

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

**OCT 29 2019**

Form 3160-3  
(June 2015)

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**RECEIVED**

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM0025533  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No. POKER LAKE / NMNM071016X  8. Lease Name and Well No. POKER LAKE UNIT 18 TWR 102H <b>326260</b>  9. API Well No. <b>30-015-46426</b>
2. Name of Operator XTO PERMIAN OPERATING LLC  3a. Address 6401 Holiday Hill Road, Bldg 5 Midland TX 79707  3b. Phone No. (include area code) (432)682-8873		10. Field and Pool, or Exploratory PURPLE SAGE WOLFCAMP GAS  11. Sec., T. R. M. or Blk. and Survey or Area SEC 19 / T24S / R31E / NMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNW / 75 FNL / 785 FWL / LAT 32.209861 / LONG -103.82314 At proposed prod. zone SWSW / 200 FSL / 750 FWL / LAT 32.181564 / LONG -103.82328		
14. Distance in miles and direction from nearest town or post office*		12. County or Parish EDDY  13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet	16. No of acres in lease 324.37	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 35 feet	19. Proposed Depth 11478 feet / 21857 feet	20. BLM/BIA Bond No. in file FED: COB000050
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3496 feet	22. Approximate date work will start* 11/01/2019	23. Estimated duration 60 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature (Electronic Submission)	Name (Printed/Typed) Kelly Kardos / Ph: (432)620-4374	Date 05/29/2019
Title Regulatory Coordinator		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 10/24/2019
Title Assistant Field Manager Lands & Minerals CARLSBAD		

Application approval 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.

Conditions of approval, if any, are attached.

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.

**APPROVED WITH CONDITIONS**

(Continued on page 2)

\*(Instructions on page 2)

Approval Date: 10/24/2019

*RW 11-1-19*

### **Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Lucid and will be connected to Lucid low/high pressure gathering system located in Eddy County, New Mexico. It will require 760.75' of pipeline to connect the facility to low/high pressure gathering system. XTO Permian Operating, LLC provides (periodically) to Lucid a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO Permian Operating, LLC and Lucid have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Red Hills Plant, Sec. 13, T24S, R33E or Roadrunner, Sec. 32, T32S, R28E, Eddy County. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### **Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Lucid system at that time. Based on current information, it is XTO Permian Operating, LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### **Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM I:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

**ITEM 24:** If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

### **Location of Well**

1. SHL: NWNW / 75 FNL / 785 FWL / TWSP: 24S / RANGE: 31E / SECTION: 19 / LAT: 32.209861 / LONG: -103.82314 ( TVD: 0 feet, MD: 0 feet )  
PPP: NWNW / 330 FNL / 750 FWL / TWSP: 24S / RANGE: 31E / SECTION: 19 / LAT: 32.209161 / LONG: -103.823254 ( TVD: 11478 feet, MD: 11818 feet )  
PPP: NWSW / 2310 FSL / 750 FWL / TWSP: 24S / RANGE: 31E / SECTION: 19 / LAT: 32.200982 / LONG: -103.823431 ( TVD: 11478 feet, MD: 14458 feet )  
PPP: NWNW / 330 FNL / 750 FWL / TWSP: 24S / RANGE: 31E / SECTION: 30 / LAT: 32.193716 / LONG: -103.823427 ( TVD: 11478 feet, MD: 17098 feet )  
BHL: SWSW / 200 FSL / 750 FWL / TWSP: 24S / RANGE: 31E / SECTION: 30 / LAT: 32.181564 / LONG: -103.82328 ( TVD: 11478 feet, MD: 21857 feet )

## **BLM Point of Contact**

Name: Priscilla Perez

Title: Legal Instruments Examiner

Phone: 5752345934

Email: pperez@blm.gov

## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>XTO Permian Operating, LLC.</b>
<b>LEASE NO.:</b>	<b>NMMN-0025533</b>
<b>WELL NAME &amp; NO.:</b>	<b>Poker Lake Unit 18 TWR 102H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>0075' FNL &amp; 0785' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0200' FSL &amp; 0750' FWL Sec. 30, T. 24 S., R 31 E.</b>
<b>LOCATION:</b>	<b>Section 19, T. 24 S., R 31 E., NMPM</b>
<b>COUNTY:</b>	<b>County, New Mexico</b>

### **Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months.

### **Unit Wells**

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

### **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 (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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.**

**Possibility of water flows in the Salado and Castile.**

**Possibility of lost circulation in the Red Beds, Rustler, and Delaware.**

**Abnormal pressure may be encountered in the 3rd Bone Spring and all subsequent formations.**

1. The **18-5/8** inch surface casing shall be set at approximately **680** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler**, and if salt is encountered, set casing at least **25** feet 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 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.

2. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:

☐ Cement to surface. If cement does not circulate see B.1.a, c-d above.

**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 (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.**

**9-5/8" Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**

3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

**Operator has proposed DV tool at depth of 4200', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.**

a. First stage to DV tool: \_\_\_\_\_

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

- ☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**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 on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

**5-1/2" Production casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**

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

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

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 psi.
4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8" intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8" intermediate casing shoe shall be psi.**
  - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
  - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**

- c. **Manufacturer representative shall install the test plug for the initial BOP test.**
- d. **Operator shall perform the 9-5/8" intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
- e. **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.**

**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.**

5. The appropriate BLM office shall be notified a minimum of 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).
  - a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
  - b. 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.

- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. 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.
- f. 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 092019**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Operator Certification Data Report

10/24/2019

### Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are*

**NAME:** Kelly Kardos

**Signed on:** 05/29/2019

**Title:** Regulatory Coordinator

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:** (432)620-4374

**Email address:** kelly\_kardos@xtoenergy.com

### Field Representative

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Application Data Report

10/24/2019

APD ID: 10400042123

Submission Date: 05/29/2019

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400042123

Tie to previous NOS? Y

Submission Date: 05/29/2019

BLM Office: CARLSBAD

User: Kelly Kardos

Title: Regulatory Coordinator

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM0025533

Lease Acres: 324.37

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? YES

Federal or Indian agreement: FEDERAL

Agreement number: NMNM071016X

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: XTO PERMIAN OPERATING LLC

Operator letter of designation:

### Operator Info

Operator Organization Name: XTO PERMIAN OPERATING LLC

Operator Address: 6401 Holiday Hill Road, Bldg 5

Zip: 79707

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)682-8873

Operator Internet Address:

### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: PURPLE SAGE  
WOLFCAMP GAS

Pool Name:

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Is the proposed well in a Helium production area? N

Use Existing Well Pad? NO

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 1

Well Class: HORIZONTAL

POKER LAKE UNIT 18 TWR

Number of Legs: 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town:

Distance to nearest well: 35 FT

Distance to lease line: 330 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: PLU\_18\_TWR\_102H\_C102\_20190523124013.pdf

Well work start Date: 11/01/2019

Duration: 60 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
	75	FNL	785	FWL	24S	31E	19	NWN	32.209861	-103.82314	EDD Y	NEW MEXI	NEW MEXI	F	NMNM 002553	3496	0	0	
	75	FNL	785	FWL	24S	31E	19	NWN	32.209861	-103.82314	EDD Y	NEW MEXI	NEW MEXI	F	NMNM 002553	-7359	10869	10855	
	330	FNL	750	FWL	24S	31E	30	NWN	32.193716	-103.823427	EDD Y	NEW MEXI	NEW MEXI	F	NMNM 000050	-7982	17098	11478	

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
	2310	FSL	750	FWL	24S	31E	19	NWS	32.200982	-103.823431	EDD Y	NEW MEXI	NEW MEXI	F	NMLC0061705	-7982	14458	11478	
	330	FNL	750	FWL	24S	31E	30	NWN	32.193716	-103.823427	EDD Y	NEW MEXI	NEW MEXI	F	NMNM000050	-7982	17098	11478	
	330	FNL	750	FWL	24S	31E	30	NWN	32.193716	-103.823427	EDD Y	NEW MEXI	NEW MEXI	F	NMNM000050	-7982	17098	11478	
	2310	FSL	750	FWL	24S	31E	19	NWS	32.200982	-103.823431	EDD Y	NEW MEXI	NEW MEXI	F	NMLC0061705	-7982	14458	11478	
	330	FNL	750	FWL	24S	31E	19	NWN	32.209161	-103.823254	EDD Y	NEW MEXI	NEW MEXI	F	NMNM002553	-7982	11818	11478	
	2310	FSL	750	FWL	24S	31E	19	NWS	32.200982	-103.823431	EDD Y	NEW MEXI	NEW MEXI	F	NMLC0061705	-7982	14458	11478	
	330	FNL	750	FWL	24S	31E	19	NWN	32.209161	-103.823254	EDD Y	NEW MEXI	NEW MEXI	F	NMNM002553	-7982	11818	11478	
	330	FNL	750	FWL	24S	31E	19	NWN	32.209161	-103.823254	EDD Y	NEW MEXI	NEW MEXI	F	NMNM002553	-7982	11818	11478	
	330	FSL	750	FWL	24S	31E	30	SWS	32.181922	-103.823279	EDD Y	NEW MEXI	NEW MEXI	F	NMLC0061705	-7982	21727	11478	
	200	FSL	750	FWL	24S	31E	30	SWS	32.181564	-103.82328	EDD Y	NEW MEXI	NEW MEXI	F	NMLC0061705	-7982	21857	11478	



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Drilling Plan Data Report

10/24/2019

APD ID: 10400042123

Submission Date: 05/29/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	PERMIAN	3496	0	0	OTHER : Quaternary	NONE	N
2	RUSTLER	2978	518	518	SILTSTONE	USEABLE WATER	N
3	TOP SALT	2607	889	889	SALT	OTHER : Produced Water	N
4	BASE OF SALT	-517	4013	4013	SALT	OTHER : Produced Water	N
5	DELAWARE	-765	4261	4261	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced	N
6	BONE SPRING	-4632	8128	8128	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced	N
7	BONE SPRING 1ST	-5582	9078	9078	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced	N
8	BONE SPRING 2ND	-6362	9858	9858	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced	N
9	BONE SPRING 3RD	-7512	11008	11008	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced	N
10	WOLFCAMP	-7912	11408	11408	SHALE	OTHER,NATURAL GAS,OIL : Produced	Y

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 11478

**Equipment:** The blow out preventer equipment (BOP) on surface casing temporary wellhead will consist of a 21-1/4" minimum 2M Hydril. MASP should not exceed 1245 psi. Once the permanent wellhead is installed 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 3742 psi.

