

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018

**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.  
NMNM25533

6. If Indian, Allottee or Tribe Name

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

7. If Unit or CA/Agreement, Name and/or No.  
891000303X

1. Type of Well  
 Oil Well  Gas Well  Other

8. Well Name and No.  
POKER LAKE UNIT 18 TWR 125H

2. Name of Operator Contact: KELLY KARDOS  
XTO PERMIAN OPERATING LLC E-Mail: kelly\_kardos@xtoenergy.com

9. API Well No.  
30-015-46552-00-X1

3a. Address  
6401 HOLIDAY HILL ROAD BLDG 5  
MIDLAND, TX 79707

3b. Phone No. (include area code)  
Ph: 432-620-4374

10. Field and Pool or Exploratory Area  
PURPLE SAGE-WOLFCAMP (GAS)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 19 T24S R31E NWNE 300FNL 2106FEL  
32.209244 N Lat, 103.815201 W Lon

11. County or Parish, State  
EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

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

XTO Permian Operating, LLC requests permission to make the following changes to the original APD:

Change the casing/cement design per the attached.

XTO requests the following variances:

In any instance where a 10M BOP is required, XTO requests to use a 5000 psi annular BOP with a 10,000 psi BOP stack. Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi.

ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states; that for pad drilling operation, moving

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #504376 verified by the BLM Well Information System  
For XTO PERMIAN OPERATING LLC, sent to the Carlsbad  
Committed to AFMSS for processing by PRISCILLA PEREZ on 02/25/2020 (20PP1354SE)**

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 02/25/2020

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

Approved By ALLISON MORENCY

Title PETROLEUM ENGINEER

Date 03/06/2020

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)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

## **Additional data for EC transaction #504376 that would not fit on the form**

### **32. Additional remarks, continued**

from one welhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. We will also function test BOP equipment after each nipple up. A full BOP test will be required prior to drilling any production hole.

Batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE 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 completed, XTO will begin drilling the production hole on each of the wells.

Attachments:

Casing/Cement Design

Multibowl Diagram

5M10M Diagram / Well Control Plan

## Revisions to Operator-Submitted EC Data for Sundry Notice #504376

	<b>Operator Submitted</b>	<b>BLM Revised (AFMSS)</b>
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM25533	NMNM25533
Agreement:	NMNM71016X	891000303X (NMNM71016X)
Operator:	XTO PERMIAN OPERATING LLC 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	XTO PERMIAN OPERATING LLC 6401 HOLIDAY HILL ROAD BLDG 5 MIDLAND, TX 79707 Ph: 432.683 2277
Admin Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com  Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com  Ph: 432-620-4374
Tech Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com  Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com  Ph: 432-620-4374
Location: State: County:	NM EDDY	NM EDDY
Field/Pool:	PURPLE SAGE WOLFCAMP	PURPLE SAGE-WOLFCAMP (GAS)
Well/Facility:	POKER LAKE UNIT 18 TWR 125H Sec 19 T24S R31E Mer NMP NWNE 300FNL 2106FEL	POKER LAKE UNIT 18 TWR 125H Sec 19 T24S R31E NWNE 300FNL 2106FEL 32.209244 N Lat, 103.815201 W Lon

## Kardos, Kelly

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**From:** amorency@blm.gov  
**Sent:** Friday, March 6, 2020 5:50 PM  
**To:** Kardos, Kelly  
**Subject:** Well POKER LAKE UNIT 18 TWR 125H  
**Attachments:** EC504376.pdf

**Categories:** External Sender

External Email - Think Before You Click

The sundry for Change to Original APD you submitted has been approved by the BLM. Your original Electronic Commerce (EC) transmission was assigned ID 504376. Please be sure to open and save all attachments to this message, since they contain important information.

03/06/2020 - AM

Break testing not approved. More information required. All previous COAs apply.

