

Well Name: POKER LAKE UNIT 20 DTD	Well Location: T24S / R30E / SEC 20 / NENE / 32.209258 / -103.896653	County or Parish/State: EDDY / NM
Well Number: 423H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMLC068905	Unit or CA Name: POKER LAKE UNIT	Unit or CA Number: NMNM71016X
US Well Number:	Operator: XTO PERMIAN OPERATING LLC	

Notice of Intent

Sundry ID: 2778054

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 03/05/2024	Time Sundry Submitted: 04:26
Date proposed operation will begin: 04/02/2024	

Procedure Description: XTO Permian Operating, LLC. respectfully requests approval to make the following changes to the approved APD. Changes to include SHL, FTP, LTP, BHL, casing sizes, cement, proposed total depth, and formation (pool). FROM: TO: SHL: 432' FNL & 547' FEL of Section 20-T24S-R30E 432' FNL & 547' FEL of Section 20-T24S-R30E FTP: 100' FSL & 550' FEL of Section 17-T24S-R30E 100' FNL & 1319' FEL of Section 20-T24S-R30E LTP: 330' FNL & 550' FEL of Section 32-T23S-R30E 100' FSL & 1005' FEL of Section 5-T25S-R30E BHL: 200' FNL & 550' FEL of Section 32-T23S-R30E 50' FSL & 1005' FEL of Section 5-T25S-R30E Proposed total depth will change from 31976' MD; 10784' TVD (Wolfcamp) to 29969' MD; TVD 9583' (Bone Spring). See attached Drilling Plan for updated cement and casing program. Attachments: C-102, Drilling Plan, Directional Drilling Plan, MBS, BOP Variance, Well Control Plan

NOI Attachments

Procedure Description

- Well_Plan_Report____Poker_Lake_Unit_20_DTD_South_423H_20240305162356.pdf
- POKER_LAKE_UNIT_20_DTD_423H_C_102_FINAL_20240305162349.pdf
- 3_String_Bighole_Four_Miler_HBE0000833_MBS_20240305162349.pdf
- PLU_20_DTD_PAD_D_423H_Drilling_Plan_20240305162349.pdf
- BOP_Variance_new_Language_BOP_BTV_20240305162348.pdf
- Well_Control_Plan_w_CFR_43_3172_20240305162346.pdf

Received by OCD: 5/8/2024 2:50:02 PM

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Conditions of Approval

Additional

Sec_20_24S_30E_NMP_Sundry_2778054_Poker_Lake_Unit_20_DTD_423H_COAs_20240404133714.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: JEAN COOPER	Signed on: MAR 05, 2024 04:24 PM
Name: XTO PERMIAN OPERATING LLC	
Title: Regulatory Analyst	
Street Address: 6401 HOLIDAY HILL ROAD BLDG 5	
City: MIDLAND	State: TX
Phone: (432) 620-6700	
Email address: JEAN.COOPER@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: 05/03/2024
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	

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 recompleat 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 recompleation 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

Attachments: C-102, Drilling Plan, Directional Drilling Plan, MBS, BOP Variance, Well Control Plan

Location of Well

0. SHL: NENE / 432 FNL / 547 FEL / TWSP: 24S / RANGE: 30E / SECTION: 20 / LAT: 32.209258 / LONG: -103.896653 (TVD: 0 feet, MD: 0 feet)

PPP: SESE / 330 FSL / 550 FEL / TWSP: 24S / RANGE: 30E / SECTION: 8 / LAT: 32.22548 / LONG: -103.89663 (TVD: 10784 feet, MD: 16500 feet)

PPP: SESE / 100 FSL / 550 FEL / TWSP: 24S / RANGE: 30E / SECTION: 17 / LAT: 32.21072 / LONG: -103.89666 (TVD: 10784 feet, MD: 11200 feet)

PPP: NESE / 100 FSL / 110 FEL / TWSP: 24S / RANGE: 30E / SECTION: 17 / LAT: 32.21438 / LONG: -103.89663 (TVD: 10784 feet, MD: 12600 feet)

PPP: SESE / 330 FSL / 550 FEL / TWSP: 24S / RANGE: 30E / SECTION: 5 / LAT: 32.24021 / LONG: -103.89663 (TVD: 10784 feet, MD: 21800 feet)

BHL: NENE / 200 FNL / 550 FEL / TWSP: 23S / RANGE: 30E / SECTION: 32 / LAT: 32.268075 / LONG: -103.896664 (TVD: 10784 feet, MD: 31976 feet)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Permian Operating LLC
WELL NAME & NO.:	Poker Lake Unit 20 423H
LOCATION:	Sec 20-24S-30E-NMP
COUNTY:	Eddy County, New Mexico

*Changes approved through engineering via **Sundry 2778054** on 04/04/2024. Any previous COAs not addressed within the updated COAs still apply.*

COA

H₂S	<input checked="" type="radio"/> No	<input type="radio"/> Yes		
Potash / WIPP	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P	<input 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 type="checkbox"/> Primary Squeeze	<input checked="" type="checkbox"/> Cont. Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
Special Req	<input checked="" type="checkbox"/> Break Testing	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit
Variance	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Capitan Reef
Variance	<input type="checkbox"/> Four-String	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Fluid-Filled	<input type="checkbox"/> Open Annulus
<input type="checkbox"/> Batch APD / Sundry				

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **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. ***Set depth adjusted per BLM geologist.***
 - 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 intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus after primary cementing stage. Operator must run a CBL from TD of the 9-5/8" casing to surface. Submit results to the BLM.

If cement does not tie-back into the previous casing shoe, a third stage remediation BH may be performed. The appropriate BLM office shall be notified.

3. The minimum required fill of cement behind the **6** inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

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

D. SPECIAL REQUIREMENT (S)

Unit Wells

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

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for 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 Onshore Oil and Gas Order No. 2.
- 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.

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)

Eddy County (API No. / US Well No. contains 30-015-#####)

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM NM CFO DrillingNotifications@blm.gov; (575) 361-2822

Lea County (API No. / US Well No. contains 30-025-#####)

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
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd 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. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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, 2) until cement has been in place at least 24 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-P 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 part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
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:
 - 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. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
 - e. 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.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead 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).
 - b. 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.)
 - c. 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 part 3170 Subpart 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. 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.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. 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 part 3170 Subpart 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.

Well Plan Report - Poker Lake Unit 20 DTD South 423H

Measured Depth: 29969.11 ft

TVD RKB: 9583.00 ft

Location

Cartographic Reference System: New Mexico East -
NAD 27

Northing: 440077.20 ft

Easting: 635211.70 ft

RKB: 3328.00 ft

Ground Level: 3296.00 ft

North Reference: Grid

Convergence Angle: 0.23 Deg

Plan Sections

Poker Lake Unit 20 DTD South 423H

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	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
1158.98	1.18	90.00	1158.98	0.00	0.61	2.00	0.00	2.00	
6642.19	1.18	90.00	6641.02	0.00	113.49	0.00	0.00	0.00	
6701.17	0.00	0.00	6700.00	0.00	114.10	-2.00	0.00	2.00	
8867.97	0.00	0.00	8866.80	0.00	114.10	0.00	0.00	0.00	
9992.97	90.00	179.68	9583.00	-716.19	118.16	8.00	0.00	8.00	
29919.11	90.00	179.68	9583.00	-20642.00	231.19	0.00	0.00	0.00	LTP 26
29969.11	90.00	179.68	9583.00	-20692.00	231.47	0.00	0.00	0.00	BHL 26

Position Uncertainty

Poker Lake Unit 20 DTD South 423H

Measured	TVD	Highside	Lateral	Vertical	Magnitude	Semi-major	Semi-minor	Semi-minor	Tool
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Depth	Inclination	Azimuth	RKB	Error	Bias	Error	Bias	Error	Bias	of Bias	Error	Error	Azimuth	Used
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.309	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.325	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.347	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.374	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.406	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.443	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.484	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	2.530	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	2.580	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	2.633	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1158.983	1.180	90.000	1158.979	4.450	0.000	4.604	-0.000	2.666	0.000	0.000	4.940	4.075	129.860	MWD+IFR1+MS
1200.000	1.180	90.000	1199.987	4.587	0.000	4.733	-0.000	2.689	0.000	0.000	5.058	4.227	129.973	MWD+IFR1+MS
1300.000	1.180	90.000	1299.966	4.915	0.000	5.064	-0.000	2.748	0.000	0.000	5.348	4.605	129.248	MWD+IFR1+MS
1400.000	1.180	90.000	1399.945	5.265	0.000	5.416	-0.000	2.811	0.000	0.000	5.647	5.017	128.108	MWD+IFR1+MS
1500.000	1.180	90.000	1499.924	5.616	0.000	5.768	-0.000	2.876	0.000	0.000	5.954	5.420	126.722	MWD+IFR1+MS
1600.000	1.180	90.000	1599.902	5.967	0.000	6.122	-0.000	2.943	0.000	0.000	6.266	5.816	125.007	MWD+IFR1+MS
1700.000	1.180	90.000	1699.881	6.320	0.000	6.476	-0.000	3.013	0.000	0.000	6.584	6.207	122.852	MWD+IFR1+MS
1800.000	1.180	90.000	1799.860	6.673	0.000	6.830	-0.000	3.085	0.000	0.000	6.908	6.593	120.097	MWD+IFR1+MS
1900.000	1.180	90.000	1899.839	7.027	0.000	7.185	-0.000	3.158	0.000	0.000	7.236	6.974	116.530	MWD+IFR1+MS
2000.000	1.180	90.000	1999.818	7.381	0.000	7.540	-0.000	3.234	0.000	0.000	7.570	7.350	111.908	MWD+IFR1+MS
2100.000	1.180	90.000	2099.796	7.736	0.000	7.895	-0.000	3.311	0.000	0.000	7.910	7.721	106.050	MWD+IFR1+MS
2200.000	1.180	90.000	2199.775	8.091	0.000	8.251	-0.000	3.390	0.000	0.000	8.255	8.086	99.071	MWD+IFR1+MS
2300.000	1.180	90.000	2299.754	8.446	0.000	8.607	-0.000	3.471	0.000	0.000	8.607	8.446	91.606	MWD+IFR1+MS
2400.000	1.180	90.000	2399.733	8.801	0.000	8.963	-0.000	3.553	0.000	0.000	8.965	8.800	84.591	MWD+IFR1+MS
2500.000	1.180	90.000	2499.712	9.157	0.000	9.320	-0.000	3.636	0.000	0.000	9.326	9.150	78.680	MWD+IFR1+MS
2600.000	1.180	90.000	2599.690	9.513	0.000	9.676	-0.000	3.721	0.000	0.000	9.691	9.498	74.009	MWD+IFR1+MS
2700.000	1.180	90.000	2699.669	9.870	0.000	10.033	-0.000	3.807	0.000	0.000	10.057	9.845	70.404	MWD+IFR1+MS
2800.000	1.180	90.000	2799.648	10.226	0.000	10.390	-0.000	3.895	0.000	0.000	10.423	10.192	67.620	MWD+IFR1+MS
2900.000	1.180	90.000	2899.627	10.583	0.000	10.747	-0.000	3.984	0.000	0.000	10.790	10.538	65.443	MWD+IFR1+MS