**Requesting Variance?** YES

**Variance request:** XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint. 13-3/8" Collapse analyzed using 50% evacuation based on regional experience. 9-5/8" Collapse analyzed using 50% evacuation based on regional experience. 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35 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.

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

**Testing Procedure:** 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 11-3/4" and 8-5/8" 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.

**Choke Diagram Attachment:**

PLU\_18\_TWR\_2M3MCM\_20190523130558.pdf

PLU\_18\_TWR\_5MCM\_20190523130612.pdf

**BOP Diagram Attachment:**

PLU\_18\_TWR\_5MBOP\_20190523130644.pdf

PLU\_18\_TWR\_Multi\_20190523130747.pdf

PLU\_18\_TWR\_2MBOP\_20190528101103.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	24	18.625	NEW	API	N	0	680	0	680			680	J-55	87.5	BUTT	2.05	1.81	DRY	23.1	DRY	23.1
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	4150	0	4150			4150	HCL-80	68	BUTT	2.31	1.8	DRY	10.41	DRY	10.41
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	10300	0	10300			10300	HCL-80	40	BUTT	1.4	1.46	BUOY	3.07	DRY	3.07
4	PRODUCTION	8.75	5.5	NEW	API	N	0	21857	0	11478			21857	P-110	17	BUTT	1.97	1.01	DRY	2.18	DRY	2.18

**Casing Attachments**

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

#### Casing Attachments

---

**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

PLU\_18\_TWR\_102H\_Csg\_20190523131126.pdf

---

**Casing ID:** 2      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

PLU\_18\_TWR\_102H\_Csg\_20190523131137.pdf

---

**Casing ID:** 3      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

PLU\_18\_TWR\_102H\_Csg\_20190523131146.pdf

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Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

### Casing Attachments

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

PLU\_18\_TWR\_102H\_Csg\_20190523131156.pdf

### Section 4 - Cement

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	680	500	1.87	12.8	935	100	EconoCem-HLTRRC	None
SURFACE	Tail				550	1.35	14.8	742.5	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	4150	2450	1.88	12.8	4606	100	HalCem-C	2% CaCl
INTERMEDIATE	Tail				850	1.35	14.8	1147.5	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead	4200	0	10300	1130	1.87	12.8	2113.1	100	HalCem-C	2% CaCl
INTERMEDIATE	Tail				390	1.35	14.8	526.5	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		4250	10300	1680	1.88	12.8	3158.4	100	HalCem-C	2% CaCl
INTERMEDIATE	Tail				470	1.33	14.8	625.1	100	HalCem-C	2% CaCl
PRODUCTION	Lead		0	21857	1670	1.88	11.5	3139.6	20	HalCem-C	2% CaCl
PRODUCTION	Tail				2610	1.33	13.2	3471.3	20	VersaCem	None

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

### Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

**Describe what will be on location to control well or mitigate other conditions:** The necessary mud products for weight addition and fluid loss control will be on location at all times.

**Describe the mud monitoring system utilized:** A Pason or Totco will be used to detect changes in loss or gain of mud volume.

### Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1030 0	1147 8	OTHER : FW / Cut Brine / Poly / OBM	10.2	10.8							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
4150	1030 0	OTHER : FW / Cut Brine	9.1	9.5							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
0	680	OTHER : FW/Native	8.4	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
											solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
680	4150	OTHER : Brine/Gel Sweeps	9.8	10.2							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

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

**List of open and cased hole logs run in the well:**

CBL,CNL,DS,GR,MUDLOG

**Coring operation description for the well:**

No coring will take place on this well.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6267

**Anticipated Surface Pressure:** 3741.84

**Anticipated Bottom Hole Temperature(F):** 160

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

Potential loss of circulation through the Capitan Reef.

**Contingency Plans geohazards description:**

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

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

after mud up. Rig up solids control equipment to operate as a closed loop system. 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.

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required? YES**

**Hydrogen sulfide drilling operations plan:**

PLU\_18\_TWR\_H2S\_Plan\_20190523132617.pdf

PLU\_18\_TWR\_H2S\_DiaE\_20190523132628.pdf

PLU\_18\_TWR\_H2S\_DiaW\_20190523132638.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

PLU\_18\_TWR\_102H\_DD\_20190523132719.pdf

**Other proposed operations facets description:**

The surface fresh water sands will be protected by setting 18-5/8 inch casing @ 680' (209' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 4150' and circulating cement to surface. A 12-1/4 inch vertical hole will be drilled to 10300' and 9-5/8 inch casing ran and cemented 500' into the 13-3/8 inch casing. An 8-3/4 inch curve and lateral hole will be drilled to MD/TD and 5-1/2 casing will be set at TD and cemented back 300' into the 9-5/8 inch casing shoe.

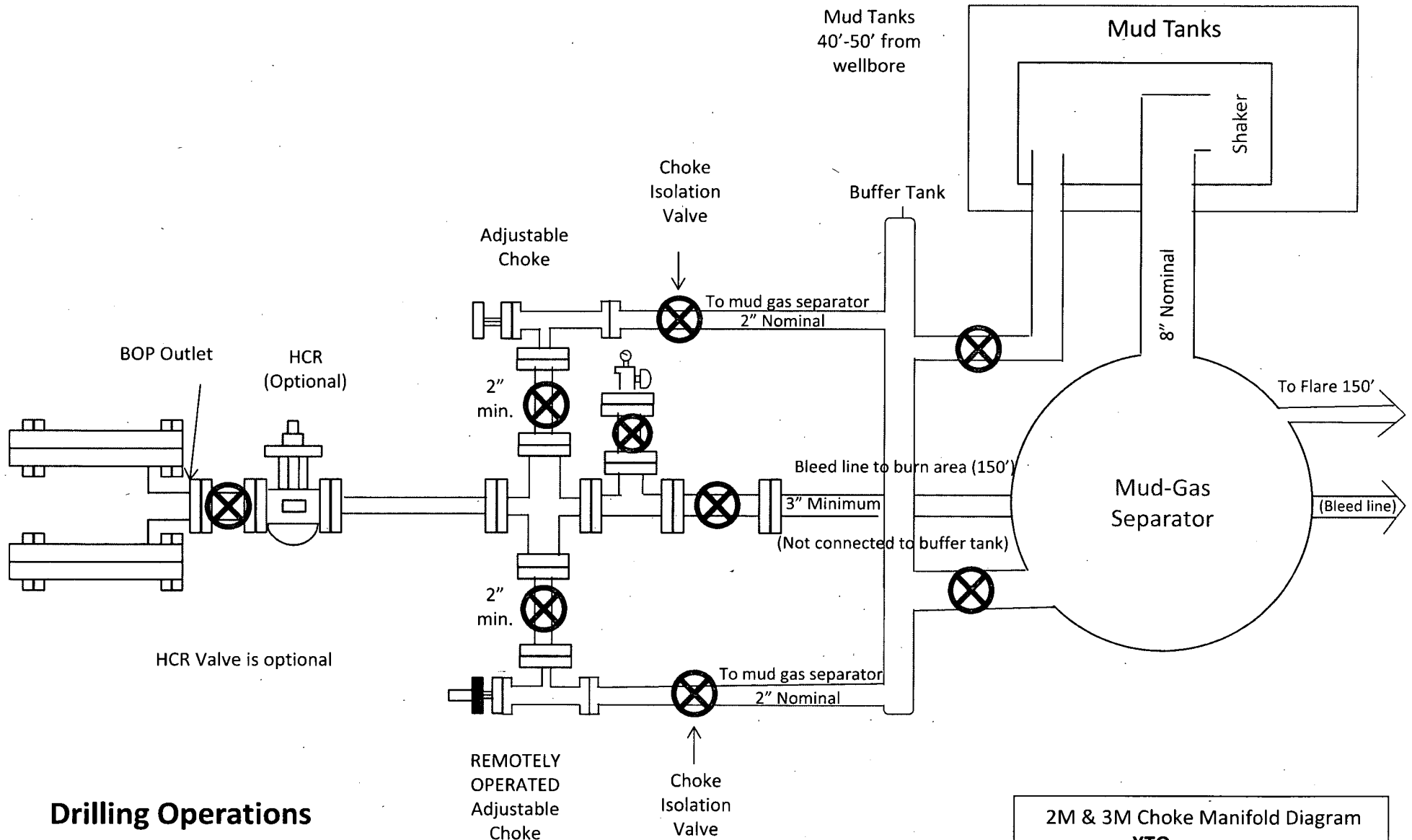
**Other proposed operations facets attachment:**

PLU\_18\_TWR\_GCPE\_20191008125853.pdf

PLU\_18\_TWR\_GCPW\_20191008125905.pdf

**Other Variance attachment:**

PLU\_18\_TWR\_FH\_20190523132910.pdf



## Drilling Operations Choke Manifold 2M & 3M Service

2M & 3M Choke Manifold Diagram  
XTO

### Casing Assumption Worksheet

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' – 680'	18-5/8"	87.5	BTC	J-55	New	1.81	2.05	23.10
17-1/2"	0' – 4150'	13-3/8"	68	BTC	HCL-80	New	1.80	2.31	10.41
12-1/4"	0' – 10300'	9-5/8"	40	BTC	HCL-80	New	1.46	1.40	3.07
8-3/4"	0' – 21857'	5-1/2"	17	BTC	P-110	New	1.01	1.97	2.18

XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.

