

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  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.
2. Name of Operator		9. API Well No. <p style="text-align: center;"><b>30 015 47020</b></p>
3a. Address	3b. Phone No. <i>(include area code)</i>	10. Field and Pool, or Exploratory
4. Location of Well <i>(Report location clearly and in accordance with any State requirements. *)</i> At surface  At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. <i>(Also to nearest drig. unit line, if any)</i>	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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	Name <i>(Printed/Typed)</i>	Date
Title		
Approved by <i>(Signature)</i>	Name <i>(Printed/Typed)</i>	Date
Title		Office

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.



(Continued on page 2)

\*(Instructions on page 2)

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office  
 AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-47020		<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
<sup>4</sup> Property Code 325469	<sup>5</sup> Property Name POKER LAKE UNIT 17 TWR		<sup>6</sup> Well Number 704H
<sup>7</sup> OGRID No. 373075	<sup>8</sup> Operator Name XTO PERMIAN OPERATING, LLC.		<sup>9</sup> Elevation 3,501'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	20	24 S	31 E		317	NORTH	2,273	WEST	EDDY

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	29	24 S	31 E		220	SOUTH	2,430	WEST	EDDY

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p><sup>16</sup> SEC. 18</p>	<p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 440,191.2 X= 664,781.7 LAT.= 32.209080°N LONG.= 103.800561°W</p> <p>FIRST TAKE POINT NAD 27 NME Y= 440,178.8 X= 664,939.1 LAT.= 32.209044°N LONG.= 103.800052°W</p> <p>CORNER COORDINATES TABLE NAD 27 NME A - Y= 440,510.1 N, X= 665,151.3 E B - Y= 440,502.2 N, X= 663,828.8 E C - Y= 437,870.4 N, X= 665,168.1 E D - Y= 437,861.1 N, X= 663,848.8 E E - Y= 435,229.8 N, X= 665,185.0 E F - Y= 435,221.6 N, X= 663,863.5 E G - Y= 432,588.8 N, X= 665,202.3 E H - Y= 432,580.7 N, X= 663,881.4 E I - Y= 429,947.7 N, X= 665,219.5 E J - Y= 429,939.4 N, X= 663,898.8 E</p>	<p>GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 440,250.0 X= 705,965.8 LAT.= 32.209204°N LONG.= 103.801045°W</p> <p>FIRST TAKE POINT NAD 83 NME Y= 440,237.6 X= 706,123.2 LAT.= 32.209167°N LONG.= 103.800536°W</p> <p>CORNER COORDINATES TABLE NAD 83 NME A - Y= 440,568.9 N, X= 706,335.3 E B - Y= 440,561.0 N, X= 705,012.8 E C - Y= 437,929.1 N, X= 706,352.2 E D - Y= 437,919.8 N, X= 705,032.9 E E - Y= 435,288.4 N, X= 706,369.2 E F - Y= 435,280.3 N, X= 705,047.7 E G - Y= 432,647.4 N, X= 706,386.6 E H - Y= 432,639.3 N, X= 705,065.7 E I - Y= 430,006.2 N, X= 706,403.9 E J - Y= 429,997.9 N, X= 705,083.2 E</p>	<p><b><sup>17</sup> OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Kelly Kardos</i> Signature _____ Date _____</p> <p>Printed Name _____</p> <p>E-mail Address _____</p>	
		<p>LAST TAKE POINT NAD 27 NME Y= 430,276.3 X= 665,005.9 LAT.= 32.181822°N LONG.= 103.799995°W</p> <p>BOTTOM HOLE LOCATION NAD 27 NME Y= 430,166.3 X= 665,006.7 LAT.= 32.181520°N LONG.= 103.799995°W</p>	<p>LAST TAKE POINT NAD 83 NME Y= 430,334.8 X= 706,190.3 LAT.= 32.181946°N LONG.= 103.800478°W</p> <p>BOTTOM HOLE LOCATION NAD 83 NME Y= 430,224.8 X= 706,191.1 LAT.= 32.181643°N LONG.= 103.800477°W</p>	<p><b><sup>18</sup> SURVEYOR CERTIFICATION</b> I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>8-27-2019 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: </p> <p>MARK DILLON HARP 23786 Certificate Number AI 2019030733</p>

Intent  As Drilled

API #									
Operator Name:					Property Name:				Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit?

Is this well an infill well?

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #									
Operator Name:					Property Name:				Well Number

## 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 a new 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.

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	XTO Permian Operating LLC
<b>WELL NAME &amp; NO.:</b>	Poker Lake Unit 17 TWR 704H
<b>LOCATION:</b>	Sec 20-24S-31E-NMP
<b>COUNTY:</b>	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input checked="" type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The 18 5/8 inch surface casing shall be set at approximately 900 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours

after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

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

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

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

**C. PRESSURE CONTROL**

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

#### **D. SPECIAL REQUIREMENT (S)**

##### **Unit Wells**

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

##### **Commercial Well Determination**

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

## **GENERAL REQUIREMENTS**

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

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

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

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 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - 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.
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 not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for

the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- 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. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**APD ID:** 10400052922

**Submission Date:** 01/03/2020

Highlighted data reflects the most recent changes

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

[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
624913	PERMIAN	3501	0	0	OTHER : Quaternary	NONE	N
624904	RUSTLER	2940	561	561	SILTSTONE	USEABLE WATER	N
624905	TOP SALT	2570	931	931	SALT	OTHER : Produced Water	N
624906	BASE OF SALT	-600	4101	4101	SALT	OTHER : Produced Water	N
624902	DELAWARE	-800	4301	4301	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
624903	BONE SPRING	-4620	8121	8121	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
624917	WOLFCAMP	-8000	11501	11501	SHALE	NATURAL GAS, OIL, OTHER : Produced Water	Y

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M

**Rating Depth:** 11572

**Equipment:** Once the permanent WH is installed on the 13-3/8 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M 3-Ram BOP. MASP should not exceed 4576 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. 18-5/8" Collapse analyzed using 75% evacuation. Casing to be filled while running. · 13-3/8" & 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 WELLHEAD: Permanent Wellhead – GE RSH Multibowl System · 18-5/8" SOW bottom x 21-1/4" 2M top flange. A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange 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. 13-3/8" & 9-5/8" Collapse analyzed using 50% evacuation based on regional experience. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M).

**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. Since a multibowl system will be used, subsequent BOP pressure tests will be performed as necessary based on required testing schedule (i.e., at least every 30 days). 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.