3000.000	1.180	90.000	2999.606	10.939	0.000	11.104	-0.000	4.075	0.000	0.000	11.157	10.885	63.713	MWD+IFR1+MS
3100.000	1.180	90.000	3099.584	11.296	0.000	11.461	-0.000	4.166	0.000	0.000	11.523	11.232	62.314	MWD+IFR1+MS
3200.000	1.180	90.000	3199.563	11.653	0.000	11.818	-0.000	4.260	0.000	0.000	11.890	11.580	61.166	MWD+IFR1+MS
3300.000	1.180	90.000	3299.542	12.010	0.000	12.176	-0.000	4.354	0.000	0.000	12.256	11.928	60.208	MWD+IFR1+MS
3400.000	1.180	90.000	3399.521	12.367	0.000	12.533	-0.000	4.450	0.000	0.000	12.622	12.276	59.400	MWD+IFR1+MS
3500.000	1.180	90.000	3499.500	12.725	0.000	12.891	-0.000	4.547	0.000	0.000	12.987	12.625	58.710	MWD+IFR1+MS
3600.000	1.180	90.000	3599.478	13.082	0.000	13.248	-0.000	4.646	0.000	0.000	13.353	12.975	58.114	MWD+IFR1+MS
3700.000	1.180	90.000	3699.457	13.439	0.000	13.606	-0.000	4.746	0.000	0.000	13.717	13.324	57.595	MWD+IFR1+MS
3800.000	1.180	90.000	3799.436	13.797	0.000	13.963	-0.000	4.847	0.000	0.000	14.082	13.675	57.140	MWD+IFR1+MS
3900.000	1.180	90.000	3899.415	14.155	0.000	14.321	-0.000	4.950	0.000	0.000	14.447	14.025	56.736	MWD+IFR1+MS
4000.000	1.180	90.000	3999.394	14.512	0.000	14.679	-0.000	5.055	0.000	0.000	14.811	14.376	56.377	MWD+IFR1+MS
4100.000	1.180	90.000	4099.372	14.870	0.000	15.037	-0.000	5.161	0.000	0.000	15.175	14.728	56.056	MWD+IFR1+MS
4200.000	1.180	90.000	4199.351	15.228	0.000	15.395	-0.000	5.269	0.000	0.000	15.538	15.080	55.766	MWD+IFR1+MS
4300.000	1.180	90.000	4299.330	15.585	0.000	15.752	-0.000	5.378	0.000	0.000	15.902	15.432	55.504	MWD+IFR1+MS
4400.000	1.180	90.000	4399.309	15.943	0.000	16.110	-0.000	5.489	0.000	0.000	16.265	15.784	55.265	MWD+IFR1+MS
4500.000	1.180	90.000	4499.288	16.301	0.000	16.468	-0.000	5.602	0.000	0.000	16.628	16.137	55.048	MWD+IFR1+MS
4600.000	1.180	90.000	4599.267	16.659	0.000	16.826	-0.000	5.716	0.000	0.000	16.991	16.489	54.848	MWD+IFR1+MS
4700.000	1.180	90.000	4699.245	17.017	0.000	17.184	-0.000	5.832	0.000	0.000	17.353	16.843	54.665	MWD+IFR1+MS
4800.000	1.180	90.000	4799.224	17.375	0.000	17.542	-0.000	5.950	0.000	0.000	17.716	17.196	54.496	MWD+IFR1+MS
4900.000	1.180	90.000	4899.203	17.733	0.000	17.900	-0.000	6.070	0.000	0.000	18.078	17.549	54.339	MWD+IFR1+MS
5000.000	1.180	90.000	4999.182	18.091	0.000	18.258	-0.000	6.191	0.000	0.000	18.441	17.903	54.194	MWD+IFR1+MS
5100.000	1.180	90.000	5099.161	18.449	0.000	18.617	-0.000	6.315	0.000	0.000	18.803	18.257	54.059	MWD+IFR1+MS
5200.000	1.180	90.000	5199.139	18.807	0.000	18.975	-0.000	6.440	0.000	0.000	19.165	18.611	53.933	MWD+IFR1+MS
5300.000	1.180	90.000	5299.118	19.165	0.000	19.333	-0.000	6.567	0.000	0.000	19.526	18.966	53.815	MWD+IFR1+MS
5400.000	1.180	90.000	5399.097	19.523	0.000	19.691	-0.000	6.697	0.000	0.000	19.888	19.320	53.705	MWD+IFR1+MS
5500.000	1.180	90.000	5499.076	19.881	0.000	20.049	-0.000	6.828	0.000	0.000	20.250	19.675	53.602	MWD+IFR1+MS
5600.000	1.180	90.000	5599.055	20.240	0.000	20.407	-0.000	6.962	0.000	0.000	20.611	20.030	53.504	MWD+IFR1+MS
5700.000	1.180	90.000	5699.033	20.598	0.000	20.766	-0.000	7.098	0.000	0.000	20.972	20.385	53.413	MWD+IFR1+MS
5800.000	1.180	90.000	5799.012	20.956	0.000	21.124	-0.000	7.235	0.000	0.000	21.334	20.740	53.327	MWD+IFR1+MS
5900.000	1.180	90.000	5898.991	21.314	0.000	21.482	-0.000	7.375	0.000	0.000	21.695	21.095	53.245	MWD+IFR1+MS
6000.000	1.180	90.000	5998.970	21.673	0.000	21.840	-0.000	7.518	0.000	0.000	22.056	21.450	53.168	MWD+IFR1+MS
6100.000	1.180	90.000	6098.949	22.031	0.000	22.199	-0.000	7.662	0.000	0.000	22.417	21.806	53.095	MWD+IFR1+MS
6200.000	1.180	90.000	6198.927	22.389	0.000	22.557	-0.000	7.809	0.000	0.000	22.778	22.162	53.026	MWD+IFR1+MS

6300.000	1.180	90.000	6298.906	22.747	0.000	22.915	-0.000	7.958	0.000	0.000	23.139	22.517	52.960	MWD+IFR1+MS
6400.000	1.180	90.000	6398.885	23.106	0.000	23.273	-0.000	8.109	0.000	0.000	23.499	22.873	52.897	MWD+IFR1+MS
6500.000	1.180	90.000	6498.864	23.464	0.000	23.632	-0.000	8.263	0.000	0.000	23.860	23.229	52.838	MWD+IFR1+MS
6600.000	1.180	90.000	6598.843	23.822	0.000	23.990	-0.000	8.419	0.000	0.000	24.221	23.585	52.781	MWD+IFR1+MS
6642.187	1.180	90.000	6641.021	23.971	0.000	24.139	-0.000	8.486	0.000	0.000	24.368	23.735	52.818	MWD+IFR1+MS
6701.171	0.000	0.000	6700.000	24.344	0.000	24.172	0.000	8.580	0.000	0.000	24.569	23.943	52.999	MWD+IFR1+MS
6800.000	0.000	0.000	6798.829	24.699	0.000	24.511	0.000	8.739	0.000	0.000	24.906	24.301	54.060	MWD+IFR1+MS
6900.000	0.000	0.000	6898.829	25.046	0.000	24.857	0.000	8.902	0.000	0.000	25.242	24.658	54.426	MWD+IFR1+MS
7000.000	0.000	0.000	6998.829	25.393	0.000	25.204	0.000	9.068	0.000	0.000	25.578	25.015	54.812	MWD+IFR1+MS
7100.000	0.000	0.000	7098.829	25.740	0.000	25.551	0.000	9.236	0.000	0.000	25.916	25.373	55.215	MWD+IFR1+MS
7200.000	0.000	0.000	7198.829	26.088	0.000	25.898	0.000	9.407	0.000	0.000	26.254	25.730	55.636	MWD+IFR1+MS
7300.000	0.000	0.000	7298.829	26.436	0.000	26.246	0.000	9.580	0.000	0.000	26.592	26.087	56.077	MWD+IFR1+MS
7400.000	0.000	0.000	7398.829	26.784	0.000	26.593	0.000	9.756	0.000	0.000	26.931	26.444	56.539	MWD+IFR1+MS
7500.000	0.000	0.000	7498.829	27.133	0.000	26.941	0.000	9.935	0.000	0.000	27.271	26.801	57.023	MWD+IFR1+MS
7600.000	0.000	0.000	7598.829	27.482	0.000	27.290	0.000	10.116	0.000	0.000	27.611	27.159	57.530	MWD+IFR1+MS
7700.000	0.000	0.000	7698.829	27.831	0.000	27.638	0.000	10.300	0.000	0.000	27.952	27.516	58.062	MWD+IFR1+MS
7800.000	0.000	0.000	7798.829	28.180	0.000	27.987	0.000	10.487	0.000	0.000	28.294	27.873	58.620	MWD+IFR1+MS
7900.000	0.000	0.000	7898.829	28.530	0.000	28.337	0.000	10.677	0.000	0.000	28.635	28.230	59.206	MWD+IFR1+MS
8000.000	0.000	0.000	7998.829	28.879	0.000	28.686	0.000	10.869	0.000	0.000	28.978	28.587	59.821	MWD+IFR1+MS
8100.000	0.000	0.000	8098.829	29.229	0.000	29.035	0.000	11.064	0.000	0.000	29.320	28.943	60.468	MWD+IFR1+MS
8200.000	0.000	0.000	8198.829	29.579	0.000	29.385	0.000	11.261	0.000	0.000	29.664	29.300	61.146	MWD+IFR1+MS
8300.000	0.000	0.000	8298.829	29.930	0.000	29.735	0.000	11.462	0.000	0.000	30.007	29.657	61.860	MWD+IFR1+MS
8400.000	0.000	0.000	8398.829	30.280	0.000	30.085	0.000	11.665	0.000	0.000	30.352	30.014	62.609	MWD+IFR1+MS
8500.000	0.000	0.000	8498.829	30.631	0.000	30.436	0.000	11.871	0.000	0.000	30.696	30.370	63.396	MWD+IFR1+MS
8600.000	0.000	0.000	8598.829	30.982	0.000	30.786	0.000	12.079	0.000	0.000	31.041	30.727	64.222	MWD+IFR1+MS
8700.000	0.000	0.000	8698.829	31.333	0.000	31.137	0.000	12.291	0.000	0.000	31.387	31.083	65.090	MWD+IFR1+MS
8800.000	0.000	0.000	8798.829	31.684	0.000	31.488	0.000	12.505	0.000	0.000	31.733	31.439	66.000	MWD+IFR1+MS
8867.971	0.000	0.000	8866.800	31.921	0.000	31.725	0.000	12.653	0.000	0.000	31.967	31.678	66.370	MWD+IFR1+MS
8900.000	2.562	179.675	8898.819	32.007	0.000	31.832	-0.000	12.722	0.000	0.000	32.078	31.787	66.588	MWD+IFR1+MS
9000.000	10.562	179.675	8998.083	32.490	0.000	32.163	-0.000	12.970	0.000	0.000	32.932	32.157	84.834	MWD+IFR1+MS
9100.000	18.562	179.675	9094.792	33.181	0.000	32.489	-0.000	13.379	0.000	0.000	34.436	32.489	90.245	MWD+IFR1+MS
9200.000	26.562	179.675	9187.063	33.343	0.000	32.803	-0.000	14.027	0.000	0.000	35.766	32.799	91.555	MWD+IFR1+MS
9300.000	34.562	179.675	9273.101	33.025	0.000	33.101	-0.000	14.960	0.000	0.000	36.895	33.093	92.217	MWD+IFR1+MS