13-3/8" Collapse analyzed using 50% evacuation based on regional experience.

9-5/8" Collapse analyzed using 50% evacuation based on regional experience.

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

Test on 2M Annular & Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

#### WELLHEAD:

##### *Temporary Wellhead*

- 18-5/8" SOW bottom x 21-1/4" 3M top flange.

##### Permanent Wellhead – GE RSH Multibowl System

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange

B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M 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 8-5/8" casing per Onshore Order 2.
- Wellhead manufacturer representative may not be present for BOP test plug installation



## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN**

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

### **Ignition of Gas source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

### **Contacting Authorities**

All XTO location personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

## **CARLSBAD OFFICE – EDDY & LEA COUNTIES**

3104 E. Greene St., Carlsbad, NM 88220  
Carlsbad, NM

575-887-7329

### **XTO PERSONNEL:**

Kendall Decker, Drilling Manager	903-521-6477
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Toady Sanders, EH & S Manager	903-520-1601
Wes McSpadden, Production Foreman	575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County	575-887-7551
Lea County	575-396-3611

### **NEW MEXICO STATE POLICE:**

575-392-5588

### **FIRE DEPARTMENTS:**

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

### **HOSPITALS:**

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

### **AGENT NOTIFICATIONS:**

#### **For Lea County:**

Bureau of Land Management – Hobbs	575-393-3612
New Mexico Oil Conservation Division – Hobbs	575-393-6161

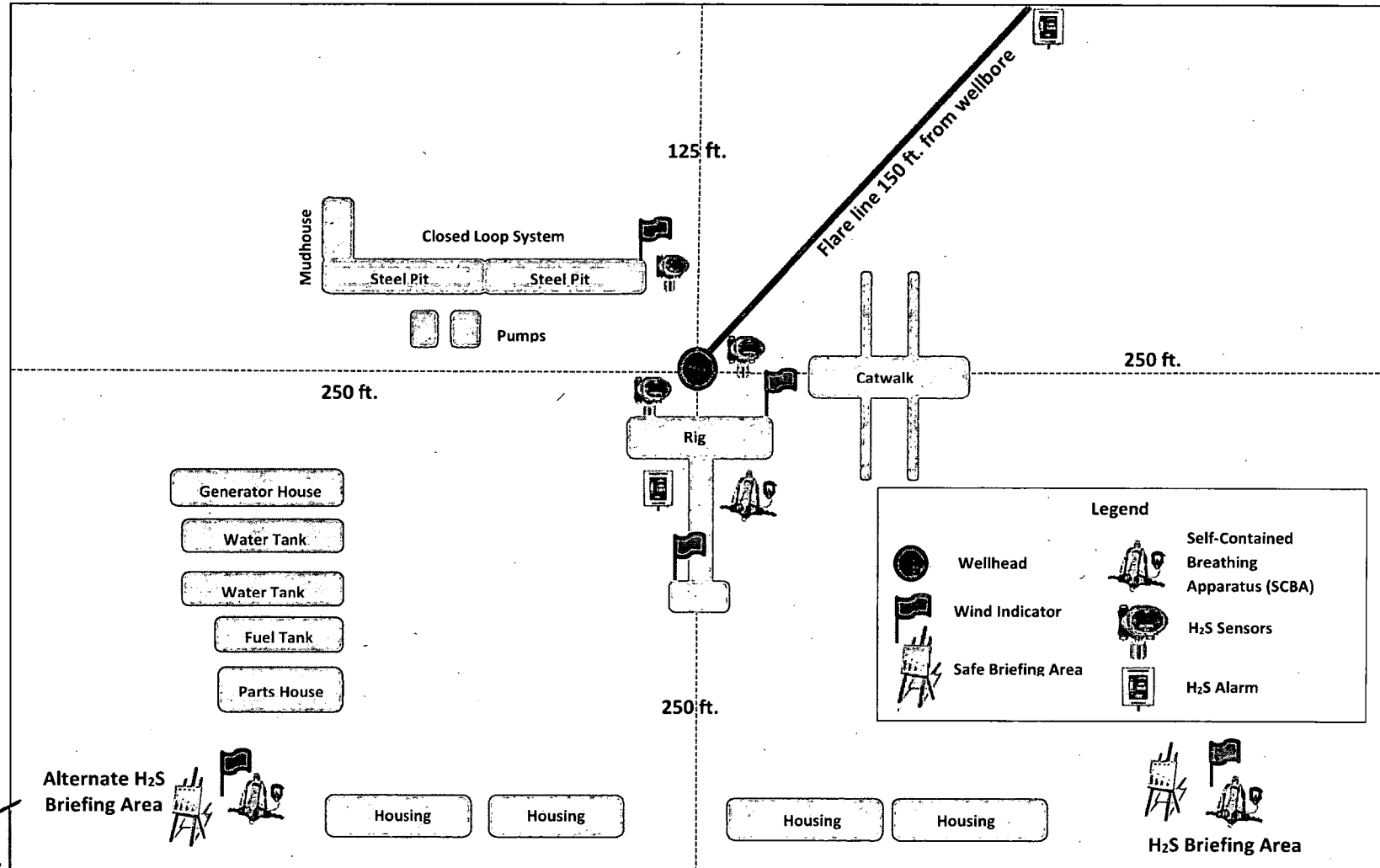
#### **For Eddy County:**

Bureau of Land Management - Carlsbad	575-234-5972
New Mexico Oil Conservation Division - Artesia	575-748-1283

↑  
E

Prevailing Winds  
Direction SW

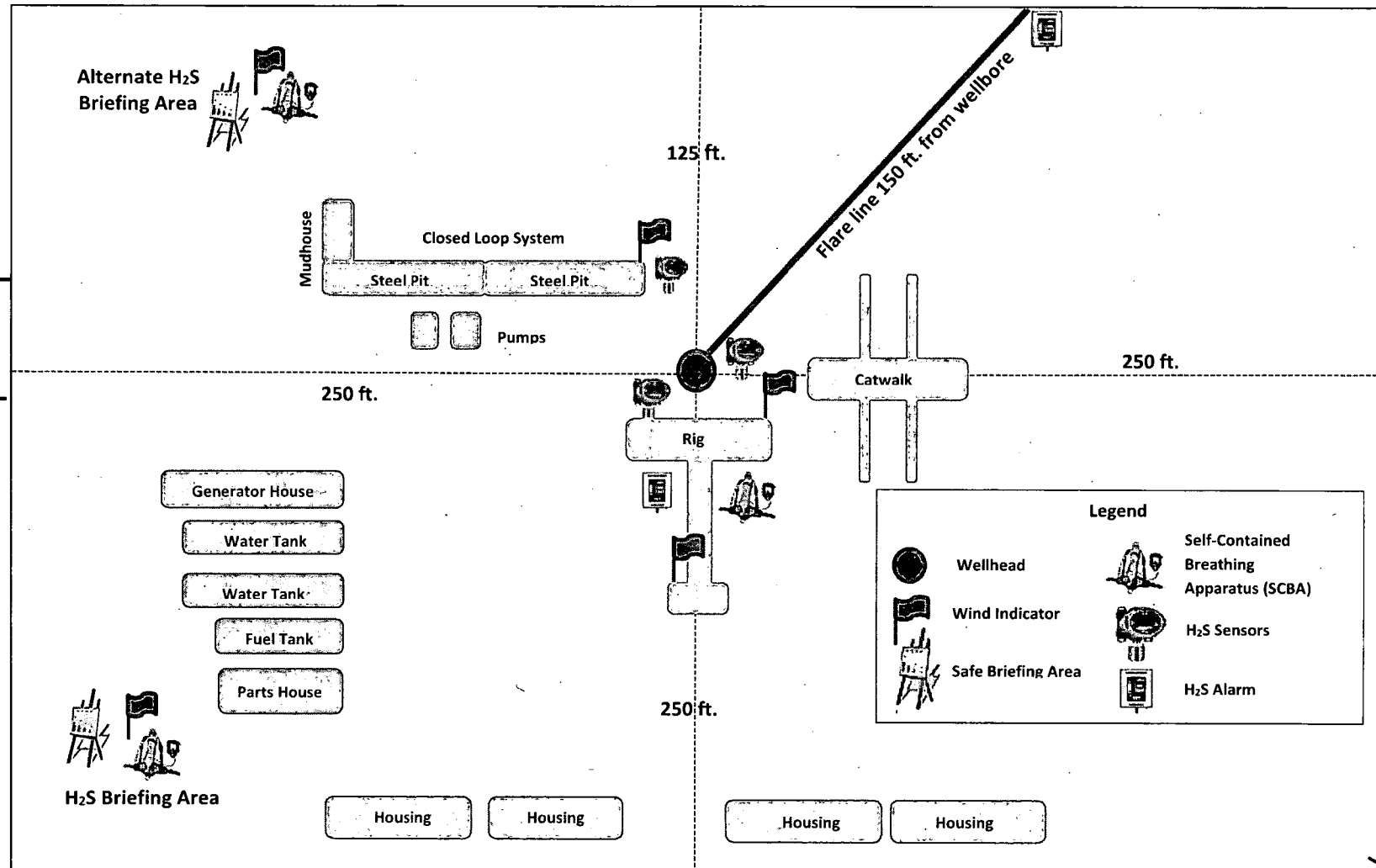
## H<sub>2</sub>S Briefing Areas and Alarm Locations





