

Lease Number: NMNM033955

Unit or CA Name: BIG EDDY

Unit or CA Number:
NMNM68294X

US Well Number: 3002552505

Operator: XTO PERMIAN OPERATING
LLC**Notice of Intent**

Sundry ID: 2776431

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/22/2024

Time Sundry Submitted: 03:53

Date proposed operation will begin: 02/22/2024

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, and Proposed total Depth. The API number for this well is 30-025-52505. FROM: TO: SHL: 470' FSL & 915' FWL OF SECTION 22-T20S-R32E 490' FSL & 915' FWL OF SECTION 22-T20S-R32E FTP: 2630' FNL & 100' FEL OF SECTION 21-T20S-R32E 760' FSL & 100' FEL OF SECTION 21-T20S-R32E LTP: 2630' FNL & 100' FWL OF SECTION 19-T20S-R32E 760' FSL & 100' FWL OF SECTION 19-T20S-R32E BHL: 2630' FNL & 50' FWL OF SECTION 19-T20S-R32E 760' FSL & 50' FWL OF SECTION 19-T20S-R32E The proposed total depth is changing from 27256' MD; 10926' TVD to 27957.86' MD; 11801' TVD. XTO Permian Operating, LLC. respectfully requests permission for a primary and a contingency drilling program for this well. Primary will be a 4-string design and the contingency will be a 5-string design that will be used in case of wellbore instability. A saturated salt brine will be utilized while drilling through the salt formations. See attached drilling program for the primary and contingency designs, with updated casing design, and cement program. Attachments: C-102, Drilling Plan (Primary 4-string design), Drilling Plan (Contingency 5-String design) Directional Plan, Non-API Spec documents for Production Casing, MBS Diagram (Primary 4-string design), MBS diagram (Contingency 5-string design), Well bore diagram (Primary 4-String design), Well bore diagram (Contingency 5-string design). All Variances were approved with the Original APD.

NOI Attachments**Procedure Description**

BEU_BB_Grevious_100H___Sundry_attachments_10252024_20241025115544.pdf

US Well Number: 3002552505

Operator: XTO PERMIAN OPERATING
LLC

Conditions of Approval

Additional

BEU_BB_Grievous_100H_COA_20241107131642.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: RICHARD REDUS

Signed on: OCT 25, 2024 11:57 AM

Name: XTO PERMIAN OPERATING LLC

Title: Permitting Manager

Street Address: 22777 SPRINGWOODS VILLAGE PARKWAY

City: SPRING

State: TX

Phone: (720) 539-1673

Email address: RICHARD.L.REDUS@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: 11/07/2024

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. NMNM033955

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator XTO PERMIAN OPERATING LLC

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

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 22/T20S/R32E/NMP

7. If Unit of CA/Agreement, Name and/or No. BIG EDDY/NMNM68294X

8. Well Name and No. BIG EDDY UNIT BB GRIEVOUS/100H

9. API Well No. 3002552505

10. Field and Pool or Exploratory Area SALT LAKE BONE SPRING

11. Country or Parish, State LEA/NM

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

TYPE OF SUBMISSION	TYPE OF ACTION				
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

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

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, and Proposed total Depth. The API number for this well is 30-025-52505.

FROM: TO:

SHL: 470' FSL & 915' FWL OF SECTION 22-T20S-R32E 490' FSL & 915' FWL OF SECTION 22-T20S-R32E

FTP: 2630' FNL & 100' FEL OF SECTION 21-T20S-R32E 760' FSL & 100' FEL OF SECTION 21-T20S-R32E

LTP: 2630' FNL & 100' FWL OF SECTION 19-T20S-R32E 760' FSL & 100' FWL OF SECTION 19-T20S-R32E

BHL: 2630' FNL & 50' FWL OF SECTION 19-T20S-R32E 760' FSL & 50' FWL OF SECTION 19-T20S-R32E

The proposed total depth is changing from 27256 MD; 10926 TVD to 27957.86 MD; 11801 TVD.

XTO Permian Operating, LLC. respectfully requests permission for a primary and a contingency drilling program for this well. Primary will be a

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) RICHARD REDUS / Ph: (720) 539-1673	Title Permitting Manager
Signature (Electronic Submission)	Date 10/25/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved	Title Petroleum Engineer	Date 11/07/2024
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 CARLSBAD	

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

4-string design and the contingency will be a 5-string design that will be used in case of wellbore instability.

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

See attached drilling program for the primary and contingency designs, with updated casing design, and cement program.

Attachments: C-102, Drilling Plan (Primary 4-string design), Drilling Plan (Contingency 5-String design) Directional Plan, Non-API Spec documents for Production Casing, MBS Diagram (Primary 4-string design), MBS diagram (Contingency 5-string design), Well bore diagram (Primary 4-String design), Well bore diagram (Contingency 5-string design). All Variances were approved with the Original APD.

Location of Well

0. SHL: SWSW / 470 FSL / 915 FWL / TWSP: 20S / RANGE: 32E / SECTION: 22 / LAT: 32.552749 / LONG: -103.759687 (TVD: 0 feet, MD: 0 feet)

PPP: SENE / 2630 FNL / 100 FEL / TWSP: 20S / RANGE: 32E / SECTION: 21 / LAT: 32.558722 / LONG: -103.762974 (TVD: 10926 feet, MD: 11536 feet)

BHL: LOT 2 / 2630 FNL / 50 FWL / TWSP: 20S / RANGE: 32E / SECTION: 19 / LAT: 32.558908 / LONG: -103.813996 (TVD: 10865 feet, MD: 27256 feet)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO
LEASE NO.:	NMNM033955
LOCATION:	Sec. 22, T.20 S, R 32 E
COUNTY:	Lea County, New Mexico ▼
WELL NAME & NO.:	Big Eddy Unit BB Grievous 101H
SURFACE HOLE FOOTAGE:	490'/S & 915'/W
BOTTOM HOLE FOOTAGE:	760'/S & 50'/W

Changes approved through engineering via **Sundry 2776431** on 11-7-2024. Any previous COAs not addressed within the updated COAs still apply.

COA

H ₂ S	☒ No		☐ Yes	
Potash / WIPP	☐ None	☐ Secretary	☒ R-111-Q	☒ Open Annulus
	4-String Design: Open 1st Int x Production Casing (ICP 2 above Relief Zone)			☐ WIPP
Cave / Karst	☒ Low	☐ Medium	☐ High	☐ Critical
Wellhead	☐ Conventional	☒ Multibowl	☐ Both	☐ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☒ Capitan Reef	☐ Water Disposal	☐ COM	☒ Unit
Waste Prev.	☐ Self-Certification	☐ Waste Min. Plan	☒ APD Submitted prior to 06/10/2024	
Additional Language	☒ Flex Hose	☒ Casing Clearance	☐ Pilot Hole	☒ Break Testing
	☒ Four-String	☒ Offline Cementing	☐ Fluid-Filled	

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.

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

B. CASING

- The **20** inch surface casing shall be set at approximately **1237** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

- a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **13-3/8 inch 1st 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.

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

 - Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
3. The minimum required fill of cement behind the **9-5/8 inch 2nd 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.
4. The minimum required fill of cement behind the **6 inch production casing** is:
 - Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
1. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Unit Wells

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

Commercial Well Determination

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

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.

- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 43 CFR 3172.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

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

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

Casing Clearance

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

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Contact Lea County Petroleum Engineering Inspection Staff:

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - i. Notify the BLM when moving in and removing the Spudder Rig.
 - ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 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. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's

requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - iii. Manufacturer representative shall install the test plug for the initial BOP test.
 - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve

- open. (only applies to single stage cement jobs, prior to the cement setting up.)
- iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - v. The results of the test shall be reported to the appropriate BLM office.
 - vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
 - vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
 - viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be

disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Approved by Zota Stevens on 11/7/2024
575-234-5998 / zstevens@blm.gov

WELL LOCATION INFORMATION

API Number 30-025-	Pool Code 98220	Pool Name Purple Sage; Wolfcamp
Property Code	Property Name BIG EDDY UNIT BB GRIEVOUS	Well Number 100H
OGRID No. 373075	Operator Name XTO PERMIAN OPERATING, LLC.	Ground Level Elevation 3,529'
Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
M	22	20S	32E		490 FSL	915 FWL	32.552804	-103.759687	LEA

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	19	20S	32E	4	760 FSL	50 FWL	32.553648	-103.813998	LEA

Dedicated Acres 959.32	Infill or Defining Well INFILL	Defining Well API	Overlapping Spacing Unit (Y/N) N	Consolidation Code U
Order Numbers.			Well Setbacks are under Common Ownership: ☒ Yes ☐ No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
M	22	20S	32E		759 FSL	616 FWL	32.553544	-103.760656	LEA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
P	21	20S	32E		760 FSL	100 FEL	32.553549	-103.762980	LEA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	19	20S	32E	4	760 FSL	100 FWL	32.553647	-103.813836	LEA

Unitized Area of Area of Interest NMNM105467880	Spacing Unit Type : ☒ Horizontal ☐ Vertical	Ground Elevation 3,529'
---	--	-----------------------------------

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or a voluntary pooling agreement or a compulsory pooling order of heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or information) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Srinivas Naveen

9/19/2024

SignatureDate

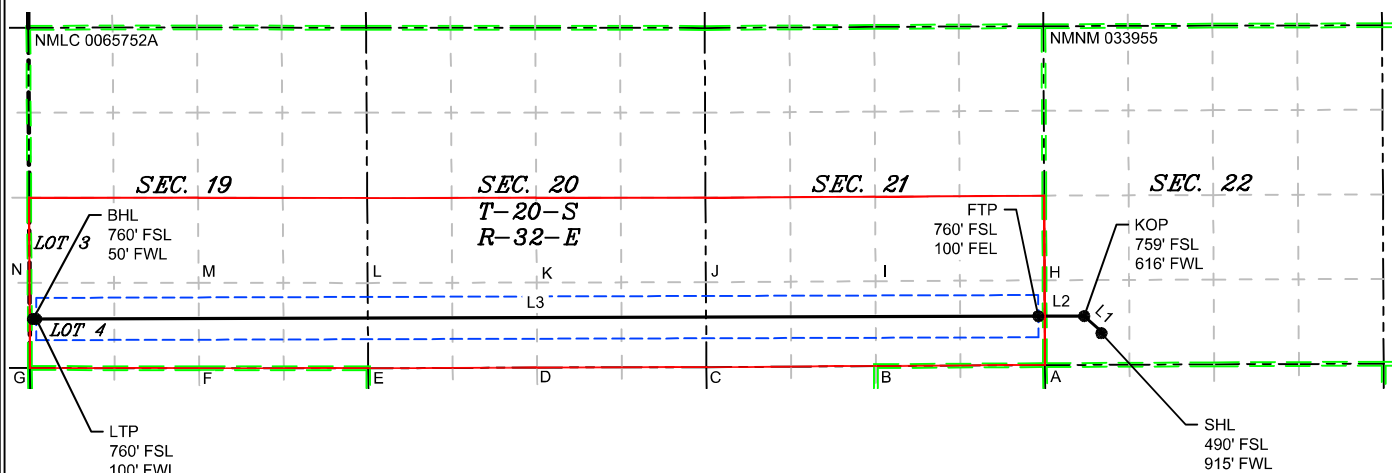
SURVEYOR CERTIFICATIONS

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief



Signature and Seal of Professional Surveyor





LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	311°44'14"	402.05'
L2	269°50'19"	716.19'
L3	269°50'16"	15,719.79'

LEGEND

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

LOT ACREAGE TABLE	
SECTION 19	
T-20-S, R-32-E	
LOT 3 = 39.64 ACRES	
LOT 4 = 39.68 ACRES	

COORDINATE TABLE

SHL (NAD 83 NME)			SHL (NAD 27 NME)		
Y =	565,316.9	N	Y =	565,255.3	N
X =	718,087.2	E	X =	676,907.4	E
LAT. =	32.552804	°N	LAT. =	32.552683	°N
LONG. =	103.759687	°W	LONG. =	103.759188	°W
KOP (NAD 83 NME)			KOP (NAD 27 NME)		
Y =	565,584.5	N	Y =	565,522.9	N
X =	717,787.2	E	X =	676,607.4	E
LAT. =	32.553544	°N	LAT. =	32.553424	°N
LONG. =	103.760656	°W	LONG. =	103.760157	°W
FTP (NAD 83 NME)			FTP (NAD 27 NME)		
Y =	565,582.5	N	Y =	565,520.9	N
X =	717,071.0	E	X =	675,891.2	E
LAT. =	32.553549	°N	LAT. =	32.553429	°N
LONG. =	103.762980	°W	LONG. =	103.762481	°W
LTP (NAD 83 NME)			LTP (NAD 27 NME)		
Y =	565,537.9	N	Y =	565,476.1	N
X =	701,401.3	E	X =	660,221.7	E
LAT. =	32.553647	°N	LAT. =	32.553526	°N
LONG. =	103.813836	°W	LONG. =	103.813335	°W
BHL (NAD 83 NME)			BHL (NAD 27 NME)		
Y =	565,538.0	N	Y =	565,476.2	N
X =	660,171.7	E	X =	660,171.7	E
LAT. =	32.553648	°N	LAT. =	32.553527	°N
LONG. =	103.813836	°W	LONG. =	103.813335	°W

