

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMLC065705B

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on page 28. Well Name and No.
MUY WAYNO 18 FEDERAL 161H9. API Well No.
30-015-44844-00-X110. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)11. County or Parish, State
EDDY COUNTY, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
XTO ENERGY INCORPORATEDContact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com3a. Address
6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 797073b. Phone No. (include area code)
Ph: 432-620-4374

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

Sec 18 T25S R30E 2310FSL 350FWL
32.129173 N Lat, 103.928268 W Lon**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

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

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be 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 recompleat 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 requests permission to make the following changes to the approved APD:

RECEIVED

1. Change name fr/Muy Wayno 18 Federal 161H to Muy Wayno 18 Federal 161H ✓
2. Change target formation from Pierce Crossing Bone Spring East to Purple Sage; Wolfcamp (Gas).
3. Drilling Program
4. Directional Plan

JAN 10 2019

DISTRICT II-ARTESIA O.C.D.

Attachments:
C102 & Supplement
GCP
Permitted vs proposed sheet
Location Layout**Carlsbad Field Office**
OCD Artesia

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

Electronic Submission #443396 verified by the BLM Well Information System

For XTO ENERGY INCORPORATED, sent to the Carlsbad

Committed to AFMS for processing by PRISCILLA PEREZ on 11/14/2018 (19PP0381SE)

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 11/09/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE

Title PETROLEUM ENGINEER

Date 12/11/2018

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 ****

RWP 1-17-19

Additional data for EC transaction #443396 that would not fit on the form

32. Additional remarks, continued

Drilling Program/BOP/CK
Directional Plan
FH

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy Inc
LEASE NO.:	LC065705B
WELL NAME & NO.:	161H - Muy Wayno 18 Federal
SURFACE HOLE FOOTAGE:	2310' FSL & 350' FWL
BOTTOM HOLE FOOTAGE	200' FNL & 330' FWL
LOCATION:	Section 18, T. 25 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply.

A. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **880** feet (a minimum of 25 feet 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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **3260** feet is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
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.
4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
 - Cement should tie-back **100'** into the previous casing. Operator shall provide method of verification.

B. 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. 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.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi.

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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the

following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible

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

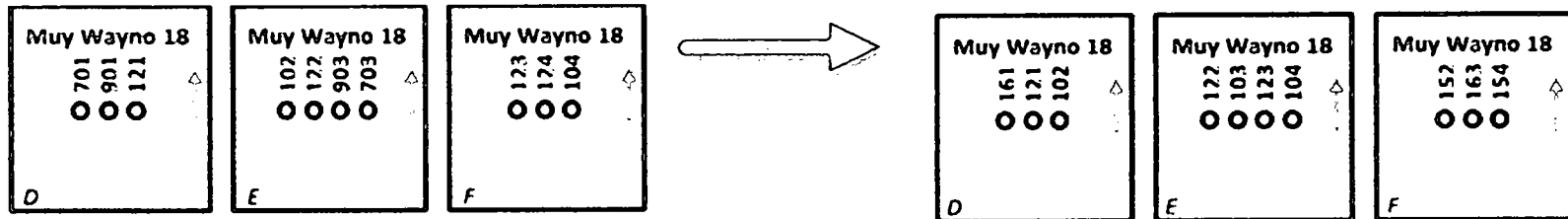
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. 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.
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. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. 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. 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.

PERMITTED PLAN

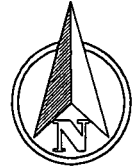
SUNDRY CHANGES

API Number	Current Pad & Slot	Current Well Name	Permitted SHL	Proposed Pad & Slot	Well Name Change	Updated SHL	ULSTR
3001544844	D-1	MUY WAYNO 18 FEDERAL 701H	L-18-25S-30E (2310' FSL & 350' FWL)	D-1	MUY WAYNO 18 FEDERAL 161H	2310'FSL & 350'FWL	3-18-25S-30E
3001544846	D-2	MUY WAYNO 18 FEDERAL 901H	L-18-25S-30E (2310' FSL & 380' FWL)	E-2	MUY WAYNO 18 FEDERAL 103H	2310'FSL & 1145'FWL	3-18-25S-30E
3001544840	D-3	MUY WAYNO 18 FEDERAL 121H	L-18-25S-30E (2310' FSL & 410' FWL)	D-2	MUY WAYNO 18 FEDERAL 121H	2310'FSL & 380'FWL	3-18-25S-30E
3001544838	E-1	MUY WAYNO 18 FEDERAL 102H	L-18-25S-30E (2310' FSL & 1115' FWL)	D-3	MUY WAYNO 18 FEDERAL 102H	2310'FSL & 410'FWL	3-18-25S-30E
3001544841	E-2	MUY WAYNO 18 FEDERAL 122H	L-18-25S-30E (2310' FSL & 1145' FWL)	E-1	MUY WAYNO 18 FEDERAL 122H	2310'FSL & 1115'FWL	3-18-25S-30E
3001544847	E-3	MUY WAYNO 18 FEDERAL 903H	L-18-25S-30E (2310' FSL & 1175' FWL)	F-1	MUY WAYNO 18 FEDERAL 152H	2310'FSL & 1930'FWL	K-18-25S-30E
3001544845	E-4	MUY WAYNO 18 FEDERAL 703H	L-18-25S-30E (2310' FSL & 1205' FWL)	F-2	MUY WAYNO 18 FEDERAL 163H	2310'FSL & 1960'FWL	K-18-25S-30E
3001544842	F-1	MUY WAYNO 18 FEDERAL 123H	K-18-25S-30E (2310' FSL & 1930' FWL)	E-3	MUY WAYNO 18 FEDERAL 123H	2310'FSL & 1175'FWL	3-18-25S-30E
3001544843	F-2	MUY WAYNO 18 FEDERAL 124H	K-18-25S-30E (2310' FSL & 1960' FWL)	F-3	MUY WAYNO 18 FEDERAL 154H	2310'FSL & 1990'FWL	K-18-25S-30E
3001544839	F-3	MUY WAYNO 18 FEDERAL 104H	K-18-25S-30E (2310' FSL & 1990' FWL)	E-4	MUY WAYNO 18 FEDERAL 104H	2310'FSL & 1205'FWL	3-18-25S-30E