Prevailing Winds  
Direction SW

## H<sub>2</sub>S Briefing Areas and Alarm Locations





## **XTO Energy**

**Eddy County, NM (NAD-27)**

**Poker Lake Unit 18 TWR**

**#102H**

**Wellbore #1**

**Plan: PERMIT v2**

## **Standard Planning Report**

**01 May, 2019**



Project: Eddy County, NM (NAD-27)  
Site: Poker Lake Unit 18 TWR  
Well: #102H  
Wellbore: Wellbore #1  
Design: PERMIT v2

PROJECT DETAILS: Eddy County, NM (NAD-27)  
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

WELL DETAILS: #102H

Rig Name: RKB = 22 @ 3518.00usft  
Ground Level: 3496.00  
Northing: 440397.40  
Easting: 657946.80  
Latitude: 32.2097381  
Longitude: -103.8226559

DESIGN TARGET DETAILS

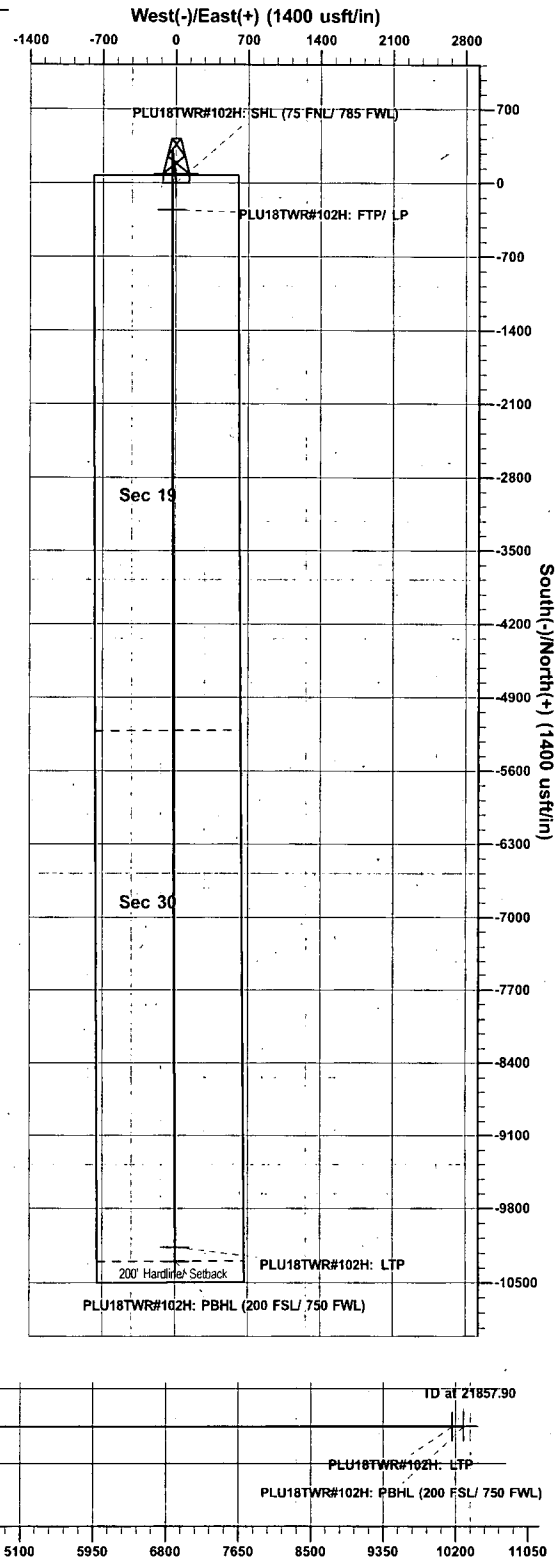
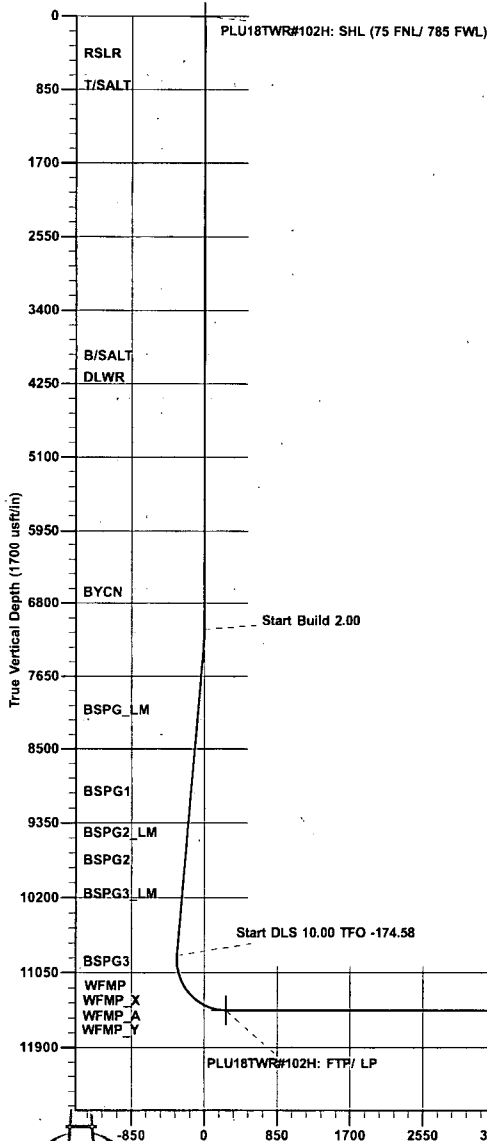
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PLU18TWR#102H: SHL (75 FNL/ 785 FWL)	0.00	0.00	0.00	440397.40	657946.80	32.2097381	-103.8226559	Point
PLU18TWR#102H: FTP/ LP	11478.00	-255.10	-34.00	440142.30	657912.80	32.2090373	-103.8227697	Point
PLU18TWR#102H: LTP	11478.00	-10164.10	4.90	430233.30	657951.70	32.1817980	-103.8227960	Point
PLU18TWR#102H: PBHL (200 FSL/ 750 FWL)	11478.00	-10294.10	5.40	430103.30	657952.20	32.1814406	-103.8227964	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7105.00	0.00	0.00	7105.00	0.00	0.00	0.00	0.00	0.00
3	7355.06	5.00	354.37	7354.74	10.85	-1.07	2.00	354.37	-10.86
4	10869.03	5.00	354.37	10865.34	315.71	-31.11	0.00	0.00	-315.83
5	11818.82	90.00	179.78	11478.00	-255.10	-34.00	10.00	-174.58	254.97
6	21727.90	90.00	179.78	11478.00	-10164.10	4.89	0.00	0.00	10164.04
7	21857.90	90.00	179.78	11478.00	-10294.10	5.40	0.00	0.00	10294.04

FORMATION TOP DETAILS

TVDPATH	FORMATION
518.00	RSLR
889.00	T/SALT
4013.00	B/SALT
4261.00	DLWR
6756.00	BYCN
8128.00	BSPG_LM
9078.00	BSPG1
9548.00	BSPG2_LM
9858.00	BSPG2
10238.00	BSPG3_LM
11008.00	BSPG3
11408.00	WFMP
11448.00	WFMP_X
11478.00	WFMP_Y



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by Prototype are at the sole risk and responsibility of the user.