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

XTO Energy Inc.  
Poker Lake Unit 18 TWR 125H  
Projected TD: 21934' MD / 11848' TVD  
SHL: 300' FNL & 2106' FEL , Section 19, T24S, R31E  
BHL: 200' FSL & 2310' FEL , Section 30, T24S, R31E  
Eddy County, NM

**1. Geologic Name of Surface Formation**

A. Permian

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

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	578'	Water
Top of Salt	948'	Water
Base of Salt	4063'	Water
Delaware	4278'	Water
Bone Spring	8149'	Water
1st Bone Spring Ss	9113'	Water/Oil/Gas
2nd Bone Spring Ss	9918'	Water/Oil/Gas
3rd Bone Spring Ss	11088'	Water/Oil/Gas
Wolfcamp	11488'	Water/Oil/Gas
Wolfcamp A	11638'	Water/Oil/Gas
Target/Land Curve	11848'	Water/Oil/Gas

\*\*\* Hydrocarbons @ Brushy Canyon

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

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 11-3/4" casing @ 848' (100' above the salt) and circulating cement back to surface. The 7-5/8" intermediate casing will be set at 10343' and bring TOC back to surface. A 6-3/4 inch curve and lateral hole will be drilled to MD/TD and 5-1/2" x 5-1/2" semi-flush casing will be set at TD and cemented back 300' into the 7-5/8" casing shoe.

**3. Casing Design**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
14-3/4"	0' – 848'	11-3/4"	54	BTC	J-55	New	1.31	5.40	18.56
9-7-8"	0' – 10343'	7-5/8"	29.7	BTC	HCL-80	New	1.58	2.09	2.22
6-3/4"	0' – 10243'	5-1/2"	23	Freedom	P-110	New	1.21	2.09	2.03
6-3/4"	10243' - 21934'	5-1/2"	23	TCSF - semi flush	HCP-110	New	1.21	2.20	2.02

· XTO requests to not utilize centralizers in the curve and lateral

· 7-5/8" Collapse analyzed using 50% evacuation based on regional experience.

· 5-1/2" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

· Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

· 5-1/2" 23 ppf casing will be run from surface to 11,750' and crossed over to 5-1/2" 23 ppf semi-flush casing from 11,750' to TD.

· Request to use 5" BTC Float equipment for the the production casing

**Wellhead:**

Permanent Wellhead – Multibowl System

A. Starting Head: 11" 10M top flange x 11-3/4" SOW bottom

B. Tubing Head: 11" 10M bottom flange x 7-1/16" 15M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 7-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

#### 4. Cement Program

##### **Surface Casing: 11-3/4", 54 New J-55, BTC casing to be set at +/- 848'**

Lead: 250 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft3/sx, 10.13 gal/sx water)

Tail: 190 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)

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

##### **Intermediate Casing: 7-5/8", 29.7 New HCL-80, BTC casing to be set at +/- 10343'**

*ECP/DV Tool to be set at 4300'*

###### 1st Stage

Lead: 1150 sxs Halcem - Class C (mixed at 11.0 ppg, 1.87 ft3/sx, 15.10 gal/sx water)

Tail: 310 sxs Halcem - Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)

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

###### 2nd Stage

Lead: 750 sxs Halcem - Class C (mixed at 11.0 ppg, 1.88 ft3/sx, 10.13 gal/sx water)

Tail: 320 sxs Halcem-Class C (mixed at 14.8 ppg, 1.33 ft3/sx, 5.29 gal/sx water)

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

TOC: Surface

##### **Production Casing: 5-1/2", 23 New HCP-110, TCSF - semi flush casing to be set at +/- 21934'**

Lead: 50 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)

Tail: 760 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 7.20 gal/sx water)

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

TOC: 300' inside previous shoe

#### 5. Pressure Control Equipment

Once the permanent WH is installed on the 11-3/4" casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M 3-Ram BOP. MASP should not exceed 4355 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 70% of the working pressure. When nipping up on the 11-3/4", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

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

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

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compainace with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one welhead to another with in 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. We will also function test BOP equipment after each nipple up. A full BOP test will be required prior to drilling any production hole.

## 6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 848'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
848' - 10343'	9-7/8"	Brine / Cut Brine / Direct Emulsion	8.6-9.8	30-32	NC
10343' to 21934'	6-3/4"	Cut Brine / WBM / OBM	10.8-11.8	32-36	NC

The necessary mud products for weight addition and fluid loss control will be on location at all times. Spud with fresh water/native mud and set 11-3/4" surface casing, isolating the fresh water aquifer. Drill out from under 11-3/4" surface casing with a brine/oil direct emulsion mud system. 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 11-3/4" casing.

