Form 3160-5
(June 2015)

OCD – Artesia – REC'D 4/27/2020

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMLC061634B

6. If Indian, Allottee or Tribe Name

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 30 BS 164H

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

9. API Well No.
30-015-46950-00-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 30 T25S R31E SENW 2310FNL 2040FWL
32.102180 N Lat, 103.819435 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			
☒ 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 to Original APD
	☐ 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 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 drilling program.

XTO requests the following variances:

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

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

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

Electronic Submission #509607 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 04/03/2020 (20PP1908SE)

Name *(Printed/Typed)* KELLY KARDOS — Title REGULATORY COORDINATOR

Signature (Electronic Submission) — Date 04/03/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JENNIFER SANCHEZ — Title PETROLEUM ENGINEER — Date 04/27/2020

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 ****

Accepted for Record 4/30/2020 RWP

Additional data for EC transaction #509607 that would not fit on the form

32. Additional remarks, continued

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.

ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. Based on discussions with the BLM on February 27th 2020, we will request permission to ONLY retest broken pressure seals if the following conditions are met: 1. After a full BOP test is conducted on the first well on the pad (First well will be the deepest Intermediate) 2. When skidding to drill an intermediate section does not penetrate into the Wolfcamp 3. Full BOP test will be required prior to drilling the production hole.

A variance is requested to cement offline for the surface and intermediate casing strings.

Attachments:
Casing/Cement Design
Multibowl Diagram
5M10M Diagram / Well Control Plan
Directional Plan

Revisions to Operator-Submitted EC Data for Sundry Notice #509607

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMLC061634B	NMLC061634B
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 30 BS 164H Sec 30 T25S R31E Mer NMP SENW 2310FNL 2040FWL	POKER LAKE UNIT 30 BS 164H Sec 30 T25S R31E SENW 2310FNL 2040FWL 32.102180 N Lat, 103.819435 W Lon

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**XTO Permian Operating, LLC**
LEASE NO.:	**NMLC-061634B**
WELL NAME & NO.:	**Poker Lake Unit 30 BS 164H**
SURFACE HOLE FOOTAGE:	**2310 FNL & 2040 FWL**
BOTTOM HOLE FOOTAGE	**0200 FSL & 2383 FWL Sec. 31, T.25 S., R.31 E.**
LOCATION:	**Section 30, T.25 S., R.31 E., NMPM**
COUNTY:	**EddyCounty, New Mexico**

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☑ Unit

Medium Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Red Beds, Rustler, and Delaware.
Abnormal pressure may be encountered in the 3rd Bone Spring and all subsequent formations.

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 Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **11-3/4** inch surface casing shall be set at approximately **1100** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) 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.

    Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

    Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

    a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

    b. Second stage above DV tool:

        - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

    ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2 X 5** inch production casing is:

    - Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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 OOGO2.III.A.2.i 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.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

2. Wait on cement (WOC) for 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 intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. 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.

4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

5. 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.

6. 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.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. 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.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer.

    c. 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.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. 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.

    f. 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.

    g. 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 Onshore Order No. 2.

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.

JAM 042720

Poker Lake Unit 30 BS 164H
Projected TD: 20278' MD / 12416' TVD
SHL: 2310' FNL & 2040' FWL , Section 30, T25S, R31E
BHL: 200' FSL & 2383' FWL , Section 31, T25S, R31E
Eddy County, NM

Casing Design

The surface fresh water sands will be protected by setting 11-3/4" casing @ 1400' (96' above the salt) and circulating cement back to surface. The 7-5/8" intermediate casing will be set at 11650' 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 5-0" casing will be set at TD and cemented back 300' into the 7-5/8" casing shoe.

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
14-3/4"	0' – 1400'	11-3/4"	54	STC	J-55	New	1.02	2.38	7.25
9-7/8"	0' – 11650'	7-5/8"	29.7	BTC	L-80	New	1.19	1.57	1.97
6-3/4"	0' – 11550'	5-1/2"	23	BTC	P-110	New	1.21	1.71	2.61
6-3/4"	11550' - 20278'	5-0"	18	BTC	P-110	New	1.16	1.58	2.09

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" x 5-0" 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

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

Cement Program

Surface Casing:

Lead: 510 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 4600'

1st Stage

Lead: 1380 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: 820 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: 20 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)
Tail: 810 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' - 1400'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
1400' - 11650'	9-7/8"	Brine / Cut Brine / Direct Emuslion	8.7-9.2	30-32	NC
11650' to 20278'	6-3/4"	Cut Brine / WBM / OBM	12.7-13.2	32-36	NC

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

XTO Energy Inc.
Poker Lake Unit 30 Big Sinks 164H
Projected TD: 20278' MD / 12416' TVD
SHL: 2310' FNL & 2040' FWL , Section 30, T25S, R31E
BHL: 200' FSL & 2383' FWL , Section 31, T25S, 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	1170'	Water
Top of Salt	1496'	Water
Base of Salt	3972'	Water
Delaware	4139'	Water
Bone Spring	8075'	Water
1st Bone Spring Ss	9075'	Water/Oil/Gas
2nd Bone Spring Ss	9722'	Water/Oil/Gas
3rd Bone Spring Ss	11041'	Water/Oil/Gas
Wolfcamp	11341'	Water/Oil/Gas
Wolfcamp D	12351'	Water/Oil/Gas
Target/Land Curve	12416'	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 @ 1400' (96' above the salt) and circulating cement back to surface. The 7-5/8" intermediate casing will be set at 11650' 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 5-0" 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' – 1400'	11-3/4"	54	STC	J-55	New	1.02	2.38	7.25
9-7/8"	0' – 11650'	7-5/8"	29.7	BTC	L-80	New	1.19	1.57	1.97
6-3/4"	0' – 11550'	5-1/2"	23	BTC	P-110	New	1.21	1.71	2.61
6-3/4"	11550' - 20278'	5-0"	18	BTC	P-110	New	1.16	1.58	2.09

· 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" x 5-0" 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

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, STC casing to be set at +/- 1400'

Lead: 510 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 L-80, BTC casing to be set at +/- 11650'
ECP/DV Tool to be set at 4600'
1st Stage
Lead: 1380 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: 820 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: 5-0", 18 New P-110, BTC casing to be set at +/- 20278'
Lead: 20 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)

Tail: 810 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 10M 3-Ram BOP. MASP should not exceed 5791 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 nippling up on the 11-3/4", 10M bradenhead and flange, the BOP test will be limited to 10000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 10M 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.

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' - 1400'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
1400' - 11650'	9-7/8"	Brine / Cut Brine / Direct Emuslion	8.7-9.2	30-32	NC
11650' to 20278'	6-3/4"	Cut Brine / WBM / OBM	12.7-13.2	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.

