Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED Carlsbad Field Office JUN 25 2019 DISTRICT II-ARTESIA O.C.D.

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.
NMNM41646

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
ROSS DRAW 25 FED WAU 11H

2. Name of Operator
XTO ENERGY INC.
Contact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com

9. API Well No.
30-015-45587 326409

3a. Address
6401 HOLIDAY HILL RD 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

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 24 T26S R29E Mer NMP SWSW 245FSL 942FWL

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 A PD
	☐ 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 Energy Inc respectfully requests permission to make the following changes to the original APD

Change name from Ross Draw 25 Fed WAU 11H to Ross Draw 25-36 Fed 101H.

Change SHL fr/245'FSL & 942'FWL to 223'FSL & 943'FWL *no additional surface disturbance will occur.

Change BHL fr/170'FSL & 922'FWL to 200'FSL & 754'FWL.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Same surface COA's apply.

Attached:
Updated C102 & Supplement

Eng. Review JAM 5/9/19 Surface Review CR 05/29/2019 Covered DOI-BLM-NM-P020-2019-0194-EA

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #464194 verified by the BLM Well Information System
For XTO ENERGY INC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/06/2019 ()

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

Signature (Electronic Submission) — Date 05/06/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By — Title — Date 05/29/2019

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 CFO

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)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

RWP 10-2819

Additional data for EC transaction #464194 that would not fit on the form

32. Additional remarks, continued

Drilling Program/BOP/CK/FH
Directional Plan

Revisions to Operator-Submitted EC Data for Sundry Notice #464194

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM41646	NMNM41646
Agreement:		
Operator:	XTO ENERGY INC. 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	XTO ENERGY INCORPORATED 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:	ROSS DRAW 25 FED WAU 11H Sec 24 T26S R29E Mer NMP SWSW 245FSL 942FWL	ROSS DRAW 25-36 FED 101H Sec 24 T26S R29E SWSW 245FSL 942FWL 32.020538 N Lat, 103.942612 W Lon

PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**XTO Energy, Inc.**
LEASE NO.:	**NMNM-041646**
WELL NAME & NO.:	**Ross Draw 25-36 Fed 101H**
SURFACE HOLE FOOTAGE:	**0223' FSL & 0943' FWL**
BOTTOM HOLE FOOTAGE	**0200' FSL & 0754' FWL Sec. 36, T. 26 S., R 29 E.**
LOCATION:	**Section 24, T. 26 S., R 29 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

Orignal COAs still stand with the following drilling modficiations:
Operator to submit sundry to add "COM" to the well name.
Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

I. DRILLING

A. DRILLING OPERATIONS 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. **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.**

2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. 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 is located, this does not include the dog house or stairway area.

4. **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.**

B. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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.

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

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

1. The **13-3/8** inch surface casing shall be set at approximately **540** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 is to include the lead cement slurry.

    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.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, **which must be set below the base of the salt**, 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.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required through the curve and a minimum of one every other joint.

3. The minimum required fill of cement behind the **7** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

   ☒ Cement as proposed. Operator shall provide method of verification. **Excess calculates to 18% - Additional cement may be required.**

5. 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.

C. 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 53.

2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. **5M 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. 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.

D. 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.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. 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 050919

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

XTO Energy Inc.
Ross Draw 25-36 FED 101H
Projected TD: 17146' MD / 10135' TVD
SHL: 223' FSL & 943' FWL , Section 24, T26S, R29E
BHL: 200' FSL & 754' FWL , Section 36, T26S, R29E
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	417'	Water
Top of Salt	1260'	Water
Base of Salt	2891'	Water
Delaware	3066'	Water
Bone Spring	6817'	Water/Oil/Gas
1st Bone Spring Ss	7791'	Water/Oil/Gas
2nd Bone Spring Ss	8662'	Water/Oil/Gas
3rd Bone Spring Ss	9666'	Water/Oil/Gas
Wolfcamp	10019'	Water/Oil/Gas
Wolfcamp X/Y	10043'	Water/Oil/Gas
Target/Land Curve	10135'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon
*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 540' (720' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 2950' and circulating cement to surface. An 8-3/4 inch vertical and curve hole will be drilled and 7 inch casing run and cemented 500' into the 9-5/8 inch casing. A 6 inch curve and lateral hole will be drilled to MD/TD and 4-1/2 inch liner will be set at TD and cemented back 250' into the 7 inch casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 540'	13-3/8"	54.5	BTC	J-55	New	2.98	4.57	32.91
12-1/4"	0' – 2950'	9-5/8"	40	BTC	J-55	New	1.49	2.77	5.93
8-3/4"	0' – 10200'	7"	32	BTC	P-110	New	1.31	2.21	3.03
6"	9471' – 17146'	4-1/2"	13.5	BTC	P-110	New	1.31	3.19	2.44

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 9-5/8" & 4-1/2" Collapse analyzed using 50% evacuation based on regional experience.
- 4-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 3M top flange
B. Tubing Head: 13-5/8" 5M 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 9-5/8" casing to per Onshore Order 2.
- Wellhead manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 13-3/8", 54.5 New J-55, BTC casing to be set at +/- 540'

Lead: 170 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 300 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: 9-5/8", 40 New J-55, BTC casing to be set at +/- 2950'

Lead: 810 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)

Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 7", 32 New P-110, BTC casing to be set at +/- 10200'

Lead: 930 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)

Tail: 60 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 4-1/2", 13.5 New P-110, BTC casing to be set at +/- 17146'

Tail: 590 sxs VersaCem (mixed at 13.2 ppg, 1.33 ft3/sx, 8.38 gal/sx water)
Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 3304 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When the 9-5/8" and 7" casing is set, the packoff seals will be tested to a minimum of 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.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 540'	17-1/2"	FW/Native	8.4-8.8	35-40	NC
540' to 2950'	12-1/4"	Brine/Gel Sweeps	9.8-10.2	30-32	NC
2950' to 10200'	8-3/4"	FW / Cut Brine	8.6-9.5	29-32	NC - 20
10200' to 17146'	6"	FW / Cut Brine / Polymer	10.2-10.5	32-50	20'

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

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. A 9.8ppg-10.2ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

A. A Kelly cock will be in the drill string at all times.
B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
C. H2S monitors will be on location when drilling below the 13-3/8" casing.