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

**Choke Diagram Attachment:**

5MCM\_20191227113317.pdf

10MCM\_20191227113332.pdf

**BOP Diagram Attachment:**

5MBOP\_20191227113401.pdf

5M10M\_BOP\_20191227113414.pdf

Multibowl\_Diagram\_13.375\_x\_9.625\_x\_5.5\_20191227113438.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 length MD	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	900	0	900	3501	2601	900	J-55	87.5	ST&C	2	1.76	DRY	9.57	DRY	9.57
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	4120	0	4120		-619	4120	J-55	68	ST&C	1.5	1.13	DRY	2.41	DRY	2.41
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	10900	0	10900		-7399	10900	HCL-80	40	LT&C	1.37	1.31	DRY	1.92	DRY	1.92
4	PRODUCTION	8.75	5.5	NEW	API	N	0	21945	0	11581		-8080	21945	P-110	20	BUTT	1.6	1.33	DRY	2.08	DRY	2.08

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_17\_TWR\_704H\_Csg\_20200103110048.pdf

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

### Casing Attachments

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_17\_TWR\_704H\_Csg\_20200103110127.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_17\_TWR\_704H\_Csg\_20200103110000.pdf

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**Casing ID:** 4                    **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_17\_TWR\_704H\_Csg\_20200103110211.pdf

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## Section 4 - Cement

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	900	2870	1.87	12.9	5366.9	100	EconoCemt-HLTRRC	None
SURFACE	Tail				300	1.35	14.8	405	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	4120	2870	1.87	12.9	5395.6	100	EconoCemt-HLTRRC	none
INTERMEDIATE	Tail		3870		300	1.35	14.8	405	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead		0	10900	1250	1.88	12.6	2350	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead	4220	4220	10900	1250	1.88	12.9	2350	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2%CaCl
PRODUCTION	Lead		0	21945	2630	1.61	13.2	4234.3	30	VersaCem	None

### 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

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

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
1090 0	1158 1	OIL-BASED MUD	10.5	12							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
4120	1090 0	OTHER : FW / Cut Brine	8.7	10							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	900	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 solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
900	4120	OTHER : Brine	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

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

## 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:

COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,MUD LOG/GEOLOGIC LITHOLOGY LOG,

### Coring operation description for the well:

No coring will take place on this well.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 7240

**Anticipated Surface Pressure:** 4692

**Anticipated Bottom Hole Temperature(F):** 165

**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 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\_17\_TWR\_H2S\_Plan\_20191227114500.pdf

PLU\_17\_TWR\_H2S\_Dia\_Pad\_2E\_20200103110653.pdf

PLU\_17\_TWR\_H2S\_Dia\_Pad\_2W\_20200103110704.pdf

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 17 TWR

**Well Number:** 704H

## Section 8 - Other Information

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

PLU\_17\_TWR\_704H\_DD\_20200103110731.pdf

### **Other proposed operations facets description:**

The surface fresh water sands will be protected by setting 18-5/8 inch casing @ 900' (31' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 4120' and circulating cement to surface. 9-5/8 inch intermediate casing will be set at 10900'. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to TD, where 5-1/2 inch casing will be set and cemented back up to the 9-5/8 inch casing shoe.

### **Other proposed operations facets attachment:**

PLU\_17\_TWR\_GCPE2\_20191227114720.pdf

PLU\_17\_TWR\_GCPW2\_20191227114732.pdf

### **Other Variance attachment:**

PLU\_17\_TWR\_FH\_20191227114750.pdf

Wild\_Well\_Control\_Plan\_20191227114821.pdf

Casing Assumption Worksheet

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' – 900'	18-5/8"	87.5	STC	J-55	New	1.76	2.00	9.57
17-1/2"	0' – 4120'	13-3/8"	68	STC	J-55	New	1.13	1.50	2.41
12-1/4"	0' – 10900'	9-5/8"	40	LTC	HCL-80	New	1.31	1.37	1.92
8-3/4"	0' – 21945'	5-1/2"	20	BTC	P-110	New	1.33	1.60	2.08

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

- 18-5/8" Collapse analyzed using 75% evacuation. Casing to be filled while running.
- 13-3/8" & 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 Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

Permanent Wellhead – GE RSH Multibowl System

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

B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

**BOPCO, L.P.**

6401 Holiday Hill Road  
 Midland, Tx 79707  
 (432) 683-2277

**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**

BOPCO, L.P. 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

### **BOPCO, L.P. 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

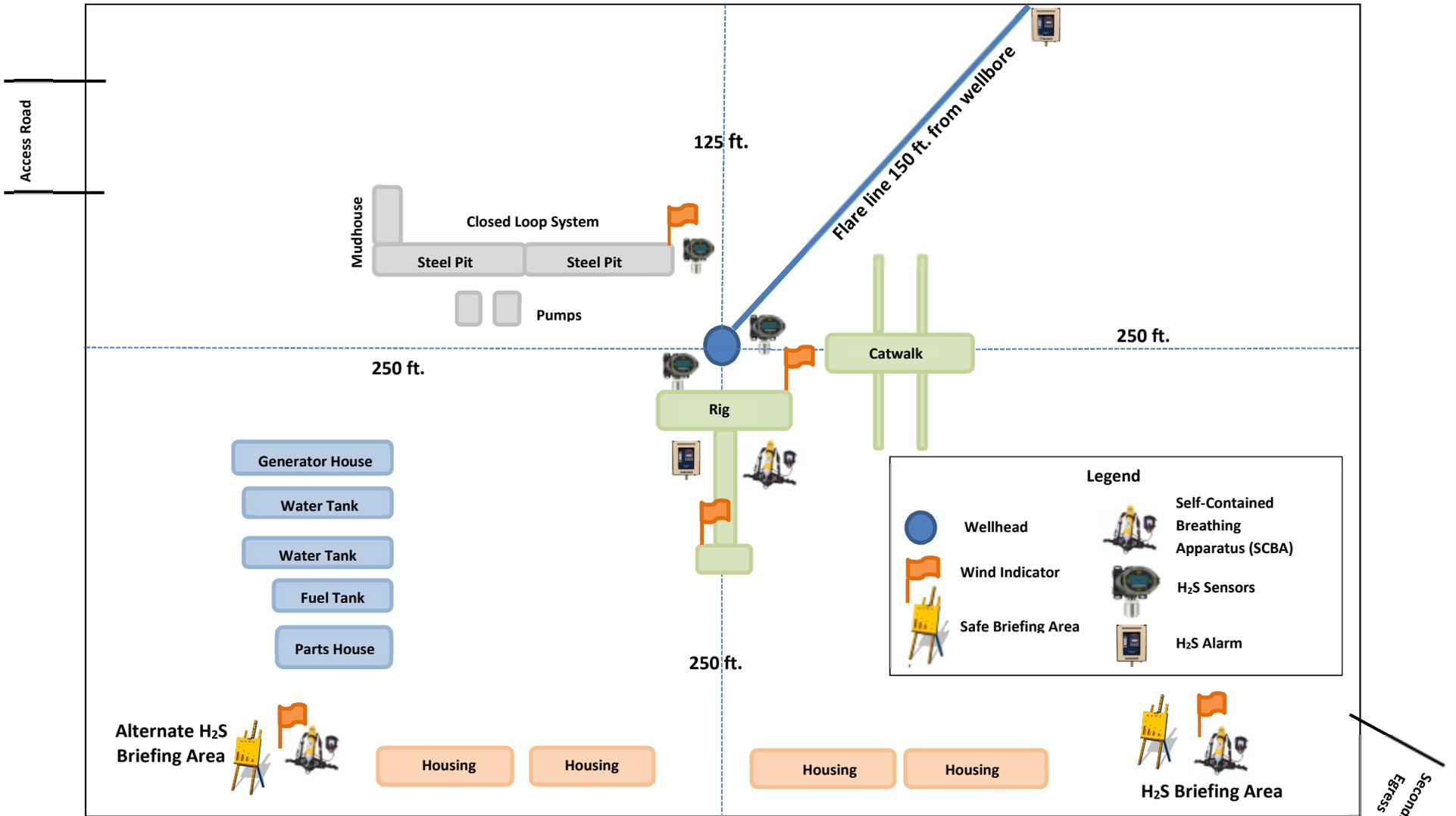
#### **For Eddy County:**

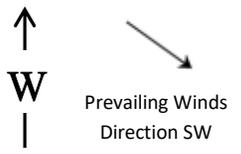
Bureau of Land Management - Carlsbad	575-234-5972
New Mexico Oil Conservation Division - Artesia	575-748-1283



