

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTNMOCD
ArtesiaFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM030453

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 27. If Unit or CA/Agreement, Name and/or No.
891000303X

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other8. Well Name and No.
POKER LAKE UNIT 13 DTD 204H2. Name of Operator
XTO PERMIAN OPERATING LLCContact: CASSIE EVANS
E-Mail: cassie_evans@xtoenergy.com9. API Well No.
30-015-46248-00-X13a. Address
6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 797073b. Phone No. (include area code)
Ph: 432-218-367110. Field and Pool or Exploratory Area
PIERCE CROSSING-BONE SPRING, E

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

Sec 24 T24S R30E NENW 654FNL 2275FWL
32.208832 N Lat, 103.835617 W Lon

11. County or Parish, State

EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

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

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

XTO Permian Operating, LLC respectfully requests the following changes to the original ADP:
Change drilling program to the attached procedure.

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 17 2019

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
RECEIVED

14. I hereby certify that the foregoing is true and correct.		
Electronic Submission #485612 verified by the BLM Well Information System For XTO PERMIAN OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by JENNIFER SANCHEZ on 09/30/2019 (19JAS0041SE)		
Name (Printed/Typed)	CASSIE EVANS	Title REGULATORY ANALYST
Signature	(Electronic Submission)	Date 09/27/2019
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved By	BUREAU OF LAND MANAGEMENT	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		ROSWELL FIELD OFFICE
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1242, 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.		Office

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Accepted RWT-10-21-19

Revisions to Operator-Submitted EC Data for Sundry Notice #485612

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM030453	NMNM030453
Agreement:		891000303X (NMNM71016X)
Operator:	XTO ENERGY INC 6401 HOLIDAY HILL RD #5 MIDLAND, NM 79707 Ph: 432-218-3671	XTO PERMIAN OPERATING LLC 6401 HOLIDAY HILL ROAD BLDG 5 MIDLAND, TX 79707 Ph: 432.683 2277
Admin Contact:	CASSIE EVANS REGULATORY ANALYST E-Mail: cassie_evans@xtoenergy.com Ph: 432-218-3671	CASSIE EVANS REGULATORY ANALYST E-Mail: cassie_evans@xtoenergy.com Ph: 432-218-3671
Tech Contact:	CASSIE EVANS REGULATORY ANALYST E-Mail: cassie_evans@xtoenergy.com Ph: 432-218-3671	CASSIE EVANS REGULATORY ANALYST E-Mail: cassie_evans@xtoenergy.com Ph: 432-218-3671
Location: State: County:	NM EDDY	NM EDDY
Field/Pool:	PIERCE CROSSING BS	PIERCE CROSSING-BONE SPRING, E
Well/Facility:	POKER LAKE UNIT 13 DTD 204H Sec 24 T24S R30E Mer NMP NENW 654FNL 2275FWL 32.208833 N Lat, 103.835619 W Lon	POKER LAKE UNIT 13 DTD 204H Sec 24 T24S R30E NENW 654FNL 2275FWL 32.208832 N Lat, 103.835617 W Lon

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

XTO Energy Inc.
PLU 13 Dog Town Draw 204H
Projected TD: 21522' MD / 11411' TVD
SHL: 654' FNL & 2275' FWL , Section 24, T24S, R30E
BHL: 200' FSL & 2207' FWL , Section 25, T24S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Permian

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	526'	Water
Top of Salt	896'	Water
Base of Salt	3996'	Water
Delaware	4161'	Water
Bone Spring	7991'	Water/Oil/Gas
1st Bone Spring Ss	8966'	Water/Oil/Gas
2nd Bone Spring Ss	9806'	Water/Oil/Gas
3rd Bone Spring Ss	10956'	Water/Oil/Gas
Wolfcamp	11356'	Water/Oil/Gas
Target/Land Curve	11411'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 16 inch casing @ 770' (126' above the salt) and circulating cement back to surface. The salt will be isolated by setting 11-3/4 inch casing at 4060' and circulating cement to surface. A 10-5/8 inch vertical hole will be drilled to 10251' and 8-5/8 inch casing ran and cemented 500' into the 11-3/4 inch casing. An 7-7/8 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 8-5/8 inch casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
18-1/2"	0' - 770'	16	65	STC	H-40	New	1.35	1.81	8.77
14-3/4"	0' - 4060'	11-3/4"	47	BTC	J-55	New	1.21	1.22	2.50
10-5/8"	0' - 10251'	8-5/8"	32	BTC	HCL-80	New	1.20	1.48	2.23
7-7/8"	0' - 21522'	5-1/2"	20	BTC	P-110	New	1.18	1.59	2.20

XTO requests to utilize centralizers from KOP to TOC only a minimum of one every other joint.

11-3/4" Collapse analyzed using 50% evacuation based on regional experience.

8-5/8" 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, Choke & Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

WELLHEAD:

Temporary Wellhead

- 16" SOW x 16-3/4" 2M top flange

Permanent Wellhead - GE RSH Multibowl System

- Starting Head (RSH System): 11-3/4" SOW bottom x 13-5/8" 2M top flange
- 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

4. Cement Program

Surface Casing: 16, 65 New H-40, STC casing to be set at +/- 770'

Lead: 230 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 200 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Top of Cement: Surface

1st Intermediate Casing: 11-3/4", 47 New J-55, BTC casing to be set at +/- 4060'

Lead: 1490 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 520 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Top of Cement: Surface

2nd Intermediate Casing (Stage 2): 8-5/8", 32 New HCL-80, BTC casing to be set at +/- 10251'

ECP/DV Tool to be set at 4110'

1st Stage

Lead: 30 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft³/sx, 9.61 gal/sx water)

Tail: 250 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Stage

Lead: 1130 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 310 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Top of Cement: 200' inside previous casing shoe

Production Casing: 5-1/2", 20 New P-110, BTC casing to be set at +/- 21522'

Lead: 1740 sxs Halcem-C + 2% CaCl (mixed at 11.5 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 1740 sxs VersaCem (mixed at 13.2 ppg, 10380 ft³/sx, 8.38 gal/sx water)

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

Top of Cement: 300' inside previous casing shoe

5. Pressure Control 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 1218 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 4491 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When the 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.

A procedure is requested to allow for a function test of the BOP from the BOP to the Casing.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 770'	18-1/2"	FW/Native	8.4-8.8	35-40	NC
770' to 4060'	14-3/4"	Brine/Gel Sweeps	9.8-10.2	30-32	NC
4060' to 10251'	10-5/8"	FW / Cut Brine	8.7-9.3	29-32	NC - 20
10251' to 21522'	7-7/8"	FW / Cut Brine / Polymer / OBM	11.5-12.3	32-50	NC - 20

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

Spud with fresh water/native mud. Drill out from under 16" surface casing with brine solution. A 9.8ppg-10.2ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 11-3/4" casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below 1st intermediate casing.

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 150 to 170 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 7002 psi.

10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

PLU 13 Dog Town Draw 204H 21,522 ft TD 7/26/2019

16 770 MD/TVD 8.7 # mud

65 H 40 STC collapse = 630 Burst = 1640 Tension = 439000

$(8.7)(0.052)(770) = 348 \text{ psi}$ $630/348 = 1.81$ SF for collapse

Max expected surf pressure = 1218 psi $1640/1218 = 1.35$ SF for burst

$(770)(65) = 50050 \text{ lb}$ $439/50.1 = 8.77$ SF for tension

11-3/4 4060 MD/TVD 10 # mud

47 J 55 BTC collapse = 1510 burst = 3070 tension = 477000

$(10)(0.052)(4060) = 2135 \text{ psi}$ $1510/2135 = 1.22$ SF for collapse

Less internal fluid height

Max expected surf pressure = 2542 psi $3070/2542.248 = 1.21$ SF for burst

$(4060)(47) = 190820 \text{ lb}$ $477/190.82 = 2.50$ SF for tension

8-5/8 0 Top 10,251 TD (MD) 10,251 TVD (max) 9 # mud

32 HCL 80 BTC collapse = 3820 burst = 5710 tension = 732000

$(9)(0.052)(10251) = 2585 \text{ psi}$ $3820/2585 = 1.48$ SF for collapse

Less internal fluid height

Max expected surf pressure = 4746.57 psi $5710/4746.569 = 1.20$ SF for burst

$(10251)(32) = 328032 \text{ lb}$ $732/328.032 = 2.23$ SF for tension

5-1/2 0 Top 21,522 TD (MD) 11411 TVD (max) 11.8 # mud

0.35 FF 11,780 LP (MD) 9,742 Lat Length

20 P 110 BTC collapse = 11100 burst = 12360 tension = 667000

$(11.8)(0.052)(11411) = 7002 \text{ psi}$ $11100/7002 = 1.59$ SF for collapse

Max expected surf pressure = 10500 psi *for frac $12360/10500 = 1.18$ SF for burst