CORNER COORDINATES (NAD 83 NME)

A - Y =	567,464.0	N	A - X =	717,162.8	E
B - Y =	567,449.0	N	B - X =	714,516.0	E
C - Y =	567,434.0	N	C - X =	711,863.7	E
D - Y =	567,430.9	N	D - X =	709,219.7	E
E - Y =	567,427.7	N	E - X =	706,578.1	E
F - Y =	567,430.1	N	F - X =	703,931.3	E
G - Y =	567,432.4	N	G - X =	701,292.5	E
H - Y =	566,143.6	N	H - X =	717,168.5	E
I - Y =	566,128.3	N	I - X =	714,522.2	E
J - Y =	566,112.3	N	J - X =	711,871.8	E
K - Y =	566,108.2	N	K - X =	709,227.5	E
L - Y =	566,100.1	N	L - X =	706,585.9	E
M - Y =	566,101.1	N	M - X =	703,940.2	E
N - Y =	566,105.2	N	N - X =	701,298.7	E

CORNER COORDINATES (NAD 27 NME)

A - Y =	567,402.4	N	A - X =	675,983.0	E
B - Y =	567,387.3	N	B - X =	673,336.3	E
C - Y =	567,372.2	N	C - X =	670,684.1	E
D - Y =	567,369.1	N	D - X =	668,040.1	E
E - Y =	567,366.0	N	E - X =	665,398.5	E
F - Y =	567,368.3	N	F - X =	662,751.7	E
G - Y =	567,370.6	N	G - X =	660,113.0	E
H - Y =	566,081.9	N	H - X =	675,988.8	E
I - Y =	566,066.6	N	I - X =	673,342.5	E
J - Y =	566,050.6	N	J - X =	670,692.2	E

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

XTO Energy Inc.
BIG EDDY UNIT BB GRIEVOUS 100H
Projected TD: 27957.86' MD / 11801' TVD
SHL: 490' FSL & 915' FWL , Section 22, T20S, R32E
BHL: 760' FSL & 50' FWL , Section 19, T20S, R32E
Lea 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	966'	Water
Top of Salt	1337'	Water
Base of Salt	2701'	Water
Capitan	3011'	Water
Delaware	4981'	Water/Oil/Gas
Brushy Canyon	6221'	Water
Bone Spring	7731'	Water/Oil/Gas
1st Bone Spring Ss	8789'	Water/Oil/Gas
2nd Bone Spring Ss	9321'	Water/Oil/Gas
3rd Bone Spring Ss	10536'	Water/Oil/Gas
Wolfcamp	10821'	Water/Oil/Gas
Wolfcamp X	10843'	Water/Oil/Gas
Wolfcamp Y	10901'	Water/Oil/Gas
Wolfcamp A	10954'	Water/Oil/Gas
Wolfcamp C	11031'	Water/Oil/Gas
Wolfcamp F	11225'	Water/Oil/Gas
Target/Land Curve	11801'	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 fresh water sands will be protected by setting surface casing above Top of Salt and circulating cement back to surface. The salt will be isolated by setting first intermediate casing below base of salt and circulating cement to surface. The second intermediate will isolate the Capitan Reef up ~ 75' inside Delaware formation and cemented to surface. A 8.5/8.75 inch curve and lateral hole will be drilled to TD and 6 inch production casing will be set at TD cemented in one stage with estimated TOC ~7700 ft (Base of Brushy Canyon)

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
24	0' – 1237'	20	94	J-55	BTC	New	2.51	0.97	9.26
17.5	0' – 2801'	13.375	54.5	J-55	BTC	New	2.57	1.33	5.95
12.25	0' – 2901'	9.625	40	HC L-80	BTC	New	1.07	3.38	4.55
12.25	2901' – 5031'	9.625	40	HC L-80	BTC	New	1.07	5.84	10.75
8.75 – 8.5	0' – 27957.86'	6	26	P-110	TenarisHydril Wedge	New	1.17	1.70	2.52

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

*Non-API Standard Spec Sheet Attached

Wellhead:

Permanent Wellhead
Multibowl System for 4 String desing as per attachement.

4. Cement Program

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

Surface Casing: 20, 94 New BTC, J-55 casing to be set at +/- 1237'

Optional Lead: 960 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 1.87 ft³/sx, 10.13 gal/sx water)
 Tail: 420 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 = 250 psi 24 hr = 500 psi

Due to the high probability of not getting cement to surface during conventional top-out jobs in the area, ~10-20 ppb gravel will be added on the backside of the 1" to get cement to surface, if required.

1st Intermediate Casing: 13.375, 54.5 New BTC, J-55 casing to be set at +/- 2801'

Lead: 1380 sxs Class C (mixed at 12.6 ppg, 1.88 ft³/sx, 10.13 gal/sx water)
 Tail: 230 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 +/- 5031'

Lead: 670 sxs Class C (mixed at 12.8 ppg, 1.88 ft³/sx, 15.59 gal/sx water)
 TOC: 0'
 Tail: 640 sxs Class C (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)
 TOC: Capitan Reef @ 3011
 Compressives: 12-hr = 900 psi 24 hr = 1150 psi

XTO requests to pump a single stage cement job on the second intermediate casing string, with slurries pumped conventionally with the first slurry top of cement at Capitan Reef (3011') and the second slurry performed with planned cement from the Capitan Reef to surface.

Production Casing: 6, 26 New TenarisHydril Wedge, P-110 casing to be set at +/- 27957.86'

Optional Lead: 240 sxs NeoCem (mixed at 12.8 ppg, 2.69 ft³/sx, 15.00 gal/sx water) Top of C 7731 feet
 Tail: 2060 sxs VersaCem (mixed at 14.5 ppg, 1.61 ft³/sx, 8.38 gal/sx water) Top of Cement: 11113 feet
 Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

XTO requests to pump a single stage cement job on the 6" Production casing string pumped conventionally, with calculated top of cement at 7731' (Base of Brushy Canyon).

In case the initial cement job do not reach the desired top of cement, a post completion bradenhead squeeze will be performed to tied back the 2nd intermediate x production casing annulus TOC into the 2nd intermediate shoe but below of potash interval

5. Pressure Control Equipment

The blow out preventer equipment (BOP) that will be RU on top of surf casing wellhead will consist of 2M Hydril. MASP should not exceed 635 psi.

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

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

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

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

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

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)	Additional Comments
0' - 1237'	24	FW/Native	8.3-8.8	35-40	NC	Fresh water or native water
1237' - 2801'	17.5	Sat salt Brine	10-11	30-32	NC	Fully saturated brine across salado / salt
2801' to 5031'	12.25	FW	8.3-8.8	30-32	NC	FW across Cap Reef
5031' to 27957.86'	8.75 – 8.5	OBM	9-13.5	50-60	NC - 20	OBM or Brine depending well conditions.

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

Spud with fresh water/native mud. Drill out from under surface casing. A fully saturated brine will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A 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 20 casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing where necessary. Otherwise, gamma ray will be utilized while actively drilling.

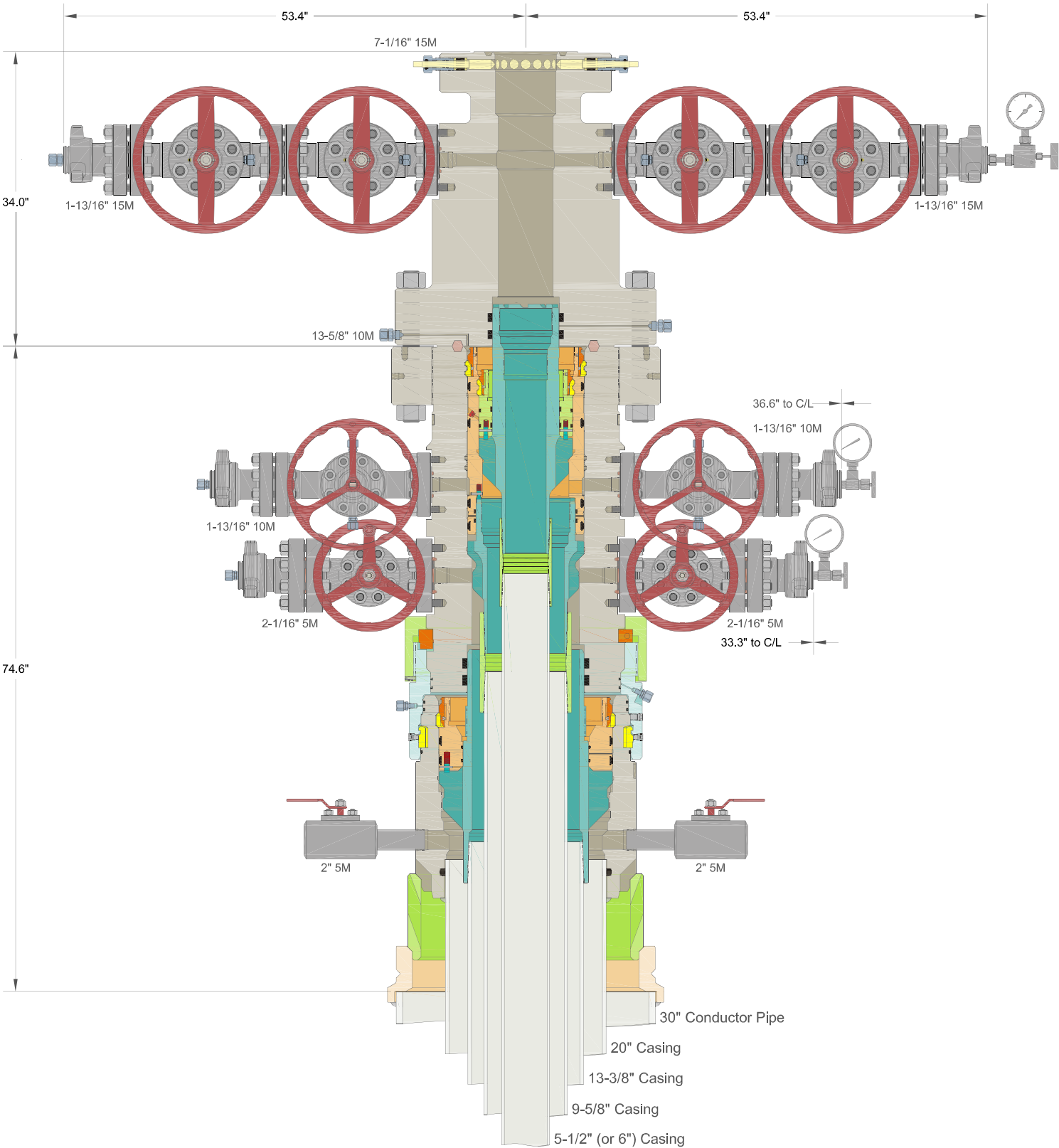
Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 180 to 200 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 7977 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.