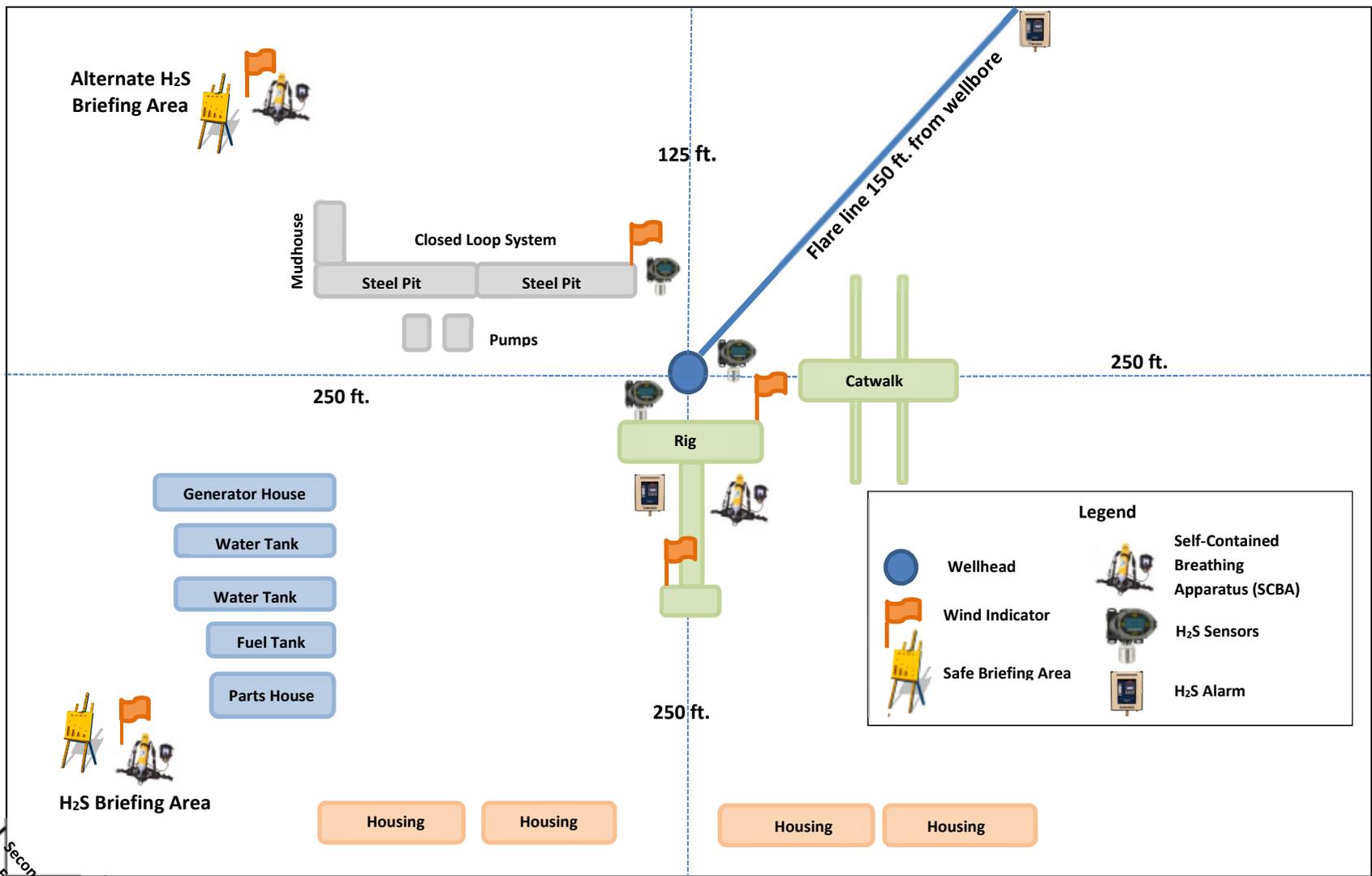
Prevailing Winds  
Direction SW

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





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



**Legend**

	Wellhead		Self-Contained Breathing Apparatus (SCBA)
	Wind Indicator		H <sub>2</sub> S Sensors
	Safe Briefing Area		H <sub>2</sub> S Alarm

Access Road

Secondary Egress



## **XTO Energy**

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

**Poker Lake Unit 17 TWR**

**#704H**

**OH**

**Plan: PERMIT**

# **Standard Planning Report**

**13 November, 2019**



Project: Eddy County, NM (NAD-27)  
 Site: Poker Lake Unit 17 TWR  
 Well: #704H  
 Wellbore: OH  
 Design: PERMIT

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: #704H

			Rig Name:			
			Ref GL @ 3501.00usft			
+N/-S	+E/-W	Northing	Ground Level:	3501.00	Latitude	Longitude
0.00	0.00	440191.20	Easting	664781.70	32.2090801	-103.8005612