9400.000	42.562	179.675	9351.230	32.297	0.000	33.381	-0.000	16.181	0.000	0.000	37.812	33.368	92.683	MWD+IFR1+MS
9500.000	50.562	179.675	9419.931	31.255	0.000	33.641	-0.000	17.654	0.000	0.000	38.519	33.623	93.082	MWD+IFR1+MS
9600.000	58.562	179.675	9477.865	30.019	0.000	33.879	-0.000	19.323	0.000	0.000	39.028	33.855	93.463	MWD+IFR1+MS
9700.000	66.562	179.675	9523.906	28.744	0.000	34.094	-0.000	21.122	0.000	0.000	39.360	34.064	93.847	MWD+IFR1+MS
9800.000	74.562	179.675	9557.157	27.608	0.000	34.284	-0.000	22.983	0.000	0.000	39.546	34.248	94.232	MWD+IFR1+MS
9900.000	82.562	179.675	9576.971	26.808	0.000	34.447	-0.000	24.843	0.000	0.000	39.627	34.406	94.602	MWD+IFR1+MS
9992.971	90.000	179.675	9582.997	26.319	0.000	34.573	-0.000	26.319	0.000	0.000	39.647	34.527	94.889	MWD+IFR1+MS
10000.000	90.000	179.675	9582.997	26.330	0.000	34.581	-0.000	26.330	0.000	0.000	39.648	34.535	94.907	MWD+IFR1+MS
10100.000	90.000	179.675	9582.997	26.477	0.000	34.709	-0.000	26.477	0.000	0.000	39.657	34.659	95.191	MWD+IFR1+MS
10200.000	90.000	179.675	9582.997	26.652	0.000	34.857	-0.000	26.652	0.000	0.000	39.667	34.803	95.509	MWD+IFR1+MS
10300.000	90.000	179.675	9582.997	26.848	0.000	35.021	-0.000	26.848	0.000	0.000	39.678	34.962	95.863	MWD+IFR1+MS
10400.000	90.000	179.675	9582.997	27.065	0.000	35.201	-0.000	27.065	0.000	0.000	39.690	35.137	96.261	MWD+IFR1+MS
10500.000	90.000	179.675	9582.997	27.303	0.000	35.396	-0.000	27.303	0.000	0.000	39.703	35.327	96.709	MWD+IFR1+MS
10600.000	90.000	179.675	9582.997	27.561	0.000	35.607	-0.000	27.561	0.000	0.000	39.717	35.531	97.219	MWD+IFR1+MS
10700.000	90.000	179.675	9582.997	27.840	0.000	35.833	-0.000	27.840	0.000	0.000	39.733	35.749	97.803	MWD+IFR1+MS
10800.000	90.000	179.675	9582.997	28.137	0.000	36.074	-0.000	28.137	0.000	0.000	39.751	35.981	98.480	MWD+IFR1+MS
10900.000	90.000	179.675	9582.997	28.453	0.000	36.330	-0.000	28.453	0.000	0.000	39.771	36.227	99.272	MWD+IFR1+MS
11000.000	90.000	179.675	9582.997	28.787	0.000	36.599	-0.000	28.787	0.000	0.000	39.793	36.484	100.210	MWD+IFR1+MS
11100.000	90.000	179.675	9582.997	29.138	0.000	36.883	-0.000	29.138	0.000	0.000	39.818	36.753	101.336	MWD+IFR1+MS
11200.000	90.000	179.675	9582.997	29.506	0.000	37.180	-0.000	29.506	0.000	0.000	39.848	37.032	102.708	MWD+IFR1+MS
11300.000	90.000	179.675	9582.997	29.890	0.000	37.491	-0.000	29.890	0.000	0.000	39.882	37.320	104.409	MWD+IFR1+MS
11400.000	90.000	179.675	9582.997	30.289	0.000	37.814	-0.000	30.289	0.000	0.000	39.923	37.614	106.555	MWD+IFR1+MS
11500.000	90.000	179.675	9582.997	30.703	0.000	38.150	-0.000	30.703	0.000	0.000	39.974	37.912	109.311	MWD+IFR1+MS
11600.000	90.000	179.675	9582.997	31.132	0.000	38.499	-0.000	31.132	0.000	0.000	40.039	38.208	112.902	MWD+IFR1+MS
11700.000	90.000	179.675	9582.997	31.574	0.000	38.859	-0.000	31.574	0.000	0.000	40.126	38.496	117.595	MWD+IFR1+MS
11800.000	90.000	179.675	9582.997	32.029	0.000	39.231	-0.000	32.029	0.000	0.000	40.244	38.765	123.596	MWD+IFR1+MS
11900.000	90.000	179.675	9582.997	32.497	0.000	39.614	-0.000	32.497	0.000	0.000	40.405	39.002	130.792	MWD+IFR1+MS
12000.000	90.000	179.675	9582.997	32.977	0.000	40.009	-0.000	32.977	0.000	0.000	40.620	39.196	-41.510	MWD+IFR1+MS
12100.000	90.000	179.675	9582.997	33.469	0.000	40.414	-0.000	33.469	0.000	0.000	40.890	39.347	-34.329	MWD+IFR1+MS
12200.000	90.000	179.675	9582.997	33.971	0.000	40.829	-0.000	33.971	0.000	0.000	41.208	39.460	-28.348	MWD+IFR1+MS
12300.000	90.000	179.675	9582.997	34.484	0.000	41.254	-0.000	34.484	0.000	0.000	41.565	39.546	-23.675	MWD+IFR1+MS
12400.000	90.000	179.675	9582.997	35.007	0.000	41.689	-0.000	35.007	0.000	0.000	41.950	39.614	-20.099	MWD+IFR1+MS
12500.000	90.000	179.675	9582.997	35.540	0.000	42.134	-0.000	35.540	0.000	0.000	42.358	39.669	-17.354	MWD+IFR1+MS