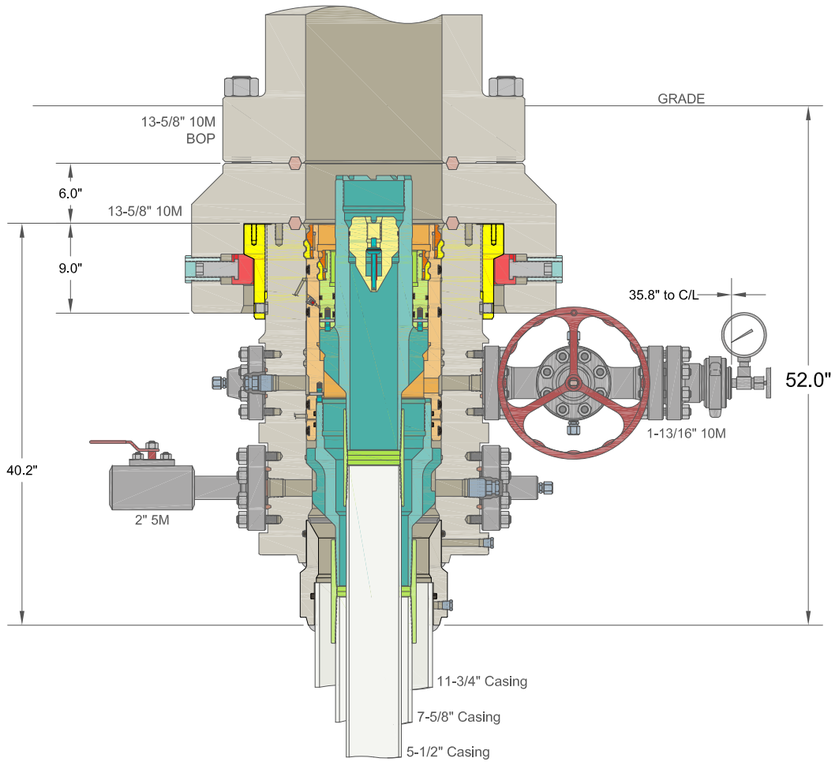
Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

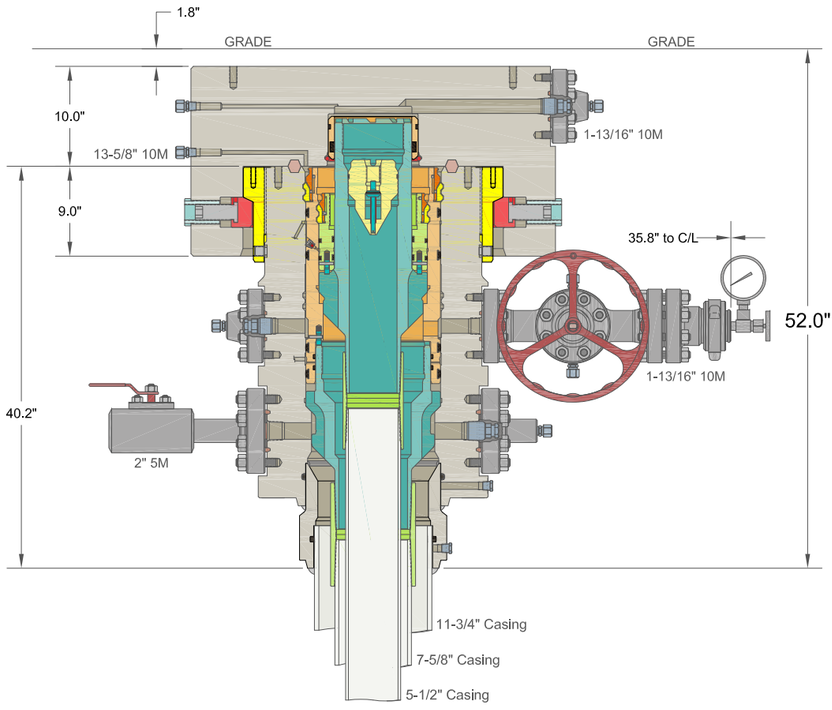
None Anticipated. BHT of 160 to 180 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 8522 psi.

10. Anticipated Starting Date and Duration of Operations

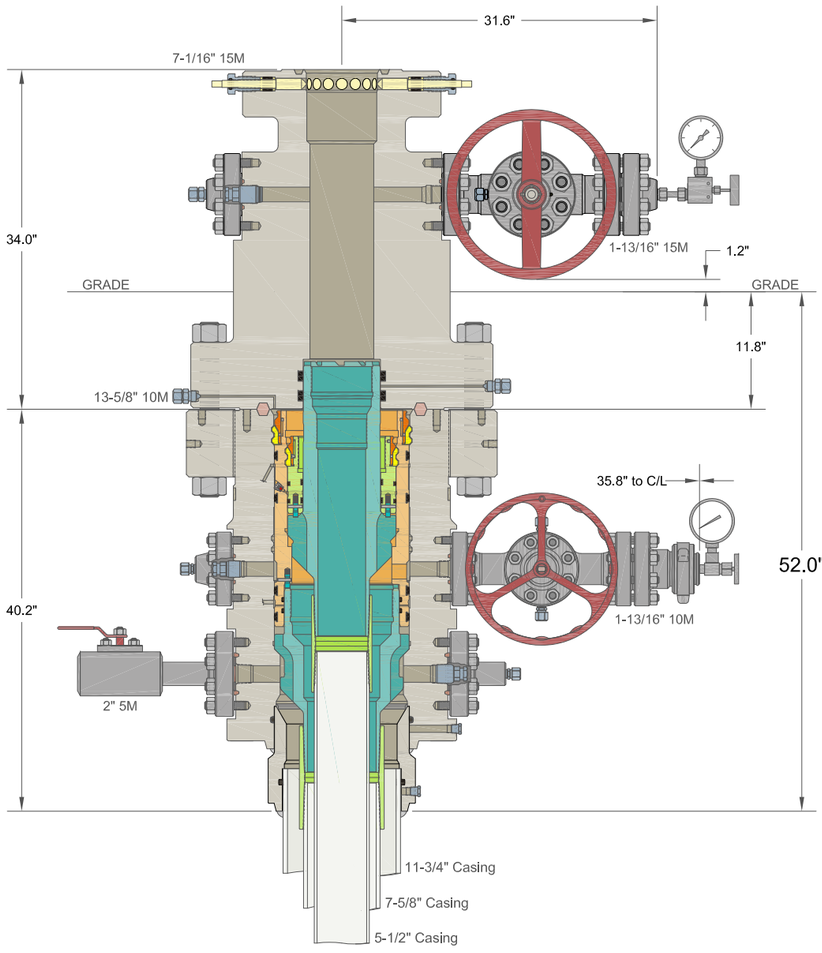
Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 45 days. If production casing is run, an additional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