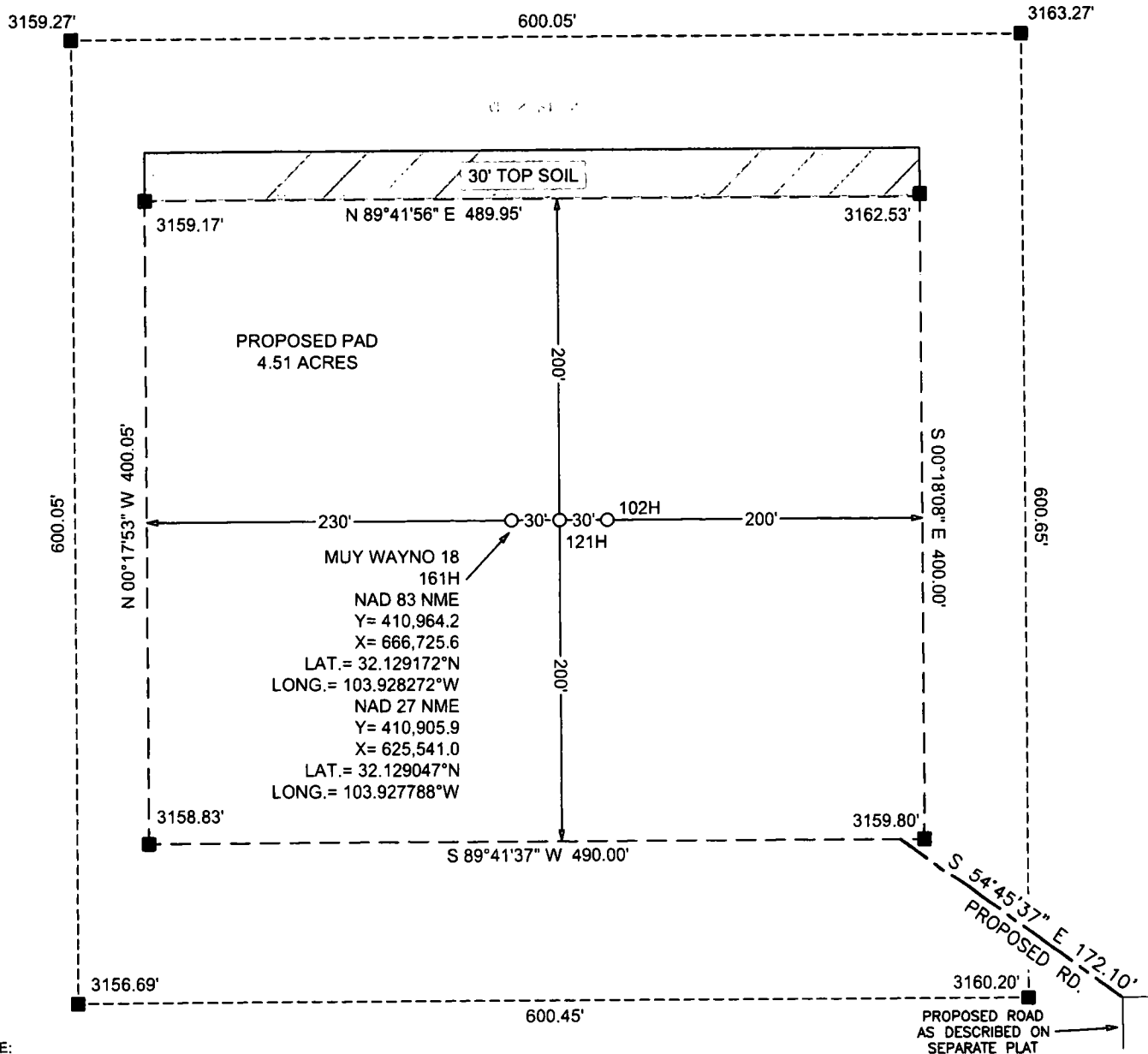


SECTION 18

TOWNSHIP 25 SOUTH, RANGE 30 EAST
NEW MEXICO PRIME MERIDIAN



0 50' 100'
1" = 100 FEET



NOTE:

- 1). SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP"
FOR PROPOSED ROAD LOCATION

LEGEND

--- PROPOSED PAD
--- PROPOSED ROAD

DIRECTIONS TO THIS LOCATION:

FROM THE INTERSECTION OF HWY 285 AND LONGHORN RD. GO NORTHEAST ON LONGHORN ROAD (PAVED). ROAD BEND SOUTHEAST AND BACK TO NORTHEAST APPROX. 4.25 MILES. TURN LEFT AND GO NORTHEAST ON PIPELINE ROAD #1 (GRAVEL) APPROX. 7.12 MILES. TURN LEFT ON ROCK DOVE RD. APPROX. 1.00 MILES. TURN LEFT ON EXISTING GRAVEL RD. APPROX. 1.00 MILE TO ANOTHER LEFT FOR APPROX. 0.35 MILES TO BEGINNING OF PROPOSED ROAD AND LOCATION IS TO THE SOUTHWEST.



550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
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XTO ENERGY, INC.