12600.000	90.000	179.675	9582.997	36.082	0.000	42.587	-0.000	36.082	0.000	0.000	42.783	39.715	-15.217	MWD+IFR1+MS
12700.000	90.000	179.675	9582.997	36.633	0.000	43.050	-0.000	36.633	0.000	0.000	43.223	39.757	-13.523	MWD+IFR1+MS
12800.000	90.000	179.675	9582.997	37.192	0.000	43.521	-0.000	37.192	0.000	0.000	43.677	39.794	-12.156	MWD+IFR1+MS
12900.000	90.000	179.675	9582.997	37.759	0.000	44.000	-0.000	37.759	0.000	0.000	44.142	39.829	-11.035	MWD+IFR1+MS
13000.000	90.000	179.675	9582.997	38.334	0.000	44.487	-0.000	38.334	0.000	0.000	44.617	39.861	-10.101	MWD+IFR1+MS
13100.000	90.000	179.675	9582.997	38.916	0.000	44.982	-0.000	38.916	0.000	0.000	45.102	39.893	-9.312	MWD+IFR1+MS
13200.000	90.000	179.675	9582.997	39.505	0.000	45.485	-0.000	39.505	0.000	0.000	45.596	39.923	-8.639	MWD+IFR1+MS
13300.000	90.000	179.675	9582.997	40.101	0.000	45.994	-0.000	40.101	0.000	0.000	46.098	39.953	-8.057	MWD+IFR1+MS
13400.000	90.000	179.675	9582.997	40.703	0.000	46.511	-0.000	40.703	0.000	0.000	46.609	39.982	-7.551	MWD+IFR1+MS
13500.000	90.000	179.675	9582.997	41.312	0.000	47.035	-0.000	41.312	0.000	0.000	47.126	40.012	-7.106	MWD+IFR1+MS
13600.000	90.000	179.675	9582.997	41.926	0.000	47.565	-0.000	41.926	0.000	0.000	47.652	40.041	-6.712	MWD+IFR1+MS
13700.000	90.000	179.675	9582.997	42.546	0.000	48.101	-0.000	42.546	0.000	0.000	48.184	40.070	-6.361	MWD+IFR1+MS
13800.000	90.000	179.675	9582.997	43.171	0.000	48.644	-0.000	43.171	0.000	0.000	48.722	40.099	-6.046	MWD+IFR1+MS
13900.000	90.000	179.675	9582.997	43.802	0.000	49.192	-0.000	43.802	0.000	0.000	49.267	40.128	-5.762	MWD+IFR1+MS
14000.000	90.000	179.675	9582.997	44.437	0.000	49.747	-0.000	44.437	0.000	0.000	49.818	40.158	-5.505	MWD+IFR1+MS
14100.000	90.000	179.675	9582.997	45.077	0.000	50.306	-0.000	45.077	0.000	0.000	50.375	40.187	-5.271	MWD+IFR1+MS
14200.000	90.000	179.675	9582.997	45.722	0.000	50.872	-0.000	45.722	0.000	0.000	50.937	40.217	-5.057	MWD+IFR1+MS
14300.000	90.000	179.675	9582.997	46.371	0.000	51.442	-0.000	46.371	0.000	0.000	51.505	40.248	-4.861	MWD+IFR1+MS
14400.000	90.000	179.675	9582.997	47.024	0.000	52.017	-0.000	47.024	0.000	0.000	52.078	40.278	-4.681	MWD+IFR1+MS
14500.000	90.000	179.675	9582.997	47.681	0.000	52.598	-0.000	47.681	0.000	0.000	52.656	40.309	-4.514	MWD+IFR1+MS
14600.000	90.000	179.675	9582.997	48.341	0.000	53.182	-0.000	48.341	0.000	0.000	53.239	40.341	-4.359	MWD+IFR1+MS
14700.000	90.000	179.675	9582.997	49.006	0.000	53.772	-0.000	49.006	0.000	0.000	53.826	40.372	-4.216	MWD+IFR1+MS
14800.000	90.000	179.675	9582.997	49.674	0.000	54.366	-0.000	49.674	0.000	0.000	54.418	40.404	-4.082	MWD+IFR1+MS
14900.000	90.000	179.675	9582.997	50.345	0.000	54.964	-0.000	50.345	0.000	0.000	55.015	40.437	-3.958	MWD+IFR1+MS
15000.000	90.000	179.675	9582.997	51.020	0.000	55.566	-0.000	51.020	0.000	0.000	55.615	40.470	-3.841	MWD+IFR1+MS
15100.000	90.000	179.675	9582.997	51.697	0.000	56.172	-0.000	51.697	0.000	0.000	56.220	40.503	-3.732	MWD+IFR1+MS
15200.000	90.000	179.675	9582.997	52.378	0.000	56.782	-0.000	52.378	0.000	0.000	56.829	40.537	-3.629	MWD+IFR1+MS
15300.000	90.000	179.675	9582.997	53.062	0.000	57.396	-0.000	53.062	0.000	0.000	57.441	40.571	-3.532	MWD+IFR1+MS
15400.000	90.000	179.675	9582.997	53.748	0.000	58.013	-0.000	53.748	0.000	0.000	58.057	40.606	-3.441	MWD+IFR1+MS
15500.000	90.000	179.675	9582.997	54.437	0.000	58.634	-0.000	54.437	0.000	0.000	58.677	40.641	-3.355	MWD+IFR1+MS
15600.000	90.000	179.675	9582.997	55.128	0.000	59.258	-0.000	55.128	0.000	0.000	59.300	40.676	-3.273	MWD+IFR1+MS
15700.000	90.000	179.675	9582.997	55.822	0.000	59.886	-0.000	55.822	0.000	0.000	59.926	40.712	-3.196	MWD+IFR1+MS
15800.000	90.000	179.675	9582.997	56.519	0.000	60.517	-0.000	56.519	0.000	0.000	60.556	40.748	-3.123	MWD+IFR1+MS

15900.000	90.000	179.675	9582.997	57.218	0.000	61.150	-0.000	57.218	0.000	0.000	61.189	40.785	-3.053	MWD+IFR1+MS
16000.000	90.000	179.675	9582.997	57.918	0.000	61.787	-0.000	57.918	0.000	0.000	61.825	40.823	-2.987	MWD+IFR1+MS
16100.000	90.000	179.675	9582.997	58.621	0.000	62.427	-0.000	58.621	0.000	0.000	62.464	40.860	-2.924	MWD+IFR1+MS
16200.000	90.000	179.675	9582.997	59.326	0.000	63.069	-0.000	59.326	0.000	0.000	63.105	40.899	-2.863	MWD+IFR1+MS
16300.000	90.000	179.675	9582.997	60.033	0.000	63.714	-0.000	60.033	0.000	0.000	63.750	40.937	-2.806	MWD+IFR1+MS
16400.000	90.000	179.675	9582.997	60.742	0.000	64.362	-0.000	60.742	0.000	0.000	64.397	40.977	-2.751	MWD+IFR1+MS
16500.000	90.000	179.675	9582.997	61.453	0.000	65.013	-0.000	61.453	0.000	0.000	65.046	41.016	-2.699	MWD+IFR1+MS
16600.000	90.000	179.675	9582.997	62.166	0.000	65.666	-0.000	62.166	0.000	0.000	65.698	41.056	-2.648	MWD+IFR1+MS
16700.000	90.000	179.675	9582.997	62.880	0.000	66.321	-0.000	62.880	0.000	0.000	66.353	41.097	-2.600	MWD+IFR1+MS
16800.000	90.000	179.675	9582.997	63.596	0.000	66.978	-0.000	63.596	0.000	0.000	67.010	41.138	-2.554	MWD+IFR1+MS
16900.000	90.000	179.675	9582.997	64.314	0.000	67.638	-0.000	64.314	0.000	0.000	67.669	41.179	-2.510	MWD+IFR1+MS
17000.000	90.000	179.675	9582.997	65.033	0.000	68.300	-0.000	65.033	0.000	0.000	68.331	41.221	-2.467	MWD+IFR1+MS
17100.000	90.000	179.675	9582.997	65.753	0.000	68.965	-0.000	65.753	0.000	0.000	68.994	41.264	-2.426	MWD+IFR1+MS
17200.000	90.000	179.675	9582.997	66.475	0.000	69.631	-0.000	66.475	0.000	0.000	69.660	41.306	-2.387	MWD+IFR1+MS
17300.000	90.000	179.675	9582.997	67.199	0.000	70.299	-0.000	67.199	0.000	0.000	70.328	41.350	-2.349	MWD+IFR1+MS
17400.000	90.000	179.675	9582.997	67.924	0.000	70.970	-0.000	67.924	0.000	0.000	70.998	41.393	-2.312	MWD+IFR1+MS
17500.000	90.000	179.675	9582.997	68.650	0.000	71.642	-0.000	68.650	0.000	0.000	71.669	41.438	-2.277	MWD+IFR1+MS
17600.000	90.000	179.675	9582.997	69.377	0.000	72.316	-0.000	69.377	0.000	0.000	72.343	41.482	-2.243	MWD+IFR1+MS
17700.000	90.000	179.675	9582.997	70.106	0.000	72.992	-0.000	70.106	0.000	0.000	73.018	41.528	-2.210	MWD+IFR1+MS
17800.000	90.000	179.675	9582.997	70.836	0.000	73.669	-0.000	70.836	0.000	0.000	73.696	41.573	-2.178	MWD+IFR1+MS
17900.000	90.000	179.675	9582.997	71.567	0.000	74.349	-0.000	71.567	0.000	0.000	74.375	41.619	-2.147	MWD+IFR1+MS
18000.000	90.000	179.675	9582.997	72.299	0.000	75.030	-0.000	72.299	0.000	0.000	75.055	41.666	-2.118	MWD+IFR1+MS
18100.000	90.000	179.675	9582.997	73.032	0.000	75.712	-0.000	73.032	0.000	0.000	75.737	41.713	-2.089	MWD+IFR1+MS
18200.000	90.000	179.675	9582.997	73.766	0.000	76.397	-0.000	73.766	0.000	0.000	76.421	41.760	-2.061	MWD+IFR1+MS
18300.000	90.000	179.675	9582.997	74.502	0.000	77.082	-0.000	74.502	0.000	0.000	77.106	41.808	-2.034	MWD+IFR1+MS
18400.000	90.000	179.675	9582.997	75.238	0.000	77.769	-0.000	75.238	0.000	0.000	77.793	41.856	-2.008	MWD+IFR1+MS
18500.000	90.000	179.675	9582.997	75.975	0.000	78.458	-0.000	75.975	0.000	0.000	78.482	41.905	-1.983	MWD+IFR1+MS
18600.000	90.000	179.675	9582.997	76.714	0.000	79.148	-0.000	76.714	0.000	0.000	79.171	41.955	-1.958	MWD+IFR1+MS
18700.000	90.000	179.675	9582.997	77.453	0.000	79.840	-0.000	77.453	0.000	0.000	79.862	42.004	-1.934	MWD+IFR1+MS
18800.000	90.000	179.675	9582.997	78.193	0.000	80.532	-0.000	78.193	0.000	0.000	80.555	42.054	-1.911	MWD+IFR1+MS
18900.000	90.000	179.675	9582.997	78.934	0.000	81.227	-0.000	78.934	0.000	0.000	81.249	42.105	-1.888	MWD+IFR1+MS
19000.000	90.000	179.675	9582.997	79.676	0.000	81.922	-0.000	79.676	0.000	0.000	81.944	42.156	-1.867	MWD+IFR1+MS
19100.000	90.000	179.675	9582.997	80.418	0.000	82.619	-0.000	80.418	0.000	0.000	82.640	42.207	-1.845	MWD+IFR1+MS

