	MWD+IFR1+MS
18500.000	90.000	269.811	9752.997	79.321	0.000	99.170	0.000	79.321	0.000	0.000	99.460	44.617	94.708	MWD+IFR1+MS
18600.000	90.000	269.811	9752.997	80.059	0.000	100.202	0.000	80.059	0.000	0.000	100.488	44.656	94.645	MWD+IFR1+MS
18700.000	90.000	269.811	9752.997	80.798	0.000	101.235	0.000	80.798	0.000	0.000	101.518	44.696	94.583	MWD+IFR1+MS
18800.000	90.000	269.811	9752.997	81.538	0.000	102.270	0.000	81.538	0.000	0.000	102.550	44.737	94.523	MWD+IFR1+MS
18900.000	90.000	269.811	9752.997	82.279	0.000	103.306	0.000	82.279	0.000	0.000	103.584	44.778	94.465	MWD+IFR1+MS
19000.000	90.000	269.811	9752.997	83.020	0.000	104.345	0.000	83.020	0.000	0.000	104.620	44.819	94.407	MWD+IFR1+MS

19100.000	90.000	269.811	9752.997	83.762	0.000	105.385	0.000	83.762	0.000	0.000	105.657	44.861	94.352	MWD+IFR1+MS
19200.000	90.000	269.811	9752.997	84.505	0.000	106.427	0.000	84.505	0.000	0.000	106.696	44.903	94.297	MWD+IFR1+MS
19300.000	90.000	269.811	9752.997	85.249	0.000	107.470	0.000	85.249	0.000	0.000	107.737	44.945	94.244	MWD+IFR1+MS
19400.000	90.000	269.811	9752.997	85.993	0.000	108.515	0.000	85.993	0.000	0.000	108.779	44.988	94.193	MWD+IFR1+MS
19500.000	90.000	269.811	9752.997	86.739	0.000	109.562	0.000	86.739	0.000	0.000	109.823	45.032	94.142	MWD+IFR1+MS
19600.000	90.000	269.811	9752.997	87.484	0.000	110.610	0.000	87.484	0.000	0.000	110.868	45.076	94.093	MWD+IFR1+MS
19700.000	90.000	269.811	9752.997	88.231	0.000	111.659	0.000	88.231	0.000	0.000	111.915	45.120	94.045	MWD+IFR1+MS
19800.000	90.000	269.811	9752.997	88.978	0.000	112.710	0.000	88.978	0.000	0.000	112.963	45.165	93.998	MWD+IFR1+MS
19900.000	90.000	269.811	9752.997	89.726	0.000	113.762	0.000	89.726	0.000	0.000	114.013	45.210	93.952	MWD+IFR1+MS
20000.000	90.000	269.811	9752.997	90.474	0.000	114.816	0.000	90.474	0.000	0.000	115.064	45.256	93.907	MWD+IFR1+MS
20100.000	90.000	269.811	9752.997	91.223	0.000	115.871	0.000	91.223	0.000	0.000	116.117	45.302	93.863	MWD+IFR1+MS
20200.000	90.000	269.811	9752.997	91.973	0.000	116.927	0.000	91.973	0.000	0.000	117.170	45.348	93.820	MWD+IFR1+MS
20300.000	90.000	269.811	9752.997	92.723	0.000	117.984	0.000	92.723	0.000	0.000	118.225	45.395	93.778	MWD+IFR1+MS
20396.429	90.000	269.811	9752.997	93.447	0.000	119.004	0.000	93.447	0.000	0.000	119.243	45.441	93.738	MWD+IFR1+MS
20400.000	90.000	269.811	9752.997	93.474	0.000	119.042	0.000	93.474	0.000	0.000	119.281	45.442	93.736	MWD+IFR1+MS
20447.439	90.000	269.811	9752.997	93.829	0.000	119.543	0.000	93.829	0.000	0.000	119.781	45.465	93.717	MWD+IFR1+MS