$(11780)(20) + (9742)(0.35)(20) = 303794 \text{ lb}$ $667/303.794 = 2.20$ SF for tension

= Calculated from BLM Drilling Program Page

BLM Min. Burst: 1
BLM Min. Collapse: 1.125
BLM Min. Tension (Dry): 1.6
BLM Min. Tension (Buoyed): 1.8

Burst Assumes MASP Equation $(10)(0.052)(4060) = (22)(4060)$

Collapse Assumes 1/2 evacuation & FW internal
Fluid Top: 2030 MD/TVD

Burst Assumes MASP Equation $(11.8)(0.052)(11411) = (22)(11411)$

Collapse Assumes 1/2 evacuation & FW internal
Fluid Top: 5126 MD/TVD

Burst Assumes MASP Equation

Surface Cement

Top of Cement: 0 ft, MD
Casing Shoe: 770 ft, MD

Hole Size: 18.5 in
Casing Size: 16 in

Lead

% Excess, OH 100 %
yield 1.87 ft³ / sack
TOC for Lead 0 ft, MD

Tail

% Excess, OH 100 %
yield 1.35 ft³ / sack
TOC for Tail 470 ft, MD

Lead Calcs

Annular Volume: 442.22 ft³ (w/ excess)
Cement Volume: 236.5 sacks

Tail Calcs

Annular Volume: 282.27 ft³ (w/ excess)
Cement Volume: 209.1 sacks

1st Intermediate Cement

Top of Cement: 0
Casing Shoe: 4060

Hole Size: 14.75
Casing Size: 11.75

Lead

% Excess, OH 100
yield 1.88
TOC for Lead 0

Tail

% Excess, OH 100
yield 1.35
TOC for Tail 3248

Lead Calcs

Annular Volume: 2816.86
Cement Volume: 1498.3

Tail Calcs

Annular Volume: 704.21
Cement Volume: 521.6

	2nd Intermediate Cement (2nd Stage)	2nd Intermediate Cement (2nd Stage)
ft, MD	Top of Cement: 3160 ft, MD	Top of Cement: 3160 ft, MD
ft, MD	Casing Shoe: 4160 ft, MD	Casing Shoe: 4160 ft, MD
in	Hole Size: 10.625 in	Hole Size: 10.625 in
in	Casing Size: 8.625 in	Casing Size: 8.625 in
	<u>Lead</u>	<u>Lead</u>
%	% Excess, OH 100 %	% Excess, OH 100 %
ft ³ / sack	yield 1.87 ft ³ / sack	yield 1.87 ft ³ / sack
ft, MD	TOC for Lead 3160 ft, MD	TOC for Lead 3160 ft, MD
	<u>Tail</u>	<u>Tail</u>
%	% Excess, OH 100 %	% Excess, OH 100 %
ft ³ / sack	yield 1.35 ft ³ / sack	yield 1.35 ft ³ / sack
ft, MD	TOC for Tail 3328 ft, MD	TOC for Tail 3328 ft, MD
	<u>Lead Calcs</u>	<u>Lead Calcs</u>
ft ³ (w/ excess)	Annular Volume: 70.56 ft ³ (w/ excess)	Annular Volume: 70.56 ft ³ (w/ excess)
sacks	Cement Volume: 37.7 sacks	Cement Volume: 37.7 sacks
	<u>Tail Calcs</u>	<u>Tail Calcs</u>
ft ³ (w/ excess)	Annular Volume: 349.43 ft ³ (w/ excess)	Annular Volume: 349.43 ft ³ (w/ excess)
sacks	Cement Volume: 258.8 sacks	Cement Volume: 258.8 sacks

Cement (1st Stage)

Top of Cement: 4160 ft, MD
Casing Shoe: 10,251 ft, MD

Hole Size: 10.625 in
Casing Size: 8.625 in

OH 100 %
Yield 1.88 ft³ / sack
Lead 4160 ft, MD

OH 100 %
Yield 1.33 ft³ / sack
Tail 9,251 ft, MD

Annular Volume: 2138.19 ft³ (w/ excess)
Cement Volume: 1137.3 sacks

Annular Volume: 419.99 ft³ (w/ excess)
Cement Volume: 315.8 sacks

Production Cement

Top of Cement: 0 ft, MD
Casing Shoe: 21,522 ft, MD

Hole Size: 7.875 in
Casing Size: 5.5 in

Lead
% Excess, OH 20 %
Yield 1.88 ft³ / sack
TOC for Lead 9,951 ft, MD

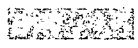
Tail
% Excess, OH 20 %
Yield 1.33 ft³ / sack
TOC for Tail 10,380 ft, MD