DESIGN TARGET DETAILS

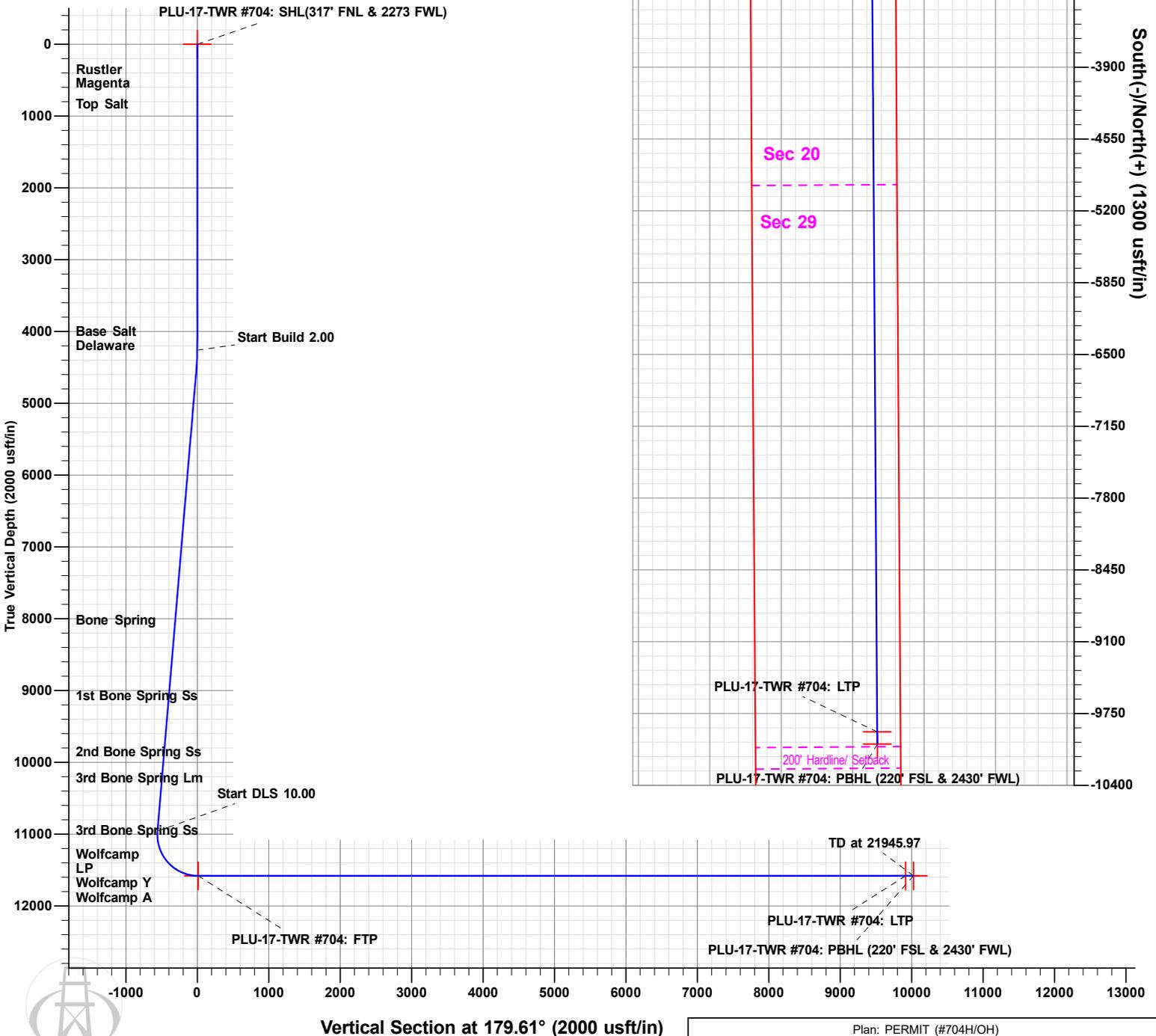
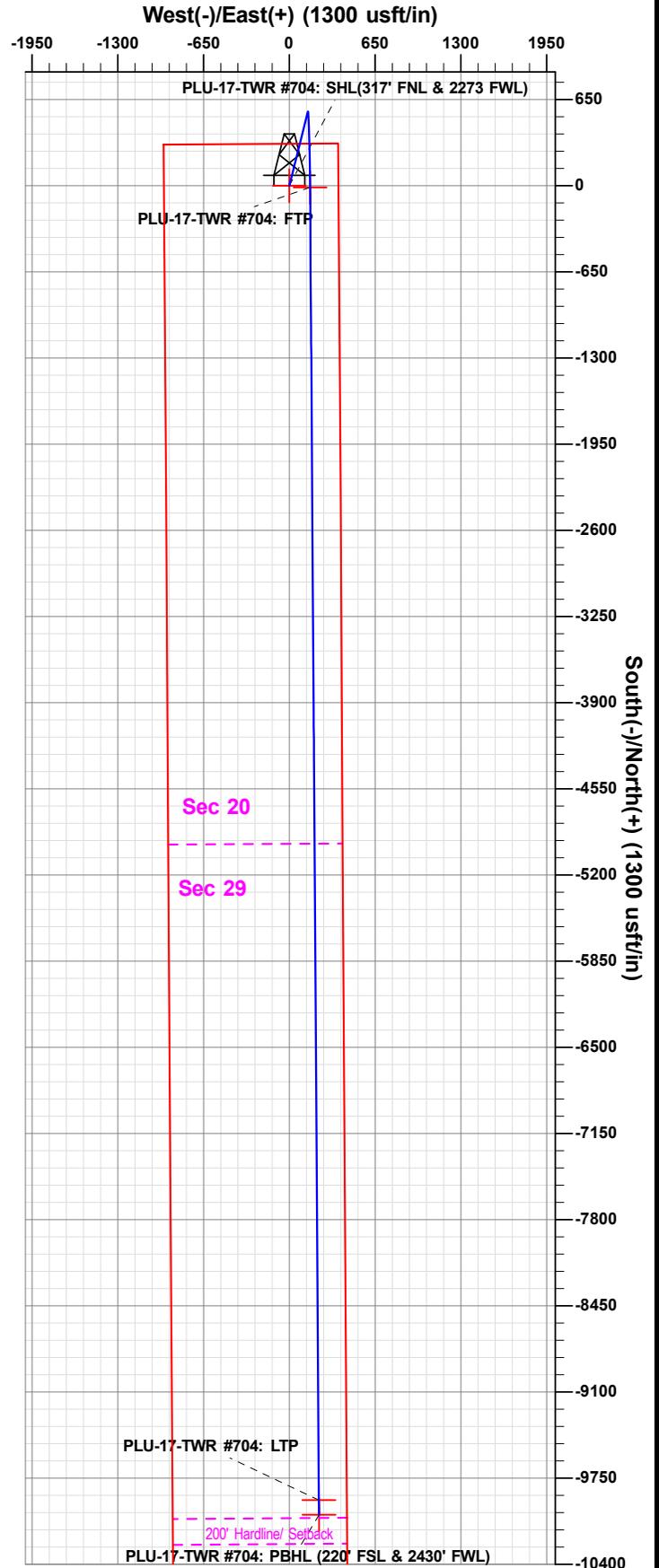
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PLU-17-TWR #704: SHL(317' FNL & 2273 FWL)	0.00	0.00	0.00	440191.20	664781.70	32.2090801	-103.8005612	Point
PLU-17-TWR #704: FTP	11581.00	-12.40	157.40	440178.80	664939.10	32.2090439	-103.8000525	Point
PLU-17-TWR #704: LTP	11581.00	-9914.90	224.20	430276.30	665005.90	32.1818221	-103.7999953	Point
PLU-17-TWR #704: PBHL (220' FSL & 2430' FWL)	11581.00	-10024.90	225.00	430166.30	665006.70	32.1815197	-103.7999945	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	4260.00	0.00	0.00	4260.00	0.00	0.00	0.00	0.00	0.00
3	4510.21	5.00	14.07	4509.89	10.59	2.65	2.00	14.07	-10.57
4	10984.79	5.00	14.07	10959.80	558.41	139.97	0.00	0.00	-557.44
5	11933.24	90.00	179.61	11581.00	-12.40	157.40	10.00	165.49	13.47
6	21835.97	90.00	179.61	11581.00	-9914.90	224.26	0.00	0.00	9916.20
7	21945.97	90.00	179.61	11581.00	-10024.90	225.00	0.00	0.00	10026.20

FORMATION TOP DETAILS

TVDPATH	FORMATION
561.00	Rustler
641.00	Magenta
931.00	Top Salt
4101.00	Base Salt
4301.00	Delaware
8121.00	Bone Spring
9171.00	1st Bone Spring Ss
9951.00	2nd Bone Spring Ss
10321.00	3rd Bone Spring Lm
11051.00	3rd Bone Spring Ss
11501.00	Wolfcamp
11581.00	LP
11581.00	Wolfcamp Y



Note: All Plan details including boundary lines and offset well data is subject to customers approval.