8. Logging, Coring and Testing Program

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

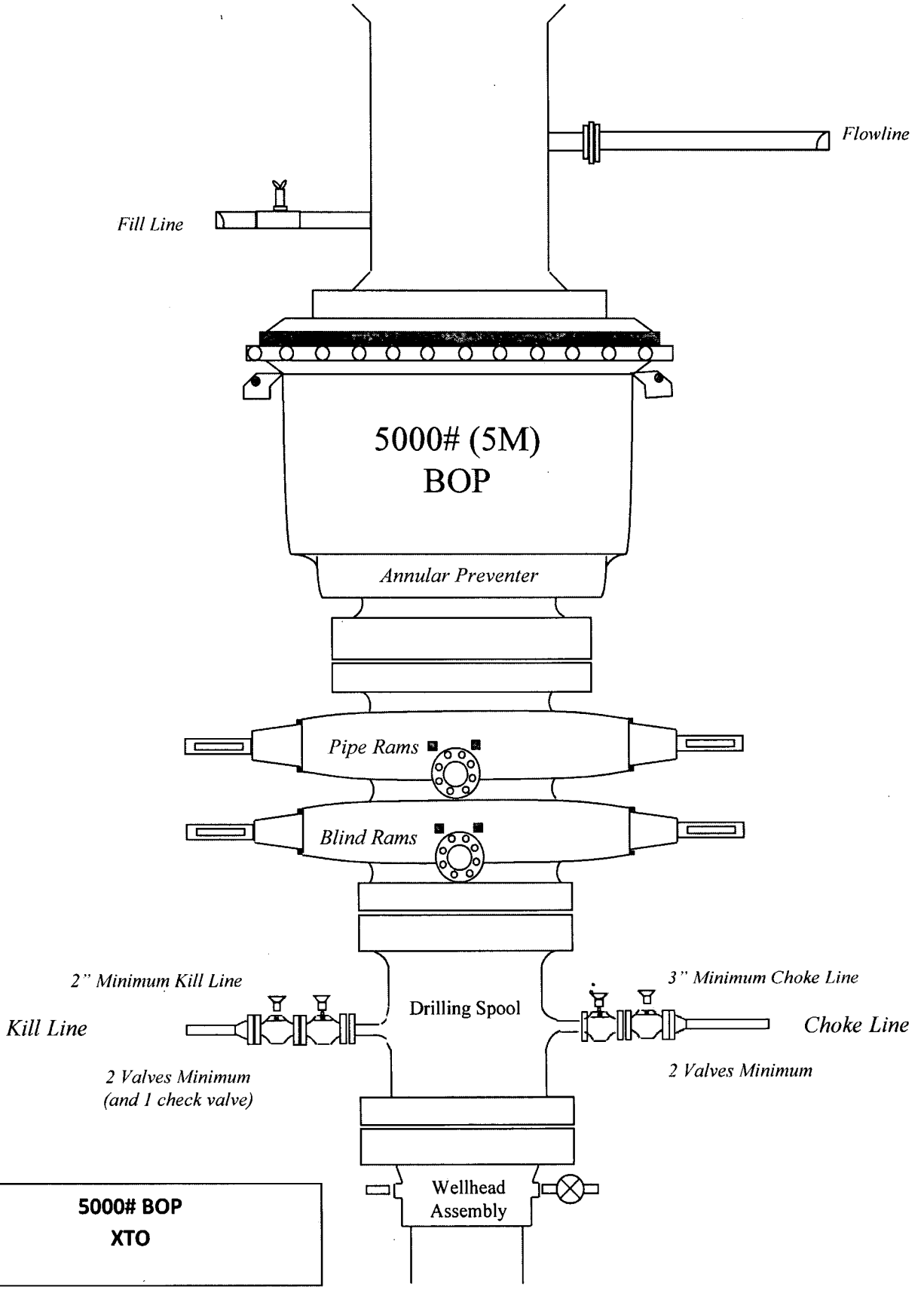
Open hole logging will not be done on this well.