Vertical Section at 179.78° (1700 usft/in)

Plan: PERMIT v2 (#102HWellbore #1)

Created By: Prototype Well Planning, LLC Date: 12:08, May 01 2019



# Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 22' @ 3518.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 22' @ 3518.00usft
Site:	Poker Lake Unit 18 TWR	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT v2		

Project	Eddy County, NM (NAD-27)		
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	Poker Lake Unit 18 TWR		
Site Position:		Northing:	440,397.40 usft
From:	Map	Easting:	657,946.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2097382
		Longitude:	-103.8226558
		Grid Convergence:	0.27 °

Well	#102H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.2097382
		Longitude:	-103.8226558
		Ground Level:	3,496.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	05/01/19	6.87
			Dip Angle
			(°)
			59.99
			Field Strength
			(nT)
			47,710

Design	PERMIT v2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			179.78

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,105.00	0.00	0.00	7,105.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,355.06	5.00	354.37	7,354.74	10.85	-1.07	2.00	2.00	0.00	354.37	
10,869.03	5.00	354.37	10,855.34	315.71	-31.11	0.00	0.00	0.00	0.00	
11,818.82	90.00	179.78	11,478.00	-255.10	-34.00	10.00	8.95	-18.38	-174.58	PLU18TWR#102H:
21,727.90	90.00	179.78	11,478.00	-10,164.10	4.89	0.00	0.00	0.00	0.00	PLU18TWR#102H:
21,857.90	90.00	179.78	11,478.00	-10,294.10	5.40	0.00	0.00	0.00	0.00	PLU18TWR#102H:



# Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 22' @ 3518.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 22' @ 3518.00usft
Site:	Poker Lake Unit 18 TWR	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT v2		

## 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
518.00	0.00	0.00	518.00	0.00	0.00	0.00	0.00	0.00	0.00
RSLR									
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
889.00	0.00	0.00	889.00	0.00	0.00	0.00	0.00	0.00	0.00
T/SALT									
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
1,300.00	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
3,300.00	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
3,500.00	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
4,013.00	0.00	0.00	4,013.00	0.00	0.00	0.00	0.00	0.00	0.00
B/SALT									
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
4,261.00	0.00	0.00	4,261.00	0.00	0.00	0.00	0.00	0.00	0.00
DLWR									
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
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



# Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 22' @ 3518.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 22' @ 3518.00usft
Site:	Poker Lake Unit.18 TWR	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT v2		

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)
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
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
6,756.00	0.00	0.00	6,756.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BYCN</b>									
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
7,105.00	0.00	0.00	7,105.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	1.90	354.37	7,199.98	1.57	-0.15	-1.57	2.00	2.00	0.00
7,300.00	3.90	354.37	7,299.85	6.60	-0.65	-6.60	2.00	2.00	0.00
7,355.06	5.00	354.37	7,354.74	10.85	-1.07	-10.86	2.00	2.00	0.00
7,400.00	5.00	354.37	7,399.51	14.75	-1.45	-14.76	0.00	0.00	0.00
7,500.00	5.00	354.37	7,499.13	23.43	-2.31	-23.44	0.00	0.00	0.00
7,600.00	5.00	354.37	7,598.75	32.10	-3.16	-32.12	0.00	0.00	0.00
7,700.00	5.00	354.37	7,698.37	40.78	-4.02	-40.79	0.00	0.00	0.00
7,800.00	5.00	354.37	7,797.99	49.46	-4.87	-49.47	0.00	0.00	0.00
7,900.00	5.00	354.37	7,897.61	58.13	-5.73	-58.15	0.00	0.00	0.00
8,000.00	5.00	354.37	7,997.23	66.81	-6.58	-66.83	0.00	0.00	0.00
8,100.00	5.00	354.37	8,096.85	75.48	-7.44	-75.51	0.00	0.00	0.00
8,131.27	5.00	354.37	8,128.00	78.20	-7.71	-78.22	0.00	0.00	0.00
<b>BSPG LM</b>									
8,200.00	5.00	354.37	8,196.47	84.16	-8.29	-84.19	0.00	0.00	0.00
8,300.00	5.00	354.37	8,296.09	92.83	-9.15	-92.87	0.00	0.00	0.00
8,400.00	5.00	354.37	8,395.70	101.51	-10.00	-101.55	0.00	0.00	0.00
8,500.00	5.00	354.37	8,495.32	110.18	-10.86	-110.23	0.00	0.00	0.00
8,600.00	5.00	354.37	8,594.94	118.86	-11.71	-118.90	0.00	0.00	0.00
8,700.00	5.00	354.37	8,694.56	127.54	-12.57	-127.58	0.00	0.00	0.00
8,800.00	5.00	354.37	8,794.18	136.21	-13.42	-136.26	0.00	0.00	0.00
8,900.00	5.00	354.37	8,893.80	144.89	-14.28	-144.94	0.00	0.00	0.00
9,000.00	5.00	354.37	8,993.42	153.56	-15.13	-153.62	0.00	0.00	0.00
9,084.90	5.00	354.37	9,078.00	160.93	-15.86	-160.99	0.00	0.00	0.00
<b>BSPG1</b>									
9,100.00	5.00	354.37	9,093.04	162.24	-15.99	-162.30	0.00	0.00	0.00



## Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 22' @ 3518.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 22' @ 3518.00usft
Site:	Poker Lake Unit 18 TWR	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT v2		

## 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)
9,200.00	5.00	354.37	9,192.66	170.91	-16.84	-170.98	0.00	0.00	0.00
9,300.00	5.00	354.37	9,292.28	179.59	-17.70	-179.66	0.00	0.00	0.00
9,400.00	5.00	354.37	9,391.90	188.26	-18.55	-188.33	0.00	0.00	0.00
9,500.00	5.00	354.37	9,491.52	196.94	-19.41	-197.01	0.00	0.00	0.00
9,556.70	5.00	354.37	9,548.00	201.86	-19.89	-201.93	0.00	0.00	0.00
<b>BSPG2 LM</b>									
9,600.00	5.00	354.37	9,591.14	205.62	-20.26	-205.69	0.00	0.00	0.00
9,700.00	5.00	354.37	9,690.76	214.29	-21.12	-214.37	0.00	0.00	0.00
9,800.00	5.00	354.37	9,790.37	222.97	-21.97	-223.05	0.00	0.00	0.00
9,867.88	5.00	354.37	9,858.00	228.86	-22.55	-228.94	0.00	0.00	0.00
<b>BSPG2</b>									
9,900.00	5.00	354.37	9,889.99	231.64	-22.83	-231.73	0.00	0.00	0.00
10,000.00	5.00	354.37	9,989.61	240.32	-23.68	-240.41	0.00	0.00	0.00
10,100.00	5.00	354.37	10,089.23	248.99	-24.54	-249.09	0.00	0.00	0.00
10,200.00	5.00	354.37	10,188.85	257.67	-25.39	-257.76	0.00	0.00	0.00
10,249.34	5.00	354.37	10,238.00	261.95	-25.81	-262.05	0.00	0.00	0.00
<b>BSPG3 LM</b>									
10,300.00	5.00	354.37	10,288.47	266.34	-26.25	-266.44	0.00	0.00	0.00
10,400.00	5.00	354.37	10,388.09	275.02	-27.10	-275.12	0.00	0.00	0.00
10,500.00	5.00	354.37	10,487.71	283.70	-27.95	-283.80	0.00	0.00	0.00
10,600.00	5.00	354.37	10,587.33	292.37	-28.81	-292.48	0.00	0.00	0.00
10,700.00	5.00	354.37	10,686.95	301.05	-29.66	-301.16	0.00	0.00	0.00
10,800.00	5.00	354.37	10,786.57	309.72	-30.52	-309.84	0.00	0.00	0.00
10,869.03	5.00	354.37	10,855.34	315.71	-31.11	-315.83	0.00	0.00	0.00
10,900.00	1.94	345.70	10,886.24	317.56	-31.37	-317.68	10.00	-9.88	-28.01
10,950.00	3.15	188.38	10,936.22	317.02	-31.78	-317.14	10.00	2.43	-314.65
11,000.00	8.13	183.08	10,985.97	312.13	-32.17	-312.25	10.00	9.96	-10.59
11,022.33	10.36	182.36	11,008.00	308.55	-32.34	-308.67	10.00	9.99	-3.24
<b>BSPG3</b>									
11,050.00	13.13	181.80	11,035.09	302.92	-32.54	-303.04	10.00	9.99	-2.02
11,100.00	18.12	181.22	11,083.23	289.46	-32.88	-289.58	10.00	10.00	-1.16
11,150.00	23.12	180.88	11,130.01	271.86	-33.20	-271.98	10.00	10.00	-0.67
11,200.00	28.12	180.66	11,175.08	250.24	-33.49	-250.37	10.00	10.00	-0.44
11,250.00	33.12	180.50	11,218.09	224.78	-33.74	-224.91	10.00	10.00	-0.32
11,300.00	38.12	180.38	11,258.73	195.67	-33.96	-195.80	10.00	10.00	-0.24
11,350.00	43.12	180.28	11,296.67	163.13	-34.15	-163.26	10.00	10.00	-0.20
11,400.00	48.12	180.20	11,331.63	127.41	-34.30	-127.54	10.00	10.00	-0.16
11,450.00	53.12	180.13	11,363.34	88.77	-34.40	-88.91	10.00	10.00	-0.14
11,500.00	58.12	180.07	11,391.56	47.52	-34.48	-47.65	10.00	10.00	-0.12
11,532.63	61.38	180.03	11,408.00	19.34	-34.50	-19.47	10.00	10.00	-0.11
<b>WFMP</b>									
11,550.00	63.12	180.01	11,416.09	3.97	-34.51	-4.10	10.00	10.00	-0.11
11,600.00	68.12	179.96	11,436.72	-41.56	-34.50	41.43	10.00	10.00	-0.10
11,632.59	71.38	179.93	11,448.00	-72.13	-34.47	72.00	10.00	10.00	-0.09
<b>WFMP X</b>									
11,650.00	73.12	179.92	11,453.31	-88.71	-34.45	88.58	10.00	10.00	-0.09
11,700.00	78.12	179.87	11,465.72	-137.13	-34.36	137.00	10.00	10.00	-0.09
11,750.00	83.12	179.83	11,473.87	-186.44	-34.24	186.31	10.00	10.00	-0.08
11,800.00	88.12	179.79	11,477.69	-236.28	-34.07	236.15	10.00	10.00	-0.08
11,818.82	90.00	179.78	11,478.00	-255.10	-34.00	254.97	10.00	10.00	-0.08
<b>LP</b>									
11,900.00	90.00	179.78	11,478.00	-336.28	-33.68	336.15	0.00	0.00	0.00
12,000.00	90.00	179.78	11,478.00	-436.28	-33.29	436.15	0.00	0.00	0.00