Lead Calcs

Annular Volume: 89.20 ft³ (w/ excess)
Cement Volume: 47.4 sacks

Tail Calcs

Annular Volume: 2316.61 ft³ (w/ excess)
Cement Volume: 1741.8 sacks

 = Calculate

Prod MW = 11.8 ppg
Max TVD = 11411 ft

BHP = 7002 psi

MASP = 4491 psi

Permit for = 5M
5000

Temporary System

1st Int MW = 10 ppg
Max TVD = 4060 ft

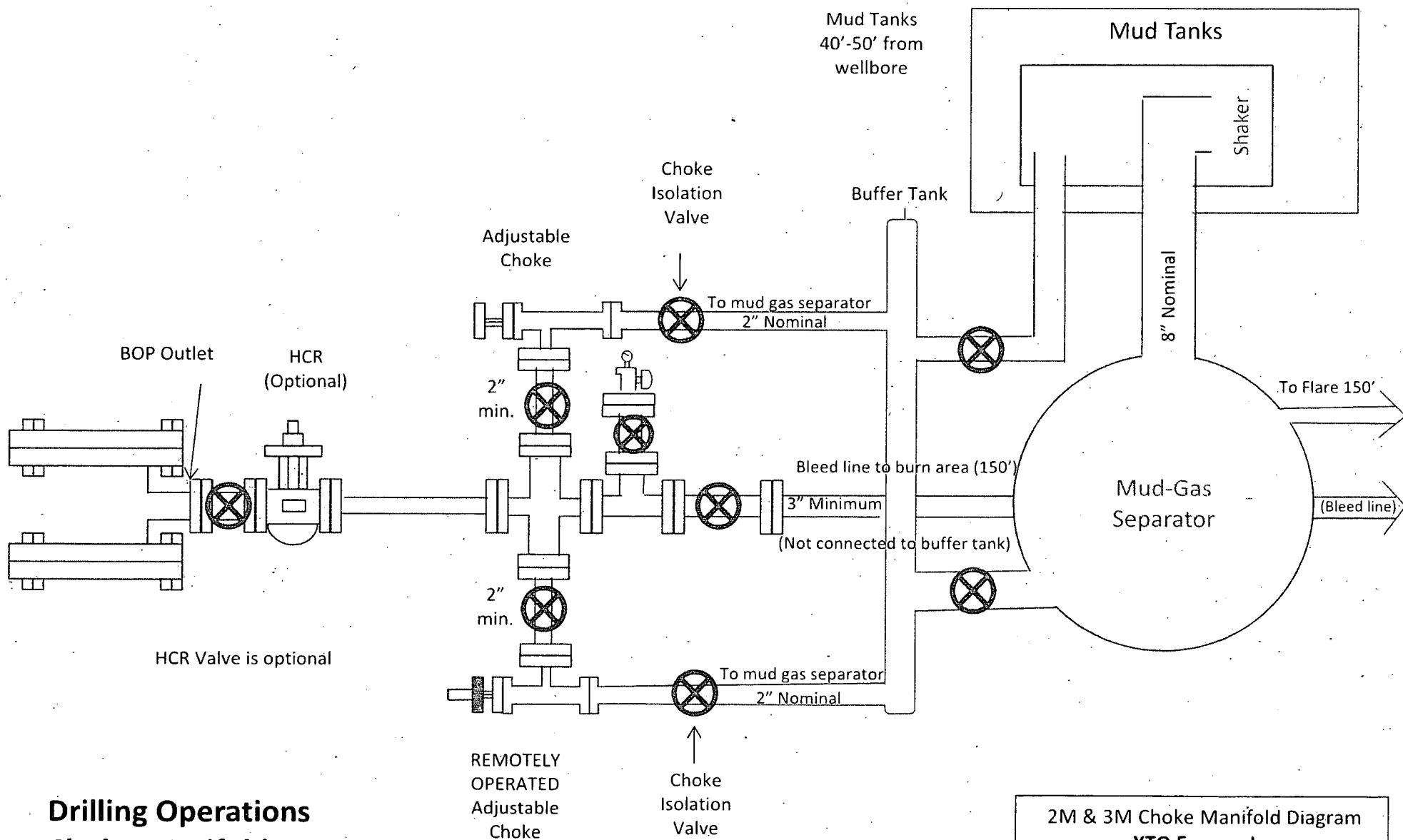
BHP = 2111 psi

MASP = 1218 psi

Permit for = 2M
2000

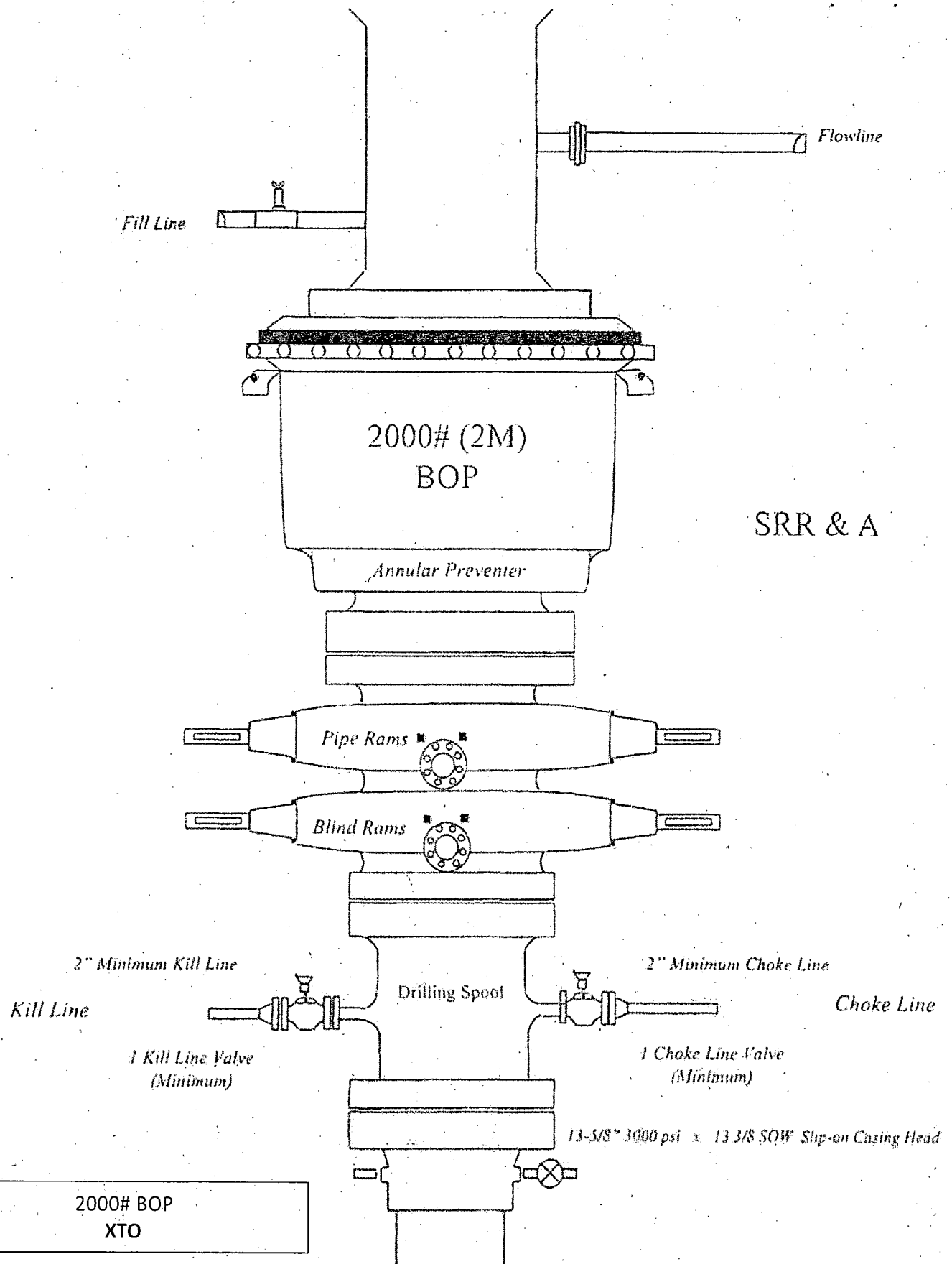
= Calculate
3M system if MASP <
5M system if 3000 < M
10M system if MASP :

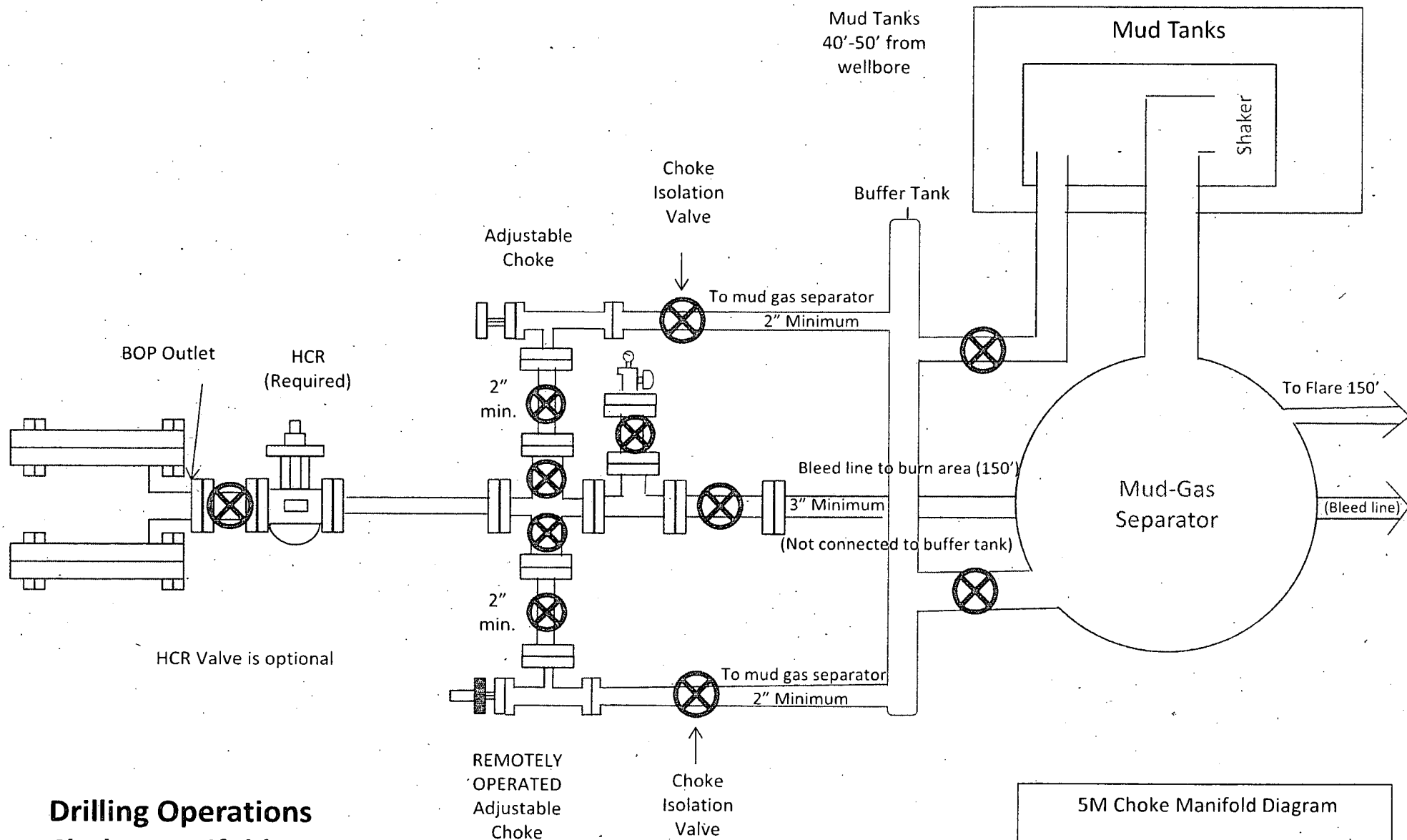
= Calculate
2M system if MASP <
5M system if 2000 < M



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

2M & 3M Choke Manifold Diagram
XTO Energy, Inc

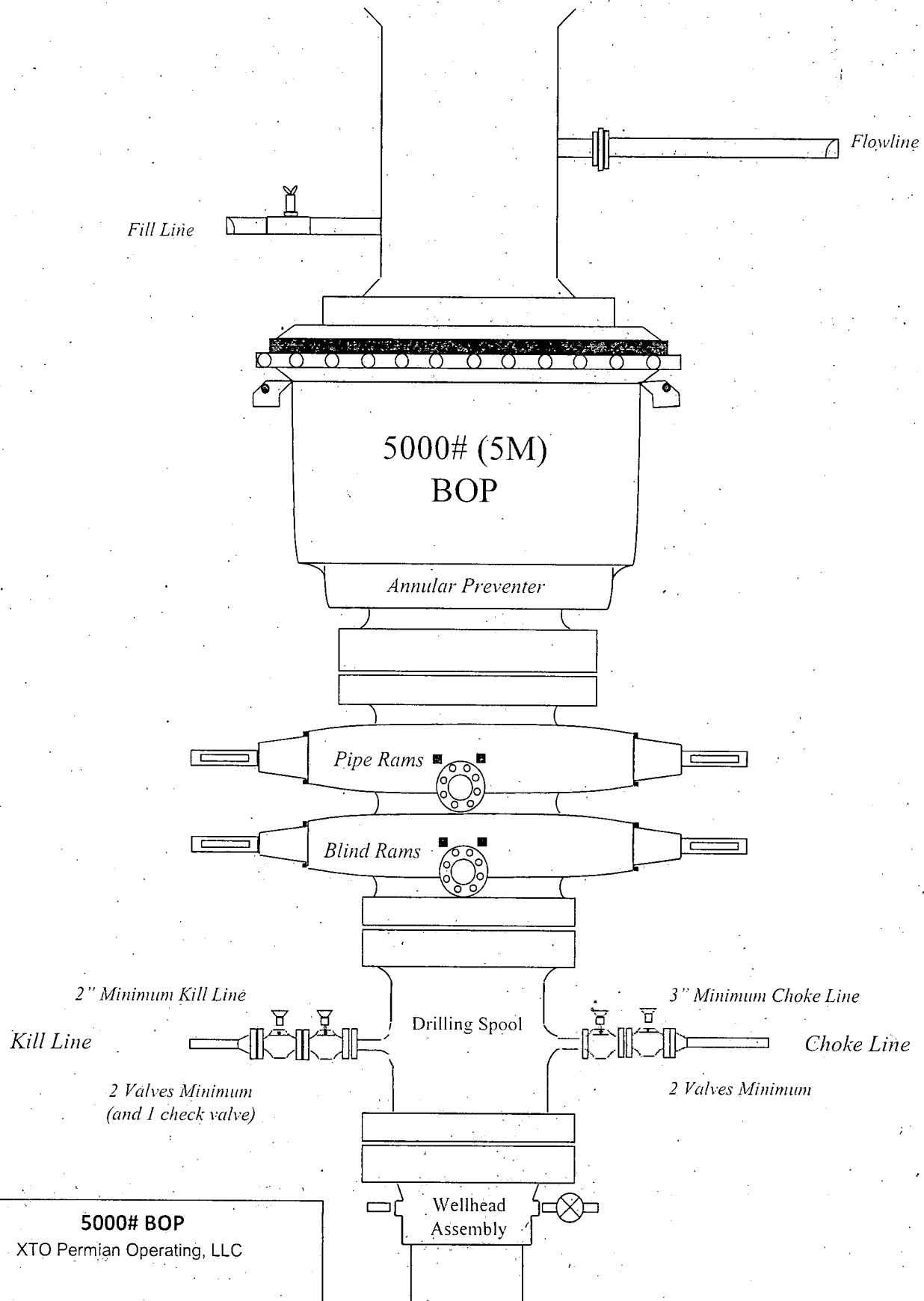




Drilling Operations **Choke Manifold** **5M Service**

5M Choke Manifold Diagram

XTO Permian Operating, LLC



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	1.86	2.05	23.10
17-1/2"	0' – 4036'	13-3/8"	68	BTC	HCL-80	New	1.80	2.37	10.71
12-1/4"	0' – 10206'	9-5/8"	40	BTC	HCL-80	New	1.37	1.41	3.09
8-3/4"	0' – 21838'	5-1/2"	20	BTC	P-110	New	1.20	2.72	2.13

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

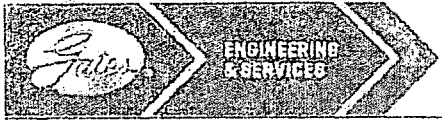
- 18-5/8" SOW bottom x 21-1/4" 3M top flange.

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 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

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 9-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation



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

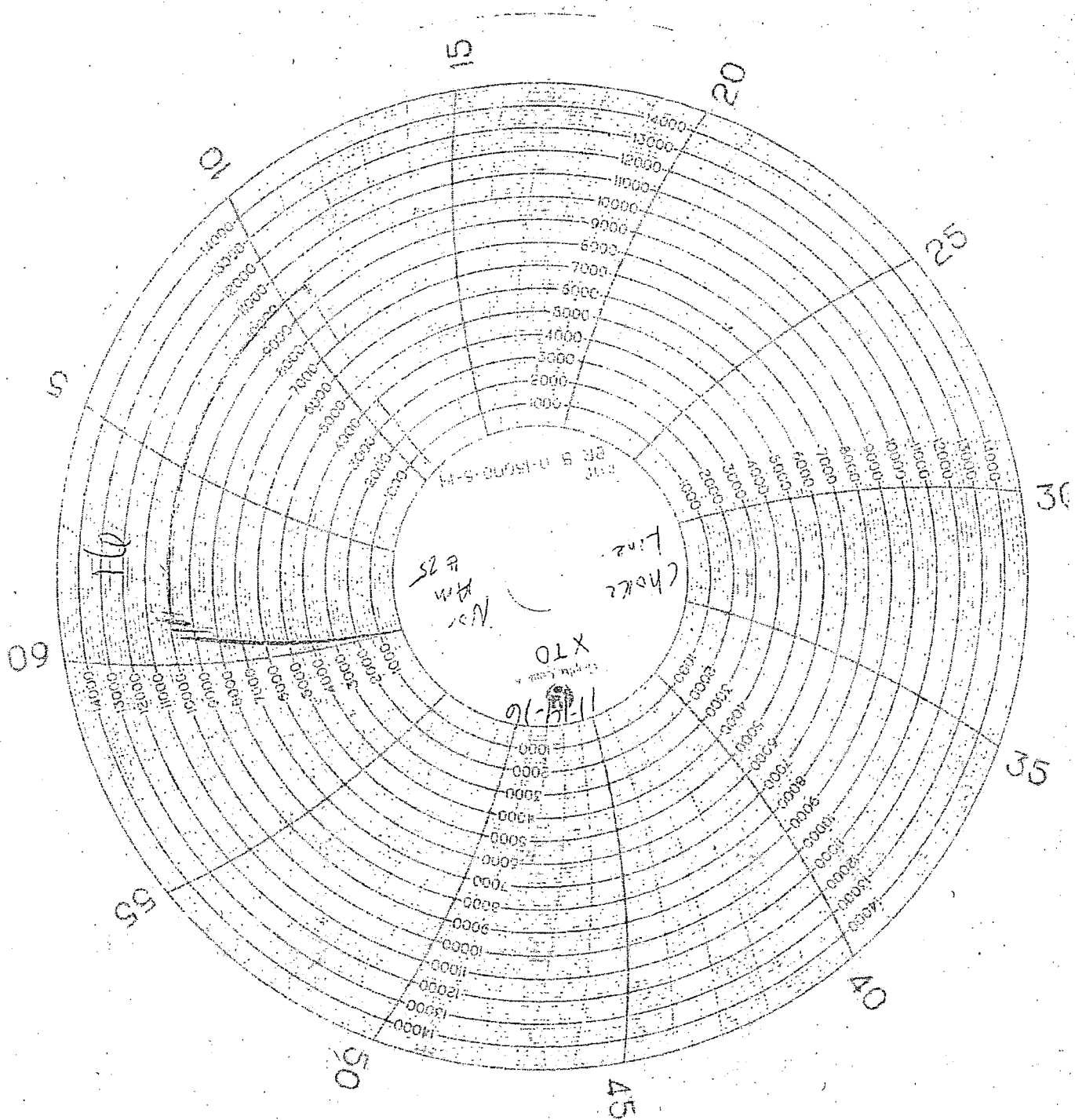
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe@s@gates.com
WEB: www.gates.com

GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA
Product Description:	FD3.0-12.0R41/16.5KFLGE/E LE		
End Fitting 1 :	4 1/16 in. SK FLG	End Fitting 2 :	4 1/16 in. SK FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011S13D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

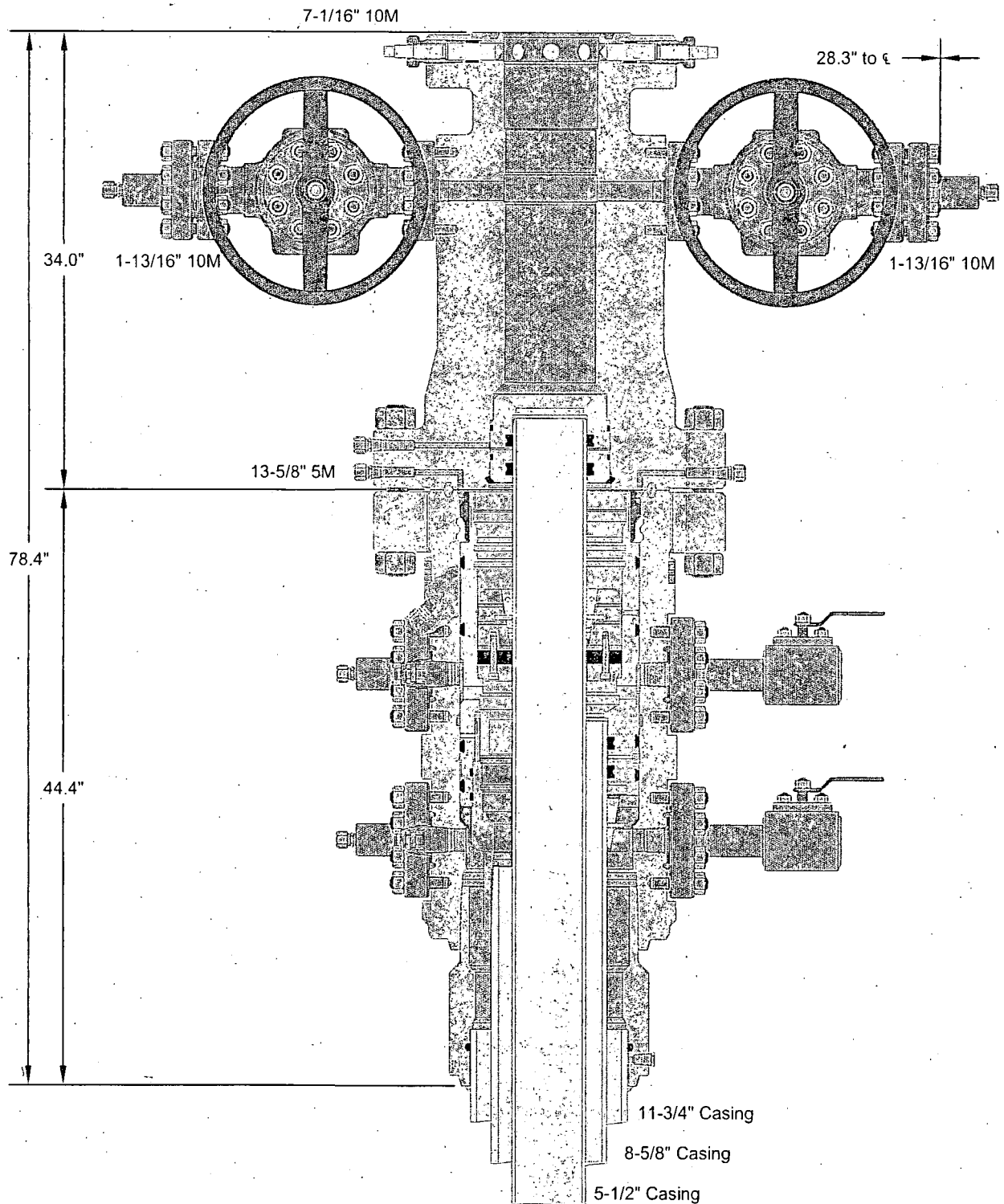
Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance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

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





GE Oil & Gas



ALL DIMENSIONS ARE APPROXIMATE

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XTO ENERGY, INC.

11-3/4" x 8-5/8" x 5-1/2" 10M RSH-2 Wellhead
Assembly, With T-EBS-F Tubing Head

DRAWN	VJK	31OCT16
APPRV	KN	31OCT16
FOR REFERENCE ONLY		
DRAWING NO.		10012358



XTO Energy

Eddy County, NM

PLU 13 Dog Town Draw

PLU 13 Dog Town Draw 204H [RSN 104H]

Wellbore #1

Plan: plan2

Standard Planning Report

31 July, 2019



a business unit of Turbo Drill Industries, Inc.

XTO ENERGY

MD	Inc	Azi	TVD	+N
0.00	0.00	0.00	0.00	0.
4200.00	0.00	0.00	4200.00	0.

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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

Site:	PLU 13 Dog Town Draw		
Site Position:		Northing:	440,075.00 usft
From:	Map	Easting:	654,089.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 12' 32.046 N
		Longitude:	103° 50' 6.479 W
		Grid Convergence:	0.27 °

Well	PLU 13 Dog Town Draw 204H [RSN 104H]					
Well Position	+N/-S	-69.90 usft	Northing:	440,005.10 usft	Latitude:	32° 12' 31.354 N
	+E/-W	-0.10 usft	Easting:	654,089.00 usft	Longitude:	103° 50' 6.484 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,459.00 usft

Wellbore:	Wellbore #1				
Magnetics:	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	07/10/19	6.78	59.88	47,898.50000000

Design	plan2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	179.76

Plan Survey Tool Program	Date	07/31/19		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(usft)	(usft)			
1	0.00	21,521.89, plan2 (Wellbore #1)	A008Mb_MWD+IFR1+MS	
			OWSG MWD + IFR1 + Multi-Si	

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	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,600.00	8.00	353.40	4,598.70	27.70	-3.20	2.00	2.00	0.00	353.40	
8,600.00	8.00	353.40	8,559.77	580.70	-67.19	0.00	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,958.48	608.39	-70.39	2.00	-2.00	0.00	180.00	
10,879.57	0.00	0.00	10,838.05	608.39	-70.39	0.00	0.00	0.00	0.00	
11,779.57	90.00	179.76	11,411.00	35.44	-68.03	10.00	10.00	19.97	179.76	
21,521.89	90.00	179.76	11,411.00	-9,706.80	-27.90	0.00	0.00	0.00	0.00	PLU 13 Dog Town Dr

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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
Rustler									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
936.00	0.00	0.00	936.00	0.00	0.00	0.00	0.00	0.00	0.00
T/Salt									
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
3,936.00	0.00	0.00	3,936.00	0.00	0.00	0.00	0.00	0.00	0.00
B/Salt									
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
4,236.00	0.72	353.40	4,236.00	0.22	-0.03	-0.22	2.00	2.00	0.00
DLWR									

Database:	EDM.5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13-Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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)
4,300.00	2.00	353.40	4,299.98	1.73	-0.20	-1.73	2.00	2.00	0.00
4,400.00	4.00	353.40	4,399.84	6.93	-0.80	-6.94	2.00	2.00	0.00
4,500.00	6.00	353.40	4,499.45	15.59	-1.80	-15.60	2.00	2.00	0.00
4,600.00	8.00	353.40	4,598.70	27.70	-3.20	-27.71	2.00	2.00	0.00
Start 4000.00 hold at 4600.00 MD									
4,700.00	8.00	353.40	4,697.73	41.52	-4.80	-41.54	0.00	0.00	0.00
4,800.00	8.00	353.40	4,796.76	55.35	-6.40	-55.37	0.00	0.00	0.00
4,900.00	8.00	353.40	4,895.78	69.17	-8.00	-69.20	0.00	0.00	0.00
5,000.00	8.00	353.40	4,994.81	83.00	-9.60	-83.03	0.00	0.00	0.00
5,100.00	8.00	353.40	5,093.84	96.82	-11.20	-96.87	0.00	0.00	0.00
5,200.00	8.00	353.40	5,192.86	110.65	-12.80	-110.70	0.00	0.00	0.00
5,300.00	8.00	353.40	5,291.89	124.47	-14.40	-124.53	0.00	0.00	0.00
5,400.00	8.00	353.40	5,390.92	138.30	-16.00	-138.36	0.00	0.00	0.00
5,500.00	8.00	353.40	5,489.94	152.12	-17.60	-152.19	0.00	0.00	0.00
5,600.00	8.00	353.40	5,588.97	165.95	-19.20	-166.02	0.00	0.00	0.00
5,700.00	8.00	353.40	5,688.00	179.77	-20.80	-179.86	0.00	0.00	0.00
5,800.00	8.00	353.40	5,787.02	193.60	-22.40	-193.69	0.00	0.00	0.00
5,900.00	8.00	353.40	5,886.05	207.42	-24.00	-207.52	0.00	0.00	0.00
6,000.00	8.00	353.40	5,985.08	221.25	-25.60	-221.35	0.00	0.00	0.00
6,100.00	8.00	353.40	6,084.10	235.07	-27.20	-235.18	0.00	0.00	0.00
6,200.00	8.00	353.40	6,183.13	248.90	-28.80	-249.01	0.00	0.00	0.00
6,300.00	8.00	353.40	6,282.16	262.72	-30.40	-262.85	0.00	0.00	0.00
6,400.00	8.00	353.40	6,381.18	276.55	-32.00	-276.68	0.00	0.00	0.00
6,500.00	8.00	353.40	6,480.21	290.37	-33.60	-290.51	0.00	0.00	0.00
6,600.00	8.00	353.40	6,579.24	304.20	-35.20	-304.34	0.00	0.00	0.00
6,700.00	8.00	353.40	6,678.26	318.02	-36.80	-318.17	0.00	0.00	0.00
6,800.00	8.00	353.40	6,777.29	331.85	-38.40	-332.00	0.00	0.00	0.00
6,900.00	8.00	353.40	6,876.32	345.67	-40.00	-345.84	0.00	0.00	0.00
7,000.00	8.00	353.40	6,975.35	359.50	-41.60	-359.67	0.00	0.00	0.00
7,100.00	8.00	353.40	7,074.37	373.32	-43.19	-373.50	0.00	0.00	0.00
7,200.00	8.00	353.40	7,173.40	387.15	-44.79	-387.33	0.00	0.00	0.00
7,300.00	8.00	353.40	7,272.43	400.97	-46.39	-401.16	0.00	0.00	0.00
7,400.00	8.00	353.40	7,371.45	414.80	-47.99	-414.99	0.00	0.00	0.00
7,500.00	8.00	353.40	7,470.48	428.62	-49.59	-428.83	0.00	0.00	0.00
7,600.00	8.00	353.40	7,569.51	442.45	-51.19	-442.66	0.00	0.00	0.00
7,700.00	8.00	353.40	7,668.53	456.27	-52.79	-456.49	0.00	0.00	0.00
7,800.00	8.00	353.40	7,767.56	470.10	-54.39	-470.32	0.00	0.00	0.00
7,900.00	8.00	353.40	7,866.59	483.92	-55.99	-484.15	0.00	0.00	0.00
8,000.00	8.00	353.40	7,965.61	497.75	-57.59	-497.98	0.00	0.00	0.00
8,071.08	8.00	353.40	8,036.00	507.57	-58.73	-507.82	0.00	0.00	0.00
BSPRG									
8,100.00	8.00	353.40	8,064.64	511.57	-59.19	-511.82	0.00	0.00	0.00
8,200.00	8.00	353.40	8,163.67	525.40	-60.79	-525.65	0.00	0.00	0.00
8,300.00	8.00	353.40	8,262.69	539.22	-62.39	-539.48	0.00	0.00	0.00
8,400.00	8.00	353.40	8,361.72	553.05	-63.99	-553.31	0.00	0.00	0.00
8,500.00	8.00	353.40	8,460.75	566.87	-65.59	-567.14	0.00	0.00	0.00
8,600.00	8.00	353.40	8,559.77	580.70	-67.19	-580.97	0.00	0.00	0.00
Start Drop -2.00									
8,700.00	6.00	353.40	8,659.02	592.80	-68.59	-593.09	2.00	-2.00	0.00
8,800.00	4.00	353.40	8,758.64	601.46	-69.59	-601.75	2.00	-2.00	0.00
8,900.00	2.00	353.40	8,858.50	606.66	-70.19	-606.95	2.00	-2.00	0.00
9,000.00	0.00	0.00	8,958.48	608.39	-70.39	-608.68	2.00	-2.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
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Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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)
Start 1879.57 hold at 9000.00 MD									
9,100.00	0.00	0.00	9,058.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,102.52	0.00	0.00	9,061.00	608.39	-70.39	-608.68	0.00	0.00	0.00
1st BSPRG SS									
9,200.00	0.00	0.00	9,158.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,300.00	0.00	0.00	9,258.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,400.00	0.00	0.00	9,358.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,500.00	0.00	0.00	9,458.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,600.00	0.00	0.00	9,558.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,700.00	0.00	0.00	9,658.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,777.52	0.00	0.00	9,736.00	608.39	-70.39	-608.68	0.00	0.00	0.00
2nd BSPRG SS									
9,800.00	0.00	0.00	9,758.48	608.39	-70.39	-608.68	0.00	0.00	0.00
9,900.00	0.00	0.00	9,858.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,000.00	0.00	0.00	9,958.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,100.00	0.00	0.00	10,058.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,177.52	0.00	0.00	10,136.00	608.39	-70.39	-608.68	0.00	0.00	0.00
3rd BSPRG LM									
10,200.00	0.00	0.00	10,158.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,300.00	0.00	0.00	10,258.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,400.00	0.00	0.00	10,358.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,500.00	0.00	0.00	10,458.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,600.00	0.00	0.00	10,558.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,700.00	0.00	0.00	10,658.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,800.00	0.00	0.00	10,758.48	608.39	-70.39	-608.68	0.00	0.00	0.00
10,879.57	0.00	0.00	10,838.05	608.39	-70.39	-608.68	0.00	0.00	0.00
KOP - Start DLS 10.00 TFO 179.76									
10,900.00	2.04	179.76	10,858.47	608.03	-70.39	-608.32	10.00	10.00	0.00
10,952.72	7.32	179.76	10,911.00	603.73	-70.37	-604.02	10.00	10.00	0.00
3rd BSPRG SS									
11,000.00	12.04	179.76	10,957.59	595.78	-70.34	-596.07	10.00	10.00	0.00
11,100.00	22.04	179.76	11,053.08	566.51	-70.22	-566.80	10.00	10.00	0.00
11,200.00	32.04	179.76	11,142.03	521.10	-70.03	-521.39	10.00	10.00	0.00
11,300.00	42.04	179.76	11,221.75	460.94	-69.79	-461.23	10.00	10.00	0.00
11,400.00	52.04	179.76	11,289.81	387.85	-69.48	-388.13	10.00	10.00	0.00
11,435.92	55.64	179.76	11,311.00	358.85	-69.37	-359.14	10.00	10.00	0.00
WFCMP									
11,500.00	62.04	179.76	11,344.14	304.05	-69.14	-304.33	10.00	10.00	0.00
11,508.18	62.86	179.76	11,347.92	296.79	-69.11	-297.08	10.00	10.00	0.00
PLU 13 Dog Town Draw 204H [RSN 104H] FTP									
11,600.00	72.04	179.76	11,383.09	212.08	-68.76	-212.37	10.00	10.00	0.00
11,700.00	82.04	179.76	11,405.49	114.75	-68.36	-115.04	10.00	10.00	0.00
11,779.57	90.00	179.76	11,411.00	35.44	-68.03	-35.72	10.00	10.00	0.00
EOC - Start 9742.32 hold at 11779.57 MD									
11,800.00	90.00	179.76	11,411.00	15.01	-67.95	-15.30	0.00	0.00	0.00
11,900.00	90.00	179.76	11,411.00	-84.99	-67.54	84.70	0.00	0.00	0.00
12,000.00	90.00	179.76	11,411.00	-184.99	-67.13	184.70	0.00	0.00	0.00
12,100.00	90.00	179.76	11,411.00	-284.99	-66.71	284.70	0.00	0.00	0.00
12,200.00	90.00	179.76	11,411.00	-384.99	-66.30	384.70	0.00	0.00	0.00
12,300.00	90.00	179.76	11,411.00	-484.99	-65.89	484.70	0.00	0.00	0.00
12,400.00	90.00	179.76	11,411.00	-584.98	-65.48	584.70	0.00	0.00	0.00
12,500.00	90.00	179.76	11,411.00	-684.98	-65.07	684.70	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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)
12,600.00	90.00	179.76	11,411.00	-784.98	-64.65	784.70	0.00	0.00	0.00
12,700.00	90.00	179.76	11,411.00	-884.98	-64.24	884.70	0.00	0.00	0.00
12,800.00	90.00	179.76	11,411.00	-984.98	-63.83	984.70	0.00	0.00	0.00
12,900.00	90.00	179.76	11,411.00	-1,084.98	-63.42	1,084.70	0.00	0.00	0.00
13,000.00	90.00	179.76	11,411.00	-1,184.98	-63.01	1,184.70	0.00	0.00	0.00
13,100.00	90.00	179.76	11,411.00	-1,284.98	-62.59	1,284.70	0.00	0.00	0.00
13,200.00	90.00	179.76	11,411.00	-1,384.98	-62.18	1,384.70	0.00	0.00	0.00
13,300.00	90.00	179.76	11,411.00	-1,484.98	-61.77	1,484.70	0.00	0.00	0.00
13,400.00	90.00	179.76	11,411.00	-1,584.98	-61.36	1,584.70	0.00	0.00	0.00
13,500.00	90.00	179.76	11,411.00	-1,684.97	-60.95	1,684.70	0.00	0.00	0.00
13,600.00	90.00	179.76	11,411.00	-1,784.97	-60.53	1,784.70	0.00	0.00	0.00
13,700.00	90.00	179.76	11,411.00	-1,884.97	-60.12	1,884.70	0.00	0.00	0.00
13,800.00	90.00	179.76	11,411.00	-1,984.97	-59.71	1,984.70	0.00	0.00	0.00
13,900.00	90.00	179.76	11,411.00	-2,084.97	-59.30	2,084.70	0.00	0.00	0.00
14,000.00	90.00	179.76	11,411.00	-2,184.97	-58.89	2,184.70	0.00	0.00	0.00
14,100.00	90.00	179.76	11,411.00	-2,284.97	-58.47	2,284.70	0.00	0.00	0.00
14,200.00	90.00	179.76	11,411.00	-2,384.97	-58.06	2,384.70	0.00	0.00	0.00
14,300.00	90.00	179.76	11,411.00	-2,484.97	-57.65	2,484.70	0.00	0.00	0.00
14,400.00	90.00	179.76	11,411.00	-2,584.97	-57.24	2,584.70	0.00	0.00	0.00
14,500.00	90.00	179.76	11,411.00	-2,684.97	-56.83	2,684.70	0.00	0.00	0.00
14,600.00	90.00	179.76	11,411.00	-2,784.97	-56.41	2,784.70	0.00	0.00	0.00
14,700.00	90.00	179.76	11,411.00	-2,884.96	-56.00	2,884.70	0.00	0.00	0.00
14,800.00	90.00	179.76	11,411.00	-2,984.96	-55.59	2,984.70	0.00	0.00	0.00
14,900.00	90.00	179.76	11,411.00	-3,084.96	-55.18	3,084.70	0.00	0.00	0.00
15,000.00	90.00	179.76	11,411.00	-3,184.96	-54.77	3,184.70	0.00	0.00	0.00
15,100.00	90.00	179.76	11,411.00	-3,284.96	-54.35	3,284.70	0.00	0.00	0.00
15,200.00	90.00	179.76	11,411.00	-3,384.96	-53.94	3,384.70	0.00	0.00	0.00
15,300.00	90.00	179.76	11,411.00	-3,484.96	-53.53	3,484.70	0.00	0.00	0.00
15,400.00	90.00	179.76	11,411.00	-3,584.96	-53.12	3,584.70	0.00	0.00	0.00
15,500.00	90.00	179.76	11,411.00	-3,684.96	-52.71	3,684.70	0.00	0.00	0.00
15,600.00	90.00	179.76	11,411.00	-3,784.96	-52.30	3,784.70	0.00	0.00	0.00
15,700.00	90.00	179.76	11,411.00	-3,884.96	-51.88	3,884.70	0.00	0.00	0.00
15,800.00	90.00	179.76	11,411.00	-3,984.96	-51.47	3,984.70	0.00	0.00	0.00
15,900.00	90.00	179.76	11,411.00	-4,084.95	-51.06	4,084.70	0.00	0.00	0.00
16,000.00	90.00	179.76	11,411.00	-4,184.95	-50.65	4,184.70	0.00	0.00	0.00
16,100.00	90.00	179.76	11,411.00	-4,284.95	-50.24	4,284.70	0.00	0.00	0.00
16,200.00	90.00	179.76	11,411.00	-4,384.95	-49.82	4,384.70	0.00	0.00	0.00
16,300.00	90.00	179.76	11,411.00	-4,484.95	-49.41	4,484.70	0.00	0.00	0.00
16,400.00	90.00	179.76	11,411.00	-4,584.95	-49.00	4,584.70	0.00	0.00	0.00
16,500.00	90.00	179.76	11,411.00	-4,684.95	-48.59	4,684.70	0.00	0.00	0.00
16,600.00	90.00	179.76	11,411.00	-4,784.95	-48.18	4,784.70	0.00	0.00	0.00
16,700.00	90.00	179.76	11,411.00	-4,884.95	-47.76	4,884.70	0.00	0.00	0.00
16,800.00	90.00	179.76	11,411.00	-4,984.95	-47.35	4,984.70	0.00	0.00	0.00
16,900.00	90.00	179.76	11,411.00	-5,084.95	-46.94	5,084.70	0.00	0.00	0.00
17,000.00	90.00	179.76	11,411.00	-5,184.95	-46.53	5,184.70	0.00	0.00	0.00
17,100.00	90.00	179.76	11,411.00	-5,284.94	-46.12	5,284.70	0.00	0.00	0.00
17,200.00	90.00	179.76	11,411.00	-5,384.94	-45.70	5,384.70	0.00	0.00	0.00
17,300.00	90.00	179.76	11,411.00	-5,484.94	-45.29	5,484.70	0.00	0.00	0.00
17,400.00	90.00	179.76	11,411.00	-5,584.94	-44.88	5,584.70	0.00	0.00	0.00
17,500.00	90.00	179.76	11,411.00	-5,684.94	-44.47	5,684.70	0.00	0.00	0.00
17,600.00	90.00	179.76	11,411.00	-5,784.94	-44.06	5,784.70	0.00	0.00	0.00
17,700.00	90.00	179.76	11,411.00	-5,884.94	-43.64	5,884.70	0.00	0.00	0.00
17,800.00	90.00	179.76	11,411.00	-5,984.94	-43.23	5,984.70	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

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)
17,900.00	90.00	179.76	11,411.00	-6,084.94	-42.82	6,084.70	0.00	0.00	0.00
18,000.00	90.00	179.76	11,411.00	-6,184.94	-42.41	6,184.70	0.00	0.00	0.00
18,100.00	90.00	179.76	11,411.00	-6,284.94	-42.00	6,284.70	0.00	0.00	0.00
18,200.00	90.00	179.76	11,411.00	-6,384.94	-41.58	6,384.70	0.00	0.00	0.00
18,300.00	90.00	179.76	11,411.00	-6,484.93	-41.17	6,484.70	0.00	0.00	0.00
18,400.00	90.00	179.76	11,411.00	-6,584.93	-40.76	6,584.70	0.00	0.00	0.00
18,500.00	90.00	179.76	11,411.00	-6,684.93	-40.35	6,684.70	0.00	0.00	0.00
18,600.00	90.00	179.76	11,411.00	-6,784.93	-39.94	6,784.70	0.00	0.00	0.00
18,700.00	90.00	179.76	11,411.00	-6,884.93	-39.52	6,884.70	0.00	0.00	0.00
18,800.00	90.00	179.76	11,411.00	-6,984.93	-39.11	6,984.70	0.00	0.00	0.00
18,900.00	90.00	179.76	11,411.00	-7,084.93	-38.70	7,084.70	0.00	0.00	0.00
19,000.00	90.00	179.76	11,411.00	-7,184.93	-38.29	7,184.70	0.00	0.00	0.00
19,100.00	90.00	179.76	11,411.00	-7,284.93	-37.88	7,284.70	0.00	0.00	0.00
19,200.00	90.00	179.76	11,411.00	-7,384.93	-37.46	7,384.70	0.00	0.00	0.00
19,300.00	90.00	179.76	11,411.00	-7,484.93	-37.05	7,484.70	0.00	0.00	0.00
19,400.00	90.00	179.76	11,411.00	-7,584.93	-36.64	7,584.70	0.00	0.00	0.00
19,500.00	90.00	179.76	11,411.00	-7,684.92	-36.23	7,684.71	0.00	0.00	0.00
19,600.00	90.00	179.76	11,411.00	-7,784.92	-35.82	7,784.71	0.00	0.00	0.00
19,700.00	90.00	179.76	11,411.00	-7,884.92	-35.41	7,884.71	0.00	0.00	0.00
19,800.00	90.00	179.76	11,411.00	-7,984.92	-34.99	7,984.71	0.00	0.00	0.00
19,900.00	90.00	179.76	11,411.00	-8,084.92	-34.58	8,084.71	0.00	0.00	0.00
20,000.00	90.00	179.76	11,411.00	-8,184.92	-34.17	8,184.71	0.00	0.00	0.00
20,100.00	90.00	179.76	11,411.00	-8,284.92	-33.76	8,284.71	0.00	0.00	0.00
20,200.00	90.00	179.76	11,411.00	-8,384.92	-33.35	8,384.71	0.00	0.00	0.00
20,300.00	90.00	179.76	11,411.00	-8,484.92	-32.93	8,484.71	0.00	0.00	0.00
20,400.00	90.00	179.76	11,411.00	-8,584.92	-32.52	8,584.71	0.00	0.00	0.00
20,500.00	90.00	179.76	11,411.00	-8,684.92	-32.11	8,684.71	0.00	0.00	0.00
20,600.00	90.00	179.76	11,411.00	-8,784.91	-31.70	8,784.71	0.00	0.00	0.00
20,700.00	90.00	179.76	11,411.00	-8,884.91	-31.29	8,884.71	0.00	0.00	0.00
20,800.00	90.00	179.76	11,411.00	-8,984.91	-30.87	8,984.71	0.00	0.00	0.00
20,900.00	90.00	179.76	11,411.00	-9,084.91	-30.46	9,084.71	0.00	0.00	0.00
21,000.00	90.00	179.76	11,411.00	-9,184.91	-30.05	9,184.71	0.00	0.00	0.00
21,100.00	90.00	179.76	11,411.00	-9,284.91	-29.64	9,284.71	0.00	0.00	0.00
21,200.00	90.00	179.76	11,411.00	-9,384.91	-29.23	9,384.71	0.00	0.00	0.00
21,300.00	90.00	179.76	11,411.00	-9,484.91	-28.81	9,484.71	0.00	0.00	0.00
21,391.89	90.00	179.76	11,411.00	-9,576.80	-28.44	9,576.60	0.00	0.00	0.00
PLU 13 Dog Town Draw 204H [RSN 104H] LTP									
21,400.00	90.00	179.76	11,411.00	-9,584.91	-28.40	9,584.71	0.00	0.00	0.00
21,500.00	90.00	179.76	11,411.00	-9,684.91	-27.99	9,684.71	0.00	0.00	0.00
21,521.89	90.00	179.76	11,411.00	-9,706.80	-27.90	9,706.60	0.00	0.00	0.00
TD at 21521.89 MD - PLU 13 Dog Town Draw 204H [RSN 104H] BHL									

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well PLU 13 Dog Town Draw 204H [RSN 104H]
Company:	XTO Energy	TVD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Project:	Eddy County, NM	MD Reference:	GL 3459' + 27' KB @ 3486.00usft (H&P 467)
Site:	PLU 13 Dog Town Draw	North Reference:	Grid
Well:	PLU 13 Dog Town Draw 204H [RSN 104H]	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	plan2		

Design Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
PLU 13 Dog Town Draw		0.00	0.00	11,411.00	-9,576.80	-28.80	430,428.30	654,060.20	32° 10' 56.583 N
- plan misses target center by 0.36usft at 21391.89usft MD (11411.00 TVD, -9576.80 N, -28.44 E)									
- Point									
PLU 13 Dog Town Draw		0.00	0.00	11,411.00	323.50	-68.40	440,328.60	654,020.60	32° 12' 34.559 N
- plan misses target center by 68.50usft at 11508.18usft MD (11347.92 TVD, 296.79 N, -69.11 E)									
- Point									
PLU 13 Dog Town Draw		0.00	0.01	11,411.00	-9,706.80	-27.90	430,298.30	654,061.10	32° 10' 55.297 N
- plan hits target center									
- Rectangle (sides W100.00 H10,030.38 D40.00)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
561.00	561.00	Rustler		0.00		
936.00	936.00	T/Salt		0.00		
3,936.00	3,936.00	B/Salt		0.00		
4,236.00	4,236.00	DLWR		0.00		
8,071.08	8,036.00	BSPRG		0.00		
9,102.52	9,061.00	1st BSPRG SS		0.00		
9,777.52	9,736.00	2nd BSPRG SS		0.00		
10,177.52	10,136.00	3rd BSPRG LM		0.00		
10,952.72	10,911.00	3rd BSPRG SS		0.00		
11,435.92	11,311.00	WFCMP		0.00		

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
4,200.00	4,200.00	0.00	0.00	Start Build 2.00
4,600.00	4,598.70	27.70	-3.20	Start 4000.00 hold at 4600.00 MD
8,600.00	8,559.77	580.70	-67.19	Start Drop -2.00
9,000.00	8,958.48	608.39	-70.39	Start 1879.57 hold at 9000.00 MD
10,879.57	10,838.05	608.39	-70.39	KOP - Start DLS 10.00 TFO 179.76
11,779.57	11,411.00	35.44	-68.03	EOC - Start 9742.32 hold at 11779.57 MD
21,521.89	11,411.00	-9,706.80	-27.90	TD at 21521.89 MD

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Permian Operating, LLC
LEASE NO.:	NMNM-0030453
WELL NAME & NO.:	Poker Lake Unit 13 DTD 204H
SURFACE HOLE FOOTAGE:	0654' FNL & 2275' FWL
BOTTOM HOLE FOOTAGE:	0200' FSL & 2207' FWL Sect. 25, T. 24 S., R 30 E.
LOCATION:	Section 24, T. 24 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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 (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

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

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

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

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 16 inch surface casing shall be set at approximately 770 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.

11-3/4" 1st Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the 11-3/4 inch 1st intermediate casing is:

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

Formation below the 11-3/4" 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.

8-5/8 2nd 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 8-5/8 inch 2nd intermediate casing is:

Operator has proposed DV tool at depth of 4110', 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 approved top of cement on the next stage.

b. Second stage above DV tool:

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

Formation below the 8-5/8" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

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

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 **2000 (2M) psi.**
4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 11-3/4" 1st intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 11-3/4" 1st intermediate 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. Operator shall perform the 9-5/8" casing integrity tests 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 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips; these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
 - g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

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

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

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

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

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