DRILLING



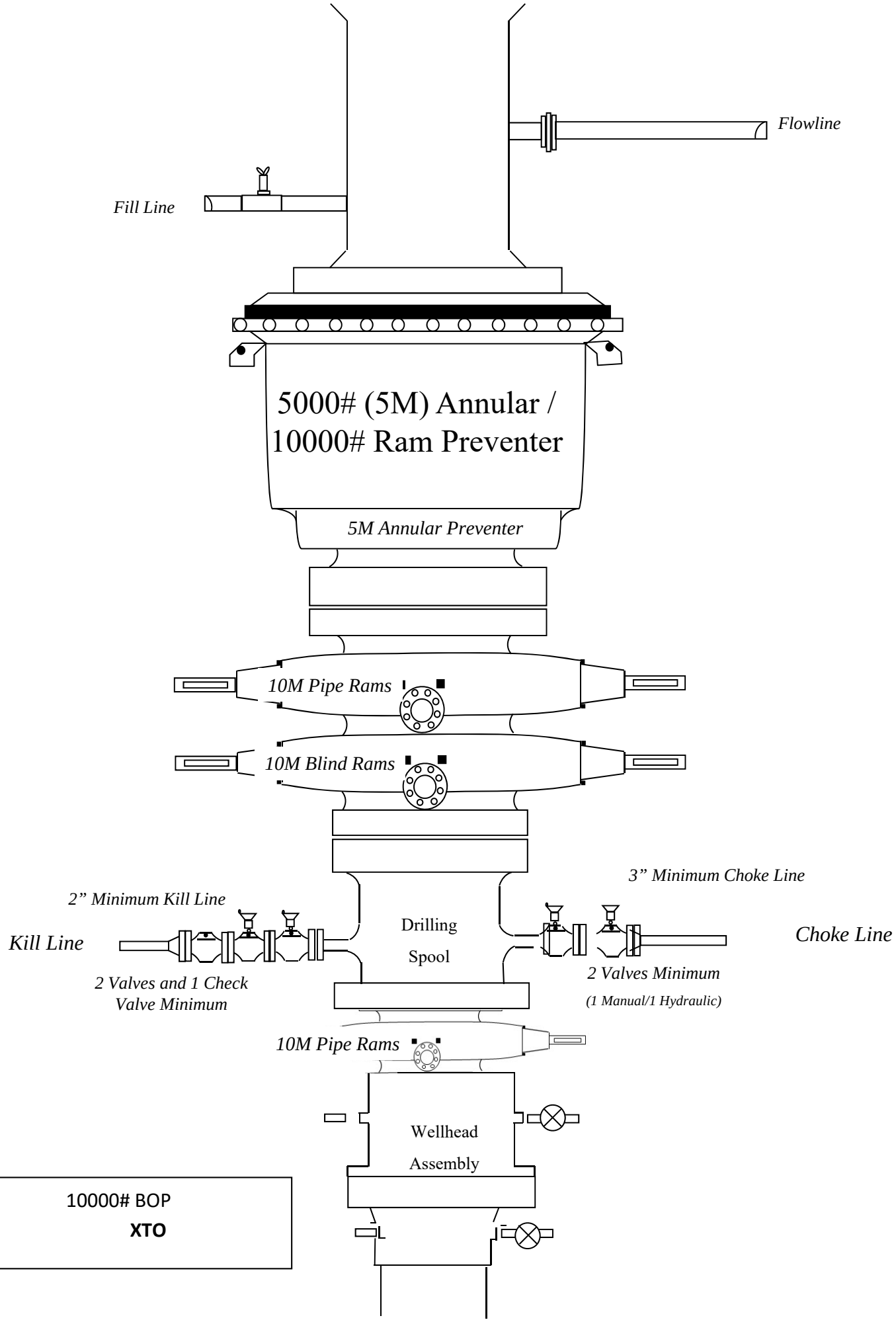
SKID



COMPLETION

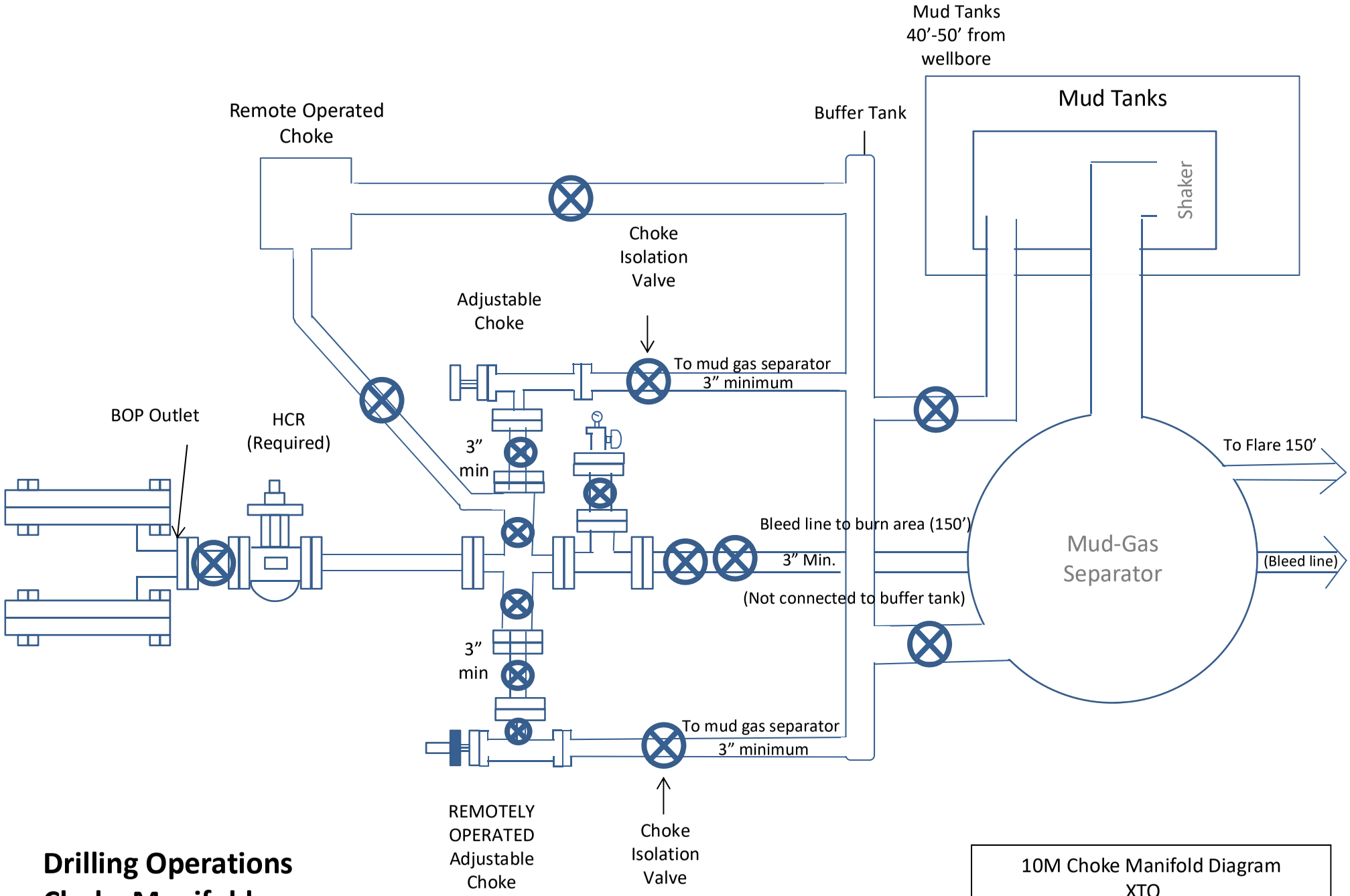
ALL DIMENSIONS APPROXIMATE

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



10000# BOP

XTO



Drilling Operations
Choke Manifold
10M Service

10M Choke Manifold Diagram
XTO

XTO Energy

Project: Eddy County, NM (NAD27) NMEZ Grid
Site: PLU 30 BS
Well: 164H
Wellbore: Lateral
Design: Plan #1

3381+25 @ 3406.00usft (E101)
NAD 1927 (NADCON CONUS)

To convert a Magnetic Direction to a True Direction, Add 6.80° East
To convert a Magnetic Direction to a Grid Direction, Add 6.53°
Magnetic North is 6.80° East of True North (Magnetic Declination)
Magnetic North is 6.53° East of Grid North (Magnetic Convergence)