## Planning Report

<b>Database:</b>	EDM 5000.1.13 Single User Db	<b>Local Co-ordinate Reference:</b>	Well #102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB = 22' @ 3518.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB = 22' @ 3518.00usft
<b>Site:</b>	Poker Lake Unit 18 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT v2		

### 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)
12,100.00	90.00	179.78	11,478.00	-536.28	-32.90	536.15	0.00	0.00	0.00
12,200.00	90.00	179.78	11,478.00	-636.28	-32.50	636.15	0.00	0.00	0.00
12,300.00	90.00	179.78	11,478.00	-736.27	-32.11	736.15	0.00	0.00	0.00
12,400.00	90.00	179.78	11,478.00	-836.27	-31.72	836.15	0.00	0.00	0.00
12,500.00	90.00	179.78	11,478.00	-936.27	-31.33	936.15	0.00	0.00	0.00
12,600.00	90.00	179.78	11,478.00	-1,036.27	-30.93	1,036.15	0.00	0.00	0.00
12,700.00	90.00	179.78	11,478.00	-1,136.27	-30.54	1,136.15	0.00	0.00	0.00
12,800.00	90.00	179.78	11,478.00	-1,236.27	-30.15	1,236.15	0.00	0.00	0.00
12,900.00	90.00	179.78	11,478.00	-1,336.27	-29.76	1,336.15	0.00	0.00	0.00
13,000.00	90.00	179.78	11,478.00	-1,436.27	-29.36	1,436.15	0.00	0.00	0.00
13,100.00	90.00	179.78	11,478.00	-1,536.27	-28.97	1,536.15	0.00	0.00	0.00
13,200.00	90.00	179.78	11,478.00	-1,636.27	-28.58	1,636.15	0.00	0.00	0.00
13,300.00	90.00	179.78	11,478.00	-1,736.27	-28.19	1,736.15	0.00	0.00	0.00
13,400.00	90.00	179.78	11,478.00	-1,836.27	-27.79	1,836.15	0.00	0.00	0.00
13,500.00	90.00	179.78	11,478.00	-1,936.27	-27.40	1,936.15	0.00	0.00	0.00
13,600.00	90.00	179.78	11,478.00	-2,036.26	-27.01	2,036.15	0.00	0.00	0.00
13,700.00	90.00	179.78	11,478.00	-2,136.26	-26.62	2,136.15	0.00	0.00	0.00
13,800.00	90.00	179.78	11,478.00	-2,236.26	-26.22	2,236.15	0.00	0.00	0.00
13,900.00	90.00	179.78	11,478.00	-2,336.26	-25.83	2,336.15	0.00	0.00	0.00
14,000.00	90.00	179.78	11,478.00	-2,436.26	-25.44	2,436.15	0.00	0.00	0.00
14,100.00	90.00	179.78	11,478.00	-2,536.26	-25.05	2,536.15	0.00	0.00	0.00
14,200.00	90.00	179.78	11,478.00	-2,636.26	-24.65	2,636.15	0.00	0.00	0.00
14,300.00	90.00	179.78	11,478.00	-2,736.26	-24.26	2,736.15	0.00	0.00	0.00
14,400.00	90.00	179.78	11,478.00	-2,836.26	-23.87	2,836.15	0.00	0.00	0.00
14,500.00	90.00	179.78	11,478.00	-2,936.26	-23.48	2,936.15	0.00	0.00	0.00
14,600.00	90.00	179.78	11,478.00	-3,036.26	-23.08	3,036.15	0.00	0.00	0.00
14,700.00	90.00	179.78	11,478.00	-3,136.26	-22.69	3,136.15	0.00	0.00	0.00
14,800.00	90.00	179.78	11,478.00	-3,236.26	-22.30	3,236.15	0.00	0.00	0.00
14,900.00	90.00	179.78	11,478.00	-3,336.25	-21.91	3,336.15	0.00	0.00	0.00
15,000.00	90.00	179.78	11,478.00	-3,436.25	-21.51	3,436.15	0.00	0.00	0.00
15,100.00	90.00	179.78	11,478.00	-3,536.25	-21.12	3,536.15	0.00	0.00	0.00
15,200.00	90.00	179.78	11,478.00	-3,636.25	-20.73	3,636.15	0.00	0.00	0.00
15,300.00	90.00	179.78	11,478.00	-3,736.25	-20.34	3,736.15	0.00	0.00	0.00
15,400.00	90.00	179.78	11,478.00	-3,836.25	-19.95	3,836.15	0.00	0.00	0.00
15,500.00	90.00	179.78	11,478.00	-3,936.25	-19.55	3,936.15	0.00	0.00	0.00
15,600.00	90.00	179.78	11,478.00	-4,036.25	-19.16	4,036.15	0.00	0.00	0.00
15,700.00	90.00	179.78	11,478.00	-4,136.25	-18.77	4,136.15	0.00	0.00	0.00
15,800.00	90.00	179.78	11,478.00	-4,236.25	-18.38	4,236.15	0.00	0.00	0.00
15,900.00	90.00	179.78	11,478.00	-4,336.25	-17.98	4,336.15	0.00	0.00	0.00
16,000.00	90.00	179.78	11,478.00	-4,436.25	-17.59	4,436.15	0.00	0.00	0.00
16,100.00	90.00	179.78	11,478.00	-4,536.25	-17.20	4,536.15	0.00	0.00	0.00
16,200.00	90.00	179.78	11,478.00	-4,636.24	-16.81	4,636.15	0.00	0.00	0.00
16,300.00	90.00	179.78	11,478.00	-4,736.24	-16.41	4,736.15	0.00	0.00	0.00
16,400.00	90.00	179.78	11,478.00	-4,836.24	-16.02	4,836.15	0.00	0.00	0.00
16,500.00	90.00	179.78	11,478.00	-4,936.24	-15.63	4,936.15	0.00	0.00	0.00
16,600.00	90.00	179.78	11,478.00	-5,036.24	-15.24	5,036.15	0.00	0.00	0.00
16,700.00	90.00	179.78	11,478.00	-5,136.24	-14.84	5,136.15	0.00	0.00	0.00
16,800.00	90.00	179.78	11,478.00	-5,236.24	-14.45	5,236.15	0.00	0.00	0.00
16,900.00	90.00	179.78	11,478.00	-5,336.24	-14.06	5,336.15	0.00	0.00	0.00
17,000.00	90.00	179.78	11,478.00	-5,436.24	-13.67	5,436.15	0.00	0.00	0.00
17,100.00	90.00	179.78	11,478.00	-5,536.24	-13.27	5,536.15	0.00	0.00	0.00
17,200.00	90.00	179.78	11,478.00	-5,636.24	-12.88	5,636.15	0.00	0.00	0.00
17,300.00	90.00	179.78	11,478.00	-5,736.24	-12.49	5,736.15	0.00	0.00	0.00
17,400.00	90.00	179.78	11,478.00	-5,836.24	-12.10	5,836.15	0.00	0.00	0.00



# Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 22' @ 3518.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 22' @ 3518.00usft
Site:	Poker Lake Unit 18 TWR	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT v2		