WELL SITE PLAN

MUY WAYNO 18 161H
LOCATED 350 FEET FROM THE WEST LINE
AND 2,310 FEET FROM THE SOUTH LINE OF
SECTION 18, TOWNSHIP 25 SOUTH, RANGE 30
EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

DATE:	7-16-2018	PROJECT NO:	2017060866
DRAWN BY:	JAR/AI/RS	SCALE:	1" = 100'
CHECKED BY:	DH	SHEET:	1 OF 1
FIELD CREW:	RE/RR	REVISION:	2

DRILLING PLAN: BLM COMPLIANCE

(Supplement to BLM 3160-3)

XTO Energy Inc.

Muy Wayno Federal 18 161H

Projected TD: 19410' MD / 11536' TVD

SHL: 2310' FSL & 350' FWL , Section 18, T25S, R30E

BHL: 200' FNL & 330' FWL , Section 7, T25S, R30E

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	712'	Water
Top of Salt	1025'	Water
Base of Salt	3273'	Water
Delaware	3466'	Water
Bone Spring	4358'	Water/Oil/Gas
1st Bone Spring Ss	8222'	Water/Oil/Gas
2nd Bone Spring Ss	9029'	Water/Oil/Gas
3rd Bone Spring Ss	10109'	Water/Oil/Gas
Wolfcamp	10510'	Water/Oil/Gas
Target/Land Curve	11536'	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 @ ~~870'~~ (155' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at ~~3330'~~ 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 - see C&A

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' - 870' 880'	13-3/8"	54.5	BTC	J-55	New	2.73	2.84	20.43
12-1/4"	0' - 3330' 3360'	9-5/8"	40	BTC	J-55	New	1.63	2.54	5.26
8-3/4"	0' - 10690'	7"	32	BTC	P-110	New	1.31	2.25	2.89
6"	10390' - 19410'	4-1/2"	13.5	BTC	P-110	New	1.31	2.19	2.16

- 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 ✓

- see COA

Surface Casing: 13-3/8", 54.5 New J-55, BTC casing to be set at +/- 820'

Lead: 420 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 +/- 3330'

Lead: 940 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 +/- 10690'

Lead: 610 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 200 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 +/- 19410'

Tail: 690 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 Hydr** and a 13-5/8" minimum **5M Double Ram BOP**. MASP should not exceed 4841 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 nipping 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 ✓ - See CoA

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 870'	17-1/2"	FW/Native	8.4-8.8	35-40	NC
870' to 3330'	12-1/4"	Brine/Gel Sweeps	9.8-10.2	30-32	NC
3330' to 10690'	8-3/4"	FW / Cut Brine	8.4-8.8	29-32	NC - 20
10690' to 19410'	6-1/8"	FW / Cut Brine / Polymer/ OBM	12-12.3	32-50	20-Aug

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.

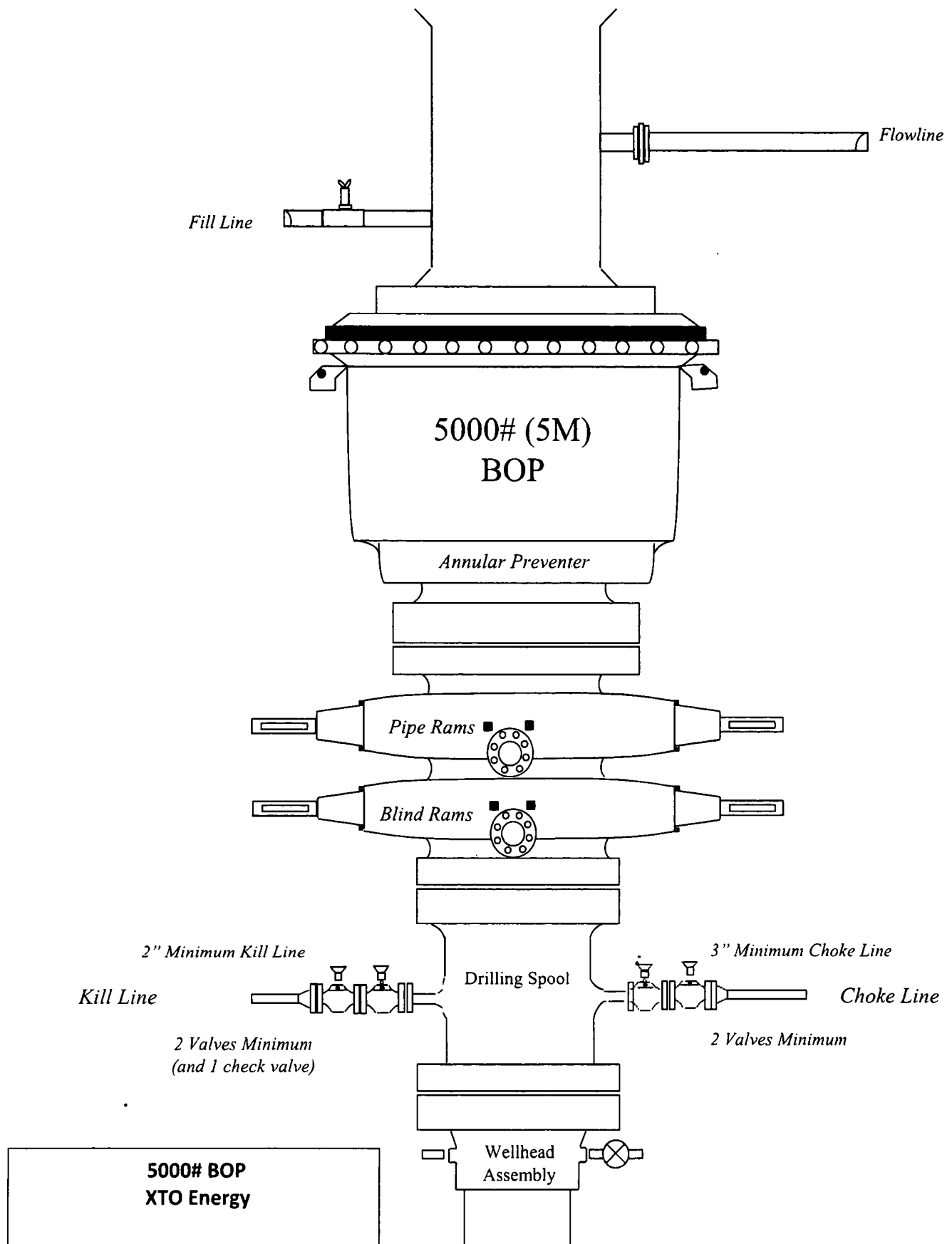
Open hole logging will not be done on this well.