## Planning Report

<b>Database:</b> EDM 5000.1.13 Single User Db	<b>Local Co-ordinate Reference:</b> Well #704H
<b>Company:</b> XTO Energy	<b>TVD Reference:</b> Ref GL @ 3501.00usft
<b>Project:</b> Eddy County, NM (NAD-27)	<b>MD Reference:</b> Ref GL @ 3501.00usft
<b>Site:</b> Poker Lake Unit 17 TWR	<b>North Reference:</b> Grid
<b>Well:</b> #704H	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> OH	
<b>Design:</b> PERMIT	

<b>Project</b> Eddy County, NM (NAD-27)	
<b>Map System:</b> US State Plane 1927 (Exact solution)	<b>System Datum:</b> Mean Sea Level
<b>Geo Datum:</b> NAD 1927 (NADCON CONUS)	
<b>Map Zone:</b> New Mexico East 3001	

<b>Site</b> Poker Lake Unit 17 TWR		
<b>Site Position:</b>	<b>Northing:</b> 440,828.50 usft	<b>Latitude:</b> 32.2108531
<b>From:</b> Map	<b>Easting:</b> 663,224.90 usft	<b>Longitude:</b> -103.8055843
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.28 °

<b>Well</b> #704H			
<b>Well Position</b>	<b>+N/-S</b> -637.30 usft	<b>Northing:</b> 440,191.20 usft	<b>Latitude:</b> 32.2090802
	<b>+E/-W</b> 1,556.80 usft	<b>Easting:</b> 664,781.70 usft	<b>Longitude:</b> -103.8005612
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b> 0.00 usft	<b>Ground Level:</b> 3,501.00 usft

<b>Wellbore</b> OH					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	11/13/19	6.80	59.98	47,657

<b>Design</b> PERMIT				
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b> PLAN	<b>Tie On Depth:</b> 0.00		
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.61

<b>Plan Sections</b>										
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	
4,260.00	0.00	0.00	4,260.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,510.21	5.00	14.07	4,509.89	10.59	2.65	2.00	2.00	0.00	14.07	
10,984.79	5.00	14.07	10,959.80	558.41	139.97	0.00	0.00	0.00	0.00	
11,933.24	90.00	179.61	11,581.00	-12.40	157.40	10.00	8.96	17.45	165.49	PLU-17-TWR #704
21,835.97	90.00	179.61	11,581.00	-9,914.90	224.26	0.00	0.00	0.00	0.00	PLU-17-TWR #704
21,945.97	90.00	179.61	11,581.00	-10,024.90	225.00	0.00	0.00	0.00	0.00	PLU-17-TWR #704



Planning Report

<b>Database:</b>	EDM 5000.1.13 Single User Db	<b>Local Co-ordinate Reference:</b>	Well #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

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
561.00	0.00	0.00	561.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Rustler</b>									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
641.00	0.00	0.00	641.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Magenta</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
931.00	0.00	0.00	931.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Top Salt</b>									
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
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,101.00	0.00	0.00	4,101.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Salt</b>									
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,260.00	0.00	0.00	4,260.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.80	14.07	4,300.00	0.27	0.07	-0.27	2.00	2.00	0.00
4,301.00	0.82	14.07	4,301.00	0.28	0.07	-0.28	2.00	2.00	0.00



Planning Report

<b>Database:</b>	EDM 5000.1.13 Single User Db	<b>Local Co-ordinate Reference:</b>	Well #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

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)
<b>Delaware</b>									
4,400.00	2.80	14.07	4,399.94	3.32	0.83	-3.31	2.00	2.00	0.00
4,500.00	4.80	14.07	4,499.72	9.75	2.44	-9.73	2.00	2.00	0.00
4,510.21	5.00	14.07	4,509.89	10.59	2.65	-10.57	2.00	2.00	0.00
4,600.00	5.00	14.07	4,599.34	18.19	4.56	-18.16	0.00	0.00	0.00
4,700.00	5.00	14.07	4,698.96	26.65	6.68	-26.60	0.00	0.00	0.00
4,800.00	5.00	14.07	4,798.58	35.11	8.80	-35.05	0.00	0.00	0.00
4,900.00	5.00	14.07	4,898.20	43.57	10.92	-43.50	0.00	0.00	0.00
5,000.00	5.00	14.07	4,997.82	52.03	13.04	-51.94	0.00	0.00	0.00
5,100.00	5.00	14.07	5,097.43	60.49	15.16	-60.39	0.00	0.00	0.00
5,200.00	5.00	14.07	5,197.05	68.96	17.28	-68.84	0.00	0.00	0.00
5,300.00	5.00	14.07	5,296.67	77.42	19.40	-77.28	0.00	0.00	0.00
5,400.00	5.00	14.07	5,396.29	85.88	21.53	-85.73	0.00	0.00	0.00
5,500.00	5.00	14.07	5,495.91	94.34	23.65	-94.17	0.00	0.00	0.00
5,600.00	5.00	14.07	5,595.53	102.80	25.77	-102.62	0.00	0.00	0.00
5,700.00	5.00	14.07	5,695.15	111.26	27.89	-111.07	0.00	0.00	0.00
5,800.00	5.00	14.07	5,794.77	119.72	30.01	-119.51	0.00	0.00	0.00
5,900.00	5.00	14.07	5,894.38	128.18	32.13	-127.96	0.00	0.00	0.00
6,000.00	5.00	14.07	5,994.00	136.64	34.25	-136.41	0.00	0.00	0.00
6,100.00	5.00	14.07	6,093.62	145.10	36.37	-144.85	0.00	0.00	0.00
6,200.00	5.00	14.07	6,193.24	153.56	38.49	-153.30	0.00	0.00	0.00
6,300.00	5.00	14.07	6,292.86	162.03	40.61	-161.75	0.00	0.00	0.00
6,400.00	5.00	14.07	6,392.48	170.49	42.73	-170.19	0.00	0.00	0.00
6,500.00	5.00	14.07	6,492.10	178.95	44.85	-178.64	0.00	0.00	0.00
6,600.00	5.00	14.07	6,591.72	187.41	46.97	-187.08	0.00	0.00	0.00
6,700.00	5.00	14.07	6,691.34	195.87	49.10	-195.53	0.00	0.00	0.00
6,800.00	5.00	14.07	6,790.95	204.33	51.22	-203.98	0.00	0.00	0.00
6,900.00	5.00	14.07	6,890.57	212.79	53.34	-212.42	0.00	0.00	0.00
7,000.00	5.00	14.07	6,990.19	221.25	55.46	-220.87	0.00	0.00	0.00
7,100.00	5.00	14.07	7,089.81	229.71	57.58	-229.32	0.00	0.00	0.00
7,200.00	5.00	14.07	7,189.43	238.17	59.70	-237.76	0.00	0.00	0.00
7,300.00	5.00	14.07	7,289.05	246.64	61.82	-246.21	0.00	0.00	0.00
7,400.00	5.00	14.07	7,388.67	255.10	63.94	-254.66	0.00	0.00	0.00
7,500.00	5.00	14.07	7,488.29	263.56	66.06	-263.10	0.00	0.00	0.00
7,600.00	5.00	14.07	7,587.91	272.02	68.18	-271.55	0.00	0.00	0.00
7,700.00	5.00	14.07	7,687.52	280.48	70.30	-279.99	0.00	0.00	0.00
7,800.00	5.00	14.07	7,787.14	288.94	72.42	-288.44	0.00	0.00	0.00
7,900.00	5.00	14.07	7,886.76	297.40	74.54	-296.89	0.00	0.00	0.00
8,000.00	5.00	14.07	7,986.38	305.86	76.67	-305.33	0.00	0.00	0.00
8,100.00	5.00	14.07	8,086.00	314.32	78.79	-313.78	0.00	0.00	0.00
8,135.13	5.00	14.07	8,121.00	317.30	79.53	-316.75	0.00	0.00	0.00
<b>Bone Spring</b>									
8,200.00	5.00	14.07	8,185.62	322.78	80.91	-322.23	0.00	0.00	0.00
8,300.00	5.00	14.07	8,285.24	331.25	83.03	-330.67	0.00	0.00	0.00
8,400.00	5.00	14.07	8,384.86	339.71	85.15	-339.12	0.00	0.00	0.00
8,500.00	5.00	14.07	8,484.47	348.17	87.27	-347.57	0.00	0.00	0.00
8,600.00	5.00	14.07	8,584.09	356.63	89.39	-356.01	0.00	0.00	0.00
8,700.00	5.00	14.07	8,683.71	365.09	91.51	-364.46	0.00	0.00	0.00
8,800.00	5.00	14.07	8,783.33	373.55	93.63	-372.90	0.00	0.00	0.00
8,900.00	5.00	14.07	8,882.95	382.01	95.75	-381.35	0.00	0.00	0.00
9,000.00	5.00	14.07	8,982.57	390.47	97.87	-389.80	0.00	0.00	0.00
9,100.00	5.00	14.07	9,082.19	398.93	99.99	-398.24	0.00	0.00	0.00
9,189.15	5.00	14.07	9,171.00	406.48	101.88	-405.77	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 #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