## 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)
17,500.00	90.00	179.78	11,478.00	-5,936.24	-11.70	5,936.15	0.00	0.00	0.00
17,600.00	90.00	179.78	11,478.00	-6,036.23	-11.31	6,036.15	0.00	0.00	0.00
17,700.00	90.00	179.78	11,478.00	-6,136.23	-10.92	6,136.15	0.00	0.00	0.00
17,800.00	90.00	179.78	11,478.00	-6,236.23	-10.53	6,236.15	0.00	0.00	0.00
17,900.00	90.00	179.78	11,478.00	-6,336.23	-10.13	6,336.15	0.00	0.00	0.00
18,000.00	90.00	179.78	11,478.00	-6,436.23	-9.74	6,436.15	0.00	0.00	0.00
18,100.00	90.00	179.78	11,478.00	-6,536.23	-9.35	6,536.15	0.00	0.00	0.00
18,200.00	90.00	179.78	11,478.00	-6,636.23	-8.96	6,636.15	0.00	0.00	0.00
18,300.00	90.00	179.78	11,478.00	-6,736.23	-8.56	6,736.15	0.00	0.00	0.00
18,400.00	90.00	179.78	11,478.00	-6,836.23	-8.17	6,836.15	0.00	0.00	0.00
18,500.00	90.00	179.78	11,478.00	-6,936.23	-7.78	6,936.15	0.00	0.00	0.00
18,600.00	90.00	179.78	11,478.00	-7,036.23	-7.39	7,036.15	0.00	0.00	0.00
18,700.00	90.00	179.78	11,478.00	-7,136.23	-6.99	7,136.15	0.00	0.00	0.00
18,800.00	90.00	179.78	11,478.00	-7,236.23	-6.60	7,236.15	0.00	0.00	0.00
18,900.00	90.00	179.78	11,478.00	-7,336.22	-6.21	7,336.15	0.00	0.00	0.00
19,000.00	90.00	179.78	11,478.00	-7,436.22	-5.82	7,436.15	0.00	0.00	0.00
19,100.00	90.00	179.78	11,478.00	-7,536.22	-5.42	7,536.15	0.00	0.00	0.00
19,200.00	90.00	179.78	11,478.00	-7,636.22	-5.03	7,636.15	0.00	0.00	0.00
19,300.00	90.00	179.78	11,478.00	-7,736.22	-4.64	7,736.15	0.00	0.00	0.00
19,400.00	90.00	179.78	11,478.00	-7,836.22	-4.25	7,836.15	0.00	0.00	0.00
19,500.00	90.00	179.78	11,478.00	-7,936.22	-3.85	7,936.15	0.00	0.00	0.00
19,600.00	90.00	179.78	11,478.00	-8,036.22	-3.46	8,036.15	0.00	0.00	0.00
19,700.00	90.00	179.78	11,478.00	-8,136.22	-3.07	8,136.15	0.00	0.00	0.00
19,800.00	90.00	179.78	11,478.00	-8,236.22	-2.68	8,236.15	0.00	0.00	0.00
19,900.00	90.00	179.78	11,478.00	-8,336.22	-2.28	8,336.15	0.00	0.00	0.00
20,000.00	90.00	179.78	11,478.00	-8,436.22	-1.89	8,436.15	0.00	0.00	0.00
20,100.00	90.00	179.78	11,478.00	-8,536.22	-1.50	8,536.15	0.00	0.00	0.00
20,200.00	90.00	179.78	11,478.00	-8,636.21	-1.11	8,636.15	0.00	0.00	0.00
20,300.00	90.00	179.78	11,478.00	-8,736.21	-0.71	8,736.15	0.00	0.00	0.00
20,400.00	90.00	179.78	11,478.00	-8,836.21	-0.32	8,836.15	0.00	0.00	0.00
20,500.00	90.00	179.78	11,478.00	-8,936.21	0.07	8,936.15	0.00	0.00	0.00
20,600.00	90.00	179.78	11,478.00	-9,036.21	0.46	9,036.15	0.00	0.00	0.00
20,700.00	90.00	179.78	11,478.00	-9,136.21	0.86	9,136.15	0.00	0.00	0.00
20,800.00	90.00	179.78	11,478.00	-9,236.21	1.25	9,236.15	0.00	0.00	0.00
20,900.00	90.00	179.78	11,478.00	-9,336.21	1.64	9,336.15	0.00	0.00	0.00
21,000.00	90.00	179.78	11,478.00	-9,436.21	2.03	9,436.15	0.00	0.00	0.00
21,100.00	90.00	179.78	11,478.00	-9,536.21	2.43	9,536.15	0.00	0.00	0.00
21,200.00	90.00	179.78	11,478.00	-9,636.21	2.82	9,636.15	0.00	0.00	0.00
21,300.00	90.00	179.78	11,478.00	-9,736.21	3.21	9,736.15	0.00	0.00	0.00
21,400.00	90.00	179.78	11,478.00	-9,836.21	3.60	9,836.15	0.00	0.00	0.00
21,500.00	90.00	179.78	11,478.00	-9,936.20	4.00	9,936.15	0.00	0.00	0.00
21,600.00	90.00	179.78	11,478.00	-10,036.20	4.39	10,036.15	0.00	0.00	0.00
21,700.00	90.00	179.78	11,478.00	-10,136.20	4.78	10,136.15	0.00	0.00	0.00
21,727.90	90.00	179.78	11,478.00	-10,164.10	4.89	10,164.04	0.00	0.00	0.00
21,800.00	90.00	179.78	11,478.00	-10,236.20	5.17	10,236.15	0.00	0.00	0.00
21,857.90	90.00	179.78	11,478.00	-10,294.10	5.40	10,294.05	0.00	0.00	0.00



# Planning Report

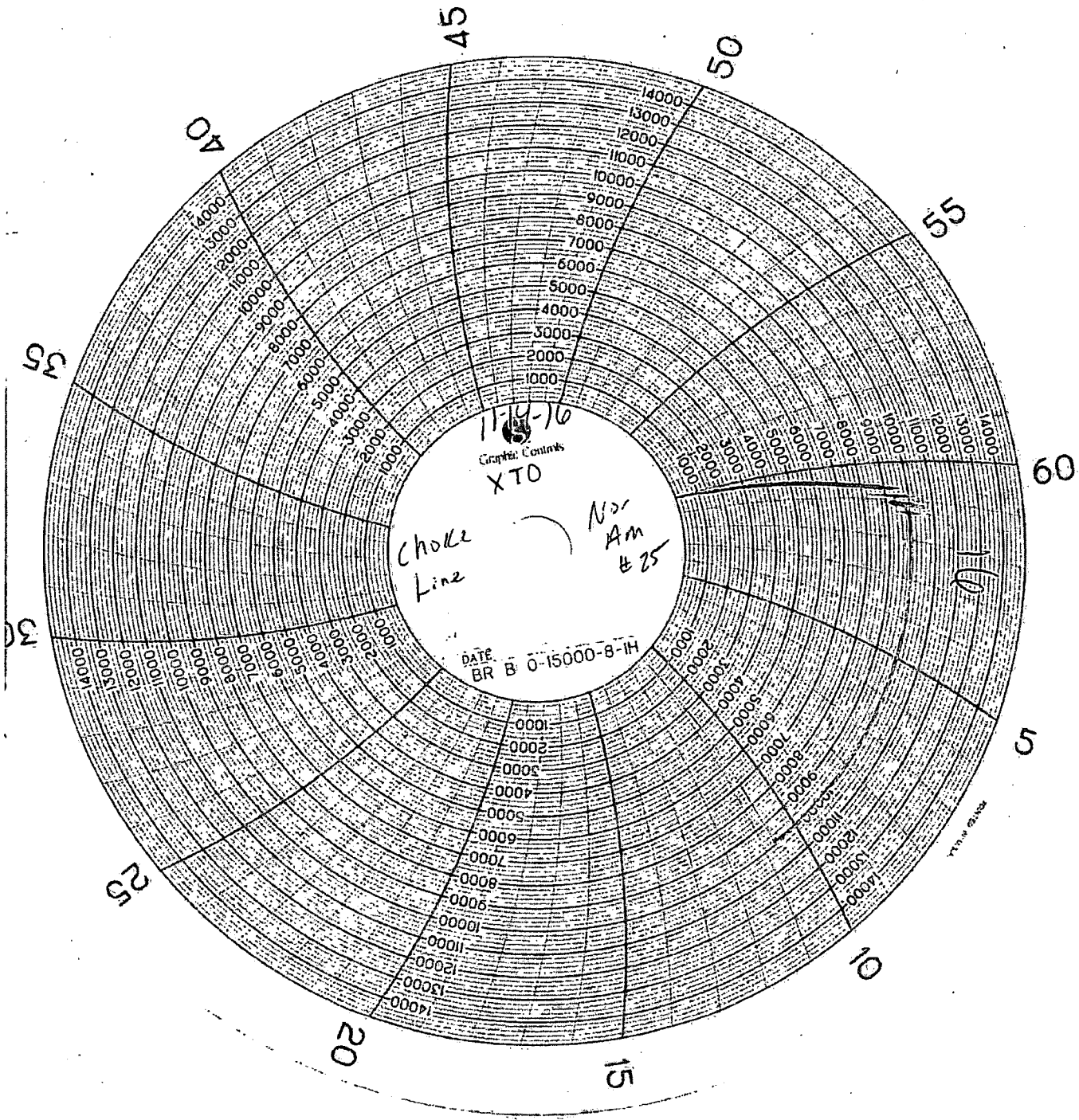
<b>Database:</b>	EDM 5000.1.13 Single User Db	<b>Local Co-ordinate Reference:</b>	Well #102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB = 22' @ 3518.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB = 22' @ 3518.00usft
<b>Site:</b>	Poker Lake Unit 18 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT v2		

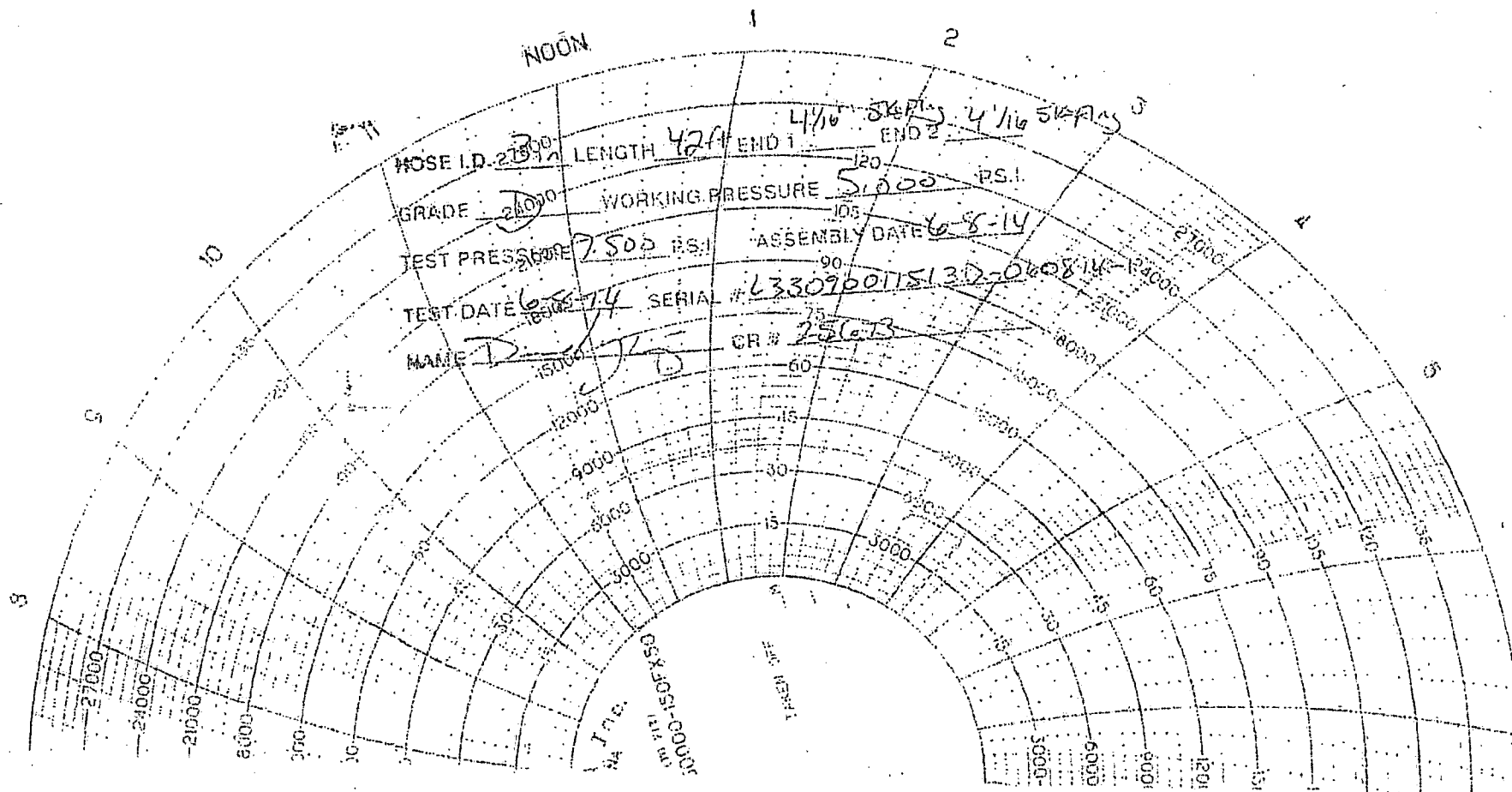
## Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PLU18TWR#102H: SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	440,397.40	657,946.80	32.2097382	-103.8226558
PLU18TWR#102H: F - plan hits target center - Point	0.00	0.00	11,478.00	-255.10	-34.00	440,142.30	657,912.80	32.2090374	-103.8227697
PLU18TWR#102H: LT - plan misses target center by 0.01usft at 21727.90usft MD (11478.00 TVD, -10164.10 N, 4.89 E) - Point	0.00	0.00	11,478.00	-10,164.10	4.90	430,233.30	657,951.70	32.1817980	-103.8227960
PLU18TWR#102H: PI - plan hits target center - Point	0.00	0.00	11,478.00	-10,294.10	5.40	430,103.30	657,952.20	32.1814407	-103.8227964

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
518.00	518.00	RSLR			
889.00	889.00	T/SALT			
4,013.00	4,013.00	B/SALT			
4,261.00	4,261.00	DLWR			
6,756.00	6,756.00	BYCN			
8,131.27	8,128.00	BSPG_LM			
9,084.90	9,078.00	BSPG1			
9,556.70	9,548.00	BSPG2_LM			
9,867.88	9,858.00	BSPG2			
10,249.34	10,238.00	BSPG3_LM			
11,022.33	11,008.00	BSPG3			
11,532.63	11,408.00	WFMP			
11,632.59	11,448.00	WFMP_X			
11,818.82	11,478.00	LP			







U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## SUPO Data Report

10/24/2019

APD ID: 10400042123

Submission Date: 05/29/2019

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 18 TWR

Well Number: 102H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

### Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

PLU\_18\_TWR\_102H\_Road\_20190523132947.pdf

Existing Road Purpose: ACCESS, FLUID TRANSPORT

Row(s) Exist? YES

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

### Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

PLU\_18\_TWR\_Access\_20191008125934.pdf

New road type: RESOURCE

Length: 7652.64

Feet

Width (ft.): 30

Max slope (%): 2

Max grade (%): 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

**New road access erosion control:** The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route.

**New road access plan or profile prepared?** NO

**New road access plan attachment:**

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Turnout?** N

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Surface material will be native caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.

**Access other construction information:** Construction, reclamation, and/or routine maintenance will not be conducted during periods when the soil conditions for construction could lead to impacts to the surrounding environment, or when watershed damage is likely to occur as a result of these activities.

**Access miscellaneous information:** The Poker Lake Unit 18 TWR area is accessed from the intersection of Jal Hwy (US Hwy 285) and Twin Wells road. Go approximately 7.0 miles. Turn left (Southeast) onto lease road and go approx. 0.5 miles. Locations will be to the East. Transportation Plan identifying existing roads that will be used to access the project area is included from Frank's Surveying marked as, 'Topographical and Access Road Map.' All equipment and vehicles will be confined to the routes shown on the "Vicinity Map" as provided by Frank's Surveying. Maintenance of the access roads will continue until abandonment and reclamation of the well pads is completed. The project is located approximately 50 miles from the town of Malaga.

**Number of access turnouts:** 0

**Access turnout map:**

### Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) description:** No drainage control structures were identified at onsite. Drainage control structures will be applied for as-needed and be in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) attachment:**

### Access Additional Attachments

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 18 TWR

**Well Number:** 102H

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

PLU\_18\_TWR\_1\_Mile\_20190523133246.pdf

### Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** Two 600' x 600' pads were staked with the BLM for construction and use as Central Tank Batteries (CTBs). The pads are located in Section 19-T24S-R31E NMPM, Eddy County, NM. Plats of the proposed facilities are attached. Only the area necessary to maintain facilities will be disturbed. Due to air permitting timeframes and anticipated reserves, two facilities are anticipated to be necessary for full area development. A 3160-5 sundry notification will be submitted after construction with a site-security diagram and layout of the facility with associated equipment. In the event the wells are found productive, 24-10" or less composite flexpipe or steel flowlines with a maximum safety pressure rating of 1400psi (operating pressure: 750psi) will be buried within proposed lease road corridors where possible from the proposed wells to the PLU 18 West and East CTBs where the oil, gas, and water will be metered and appropriately separated. If XTO Permian Operating, LLC decides to run surface lines, 24-4" or less flexpipe or steel flowlines with a max. safety psi rating of 750 (op pressure: 125psi) will be laid within proposed lease road corridors from the proposed wells to the proposed CTBs. An additional 24-6" high pressure gas lines will be buried within the proposed lease road corridors where possible for gas lift, fuel gas, and water. The distance of proposed flowlines per well will be approximately 6,296.93' or less per well based on the location of the well pad in conjunction with the facility location. All flowlines will follow proposed lease road corridors where possible. A plat of the proposed flowline route for the lease is attached. \*5,351' of pipeline in Sec. 19, T24S, R31E was approved with the Row 2 East TL corridor sundry (DOI-BLM-NM-P020-2018-0522 EA). A gas purchaser has been identified. Two 110' corridors are requested to connect with the Poker Lake Unit Row 2 pipeline extending from the PLU 18 TWR West and East CTBs. XTO Permian Operating, LLC will be installing the line with anticipated risers located on the CTBs. The gas purchaser will be responsible for permitting their own gas lines and compressor station, where applicable, through private, state, and federal lands. PLU 18 TWR West GSL approx. Length: 700.04'. PLU 18 TWR East GSL approx. Length: 760.75'. Produced water will be hauled from location to a commercial disposal facility as needed. Once wells are drilled and completed, a 3160-5 sundry notification will be submitted to BLM in compliance with Onshore Order 7. There are two flares associated with the PLU 18 TWR development. The flare stacks will be 50'x50' and located on the approved CTB pads. Flares will be sized and rated based on anticipated reserves and recovery of gas throughout the development area with 150' of distance between all facility equipment, road and well pad locations for safety purposes. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment. Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas. All electrical poles and lines will be placed within existing and proposed lease roads corridors. All lines will be primary 12,740 volt to properly run expected production equipment. Approx. 2302.41' of electrical will be run from the anticipated tie-in point with a request for 30' ROW construction and maintenance buffer. This distance is a max. approximation and may vary based on lease road corridors, varying elevations and terrain in the area.

**Production Facilities map:**

PLU\_18\_TWR\_CTBE\_20190523133555.pdf

PLU\_18\_TWR\_CTBW\_20190529083106.pdf

PLU\_18\_TWR\_FL\_20191008130020.pdf