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

XTO ENERGY INC
DELAWARE BASIN

30" x 20" x 13-3/8" x 9-5/8" x 5-1/2" (or 6") CRC / MBU-3T-CFL
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head
And 13-3/8", 9-5/8" & 5-1/2" (or 6") Pin Bottom Casing Hangers

DRAWN	DLE	25MAR24
APPRV		
DRAWING NO.	HBE0000801	

TenarisHydril Wedge

461®



Page 22 of 50

Coupling	Pipe Body
Grade: P110-CY	Grade: P110-CY
Body: White	1st Band: White
1st Band: Grey	2nd Band: Grey
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	6.000 in.	Wall Thickness	0.438 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry		Performance	
Nominal OD	6.000 in.	Wall Thickness	0.438 in.
Nominal Weight	26.00 lb/ft	Plain End Weight	26.04 lb/ft
Drift	4.999 in.	OD Tolerance	API
Nominal ID	5.124 in.		
		Body Yield Strength	842 x1000 lb
		Min. Internal Yield Pressure	14,050 psi
		SMYS	110,000 psi
		Collapse Pressure	13,680 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	6.800 in.	Tension Efficiency	100 %	Minimum	20,000 ft-lb
Coupling Length	8.914 in.	Joint Yield Strength	842 x1000 lb	Optimum	21,000 ft-lb
Connection ID	5.170 in.	Internal Pressure Capacity	14,050 psi	Maximum	25,200 ft-lb
Make-up Loss	4.375 in.	Compression Efficiency	100 %		
Threads per inch	3.40	Compression Strength	842 x1000 lb	Operation Limit Torques	
Connection OD Option	Regular	Max. Allowable Bending	84.03 °/100 ft	Operating Torque	52,000 ft-lb
		External Pressure Capacity	13,680 psi	Yield Torque	61,000 ft-lb
		Coupling Face Load	306,000 lb		
				Buck-On	
				Minimum	25,200 ft-lb
				Maximum	26,700 ft-lb

Notes

In October 2019, TenarisHydril Wedge XP® 2.0 was renamed TenarisHydril Wedge 461™. Product dimensions and properties remain identical and both connections are fully interchangeable

For the latest performance data, always visit our website: www.tenaris.com
For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

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P111/C1

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

XTO Energy Inc.
BIG EDDY UNIT BB GRIEVOUS 100H
Projected TD: 27957.86' MD / 11801' TVD
SHL: 490' FSL & 915' FWL , Section 22, T20S, R32E
BHL: 760' FSL & 50' FWL , Section 19, T20S, R32E
Lea 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	966'	Water
Top of Salt	1337'	Water
Base of Salt	2701'	Water
Capitan	3011'	Water
Delaware	4981'	Water/Oil/Gas
Brushy Canyon	6221'	Water
Bone Spring	7731'	Water/Oil/Gas
1st Bone Spring Ss	8789'	Water/Oil/Gas
2nd Bone Spring Ss	9321'	Water/Oil/Gas
3rd Bone Spring Ss	10536'	Water/Oil/Gas
Wolfcamp	10821'	Water/Oil/Gas
Wolfcamp X	10843'	Water/Oil/Gas
Wolfcamp Y	10901'	Water/Oil/Gas
Wolfcamp A	10954'	Water/Oil/Gas
Wolfcamp C	11031'	Water/Oil/Gas
Wolfcamp F	11225'	Water/Oil/Gas
Target/Land Curve	11801'	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 fresh water sands will be protected by setting surface casing above Top of Salt and circulating cement back to surface. The salt will be isolated by setting first intermediate casing below base of salt and circulating cement to surface. The second intermediate will isolate the Capitan Reef up ~ 75' inside Delaware formation and cemented to surface. The 3rd Intermediate csg will isolate DMG to Wolfcamp A circulating cement to ~300' inside Int 2 csg. A 6.75 inch curve and lateral hole will be drilled to TD and 5.5 inch production casing will be set at TD cemented in one stage with estimated TOC ~500ft inside previous casing string.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
24	0' – 1237'	20	94	J-55	BTC	New	2.51	0.97	9.26
17.5	0' – 2801'	13.375	54.5	J-55	BTC	New	2.57	1.33	5.95
12.25	0' – 2901'	9.625	40	HC L-80	BTC	New	1.75	3.38	4.55
12.25	2901' – 5031'	9.625	40	HC L-80	BTC	New	1.75	5.84	10.75
8.75 – 8.5	0' - 5181	7.625	29.7	RY P-110	Flush Joint	New	1.76	4.45	1.72
8.75 – 8.5	5181' – 10954'	7.625	29.7	HC L-80	Flush Joint	New	1.28	2.27	2.37
6.75	0' – 10854'	5.5	20	RY P-110	Semi-Premium / Freedom	New	1.05	1.50	1.81
6.75	10854' - 27957.86'	5.5	20	RY P-110	Semi-Flush / Talon	New	1.05	1.39	4.72

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

*Non-API Standard Casing Specs attached.

Wellhead:

Permanent Wellhead

Multibowl System for 5 String desing as per attachment.

4. Cement Program

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

Surface Casing: 20, New casing to be set at +/- 1237'

Optional Lead: 960 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 1.87 ft³/sx, 10.13 gal/sx water)
 Tail: 420 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 = 250 psi 24 hr = 500 psi

Due to the high probability of not getting cement to surface during conventional top-out jobs in the area, ~10-20 ppb gravel will be added on the backside of the 1" to get cement to surface, if required.

1st Intermediate Casing: 13.375, New casing to be set at +/- 2801'

Lead: 1380 sxs Class C (mixed at 12.6 ppg, 1.88 ft³/sx, 10.13 gal/sx water)
 Tail: 230 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, New casing to be set at +/- 5031'

Lead: 670 sxs Class C (mixed at 12.8 ppg, 1.88 ft³/sx, 10.13 gal/sx water)
 TOC: 0'
 Tail: 640 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)
 TOC: Capitan Reef @ 3011
 Compressives: 12-hr = 900 psi 24 hr = 1500 psi

3rd Intermediate Casing: 7.625, New casing to be set at +/- 10954'

Optional Lead: 250 sxs Class C (mixed at 12.8 ppg, 1.88 ft³/sx, 15.59 gal/sx water)
 TOC @ 4731' ~ 300' inside 2nd Intermediate csg
 Tail: 120 sxs Class C (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)
 TOC @ 9300'
 Compressives: 12-hr = 900 psi 24 hr = 1150 psi

XTO Request to pump an optional Lead slurry if well conditions dictate in an attempt to bring cement inside the 2nd intermediate casing with primary job. If cement reaches the desired height, the BLM will be notified and the second stage bradenhead Squeeze will be negated.

XTO requests to pump the 7-5/8" intermediate casing string with the first stage being pumped conventionally with 1 or 2 slurries with the calculated TOC @ 4731' ~300 ft inside 2nd intermediate casing.

XTO Request the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval of BLM, when unplanned remediation is needed and batch drilling is approved.

Production Casing: 5.5, New casing to be set at +/- 27957.86'

Lead: 20 sxs NeoCem (mixed at 12.8 ppg, 2.69 ft³/sx, 15.00 gal/sx water) Top of Cement: 10400 feet
 Tail: 1000 sxs VersaCem (mixed at 14.5 ppg, 1.61 ft³/sx, 8.38 gal/sx water) Top of Cement: 11113 feet
 Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

XTO requests to pump a single stage cement job on the 5.5" Production casing string pumped conventionally, the first slurry with calculated top of cement at ~ 10400' (~500' feet inside Intermediate 3 casing string).

5. Pressure Control Equipment

The blow out preventer equipment (BOP) that will be RU on top of surf casing wellhead will consist of 2M Hydril. MASP should not exceed 635 psi.

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

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

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

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

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

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)	Additional Comments
0' - 1237'	24	FW/Native	8.3-8.8	35-40	NC	Fresh water or native water
1237' - 2801'	17.5	Sat salt brine	10-10.5	30-32	NC	Fully saturated brine across salado / salt
2801' to 5031'	12.25	FW	8.3-8.8	30-32	NC	FW across Cap Reef
5031' to 10954'	8.75 – 8.5	Cut Brine / OBM	10-11.5	50-60	NC - 20	OBM or cut brine depending well conditions.
10954' to 27957.86'	8.5 - 6.75	Cut Brine / OBM	11.5-13.5	50-60	NC - 20	OBM or cut brine depending well conditions.

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

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

7. Auxiliary Well Control and Monitoring Equipment

- 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 20 casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing where necessary. Otherwise, gamma ray will be utilized while actively drilling.

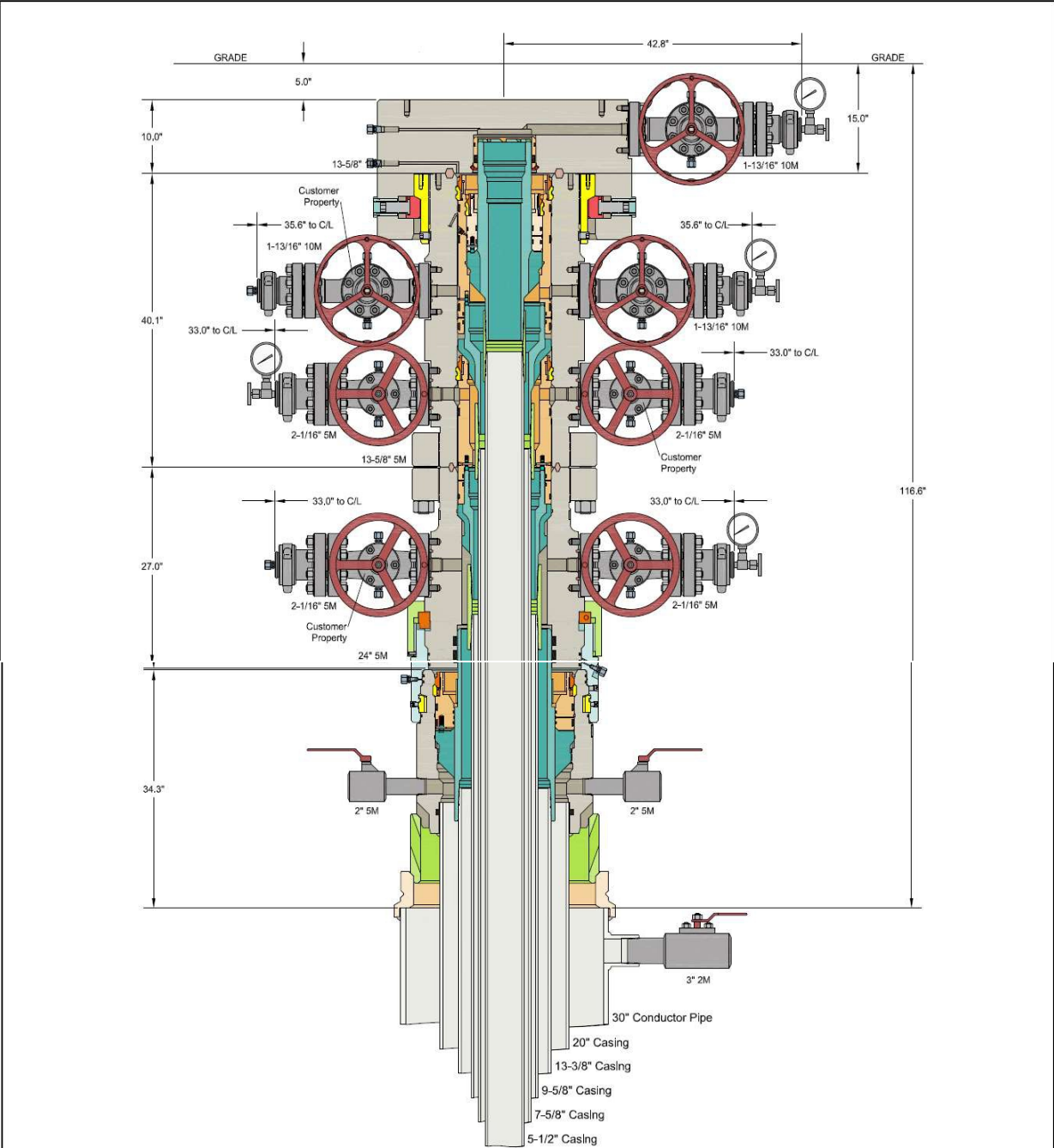
Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated, BHT of 180 to 200 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 7977 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.



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC			
30" x 20" x 13-3/8" x 9-5/8" x 7-5/8" x 5-1/2" CRC/MBU-4T-CFL With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head And 13-3/8", 9-5/8", 7-5/8" & 5-1/2" Mandrel Casing Hangers	DRAWN	DLE	20FEB24
	APPRV		
	DRAWING NO.	HBE0001163	



U. S. Steel Tubular Products

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



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

UNCONTROLLED

Notes

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
2. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4. Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.

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



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

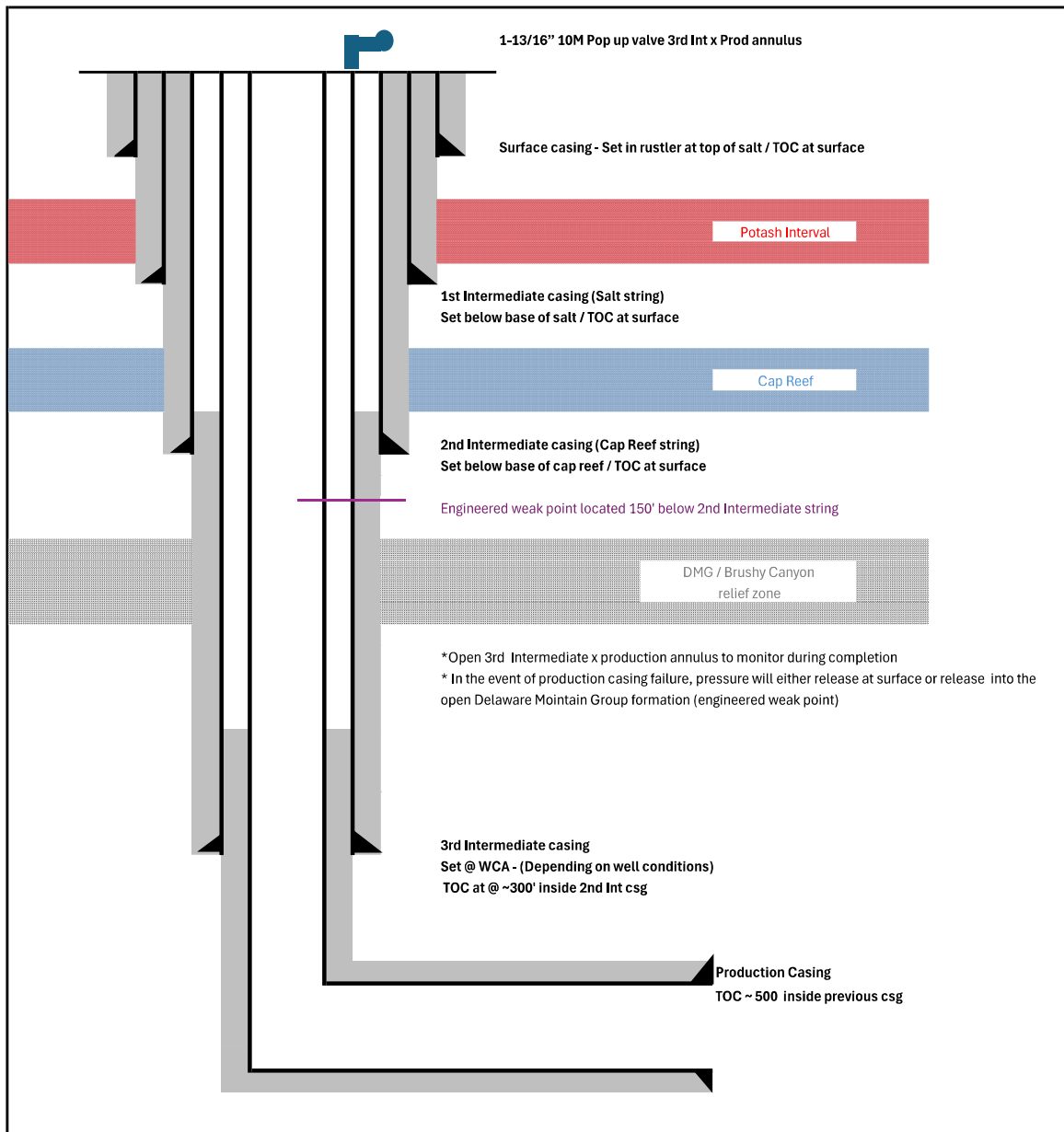
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Notes