## 8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing.

Open hole logging will not be done on this well.

## 9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 155 to 175 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 6962 psi.

## 10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 45 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

**Poker Lake Unit 18 TWR 125H**  
 Projected TD: 21934' MD / 11848' TVD  
 SHL: 300' FNL & 2106' FEL , Section 19, T24S, R31E  
 BHL: 200' FSL & 2310' FEL , Section 30, T24S, R31E  
 Eddy County, NM

**Casing Design**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
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6-3/4"	10243' - 21934'	5-1/2"	23	TCSF - semi flush	HCP-110	New	1.21	2.20	2.02

XTO requests to not utilize centralizers in the curve and lateral.

7-5/8" Collapse analyzed using 50% evacuation based on regional experience.

5-1/2" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

5-1/2" 23 ppf casing will be run from surface to 11,750' and crossed over to 5-1/2" 23 ppf semi-flush casing from 11,750' to TD.

Request to use 5" BTC Float equipment

**Cement Program**

**Surface Casing:**

Lead: 250 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft3/sx, 10.13 gal/sx water)

Tail: 190 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)

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

**Intermediate Casing:**

ECP/DV Tool to be set at 4300'

*1st Stage*

Lead: 1150 sxs Halcem - Class C (mixed at 11.0 ppg, 1.87 ft3/sx, 15.10 gal/sx water)

Tail: 310 sxs Halcem - Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)

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

*2nd Stage*

Lead: 750 sxs Halcem - Class C (mixed at 11.0 ppg, 1.88 ft3/sx, 10.13 gal/sx water)

Tail: 320 sxs Halcem-Class C (mixed at 14.8 ppg, 1.33 ft3/sx, 5.29 gal/sx water)

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

**Production Casing:**

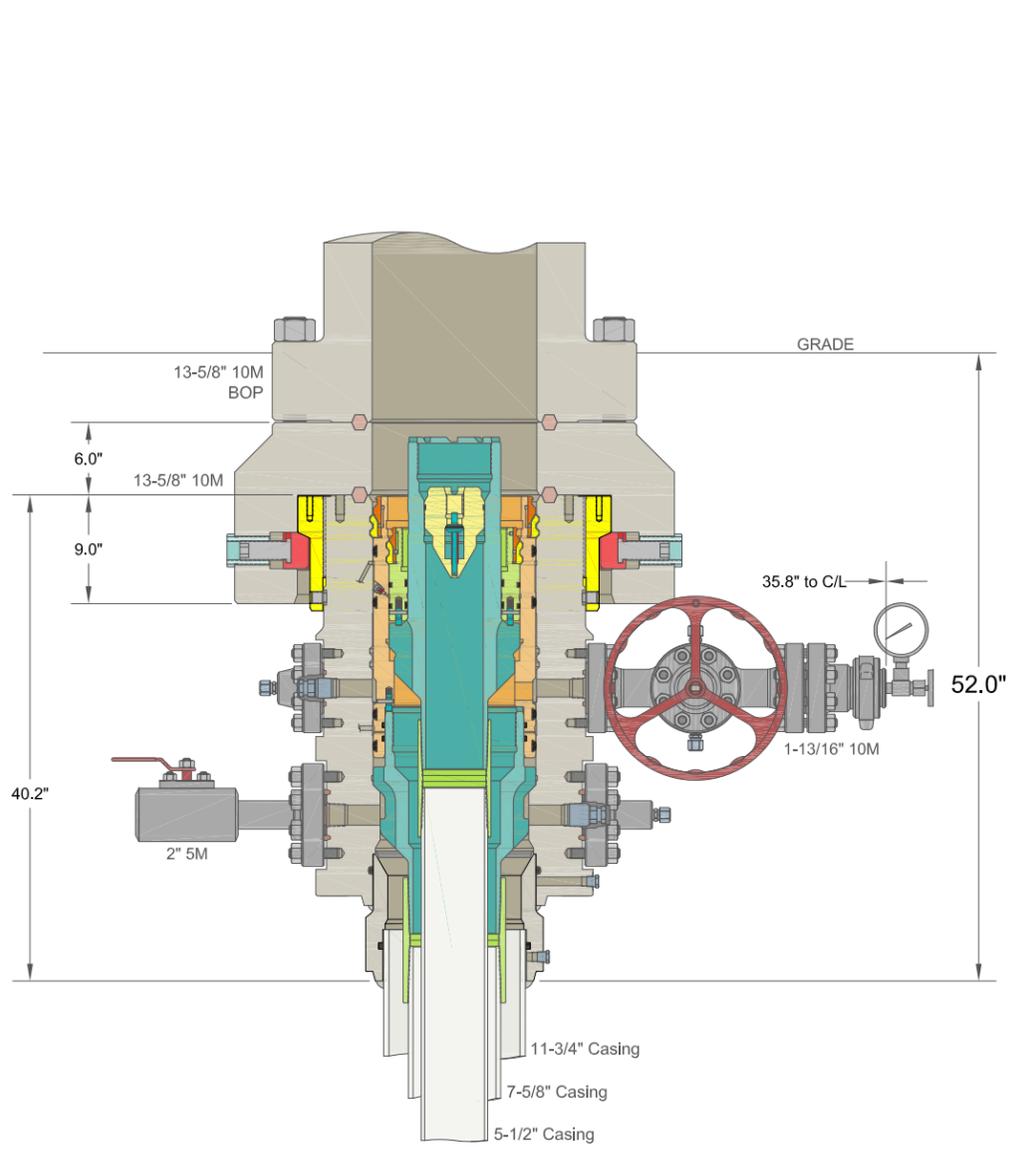
Lead: 50 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)

Tail: 760 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 7.20 gal/sx water)

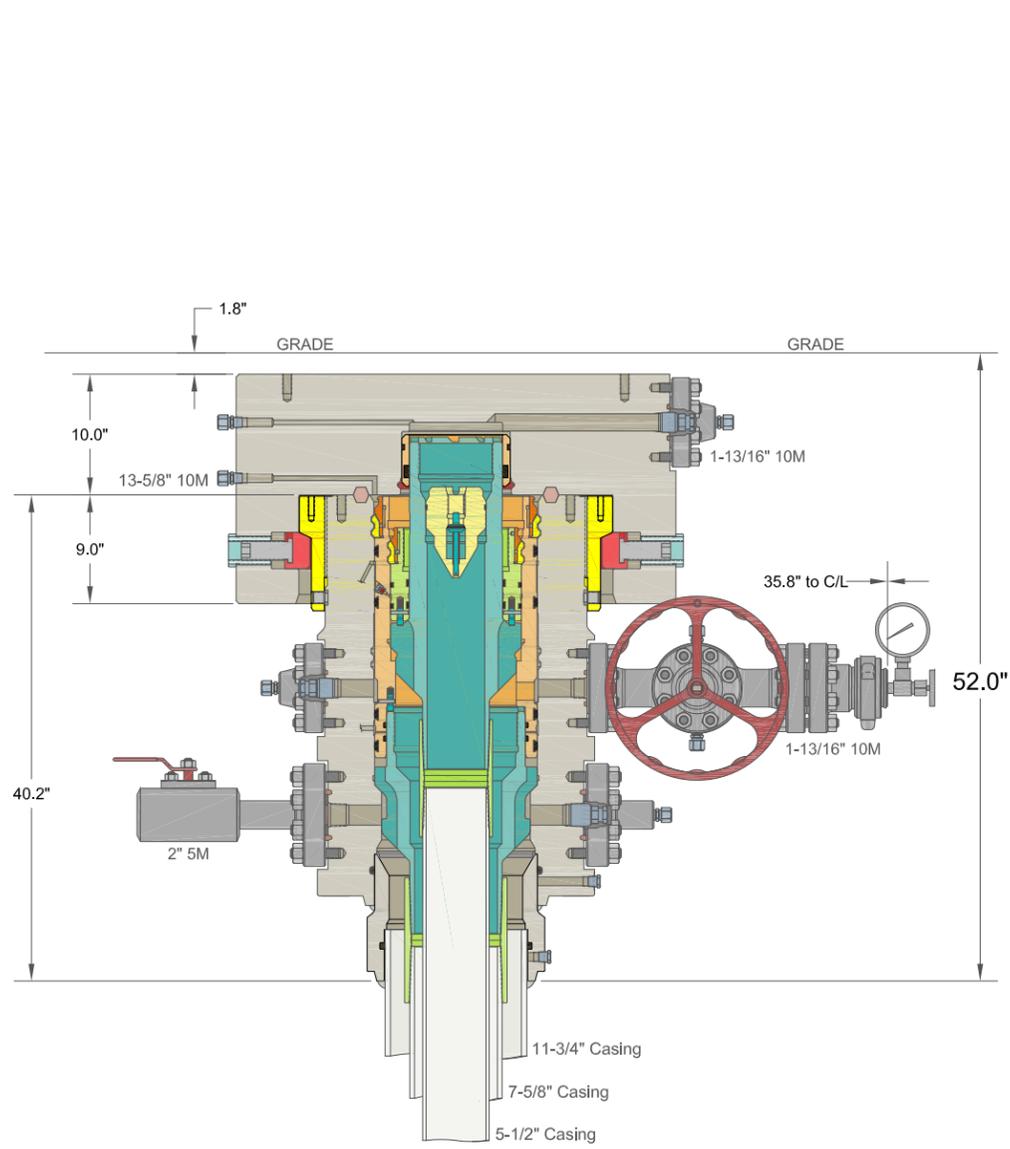
Compressives: 12-hr = 800 psi 24 hr = 1500 psi

**Mud Circulation Program**

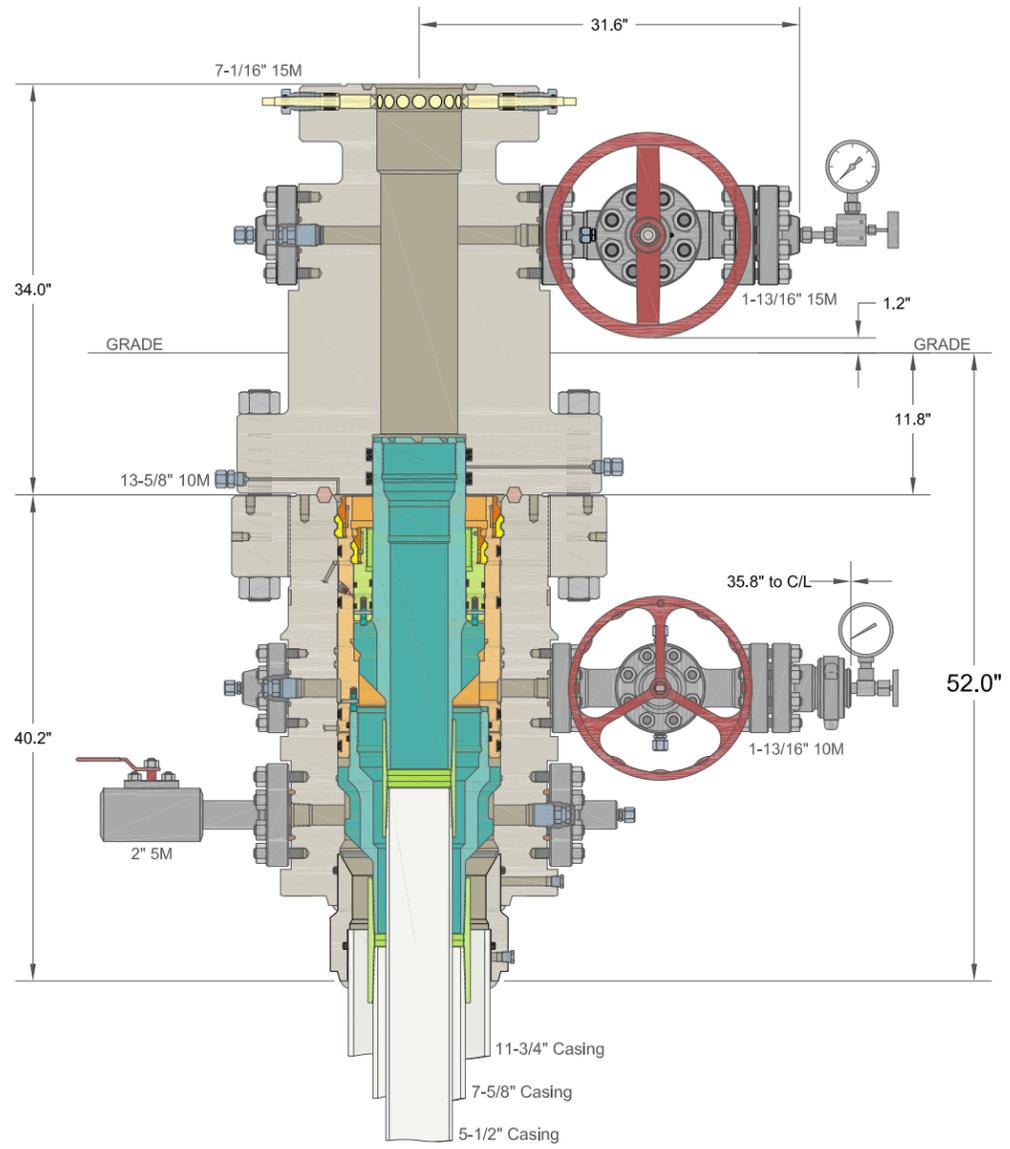
INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 848'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
848' - 10343'	9-7/8"	Brine / Cut Brine / Direct Emulsion	8.6-9.8	30-32	NC
10343' to 21934'	6-3/4"	Cut Brine / WBM / OBM	10.8-11.8	32-36	NC



DRILLING



SKID



COMPLETION

ALL DIMENSIONS APPROXIMATE

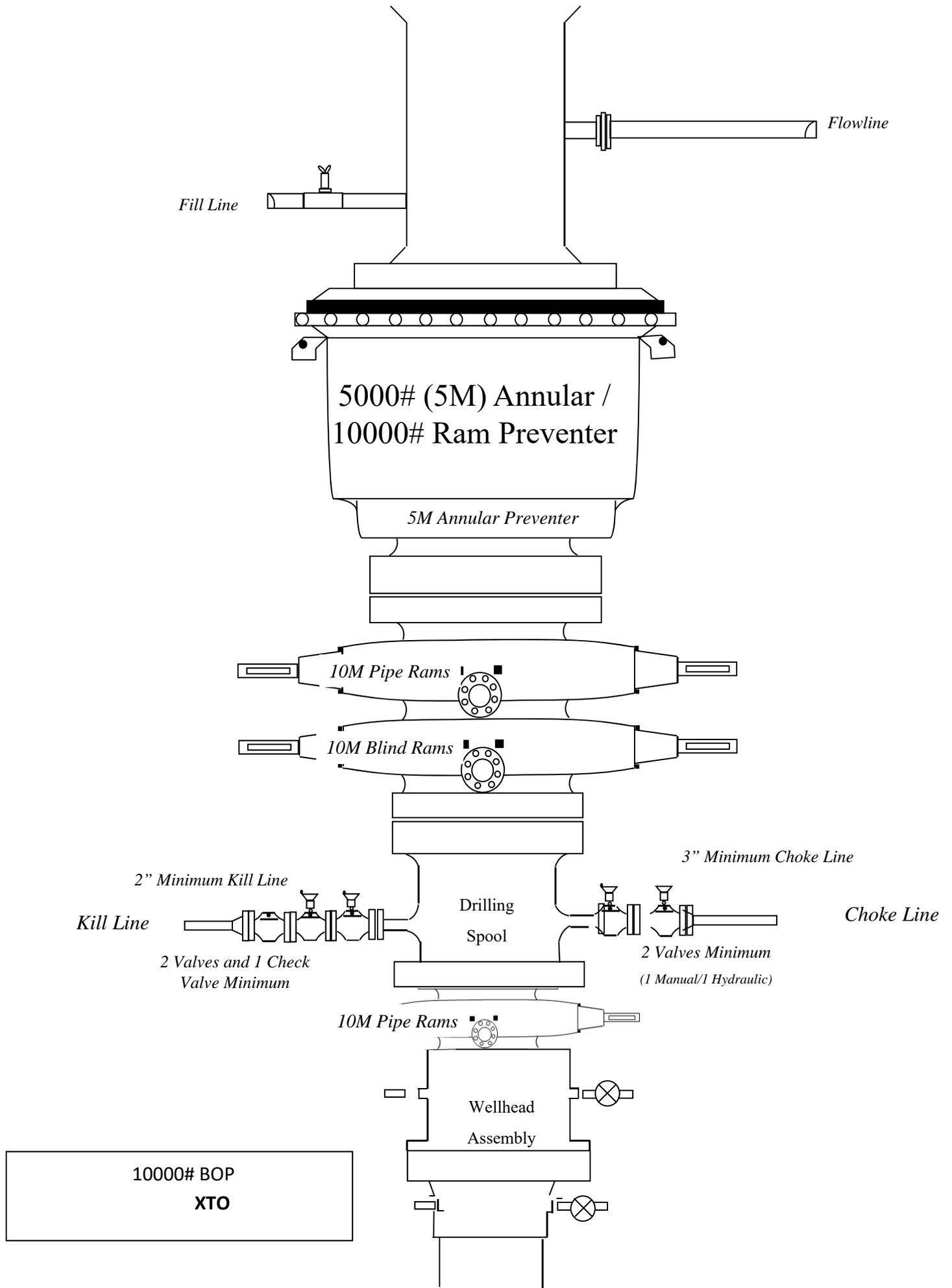
CACTUS WELLHEAD LLC

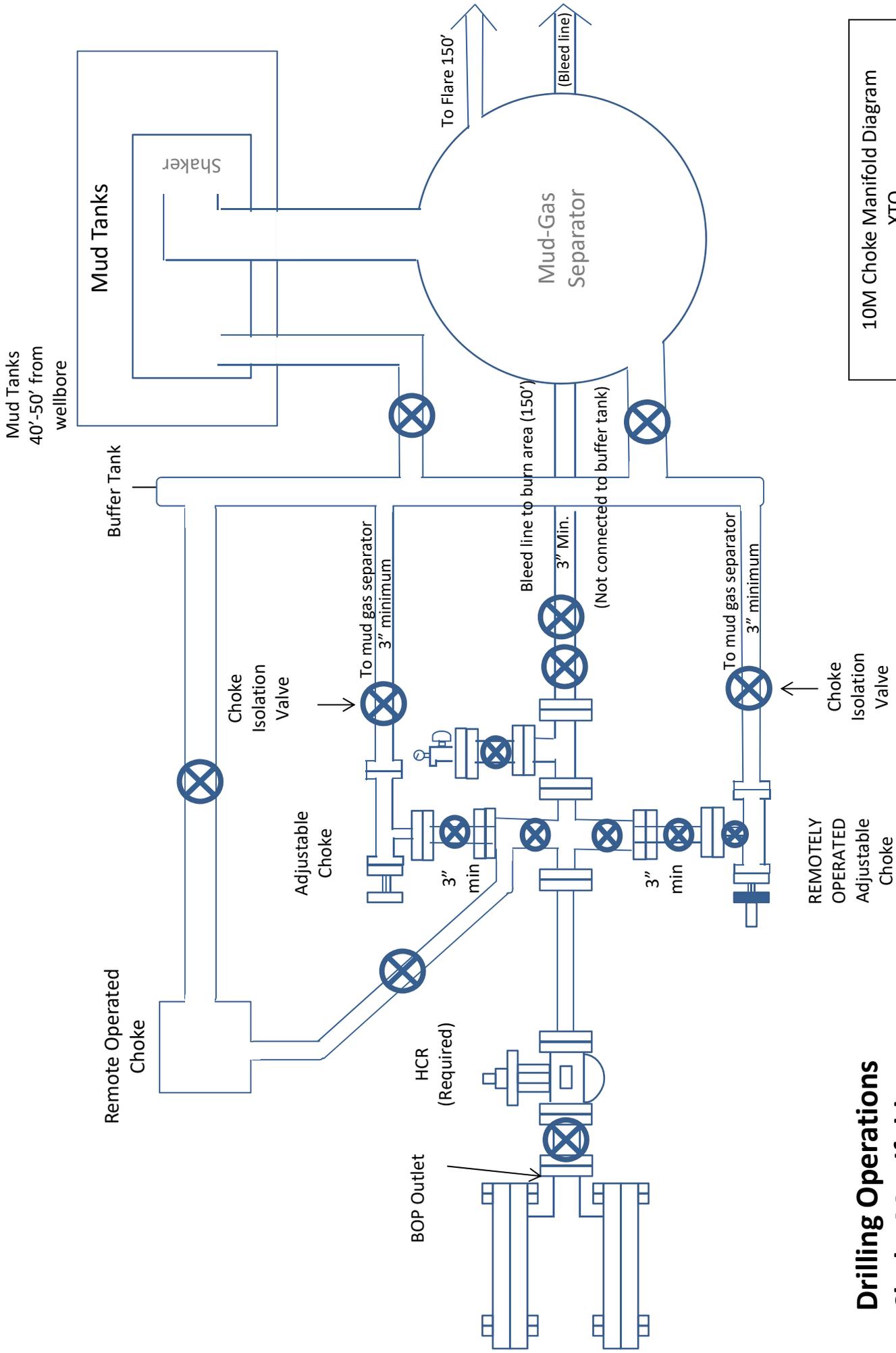
XTO ENERGY INC  
POKER LAKE, NM

30" x 11-3/4" x 7-5/8" x 5-1/2" MBU-3T-SF SOW Wellhead System  
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head  
And 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers

DRAWN	DLE	09DEC19
APPRV		
DRAWING NO.		ODE0003261

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10M Choke Manifold Diagram  
XTO

**Drilling Operations  
Choke Manifold  
10M Service**

REMOTELY  
OPERATED  
Adjustable  
Choke

## 10,000 PSI Annular BOP Variance Request

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

### 1. Component and Preventer Compatibility Tables

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

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

## 2. Well Control Procedures

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

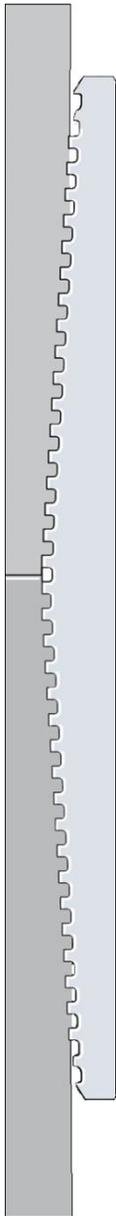
- ii. Pit gain
    - iii. Time
  - h. Regroup and identify forward plan
- 3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
  - c. If 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



5.5 23.00 (0.415)

P110 RY

USS-FREEDOM HTQ™



	PIPE	CONNECTION	
<b>MECHANICAL PROPERTIES</b>			
Minimum Yield Strength	110,000	110,000	psi
Maximum Yield Strength	125,000	125,000	psi
Minimum Tensile Strength	125,000	125,000	psi
<b>DIMENSIONS</b>			
Outside Diameter	5.500	6.300	in.
Wall Thickness	0.415		in.
Inside Diameter	4.670	4.670	in.
Drift - API	4.545	4.545	in.
Nominal Linear Weight, T&C	23.00		lbs/ft
Plain End Weight	22.56		lbs/ft
<b>SECTION AREA</b>			
Cross Sectional Area   Critical Area	6.630	6.630	sq. in.
Joint Efficiency		100.0%	
<b>PERFORMANCE</b>			
Minimum Collapse Pressure	14,540	14,540	psi
External Pressure Leak Resistance		11,632	psi
Minimum Internal Yield Pressure	14,520	14,520	psi
Minimum Pipe Body Yield Strength	729,000		lbs
Joint Strength		729,000	lbs
Compression Rating		729,000	lbs
Reference Length		21,550	ft [4]
Maximum Uniaxial Bend Rating		91.7	deg/100 ft [2]
<b>MAKE-UP DATA</b>			
Make-Up Loss		4.13	in.
Minimum Make-Up Torque		15,000	ft-lbs [3]
Maximum Make-Up Torque		21,000	ft-lbs [3]
Maximum Operating Torque		33,500	ft-lbs [3]

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.
- 5) Both PIPE and COUPLING need to meet the mechanical properties specified.

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