19200.000	90.000	179.675	9582.997	81.161	0.000	83.316	-0.000	81.161	0.000	0.000	83.338	42.259	-1.825	MWD+IFR1+MS
19300.000	90.000	179.675	9582.997	81.906	0.000	84.015	-0.000	81.906	0.000	0.000	84.036	42.312	-1.804	MWD+IFR1+MS
19400.000	90.000	179.675	9582.997	82.651	0.000	84.716	-0.000	82.651	0.000	0.000	84.736	42.365	-1.785	MWD+IFR1+MS
19500.000	90.000	179.675	9582.997	83.396	0.000	85.417	-0.000	83.396	0.000	0.000	85.437	42.418	-1.766	MWD+IFR1+MS
19600.000	90.000	179.675	9582.997	84.142	0.000	86.119	-0.000	84.142	0.000	0.000	86.139	42.472	-1.747	MWD+IFR1+MS
19700.000	90.000	179.675	9582.997	84.890	0.000	86.823	-0.000	84.890	0.000	0.000	86.842	42.526	-1.729	MWD+IFR1+MS
19800.000	90.000	179.675	9582.997	85.637	0.000	87.527	-0.000	85.637	0.000	0.000	87.547	42.580	-1.711	MWD+IFR1+MS
19900.000	90.000	179.675	9582.997	86.386	0.000	88.233	-0.000	86.386	0.000	0.000	88.252	42.635	-1.694	MWD+IFR1+MS
20000.000	90.000	179.675	9582.997	87.135	0.000	88.939	-0.000	87.135	0.000	0.000	88.958	42.691	-1.677	MWD+IFR1+MS
20100.000	90.000	179.675	9582.997	87.884	0.000	89.647	-0.000	87.884	0.000	0.000	89.665	42.746	-1.661	MWD+IFR1+MS
20200.000	90.000	179.675	9582.997	88.634	0.000	90.355	-0.000	88.634	0.000	0.000	90.374	42.803	-1.645	MWD+IFR1+MS
20300.000	90.000	179.675	9582.997	89.385	0.000	91.064	-0.000	89.385	0.000	0.000	91.083	42.859	-1.629	MWD+IFR1+MS
20400.000	90.000	179.675	9582.997	90.137	0.000	91.775	-0.000	90.137	0.000	0.000	91.793	42.916	-1.614	MWD+IFR1+MS
20500.000	90.000	179.675	9582.997	90.889	0.000	92.486	-0.000	90.889	0.000	0.000	92.504	42.974	-1.599	MWD+IFR1+MS
20600.000	90.000	179.675	9582.997	91.641	0.000	93.198	-0.000	91.641	0.000	0.000	93.215	43.032	-1.585	MWD+IFR1+MS
20700.000	90.000	179.675	9582.997	92.394	0.000	93.911	-0.000	92.394	0.000	0.000	93.928	43.090	-1.570	MWD+IFR1+MS
20800.000	90.000	179.675	9582.997	93.148	0.000	94.624	-0.000	93.148	0.000	0.000	94.641	43.149	-1.557	MWD+IFR1+MS
20900.000	90.000	179.675	9582.997	93.902	0.000	95.339	-0.000	93.902	0.000	0.000	95.356	43.208	-1.543	MWD+IFR1+MS
21000.000	90.000	179.675	9582.997	94.657	0.000	96.054	-0.000	94.657	0.000	0.000	96.071	43.268	-1.530	MWD+IFR1+MS
21100.000	90.000	179.675	9582.997	95.412	0.000	96.770	-0.000	95.412	0.000	0.000	96.787	43.328	-1.517	MWD+IFR1+MS
21200.000	90.000	179.675	9582.997	96.167	0.000	97.487	-0.000	96.167	0.000	0.000	97.503	43.389	-1.504	MWD+IFR1+MS
21300.000	90.000	179.675	9582.997	96.923	0.000	98.204	-0.000	96.923	0.000	0.000	98.221	43.449	-1.491	MWD+IFR1+MS
21400.000	90.000	179.675	9582.997	97.680	0.000	98.922	-0.000	97.680	0.000	0.000	98.939	43.511	-1.479	MWD+IFR1+MS
21500.000	90.000	179.675	9582.997	98.437	0.000	99.641	-0.000	98.437	0.000	0.000	99.657	43.572	-1.467	MWD+IFR1+MS
21600.000	90.000	179.675	9582.997	99.194	0.000	100.361	-0.000	99.194	0.000	0.000	100.377	43.635	-1.456	MWD+IFR1+MS
21700.000	90.000	179.675	9582.997	99.952	0.000	101.081	-0.000	99.952	0.000	0.000	101.097	43.697	-1.444	MWD+IFR1+MS
21800.000	90.000	179.675	9582.997	100.710	0.000	101.802	-0.000	100.710	0.000	0.000	101.818	43.760	-1.433	MWD+IFR1+MS
21900.000	90.000	179.675	9582.997	101.468	0.000	102.524	-0.000	101.468	0.000	0.000	102.539	43.823	-1.422	MWD+IFR1+MS
22000.000	90.000	179.675	9582.997	102.227	0.000	103.246	-0.000	102.227	0.000	0.000	103.261	43.887	-1.411	MWD+IFR1+MS
22100.000	90.000	179.675	9582.997	102.987	0.000	103.969	-0.000	102.987	0.000	0.000	103.984	43.951	-1.400	MWD+IFR1+MS
22200.000	90.000	179.675	9582.997	103.747	0.000	104.692	-0.000	103.747	0.000	0.000	104.707	44.016	-1.390	MWD+IFR1+MS
22300.000	90.000	179.675	9582.997	104.507	0.000	105.416	-0.000	104.507	0.000	0.000	105.431	44.080	-1.380	MWD+IFR1+MS
22400.000	90.000	179.675	9582.997	105.267	0.000	106.141	-0.000	105.267	0.000	0.000	106.156	44.146	-1.370	MWD+IFR1+MS

22500.000	90.000	179.675	9582.997	106.028	0.000	106.866	-0.000	106.028	0.000	0.000	106.881	44.211	-1.360	MWD+IFR1+MS
22600.000	90.000	179.675	9582.997	106.789	0.000	107.592	-0.000	106.789	0.000	0.000	107.606	44.277	-1.351	MWD+IFR1+MS
22700.000	90.000	179.675	9582.997	107.551	0.000	108.318	-0.000	107.551	0.000	0.000	108.333	44.344	-1.341	MWD+IFR1+MS
22800.000	90.000	179.675	9582.997	108.313	0.000	109.045	-0.000	108.313	0.000	0.000	109.059	44.411	-1.332	MWD+IFR1+MS
22900.000	90.000	179.675	9582.997	109.075	0.000	109.773	-0.000	109.075	0.000	0.000	109.787	44.478	-1.323	MWD+IFR1+MS
23000.000	90.000	179.675	9582.997	109.837	0.000	110.501	-0.000	109.837	0.000	0.000	110.514	44.546	-1.314	MWD+IFR1+MS
23100.000	90.000	179.675	9582.997	110.600	0.000	111.229	-0.000	110.600	0.000	0.000	111.243	44.614	-1.305	MWD+IFR1+MS
23200.000	90.000	179.675	9582.997	111.363	0.000	111.958	-0.000	111.363	0.000	0.000	111.971	44.682	-1.296	MWD+IFR1+MS
23300.000	90.000	179.675	9582.997	112.127	0.000	112.687	-0.000	112.127	0.000	0.000	112.701	44.751	-1.288	MWD+IFR1+MS
23400.000	90.000	179.675	9582.997	112.890	0.000	113.417	-0.000	112.890	0.000	0.000	113.430	44.820	-1.280	MWD+IFR1+MS
23500.000	90.000	179.675	9582.997	113.654	0.000	114.148	-0.000	113.654	0.000	0.000	114.161	44.889	-1.271	MWD+IFR1+MS
23600.000	90.000	179.675	9582.997	114.419	0.000	114.878	-0.000	114.419	0.000	0.000	114.891	44.959	-1.263	MWD+IFR1+MS
23700.000	90.000	179.675	9582.997	115.183	0.000	115.610	-0.000	115.183	0.000	0.000	115.623	45.029	-1.255	MWD+IFR1+MS
23800.000	90.000	179.675	9582.997	115.948	0.000	116.341	-0.000	115.948	0.000	0.000	116.354	45.100	-1.248	MWD+IFR1+MS
23900.000	90.000	179.675	9582.997	116.713	0.000	117.073	-0.000	116.713	0.000	0.000	117.086	45.171	-1.240	MWD+IFR1+MS
24000.000	90.000	179.675	9582.997	117.478	0.000	117.806	-0.000	117.478	0.000	0.000	117.819	45.242	-1.233	MWD+IFR1+MS
24100.000	90.000	179.675	9582.997	118.244	0.000	118.539	-0.000	118.244	0.000	0.000	118.551	45.314	-1.225	MWD+IFR1+MS
24200.000	90.000	179.675	9582.997	119.010	0.000	119.272	-0.000	119.010	0.000	0.000	119.285	45.386	-1.218	MWD+IFR1+MS
24300.000	90.000	179.675	9582.997	119.776	0.000	120.006	-0.000	119.776	0.000	0.000	120.018	45.459	-1.211	MWD+IFR1+MS
24400.000	90.000	179.675	9582.997	120.542	0.000	120.740	-0.000	120.542	0.000	0.000	120.752	45.531	-1.204	MWD+IFR1+MS
24500.000	90.000	179.675	9582.997	121.309	0.000	121.475	-0.000	121.309	0.000	0.000	121.487	45.604	-1.197	MWD+IFR1+MS
24600.000	90.000	179.675	9582.997	122.076	0.000	122.210	-0.000	122.076	0.000	0.000	122.222	45.678	-1.190	MWD+IFR1+MS
24700.000	90.000	179.675	9582.997	122.843	0.000	122.945	-0.000	122.843	0.000	0.000	122.957	45.752	-1.183	MWD+IFR1+MS
24800.000	90.000	179.675	9582.997	123.610	0.000	123.681	-0.000	123.610	0.000	0.000	123.693	45.826	-1.177	MWD+IFR1+MS
24900.000	90.000	179.675	9582.997	124.377	0.000	124.417	-0.000	124.377	0.000	0.000	124.428	45.901	-1.170	MWD+IFR1+MS
25000.000	90.000	179.675	9582.997	125.145	0.000	125.153	-0.000	125.145	0.000	0.000	125.165	45.975	-1.164	MWD+IFR1+MS
25100.000	90.000	179.675	9582.997	125.913	0.000	125.890	-0.000	125.913	0.000	0.000	125.901	46.051	-1.157	MWD+IFR1+MS
25200.000	90.000	179.675	9582.997	126.681	0.000	126.627	-0.000	126.681	0.000	0.000	126.638	46.126	-1.151	MWD+IFR1+MS
25300.000	90.000	179.675	9582.997	127.449	0.000	127.364	-0.000	127.449	0.000	0.000	127.376	46.202	-1.145	MWD+IFR1+MS
25400.000	90.000	179.675	9582.997	128.218	0.000	128.102	-0.000	128.218	0.000	0.000	128.113	46.278	-1.139	MWD+IFR1+MS
25500.000	90.000	179.675	9582.997	128.987	0.000	128.840	-0.000	128.987	0.000	0.000	128.851	46.355	-1.133	MWD+IFR1+MS
25600.000	90.000	179.675	9582.997	129.756	0.000	129.579	-0.000	129.756	0.000	0.000	129.590	46.432	-1.127	MWD+IFR1+MS
25700.000	90.000	179.675	9582.997	130.525	0.000	130.317	-0.000	130.525	0.000	0.000	130.328	46.509	-1.121	MWD+IFR1+MS