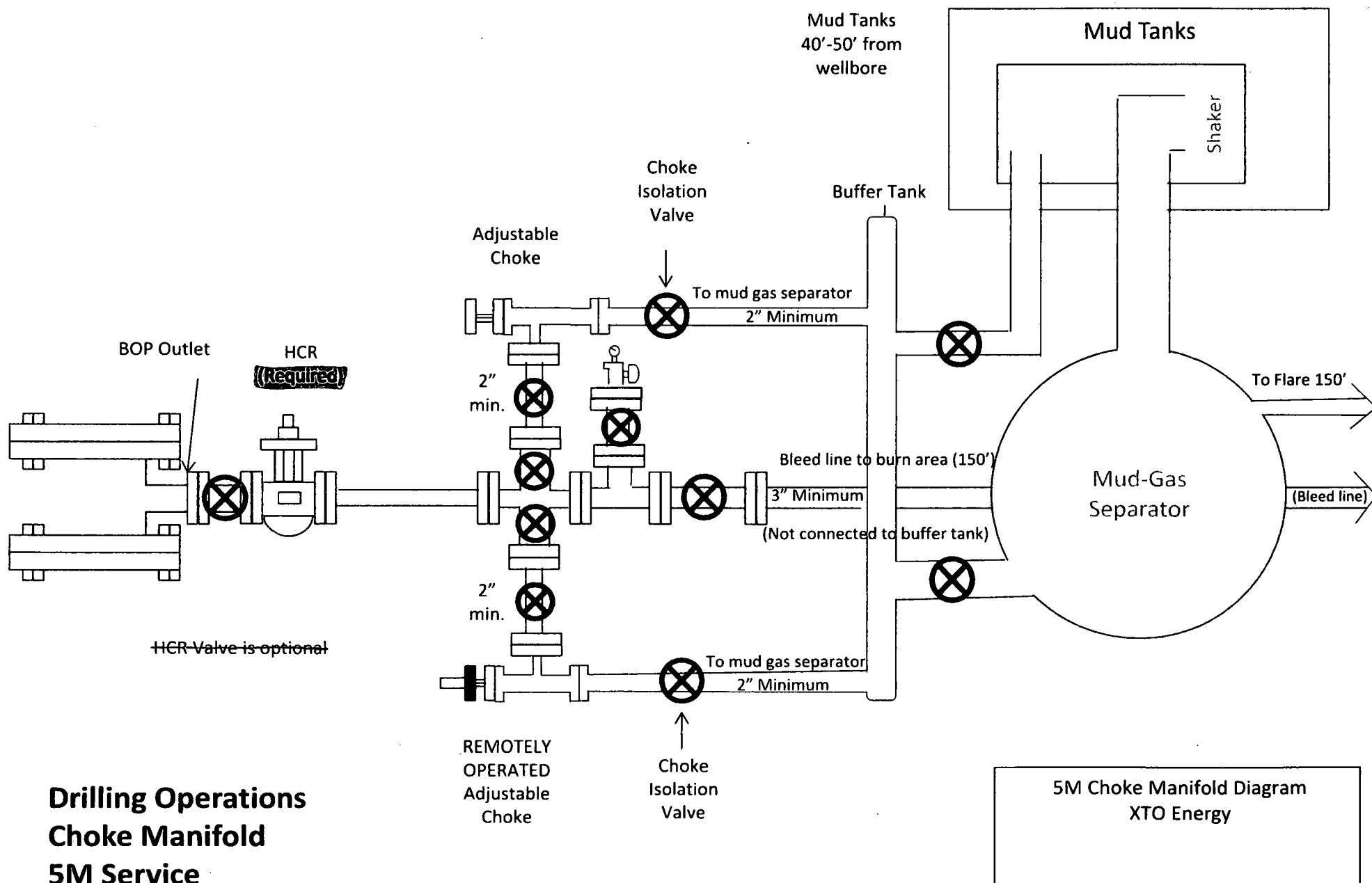
9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 150 to 170 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 7378 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.





Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
 XTO Energy



XTO Energy

Eddy County, NM (NAD27 NME)

Muy Wayno 18 Federal Pad

Muy Wayno 18 Federal #161H

API: 30-015-44844

OH

Plan: Plan #1 09-06-18

Standard Planning Report

06 September, 2018



Windows User Planning Report

Database: EDM 5000.14 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD27 NME)
Site: Muy Wayno 18 Federal Pad
Well: Muy Wayno 18 Federal #161H
Wellbore: OH
Design: Plan #1 09-06-18

Local Co-ordinate Reference: Well Muy Wayno 18 Federal #161H
TVD Reference: KB @ 3193.00usft (Patterson 793)
MD Reference: KB @ 3193.00usft (Patterson 793)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD27 NME)		
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 Muy Wayno 18 Federal Pad

Site Position:	Map	Northing:	410,906.20 usft	Latitude:	32° 7' 44.571 N
From:	Map	Easting:	625,601.10 usft	Longitude:	103° 55' 39.337 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well Muy Wayno 18 Federal #161H