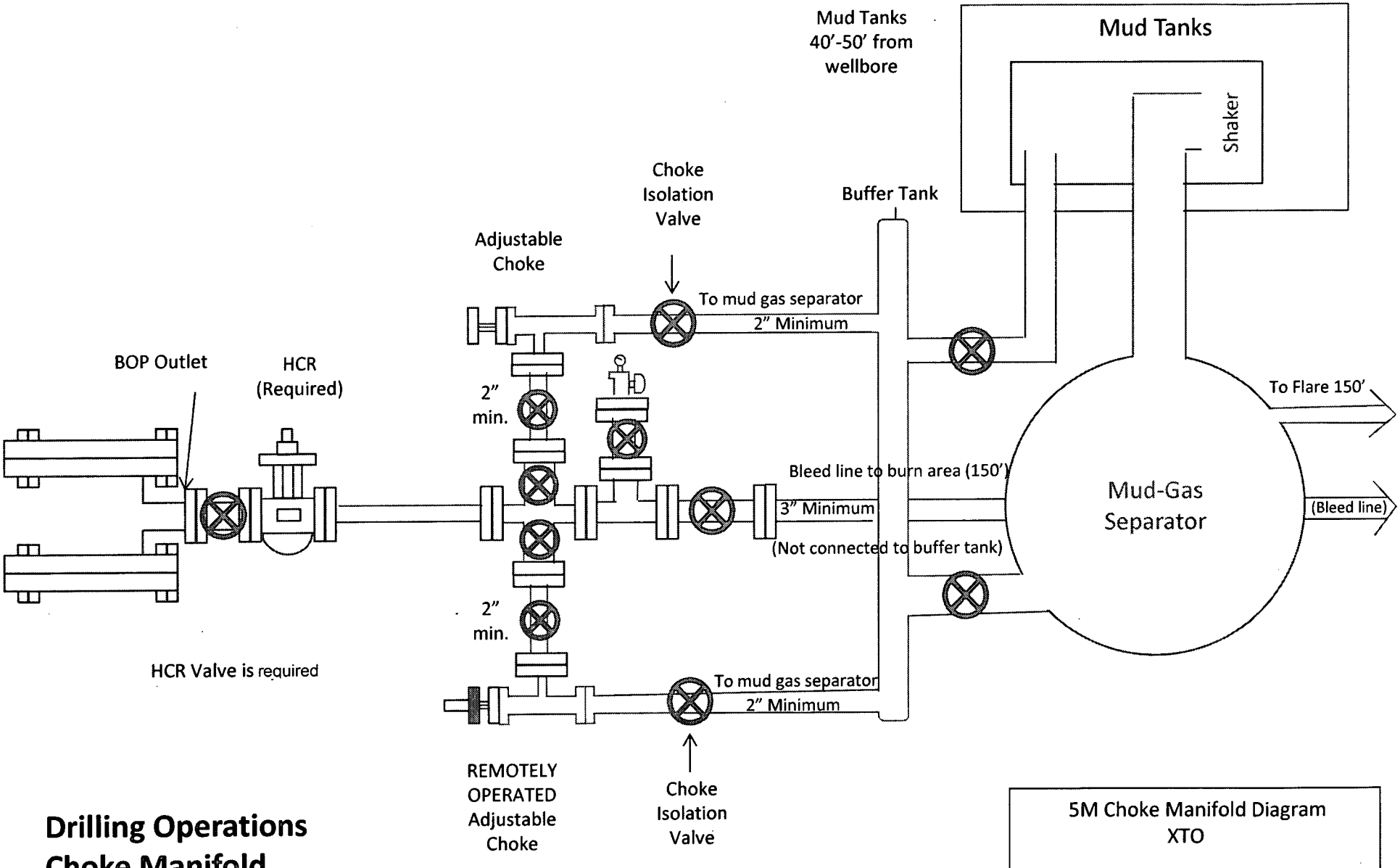
9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 140 to 160 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 5534 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 40 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.


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
2" Minimum Kill Line
3" Minimum Choke Line
Kill Line
Drilling Spool
Choke Line
2 Valves Minimum
(and 1 check valve)
2 Valves Minimum
Wellhead
Assembly
5000# BOP
XTO



Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
XTO

GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

GRADE D PRESSURE TEST CERTIFICATE

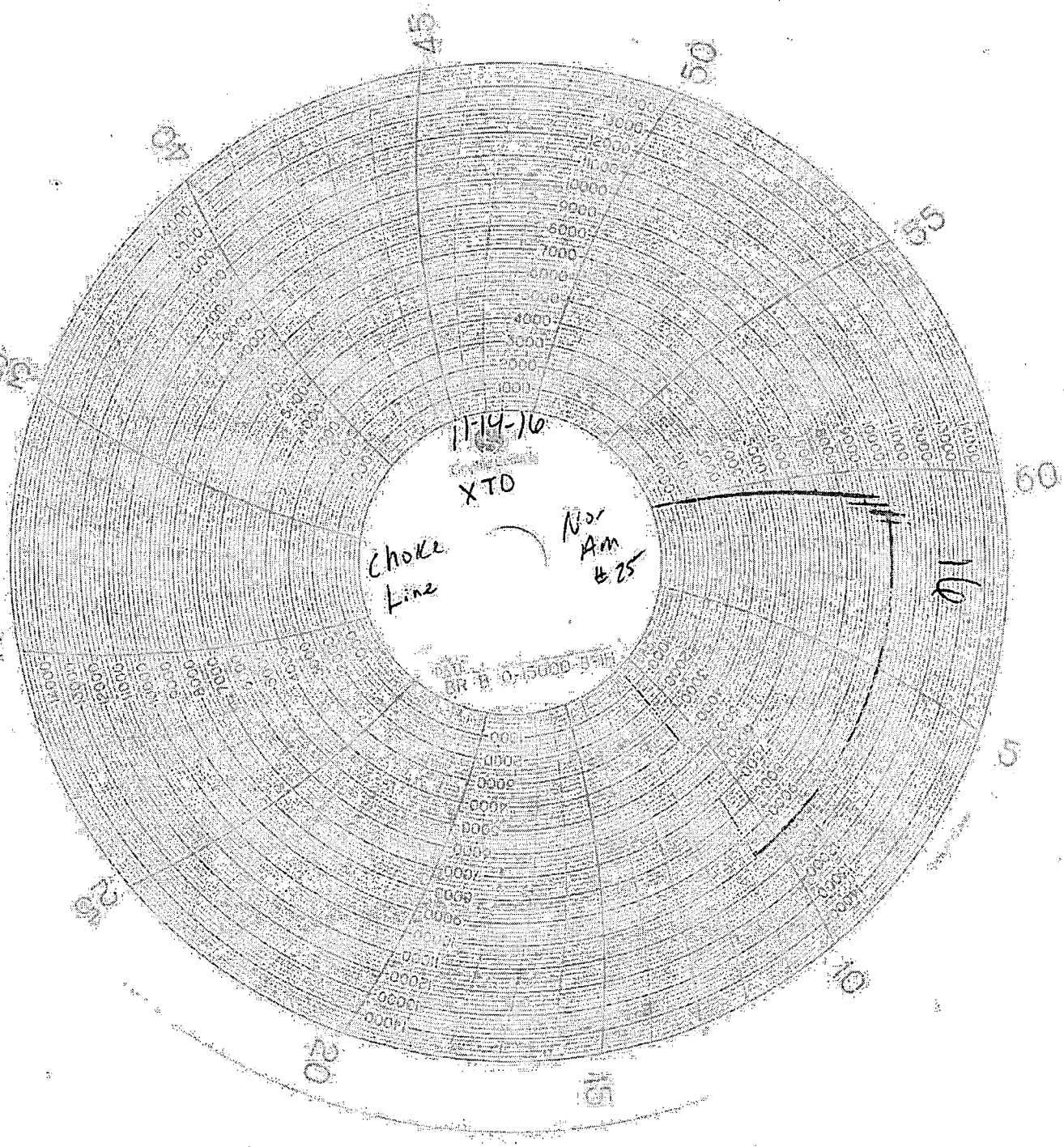
Customer:	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref.:	PENDING	Hose Serial No.:	D-060814-1
Invoice No.:	201709	Created By:	NORMA

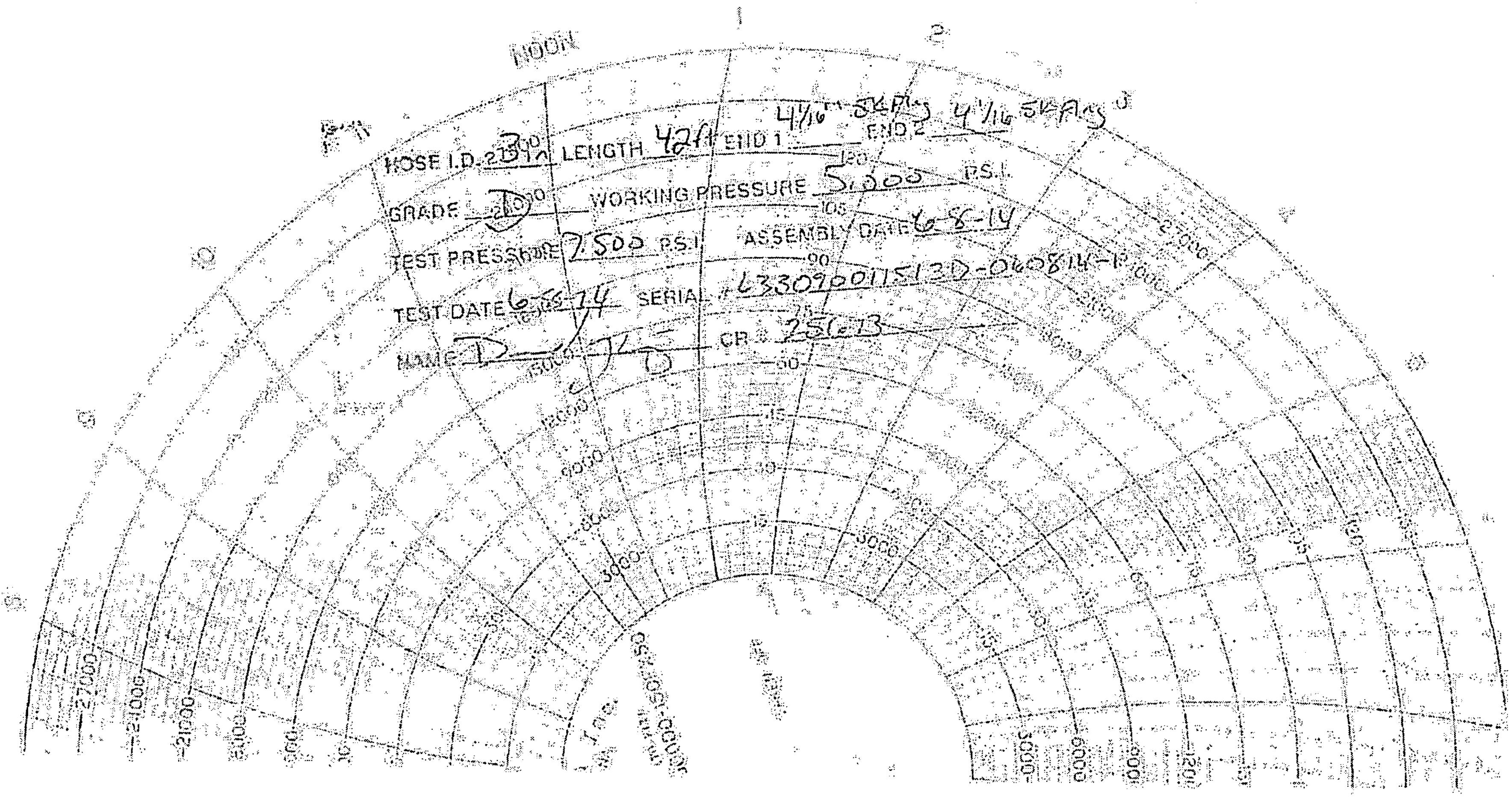
Product Description:	FD3.042.0R41/16.5KFLGE/E LE

End Fitting 1:	4 1/16 in.5K FLG	End Fitting 2:	4 1/16 in.5K FLG
Gates Part No.:	4774-6001	Assembly Code:	L33090011513D-060814-1
Working Pressure:	5,000 PSI	Test Pressure:	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor:	PRODUCTION
Date:	6/8/2014	Date:	6/8/2014
Signature:		Signature:	


11-14-16
XTO
Choke Line
Nor Am #25



NOON
HOSE I.D. 3in LENGTH 42ft END 1 4 1/16" 5K Flg END 2 4 1/16 5K Flg
GRADE D WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I. ASSEMBLY DATE 6-8-14
TEST DATE SERIAL # 63309001151 3D-060814-1
NAME CR # 25673

XTO Energy

Eddy County, NM (Nad-27 / East Zone)
Ross Draw 25-36 Fed West
#101H

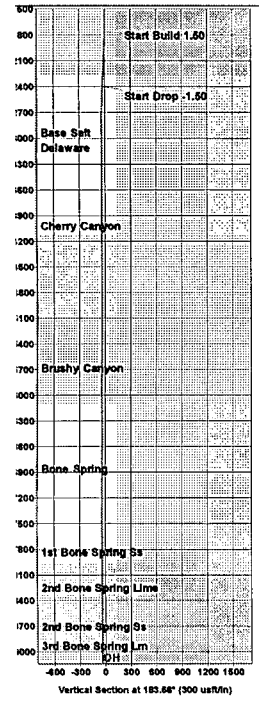
OH

Plan: Plan #1

Standard Planning Report

26 April, 2019

WELLBENDERS
DIRECTIONAL SERVICES



XTO ENERGY

Company: XTO Energy
Project: Eddy County, NM (Nad-27 / East Zone)
Site: Ross Draw 25-36 Fed West
Well: #101H
Wellbore: OH
Rig: Frontier 17
Design: Plan #1 / 8:37, April 26 2019

WELLBENDERS DIRECTIONAL SERVICES

TOTAL CORRECTION
To convert a Magnetic Direction to a Grid Direction, Add 6.703°

WELL DETAILS: #101H

RKB = 27 @ 2963.00usft (Frontier 17)
Z940.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	371349.20	621246.20	32.020350	-103.942125

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1765.00	0.00	0.00	1765.00	0.00	0.00	0.00	0.00
3	2098.24	5.00	313.98	2097.81	10.09	-10.45	1.50	-8.42
4	2402.77	5.00	313.98	2401.19	28.51	-29.55	0.00	-26.62
5	2736.00	0.00	0.00	2734.00	38.60	-40.00	1.50	-36.04
6	9471.97	0.00	0.00	9469.97	38.60	-40.00	0.00	-36.04
7	9971.97	40.00	192.60	9930.33	-124.92	-76.55	8.00	129.43
8	10471.97	90.00	192.60	10135.00	-553.26	-172.30	10.00	582.89
9	10924.04	90.00	183.56	10135.00	-1000.36	-235.77	2.00	1013.09
10	17146.56	90.00	183.56	10135.00	-7210.90	-622.00	0.00	7235.61

FORMATION TOP DETAILS

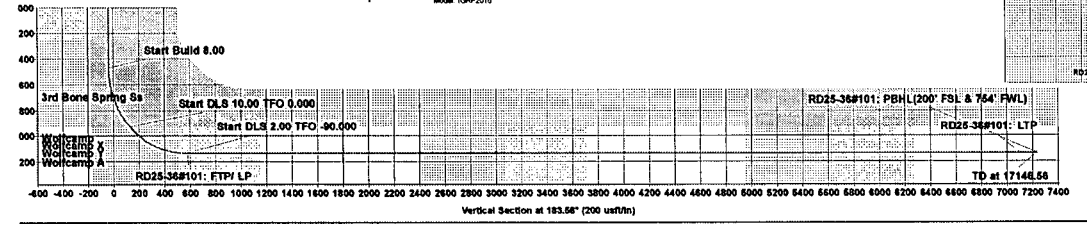
TVDPath	Formation
417.00	Rustler
1280.00	Top Salt
2591.00	Base Salt
3066.00	Delaware
3975.00	Cherry Canyon
5839.00	Brushy Canyon
6817.00	Bone Spring
7791.00	1st Bone Spring Ss
8208.00	2nd Bone Spring Line
8552.00	2nd Bone Spring Ss
8864.00	3rd Bone Spring Lm
9668.00	3rd Bone Spring Ss
10019.00	Wolfcamp
10043.00	Wolfcamp X
10126.00	Wolfcamp Y
10135.00	LP

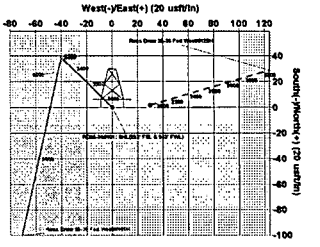
DESIGN TARGET DETAILS

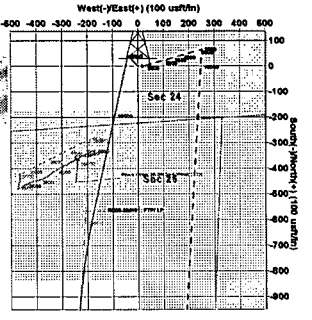
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RD25-36#101: SHL(223' FSL & 943' FWL)	0.00	0.00	0.00	371349.20	621246.20	32.020350	-103.942125
RD25-36#101: FTP/ LP	10135.00	-588.70	-206.20	370762.50	621039.00	32.018794	-103.942803
RD25-36#101: LTP	10135.00	-7080.90	-613.90	364268.30	620532.30	32.000880	-103.944168
RD25-36#101: PBHL(200' FSL & 754' FWL)	10135.00	-7210.90	-622.00	364138.30	620524.20	32.000533	-103.944215

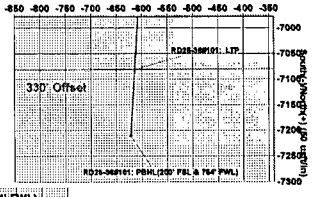
Azimuths to Grid North
True North: -0.21°
Magnetic North: 6.70°
Magnetic Field
Strength: 47591.4nT
Dip Angle: 59.79°
Date: 04/25/2019
Model: IGRF2015

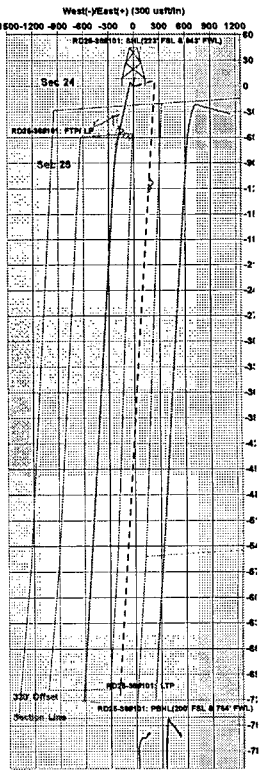
PROJECT DETAILS: Eddy County, NM (Nad-27 / East Zone)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level











Disclaimer:

Plan: Plan #1 (#101H/OH) Frontier 17
Created By: Matthew May Date: 8:37, April 26 2019

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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	0.000	
1,765.00	0.00	0.00	1,765.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,098.24	5.00	313.98	2,097.81	10.09	-10.45	1.50	1.50	0.00	313.980	
2,402.77	5.00	313.98	2,401.19	28.51	-29.55	0.00	0.00	0.00	0.000	
2,736.00	0.00	0.00	2,734.00	38.60	-40.00	1.50	-1.50	0.00	180.000	
9,471.97	0.00	0.00	9,469.97	38.60	-40.00	0.00	0.00	0.00	0.000	
9,971.97	40.00	192.60	9,930.33	-124.92	-76.55	8.00	8.00	0.00	192.600	
10,471.97	90.00	192.60	10,135.00	-553.26	-172.30	10.00	10.00	0.00	0.000	
10,924.04	90.00	183.56	10,135.00	-1,000.38	-235.77	2.00	0.00	-2.00	-90.000	
17,146.56	90.00	183.56	10,135.00	-7,210.90	-622.00	0.00	0.00	0.00	0.000	RD25-36#101: PBH