25800.000	90.000	179.675	9582.997	131.294	0.000	131.056	-0.000	131.294	0.000	0.000	131.067	46.587	-1.116	MWD+IFR1+MS
25900.000	90.000	179.675	9582.997	132.063	0.000	131.796	-0.000	132.063	0.000	0.000	131.807	46.665	-1.110	MWD+IFR1+MS
26000.000	90.000	179.675	9582.997	132.833	0.000	132.535	-0.000	132.833	0.000	0.000	132.546	46.743	-1.105	MWD+IFR1+MS
26100.000	90.000	179.675	9582.997	133.603	0.000	133.275	-0.000	133.603	0.000	0.000	133.286	46.822	-1.099	MWD+IFR1+MS
26200.000	90.000	179.675	9582.997	134.373	0.000	134.015	-0.000	134.373	0.000	0.000	134.026	46.901	-1.094	MWD+IFR1+MS
26300.000	90.000	179.675	9582.997	135.143	0.000	134.756	-0.000	135.143	0.000	0.000	134.766	46.980	-1.088	MWD+IFR1+MS
26400.000	90.000	179.675	9582.997	135.913	0.000	135.497	-0.000	135.913	0.000	0.000	135.507	47.060	-1.083	MWD+IFR1+MS
26500.000	90.000	179.675	9582.997	136.684	0.000	136.238	-0.000	136.684	0.000	0.000	136.248	47.140	-1.078	MWD+IFR1+MS
26600.000	90.000	179.675	9582.997	137.454	0.000	136.979	-0.000	137.454	0.000	0.000	136.989	47.220	-1.073	MWD+IFR1+MS
26700.000	90.000	179.675	9582.997	138.225	0.000	137.721	-0.000	138.225	0.000	0.000	137.731	47.300	-1.068	MWD+IFR1+MS
26800.000	90.000	179.675	9582.997	138.996	0.000	138.462	-0.000	138.996	0.000	0.000	138.473	47.381	-1.063	MWD+IFR1+MS
26900.000	90.000	179.675	9582.997	139.767	0.000	139.205	-0.000	139.767	0.000	0.000	139.215	47.462	-1.058	MWD+IFR1+MS
27000.000	90.000	179.675	9582.997	140.539	0.000	139.947	-0.000	140.539	0.000	0.000	139.957	47.544	-1.053	MWD+IFR1+MS
27100.000	90.000	179.675	9582.997	141.310	0.000	140.690	-0.000	141.310	0.000	0.000	140.699	47.626	-1.048	MWD+IFR1+MS
27200.000	90.000	179.675	9582.997	142.082	0.000	141.432	-0.000	142.082	0.000	0.000	141.442	47.708	-1.044	MWD+IFR1+MS
27300.000	90.000	179.675	9582.997	142.853	0.000	142.175	-0.000	142.853	0.000	0.000	142.185	47.790	-1.039	MWD+IFR1+MS
27400.000	90.000	179.675	9582.997	143.625	0.000	142.919	-0.000	143.625	0.000	0.000	142.928	47.873	-1.035	MWD+IFR1+MS
27500.000	90.000	179.675	9582.997	144.397	0.000	143.662	-0.000	144.397	0.000	0.000	143.672	47.956	-1.030	MWD+IFR1+MS
27600.000	90.000	179.675	9582.997	145.169	0.000	144.406	-0.000	145.169	0.000	0.000	144.416	48.040	-1.026	MWD+IFR1+MS
27700.000	90.000	179.675	9582.997	145.942	0.000	145.150	-0.000	145.942	0.000	0.000	145.160	48.123	-1.021	MWD+IFR1+MS
27800.000	90.000	179.675	9582.997	146.714	0.000	145.894	-0.000	146.714	0.000	0.000	145.904	48.207	-1.017	MWD+IFR1+MS
27900.000	90.000	179.675	9582.997	147.486	0.000	146.639	-0.000	147.486	0.000	0.000	146.648	48.292	-1.012	MWD+IFR1+MS
28000.000	90.000	179.675	9582.997	148.259	0.000	147.383	-0.000	148.259	0.000	0.000	147.393	48.376	-1.008	MWD+IFR1+MS
28100.000	90.000	179.675	9582.997	149.032	0.000	148.128	-0.000	149.032	0.000	0.000	148.138	48.461	-1.004	MWD+IFR1+MS
28200.000	90.000	179.675	9582.997	149.805	0.000	148.873	-0.000	149.805	0.000	0.000	148.883	48.546	-1.000	MWD+IFR1+MS
28300.000	90.000	179.675	9582.997	150.578	0.000	149.619	-0.000	150.578	0.000	0.000	149.628	48.632	-0.996	MWD+IFR1+MS
28400.000	90.000	179.675	9582.997	151.351	0.000	150.364	-0.000	151.351	0.000	0.000	150.373	48.718	-0.992	MWD+IFR1+MS
28500.000	90.000	179.675	9582.997	152.124	0.000	151.110	-0.000	152.124	0.000	0.000	151.119	48.804	-0.988	MWD+IFR1+MS
28600.000	90.000	179.675	9582.997	152.898	0.000	151.856	-0.000	152.898	0.000	0.000	151.865	48.890	-0.984	MWD+IFR1+MS
28700.000	90.000	179.675	9582.997	153.671	0.000	152.602	-0.000	153.671	0.000	0.000	152.611	48.977	-0.980	MWD+IFR1+MS
28800.000	90.000	179.675	9582.997	154.445	0.000	153.348	-0.000	154.445	0.000	0.000	153.357	49.064	-0.976	MWD+IFR1+MS
28900.000	90.000	179.675	9582.997	155.219	0.000	154.095	-0.000	155.219	0.000	0.000	154.104	49.151	-0.972	MWD+IFR1+MS
29000.000	90.000	179.675	9582.997	155.992	0.000	154.841	-0.000	155.992	0.000	0.000	154.850	49.238	-0.968	MWD+IFR1+MS

29100.000	90.000	179.675	9582.997	156.766	0.000	155.588	-0.000	156.766	0.000	0.000	155.597	49.326	-0.965	MWD+IFR1+MS
29200.000	90.000	179.675	9582.997	157.540	0.000	156.335	-0.000	157.540	0.000	0.000	156.344	49.414	-0.961	MWD+IFR1+MS
29300.000	90.000	179.675	9582.997	158.315	0.000	157.082	-0.000	158.315	0.000	0.000	157.091	49.502	-0.957	MWD+IFR1+MS
29400.000	90.000	179.675	9582.997	159.089	0.000	157.830	-0.000	159.089	0.000	0.000	157.838	49.591	-0.954	MWD+IFR1+MS
29500.000	90.000	179.675	9582.997	159.863	0.000	158.577	-0.000	159.863	0.000	0.000	158.586	49.680	-0.950	MWD+IFR1+MS
29600.000	90.000	179.675	9582.997	160.638	0.000	159.325	-0.000	160.638	0.000	0.000	159.334	49.769	-0.947	MWD+IFR1+MS
29700.000	90.000	179.675	9582.997	161.412	0.000	160.073	-0.000	161.412	0.000	0.000	160.081	49.859	-0.943	MWD+IFR1+MS
29800.000	90.000	179.675	9582.997	162.187	0.000	160.821	-0.000	162.187	0.000	0.000	160.829	49.948	-0.940	MWD+IFR1+MS
29900.000	90.000	179.675	9582.997	162.962	0.000	161.569	-0.000	162.962	0.000	0.000	161.578	50.038	-0.936	MWD+IFR1+MS
29919.107	90.000	179.675	9582.997	163.109	0.000	161.712	-0.000	163.109	0.000	0.000	161.720	50.056	-0.936	MWD+IFR1+MS
29969.105	90.000	179.675	9582.997	163.496	0.000	162.085	-0.000	163.496	0.000	0.000	162.094	50.101	-0.934	MWD+IFR1+MS

Plan Targets

Poker Lake Unit 20 DTD South 423H

Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
SHL 25	11923.94	440076.78	635151.62	8279.52	RECTANGLE
LTP 26	29919.11	419435.20	635442.90	6255.00	RECTANGLE
BHL 26	29969.18	419385.20	635443.10	6255.00	RECTANGLE
FTP 26	9698.87	440077.20	635325.80	6255.00	RECTANGLE