Well Position	+N/-S	-0.30 usft	Northing:	410,905.90 usft	Latitude:	32° 7' 44.570 N
	+E/-W	-60.10 usft	Easting:	625,541.00 usft	Longitude:	103° 55' 40.036 W
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level:	3,161.00 usft	

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	09/05/18	6.98	59.90	47,720.68202605

Design Plan #1 09-06-18

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	359.72

Plan Survey Tool Program Date 09/06/18

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1 0.00	19,410.23	Plan #1 09-06-18 (OH)	MWD	
			MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,963.04	0.00	0.00	10,963.04	0.00	0.00	0.00	0.00	0.00	0.00	
11,863.04	90.00	2.50	11,536.00	572.41	24.99	10.00	10.00	0.00	2.50	
11,932.64	90.00	359.72	11,536.00	641.99	26.34	4.00	0.00	-4.00	-90.00	
19,410.23	90.00	359.72	11,536.00	8,119.50	-10.70	0.00	0.00	0.00	0.00	PBHL(MW 18 Fed #1)



Windows User

Planning Report

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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
714.00	0.00	0.00	714.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,027.00	0.00	0.00	1,027.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado (Top Salt)									
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
1,300.00	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
1,800.00	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	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,275.00	0.00	0.00	3,275.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,468.00	0.00	0.00	3,468.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware (Bell Canyon)									
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,360.00	0.00	0.00	4,360.00	0.00	0.00	0.00	0.00	0.00	0.00



Windows User Planning Report

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Wellbore: OH
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Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Cherry Canyon									
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,994.00	0.00	0.00	5,994.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,224.00	0.00	0.00	7,224.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring Lime									
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,224.00	0.00	0.00	8,224.00	0.00	0.00	0.00	0.00	0.00	0.00
1st Bone Spring Sand									
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,607.00	0.00	0.00	8,607.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd Bone Spring Lime									
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00



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8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,031.00	0.00	0.00	9,031.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd Bone Spring Sand									
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,290.00	0.00	0.00	9,290.00	0.00	0.00	0.00	0.00	0.00	0.00
3rd Bone Spring Lime									
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,654.00	0.00	0.00	9,654.00	0.00	0.00	0.00	0.00	0.00	0.00
Harkey Sand									
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,910.00	0.00	0.00	9,910.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower 3rd Bone Spring Lime									
9,963.00	0.00	0.00	9,963.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower 3rd Bone Spring Shale									
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,111.00	0.00	0.00	10,111.00	0.00	0.00	0.00	0.00	0.00	0.00
3rd Bone Spring Sand									
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00
10,512.00	0.00	0.00	10,512.00	0.00	0.00	0.00	0.00	0.00	0.00
Wolfcamp									
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00
10,640.00	0.00	0.00	10,640.00	0.00	0.00	0.00	0.00	0.00	0.00
Wolfcamp A									
10,700.00	0.00	0.00	10,700.00	0.00	0.00	0.00	0.00	0.00	0.00
10,800.00	0.00	0.00	10,800.00	0.00	0.00	0.00	0.00	0.00	0.00
10,900.00	0.00	0.00	10,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,963.04	0.00	0.00	10,963.04	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Start 10°/100' Build									
10,991.01	2.80	2.50	10,991.00	0.68	0.03	0.68	10.00	10.00	0.00
Wolfcamp B									
11,000.00	3.70	2.50	10,999.97	1.19	0.05	1.19	10.00	10.00	0.00
11,100.00	13.70	2.50	11,098.70	16.28	0.71	16.27	10.00	10.00	0.00
11,182.31	21.93	2.50	11,177.00	41.41	1.81	41.40	10.00	10.00	0.00
Wolfcamp C									
11,200.00	23.70	2.50	11,193.30	48.26	2.11	48.25	10.00	10.00	0.00
11,300.00	33.70	2.50	11,280.91	96.17	4.20	96.15	10.00	10.00	0.00
11,400.00	43.70	2.50	11,358.86	158.55	6.92	158.51	10.00	10.00	0.00
11,446.29	48.33	2.50	11,391.00	191.81	8.37	191.77	10.00	10.00	0.00
Wolfcamp D									
11,500.00	53.70	2.50	11,424.78	233.50	10.20	233.45	10.00	10.00	0.00
11,600.00	63.70	2.50	11,476.67	318.76	13.92	318.69	10.00	10.00	0.00



Windows User Planning Report

Database: EDM 5000.14 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD27 NME)
Site: Muy Wayno 18 Federal Pad
Well: Muy Wayno 18 Federal #161H
Wellbore: OH
Design: Plan #1 09-06-18