TARGET DETAILS

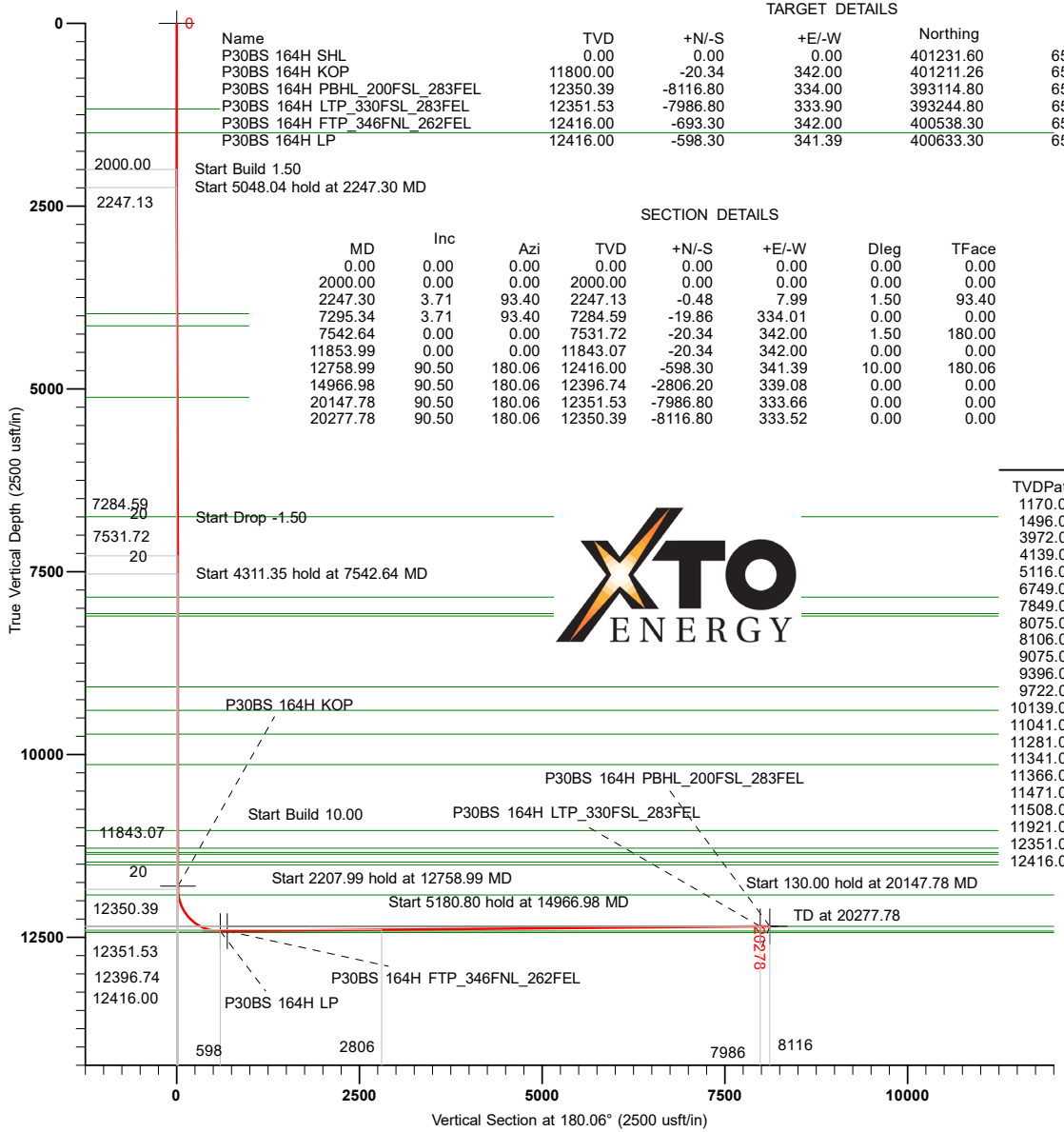
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
P30BS 164H SHL	0.00	0.00	0.00	401231.60	659279.20	Point
P30BS 164H KOP	11800.00	-20.34	342.00	401211.26	659621.20	Point
P30BS 164H PBHL_200FSL_283FEL	12350.39	-8116.80	334.00	393114.80	659613.20	Rectangle (Sides: L7424.00 W100.00)
P30BS 164H LTP_330FSL_283FEL	12351.53	-7986.80	333.90	393244.80	659613.10	Point
P30BS 164H FTP_346FNL_262FEL	12416.00	-693.30	342.00	400538.30	659621.20	Point
P30BS 164H LP	12416.00	-598.30	341.39	400633.30	659620.59	Point

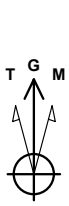
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
2247.30	3.71	93.40	2247.13	-0.48	7.99	1.50	93.40	0.47
7295.34	3.71	93.40	7284.59	-19.86	334.01	0.00	0.00	19.52
7542.64	0.00	0.00	7531.72	-20.34	342.00	1.50	180.00	19.98
11853.99	0.00	0.00	11843.07	-20.34	342.00	0.00	0.00	19.98
12758.99	90.50	180.06	12416.00	-598.30	341.39	10.00	180.06	597.94
14966.98	90.50	180.06	12396.74	-2806.20	339.08	0.00	0.00	2805.85
20147.78	90.50	180.06	12351.53	-7986.80	333.66	0.00	0.00	7986.45
20277.78	90.50	180.06	12350.39	-8116.80	333.52	0.00	0.00	8116.45

FORMATION TOP DETAILS

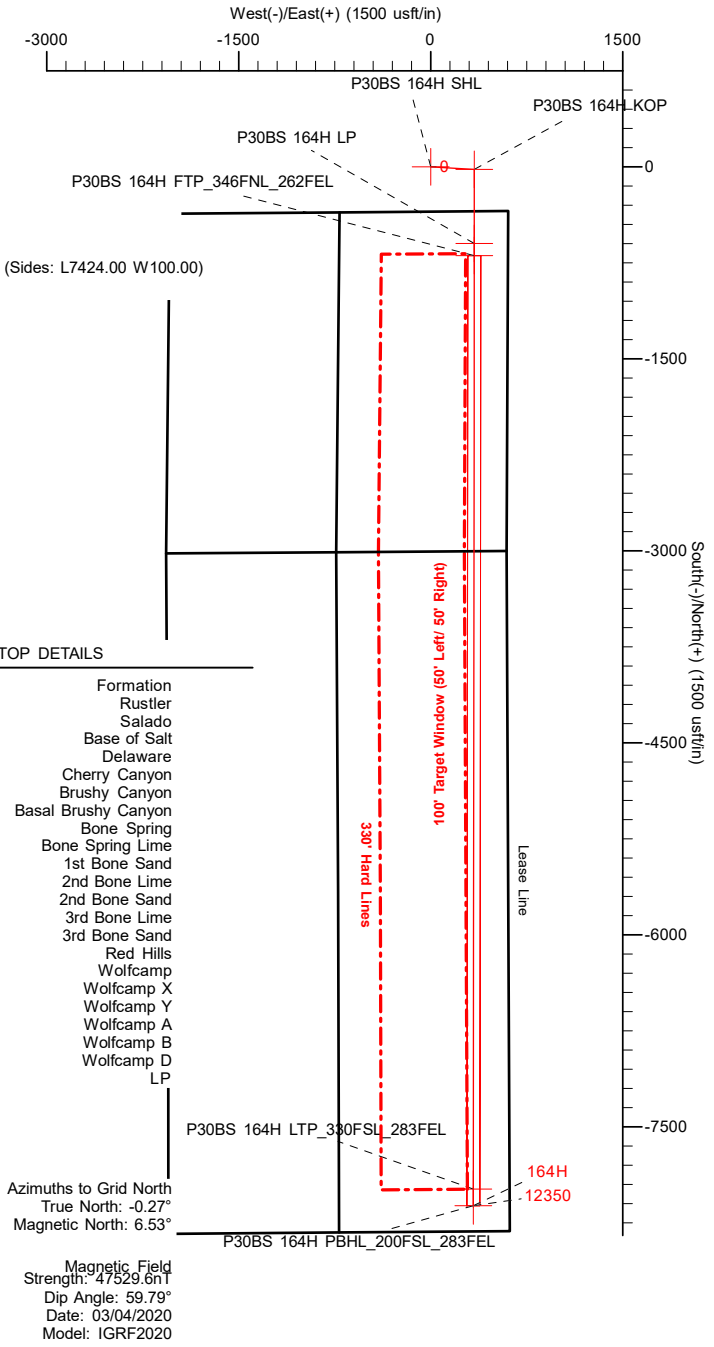
TVDPath	MDPath	Formation
1170.00	1170.00	Rustler
1496.00	1496.00	Salado
3972.00	3975.79	Base of Salt
4139.00	4143.14	Delaware
5116.00	5122.20	Cherry Canyon
6749.00	6758.62	Brushy Canyon
7849.00	7859.92	Basal Brushy Canyon
8075.00	8085.92	Bone Spring
8106.00	8116.92	Bone Spring Lime
9075.00	9085.92	1st Bone Sand
9396.00	9406.92	2nd Bone Lime
9722.00	9732.92	2nd Bone Sand
10139.00	10149.92	3rd Bone Lime
11041.00	11051.92	3rd Bone Sand
11281.00	11291.92	Red Hills
11341.00	11351.92	Wolfcamp
11366.00	11376.92	Wolfcamp X
11471.00	11481.92	Wolfcamp Y
11508.00	11518.92	Wolfcamp A
11921.00	11932.16	Wolfcamp B
12351.00	12478.37	Wolfcamp D
12416.00	12748.46	LP