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

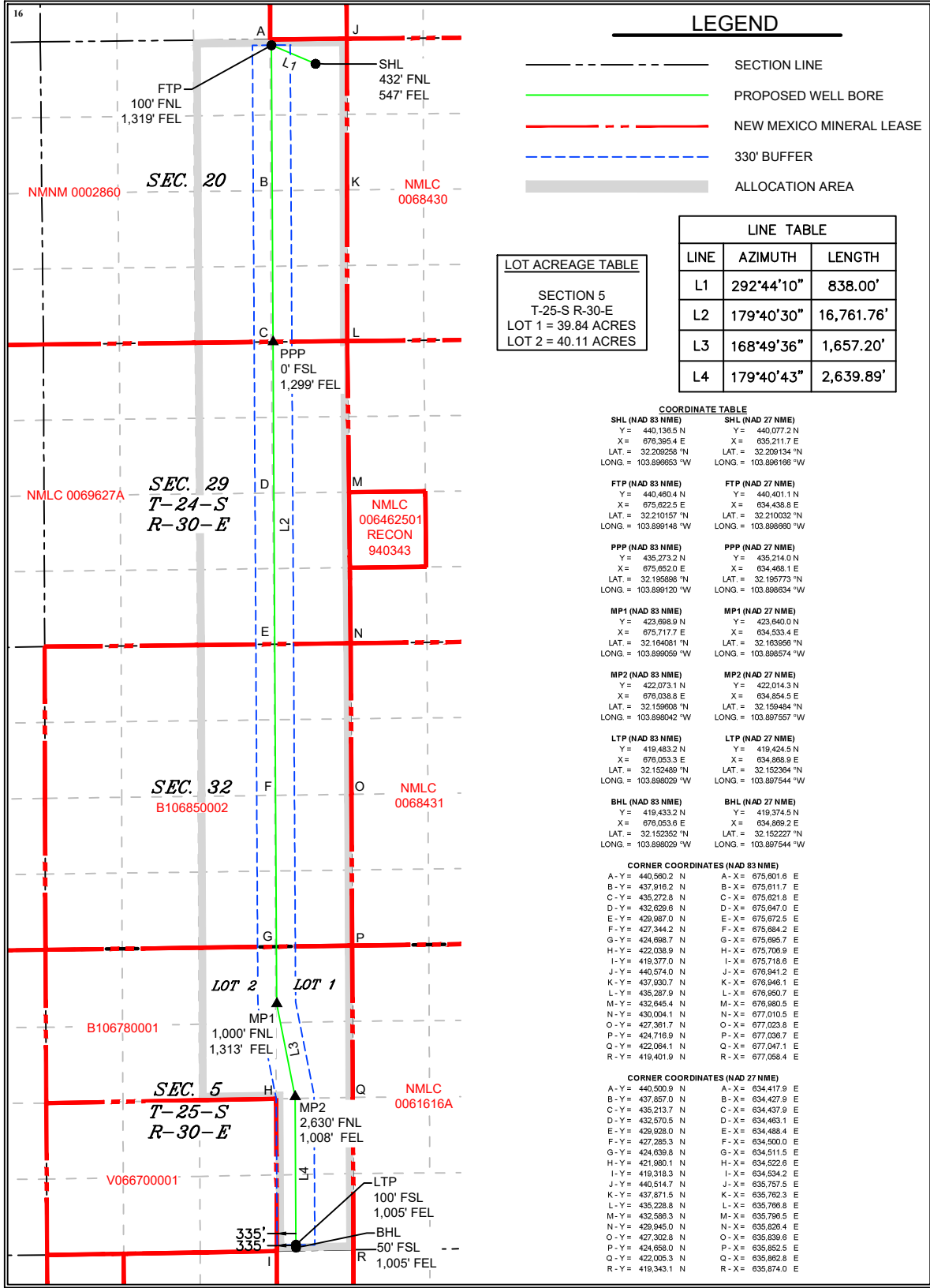
¹ APD ID 10400089147	⁴ Pool Code 96526	³ Pool Name FOURTYNINER; BONE SPRING
⁴ Property Code	⁵ Property Name POKER LAKE UNIT 20 DTD	⁶ Well Number 423H
⁷ OGRID No. 373075	⁸ Operator Name XTO PERMIAN OPERATING, LLC	⁹ Elevation 3,296'

¹⁰ Surface Location									
UL or lot no. A	Section 20	Township 24S	Range 30E	Lot Idn	Feet from the 432	North/South line NORTH	Feet from the 547	East/West line EAST	County EDDY

¹¹ Bottom Hole Location If Different From Surface									
UL or lot no. P	Section 5	Township 25S	Range 30E	Lot Idn	Feet from the 50	North/South line SOUTH	Feet from the 1,005	East/West line EAST	County EDDY

¹² Dedicated Acres 1,199.95	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and 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 well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Jean A. Cooper* Date: 3/5/2024

Jean A. Cooper
Printed Name

jean.cooper@exxonmobil.com
E-mail Address

18 SURVEYOR CERTIFICATION

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.

02/09/2024
Date of Survey

Signature and Seal of Professional Surveyor:



P:\618.013 XTO Energy - NM\003 Poker Lake Unit\06 - PLU 20 DTD - EDDY\Wells\55 - 423H\DWG\SOUTH 423H C-102.dwg

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

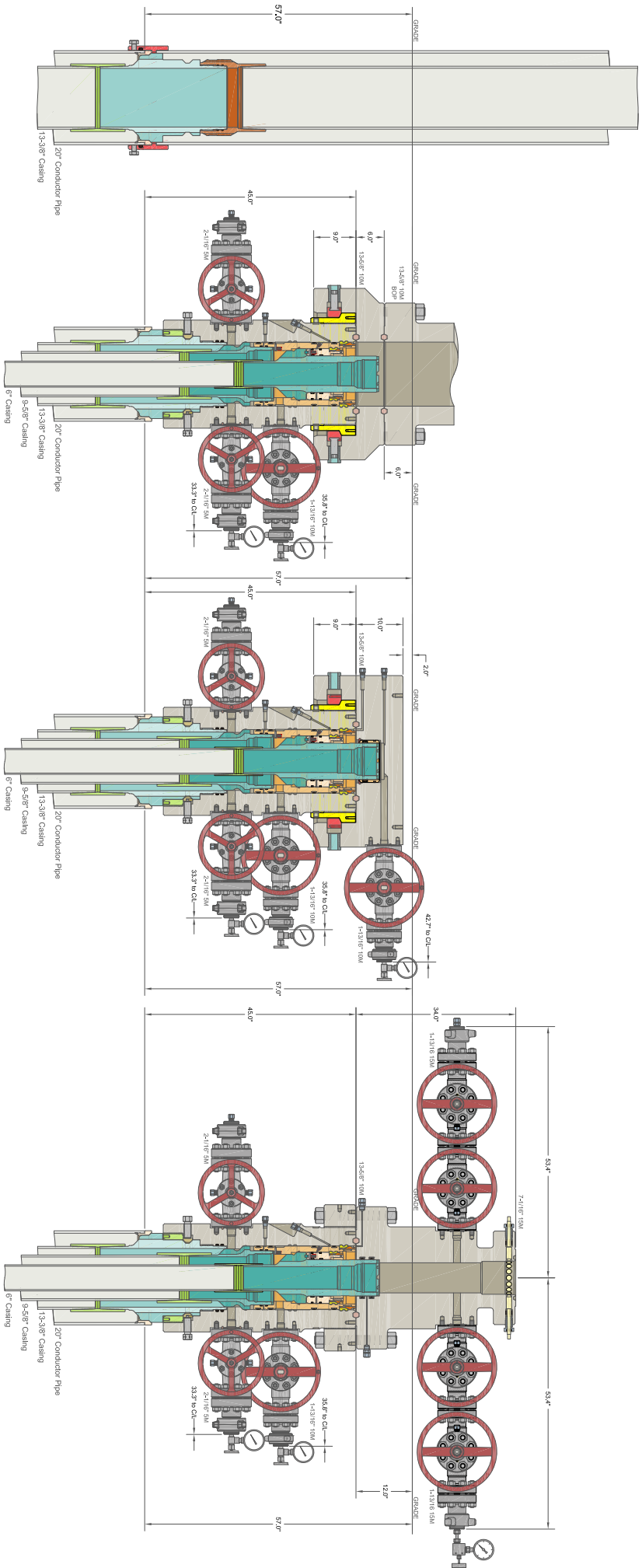
UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

XTO ENERGY INC
DELAWARE BASIN

(20") x 13-3/8" x 9-5/8" x 6" 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

DRAWN	DLE	04NOV22
APPRV		
DRAWING NO.	HBE0000833	

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

XTO Energy Inc.
PLU 20 Dog Town Draw 423H
Projected TD: 29969.11' MD / 9583' TVD
SHL: 432' FNL & 547' FEL , Section 20, T24S, R30E
BHL: 50' FSL & 431' FEL , Section 5, T25S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

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

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	935'	Water
Top of Salt	1338'	Water
Base of Salt	3531'	Water
Delaware	3725'	Water
Brushy Canyon	6223'	Water/Oil/Gas
Bone Spring	7519'	Water
1st Bone Spring	8505'	Water/Oil/Gas
2nd Bone Spring	9323'	Water/Oil/Gas
Target/Land Curve	9583'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

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

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13.375 inch casing @ 1035' (303' above the salt) and circulating cement back to surface. The intermediate will isolate from the top of salt down to the next casing seat by setting 9.625 inch casing at 8667.97' and cemented to surface. A 8.5 inch curve and 8.5 inch lateral hole will be drilled to 29969.11 MD/TD and 6 inch production casing will be set at TD and cemented back up in the intermediate shoe (estimated TOC 8367.97 feet).

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
17.5	0' – 1035'	13.375	54.5	J-55	BTC	New	1.33	2.50	16.11
12.25	0' – 4000'	9.625	40	HC P-110	BTC	New	3.26	2.31	3.65
12.25	4000' – 8667.97'	9.625	40	HC L-80	BTC	New	2.37	2.02	4.91
8.5	0' – 8567.97'	6	26	P-110	Semi-Premium	New	1.17	3.35	1.70
8.5	8567.97' - 29969.11'	6	26	P-110	Semi-Premium	New	1.17	2.99	1.90

- XTO requests the option to utilize a spudder rig (Atlas Copco RD20 or Equivalent) to set and cement surface casing per this Sundry
- XTO requests to not utilize centralizers in the curve and lateral
- 9.625 Collapse analyzed using 50% evacuation based on regional experience.
- 6 Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
- Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less
- XTO requests the option to use 5.5" BTC Float equipment for the the production casing

Wellhead:

Permanent Wellhead – Multibowl System

A. Starting Head: 13-5/8" 10M top flange x 13-3/8" SOW bottom (or equivalent)

B. Tubing Head: 13-5/8" 10M bottom flange x 7-1/16" 15M top flange (or equivalent)

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 9-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 13.375, 54.5 New BTC, J-55 casing to be set at +/- 1035'

Lead: 540 sxs EconoCem-HLTRRC (mixed at 10.5 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 300 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Top of Cement: Surface

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

2nd Intermediate Casing: 9.625, 40 New casing to be set at +/- 8667.97'

1st Stage

Optional Lead: 1050 sxs Class C (mixed at 10.5 ppg, 2.77 ft³/sx, 15.59 gal/sx water)

TOC: Surface

Tail: 700 sxs Class C (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

TOC: Brushy Canyon @ 6223

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

2nd Stage

Lead: 0 sxs Class C (mixed at 12.9 ppg, 2.16 ft³/sx, 9.61 gal/sx water)

Tail: 2190 sxs Class C (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Top of Cement: 0

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

XTO requests to pump a two stage cement job on the 9-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brush Canyon (6223') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If cement is not visually confirmed to circulate to surface, the final cement top after the second stage job will be verified by Echo-meter. If necessary, a top out consisting of 1,500 sack of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. If cement is still unable to circulate to surface, another Echo-meter run will be performed for cement top verification.