Local Co-ordinate Reference: Well Muy Wayno 18 Federal #161H
TVD Reference: KB @ 3193.00usft (Patterson 793)
MD Reference: KB @ 3193.00usft (Patterson 793)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,693.17	73.01	2.50	11,511.00	405.18	17.69	405.09	10.00	10.00	0.00
Wolfcamp E									
11,700.00	73.70	2.50	11,512.96	411.72	17.98	411.62	10.00	10.00	0.00
11,800.00	83.70	2.50	11,532.53	509.56	22.25	509.44	10.00	10.00	0.00
11,863.04	90.00	2.50	11,536.00	572.41	24.99	572.28	10.00	10.00	0.00
Begin 4°/100' Turn - Landing Point									
11,900.00	90.00	1.02	11,536.00	609.35	26.13	609.22	4.00	0.00	-4.00
11,932.64	90.00	359.72	11,536.00	641.99	26.34	641.85	4.00	0.00	-4.00
Begin 90° Inc Hold, 359.72° Azm									
12,000.00	90.00	359.72	11,536.00	709.35	26.00	709.22	0.00	0.00	0.00
12,100.00	90.00	359.72	11,536.00	809.35	25.51	809.22	0.00	0.00	0.00
12,200.00	90.00	359.72	11,536.00	909.35	25.01	909.22	0.00	0.00	0.00
12,300.00	90.00	359.72	11,536.00	1,009.35	24.52	1,009.22	0.00	0.00	0.00
12,400.00	90.00	359.72	11,536.00	1,109.35	24.02	1,109.22	0.00	0.00	0.00
12,500.00	90.00	359.72	11,536.00	1,209.35	23.53	1,209.22	0.00	0.00	0.00
12,600.00	90.00	359.72	11,536.00	1,309.34	23.03	1,309.22	0.00	0.00	0.00
12,700.00	90.00	359.72	11,536.00	1,409.34	22.54	1,409.22	0.00	0.00	0.00
12,800.00	90.00	359.72	11,536.00	1,509.34	22.04	1,509.22	0.00	0.00	0.00
12,900.00	90.00	359.72	11,536.00	1,609.34	21.55	1,609.22	0.00	0.00	0.00
13,000.00	90.00	359.72	11,536.00	1,709.34	21.05	1,709.22	0.00	0.00	0.00
13,100.00	90.00	359.72	11,536.00	1,809.34	20.56	1,809.22	0.00	0.00	0.00
13,200.00	90.00	359.72	11,536.00	1,909.34	20.06	1,909.22	0.00	0.00	0.00
13,300.00	90.00	359.72	11,536.00	2,009.34	19.56	2,009.22	0.00	0.00	0.00
13,400.00	90.00	359.72	11,536.00	2,109.33	19.07	2,109.22	0.00	0.00	0.00
13,500.00	90.00	359.72	11,536.00	2,209.33	18.57	2,209.22	0.00	0.00	0.00
13,600.00	90.00	359.72	11,536.00	2,309.33	18.08	2,309.22	0.00	0.00	0.00
13,700.00	90.00	359.72	11,536.00	2,409.33	17.58	2,409.22	0.00	0.00	0.00
13,800.00	90.00	359.72	11,536.00	2,509.33	17.09	2,509.22	0.00	0.00	0.00
13,900.00	90.00	359.72	11,536.00	2,609.33	16.59	2,609.22	0.00	0.00	0.00
14,000.00	90.00	359.72	11,536.00	2,709.33	16.10	2,709.22	0.00	0.00	0.00
14,100.00	90.00	359.72	11,536.00	2,809.33	15.60	2,809.22	0.00	0.00	0.00
14,200.00	90.00	359.72	11,536.00	2,909.32	15.11	2,909.22	0.00	0.00	0.00
14,300.00	90.00	359.72	11,536.00	3,009.32	14.61	3,009.22	0.00	0.00	0.00
14,400.00	90.00	359.72	11,536.00	3,109.32	14.12	3,109.22	0.00	0.00	0.00
14,500.00	90.00	359.72	11,536.00	3,209.32	13.62	3,209.22	0.00	0.00	0.00
14,600.00	90.00	359.72	11,536.00	3,309.32	13.13	3,309.22	0.00	0.00	0.00
14,700.00	90.00	359.72	11,536.00	3,409.32	12.63	3,409.22	0.00	0.00	0.00
14,800.00	90.00	359.72	11,536.00	3,509.32	12.13	3,509.22	0.00	0.00	0.00
14,900.00	90.00	359.72	11,536.00	3,609.32	11.64	3,609.22	0.00	0.00	0.00
15,000.00	90.00	359.72	11,536.00	3,709.32	11.14	3,709.22	0.00	0.00	0.00
15,100.00	90.00	359.72	11,536.00	3,809.31	10.65	3,809.22	0.00	0.00	0.00
15,200.00	90.00	359.72	11,536.00	3,909.31	10.15	3,909.22	0.00	0.00	0.00
15,300.00	90.00	359.72	11,536.00	4,009.31	9.66	4,009.22	0.00	0.00	0.00
15,400.00	90.00	359.72	11,536.00	4,109.31	9.16	4,109.22	0.00	0.00	0.00
15,500.00	90.00	359.72	11,536.00	4,209.31	8.67	4,209.22	0.00	0.00	0.00
15,600.00	90.00	359.72	11,536.00	4,309.31	8.17	4,309.22	0.00	0.00	0.00
15,700.00	90.00	359.72	11,536.00	4,409.31	7.68	4,409.22	0.00	0.00	0.00
15,800.00	90.00	359.72	11,536.00	4,509.31	7.18	4,509.22	0.00	0.00	0.00
15,900.00	90.00	359.72	11,536.00	4,609.30	6.69	4,609.22	0.00	0.00	0.00
16,000.00	90.00	359.72	11,536.00	4,709.30	6.19	4,709.22	0.00	0.00	0.00
16,100.00	90.00	359.72	11,536.00	4,809.30	5.70	4,809.22	0.00	0.00	0.00
16,200.00	90.00	359.72	11,536.00	4,909.30	5.20	4,909.22	0.00	0.00	0.00
16,300.00	90.00	359.72	11,536.00	5,009.30	4.70	5,009.22	0.00	0.00	0.00



Windows User Planning Report

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Site: Muy Wayno 18 Federal Pad
Well: Muy Wayno 18 Federal #161H
Wellbore: OH
Design: Plan #1 09-06-18

Local Co-ordinate Reference: Well Muy Wayno 18 Federal #161H
TVD Reference: KB @ 3193.00usft (Patterson 793)
MD Reference: KB @ 3193.00usft (Patterson 793)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,400.00	90.00	359.72	11,536.00	5,109.30	4.21	5,109.22	0.00	0.00	0.00
16,500.00	90.00	359.72	11,536.00	5,209.30	3.71	5,209.22	0.00	0.00	0.00
16,600.00	90.00	359.72	11,536.00	5,309.30	3.22	5,309.22	0.00	0.00	0.00
16,700.00	90.00	359.72	11,536.00	5,409.29	2.72	5,409.22	0.00	0.00	0.00
16,800.00	90.00	359.72	11,536.00	5,509.29	2.23	5,509.22	0.00	0.00	0.00
16,900.00	90.00	359.72	11,536.00	5,609.29	1.73	5,609.22	0.00	0.00	0.00
17,000.00	90.00	359.72	11,536.00	5,709.29	1.24	5,709.22	0.00	0.00	0.00
17,100.00	90.00	359.72	11,536.00	5,809.29	0.74	5,809.22	0.00	0.00	0.00
17,200.00	90.00	359.72	11,536.00	5,909.29	0.25	5,909.22	0.00	0.00	0.00
17,300.00	90.00	359.72	11,536.00	6,009.29	-0.25	6,009.22	0.00	0.00	0.00
17,400.00	90.00	359.72	11,536.00	6,109.29	-0.74	6,109.22	0.00	0.00	0.00
17,500.00	90.00	359.72	11,536.00	6,209.28	-1.24	6,209.22	0.00	0.00	0.00
17,600.00	90.00	359.72	11,536.00	6,309.28	-1.73	6,309.22	0.00	0.00	0.00
17,700.00	90.00	359.72	11,536.00	6,409.28	-2.23	6,409.22	0.00	0.00	0.00
17,800.00	90.00	359.72	11,536.00	6,509.28	-2.72	6,509.22	0.00	0.00	0.00
17,900.00	90.00	359.72	11,536.00	6,609.28	-3.22	6,609.22	0.00	0.00	0.00
18,000.00	90.00	359.72	11,536.00	6,709.28	-3.72	6,709.22	0.00	0.00	0.00
18,100.00	90.00	359.72	11,536.00	6,809.28	-4.21	6,809.22	0.00	0.00	0.00
18,200.00	90.00	359.72	11,536.00	6,909.28	-4.71	6,909.22	0.00	0.00	0.00
18,300.00	90.00	359.72	11,536.00	7,009.27	-5.20	7,009.22	0.00	0.00	0.00
18,400.00	90.00	359.72	11,536.00	7,109.27	-5.70	7,109.22	0.00	0.00	0.00
18,500.00	90.00	359.72	11,536.00	7,209.27	-6.19	7,209.22	0.00	0.00	0.00
18,600.00	90.00	359.72	11,536.00	7,309.27	-6.69	7,309.22	0.00	0.00	0.00
18,700.00	90.00	359.72	11,536.00	7,409.27	-7.18	7,409.22	0.00	0.00	0.00
18,800.00	90.00	359.72	11,536.00	7,509.27	-7.68	7,509.22	0.00	0.00	0.00
18,900.00	90.00	359.72	11,536.00	7,609.27	-8.17	7,609.22	0.00	0.00	0.00
19,000.00	90.00	359.72	11,536.00	7,709.27	-8.67	7,709.22	0.00	0.00	0.00
19,100.00	90.00	359.72	11,536.00	7,809.26	-9.16	7,809.22	0.00	0.00	0.00
19,200.00	90.00	359.72	11,536.00	7,909.26	-9.66	7,909.22	0.00	0.00	0.00
19,300.00	90.00	359.72	11,536.00	8,009.26	-10.15	8,009.22	0.00	0.00	0.00
19,400.00	90.00	359.72	11,536.00	8,109.26	-10.65	8,109.22	0.00	0.00	0.00
19,410.23	90.00	359.72	11,536.00	8,119.50	-10.70	8,119.45	0.00	0.00	0.00

TD at 19410.23' MD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP(MW 18 Fed #161H)	0.00	0.01	11,536.00	700.16	25.90	411,606.06	625,566.90	32° 7' 51.498 N	103° 55' 39.705 W
- plan misses target center by 0.15usft at 11990.81usft MD (11536.00 TVD, 700.16 N, 26.05 E)									
- Point									
LTP(MW 18 Fed #161H)	0.00	0.01	11,536.00	7,989.50	-10.00	418,895.40	625,531.00	32° 9' 3.637 N	103° 55' 39.803 W
- plan misses target center by 0.06usft at 19280.24usft MD (11536.00 TVD, 7989.50 N, -10.06 E)									
- Point									
PBHL(MW 18 Fed #161H)	0.00	0.01	11,536.00	8,119.50	-10.70	419,025.39	625,530.30	32° 9' 4.923 N	103° 55' 39.805 W
- plan hits target center									
- Point									



Windows User

Planning Report

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Site: Muy Wayno 18 Federal Pad
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Wellbore: OH
Design: Plan #1 09-06-18