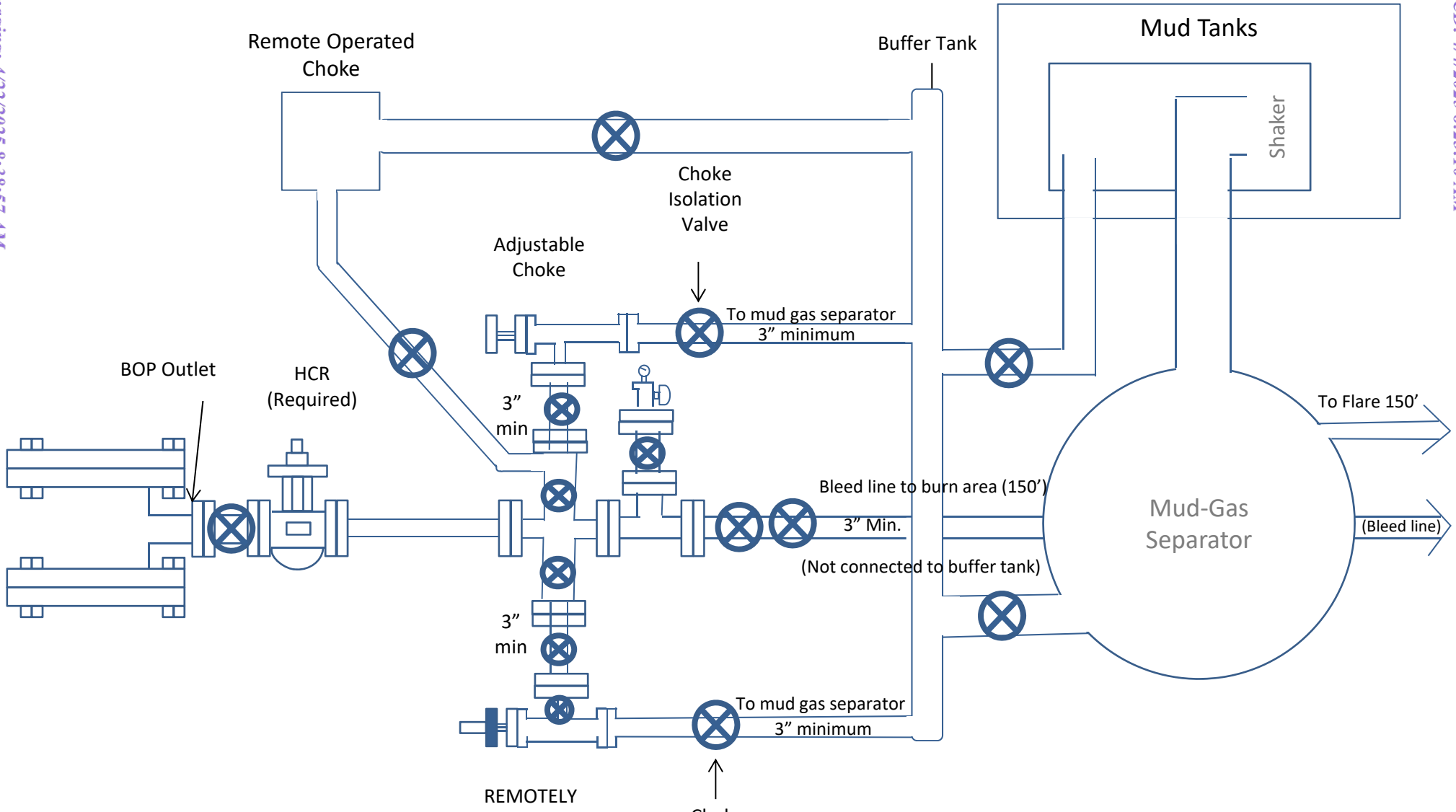
Plan Targets

Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
FTP 9	10597.21	509003.30	656539.80	6373.00	CIRCLE
LTP 9	20397.43	508969.40	646273.50	6373.00	CIRCLE
BHL 9	20447.43	508969.30	646223.50	6373.00	CIRCLE



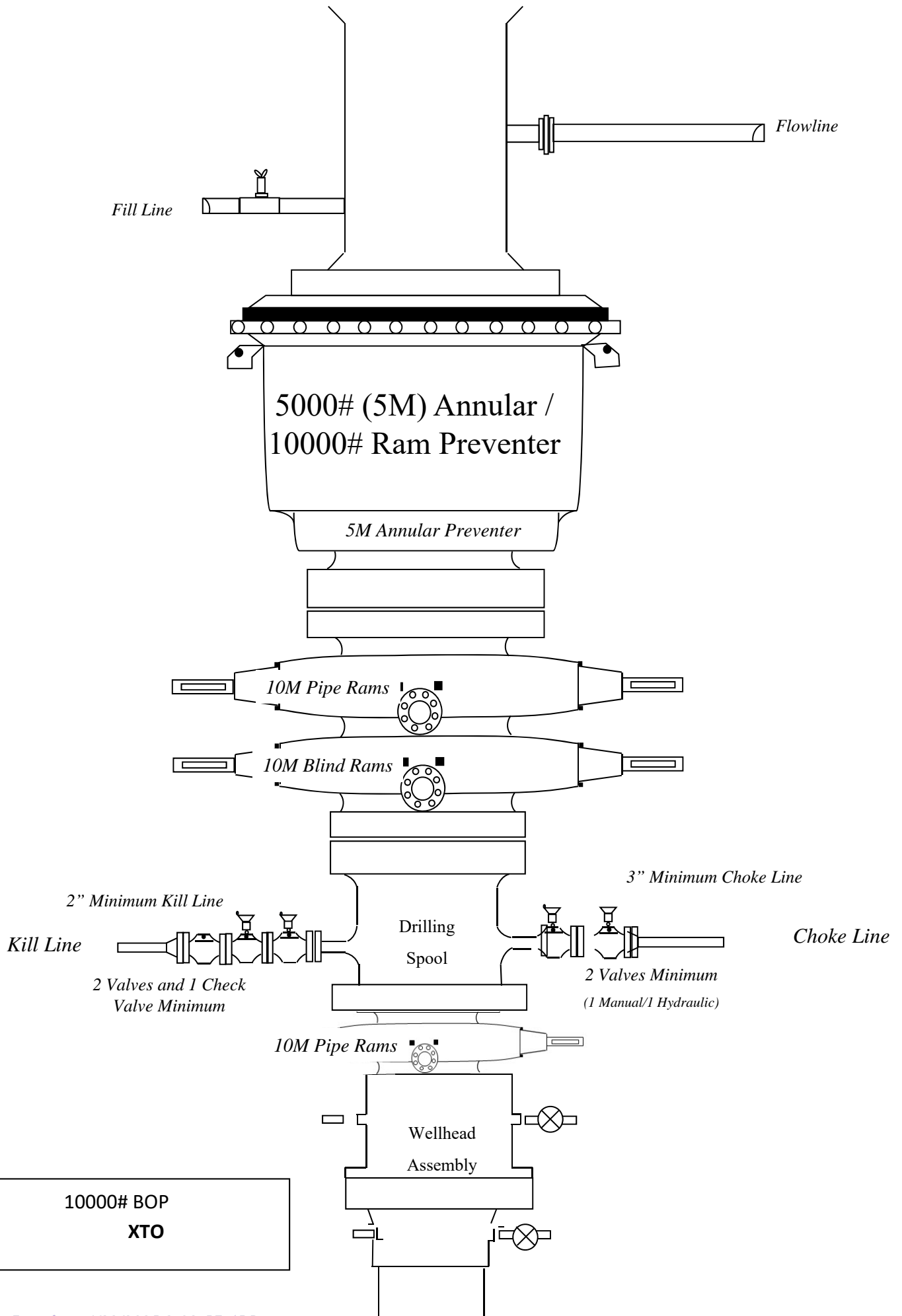
<u>Formation</u>	<u>TVDSS (feet)</u>	<u>MD TVD (feet)</u>
Alluvium	surface	surface
Rustler	2,924'	456'
Salado/Top of Salt	2,624'	756'
MB 126	1,940'	1,440'
Castile Anhydrite 1 Top	880'	2,500'
Castile Anhydrite 1 Base	455'	2,925'
Castile Anhydrite 2 Top	219'	3,161'
Castile Anhydrite 2 Base	124'	3,256'
Base Salt	-228'	3,608'
Delaware/Lamar	-489'	3,869'
Bell Canyon	-530'	3,910'
Cherry Canyon	-1,635'	5,015'
Brushy Canyon Ss.	-2,997'	6,377'
Bone Spring Lm.	-4,406'	7,786'
Avalon Ss.	-4,471'	7,851'
Upper Avalon Carb.	-4,694'	8,074'
Upper Avalon Sh.	-4,779'	8,159'
Middle Avalon Carb.	-4,923'	8,303'
Lw. Avalon Sh.	-4,997'	8,377'
First Bone Spring Carb.	-5,253'	8,633'
First Bone Spring Ss.	-5,424'	8,804'
Second Bone Spring Carb.	-5,861'	9,241'
Second Bone Spring A Ss.	-6,130'	9,510'
Second Bone Spring A/B Carb.	-6,294'	9,674'
Second Bone Spring B Ss.	-6,343'	9,723'
Landing Point	-6,373'	9,753'
TD	-6,300'	9,680'
Third Bone Spring Carb.	-6,477'	9,857'