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)	
<b>1st Bone Spring Ss</b>										
9,200.00	5.00	14.07	9,181.81	407.39	102.11	-406.69	0.00	0.00	0.00	
9,300.00	5.00	14.07	9,281.43	415.86	104.23	-415.14	0.00	0.00	0.00	
9,400.00	5.00	14.07	9,381.04	424.32	106.36	-423.58	0.00	0.00	0.00	
9,500.00	5.00	14.07	9,480.66	432.78	108.48	-432.03	0.00	0.00	0.00	
9,600.00	5.00	14.07	9,580.28	441.24	110.60	-440.48	0.00	0.00	0.00	
9,700.00	5.00	14.07	9,679.90	449.70	112.72	-448.92	0.00	0.00	0.00	
9,800.00	5.00	14.07	9,779.52	458.16	114.84	-457.37	0.00	0.00	0.00	
9,900.00	5.00	14.07	9,879.14	466.62	116.96	-465.81	0.00	0.00	0.00	
9,972.14	5.00	14.07	9,951.00	472.72	118.49	-471.91	0.00	0.00	0.00	
<b>2nd Bone Spring Ss</b>										
10,000.00	5.00	14.07	9,978.76	475.08	119.08	-474.26	0.00	0.00	0.00	
10,100.00	5.00	14.07	10,078.38	483.54	121.20	-482.71	0.00	0.00	0.00	
10,200.00	5.00	14.07	10,178.00	492.00	123.32	-491.15	0.00	0.00	0.00	
10,300.00	5.00	14.07	10,277.61	500.47	125.44	-499.60	0.00	0.00	0.00	
10,343.55	5.00	14.07	10,321.00	504.15	126.37	-503.28	0.00	0.00	0.00	
<b>3rd Bone Spring Lm</b>										
10,400.00	5.00	14.07	10,377.23	508.93	127.56	-508.05	0.00	0.00	0.00	
10,500.00	5.00	14.07	10,476.85	517.39	129.68	-516.49	0.00	0.00	0.00	
10,600.00	5.00	14.07	10,576.47	525.85	131.80	-524.94	0.00	0.00	0.00	
10,700.00	5.00	14.07	10,676.09	534.31	133.93	-533.39	0.00	0.00	0.00	
10,800.00	5.00	14.07	10,775.71	542.77	136.05	-541.83	0.00	0.00	0.00	
10,900.00	5.00	14.07	10,875.33	551.23	138.17	-550.28	0.00	0.00	0.00	
10,984.79	5.00	14.07	10,959.80	558.41	139.97	-557.44	0.00	0.00	0.00	
11,000.00	3.55	20.23	10,974.96	559.49	140.29	-558.52	10.00	-9.55	40.51	
11,050.00	2.09	142.85	11,024.93	560.22	141.38	-559.24	10.00	-2.92	245.23	
11,076.12	4.47	163.36	11,051.00	558.86	141.96	-557.88	10.00	9.09	78.54	
<b>3rd Bone Spring Ss</b>										
11,100.00	6.79	169.04	11,074.77	556.59	142.49	-555.60	10.00	9.74	23.77	
11,150.00	11.74	173.58	11,124.10	548.62	143.62	-547.63	10.00	9.90	9.08	
11,200.00	16.72	175.44	11,172.55	536.39	144.77	-535.39	10.00	9.96	3.73	
11,250.00	21.71	176.47	11,219.75	519.98	145.91	-518.97	10.00	9.98	2.05	
11,300.00	26.70	177.12	11,265.34	499.52	147.04	-498.50	10.00	9.99	1.31	
11,350.00	31.70	177.58	11,308.97	475.16	148.16	-474.14	10.00	9.99	0.92	
11,400.00	36.69	177.93	11,350.32	447.09	149.25	-446.06	10.00	9.99	0.70	
11,450.00	41.69	178.21	11,389.05	415.52	150.31	-414.48	10.00	9.99	0.55	
11,500.00	46.69	178.43	11,424.90	380.69	151.33	-379.65	10.00	10.00	0.45	
11,550.00	51.69	178.62	11,457.56	342.87	152.30	-341.83	10.00	10.00	0.38	
11,600.00	56.68	178.79	11,486.81	302.35	153.22	-301.30	10.00	10.00	0.33	
11,626.79	59.36	178.87	11,501.00	279.63	153.68	-278.58	10.00	10.00	0.30	
<b>Wolfcamp</b>										
11,650.00	61.68	178.94	11,512.42	259.43	154.07	-258.38	10.00	10.00	0.29	
11,700.00	66.68	179.07	11,534.19	214.44	154.85	-213.38	10.00	10.00	0.27	
11,750.00	71.68	179.20	11,551.95	167.73	155.55	-166.67	10.00	10.00	0.25	
11,800.00	76.68	179.32	11,565.58	119.64	156.17	-118.58	10.00	10.00	0.24	
11,850.00	81.68	179.43	11,574.97	70.55	156.71	-69.48	10.00	10.00	0.23	
11,900.00	86.68	179.54	11,580.04	20.83	157.15	-19.75	10.00	10.00	0.22	
11,933.24	90.00	179.61	11,581.00	-12.40	157.40	13.47	10.00	10.00	0.22	
<b>LP - Wolfcamp Y</b>										
12,000.00	90.00	179.61	11,581.00	-79.15	157.85	80.23	0.00	0.00	0.00	
12,100.00	90.00	179.61	11,581.00	-179.15	158.53	180.23	0.00	0.00	0.00	
12,200.00	90.00	179.61	11,581.00	-279.15	159.20	280.23	0.00	0.00	0.00	
12,300.00	90.00	179.61	11,581.00	-379.15	159.88	380.23	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 #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