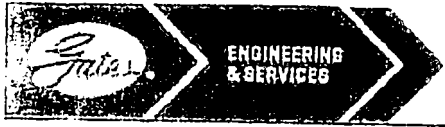
Local Co-ordinate Reference: Well Muy Wayno 18 Federal #161H
TVD Reference: KB @ 3193.00usft (Patterson 793)
MD Reference: KB @ 3193.00usft (Patterson 793)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
714.00	714.00	Rustler		0.00	359.72
1,027.00	1,027.00	Salado (Top Salt)		0.00	359.72
3,275.00	3,275.00	Base Salt		0.00	359.72
3,468.00	3,468.00	Delaware (Bell Canyon)		0.00	359.72
4,360.00	4,360.00	Cherry Canyon		0.00	359.72
5,994.00	5,994.00	Brushy Canyon		0.00	359.72
7,224.00	7,224.00	Bone Spring Lime		0.00	359.72
8,224.00	8,224.00	1st Bone Spring Sand		0.00	359.72
8,607.00	8,607.00	2nd Bone Spring Lime		0.00	359.72
9,031.00	9,031.00	2nd Bone Spring Sand		0.00	359.72
9,290.00	9,290.00	3rd Bone Spring Lime		0.00	359.72
9,654.00	9,654.00	Harkey Sand		0.00	359.72
9,910.00	9,910.00	Lower 3rd Bone Spring Lime		0.00	359.72
9,963.00	9,963.00	Lower 3rd Bone Spring Shale		0.00	359.72
10,111.00	10,111.00	3rd Bone Spring Sand		0.00	359.72
10,512.00	10,512.00	Wolfcamp		0.00	359.72
10,640.00	10,640.00	Wolfcamp A		0.00	359.72
10,991.01	10,991.00	Wolfcamp B		0.00	359.72
11,182.31	11,177.00	Wolfcamp C		0.00	359.72
11,446.29	11,391.00	Wolfcamp D		0.00	359.72
11,693.17	11,511.00	Wolfcamp E		0.00	359.72
11,863.04	11,536.00	Landing Point		0.00	359.72

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,963.04	10,963.04	0.00	0.00	KOP, Start 10°/100' Build
11,863.04	11,536.00	572.41	24.99	Begin 4°/100' Turn
11,932.64	11,536.00	641.99	26.34	Begin 90° Inc Hold, 359.72° Azm
19,410.23	11,536.00	8,119.50	-10.70	TD at 19410.23' MD



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

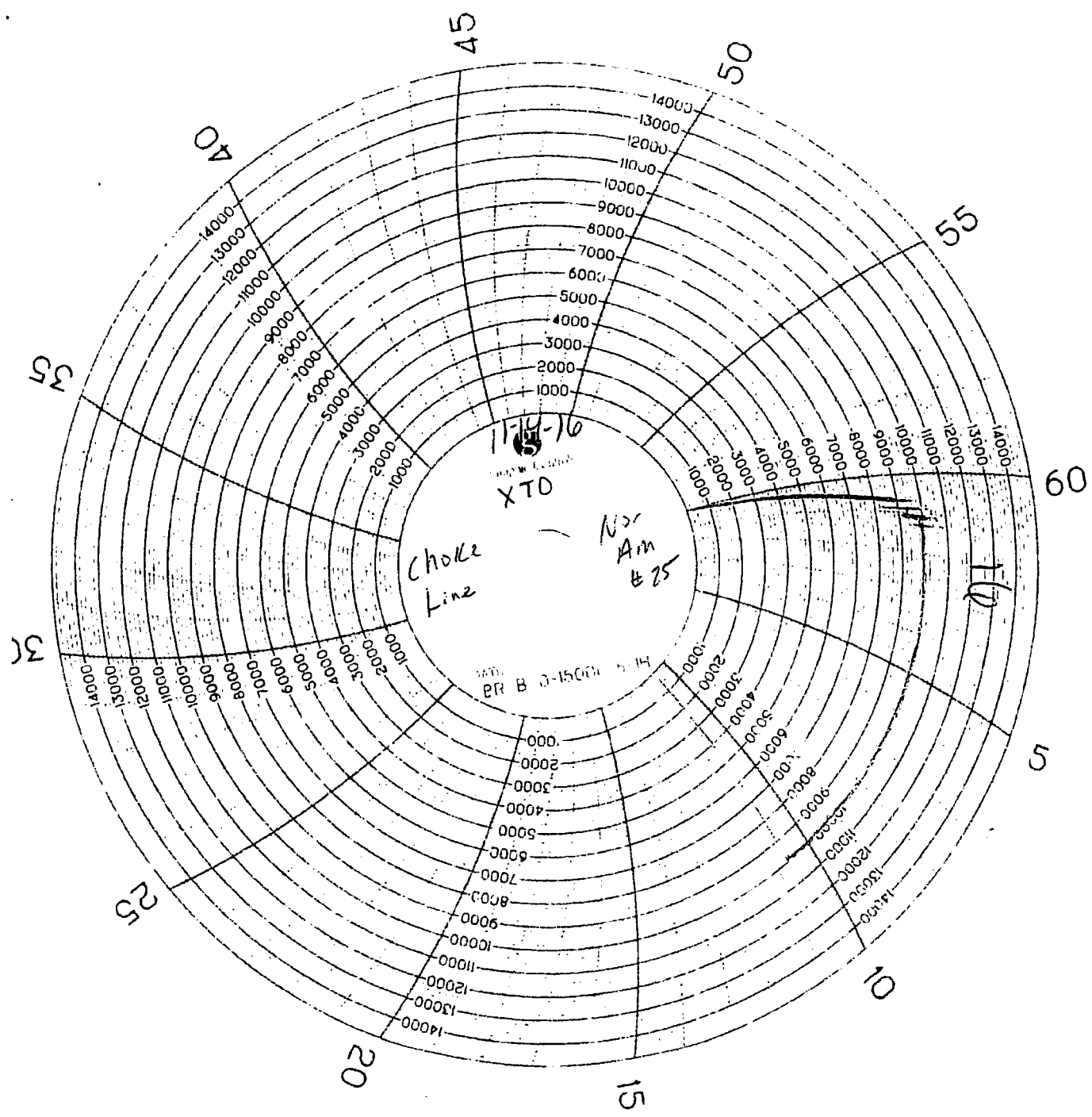
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

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:	FDJ-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:	



MOON

HOSE I.D. 2 1/2" LENGTH 42ft END 1 4 1/2" SKAF END 2 4 1/2" SKAF
GRADE D WORKING PRESSURE 5,000 PSI
TEST PRESSURE 7,500 PSI ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14 SERIAL 6330960115130-060814-12000
NAME D-76 CH 25673