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



**Drilling Operations**  
**Choke Manifold**  
**10M Service**

10M Choke Manifold Diagram  
XTO





# TenarisHydril Wedge 511



Coupling	Pipe Body
Grade: P110-ICY	Grade: P110-ICY
Body: White	1st Band: White
1st Band: Pale Green	2nd Band: Pale Green
2nd Band: -	3rd Band: Pale Green
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	7.625 in.	Wall Thickness	0.375 in.	Grade	P110-ICY
Min. Wall Thickness	90.00 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.625 in.	Wall Thickness	0.375 in.	Body Yield Strength	1068 x1000 lb
Nominal Weight	29.70 lb/ft	Plain End Weight	29.06 lb/ft	Min. Internal Yield Pressure	11,070 psi
Drift	6.750 in.	OD Tolerance	API	SMYS	125,000 psi
Nominal ID	6.875 in.			Collapse Pressure	7360 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.625 in.	Tension Efficiency	61.10 %	Minimum	5900 ft-lb
Connection ID	6.787 in.	Joint Yield Strength	653 x1000 lb	Optimum	7100 ft-lb
Make-up Loss	3.704 in.	Internal Pressure Capacity	11,070 psi	Maximum	10,300 ft-lb
Threads per inch	3.28	Compression Efficiency	73.80 %	Operation Limit Torques	
Connection OD Option	Regular	Compression Strength	788 x1000 lb	Operating Torque	55,000 ft-lb
		Max. Allowable Bending	45.83 °/100 ft	Yield Torque	82,000 ft-lb
		External Pressure Capacity	7360 psi		

Notes

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For further information on concepts indicated in this datasheet, download the Datasheet Manual from [www.tenaris.com](http://www.tenaris.com)

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# TenarisHydril Wedge 511



Coupling	Pipe Body
Grade: L80-IC	Grade: L80-IC
Body: Red	1st Band: Red
1st Band: Brown	2nd Band: Brown
2nd Band: -	3rd Band: Pale Green
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	7.625 in.	Wall Thickness	0.375 in.	Grade	L80-IC
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

### Pipe Body Data

Geometry				Performance	
Nominal OD	7.625 in.	Wall Thickness	0.375 in.	Body Yield Strength	683 x1000 lb
Nominal Weight	29.70 lb/ft	Plain End Weight	29.06 lb/ft	Min. Internal Yield Pressure	6890 psi
Drift	6.750 in.	OD Tolerance	API	SMYS	80,000 psi
Nominal ID	6.875 in.			Collapse Pressure	5900 psi

### Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.625 in.	Tension Efficiency	61.10 %	Minimum	5900 ft-lb
Connection ID	6.787 in.	Joint Yield Strength	417 x1000 lb	Optimum	7100 ft-lb
Make-up Loss	3.704 in.	Internal Pressure Capacity	6890 psi	Maximum	10,300 ft-lb
Threads per inch	3.28	Compression Efficiency	73.80 %	Operation Limit Torques	
Connection OD Option	Regular	Compression Strength	504 x1000 lb	Operating Torque	35,000 ft-lb
		Max. Allowable Bending	29.33 °/100 ft	Yield Torque	52,000 ft-lb
		External Pressure Capacity	5900 psi		

### Notes

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# TenarisHydril Wedge 441®



Coupling	Pipe Body
Grade: P110-IC	Grade: P110-IC
Body: White	1st Band: White
1st Band: -	2nd Band: Pale Green
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	5.500 in.	Wall Thickness	0.361 in.	Grade	P110-IC
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.500 in.	Wall Thickness	0.361 in.	Body Yield Strength	641 x1000 lb
Nominal Weight	20.00 lb/ft	Plain End Weight	19.83 lb/ft	Min. Internal Yield Pressure	12,640 psi
Drift	4.653 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	4.778 in.			Collapse Pressure	12,300 psi

Connection Data

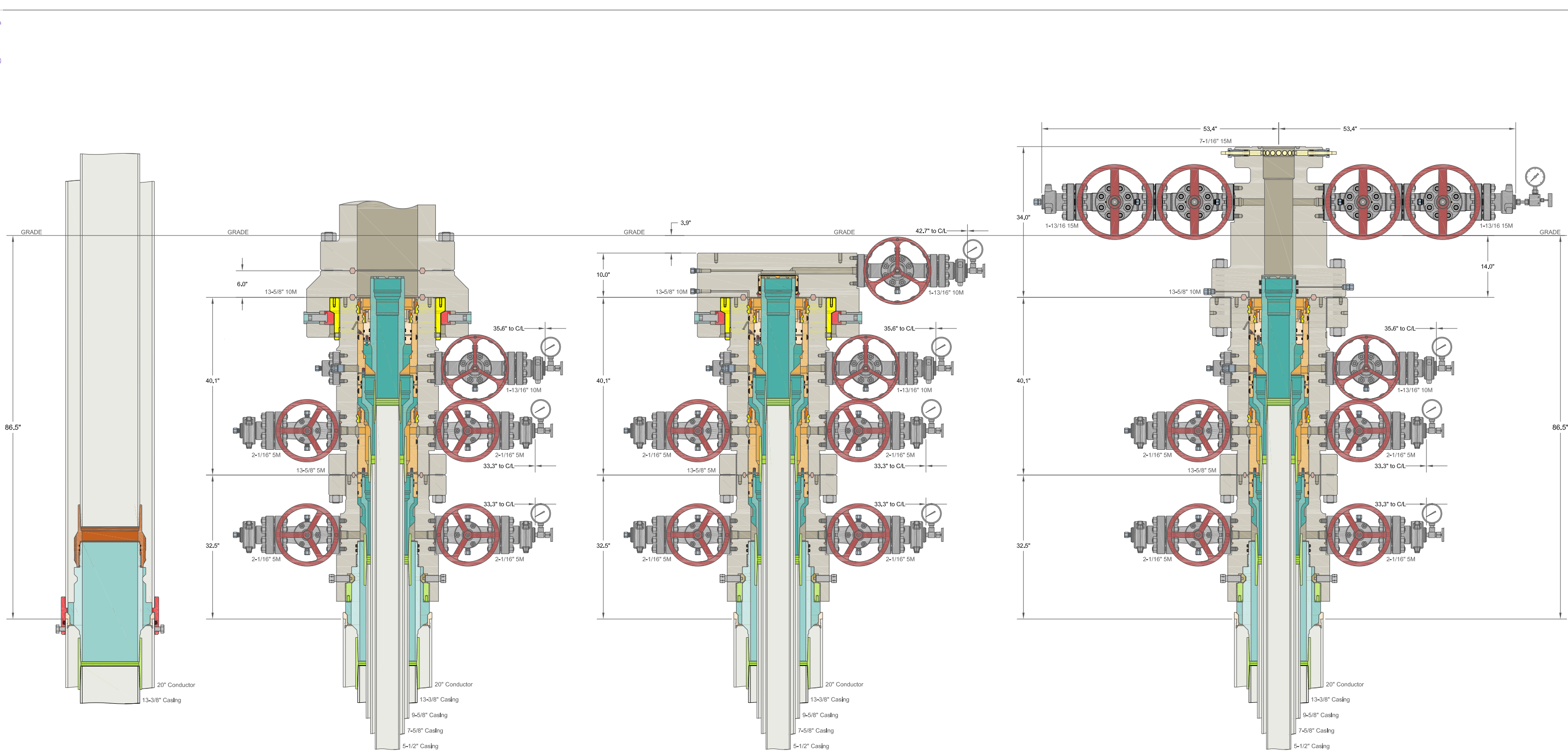
Geometry		Performance		Make-Up Torques	
Connection OD	5.852 in.	Tension Efficiency	81.50 %	Minimum	15,000 ft-lb
Coupling Length	8.714 in.	Joint Yield Strength	522 x1000 lb	Optimum	16,000 ft-lb
Connection ID	4.778 in.	Internal Pressure Capacity	12,640 psi	Maximum	19,200 ft-lb
Make-up Loss	3.780 in.	Compression Efficiency	81.50 %	Operation Limit Torques	
Threads per inch	3.40	Compression Strength	522 x1000 lb	Operating Torque	32,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	74.98 °/100 ft	Yield Torque	38,000 ft-lb
		External Pressure Capacity	12,300 psi	Buck-On	
				Minimum	19,200 ft-lb
				Maximum	20,700 ft-lb

Notes

This connection is fully interchangeable with:  
Wedge 441® - 5.5 in. - 0.304 (17.00) in. (lb/ft)  
Wedge 461® - 5.5 in. - 0.304 (17.00) / 0.361 (20.00) / 0.415 (23.00) in. (lb/ft)  
Connections with Dopeless® Technology are fully compatible with the same connection in its doped version  
Connection performance values are related to structural capabilities. For sealability-related performance information, request the Connection Service Envelope from your local Tenaris Representative.

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



ALL DIMENSIONS APPROXIMATE

XTO ENERGY INC  
DELAWARE BASIN

(20") x 13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL-R-DBLO-SF Wellhead  
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head  
And Drilling & Skid Configurations

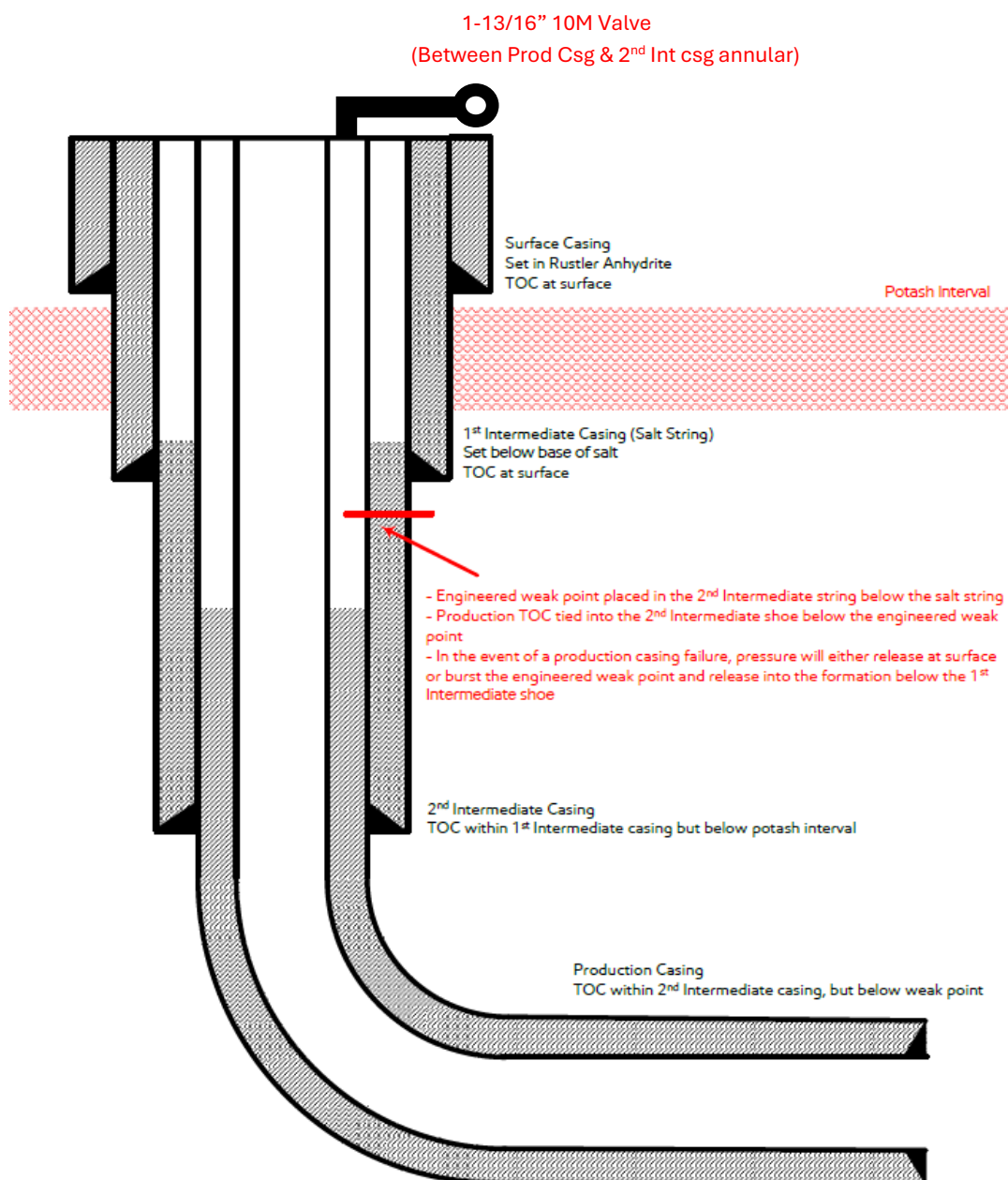
VJK

31MAR22

APPRV

DRAWING NO.

SDT-2856

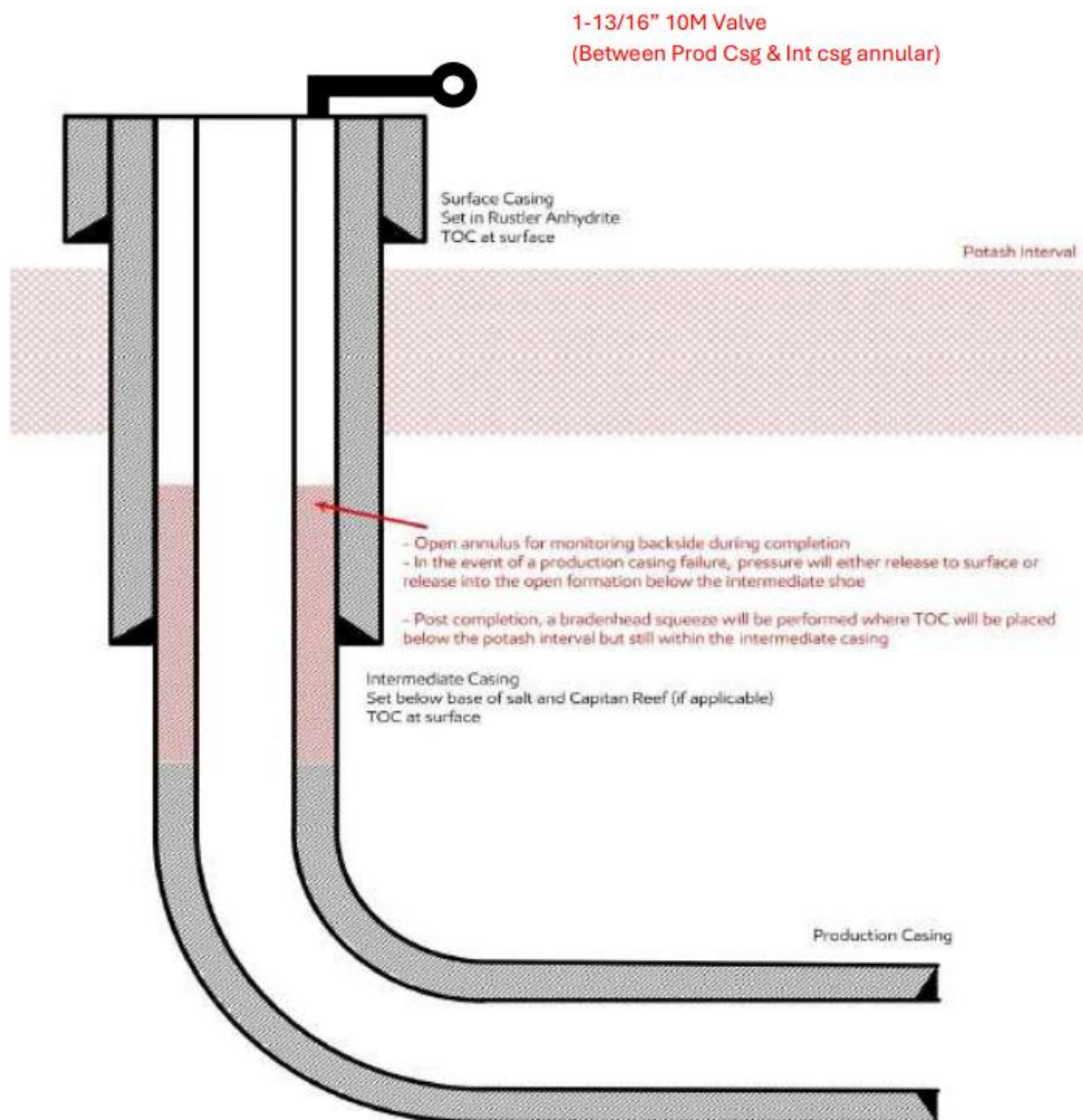


[Figure F] 4 String – 2<sup>nd</sup> Intermediate casing engineered weak point

Update May 2024:

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

- 1) Alignment with KPLA requirements per schematic below, with engineering weak point casing design and utilizing new casing that meets API standards.
- 2) Contingency plans in place to divert fluids away from salt interval in event of production casing failure.
- 3) Intermediate 2 casing will consist of a primary cement job with TOC at the top of the Brushy Canyon formation within the Delaware Mountain Group.
  - a. Bradenhead squeeze to be completed after primary cement job to tie back TOC to intermediate 1 “Salt string” & below Marker Bed 126 “Potash Interval”.
- 4) Production cement to be tied back no less than 500’ inside previous casing shoe (intermediate 2 casing) and below the engineered weak point.



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

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

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

**BLACK GOLD®**

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

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

*NEW CHOKE HOSE*  
*INSTALLED 02-10-2024*

## CERTIFICATE OF CONFORMANCE

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

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

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

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

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



H3-15/16

1/25/2024 11:48:06 AM

# TEST REPORT

**CUSTOMER**

Company: Nabors Industries Inc.

Production description: 74621/66-1531

Sales order #: 529480

Customer reference: FG1213

**TEST OBJECT**

Serial number: H3-012524-1

Lot number:

Description: 74621/66-1531

Hose ID: 3" 16C CK

Part number:

**TEST INFORMATION**

Test procedure: GTS-04-053

Test pressure: 15000.00 psi

Test pressure hold: 3600.00 sec

Work pressure: 10000.00 psi

Work pressure hold: 900.00 sec

Length difference: 0.00 %

Length difference: 0.00 inch

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

Part number:

Description:

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

Part number:

Description:

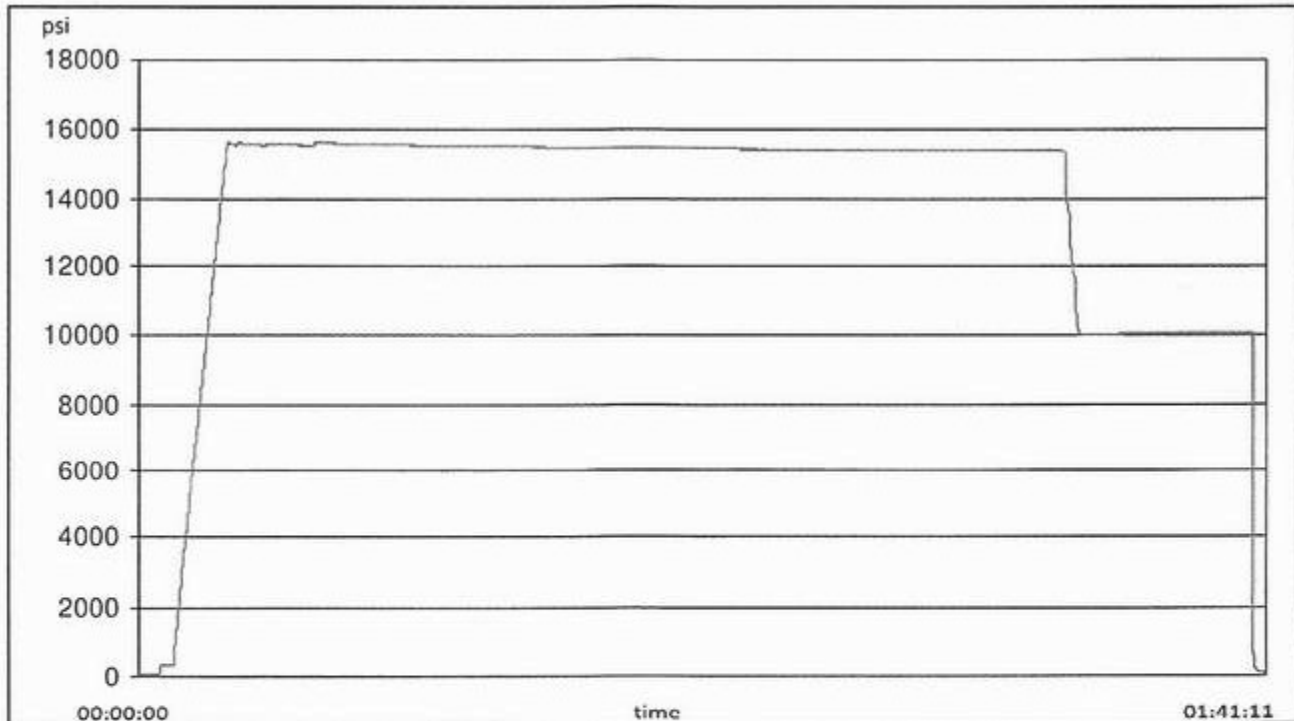
Visual check:

Pressure test result: PASS

Length measurement result:

Length: 45 feet

Test operator: Travis





H3-15/1b

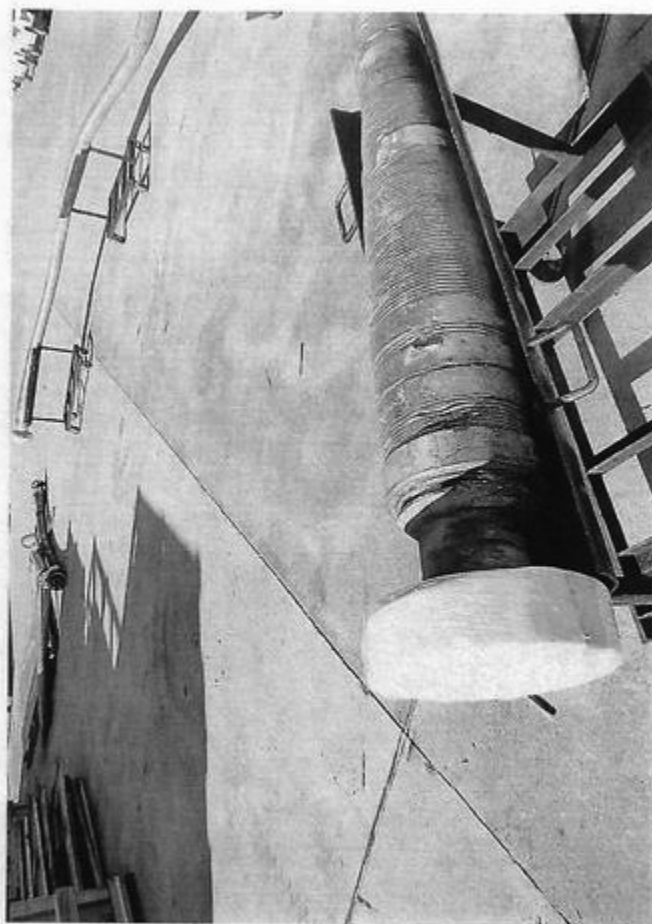
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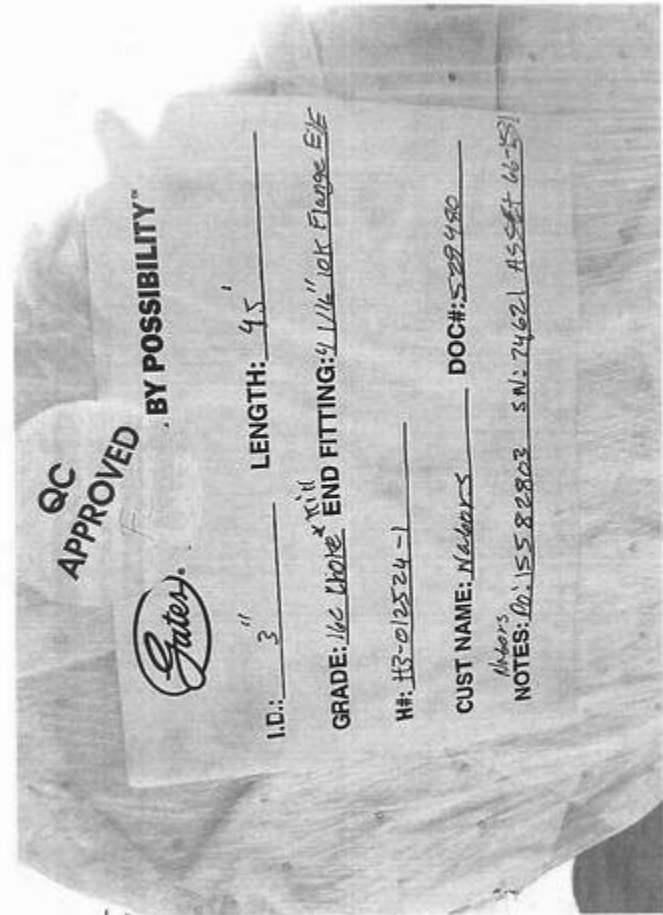
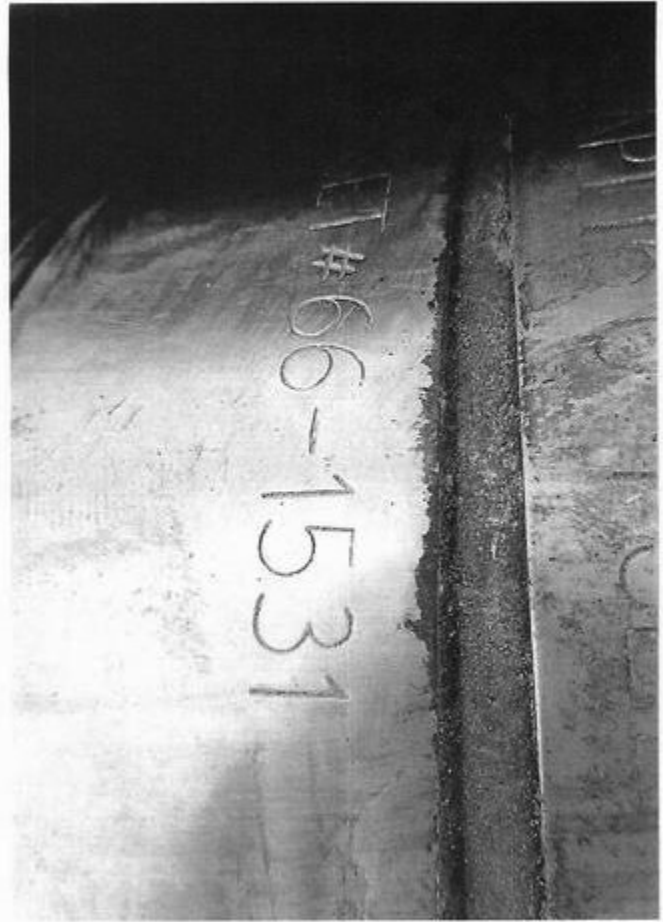
## TEST REPORT

### GAUGE TRACEABILITY

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

Comment





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

Description of Operations:

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

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

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

**Background**

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

**Supporting Documentation**

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

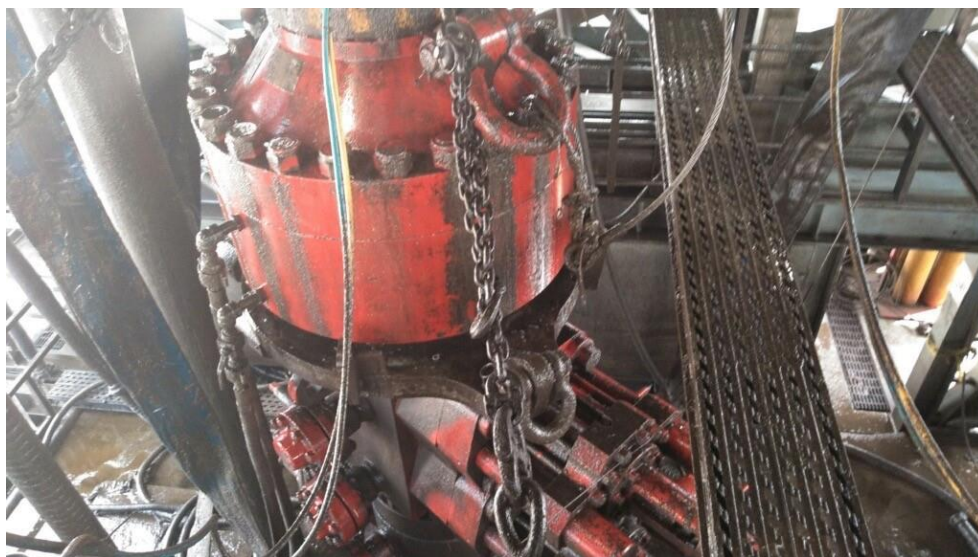


Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System

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

62 API STANDARD 53			
Table C.4—Initial Pressure Testing, Surface BOP Stacks			
Component to be Pressure Tested	Pressure Test—Low Pressure <sup>ac</sup> psig (MPa)	Pressure Test—High Pressure <sup>ac</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>bd</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	
<sup>a</sup> Pressure test evaluation periods shall be a minimum of five minutes. No visible leaks. The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure. <sup>b</sup> Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program. <sup>c</sup> For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. <sup>d</sup> For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually. <sup>e</sup> Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.			

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

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

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

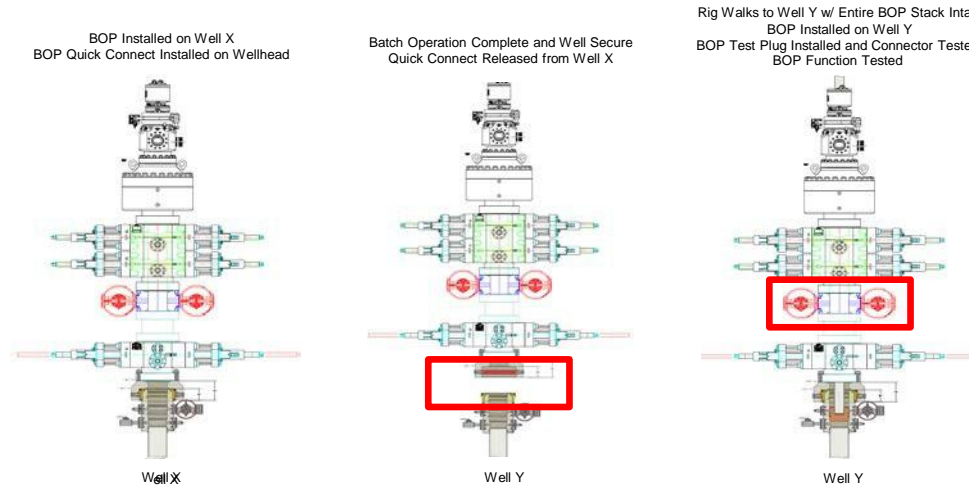
each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the CFR Title 43 Part 3170.

### **Procedures**

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

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

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



### Summary

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

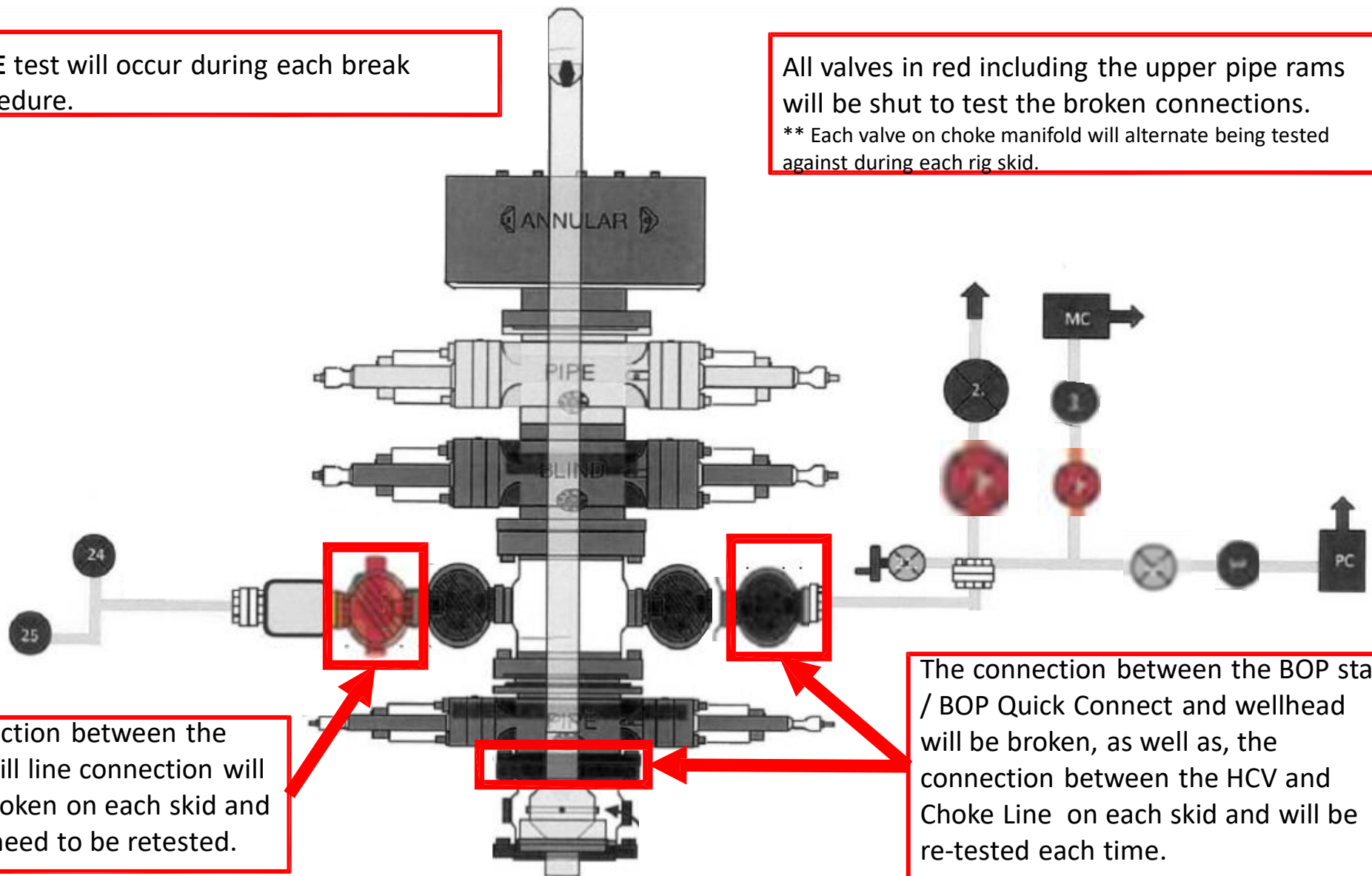
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

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

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

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

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



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

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

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

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

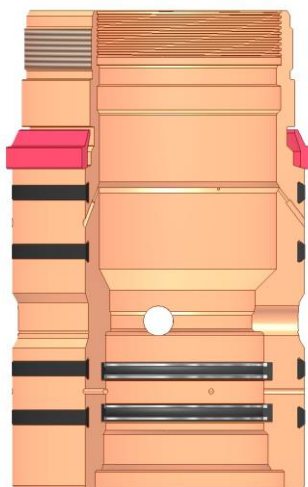
**1. Cement Program**

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

**2. Offline Cementing Procedure**

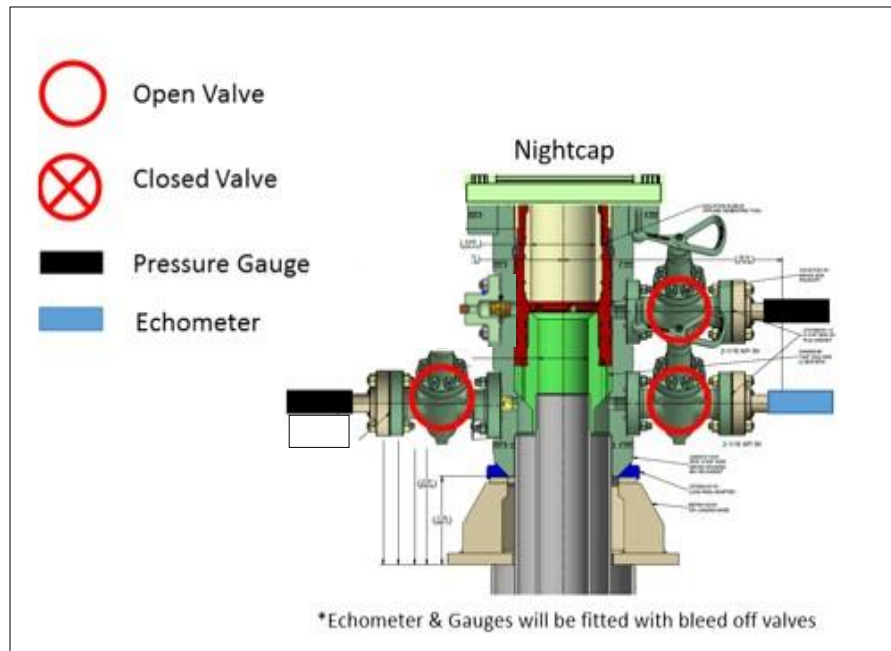
The operational sequence will be as follows. If a well control event occurs, the BLM will be contacted for approval prior to conducting offline cementing operations.

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



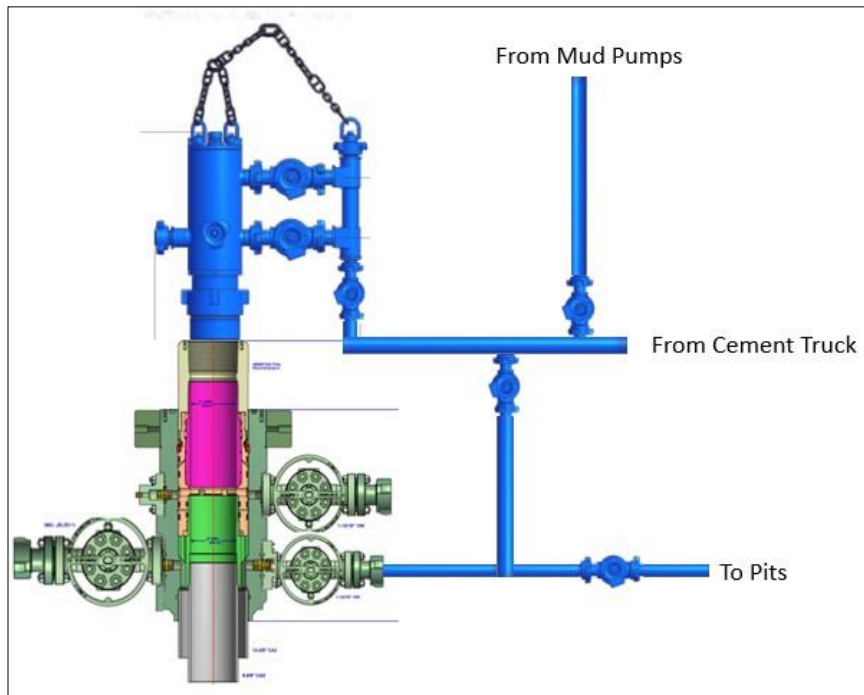
Annular packoff with both external and internal seals

## XTO Permian Operating, LLC Offline Cementing Variance Request



Wellhead diagram during skidding operations

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

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

Wellhead diagram during offline cementing operations

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

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

CONDITIONS

Action 448757

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 448757
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Operator must comply with all of the R-111-Q requirements.	4/22/2025
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	4/22/2025