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

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

XTO requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure the first stage cement job is cemented properly and the well is static with floats holding and no pressure on the csg annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

Production Casing: 6, 26 New Semi-Premium, P-110 casing to be set at +/- 29969.11'

Lead: 40 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft³/sx, 15.00 gal/sx water) Top of Cement: 8367.97 feet

Tail: 3590 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft³/sx, 8.38 gal/sx water) Top of Cement: 8867.97 feet

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

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

5. Pressure Control Equipment

Once the permanent WH is installed on the 13.375 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 10M Double Ram BOP. MASP should not exceed 2426 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M).

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13.375, 3M bradenhead and flange, the BOP test will be limited to 3000 psi. When nipping up on the 9.625, the BOP will be tested to a minimum of 3000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each week.

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.

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

hole on each of the wells.

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. Based on discussions with the BLM on February 27th 2020, we will request permission to **ONLY** retest broken pressure seals if the following conditions are met: 1. After a full BOP test is conducted on the first well on the pad 2. When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 1035'	17.5	FW/Native	8.4-8.9	35-40	NC
1035' - 8667.97'	12.25	FW / Cut Brine / Direct Emulsion	8.8-9.3	30-32	NC
8667.97' - 29969.11'	8.5	OBM	9.1-9.6	50-60	NC - 20

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 9-5/8" surface casing with brine solution. A 9.7 ppg - 10.2 ppg cut brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 13.375 casing.

8. Logging, Coring and Testing Program

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 160 to 180 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 4535 psi.

10. Anticipated Starting Date and Duration of Operations

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

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

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

Background

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

Supporting Documentation

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



Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System

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

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API STANDARD 53

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

Component to be Pressure Tested	Pressure Test—Low Pressure ^{ac} psig (MPa)	Pressure Test—High Pressure ^{ac}	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer ^a	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 ^{bd}	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 ^a	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes ^a	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	

^a 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.

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

^c 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.

^d 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.

^e 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

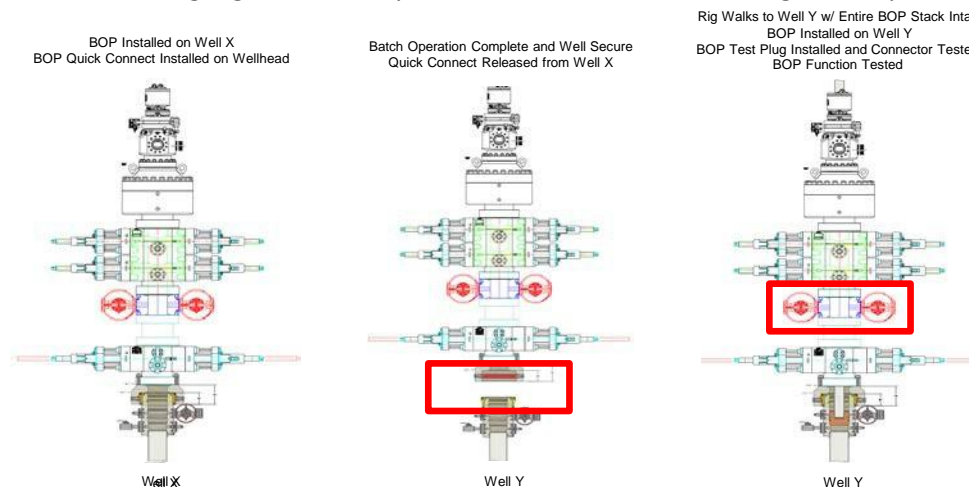
each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the CFR Title 43 Part 3170.

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.

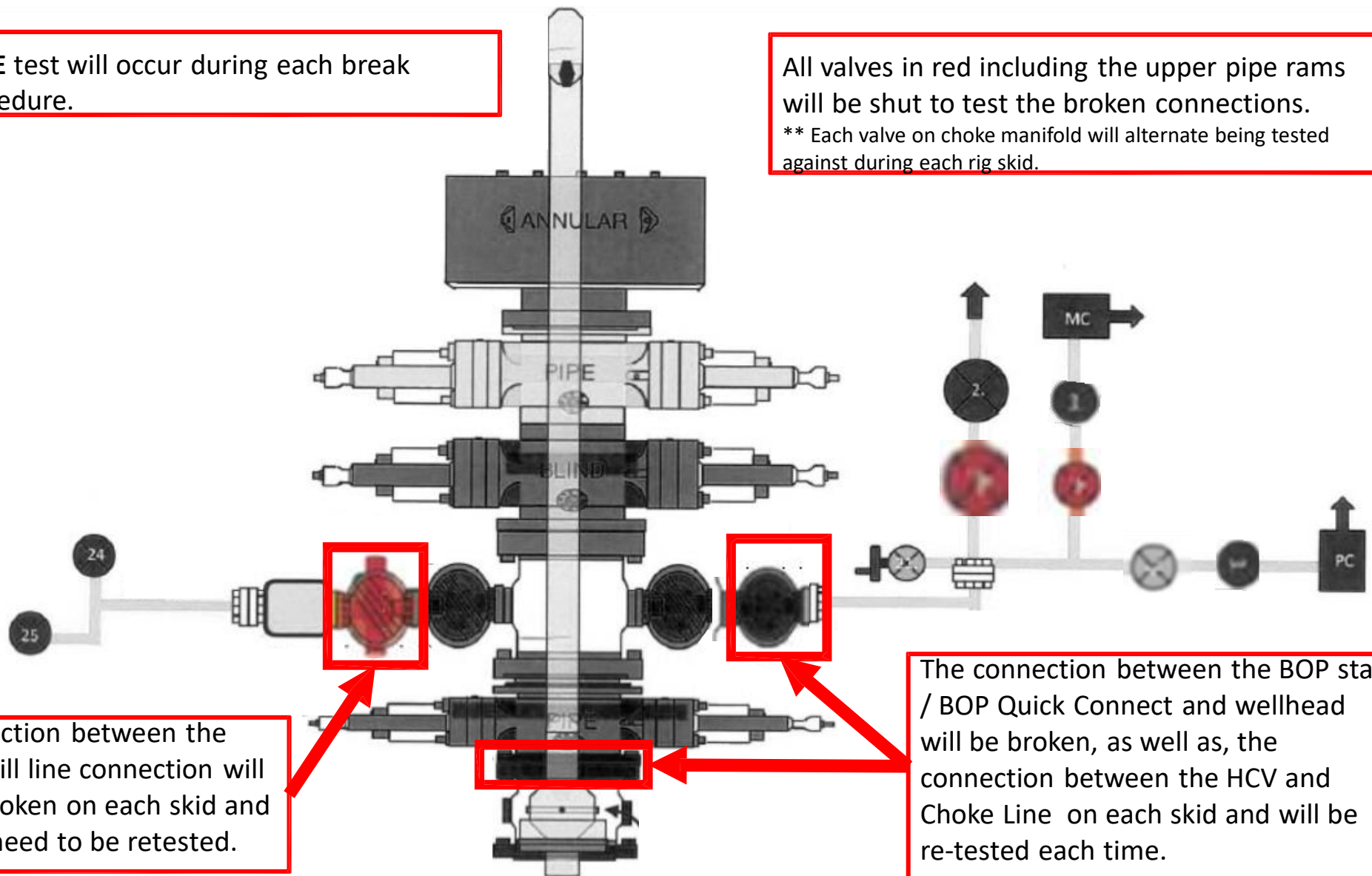
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

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.

10,000 PSI Annular BOP Variance Request

XTO Energy/XTO Permian Op. request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOPL).

1. Component and Preventer Compatibility Tables

The tables below outline the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

8-1/2" Production Hole Section 10M psi Requirement					
Component	OD	Primary Preventer	RWP	Alternate Preventer(s)	RWP
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Jars	6.500"	Annular	5M	-	-
DCs and MWD tools	6.500"-8.000"	Annular	5M	-	-
Mud Motor	6.750"-8.000"	Annular	5M	-	-
Production Casing	5-1/2"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the XTO Energy/Permian Operating drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per 43.CFR.3172 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
 - a. SIDPP & SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan

9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
 - a. SIDPP & SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Running Production Casing

- a. Sound alarm (alert crew)
- b. Stab crossover and full-opening safety valve and close
- c. Space out string
- d. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
- e. Confirm shut-in
- f. Notify toolpusher/company representative
- g. Read and record the following:
 - a. SIDPP & SICP
 - b. Pit gain
 - c. Time
- h. Regroup and identify forward plan
- i. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
 - a. SICP
 - b. Pit gain
 - c. Time
6. Regroup and identify forward plan

General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
 - a. Perform flow check. If flowing, continue to (b).
 - b. Sound alarm (alert crew)
 - c. Stab full-opening safety valve and close
 - d. Space out drill string with tool joint just beneath the upper variable bore rams
 - e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
 - f. Confirm shut-in
 - g. Notify toolpusher/company representative
 - h. Read and record the following:
 - i. SIDPP & SICP
 - ii. Pit gain
 - iii. Time
 - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
 - a. Sound alarm (alert crew)
 - b. Stab crossover and full-opening safety valve and close
 - c. Space out drill string with upset just beneath the upper variable bore rams
 - d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
 - e. Confirm shut-in
 - f. Notify toolpusher/company representative
 - g. Read and record the following:
 - i. SIDPP & SICP
 - ii. Pit gain
 - iii. Time

- h. Regroup and identify forward plan
 - 3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
 - a. Sound alarm (alert crew)
 - b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
 - c. If impossible to pull string clear of the stack:
 - d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close
 - e. Space out drill string with tooljoint just beneath the upper variable bore ram
 - f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)
 - g. Confirm shut-in
 - h. Notify toolpusher/company representative
 - i. Read and record the following:
 - i. SIDPP & SICP
 - ii. Pit gain
 - iii. Time
 - j. Regroup and identify forward plan

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 342220

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 342220
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	5/17/2024