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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
417.00	0.00	0.00	417.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,260.00	0.00	0.00	1,260.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
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
1,500.00	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
1,765.00	0.00	0.00	1,765.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.53	313.98	1,800.00	0.11	-0.12	-0.10	1.50	1.50	0.00
1,900.00	2.03	313.98	1,899.97	1.66	-1.72	-1.55	1.50	1.50	0.00
2,000.00	3.53	313.98	1,999.85	5.02	-5.20	-4.69	1.50	1.50	0.00
2,098.24	5.00	313.98	2,097.81	10.09	-10.45	-9.42	1.50	1.50	0.00
2,100.00	5.00	313.98	2,099.57	10.19	-10.56	-9.52	0.00	0.00	0.00
2,200.00	5.00	313.98	2,199.19	16.24	-16.83	-15.17	0.00	0.00	0.00
2,300.00	5.00	313.98	2,298.81	22.29	-23.10	-20.82	0.00	0.00	0.00
2,400.00	5.00	313.98	2,398.43	28.35	-29.37	-26.47	0.00	0.00	0.00
2,402.77	5.00	313.98	2,401.19	28.51	-29.55	-26.62	0.00	0.00	0.00
2,500.00	3.54	313.98	2,498.15	33.54	-34.76	-31.32	1.50	-1.50	0.00
2,600.00	2.04	313.98	2,598.03	36.92	-38.26	-34.47	1.50	-1.50	0.00
2,700.00	0.54	313.98	2,698.00	38.48	-39.88	-35.93	1.50	-1.50	0.00
2,736.00	0.00	0.00	2,734.00	38.60	-40.00	-36.04	1.50	-1.50	0.00
2,800.00	0.00	0.00	2,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
2,893.00	0.00	0.00	2,891.00	38.60	-40.00	-36.04	0.00	0.00	0.00
Base Salt									
2,900.00	0.00	0.00	2,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,000.00	0.00	0.00	2,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,068.00	0.00	0.00	3,066.00	38.60	-40.00	-36.04	0.00	0.00	0.00
Delaware									
3,100.00	0.00	0.00	3,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,700.00	0.00	0.00	3,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,800.00	0.00	0.00	3,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,900.00	0.00	0.00	3,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3,977.00	0.00	0.00	3,975.00	38.60	-40.00	-36.04	0.00	0.00	0.00
Cherry Canyon									

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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)
4,000.00	0.00	0.00	3,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,100.00	0.00	0.00	4,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,200.00	0.00	0.00	4,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,300.00	0.00	0.00	4,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,500.00	0.00	0.00	4,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,600.00	0.00	0.00	4,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,700.00	0.00	0.00	4,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,000.00	0.00	0.00	4,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,641.00	0.00	0.00	5,639.00	38.60	-40.00	-36.04	0.00	0.00	0.00
Brushy Canyon									
5,700.00	0.00	0.00	5,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,300.00	0.00	0.00	6,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,400.00	0.00	0.00	6,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,500.00	0.00	0.00	6,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,600.00	0.00	0.00	6,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,700.00	0.00	0.00	6,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,800.00	0.00	0.00	6,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
6,819.00	0.00	0.00	6,817.00	38.60	-40.00	-36.04	0.00	0.00	0.00
Bone Spring									
6,900.00	0.00	0.00	6,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,000.00	0.00	0.00	6,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,100.00	0.00	0.00	7,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,200.00	0.00	0.00	7,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,300.00	0.00	0.00	7,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,400.00	0.00	0.00	7,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,500.00	0.00	0.00	7,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,600.00	0.00	0.00	7,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,700.00	0.00	0.00	7,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,793.00	0.00	0.00	7,791.00	38.60	-40.00	-36.04	0.00	0.00	0.00
1st Bone Spring Ss									
7,800.00	0.00	0.00	7,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
7,900.00	0.00	0.00	7,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,000.00	0.00	0.00	7,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,100.00	0.00	0.00	8,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,200.00	0.00	0.00	8,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,210.00	0.00	0.00	8,208.00	38.60	-40.00	-36.04	0.00	0.00	0.00
2nd Bone Spring Lime									
8,300.00	0.00	0.00	8,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,400.00	0.00	0.00	8,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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)
8,500.00	0.00	0.00	8,498.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,600.00	0.00	0.00	8,598.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,664.00	0.00	0.00	8,662.00	38.60	-40.00	-36.04	0.00	0.00	0.00
2nd Bone Spring Ss									
8,700.00	0.00	0.00	8,698.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,800.00	0.00	0.00	8,798.00	38.60	-40.00	-36.04	0.00	0.00	0.00
8,890.00	0.00	0.00	8,888.00	38.60	-40.00	-36.04	0.00	0.00	0.00
3rd Bone Spring Lm									
8,900.00	0.00	0.00	8,898.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,000.00	0.00	0.00	8,998.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,100.00	0.00	0.00	9,098.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,200.00	0.00	0.00	9,198.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,300.00	0.00	0.00	9,298.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,400.00	0.00	0.00	9,398.00	38.60	-40.00	-36.04	0.00	0.00	0.00
9,471.97	0.00	0.00	9,469.97	38.60	-40.00	-36.04	0.00	0.00	0.00
9,500.00	2.24	192.60	9,497.99	38.06	-40.12	-35.50	8.00	8.00	0.00
9,600.00	10.24	192.60	9,597.32	27.46	-42.49	-24.77	8.00	8.00	0.00
9,670.54	15.89	192.60	9,666.00	11.91	-45.97	-9.03	8.00	8.00	0.00
3rd Bone Spring Ss									
9,700.00	18.24	192.60	9,694.16	3.47	-47.85	-0.49	8.00	8.00	0.00
9,800.00	26.24	192.60	9,786.65	-33.44	-56.10	36.86	8.00	8.00	0.00
9,900.00	34.24	192.60	9,872.97	-82.55	-67.08	86.56	8.00	8.00	0.00
9,971.97	40.00	192.60	9,930.33	-124.92	-76.55	129.43	8.00	8.00	0.00
10,000.00	42.80	192.60	9,951.35	-143.01	-80.59	147.74	10.00	10.00	0.00
10,100.00	52.80	192.60	10,018.44	-215.22	-96.73	220.81	10.00	10.00	0.00
10,100.93	52.90	192.60	10,019.00	-215.94	-96.90	221.54	10.00	10.00	0.00
Wolfcamp									
10,142.77	57.08	192.60	10,043.00	-249.38	-104.37	255.38	10.00	10.00	0.00
Wolfcamp X									
10,200.00	62.80	192.60	10,071.65	-297.70	-115.17	304.27	10.00	10.00	0.00
10,300.00	72.80	192.60	10,109.38	-387.94	-135.34	395.60	10.00	10.00	0.00
10,382.32	81.04	192.60	10,128.00	-466.13	-152.82	474.72	10.00	10.00	0.00
Wolfcamp Y									
10,400.00	82.80	192.60	10,130.48	-483.21	-156.64	492.00	10.00	10.00	0.00
10,471.97	90.00	192.60	10,135.00	-553.26	-172.30	562.89	10.00	10.00	0.00
LP									
10,500.00	90.00	192.04	10,135.00	-580.65	-178.28	590.60	2.00	0.00	-2.00
10,600.00	90.00	190.04	10,135.00	-678.79	-197.42	689.74	2.00	0.00	-2.00
10,700.00	90.00	188.04	10,135.00	-777.54	-213.14	789.28	2.00	0.00	-2.00
10,800.00	90.00	186.04	10,135.00	-876.78	-225.39	889.09	2.00	0.00	-2.00
10,900.00	90.00	184.04	10,135.00	-976.39	-234.17	989.05	2.00	0.00	-2.00
10,924.04	90.00	183.56	10,135.00	-1,000.38	-235.77	1,013.09	2.00	0.00	-2.00
11,000.00	90.00	183.56	10,135.00	-1,076.19	-240.48	1,089.05	0.00	0.00	0.00
11,100.00	90.00	183.56	10,135.00	-1,176.00	-246.69	1,189.05	0.00	0.00	0.00
11,200.00	90.00	183.56	10,135.00	-1,275.81	-252.90	1,289.05	0.00	0.00	0.00
11,300.00	90.00	183.56	10,135.00	-1,375.62	-259.10	1,389.05	0.00	0.00	0.00
11,400.00	90.00	183.56	10,135.00	-1,475.42	-265.31	1,489.05	0.00	0.00	0.00
11,500.00	90.00	183.56	10,135.00	-1,575.23	-271.52	1,589.05	0.00	0.00	0.00
11,600.00	90.00	183.56	10,135.00	-1,675.04	-277.72	1,689.05	0.00	0.00	0.00
11,700.00	90.00	183.56	10,135.00	-1,774.84	-283.93	1,789.05	0.00	0.00	0.00
11,800.00	90.00	183.56	10,135.00	-1,874.65	-290.14	1,889.05	0.00	0.00	0.00
11,900.00	90.00	183.56	10,135.00	-1,974.46	-296.34	1,989.05	0.00	0.00	0.00
12,000.00	90.00	183.56	10,135.00	-2,074.27	-302.55	2,089.05	0.00	0.00	0.00