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

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**FROM ROTARY TABLE TO
ANNULAR**
~ 12-15' (depending on rig)

**CENTER OF FLOWLINE
FLANGE TO GROUND**
(~15'-16' depending on rig)

**BELL NIPPLE WITH WELD ON
FLANGE AND ROT. HEAD
TO CENTER FLOWLINE FLANGE**

**21-1/4"
2000# DIVERTER**

DIVERTER

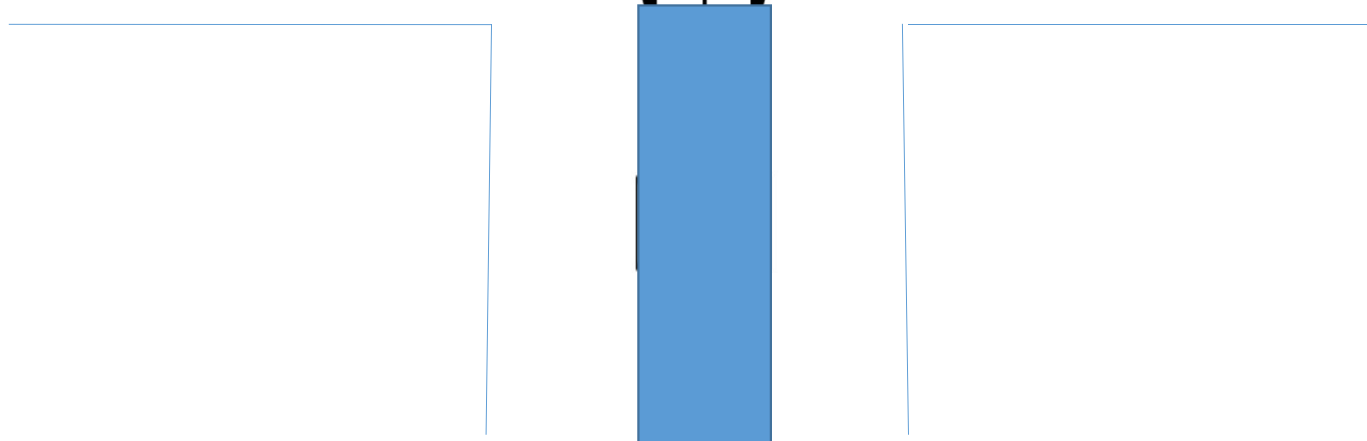
SPOOL

KILL VALVE

HCR VALVE

MUD CROSS

**WELL HEAD ABOVE
GROUND LEVEL**



Well Plan Report - Big Eddy Unit BB GRIEVOUS 100H

Measured Depth: 27957.86 ft
TVD RKB: 11801.00 ft
Location
Cartographic Reference System: New Mexico East - NAD 27
Northing: 565255.30 ft
Easting: 676907.40 ft
RKB: 3561.00 ft
Ground Level: 3529.00 ft
North Reference: Grid
Convergence Angle: 0.31 Deg

Plan Sections Big Eddy Unit BB GRIEVOUS 100H

Measured	Depth (ft)	Inclination (Deg)	Azimuth (Deg)	TVD		Y Offset (ft)	X Offset (ft)	Build		Turn		Dogleg	
				RKB (ft)				Rate (Deg/100ft)		Rate (Deg/100ft)		Rate (Deg/100ft)	Target
	0.00		0.00	0.00		0.00	0.00	0.00		0.00		0.00	
	3100.00	0.00	0.00	3100.00		0.00	0.00	0.00		0.00		0.00	
	3527.96	8.56	311.74	3526.37		21.24	-23.81	2.00		0.00		2.00	
	5800.53	8.56	311.74	5773.63		246.41	-276.20	0.00		0.00		0.00	
	6228.49	0.00	0.00	6200.00		267.65	-300.01	-2.00		0.00		2.00	
	11113.29	0.00	0.00	11084.80		267.65	-300.01	0.00		0.00		0.00	
	12238.29	90.00	269.84	11801.00		265.60	-1016.20	8.00		0.00		8.00	FTP 100H
	27907.86	90.00	269.84	11801.00		220.80	-16685.70	0.00		0.00		0.00	LTP 100H
	27957.86	90.00	269.84	11801.00		220.66	-16735.70	0.00		0.00		0.00	BHL 100H

Position Uncertainty Big Eddy Unit BB GRIEVOUS 100H

Measured	TVD	Highside	Lateral	Vertical	Magnitude	Semi-major	Semi-minor	Tool
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Depth (ft)	Inclination (°)	Azimuth	RKB (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	of Bias (ft)	Error (ft)	Error (ft)	Azimuth (°)	Used
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.310	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.326	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.348	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.375	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.408	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.446	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.488	0.000	0.000	3.642	2.775	128.423	MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.696	0.000	3.502	0.000	2.534	0.000	0.000	4.014	3.133	128.602	MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	4.058	0.000	3.865	0.000	2.585	0.000	0.000	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	2.639	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1200.000	0.000	0.000	1200.000	4.779	0.000	4.589	0.000	2.696	0.000	0.000	5.119	4.207	128.954	MWD+IFR1+MS
1300.000	0.000	0.000	1300.000	5.140	0.000	4.950	0.000	2.756	0.000	0.000	5.484	4.565	129.034	MWD+IFR1+MS
1400.000	0.000	0.000	1400.000	5.500	0.000	5.311	0.000	2.819	0.000	0.000	5.849	4.924	129.102	MWD+IFR1+MS
1500.000	0.000	0.000	1500.000	5.860	0.000	5.672	0.000	2.884	0.000	0.000	6.213	5.282	129.161	MWD+IFR1+MS
1600.000	0.000	0.000	1600.000	6.219	0.000	6.032	0.000	2.952	0.000	0.000	6.577	5.640	129.212	MWD+IFR1+MS
1700.000	0.000	0.000	1700.000	6.579	0.000	6.392	0.000	3.022	0.000	0.000	6.939	5.999	129.257	MWD+IFR1+MS
1800.000	0.000	0.000	1800.000	6.938	0.000	6.752	0.000	3.094	0.000	0.000	7.302	6.357	129.297	MWD+IFR1+MS
1900.000	0.000	0.000	1900.000	7.298	0.000	7.112	0.000	3.168	0.000	0.000	7.664	6.715	129.333	MWD+IFR1+MS
2000.000	0.000	0.000	2000.000	7.657	0.000	7.471	0.000	3.243	0.000	0.000	8.026	7.074	129.365	MWD+IFR1+MS
2100.000	0.000	0.000	2100.000	8.016	0.000	7.831	0.000	3.320	0.000	0.000	8.387	7.432	129.394	MWD+IFR1+MS
2200.000	0.000	0.000	2200.000	8.375	0.000	8.190	0.000	3.399	0.000	0.000	8.748	7.791	129.420	MWD+IFR1+MS
2300.000	0.000	0.000	2300.000	8.734	0.000	8.550	0.000	3.479	0.000	0.000	9.109	8.149	129.444	MWD+IFR1+MS
2400.000	0.000	0.000	2400.000	9.093	0.000	8.909	0.000	3.561	0.000	0.000	9.470	8.507	129.466	MWD+IFR1+MS
2500.000	0.000	0.000	2500.000	9.452	0.000	9.268	0.000	3.644	0.000	0.000	9.831	8.866	129.486	MWD+IFR1+MS
2600.000	0.000	0.000	2600.000	9.811	0.000	9.627	0.000	3.728	0.000	0.000	10.191	9.224	129.505	MWD+IFR1+MS
2700.000	0.000	0.000	2700.000	10.170	0.000	9.986	0.000	3.814	0.000	0.000	10.552	9.583	129.522	MWD+IFR1+MS
2800.000	0.000	0.000	2800.000	10.529	0.000	10.345	0.000	3.901	0.000	0.000	10.912	9.941	129.538	MWD+IFR1+MS
2900.000	0.000	0.000	2900.000	10.888	0.000	10.705	0.000	3.989	0.000	0.000	11.272	10.299	129.552	MWD+IFR1+MS
3000.000	0.000	0.000	3000.000	11.247	0.000	11.063	0.000	4.078	0.000	0.000	11.632	10.658	129.566	MWD+IFR1+MS

3100.000	0.000	0.000	3100.000	11.606	0.000	11.422	0.000	4.169	0.000	11.992	11.016	129.579	MWD+IFR1+MS
3200.000	2.000	311.737	3199.980	11.424	0.000	12.340	0.000	4.260	0.000	12.345	11.424	127.162	MWD+IFR1+MS
3300.000	4.000	311.737	3299.838	11.985	0.000	12.680	0.000	4.353	0.000	12.704	11.984	121.110	MWD+IFR1+MS
3400.000	6.000	311.737	3399.452	12.517	0.000	13.021	0.000	4.449	0.000	13.085	12.502	112.139	MWD+IFR1+MS
3500.000	8.000	311.737	3498.702	13.021	0.000	13.362	0.000	4.550	0.000	13.501	12.969	100.747	MWD+IFR1+MS
3527.961	8.559	311.737	3526.371	13.106	0.000	13.455	0.000	4.574	0.000	13.597	13.066	100.311	MWD+IFR1+MS
3600.000	8.559	311.737	3597.608	13.352	0.000	13.693	0.000	4.644	0.000	13.839	13.307	99.960	MWD+IFR1+MS
3700.000	8.559	311.737	3696.494	13.697	0.000	14.034	0.000	4.743	0.000	14.187	13.641	99.522	MWD+IFR1+MS
3800.000	8.559	311.737	3795.380	14.047	0.000	14.379	0.000	4.845	0.000	14.542	13.977	98.984	MWD+IFR1+MS
3900.000	8.559	311.737	3894.266	14.398	0.000	14.725	0.000	4.949	0.000	14.898	14.314	98.499	MWD+IFR1+MS
4000.000	8.559	311.737	3993.153	14.750	0.000	15.072	0.000	5.054	0.000	15.255	14.653	98.060	MWD+IFR1+MS
4100.000	8.559	311.737	4092.039	15.103	0.000	15.421	0.000	5.161	0.000	15.613	14.993	97.660	MWD+IFR1+MS
4200.000	8.559	311.737	4190.925	15.458	0.000	15.770	0.000	5.271	0.000	15.971	15.334	97.294	MWD+IFR1+MS
4300.000	8.559	311.737	4289.811	15.813	0.000	16.120	0.000	5.381	0.000	16.330	15.676	96.957	MWD+IFR1+MS
4400.000	8.559	311.737	4388.698	16.169	0.000	16.471	0.000	5.494	0.000	16.690	16.020	96.646	MWD+IFR1+MS
4500.000	8.559	311.737	4487.584	16.525	0.000	16.823	0.000	5.609	0.000	17.050	16.364	96.358	MWD+IFR1+MS
4600.000	8.559	311.737	4586.470	16.883	0.000	17.176	0.000	5.725	0.000	17.411	16.710	96.090	MWD+IFR1+MS
4700.000	8.559	311.737	4685.356	17.241	0.000	17.529	0.000	5.844	0.000	17.772	17.056	95.840	MWD+IFR1+MS
4800.000	8.559	311.737	4784.243	17.600	0.000	17.883	0.000	5.964	0.000	18.133	17.404	95.605	MWD+IFR1+MS
4900.000	8.559	311.737	4883.129	17.959	0.000	18.237	0.000	6.086	0.000	18.495	17.752	95.385	MWD+IFR1+MS
5000.000	8.559	311.737	4982.015	18.319	0.000	18.593	0.000	6.210	0.000	18.858	18.101	95.178	MWD+IFR1+MS
5100.000	8.559	311.737	5080.901	18.680	0.000	18.948	0.000	6.336	0.000	19.220	18.450	94.982	MWD+IFR1+MS
5200.000	8.559	311.737	5179.788	19.041	0.000	19.304	0.000	6.464	0.000	19.583	18.801	94.797	MWD+IFR1+MS
5300.000	8.559	311.737	5278.674	19.403	0.000	19.661	0.000	6.594	0.000	19.947	19.151	94.621	MWD+IFR1+MS
5400.000	8.559	311.737	5377.560	19.765	0.000	20.018	0.000	6.726	0.000	20.310	19.503	94.453	MWD+IFR1+MS
5500.000	8.559	311.737	5476.447	20.127	0.000	20.375	0.000	6.860	0.000	20.674	19.855	94.294	MWD+IFR1+MS
5600.000	8.559	311.737	5575.333	20.490	0.000	20.733	0.000	6.996	0.000	21.039	20.208	94.141	MWD+IFR1+MS
5700.000	8.559	311.737	5674.219	20.853	0.000	21.092	0.000	7.135	0.000	21.403	20.561	93.996	MWD+IFR1+MS
5800.529	8.559	311.737	5773.629	21.219	0.000	21.452	0.000	7.276	0.000	21.770	20.917	93.854	MWD+IFR1+MS
5900.000	6.570	311.737	5872.229	21.663	0.000	21.808	0.000	7.419	0.000	22.159	21.281	92.274	MWD+IFR1+MS
6000.000	4.570	311.737	5971.752	22.156	0.000	22.165	0.000	7.567	0.000	22.591	21.675	88.420	MWD+IFR1+MS
6100.000	2.570	311.737	6071.552	22.619	0.000	22.519	0.000	7.711	0.000	23.027	22.059	85.001	MWD+IFR1+MS
6200.000	0.570	311.737	6171.510	23.051	0.000	22.870	0.000	7.853	0.000	23.463	22.434	82.050	MWD+IFR1+MS