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)
12,400.00	90.00	179.61	11,581.00	-479.14	160.55	480.23	0.00	0.00	0.00
12,500.00	90.00	179.61	11,581.00	-579.14	161.23	580.23	0.00	0.00	0.00
12,600.00	90.00	179.61	11,581.00	-679.14	161.90	680.23	0.00	0.00	0.00
12,700.00	90.00	179.61	11,581.00	-779.14	162.58	780.23	0.00	0.00	0.00
12,800.00	90.00	179.61	11,581.00	-879.14	163.25	880.23	0.00	0.00	0.00
12,900.00	90.00	179.61	11,581.00	-979.13	163.93	980.23	0.00	0.00	0.00
13,000.00	90.00	179.61	11,581.00	-1,079.13	164.60	1,080.23	0.00	0.00	0.00
13,100.00	90.00	179.61	11,581.00	-1,179.13	165.28	1,180.23	0.00	0.00	0.00
13,200.00	90.00	179.61	11,581.00	-1,279.13	165.95	1,280.23	0.00	0.00	0.00
13,300.00	90.00	179.61	11,581.00	-1,379.12	166.63	1,380.23	0.00	0.00	0.00
13,400.00	90.00	179.61	11,581.00	-1,479.12	167.30	1,480.23	0.00	0.00	0.00
13,500.00	90.00	179.61	11,581.00	-1,579.12	167.98	1,580.23	0.00	0.00	0.00
13,600.00	90.00	179.61	11,581.00	-1,679.12	168.65	1,680.23	0.00	0.00	0.00
13,700.00	90.00	179.61	11,581.00	-1,779.12	169.33	1,780.23	0.00	0.00	0.00
13,800.00	90.00	179.61	11,581.00	-1,879.11	170.00	1,880.23	0.00	0.00	0.00
13,900.00	90.00	179.61	11,581.00	-1,979.11	170.68	1,980.23	0.00	0.00	0.00
14,000.00	90.00	179.61	11,581.00	-2,079.11	171.35	2,080.23	0.00	0.00	0.00
14,100.00	90.00	179.61	11,581.00	-2,179.11	172.03	2,180.23	0.00	0.00	0.00
14,200.00	90.00	179.61	11,581.00	-2,279.10	172.70	2,280.23	0.00	0.00	0.00
14,300.00	90.00	179.61	11,581.00	-2,379.10	173.38	2,380.23	0.00	0.00	0.00
14,400.00	90.00	179.61	11,581.00	-2,479.10	174.05	2,480.23	0.00	0.00	0.00
14,500.00	90.00	179.61	11,581.00	-2,579.10	174.73	2,580.23	0.00	0.00	0.00
14,600.00	90.00	179.61	11,581.00	-2,679.09	175.40	2,680.23	0.00	0.00	0.00
14,700.00	90.00	179.61	11,581.00	-2,779.09	176.08	2,780.23	0.00	0.00	0.00
14,800.00	90.00	179.61	11,581.00	-2,879.09	176.75	2,880.23	0.00	0.00	0.00
14,900.00	90.00	179.61	11,581.00	-2,979.09	177.43	2,980.23	0.00	0.00	0.00
15,000.00	90.00	179.61	11,581.00	-3,079.09	178.10	3,080.23	0.00	0.00	0.00
15,100.00	90.00	179.61	11,581.00	-3,179.08	178.78	3,180.23	0.00	0.00	0.00
15,200.00	90.00	179.61	11,581.00	-3,279.08	179.46	3,280.23	0.00	0.00	0.00
15,300.00	90.00	179.61	11,581.00	-3,379.08	180.13	3,380.23	0.00	0.00	0.00
15,400.00	90.00	179.61	11,581.00	-3,479.08	180.81	3,480.23	0.00	0.00	0.00
15,500.00	90.00	179.61	11,581.00	-3,579.07	181.48	3,580.23	0.00	0.00	0.00
15,600.00	90.00	179.61	11,581.00	-3,679.07	182.16	3,680.23	0.00	0.00	0.00
15,700.00	90.00	179.61	11,581.00	-3,779.07	182.83	3,780.23	0.00	0.00	0.00
15,800.00	90.00	179.61	11,581.00	-3,879.07	183.51	3,880.23	0.00	0.00	0.00
15,900.00	90.00	179.61	11,581.00	-3,979.07	184.18	3,980.23	0.00	0.00	0.00
16,000.00	90.00	179.61	11,581.00	-4,079.06	184.86	4,080.23	0.00	0.00	0.00
16,100.00	90.00	179.61	11,581.00	-4,179.06	185.53	4,180.23	0.00	0.00	0.00
16,200.00	90.00	179.61	11,581.00	-4,279.06	186.21	4,280.23	0.00	0.00	0.00
16,300.00	90.00	179.61	11,581.00	-4,379.06	186.88	4,380.23	0.00	0.00	0.00
16,400.00	90.00	179.61	11,581.00	-4,479.05	187.56	4,480.23	0.00	0.00	0.00
16,500.00	90.00	179.61	11,581.00	-4,579.05	188.23	4,580.23	0.00	0.00	0.00
16,600.00	90.00	179.61	11,581.00	-4,679.05	188.91	4,680.23	0.00	0.00	0.00
16,700.00	90.00	179.61	11,581.00	-4,779.05	189.58	4,780.23	0.00	0.00	0.00
16,800.00	90.00	179.61	11,581.00	-4,879.04	190.26	4,880.23	0.00	0.00	0.00
16,900.00	90.00	179.61	11,581.00	-4,979.04	190.93	4,980.23	0.00	0.00	0.00
17,000.00	90.00	179.61	11,581.00	-5,079.04	191.61	5,080.23	0.00	0.00	0.00
17,100.00	90.00	179.61	11,581.00	-5,179.04	192.28	5,180.23	0.00	0.00	0.00
17,200.00	90.00	179.61	11,581.00	-5,279.04	192.96	5,280.23	0.00	0.00	0.00
17,300.00	90.00	179.61	11,581.00	-5,379.03	193.63	5,380.23	0.00	0.00	0.00
17,400.00	90.00	179.61	11,581.00	-5,479.03	194.31	5,480.23	0.00	0.00	0.00
17,500.00	90.00	179.61	11,581.00	-5,579.03	194.98	5,580.23	0.00	0.00	0.00
17,600.00	90.00	179.61	11,581.00	-5,679.03	195.66	5,680.23	0.00	0.00	0.00
17,700.00	90.00	179.61	11,581.00	-5,779.02	196.33	5,780.23	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 #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