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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)
12,100.00	90.00	183.56	10,135.00	-2,174.07	-308.76	2,189.05	0.00	0.00	0.00
12,200.00	90.00	183.56	10,135.00	-2,273.88	-314.97	2,289.05	0.00	0.00	0.00
12,300.00	90.00	183.56	10,135.00	-2,373.69	-321.17	2,389.05	0.00	0.00	0.00
12,400.00	90.00	183.56	10,135.00	-2,473.49	-327.38	2,489.05	0.00	0.00	0.00
12,500.00	90.00	183.56	10,135.00	-2,573.30	-333.59	2,589.05	0.00	0.00	0.00
12,600.00	90.00	183.56	10,135.00	-2,673.11	-339.79	2,689.05	0.00	0.00	0.00
12,700.00	90.00	183.56	10,135.00	-2,772.92	-346.00	2,789.05	0.00	0.00	0.00
12,800.00	90.00	183.56	10,135.00	-2,872.72	-352.21	2,889.05	0.00	0.00	0.00
12,900.00	90.00	183.56	10,135.00	-2,972.53	-358.41	2,989.05	0.00	0.00	0.00
13,000.00	90.00	183.56	10,135.00	-3,072.34	-364.62	3,089.05	0.00	0.00	0.00
13,100.00	90.00	183.56	10,135.00	-3,172.14	-370.83	3,189.05	0.00	0.00	0.00
13,200.00	90.00	183.56	10,135.00	-3,271.95	-377.04	3,289.05	0.00	0.00	0.00
13,300.00	90.00	183.56	10,135.00	-3,371.76	-383.24	3,389.05	0.00	0.00	0.00
13,400.00	90.00	183.56	10,135.00	-3,471.57	-389.45	3,489.05	0.00	0.00	0.00
13,500.00	90.00	183.56	10,135.00	-3,571.37	-395.66	3,589.05	0.00	0.00	0.00
13,600.00	90.00	183.56	10,135.00	-3,671.18	-401.86	3,689.05	0.00	0.00	0.00
13,700.00	90.00	183.56	10,135.00	-3,770.99	-408.07	3,789.05	0.00	0.00	0.00
13,800.00	90.00	183.56	10,135.00	-3,870.79	-414.28	3,889.05	0.00	0.00	0.00
13,900.00	90.00	183.56	10,135.00	-3,970.60	-420.49	3,989.05	0.00	0.00	0.00
14,000.00	90.00	183.56	10,135.00	-4,070.41	-426.69	4,089.05	0.00	0.00	0.00
14,100.00	90.00	183.56	10,135.00	-4,170.22	-432.90	4,189.05	0.00	0.00	0.00
14,200.00	90.00	183.56	10,135.00	-4,270.02	-439.11	4,289.05	0.00	0.00	0.00
14,300.00	90.00	183.56	10,135.00	-4,369.83	-445.31	4,389.05	0.00	0.00	0.00
14,400.00	90.00	183.56	10,135.00	-4,469.64	-451.52	4,489.05	0.00	0.00	0.00
14,500.00	90.00	183.56	10,135.00	-4,569.44	-457.73	4,589.05	0.00	0.00	0.00
14,600.00	90.00	183.56	10,135.00	-4,669.25	-463.93	4,689.05	0.00	0.00	0.00
14,700.00	90.00	183.56	10,135.00	-4,769.06	-470.14	4,789.05	0.00	0.00	0.00
14,800.00	90.00	183.56	10,135.00	-4,868.87	-476.35	4,889.05	0.00	0.00	0.00
14,900.00	90.00	183.56	10,135.00	-4,968.67	-482.56	4,989.05	0.00	0.00	0.00
15,000.00	90.00	183.56	10,135.00	-5,068.48	-488.76	5,089.05	0.00	0.00	0.00
15,100.00	90.00	183.56	10,135.00	-5,168.29	-494.97	5,189.05	0.00	0.00	0.00
15,200.00	90.00	183.56	10,135.00	-5,268.10	-501.18	5,289.05	0.00	0.00	0.00
15,300.00	90.00	183.56	10,135.00	-5,367.90	-507.38	5,389.05	0.00	0.00	0.00
15,400.00	90.00	183.56	10,135.00	-5,467.71	-513.59	5,489.05	0.00	0.00	0.00
15,500.00	90.00	183.56	10,135.00	-5,567.52	-519.80	5,589.05	0.00	0.00	0.00
15,600.00	90.00	183.56	10,135.00	-5,667.32	-526.00	5,689.05	0.00	0.00	0.00
15,700.00	90.00	183.56	10,135.00	-5,767.13	-532.21	5,789.05	0.00	0.00	0.00
15,800.00	90.00	183.56	10,135.00	-5,866.94	-538.42	5,889.05	0.00	0.00	0.00
15,900.00	90.00	183.56	10,135.00	-5,966.75	-544.63	5,989.05	0.00	0.00	0.00
16,000.00	90.00	183.56	10,135.00	-6,066.55	-550.83	6,089.05	0.00	0.00	0.00
16,100.00	90.00	183.56	10,135.00	-6,166.36	-557.04	6,189.05	0.00	0.00	0.00
16,200.00	90.00	183.56	10,135.00	-6,266.17	-563.25	6,289.05	0.00	0.00	0.00
16,300.00	90.00	183.56	10,135.00	-6,365.97	-569.45	6,389.05	0.00	0.00	0.00
16,400.00	90.00	183.56	10,135.00	-6,465.78	-575.66	6,489.05	0.00	0.00	0.00
16,500.00	90.00	183.56	10,135.00	-6,565.59	-581.87	6,589.05	0.00	0.00	0.00
16,600.00	90.00	183.56	10,135.00	-6,665.40	-588.07	6,689.05	0.00	0.00	0.00
16,700.00	90.00	183.56	10,135.00	-6,765.20	-594.28	6,789.05	0.00	0.00	0.00
16,800.00	90.00	183.56	10,135.00	-6,865.01	-600.49	6,889.05	0.00	0.00	0.00
16,900.00	90.00	183.56	10,135.00	-6,964.82	-606.70	6,989.05	0.00	0.00	0.00
17,000.00	90.00	183.56	10,135.00	-7,064.62	-612.90	7,089.05	0.00	0.00	0.00
17,100.00	90.00	183.56	10,135.00	-7,164.43	-619.11	7,189.05	0.00	0.00	0.00
17,146.56	90.00	183.56	10,135.00	-7,210.90	-622.00	7,235.61	0.00	0.00	0.00

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #101H
Company:	XTO Energy	**TVD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Project:	Eddy County, NM (Nad-27 / East Zone)	**MD Reference:**	RKB = 23' @ 2963.00usft (Frontier 17)
Site:	Ross Draw 25-36 Fed West	**North Reference:**	Grid
Well:	#101H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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
RD25-36#101: SHL(2 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	371,349.20	621,246.20	32.020350	-103.942125
RD25-36#101: PBHL(- plan hits target center - Point	0.00	0.00	10,135.00	-7,210.90	-622.00	364,138.30	620,624.20	32.000533	-103.944216
RD25-36#101: LTP - plan misses target center by 0.02usft at 17016.31usft MD (10135.00 TVD, -7080.90 N, -613.92 E) - Point	0.00	0.00	10,135.00	-7,080.90	-613.90	364,268.30	620,632.30	32.000890	-103.944188
RD25-36#101: FTP/ L - plan misses target center by 32.18usft at 10492.76usft MD (10135.00 TVD, -573.57 N, -176.76 E) - Point	0.00	0.00	10,135.00	-566.70	-208.20	370,782.50	621,038.00	32.018794	-103.942803

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
417.00	417.00	Rustler			
1,260.00	1,260.00	Top Salt			
2,893.00	2,891.00	Base Salt			
3,068.00	3,066.00	Delaware			
3,977.00	3,975.00	Cherry Canyon			
5,641.00	5,639.00	Brushy Canyon			
6,819.00	6,817.00	Bone Spring			
7,793.00	7,791.00	1st Bone Spring Ss			
8,210.00	8,208.00	2nd Bone Spring Lime			
8,664.00	8,662.00	2nd Bone Spring Ss			
8,890.00	8,888.00	3rd Bone Spring Lm			
9,670.54	9,666.00	3rd Bone Spring Ss			
10,100.93	10,019.00	Wolfcamp			
10,142.77	10,043.00	Wolfcamp X			
10,382.32	10,128.00	Wolfcamp Y			
10,471.97	10,135.00	LP			