6228.491	0.000	0.000	6200.000	23.542	0.000	22.553	0.000	7.894	0.000	23.562	22.533	82.013	MWD+IFR1+MS
6300.000	0.000	0.000	6271.509	23.786	0.000	22.801	0.000	7.995	0.000	23.805	22.782	82.188	MWD+IFR1+MS
6400.000	0.000	0.000	6371.509	24.128	0.000	23.153	0.000	8.139	0.000	24.145	23.136	82.579	MWD+IFR1+MS
6500.000	0.000	0.000	6471.509	24.473	0.000	23.508	0.000	8.285	0.000	24.487	23.493	83.080	MWD+IFR1+MS
6600.000	0.000	0.000	6571.509	24.818	0.000	23.862	0.000	8.434	0.000	24.830	23.849	83.580	MWD+IFR1+MS
6700.000	0.000	0.000	6671.509	25.164	0.000	24.216	0.000	8.585	0.000	25.174	24.206	84.080	MWD+IFR1+MS
6800.000	0.000	0.000	6771.509	25.509	0.000	24.571	0.000	8.739	0.000	25.518	24.562	84.578	MWD+IFR1+MS
6900.000	0.000	0.000	6871.509	25.856	0.000	24.926	0.000	8.895	0.000	25.862	24.918	85.075	MWD+IFR1+MS
7000.000	0.000	0.000	6971.509	26.202	0.000	25.280	0.000	9.053	0.000	26.207	25.275	85.570	MWD+IFR1+MS
7100.000	0.000	0.000	7071.509	26.549	0.000	25.635	0.000	9.215	0.000	26.553	25.631	86.064	MWD+IFR1+MS
7200.000	0.000	0.000	7171.509	26.896	0.000	25.990	0.000	9.378	0.000	26.899	25.987	86.554	MWD+IFR1+MS
7300.000	0.000	0.000	7271.509	27.243	0.000	26.345	0.000	9.545	0.000	27.246	26.343	87.043	MWD+IFR1+MS
7400.000	0.000	0.000	7371.509	27.591	0.000	26.700	0.000	9.714	0.000	27.593	26.699	87.528	MWD+IFR1+MS
7500.000	0.000	0.000	7471.509	27.939	0.000	27.056	0.000	9.885	0.000	27.940	27.055	88.010	MWD+IFR1+MS
7600.000	0.000	0.000	7571.509	28.287	0.000	27.411	0.000	10.060	0.000	28.288	27.410	88.489	MWD+IFR1+MS
7700.000	0.000	0.000	7671.509	28.636	0.000	27.766	0.000	10.237	0.000	28.636	27.766	88.965	MWD+IFR1+MS
7800.000	0.000	0.000	7771.509	28.984	0.000	28.122	0.000	10.416	0.000	28.984	28.122	89.436	MWD+IFR1+MS
7900.000	0.000	0.000	7871.509	29.333	0.000	28.477	0.000	10.599	0.000	29.333	28.477	89.904	MWD+IFR1+MS
8000.000	0.000	0.000	7971.509	29.683	0.000	28.833	0.000	10.784	0.000	29.683	28.833	90.367	MWD+IFR1+MS
8100.000	0.000	0.000	8071.509	30.032	0.000	29.189	0.000	10.972	0.000	30.032	29.189	90.826	MWD+IFR1+MS
8200.000	0.000	0.000	8171.509	30.382	0.000	29.545	0.000	11.163	0.000	30.382	29.544	91.281	MWD+IFR1+MS
8300.000	0.000	0.000	8271.509	30.731	0.000	29.900	0.000	11.356	0.000	30.732	29.900	91.730	MWD+IFR1+MS
8400.000	0.000	0.000	8371.509	31.081	0.000	30.256	0.000	11.553	0.000	31.083	30.255	92.175	MWD+IFR1+MS
8500.000	0.000	0.000	8471.509	31.432	0.000	30.612	0.000	11.752	0.000	31.433	30.611	92.615	MWD+IFR1+MS
8600.000	0.000	0.000	8571.509	31.782	0.000	30.968	0.000	11.954	0.000	31.784	30.966	93.050	MWD+IFR1+MS
8700.000	0.000	0.000	8671.509	32.133	0.000	31.324	0.000	12.159	0.000	32.136	31.321	93.480	MWD+IFR1+MS
8800.000	0.000	0.000	8771.509	32.483	0.000	31.680	0.000	12.367	0.000	32.487	31.677	93.904	MWD+IFR1+MS
8900.000	0.000	0.000	8871.509	32.834	0.000	32.037	0.000	12.577	0.000	32.839	32.032	94.323	MWD+IFR1+MS
9000.000	0.000	0.000	8971.509	33.185	0.000	32.393	0.000	12.791	0.000	33.191	32.387	94.736	MWD+IFR1+MS
9100.000	0.000	0.000	9071.509	33.536	0.000	32.749	0.000	13.007	0.000	33.543	32.743	95.144	MWD+IFR1+MS
9200.000	0.000	0.000	9171.509	33.888	0.000	33.106	0.000	13.227	0.000	33.895	33.098	95.547	MWD+IFR1+MS
9300.000	0.000	0.000	9271.509	34.239	0.000	33.462	0.000	13.449	0.000	34.248	33.453	95.943	MWD+IFR1+MS
9400.000	0.000	0.000	9371.509	34.591	0.000	33.818	0.000	13.674	0.000	34.601	33.809	96.334	MWD+IFR1+MS

9500.000	0.000	0.000	9471.509	34.943	0.000	34.175	0.000	13.902	0.000	34.954	34.164	96.720	MWD+IFR1+MS
9600.000	0.000	0.000	9571.509	35.295	0.000	34.531	0.000	14.133	0.000	35.307	34.519	97.099	MWD+IFR1+MS
9700.000	0.000	0.000	9671.509	35.647	0.000	34.888	0.000	14.367	0.000	35.660	34.874	97.473	MWD+IFR1+MS
9800.000	0.000	0.000	9771.509	35.999	0.000	35.244	0.000	14.604	0.000	36.014	35.230	97.842	MWD+IFR1+MS
9900.000	0.000	0.000	9871.509	36.351	0.000	35.601	0.000	14.844	0.000	36.367	35.585	98.204	MWD+IFR1+MS
10000.000	0.000	0.000	9971.509	36.704	0.000	35.958	0.000	15.087	0.000	36.721	35.940	98.561	MWD+IFR1+MS
10100.000	0.000	0.000	10071.509	37.056	0.000	36.314	0.000	15.333	0.000	37.075	36.295	98.912	MWD+IFR1+MS
10200.000	0.000	0.000	10171.509	37.409	0.000	36.671	0.000	15.582	0.000	37.429	36.651	99.258	MWD+IFR1+MS
10300.000	0.000	0.000	10271.509	37.762	0.000	37.028	0.000	15.834	0.000	37.783	37.006	99.598	MWD+IFR1+MS
10400.000	0.000	0.000	10371.509	38.115	0.000	37.385	0.000	16.089	0.000	38.138	37.361	99.933	MWD+IFR1+MS
10500.000	0.000	0.000	10471.509	38.468	0.000	37.741	0.000	16.347	0.000	38.492	37.717	100.262	MWD+IFR1+MS
10600.000	0.000	0.000	10571.509	38.821	0.000	38.098	0.000	16.608	0.000	38.847	38.072	100.585	MWD+IFR1+MS
10700.000	0.000	0.000	10671.509	39.174	0.000	38.455	0.000	16.872	0.000	39.201	38.427	100.904	MWD+IFR1+MS
10800.000	0.000	0.000	10771.509	39.527	0.000	38.812	0.000	17.139	0.000	39.556	38.783	101.216	MWD+IFR1+MS
10900.000	0.000	0.000	10871.509	39.881	0.000	39.169	0.000	17.409	0.000	39.911	39.138	101.524	MWD+IFR1+MS
11000.000	0.000	0.000	10971.509	40.234	0.000	39.526	0.000	17.682	0.000	40.266	39.493	101.826	MWD+IFR1+MS
11100.000	0.000	0.000	11071.509	40.588	0.000	39.883	0.000	17.958	0.000	40.621	39.849	102.124	MWD+IFR1+MS
11113.293	0.000	0.000	11084.803	40.634	0.000	39.930	0.000	17.995	0.000	40.668	39.896	102.124	MWD+IFR1+MS
11200.000	6.937	269.836	11171.298	40.255	-0.000	40.933	0.000	18.241	0.000	40.970	40.342	103.882	MWD+IFR1+MS
11300.000	14.937	269.836	11269.402	40.802	-0.000	41.279	0.000	18.592	0.000	41.620	41.257	-14.399	MWD+IFR1+MS
11400.000	22.937	269.836	11363.913	40.866	-0.000	41.625	0.000	19.094	0.000	42.830	41.624	-1.161	MWD+IFR1+MS
11500.000	30.937	269.836	11452.991	40.353	-0.000	41.965	0.000	19.790	0.000	43.908	41.964	0.967	MWD+IFR1+MS
11600.000	38.937	269.836	11534.903	39.328	-0.000	42.295	0.000	20.706	0.000	44.817	42.292	1.892	MWD+IFR1+MS
11700.000	46.937	269.836	11608.055	37.889	-0.000	42.614	0.000	21.840	0.000	45.544	42.607	2.465	MWD+IFR1+MS
11800.000	54.937	269.836	11671.022	36.162	-0.000	42.920	0.000	23.168	0.000	46.093	42.910	2.896	MWD+IFR1+MS
11900.000	62.937	269.836	11722.579	34.312	-0.000	43.211	0.000	24.646	0.000	46.473	43.199	3.256	MWD+IFR1+MS
12000.000	70.937	269.836	11761.722	32.545	-0.000	43.489	0.000	26.225	0.000	46.708	43.474	3.566	MWD+IFR1+MS
12100.000	78.937	269.836	11787.690	31.098	-0.000	43.749	0.000	27.850	0.000	46.827	43.734	3.816	MWD+IFR1+MS
12200.000	86.937	269.836	11799.977	30.215	-0.000	43.991	0.000	29.466	0.000	46.868	43.975	3.962	MWD+IFR1+MS
12238.293	90.000	269.836	11801.000	29.618	0.000	44.075	0.000	29.618	0.000	46.872	44.060	3.961	MWD+IFR1+MS
12300.000	90.000	269.836	11801.000	29.726	0.000	44.214	0.000	29.726	0.000	46.876	44.200	3.957	MWD+IFR1+MS
12400.000	90.000	269.836	11801.000	29.881	0.000	44.465	0.000	29.881	0.000	46.883	44.451	3.993	MWD+IFR1+MS
12500.000	90.000	269.836	11801.000	30.058	0.000	44.743	0.000	30.058	0.000	46.891	44.731	4.092	MWD+IFR1+MS

12600.000	90.000	269.836	11801.000	30.254	0.000	45.048	0.000	30.254	0.000	46.900	45.037	4.281	MWD+IFR1+MS
12700.000	90.000	269.836	11801.000	30.469	0.000	45.379	0.000	30.469	0.000	46.910	45.368	4.620	MWD+IFR1+MS
12800.000	90.000	269.836	11801.000	30.703	0.000	45.735	0.000	30.703	0.000	46.920	45.724	5.251	MWD+IFR1+MS
12900.000	90.000	269.836	11801.000	30.955	0.000	46.115	0.000	30.955	0.000	46.932	46.104	6.588	MWD+IFR1+MS
13000.000	90.000	269.836	11801.000	31.224	0.000	46.520	0.000	31.224	0.000	46.948	46.504	10.571	MWD+IFR1+MS
13100.000	90.000	269.836	11801.000	31.511	0.000	46.948	0.000	31.511	0.000	47.012	46.880	45.402	MWD+IFR1+MS
13200.000	90.000	269.836	11801.000	31.814	0.000	47.398	0.000	31.814	0.000	47.404	46.952	83.376	MWD+IFR1+MS
13300.000	90.000	269.836	11801.000	32.134	0.000	47.871	0.000	32.134	0.000	47.872	46.970	87.588	MWD+IFR1+MS
13400.000	90.000	269.836	11801.000	32.470	0.000	48.365	0.000	32.470	0.000	48.366	46.985	88.991	MWD+IFR1+MS
13500.000	90.000	269.836	11801.000	32.821	0.000	48.880	0.000	32.821	0.000	48.880	47.000	89.668	MWD+IFR1+MS
13600.000	90.000	269.836	11801.000	33.187	0.000	49.416	0.000	33.187	0.000	49.416	47.016	90.054	MWD+IFR1+MS
13700.000	90.000	269.836	11801.000	33.567	0.000	49.970	0.000	33.567	0.000	49.971	47.032	90.297	MWD+IFR1+MS
13800.000	90.000	269.836	11801.000	33.961	0.000	50.544	0.000	33.961	0.000	50.544	47.048	90.458	MWD+IFR1+MS
13900.000	90.000	269.836	11801.000	34.368	0.000	51.136	0.000	34.368	0.000	51.136	47.065	90.569	MWD+IFR1+MS
14000.000	90.000	269.836	11801.000	34.789	0.000	51.745	0.000	34.789	0.000	51.746	47.082	90.648	MWD+IFR1+MS
14100.000	90.000	269.836	11801.000	35.222	0.000	52.372	0.000	35.222	0.000	52.373	47.100	90.704	MWD+IFR1+MS
14200.000	90.000	269.836	11801.000	35.667	0.000	53.015	0.000	35.667	0.000	53.016	47.119	90.744	MWD+IFR1+MS
14300.000	90.000	269.836	11801.000	36.123	0.000	53.673	0.000	36.123	0.000	53.675	47.138	90.772	MWD+IFR1+MS
14400.000	90.000	269.836	11801.000	36.591	0.000	54.347	0.000	36.591	0.000	54.349	47.158	90.792	MWD+IFR1+MS
14500.000	90.000	269.836	11801.000	37.069	0.000	55.036	0.000	37.069	0.000	55.038	47.178	90.805	MWD+IFR1+MS
14600.000	90.000	269.836	11801.000	37.558	0.000	55.739	0.000	37.558	0.000	55.741	47.199	90.814	MWD+IFR1+MS
14700.000	90.000	269.836	11801.000	38.056	0.000	56.455	0.000	38.056	0.000	56.457	47.221	90.818	MWD+IFR1+MS
14800.000	90.000	269.836	11801.000	38.564	0.000	57.184	0.000	38.564	0.000	57.187	47.243	90.820	MWD+IFR1+MS
14900.000	90.000	269.836	11801.000	39.082	0.000	57.926	0.000	39.082	0.000	57.929	47.266	90.819	MWD+IFR1+MS
15000.000	90.000	269.836	11801.000	39.608	0.000	58.680	0.000	39.608	0.000	58.683	47.289	90.816	MWD+IFR1+MS
15100.000	90.000	269.836	11801.000	40.142	0.000	59.446	0.000	40.142	0.000	59.449	47.313	90.812	MWD+IFR1+MS
15200.000	90.000	269.836	11801.000	40.685	0.000	60.223	0.000	40.685	0.000	60.226	47.338	90.806	MWD+IFR1+MS
15300.000	90.000	269.836	11801.000	41.235	0.000	61.011	0.000	41.235	0.000	61.014	47.363	90.800	MWD+IFR1+MS
15400.000	90.000	269.836	11801.000	41.793	0.000	61.809	0.000	41.793	0.000	61.813	47.389	90.793	MWD+IFR1+MS
15500.000	90.000	269.836	11801.000	42.358	0.000	62.617	0.000	42.358	0.000	62.621	47.415	90.785	MWD+IFR1+MS
15600.000	90.000	269.836	11801.000	42.930	0.000	63.435	0.000	42.930	0.000	63.439	47.442	90.777	MWD+IFR1+MS
15700.000	90.000	269.836	11801.000	43.509	0.000	64.262	0.000	43.509	0.000	64.266	47.470	90.768	MWD+IFR1+MS
15800.000	90.000	269.836	11801.000	44.094	0.000	65.098	0.000	44.094	0.000	65.102	47.498	90.760	MWD+IFR1+MS

15900.000	90.000	269.836	11801.000	44.685	0.000	65.942	0.000	44.685	0.000	65.946	47.527	90.751	MWD+IFR1+MS
16000.000	90.000	269.836	11801.000	45.282	0.000	66.795	0.000	45.282	0.000	66.799	47.556	90.741	MWD+IFR1+MS
16100.000	90.000	269.836	11801.000	45.884	0.000	67.655	0.000	45.884	0.000	67.659	47.586	90.732	MWD+IFR1+MS
16200.000	90.000	269.836	11801.000	46.493	0.000	68.523	0.000	46.493	0.000	68.527	47.616	90.723	MWD+IFR1+MS
16300.000	90.000	269.836	11801.000	47.106	0.000	69.398	0.000	47.106	0.000	69.403	47.647	90.714	MWD+IFR1+MS
16400.000	90.000	269.836	11801.000	47.724	0.000	70.281	0.000	47.724	0.000	70.285	47.679	90.705	MWD+IFR1+MS
16500.000	90.000	269.836	11801.000	48.347	0.000	71.170	0.000	48.347	0.000	71.175	47.711	90.695	MWD+IFR1+MS
16600.000	90.000	269.836	11801.000	48.975	0.000	72.066	0.000	48.975	0.000	72.070	47.744	90.686	MWD+IFR1+MS
16700.000	90.000	269.836	11801.000	49.608	0.000	72.968	0.000	49.608	0.000	72.972	47.777	90.677	MWD+IFR1+MS
16800.000	90.000	269.836	11801.000	50.244	0.000	73.876	0.000	50.244	0.000	73.881	47.811	90.668	MWD+IFR1+MS
16900.000	90.000	269.836	11801.000	50.885	0.000	74.790	0.000	50.885	0.000	74.795	47.846	90.659	MWD+IFR1+MS
17000.000	90.000	269.836	11801.000	51.530	0.000	75.710	0.000	51.530	0.000	75.714	47.881	90.650	MWD+IFR1+MS
17100.000	90.000	269.836	11801.000	52.178	0.000	76.635	0.000	52.178	0.000	76.639	47.916	90.642	MWD+IFR1+MS
17200.000	90.000	269.836	11801.000	52.830	0.000	77.565	0.000	52.830	0.000	77.570	47.953	90.633	MWD+IFR1+MS
17300.000	90.000	269.836	11801.000	53.486	0.000	78.500	0.000	53.486	0.000	78.505	47.989	90.625	MWD+IFR1+MS
17400.000	90.000	269.836	11801.000	54.145	0.000	79.440	0.000	54.145	0.000	79.445	48.027	90.616	MWD+IFR1+MS
17500.000	90.000	269.836	11801.000	54.808	0.000	80.385	0.000	54.808	0.000	80.390	48.065	90.608	MWD+IFR1+MS
17600.000	90.000	269.836	11801.000	55.474	0.000	81.335	0.000	55.474	0.000	81.339	48.103	90.600	MWD+IFR1+MS
17700.000	90.000	269.836	11801.000	56.143	0.000	82.288	0.000	56.143	0.000	82.293	48.142	90.592	MWD+IFR1+MS
17800.000	90.000	269.836	11801.000	56.814	0.000	83.246	0.000	56.814	0.000	83.251	48.182	90.584	MWD+IFR1+MS
17900.000	90.000	269.836	11801.000	57.489	0.000	84.209	0.000	57.489	0.000	84.213	48.222	90.577	MWD+IFR1+MS
18000.000	90.000	269.836	11801.000	58.166	0.000	85.175	0.000	58.166	0.000	85.179	48.263	90.569	MWD+IFR1+MS
18100.000	90.000	269.836	11801.000	58.847	0.000	86.144	0.000	58.847	0.000	86.149	48.304	90.562	MWD+IFR1+MS
18200.000	90.000	269.836	11801.000	59.529	0.000	87.118	0.000	59.529	0.000	87.123	48.346	90.554	MWD+IFR1+MS
18300.000	90.000	269.836	11801.000	60.214	0.000	88.095	0.000	60.214	0.000	88.100	48.388	90.547	MWD+IFR1+MS
18400.000	90.000	269.836	11801.000	60.902	0.000	89.076	0.000	60.902	0.000	89.080	48.431	90.540	MWD+IFR1+MS
18500.000	90.000	269.836	11801.000	61.592	0.000	90.059	0.000	61.592	0.000	90.064	48.474	90.533	MWD+IFR1+MS
18600.000	90.000	269.836	11801.000	62.284	0.000	91.047	0.000	62.284	0.000	91.051	48.518	90.526	MWD+IFR1+MS
18700.000	90.000	269.836	11801.000	62.978	0.000	92.037	0.000	62.978	0.000	92.042	48.563	90.519	MWD+IFR1+MS
18800.000	90.000	269.836	11801.000	63.675	0.000	93.030	0.000	63.675	0.000	93.035	48.608	90.513	MWD+IFR1+MS
18900.000	90.000	269.836	11801.000	64.373	0.000	94.026	0.000	64.373	0.000	94.031	48.653	90.506	MWD+IFR1+MS
19000.000	90.000	269.836	11801.000	65.073	0.000	95.025	0.000	65.073	0.000	95.030	48.700	90.500	MWD+IFR1+MS
19100.000	90.000	269.836	11801.000	65.776	0.000	96.027	0.000	65.776	0.000	96.032	48.746	90.493	MWD+IFR1+MS

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19200.000	90.000	269.836	11801.000	66.480	0.000	97.031	0.000	66.480	0.000	97.036	48.794	90.487	MWD+IFR1+MS
19300.000	90.000	269.836	11801.000	67.186	0.000	98.038	0.000	67.186	0.000	98.043	48.841	90.481	MWD+IFR1+MS
19400.000	90.000	269.836	11801.000	67.893	0.000	99.048	0.000	67.893	0.000	99.052	48.890	90.475	MWD+IFR1+MS
19500.000	90.000	269.836	11801.000	68.603	0.000	100.060	0.000	68.603	0.000	100.064	48.938	90.469	MWD+IFR1+MS
19600.000	90.000	269.836	11801.000	69.314	0.000	101.074	0.000	69.314	0.000	101.079	48.988	90.464	MWD+IFR1+MS
19700.000	90.000	269.836	11801.000	70.026	0.000	102.090	0.000	70.026	0.000	102.095	49.038	90.458	MWD+IFR1+MS
19800.000	90.000	269.836	11801.000	70.740	0.000	103.109	0.000	70.740	0.000	103.114	49.088	90.452	MWD+IFR1+MS
19900.000	90.000	269.836	11801.000	71.456	0.000	104.130	0.000	71.456	0.000	104.135	49.139	90.447	MWD+IFR1+MS
20000.000	90.000	269.836	11801.000	72.173	0.000	105.153	0.000	72.173	0.000	105.158	49.191	90.441	MWD+IFR1+MS
20100.000	90.000	269.836	11801.000	72.891	0.000	106.178	0.000	72.891	0.000	106.183	49.243	90.436	MWD+IFR1+MS
20200.000	90.000	269.836	11801.000	73.611	0.000	107.205	0.000	73.611	0.000	107.210	49.295	90.431	MWD+IFR1+MS
20300.000	90.000	269.836	11801.000	74.332	0.000	108.234	0.000	74.332	0.000	108.239	49.348	90.426	MWD+IFR1+MS
20400.000	90.000	269.836	11801.000	75.055	0.000	109.265	0.000	75.055	0.000	109.269	49.402	90.421	MWD+IFR1+MS
20500.000	90.000	269.836	11801.000	75.778	0.000	110.297	0.000	75.778	0.000	110.302	49.456	90.416	MWD+IFR1+MS
20600.000	90.000	269.836	11801.000	76.503	0.000	111.332	0.000	76.503	0.000	111.336	49.510	90.411	MWD+IFR1+MS
20700.000	90.000	269.836	11801.000	77.229	0.000	112.368	0.000	77.229	0.000	112.372	49.565	90.406	MWD+IFR1+MS
20800.000	90.000	269.836	11801.000	77.956	0.000	113.405	0.000	77.956	0.000	113.410	49.621	90.401	MWD+IFR1+MS
20900.000	90.000	269.836	11801.000	78.684	0.000	114.445	0.000	78.684	0.000	114.449	49.677	90.396	MWD+IFR1+MS
21000.000	90.000	269.836	11801.000	79.413	0.000	115.485	0.000	79.413	0.000	115.490	49.734	90.392	MWD+IFR1+MS
21100.000	90.000	269.836	11801.000	80.144	0.000	116.528	0.000	80.144	0.000	116.532	49.791	90.387	MWD+IFR1+MS
21200.000	90.000	269.836	11801.000	80.875	0.000	117.572	0.000	80.875	0.000	117.576	49.849	90.383	MWD+IFR1+MS
21300.000	90.000	269.836	11801.000	81.608	0.000	118.617	0.000	81.608	0.000	118.621	49.907	90.378	MWD+IFR1+MS
21400.000	90.000	269.836	11801.000	82.341	0.000	119.664	0.000	82.341	0.000	119.668	49.965	90.374	MWD+IFR1+MS
21500.000	90.000	269.836	11801.000	83.075	0.000	120.712	0.000	83.075	0.000	120.716	50.024	90.370	MWD+IFR1+MS
21600.000	90.000	269.836	11801.000	83.810	0.000	121.761	0.000	83.810	0.000	121.766	50.084	90.366	MWD+IFR1+MS
21700.000	90.000	269.836	11801.000	84.546	0.000	122.812	0.000	84.546	0.000	122.816	50.144	90.361	MWD+IFR1+MS
21800.000	90.000	269.836	11801.000	85.283	0.000	123.864	0.000	85.283	0.000	123.868	50.205	90.357	MWD+IFR1+MS
21900.000	90.000	269.836	11801.000	86.021	0.000	124.917	0.000	86.021	0.000	124.922	50.266	90.353	MWD+IFR1+MS
22000.000	90.000	269.836	11801.000	86.760	0.000	125.972	0.000	86.760	0.000	125.976	50.328	90.349	MWD+IFR1+MS
22100.000	90.000	269.836	11801.000	87.499	0.000	127.028	0.000	87.499	0.000	127.032	50.390	90.346	MWD+IFR1+MS
22200.000	90.000	269.836	11801.000	88.239	0.000	128.084	0.000	88.239	0.000	128.089	50.452	90.342	MWD+IFR1+MS
22300.000	90.000	269.836	11801.000	88.980	0.000	129.142	0.000	88.980	0.000	129.146	50.515	90.338	MWD+IFR1+MS
22400.000	90.000	269.836	11801.000	89.722	0.000	130.201	0.000	89.722	0.000	130.205	50.579	90.334	MWD+IFR1+MS

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22500.000	90.000	269.836	11801.000	90.464	0.000	131.261	0.000	90.464	0.000	131.266	50.643	90.331	MWD+IFR1+MS
22600.000	90.000	269.836	11801.000	91.208	0.000	132.322	0.000	91.208	0.000	132.327	50.707	90.327	MWD+IFR1+MS
22700.000	90.000	269.836	11801.000	91.951	0.000	133.385	0.000	91.951	0.000	133.389	50.772	90.323	MWD+IFR1+MS
22800.000	90.000	269.836	11801.000	92.696	0.000	134.448	0.000	92.696	0.000	134.452	50.838	90.320	MWD+IFR1+MS
22900.000	90.000	269.836	11801.000	93.441	0.000	135.512	0.000	93.441	0.000	135.516	50.904	90.316	MWD+IFR1+MS
23000.000	90.000	269.836	11801.000	94.187	0.000	136.577	0.000	94.187	0.000	136.581	50.970	90.313	MWD+IFR1+MS
23100.000	90.000	269.836	11801.000	94.933	0.000	137.643	0.000	94.933	0.000	137.647	51.037	90.310	MWD+IFR1+MS
23200.000	90.000	269.836	11801.000	95.680	0.000	138.710	0.000	95.680	0.000	138.714	51.104	90.306	MWD+IFR1+MS
23300.000	90.000	269.836	11801.000	96.428	0.000	139.778	0.000	96.428	0.000	139.782	51.172	90.303	MWD+IFR1+MS
23400.000	90.000	269.836	11801.000	97.176	0.000	140.846	0.000	97.176	0.000	140.850	51.240	90.300	MWD+IFR1+MS
23500.000	90.000	269.836	11801.000	97.925	0.000	141.916	0.000	97.925	0.000	141.920	51.309	90.296	MWD+IFR1+MS
23600.000	90.000	269.836	11801.000	98.674	0.000	142.986	0.000	98.674	0.000	142.990	51.378	90.293	MWD+IFR1+MS
23700.000	90.000	269.836	11801.000	99.424	0.000	144.057	0.000	99.424	0.000	144.061	51.448	90.290	MWD+IFR1+MS
23800.000	90.000	269.836	11801.000	100.175	0.000	145.129	0.000	100.175	0.000	145.133	51.518	90.287	MWD+IFR1+MS
23900.000	90.000	269.836	11801.000	100.926	0.000	146.202	0.000	100.926	0.000	146.205	51.588	90.284	MWD+IFR1+MS
24000.000	90.000	269.836	11801.000	101.677	0.000	147.275	0.000	101.677	0.000	147.279	51.659	90.281	MWD+IFR1+MS
24100.000	90.000	269.836	11801.000	102.429	0.000	148.349	0.000	102.429	0.000	148.353	51.731	90.278	MWD+IFR1+MS
24200.000	90.000	269.836	11801.000	103.182	0.000	149.424	0.000	103.182	0.000	149.428	51.803	90.275	MWD+IFR1+MS
24300.000	90.000	269.836	11801.000	103.935	0.000	150.500	0.000	103.935	0.000	150.503	51.875	90.272	MWD+IFR1+MS
24400.000	90.000	269.836	11801.000	104.688	0.000	151.576	0.000	104.688	0.000	151.580	51.948	90.269	MWD+IFR1+MS
24500.000	90.000	269.836	11801.000	105.442	0.000	152.653	0.000	105.442	0.000	152.657	52.021	90.267	MWD+IFR1+MS
24600.000	90.000	269.836	11801.000	106.196	0.000	153.730	0.000	106.196	0.000	153.734	52.095	90.264	MWD+IFR1+MS
24700.000	90.000	269.836	11801.000	106.951	0.000	154.809	0.000	106.951	0.000	154.812	52.169	90.261	MWD+IFR1+MS
24800.000	90.000	269.836	11801.000	107.706	0.000	155.887	0.000	107.706	0.000	155.891	52.243	90.258	MWD+IFR1+MS
24900.000	90.000	269.836	11801.000	108.462	0.000	156.967	0.000	108.462	0.000	156.971	52.318	90.256	MWD+IFR1+MS
25000.000	90.000	269.836	11801.000	109.218	0.000	158.047	0.000	109.218	0.000	158.051	52.394	90.253	MWD+IFR1+MS
25100.000	90.000	269.836	11801.000	109.974	0.000	159.128	0.000	109.974	0.000	159.132	52.470	90.251	MWD+IFR1+MS
25200.000	90.000	269.836	11801.000	110.731	0.000	160.209	0.000	110.731	0.000	160.213	52.546	90.248	MWD+IFR1+MS
25300.000	90.000	269.836	11801.000	111.488	0.000	161.291	0.000	111.488	0.000	161.295	52.623	90.245	MWD+IFR1+MS
25400.000	90.000	269.836	11801.000	112.246	0.000	162.373	0.000	112.246	0.000	162.377	52.700	90.243	MWD+IFR1+MS
25500.000	90.000	269.836	11801.000	113.004	0.000	163.456	0.000	113.004	0.000	163.460	52.777	90.240	MWD+IFR1+MS
25600.000	90.000	269.836	11801.000	113.762	0.000	164.540	0.000	113.762	0.000	164.544	52.855	90.238	MWD+IFR1+MS
25700.000	90.000	269.836	11801.000	114.521	0.000	165.624	0.000	114.521	0.000	165.628	52.934	90.236	MWD+IFR1+MS

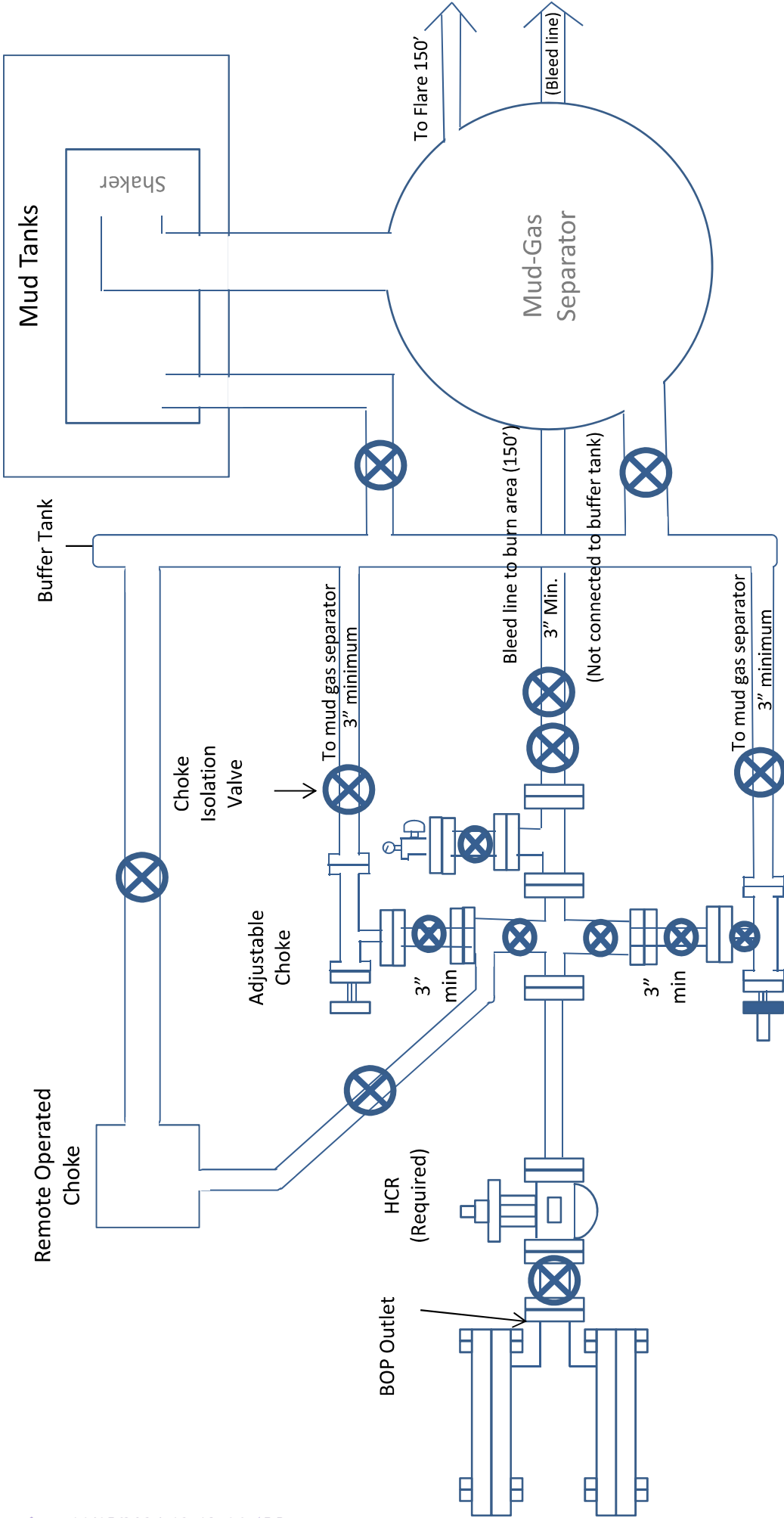
Well Plan Report

9/9/24, 7:24 AM	25800.000	90.000	269.836	11801.000	115.280	0.000	166.709	0.000	115.280	0.000	166.712	53.012	90.233	MWD+IFR1+MS
	25900.000	90.000	269.836	11801.000	116.039	0.000	167.794	0.000	116.039	0.000	167.797	53.092	90.231	MWD+IFR1+MS
	26000.000	90.000	269.836	11801.000	116.799	0.000	168.879	0.000	116.799	0.000	168.883	53.171	90.229	MWD+IFR1+MS
	26100.000	90.000	269.836	11801.000	117.559	0.000	169.965	0.000	117.559	0.000	169.969	53.251	90.226	MWD+IFR1+MS
	26200.000	90.000	269.836	11801.000	118.319	0.000	171.052	0.000	118.319	0.000	171.055	53.332	90.224	MWD+IFR1+MS
	26300.000	90.000	269.836	11801.000	119.080	0.000	172.139	0.000	119.080	0.000	172.142	53.413	90.222	MWD+IFR1+MS
	26400.000	90.000	269.836	11801.000	119.841	0.000	173.226	0.000	119.841	0.000	173.230	53.494	90.219	MWD+IFR1+MS
	26500.000	90.000	269.836	11801.000	120.602	0.000	174.314	0.000	120.602	0.000	174.318	53.576	90.217	MWD+IFR1+MS
	26600.000	90.000	269.836	11801.000	121.364	0.000	175.403	0.000	121.364	0.000	175.406	53.658	90.215	MWD+IFR1+MS
	26700.000	90.000	269.836	11801.000	122.126	0.000	176.491	0.000	122.126	0.000	176.495	53.740	90.213	MWD+IFR1+MS
	26800.000	90.000	269.836	11801.000	122.888	0.000	177.581	0.000	122.888	0.000	177.584	53.823	90.211	MWD+IFR1+MS
	26900.000	90.000	269.836	11801.000	123.650	0.000	178.670	0.000	123.650	0.000	178.674	53.906	90.209	MWD+IFR1+MS
	27000.000	90.000	269.836	11801.000	124.413	0.000	179.760	0.000	124.413	0.000	179.764	53.990	90.207	MWD+IFR1+MS
	27100.000	90.000	269.836	11801.000	125.176	0.000	180.851	0.000	125.176	0.000	180.854	54.074	90.205	MWD+IFR1+MS
	27200.000	90.000	269.836	11801.000	125.939	0.000	181.942	0.000	125.939	0.000	181.945	54.159	90.202	MWD+IFR1+MS
	27300.000	90.000	269.836	11801.000	126.703	0.000	183.033	0.000	126.703	0.000	183.036	54.244	90.200	MWD+IFR1+MS
	27400.000	90.000	269.836	11801.000	127.467	0.000	184.125	0.000	127.467	0.000	184.128	54.329	90.198	MWD+IFR1+MS
	27500.000	90.000	269.836	11801.000	128.231	0.000	185.217	0.000	128.231	0.000	185.220	54.414	90.196	MWD+IFR1+MS
	27600.000	90.000	269.836	11801.000	128.995	0.000	186.309	0.000	128.995	0.000	186.312	54.501	90.195	MWD+IFR1+MS
	27700.000	90.000	269.836	11801.000	129.760	0.000	187.402	0.000	129.760	0.000	187.405	54.587	90.193	MWD+IFR1+MS
	27800.000	90.000	269.836	11801.000	130.524	0.000	188.495	0.000	130.524	0.000	188.498	54.674	90.191	MWD+IFR1+MS
	27907.857	90.000	269.836	11801.000	131.350	0.000	189.675	0.000	131.350	0.000	189.678	54.768	90.189	MWD+IFR1+MS
	27957.861	90.000	269.836	11801.000	131.732	0.000	190.221	0.000	131.732	0.000	190.224	54.811	90.188	MWD+IFR1+MS

Big Eddy Unit BB GRIEVOUS 100H

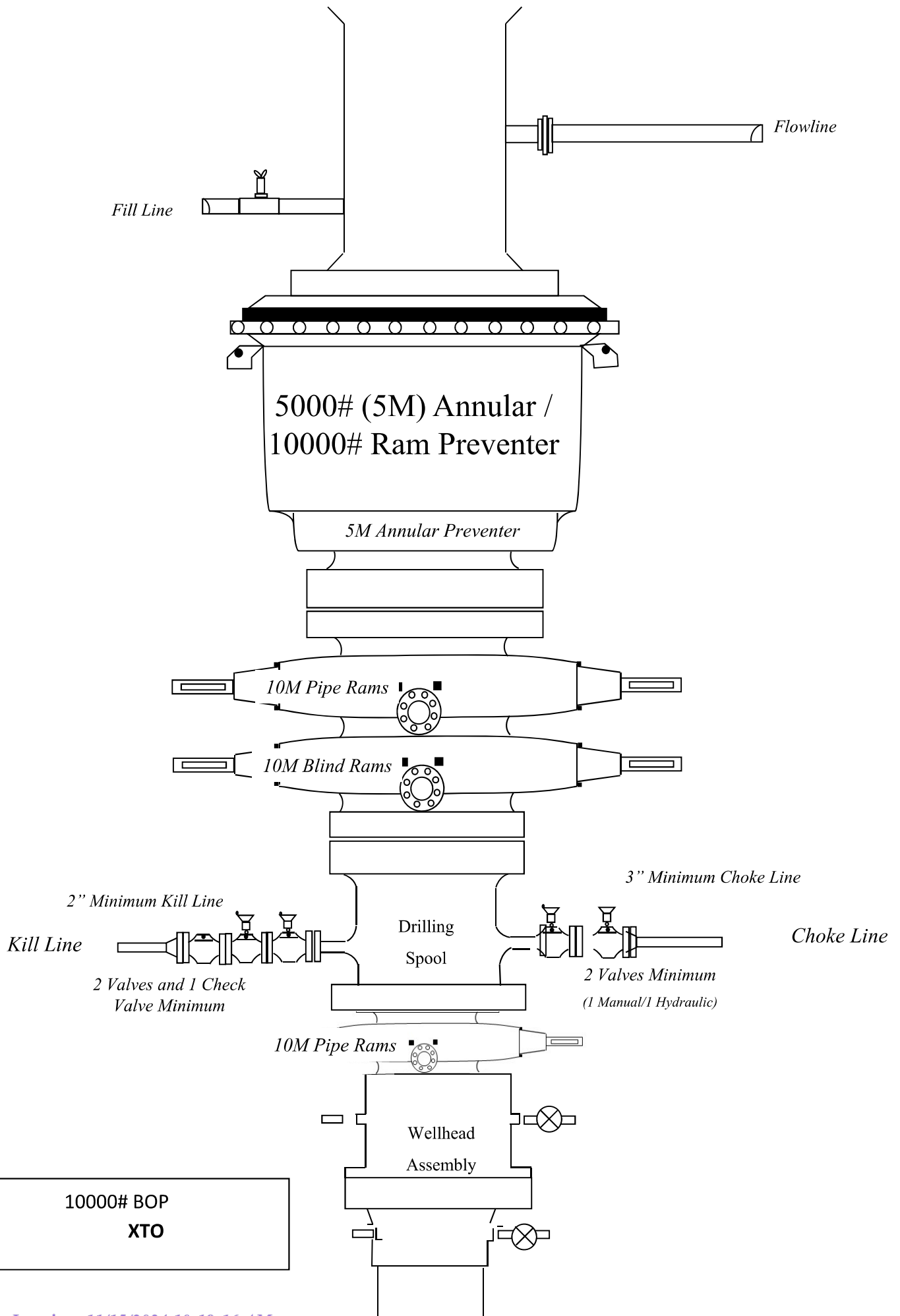
Plan Targets	Big Eddy Unit BB GRIEVOUS 100H				Measured Depth		Grid Northing		Grid Easting		TVD MSL		Target Shape	
Target Name					(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		
FTP 100H					12238.29	565520.90	675891.20				8240.00	CIRCLE		
LTP 100H					27907.86	565476.10	660221.70				8240.00	CIRCLE		
BHL 100H					27957.86	565476.20	660171.70				8240.00	CIRCLE		

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



**Drilling Operations
Choke Manifold
10M Service**

10M Choke Manifold Diagram
XTO



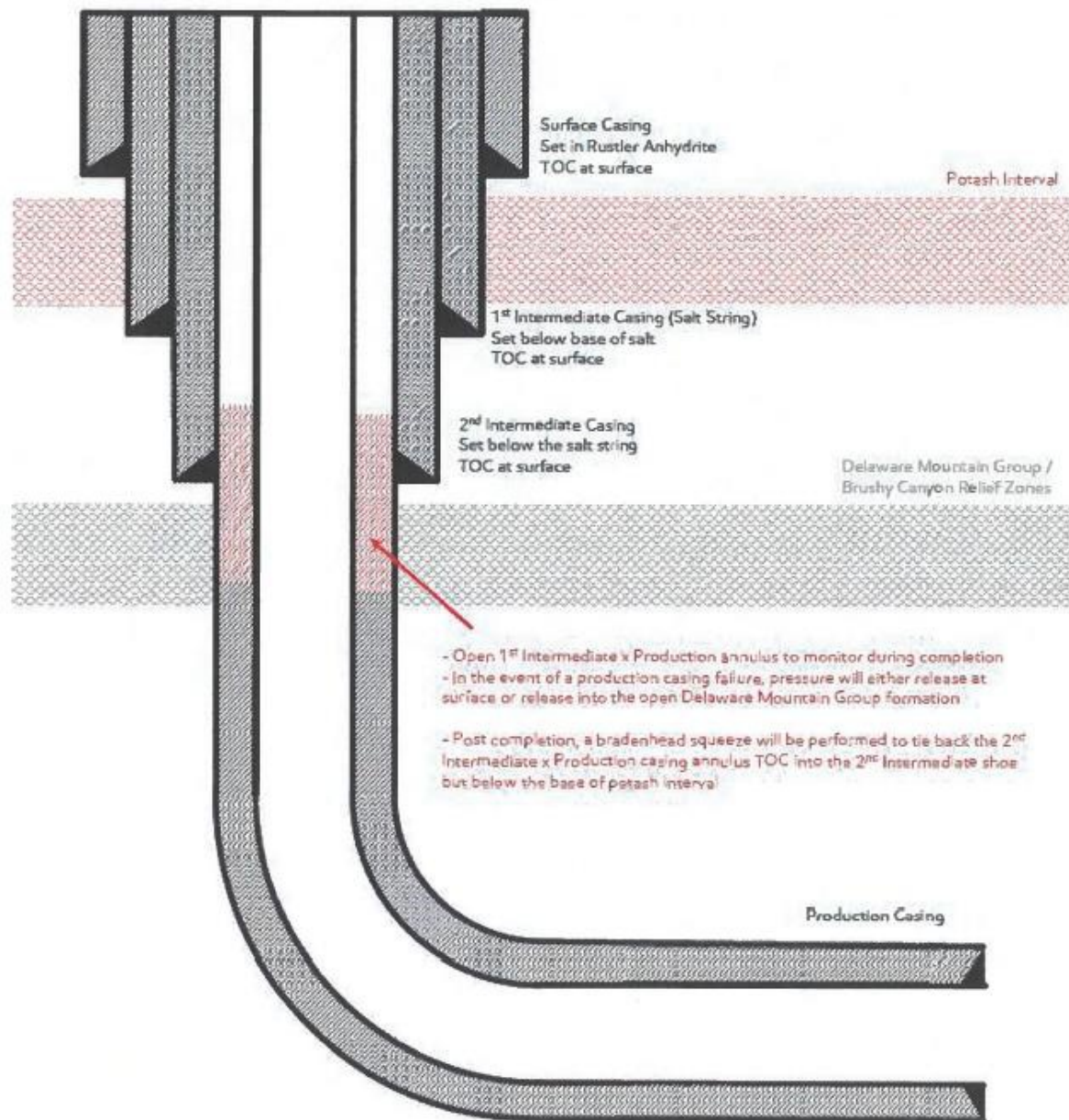


Figure – E: 4 String design (Capitan Reef + Potash)

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

1. Alignment with KPLA requirements per schematic above, leaving open annulus for pressure monitoring during frac and utilizing new casing that meets API standards.
2. Contingency plans in place to divert formation fluids away from salt interval in even of production casing failure.
3. Bradenhead squeeze to be completed within 180 days to tie back TOC to salt string at least 500ft but with top below Marker Bed 126.
4. Production Cement to be tied back no less than 500ft inside previous casing shoe

10,000 PSI Annular BOP Variance Request

Mewbourne Oil Company 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.

12-1/4" Intermediate 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	8.000"-9.625"	Annular	5M	-	-
Intermediate Casing	9.625"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

8-3/4" 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	7"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

6-1/8" Lateral Hole Section 10M psi Requirement					
Component	OD	Primary Preventer	RWP	Alternate Preventer(s)	RWP
Drillpipe	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
DCs and MWD tools	4.750"-5.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Mud Motor	4.750"-5.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Production Casing	4.500"	Annular	5M	Upper 3.5"-5.5" VBR Upper 3.5"-5.5" VBR	10M 10M
Open-Hole	-	Blind Rams	10M	-	-

VBR = Variable Bore Ram

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 Mewbourne Oil Company drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 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

1. Sound alarm (alert crew)
2. Stab crossover and full-opening safety valve and close
3. Space out 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% 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

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

CONDITIONS

Action 400903

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 400903
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	PLEASE NOTE CORRECTION OF POOL TO SALT LAKE;WOLFCAMP [53570]	11/15/2024
pkautz	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	11/15/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing.	11/15/2024