Azimuths to Grid North
True North: -0.27°
Magnetic North: 6.53°

Magnetic Field
Strength: 47529.6nT
Dip Angle: 59.79°
Date: 03/04/2020
Model: IGRF2020



Plan: Plan #1 (164H/Lateral)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
13:24, March 06 2020

STRYKER DIRECTIONAL
6701 FM 307
Midland, Texas 79706 - 432-687-1121

STRYKER DIRECTIONAL

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project Eddy County, NM (NAD27) NMEZ Grid

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site PLU 30 BS

Site Position:		**Northing:**	401,230.80 usft	**Latitude:**	32° 6' 7.4038 N
From:	Map	**Easting:**	659,159.30 usft	**Longitude:**	103° 49' 9.6252 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.27 °

Well 164H - Slot P30BS 164H SHL

Well Position	**+N/-S**	0.80 usft	**Northing:**	401,231.60 usft	**Latitude:**	32° 6' 7.4061 N
	+E/-W	119.90 usft	**Easting:**	659,279.20 usft	**Longitude:**	103° 49' 8.2312 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,381.00 usft

Wellbore Lateral

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	03/04/20	6.80	59.79	47,529.63250660

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.06

Plan Survey Tool Program **Date** 03/06/20

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,870.57	Plan #1 (Lateral)	MWD OWSG MWD - Standard	
2	11,870.57	20,277.78	Plan #1 (Lateral)	MWD+IFR1+MS OWSG MWD + IFR1 + Multi-St	

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,247.30	3.71	93.40	2,247.13	-0.48	7.99	1.50	1.50	0.00	93.40	
7,295.34	3.71	93.40	7,284.59	-19.86	334.01	0.00	0.00	0.00	0.00	
7,542.64	0.00	0.00	7,531.72	-20.34	342.00	1.50	-1.50	0.00	180.00	
11,853.99	0.00	0.00	11,843.07	-20.34	342.00	0.00	0.00	0.00	0.00	
12,758.99	90.50	180.06	12,416.01	-598.30	341.39	10.00	10.00	0.00	180.06	
14,966.98	90.50	180.06	12,396.74	-2,806.20	339.08	0.00	0.00	0.00	0.00	
20,147.78	90.50	180.06	12,351.53	-7,986.80	333.66	0.00	0.00	0.00	0.00	P30BS 164H LTP_33(
20,277.78	90.50	180.06	12,350.39	-8,116.80	333.52	0.00	0.00	0.00	0.00	P30BS 164H PBHL_2

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,170.00	0.00	0.00	1,170.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,496.00	0.00	0.00	1,496.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	1.50	93.40	2,099.99	-0.08	1.31	0.08	1.50	1.50	0.00
2,200.00	3.00	93.40	2,199.91	-0.31	5.23	0.31	1.50	1.50	0.00
2,247.30	3.71	93.40	2,247.13	-0.48	7.99	0.47	1.50	1.50	0.00
2,300.00	3.71	93.40	2,299.72	-0.68	11.39	0.67	0.00	0.00	0.00
2,400.00	3.71	93.40	2,399.51	-1.06	17.85	1.04	0.00	0.00	0.00
2,500.00	3.71	93.40	2,499.30	-1.45	24.31	1.42	0.00	0.00	0.00
2,600.00	3.71	93.40	2,599.09	-1.83	30.77	1.80	0.00	0.00	0.00
2,700.00	3.71	93.40	2,698.88	-2.21	37.23	2.17	0.00	0.00	0.00
2,800.00	3.71	93.40	2,798.67	-2.60	43.68	2.55	0.00	0.00	0.00
2,900.00	3.71	93.40	2,898.46	-2.98	50.14	2.93	0.00	0.00	0.00
3,000.00	3.71	93.40	2,998.25	-3.37	56.60	3.31	0.00	0.00	0.00
3,100.00	3.71	93.40	3,098.04	-3.75	63.06	3.68	0.00	0.00	0.00
3,200.00	3.71	93.40	3,197.83	-4.13	69.52	4.06	0.00	0.00	0.00
3,300.00	3.71	93.40	3,297.62	-4.52	75.98	4.44	0.00	0.00	0.00
3,400.00	3.71	93.40	3,397.41	-4.90	82.43	4.82	0.00	0.00	0.00
3,500.00	3.71	93.40	3,497.20	-5.29	88.89	5.19	0.00	0.00	0.00
3,600.00	3.71	93.40	3,596.99	-5.67	95.35	5.57	0.00	0.00	0.00
3,700.00	3.71	93.40	3,696.78	-6.06	101.81	5.95	0.00	0.00	0.00
3,800.00	3.71	93.40	3,796.57	-6.44	108.27	6.33	0.00	0.00	0.00
3,900.00	3.71	93.40	3,896.36	-6.82	114.73	6.70	0.00	0.00	0.00
3,975.79	3.71	93.40	3,972.00	-7.11	119.62	6.99	0.00	0.00	0.00
Base of Salt									
4,000.00	3.71	93.40	3,996.16	-7.21	121.18	7.08	0.00	0.00	0.00
4,100.00	3.71	93.40	4,095.95	-7.59	127.64	7.46	0.00	0.00	0.00
4,143.14	3.71	93.40	4,139.00	-7.76	130.43	7.62	0.00	0.00	0.00
Delaware									
4,200.00	3.71	93.40	4,195.74	-7.98	134.10	7.84	0.00	0.00	0.00
4,300.00	3.71	93.40	4,295.53	-8.36	140.56	8.21	0.00	0.00	0.00
4,400.00	3.71	93.40	4,395.32	-8.74	147.02	8.59	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	3.71	93.40	4,495.11	-9.13	153.48	8.97	0.00	0.00	0.00
4,600.00	3.71	93.40	4,594.90	-9.51	159.94	9.34	0.00	0.00	0.00
4,700.00	3.71	93.40	4,694.69	-9.90	166.39	9.72	0.00	0.00	0.00
4,800.00	3.71	93.40	4,794.48	-10.28	172.85	10.10	0.00	0.00	0.00
4,900.00	3.71	93.40	4,894.27	-10.66	179.31	10.48	0.00	0.00	0.00
5,000.00	3.71	93.40	4,994.06	-11.05	185.77	10.85	0.00	0.00	0.00
5,100.00	3.71	93.40	5,093.85	-11.43	192.23	11.23	0.00	0.00	0.00
5,122.20	3.71	93.40	5,116.00	-11.52	193.66	11.31	0.00	0.00	0.00
Cherry Canyon									
5,200.00	3.71	93.40	5,193.64	-11.82	198.69	11.61	0.00	0.00	0.00
5,300.00	3.71	93.40	5,293.43	-12.20	205.14	11.99	0.00	0.00	0.00
5,400.00	3.71	93.40	5,393.22	-12.58	211.60	12.36	0.00	0.00	0.00
5,500.00	3.71	93.40	5,493.01	-12.97	218.06	12.74	0.00	0.00	0.00
5,600.00	3.71	93.40	5,592.80	-13.35	224.52	13.12	0.00	0.00	0.00
5,700.00	3.71	93.40	5,692.59	-13.74	230.98	13.50	0.00	0.00	0.00
5,800.00	3.71	93.40	5,792.38	-14.12	237.44	13.87	0.00	0.00	0.00
5,900.00	3.71	93.40	5,892.17	-14.51	243.89	14.25	0.00	0.00	0.00
6,000.00	3.71	93.40	5,991.97	-14.89	250.35	14.63	0.00	0.00	0.00
6,100.00	3.71	93.40	6,091.76	-15.27	256.81	15.00	0.00	0.00	0.00
6,200.00	3.71	93.40	6,191.55	-15.66	263.27	15.38	0.00	0.00	0.00
6,300.00	3.71	93.40	6,291.34	-16.04	269.73	15.76	0.00	0.00	0.00
6,400.00	3.71	93.40	6,391.13	-16.43	276.19	16.14	0.00	0.00	0.00
6,500.00	3.71	93.40	6,490.92	-16.81	282.65	16.51	0.00	0.00	0.00
6,600.00	3.71	93.40	6,590.71	-17.19	289.10	16.89	0.00	0.00	0.00
6,700.00	3.71	93.40	6,690.50	-17.58	295.56	17.27	0.00	0.00	0.00
6,758.62	3.71	93.40	6,749.00	-17.80	299.35	17.49	0.00	0.00	0.00
Brushy Canyon									
6,800.00	3.71	93.40	6,790.29	-17.96	302.02	17.65	0.00	0.00	0.00
6,900.00	3.71	93.40	6,890.08	-18.35	308.48	18.02	0.00	0.00	0.00
7,000.00	3.71	93.40	6,989.87	-18.73	314.94	18.40	0.00	0.00	0.00
7,100.00	3.71	93.40	7,089.66	-19.11	321.40	18.78	0.00	0.00	0.00
7,200.00	3.71	93.40	7,189.45	-19.50	327.85	19.16	0.00	0.00	0.00
7,295.34	3.71	93.40	7,284.59	-19.86	334.01	19.52	0.00	0.00	0.00
7,300.00	3.64	93.40	7,289.24	-19.88	334.31	19.53	1.50	-1.50	0.00
7,400.00	2.14	93.40	7,389.11	-20.18	339.34	19.83	1.50	-1.50	0.00
7,500.00	0.64	93.40	7,489.08	-20.33	341.76	19.97	1.50	-1.50	0.00
7,542.64	0.00	0.00	7,531.72	-20.34	342.00	19.98	1.50	-1.50	0.00
7,600.00	0.00	0.00	7,589.08	-20.34	342.00	19.98	0.00	0.00	0.00
7,700.00	0.00	0.00	7,689.08	-20.34	342.00	19.98	0.00	0.00	0.00
7,800.00	0.00	0.00	7,789.08	-20.34	342.00	19.98	0.00	0.00	0.00
7,859.92	0.00	0.00	7,849.00	-20.34	342.00	19.98	0.00	0.00	0.00
Basal Brushy Canyon									
7,900.00	0.00	0.00	7,889.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,000.00	0.00	0.00	7,989.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,085.92	0.00	0.00	8,075.00	-20.34	342.00	19.98	0.00	0.00	0.00
Bone Spring									
8,100.00	0.00	0.00	8,089.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,116.92	0.00	0.00	8,106.00	-20.34	342.00	19.98	0.00	0.00	0.00
Bone Spring Lime									
8,200.00	0.00	0.00	8,189.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,300.00	0.00	0.00	8,289.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,400.00	0.00	0.00	8,389.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,500.00	0.00	0.00	8,489.08	-20.34	342.00	19.98	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,600.00	0.00	0.00	8,589.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,700.00	0.00	0.00	8,689.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,800.00	0.00	0.00	8,789.08	-20.34	342.00	19.98	0.00	0.00	0.00
8,900.00	0.00	0.00	8,889.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,000.00	0.00	0.00	8,989.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,085.92	0.00	0.00	9,075.00	-20.34	342.00	19.98	0.00	0.00	0.00
1st Bone Sand									
9,100.00	0.00	0.00	9,089.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,200.00	0.00	0.00	9,189.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,300.00	0.00	0.00	9,289.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,400.00	0.00	0.00	9,389.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,406.92	0.00	0.00	9,396.00	-20.34	342.00	19.98	0.00	0.00	0.00
2nd Bone Lime									
9,500.00	0.00	0.00	9,489.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,600.00	0.00	0.00	9,589.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,700.00	0.00	0.00	9,689.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,732.92	0.00	0.00	9,722.00	-20.34	342.00	19.98	0.00	0.00	0.00
2nd Bone Sand									
9,800.00	0.00	0.00	9,789.08	-20.34	342.00	19.98	0.00	0.00	0.00
9,900.00	0.00	0.00	9,889.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,000.00	0.00	0.00	9,989.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,100.00	0.00	0.00	10,089.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,149.92	0.00	0.00	10,139.00	-20.34	342.00	19.98	0.00	0.00	0.00
3rd Bone Lime									
10,200.00	0.00	0.00	10,189.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,300.00	0.00	0.00	10,289.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,400.00	0.00	0.00	10,389.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,500.00	0.00	0.00	10,489.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,600.00	0.00	0.00	10,589.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,700.00	0.00	0.00	10,689.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,800.00	0.00	0.00	10,789.08	-20.34	342.00	19.98	0.00	0.00	0.00
10,900.00	0.00	0.00	10,889.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,000.00	0.00	0.00	10,989.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,051.92	0.00	0.00	11,041.00	-20.34	342.00	19.98	0.00	0.00	0.00
3rd Bone Sand									
11,100.00	0.00	0.00	11,089.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,200.00	0.00	0.00	11,189.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,291.92	0.00	0.00	11,281.00	-20.34	342.00	19.98	0.00	0.00	0.00
Red Hills									
11,300.00	0.00	0.00	11,289.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,351.92	0.00	0.00	11,341.00	-20.34	342.00	19.98	0.00	0.00	0.00
Wolfcamp									
11,376.92	0.00	0.00	11,366.00	-20.34	342.00	19.98	0.00	0.00	0.00
Wolfcamp X									
11,400.00	0.00	0.00	11,389.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,481.92	0.00	0.00	11,471.00	-20.34	342.00	19.98	0.00	0.00	0.00
Wolfcamp Y									
11,500.00	0.00	0.00	11,489.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,518.92	0.00	0.00	11,508.00	-20.34	342.00	19.98	0.00	0.00	0.00
Wolfcamp A									
11,600.00	0.00	0.00	11,589.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,700.00	0.00	0.00	11,689.08	-20.34	342.00	19.98	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,800.00	0.00	0.00	11,789.08	-20.34	342.00	19.98	0.00	0.00	0.00
11,853.99	0.00	0.00	11,843.07	-20.34	342.00	19.98	0.00	0.00	0.00
11,900.00	4.60	180.06	11,889.03	-22.19	342.00	21.83	10.00	10.00	0.00
11,932.16	7.82	180.06	11,921.00	-25.66	341.99	25.31	10.00	10.00	0.00
Wolfcamp B									
11,950.00	9.60	180.06	11,938.63	-28.37	341.99	28.01	10.00	10.00	0.00
12,000.00	14.60	180.06	11,987.50	-38.84	341.98	38.49	10.00	10.00	0.00
12,050.00	19.60	180.06	12,035.28	-53.54	341.97	53.18	10.00	10.00	0.00
12,100.00	24.60	180.06	12,081.59	-72.35	341.95	71.99	10.00	10.00	0.00
12,150.00	29.60	180.06	12,126.09	-95.12	341.92	94.76	10.00	10.00	0.00
12,200.00	34.60	180.06	12,168.43	-121.68	341.89	121.32	10.00	10.00	0.00
12,250.00	39.60	180.06	12,208.29	-151.83	341.86	151.47	10.00	10.00	0.00
12,300.00	44.60	180.06	12,245.38	-185.34	341.83	184.98	10.00	10.00	0.00
12,350.00	49.60	180.06	12,279.40	-221.96	341.79	221.60	10.00	10.00	0.00
12,400.00	54.60	180.06	12,310.11	-261.40	341.75	261.04	10.00	10.00	0.00
12,450.00	59.60	180.06	12,337.26	-303.37	341.70	303.01	10.00	10.00	0.00
12,478.37	62.44	180.06	12,351.00	-328.18	341.68	327.82	10.00	10.00	0.00
Wolfcamp D									
12,500.00	64.60	180.06	12,360.65	-347.54	341.66	347.19	10.00	10.00	0.00
12,550.00	69.60	180.06	12,380.10	-393.59	341.61	393.23	10.00	10.00	0.00
12,600.00	74.60	180.06	12,395.46	-441.15	341.56	440.80	10.00	10.00	0.00
12,650.00	79.60	180.06	12,406.62	-489.88	341.51	489.52	10.00	10.00	0.00
12,700.00	84.60	180.06	12,413.49	-539.39	341.46	539.03	10.00	10.00	0.00
12,748.46	89.45	180.06	12,416.00	-587.77	341.41	587.41	10.00	10.00	0.00
LP									
12,750.00	89.60	180.06	12,416.01	-589.31	341.40	588.95	10.00	10.00	0.00
12,758.99	90.50	180.06	12,416.01	-598.30	341.39	597.94	10.00	10.00	0.00
12,800.00	90.50	180.06	12,415.65	-639.30	341.35	638.95	0.00	0.00	0.00
12,900.00	90.50	180.06	12,414.77	-739.30	341.25	738.94	0.00	0.00	0.00
13,000.00	90.50	180.06	12,413.90	-839.30	341.14	838.94	0.00	0.00	0.00
13,100.00	90.50	180.06	12,413.03	-939.29	341.04	938.94	0.00	0.00	0.00
13,200.00	90.50	180.06	12,412.16	-1,039.29	340.93	1,038.93	0.00	0.00	0.00
13,300.00	90.50	180.06	12,411.28	-1,139.29	340.83	1,138.93	0.00	0.00	0.00
13,400.00	90.50	180.06	12,410.41	-1,239.28	340.72	1,238.92	0.00	0.00	0.00
13,500.00	90.50	180.06	12,409.54	-1,339.28	340.62	1,338.92	0.00	0.00	0.00
13,600.00	90.50	180.06	12,408.67	-1,439.27	340.51	1,438.92	0.00	0.00	0.00
13,700.00	90.50	180.06	12,407.79	-1,539.27	340.41	1,538.91	0.00	0.00	0.00
13,800.00	90.50	180.06	12,406.92	-1,639.27	340.30	1,638.91	0.00	0.00	0.00
13,900.00	90.50	180.06	12,406.05	-1,739.26	340.20	1,738.91	0.00	0.00	0.00
14,000.00	90.50	180.06	12,405.18	-1,839.26	340.10	1,838.90	0.00	0.00	0.00
14,100.00	90.50	180.06	12,404.30	-1,939.25	339.99	1,938.90	0.00	0.00	0.00
14,200.00	90.50	180.06	12,403.43	-2,039.25	339.89	2,038.89	0.00	0.00	0.00
14,300.00	90.50	180.06	12,402.56	-2,139.25	339.78	2,138.89	0.00	0.00	0.00
14,400.00	90.50	180.06	12,401.68	-2,239.24	339.68	2,238.89	0.00	0.00	0.00
14,500.00	90.50	180.06	12,400.81	-2,339.24	339.57	2,338.88	0.00	0.00	0.00
14,600.00	90.50	180.06	12,399.94	-2,439.24	339.47	2,438.88	0.00	0.00	0.00
14,700.00	90.50	180.06	12,399.07	-2,539.23	339.36	2,538.87	0.00	0.00	0.00
14,800.00	90.50	180.06	12,398.19	-2,639.23	339.26	2,638.87	0.00	0.00	0.00
14,900.00	90.50	180.06	12,397.32	-2,739.22	339.15	2,738.87	0.00	0.00	0.00
14,966.98	90.50	180.06	12,396.74	-2,806.20	339.08	2,805.85	0.00	0.00	0.00
15,000.00	90.50	180.06	12,396.45	-2,839.22	339.05	2,838.86	0.00	0.00	0.00
15,100.00	90.50	180.06	12,395.58	-2,939.22	338.94	2,938.86	0.00	0.00	0.00
15,200.00	90.50	180.06	12,394.70	-3,039.21	338.84	3,038.86	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,300.00	90.50	180.06	12,393.83	-3,139.21	338.73	3,138.85	0.00	0.00	0.00
15,400.00	90.50	180.06	12,392.96	-3,239.20	338.63	3,238.85	0.00	0.00	0.00
15,500.00	90.50	180.06	12,392.09	-3,339.20	338.52	3,338.84	0.00	0.00	0.00
15,600.00	90.50	180.06	12,391.21	-3,439.20	338.42	3,438.84	0.00	0.00	0.00
15,700.00	90.50	180.06	12,390.34	-3,539.19	338.32	3,538.84	0.00	0.00	0.00
15,800.00	90.50	180.06	12,389.47	-3,639.19	338.21	3,638.83	0.00	0.00	0.00
15,900.00	90.50	180.06	12,388.59	-3,739.19	338.11	3,738.83	0.00	0.00	0.00
16,000.00	90.50	180.06	12,387.72	-3,839.18	338.00	3,838.83	0.00	0.00	0.00
16,100.00	90.50	180.06	12,386.85	-3,939.18	337.90	3,938.82	0.00	0.00	0.00
16,200.00	90.50	180.06	12,385.98	-4,039.17	337.79	4,038.82	0.00	0.00	0.00
16,300.00	90.50	180.06	12,385.10	-4,139.17	337.69	4,138.81	0.00	0.00	0.00
16,400.00	90.50	180.06	12,384.23	-4,239.17	337.58	4,238.81	0.00	0.00	0.00
16,500.00	90.50	180.06	12,383.36	-4,339.16	337.48	4,338.81	0.00	0.00	0.00
16,600.00	90.50	180.06	12,382.49	-4,439.16	337.37	4,438.80	0.00	0.00	0.00
16,700.00	90.50	180.06	12,381.61	-4,539.15	337.27	4,538.80	0.00	0.00	0.00
16,800.00	90.50	180.06	12,380.74	-4,639.15	337.16	4,638.79	0.00	0.00	0.00
16,900.00	90.50	180.06	12,379.87	-4,739.15	337.06	4,738.79	0.00	0.00	0.00
17,000.00	90.50	180.06	12,379.00	-4,839.14	336.95	4,838.79	0.00	0.00	0.00
17,100.00	90.50	180.06	12,378.12	-4,939.14	336.85	4,938.78	0.00	0.00	0.00
17,200.00	90.50	180.06	12,377.25	-5,039.13	336.74	5,038.78	0.00	0.00	0.00
17,300.00	90.50	180.06	12,376.38	-5,139.13	336.64	5,138.78	0.00	0.00	0.00
17,400.00	90.50	180.06	12,375.51	-5,239.13	336.53	5,238.77	0.00	0.00	0.00
17,500.00	90.50	180.06	12,374.63	-5,339.12	336.43	5,338.77	0.00	0.00	0.00
17,600.00	90.50	180.06	12,373.76	-5,439.12	336.33	5,438.76	0.00	0.00	0.00
17,700.00	90.50	180.06	12,372.89	-5,539.12	336.22	5,538.76	0.00	0.00	0.00
17,800.00	90.50	180.06	12,372.01	-5,639.11	336.12	5,638.76	0.00	0.00	0.00
17,900.00	90.50	180.06	12,371.14	-5,739.11	336.01	5,738.75	0.00	0.00	0.00
18,000.00	90.50	180.06	12,370.27	-5,839.10	335.91	5,838.75	0.00	0.00	0.00
18,100.00	90.50	180.06	12,369.40	-5,939.10	335.80	5,938.75	0.00	0.00	0.00
18,200.00	90.50	180.06	12,368.52	-6,039.10	335.70	6,038.74	0.00	0.00	0.00
18,300.00	90.50	180.06	12,367.65	-6,139.09	335.59	6,138.74	0.00	0.00	0.00
18,400.00	90.50	180.06	12,366.78	-6,239.09	335.49	6,238.73	0.00	0.00	0.00
18,500.00	90.50	180.06	12,365.91	-6,339.08	335.38	6,338.73	0.00	0.00	0.00
18,600.00	90.50	180.06	12,365.03	-6,439.08	335.28	6,438.73	0.00	0.00	0.00
18,700.00	90.50	180.06	12,364.16	-6,539.08	335.17	6,538.72	0.00	0.00	0.00
18,800.00	90.50	180.06	12,363.29	-6,639.07	335.07	6,638.72	0.00	0.00	0.00
18,900.00	90.50	180.06	12,362.42	-6,739.07	334.96	6,738.71	0.00	0.00	0.00
19,000.00	90.50	180.06	12,361.54	-6,839.07	334.86	6,838.71	0.00	0.00	0.00
19,100.00	90.50	180.06	12,360.67	-6,939.06	334.75	6,938.71	0.00	0.00	0.00
19,200.00	90.50	180.06	12,359.80	-7,039.06	334.65	7,038.70	0.00	0.00	0.00
19,300.00	90.50	180.06	12,358.92	-7,139.05	334.55	7,138.70	0.00	0.00	0.00
19,400.00	90.50	180.06	12,358.05	-7,239.05	334.44	7,238.70	0.00	0.00	0.00
19,500.00	90.50	180.06	12,357.18	-7,339.05	334.34	7,338.69	0.00	0.00	0.00
19,600.00	90.50	180.06	12,356.31	-7,439.04	334.23	7,438.69	0.00	0.00	0.00
19,700.00	90.50	180.06	12,355.43	-7,539.04	334.13	7,538.68	0.00	0.00	0.00
19,800.00	90.50	180.06	12,354.56	-7,639.03	334.02	7,638.68	0.00	0.00	0.00
19,900.00	90.50	180.06	12,353.69	-7,739.03	333.92	7,738.68	0.00	0.00	0.00
20,000.00	90.50	180.06	12,352.82	-7,839.03	333.81	7,838.67	0.00	0.00	0.00
20,100.00	90.50	180.06	12,351.94	-7,939.02	333.71	7,938.67	0.00	0.00	0.00
20,147.78	90.50	180.06	12,351.53	-7,986.80	333.66	7,986.45	0.00	0.00	0.00
20,200.00	90.50	180.06	12,351.07	-8,039.02	333.60	8,038.67	0.00	0.00	0.00
20,277.78	90.50	180.06	12,350.39	-8,116.80	333.52	8,116.45	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 164H - Slot P30BS 164H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	164H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
P30BS 164H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	401,231.60	659,279.20	32° 6' 7.4061 N	103° 49' 8.2312 W
P30BS 164H KOP - plan hits target center - Point	0.00	0.00	11,800.00	-20.34	342.00	401,211.26	659,621.20	32° 6' 7.1886 N	103° 49' 4.2564 W
P30BS 164H PBHL_200 - plan misses target center by 0.48usft at 20277.78usft MD (12350.39 TVD, -8116.80 N, 333.52 E) - Rectangle (sides W100.00 H7,424.00 D0.00)	0.00	0.00	12,350.39	-8,116.80	334.00	393,114.80	659,613.20	32° 4' 47.0649 N	103° 49' 4.7992 W
P30BS 164H LTP_330F - plan misses target center by 0.24usft at 20147.78usft MD (12351.53 TVD, -7986.80 N, 333.66 E) - Point	0.00	0.00	12,351.53	-7,986.80	333.90	393,244.80	659,613.10	32° 4' 48.3514 N	103° 49' 4.7932 W
P30BS 164H LP - plan misses target center by 0.01usft at 12758.99usft MD (12416.00 TVD, -598.30 N, 341.39 E) - Point	0.00	0.00	12,416.00	-598.30	341.39	400,633.30	659,620.59	32° 6' 1.4691 N	103° 49' 4.2956 W
P30BS 164H FTP_346F - plan misses target center by 1.08usft at 12853.99usft MD (12415.18 TVD, -693.29 N, 341.30 E) - Point	0.00	0.00	12,416.00	-693.30	342.00	400,538.30	659,621.20	32° 6' 0.5289 N	103° 49' 4.2938 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,170.00	1,170.00	Rustler			
1,496.00	1,496.00	Salado			
3,975.79	3,972.00	Base of Salt			
4,143.14	4,139.00	Delaware			
5,122.20	5,116.00	Cherry Canyon			
6,758.62	6,749.00	Brushy Canyon			
7,859.92	7,849.00	Basal Brushy Canyon			
8,085.92	8,075.00	Bone Spring			
8,116.92	8,106.00	Bone Spring Lime			
9,085.92	9,075.00	1st Bone Sand			
9,406.92	9,396.00	2nd Bone Lime			
9,732.92	9,722.00	2nd Bone Sand			
10,149.92	10,139.00	3rd Bone Lime			
11,051.92	11,041.00	3rd Bone Sand			
11,291.92	11,281.00	Red Hills			
11,351.92	11,341.00	Wolfcamp			
11,376.92	11,366.00	Wolfcamp X			
11,481.92	11,471.00	Wolfcamp Y			
11,518.92	11,508.00	Wolfcamp A			
11,932.16	11,921.00	Wolfcamp B			
12,478.37	12,351.00	Wolfcamp D			
12,748.46	12,416.00	LP			