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)
17,800.00	90.00	179.61	11,581.00	-5,879.02	197.01	5,880.23	0.00	0.00	0.00
17,900.00	90.00	179.61	11,581.00	-5,979.02	197.68	5,980.23	0.00	0.00	0.00
18,000.00	90.00	179.61	11,581.00	-6,079.02	198.36	6,080.23	0.00	0.00	0.00
18,100.00	90.00	179.61	11,581.00	-6,179.01	199.03	6,180.23	0.00	0.00	0.00
18,200.00	90.00	179.61	11,581.00	-6,279.01	199.71	6,280.23	0.00	0.00	0.00
18,300.00	90.00	179.61	11,581.00	-6,379.01	200.38	6,380.23	0.00	0.00	0.00
18,400.00	90.00	179.61	11,581.00	-6,479.01	201.06	6,480.23	0.00	0.00	0.00
18,500.00	90.00	179.61	11,581.00	-6,579.01	201.73	6,580.23	0.00	0.00	0.00
18,600.00	90.00	179.61	11,581.00	-6,679.00	202.41	6,680.23	0.00	0.00	0.00
18,700.00	90.00	179.61	11,581.00	-6,779.00	203.09	6,780.23	0.00	0.00	0.00
18,800.00	90.00	179.61	11,581.00	-6,879.00	203.76	6,880.23	0.00	0.00	0.00
18,900.00	90.00	179.61	11,581.00	-6,979.00	204.44	6,980.23	0.00	0.00	0.00
19,000.00	90.00	179.61	11,581.00	-7,078.99	205.11	7,080.23	0.00	0.00	0.00
19,100.00	90.00	179.61	11,581.00	-7,178.99	205.79	7,180.23	0.00	0.00	0.00
19,200.00	90.00	179.61	11,581.00	-7,278.99	206.46	7,280.23	0.00	0.00	0.00
19,300.00	90.00	179.61	11,581.00	-7,378.99	207.14	7,380.23	0.00	0.00	0.00
19,400.00	90.00	179.61	11,581.00	-7,478.99	207.81	7,480.23	0.00	0.00	0.00
19,500.00	90.00	179.61	11,581.00	-7,578.98	208.49	7,580.23	0.00	0.00	0.00
19,600.00	90.00	179.61	11,581.00	-7,678.98	209.16	7,680.23	0.00	0.00	0.00
19,700.00	90.00	179.61	11,581.00	-7,778.98	209.84	7,780.23	0.00	0.00	0.00
19,800.00	90.00	179.61	11,581.00	-7,878.98	210.51	7,880.23	0.00	0.00	0.00
19,900.00	90.00	179.61	11,581.00	-7,978.97	211.19	7,980.23	0.00	0.00	0.00
20,000.00	90.00	179.61	11,581.00	-8,078.97	211.86	8,080.23	0.00	0.00	0.00
20,100.00	90.00	179.61	11,581.00	-8,178.97	212.54	8,180.23	0.00	0.00	0.00
20,200.00	90.00	179.61	11,581.00	-8,278.97	213.21	8,280.23	0.00	0.00	0.00
20,300.00	90.00	179.61	11,581.00	-8,378.96	213.89	8,380.23	0.00	0.00	0.00
20,400.00	90.00	179.61	11,581.00	-8,478.96	214.56	8,480.23	0.00	0.00	0.00
20,500.00	90.00	179.61	11,581.00	-8,578.96	215.24	8,580.23	0.00	0.00	0.00
20,600.00	90.00	179.61	11,581.00	-8,678.96	215.91	8,680.23	0.00	0.00	0.00
20,700.00	90.00	179.61	11,581.00	-8,778.96	216.59	8,780.23	0.00	0.00	0.00
20,800.00	90.00	179.61	11,581.00	-8,878.95	217.26	8,880.23	0.00	0.00	0.00
20,900.00	90.00	179.61	11,581.00	-8,978.95	217.94	8,980.23	0.00	0.00	0.00
21,000.00	90.00	179.61	11,581.00	-9,078.95	218.61	9,080.23	0.00	0.00	0.00
21,100.00	90.00	179.61	11,581.00	-9,178.95	219.29	9,180.23	0.00	0.00	0.00
21,200.00	90.00	179.61	11,581.00	-9,278.94	219.96	9,280.23	0.00	0.00	0.00
21,300.00	90.00	179.61	11,581.00	-9,378.94	220.64	9,380.23	0.00	0.00	0.00
21,400.00	90.00	179.61	11,581.00	-9,478.94	221.31	9,480.23	0.00	0.00	0.00
21,500.00	90.00	179.61	11,581.00	-9,578.94	221.99	9,580.23	0.00	0.00	0.00
21,600.00	90.00	179.61	11,581.00	-9,678.94	222.66	9,680.23	0.00	0.00	0.00
21,700.00	90.00	179.61	11,581.00	-9,778.93	223.34	9,780.23	0.00	0.00	0.00
21,800.00	90.00	179.61	11,581.00	-9,878.93	224.01	9,880.23	0.00	0.00	0.00
21,835.97	90.00	179.61	11,581.00	-9,914.90	224.26	9,916.20	0.00	0.00	0.00
21,900.00	90.00	179.61	11,581.00	-9,978.93	224.69	9,980.23	0.00	0.00	0.00
21,945.97	90.00	179.61	11,581.00	-10,024.90	225.00	10,026.20	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 #704H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Ref GL @ 3501.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	Ref GL @ 3501.00usft
<b>Site:</b>	Poker Lake Unit 17 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	#704H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PLU-17-TWR #704: S - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	440,191.20	664,781.70	32.2090802	-103.8005612
PLU-17-TWR #704: F - plan hits target center - Point	0.00	0.00	11,581.00	-12.40	157.40	440,178.80	664,939.10	32.2090439	-103.8000525
PLU-17-TWR #704: P - plan hits target center - Point	0.00	0.00	11,581.00	-10,024.90	225.00	430,166.30	665,006.70	32.1815198	-103.7999945
PLU-17-TWR #704: L - plan misses target center by 0.06usft at 21835.97usft MD (11581.00 TVD, -9914.90 N, 224.26 E) - Point	0.00	0.00	11,581.00	-9,914.90	224.20	430,276.30	665,005.90	32.1818221	-103.7999953

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
561.00	561.00	Rustler			
641.00	641.00	Magenta			
931.00	931.00	Top Salt			
4,101.00	4,101.00	Base Salt			
4,301.00	4,301.00	Delaware			
8,135.13	8,121.00	Bone Spring			
9,189.15	9,171.00	1st Bone Spring Ss			
9,972.14	9,951.00	2nd Bone Spring Ss			
10,343.55	10,321.00	3rd Bone Spring Lm			
11,076.12	11,051.00	3rd Bone Spring Ss			
11,626.79	11,501.00	Wolfcamp			
11,933.24	11,581.00	LP			
11,933.24	11,581.00	Wolfcamp Y			

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

**GAS CAPTURE PLAN**

Date: 12/12/19

Original Operator & OGRID No.: XTO Permian Operating, LLC [373075]  
 Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

**Well(s)/Production Facility – Name of facility: Poker Lake Unit 17 TWR East CTB**

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
POKER LAKE UNIT 17 TWR 702H		D-20-24S-31E	318' FNL & 783' FWL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 704H		C-20-24S-31E	317' FNL & 2273' FWL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 706H		B-20-24S-31E	75' FNL & 1613' FEL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 107H		A-20-24S-31E	95' FNL & 785' FEL	2800	Flared/Sold	

**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 0' of pipeline to connect the facility to low/high pressure gathering system. XTO 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 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 BOPCO'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

District I  
1625 N. French Dr., Hobbs, NM 88240  
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State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

**GAS CAPTURE PLAN**

Date: 12/12/19

Original Operator & OGRID No.: XTO Permian Operating, LLC [373075]  
 Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

**Well(s)/Production Facility – Name of facility: Poker Lake Unit 17 TWR West CTB**

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
POKER LAKE UNIT 17 TWR 702H		D-20-24S-31E	318' FNL & 783' FWL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 704H		C-20-24S-31E	317' FNL & 2273' FWL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 706H		B-20-24S-31E	75' FNL & 1613' FEL	2800	Flared/Sold	
POKER LAKE UNIT 17 TWR 107H		A-20-24S-31E	95' FNL & 785' FEL	2800	Flared/Sold	

**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 0' of pipeline to connect the facility to low/high pressure gathering system. XTO 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 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 BOPCO'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

## 10,000 PSI Annular BOP Variance Request

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

### 1. Component and Preventer Compatibility Tables

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

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

## 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the XTO Energy/Permian Operating drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan

9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full-opening safety valve and close
3. Space out string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

### General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

### General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
  - a. Perform flow check. If flowing, continue to (b).
  - b. Sound alarm (alert crew)
  - c. Stab full-opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper variable bore rams
  - e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full-opening safety valve and close
  - c. Space out drill string with upset just beneath the upper variable bore rams
  - d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP & SICP

- ii. Pit gain
    - iii. Time
  - h. Regroup and identify forward plan
- 3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
  - c. If impossible to pull string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper variable bore ram
  - f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan