

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or recomplete an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
INMN99147

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CORRAL CANYON 8-32 FEDERAL 121H9. API Well No.
30-015-46483-00-X110. Field and Pool or Exploratory Area
PURPLE SAGE WOLF CAMP (GAS)11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

XTO ENERGY INCORPORATED

Contact: KELLY KARDOS

E-Mail: kelly.kardos@xtoenergy.com

3a. Address

6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)

Ph: 432-620-4374

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

Sec. 8 T.25S R.29E NWSW 2548FSL 1038FWL
32.144474 N Lat, 104.011879 W Lon

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

TYPE OF SUBMISSION

- ☒
- Notice of Intent
-
- ☐
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|--|---|
| <input type="checkbox"/> Acidize | <input type="checkbox"/> Deepen | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Alter Casing | <input type="checkbox"/> Hydraulic Fracturing | <input type="checkbox"/> Reclamation | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Casing Repair | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete | <input checked="" type="checkbox"/> Other |
| <input type="checkbox"/> Change Plans | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon | Change to Original APD |
| <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back | <input type="checkbox"/> Water Disposal | |

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

XTO Permian Operating, LLC requests to change the casing & cement design per the attached drilling program.

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

XTO requests a variance to be able to batch drill the wells. In doing so, XTO will set intermediate casing and ensure that the well is cemented properly and the well is dead. With floats holding, no pressure on the intermediate csg annulus, and the installation of a TA cap as per GE recommendations, XTO will contact the BLM to skid the rig to drill the surface and intermediate for the remaining wells on the pad. Once surface and intermediate are all completed, XTO will begin drilling the production hole on each of the wells.

REC'D/MIDLAND

DEC 26 2019

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #496163 verified by the BLM Well Information System
For XTO ENERGY INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER SANCHEZ on 12/17/2019 (20JAS0031SE)

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 12/17/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE DEC 18 2019

Approved By

Title

BUREAU OF LAND MANAGEMENT
ROSWELL FIELD OFFICE

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

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

1/28/20 KS

Additional data for EC transaction #496163 that would not fit on the form

32. Additional remarks, continued

Corral Canyon 8-32 Federal 161H 30-015-46466
Corral Canyon 8-32 Federal 121H 30-015-46483
Corral Canyon 8-32 Federal 102H 30-015-46485
Corral Canyon 8-32 Federal 122H 30-015-46484
Corral Canyon 8-32 Federal 162H APD ID 10400045692 WO API Number

Revisions to Operator-Submitted EC Data for Sundry Notice #496163

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type	APDCH NOI	APDCH NOI
Lease	NMNM99147	NMNM99147
Agreement		
Operator	XTO PERMIAN OPERATING, LLC 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	XTO ENERGY INCORPORATED 6401 HOLIDAY HILL ROAD BLDG 5 MIDLAND, TX 79707 Ph: 432-683-2277
Admin Contact	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly.kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly.kardos@xtoenergy.com Ph: 432-620-4374
Tech Contact	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly.kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly.kardos@xtoenergy.com Ph: 432-620-4374
Location		
State	NM	NM
County	EDDY	EDDY
Field/Pool	PURPLE SAGE WOLFCAMP	PURPLE SAGE WOLFCAMP (GAS)
Well/Facility	CORRAL CANYON 8-32 FEDERAL 121H Sec 8 T25S R29E Mer NMP NWSW 2548FSL 1038FWL	CORRAL CANYON 8-32 FEDERAL 121H Sec 8 T25S R29E NWSW 2548FSL 1038FWL 32 144474 N Lat: 104 011879 W Lon

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

XTO Energy Inc.
Corral Canyon 8-32-Fed 121H
Projected TD: 20762' MD/ 10134' TVD
SHL: 2548' FSL: 8' 1038' FWL: Section 8: T25S, R29E
BHL: 2440' FSL: 8' 330' FWL: Section 32: T24S, R29E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

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

Formation	Well Depth (TVD)'	Water/Oil/Gas
Rustler	348	Water
Top of Salt	636	Water
Base of Salt	2636	Water
Delaware	2834	Water
Bone Spring	6572	Water
1st Bone Spring Ss	7511	Water/Oil/Gas
3rd Bone Spring LM	8594	Water/Oil/Gas
3rd Bone Spring Ss	9399	Water/Oil/Gas
Wolfcamp X	9793	Water/Oil/Gas
Wolfcamp A	9906	Water/Oil/Gas
Target Land Curve	10134	Water/Oil/Gas

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

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing @ 600' (36' above the salt) and circulating cement back to surface. The 9 5/8" intermediate casing will be set at 9100' and bring TOC back 200' inside the previous shoe. An 8-3/4 inch curve and lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back 500' into the 9-5/8" casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' = 600'	13 3/8"	168	STC	J-55	New	1.38	7.18	16.54
12-1/4"	0' = 9100'	9-5/8"	40	BTC	HCL-80	New	1.50	1.53	2.60
8-3/4" = 8-1/2"	0' = 20762'	5-1/2"	20	BTC	P-110	New	1.20	1.83	2.36

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

Wellhead:

Permanent Wellhead - GE-RSH-Multibowl System

A. Starting Head: 13-5/8" 10M top flange x 13-3/8" SOW bottom

B. Tubing Head: 13-5/8" 10M bottom flange x 7-1/16" 15M top flange

Wellhead will be installed by manufacturer's representatives.

Manufacturer will monitor welding process to ensure appropriate temperature of seal.

Operator will test the 9-5/8" casing per BLM Onshore Order 2.

Wellhead Manufacturer representative will not be present for BOP test plug installation.

4. Cement Program

Surface Casing: 13 3/8", 68' New J-55, BTC casing to be set at +/- 600'

Lead: 220 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)
Tail: 300 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24-hr = 1500 psi
TOC @ Surface

Intermediate Casing: 9 5/8", 40' New HCL-80, BTC casing to be set at +/- 9100'
ECP/DV Tool to be set at 3500'

1st Stage

Lead: 1370 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)
Tail: 460 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: 690 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)
Tail: 470 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
TOC @ 1000'

Production Casing: 5 1/2", 20' New P-110, BTC casing to be set at +/- 20762'

Tail: 2280 sxs VersaCem (mixed at 13.2 ppg, 1.61 ft³/sx, 8.38 gal/sx water)
Compressives: 12-hr = 1375 psi 24-hr = 2285 psi

5. Pressure Control 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 3831 psi. 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). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 70% of the working pressure. When nipping up on the 13 3/8", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip; pipe rams will be functioned tested each day.

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

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

TUC @ surface on 2nd string.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 600'	17 1/2"	FW / Native	8.4-8.8	35-40	NC
600' - 9100'	12 1/4"	Brine / Cut Brine / WBM	8.8-9.8	30-32	NC
9100' to 20762'	8 3/4"	Cut Brine / WBM / OBM	11.0-12.0	32-36	NC

The necessary mud products for weight addition and fluid loss control will be on location at all times. Spud with fresh water/native mud and set 13 3/8" surface casing isolating the fresh water aquifer. Drill out from under 13 3/8" surface casing with a brine/oil direct emulsion water-based mud. 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 Toico will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

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

8. Logging, Coring and Testing Program

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

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

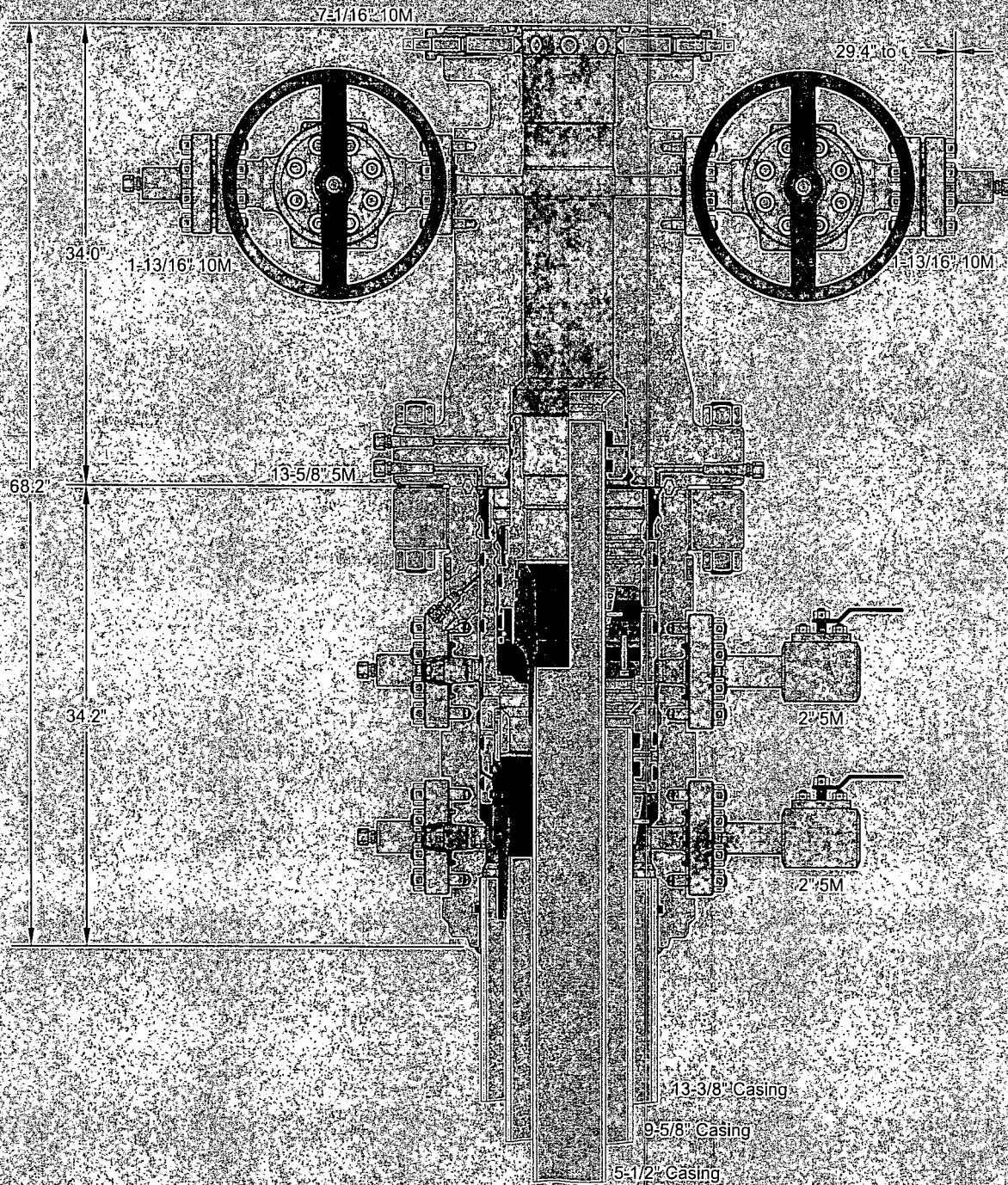
None Anticipated. BHT of 140 to 160 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 6060 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 45 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.



GE Oil & Gas



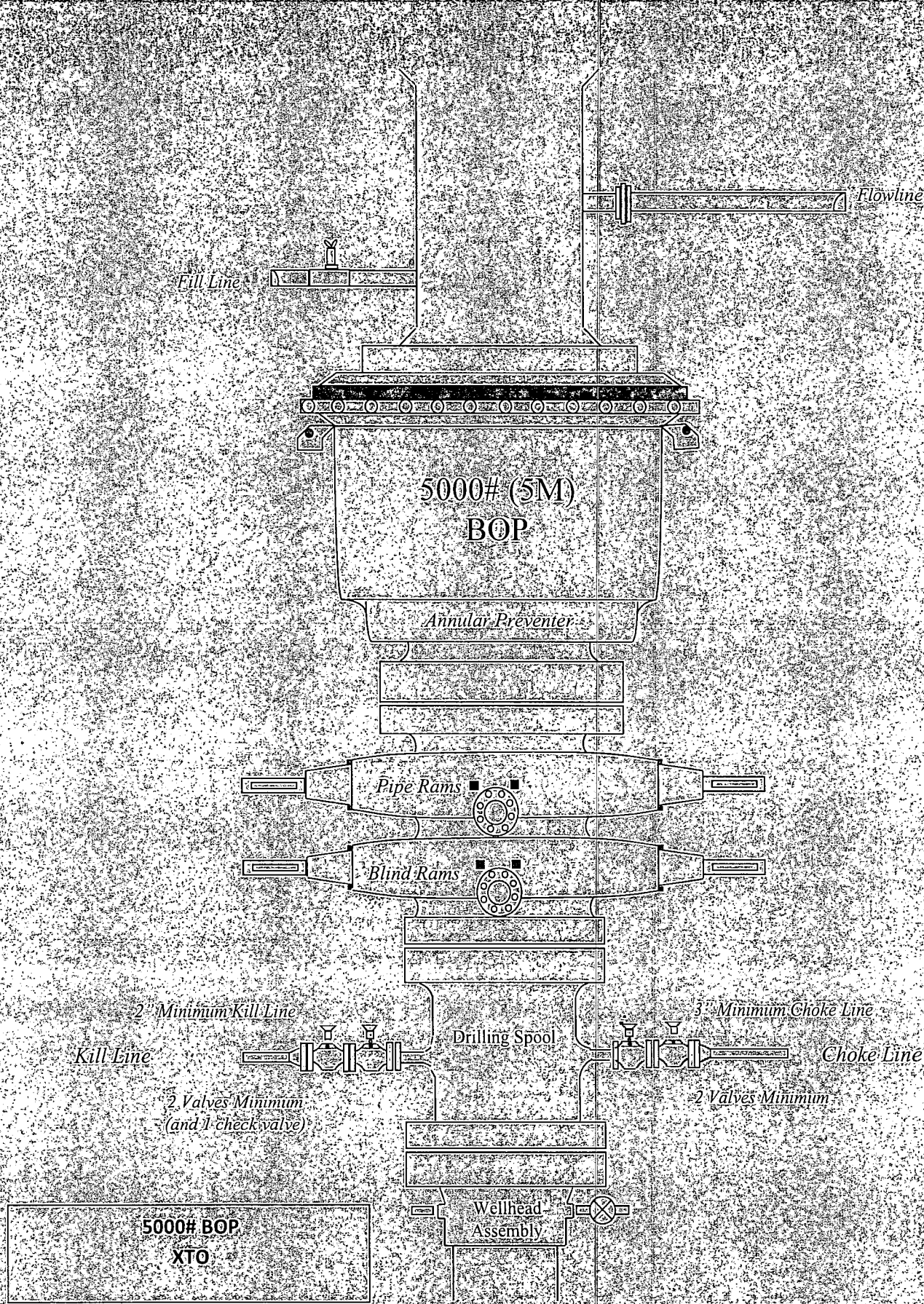
ALL DIMENSIONS ARE APPROXIMATE

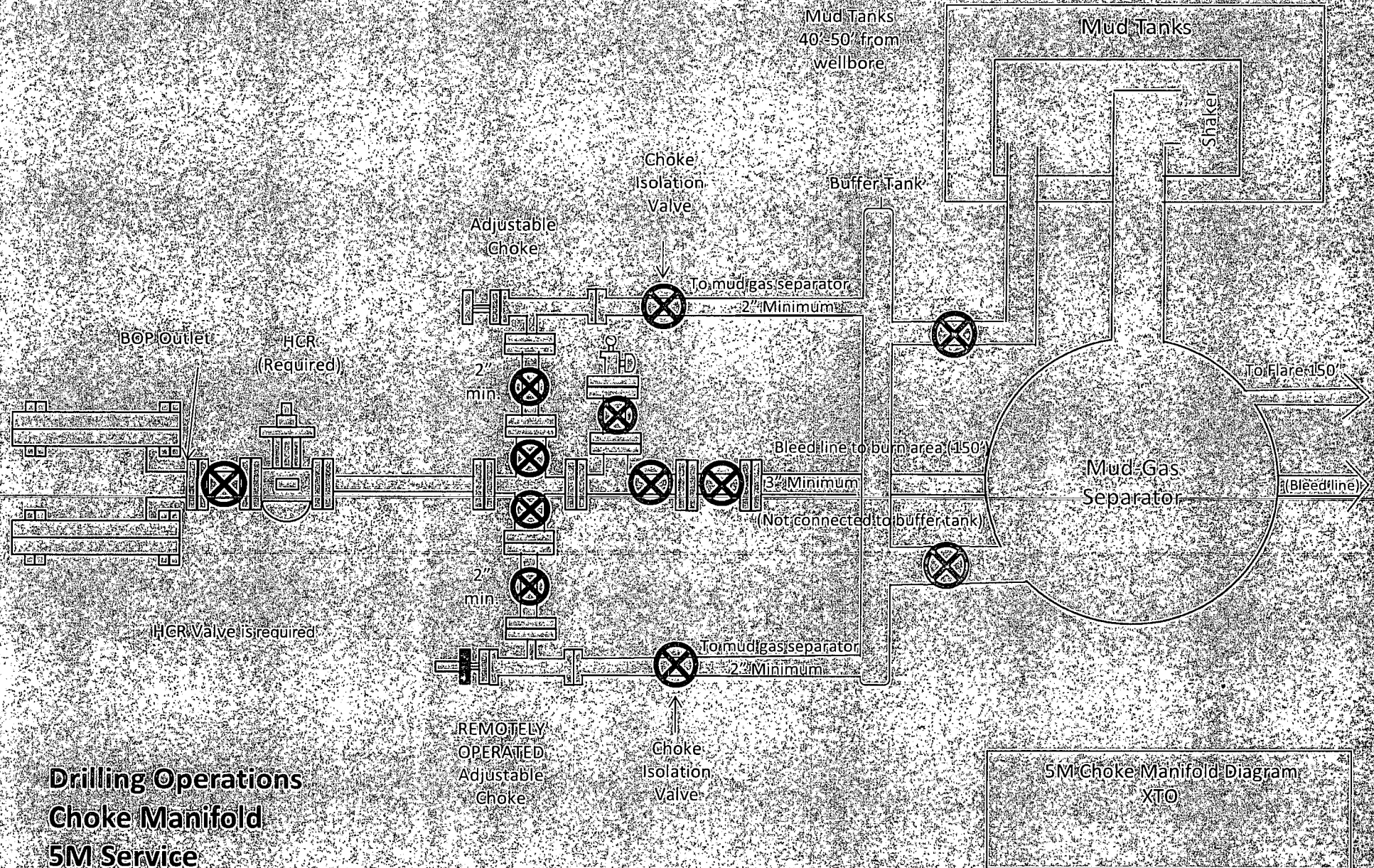
This drawing is the property of GE Oil & Gas Pressure Control LP and is considered confidential. Unless otherwise approved in writing, neither it nor its contents may be used, copied, transmitted or reproduced except for the sole purpose of GE Oil & Gas Pressure Control LP.

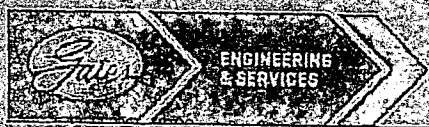
XTO ENERGY INC.

13-3/8" x 9-5/8" x 5-1/2" 10M RSH-2 Wellhead
Assembly, With T-EBS-F Tubing Head

DRAWN	VJK	16FEB17
APPRV	KN	16FEB17
FOR REFERENCE ONLY		
DRAWING NO	10012842	







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

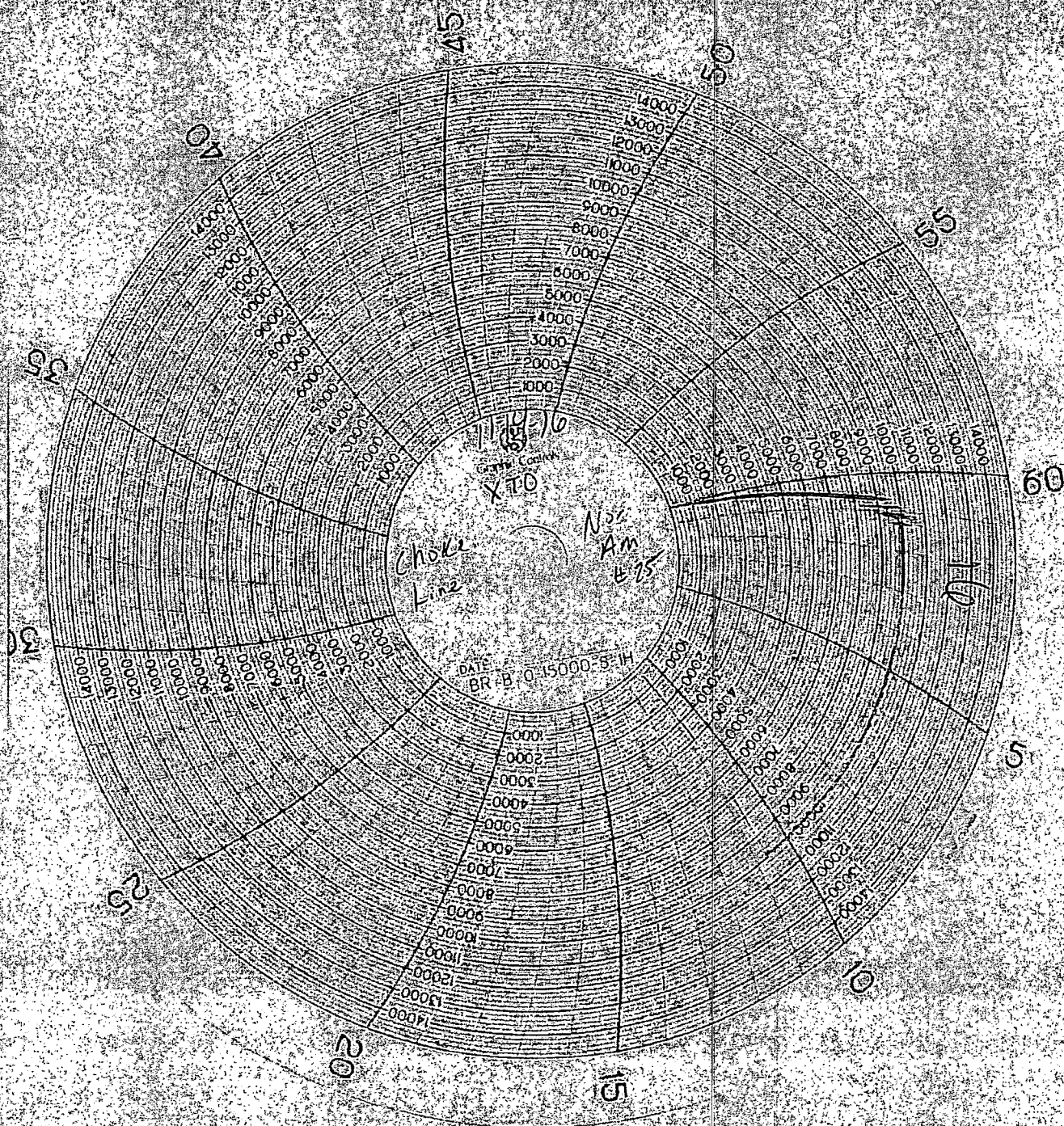
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

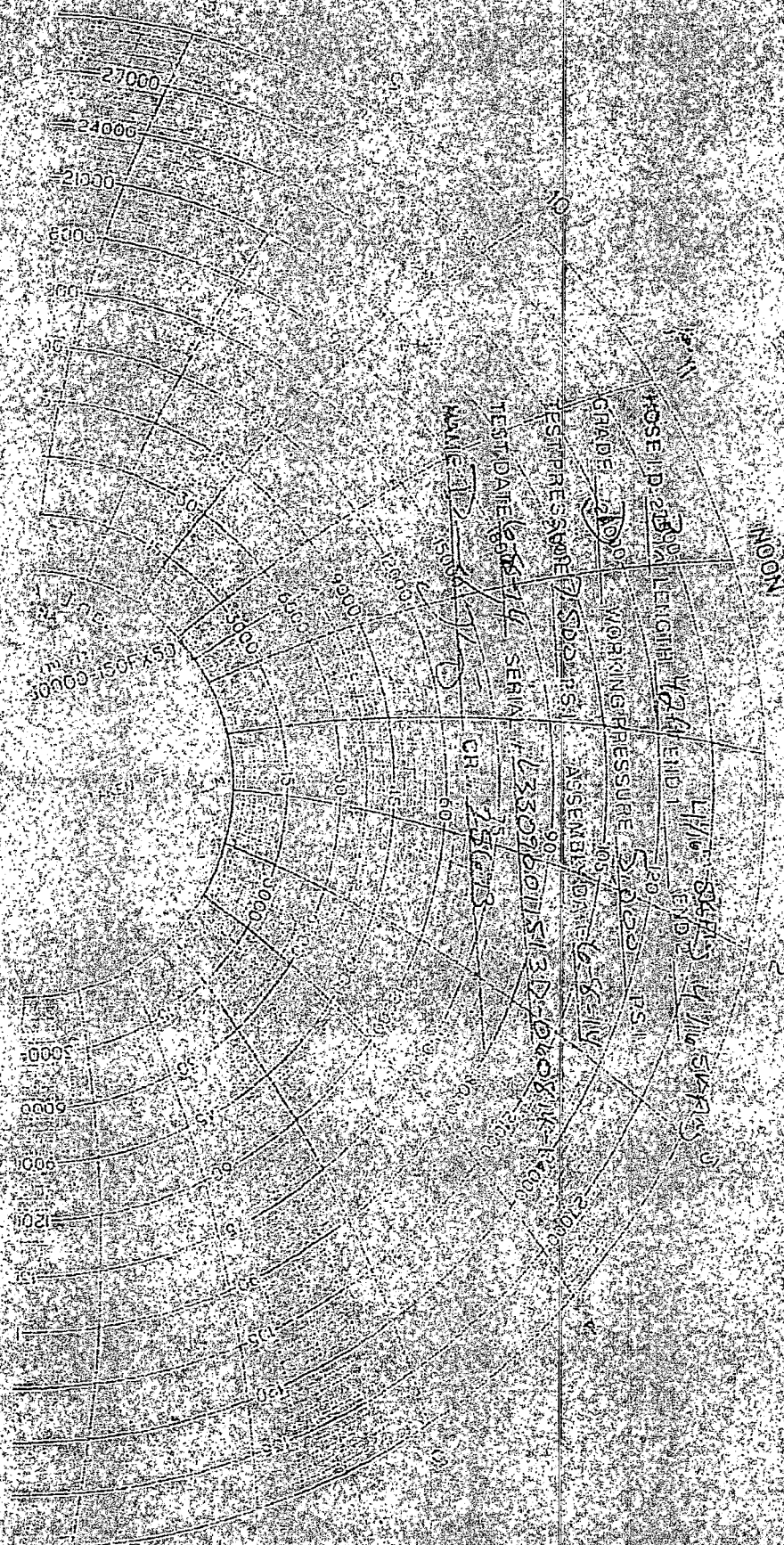
GRADE D PRESSURE TEST CERTIFICATE

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:	FD3-012-0R41/L6-5KFLGE/E-LE		
End Fitting 1:	1/16 in 5K FLG	End Fitting 2:	1/16 in 5K FLG
Gates Part No:	1771-6001	Assembly Code:	L33090011513D-060814-1
Working Pressure:	5,000 PSI	Test Pressure:	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010. Test pressure 9,677 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9,672 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:	







Planned Wellpath Report

Corral Canyon 8-32-FED #121H Rev-B:0

Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	XTO Energy Inc.	Well	Corral Canyon 8-32-FED #121H
Field	Wolfcamp (Eddy Co., NM)	API/Lease	
Facility	Corral Canyon 8-32-FED Pad	Wellbore	Corral Canyon 8-32-FED #121H
Slot	Corral Canyon 8-32-FED #121H		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Gail Deering
Scale	0.999920	Report Generated	16/Dec/2019 at 15:35
Convergence at slot	0.17° East	Database	WA-HOU-Midland-Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting(US ft)	Northing(US ft)	Latitude	Longitude
Slot Location	0.30	30.00	599643.60	416385.70	32°08'39.6656"N	104°00'41.0119"W
Facility Reference Pt			599613.60	416386.00	32°08'39.6694"N	104°00'41.3609"W
Field Reference Pt			152400.30	0.00	30°59'42.8458"N	105°26'33.6593"W

WELLPATH DATUM

Calculation method	Minimum curvature	PD 568 (RKB) to Facility Vertical Datum	2994.00ft
Horizontal Reference Pt	Slot	PD 568 (RKB) to Mean Sea Level	2994.00ft
Vertical Reference Pt	PD 568 (RKB)	PD 568 (RKB) to Ground Level at Slot (Corral Canyon 8-32-FED #121H)	25.00ft
MD Reference Pt	PD 568 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.05°



Planned Wellpath Report

Corral Canyon 8-32 FED #121H Rev.B.0
Page 2 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	XTO Energy Inc.	Well	Corral Canyon 8-32 FED #121H
Field	Wolfcamp (Eddy Co. NM)	API/Lease	
Facility	Corral Canyon 8-32 FED Pad	Wellbore	Corral Canyon 8-32 FED #121H
Slot	Corral Canyon 8-32 FED #121H		

WELLPATH DATA (120 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(°/100ft)	(°/100ft)	(°/100ft)	
0.00	0.000	235.000	0.00	0.00	0.00	0.00	599643.60	416385.70	32°08'39.6656"N	104°00'41.0119"W	0.00	0.00	0.00	
25.00	0.000	235.000	25.00	0.00	0.00	0.00	599643.60	416385.70	32°08'39.6656"N	104°00'41.0119"W	0.00	0.00	0.00	lie On
2000.00	0.000	235.000	2000.00	0.00	0.00	0.00	599643.60	416385.70	32°08'39.6656"N	104°00'41.0119"W	0.00	0.00	0.00	Begin Nudge
2400.00	8.000	235.000	2398.70	16.01	15.99	22.84	599620.76	416369.74	32°08'39.5080"N	104°00'41.2781"W	2.00	2.00	0.00	End of Build
6600.00	8.000	235.000	6557.83	351.68	351.26	501.65	599744.99	416034.47	32°08'36.2044"N	104°00'46.8584"W	0.00	0.00	0.00	End of Hold
7000.00	0.000	332.300	6956.53	367.69	367.25	524.49	599119.15	416018.48	32°08'36.0469"N	104°00'47.1246"W	2.00	2.00	0.00	Vertical
9571.74	0.000	332.300	9528.27	367.69	367.25	524.49	599119.15	416018.48	32°08'36.0469"N	104°00'47.1246"W	0.00	0.00	0.00	Curve KOP
9845.00	27.326	332.300	9791.29	311.11	310.64	554.21	599089.43	416075.08	32°08'36.6079"N	104°00'47.4683"W	10.00	10.00	0.00	
9945.00	37.326	332.300	9875.68	263.84	263.36	579.04	599064.61	416122.36	32°08'37.0766"N	104°00'47.7554"W	10.00	10.00	0.00	
10045.00	47.326	332.300	9949.52	204.83	203.82	610.80	599033.85	416181.80	32°08'37.6667"N	104°00'48.1169"W	10.00	10.00	0.00	
10071.74	50.000	332.300	9967.18	186.56	186.04	619.63	599024.02	416199.67	32°08'37.8429"N	104°00'48.2248"W	10.00	10.00	0.00	End of Build/Turn
10145.00	55.833	337.863	10011.36	133.59	133.05	644.13	598999.52	416252.66	32°08'38.3679"N	104°00'48.5079"W	10.00	7.96	7.59	
10245.00	64.134	344.315	10061.38	51.77	51.21	671.95	598971.70	416334.50	32°08'39.1786"N	104°00'48.8287"W	10.00	8.30	16.45	
10345.00	72.682	349.905	10098.17	38.75	39.33	692.53	598951.12	416425.03	32°08'40.0752"N	104°00'49.0649"W	10.00	8.55	15.59	
10445.00	81.374	354.990	10120.61	135.23	135.82	705.25	598938.41	416521.50	32°08'41.0303"N	104°00'49.2095"W	10.00	8.69	15.09	
10545.00	90.123	359.845	10128.02	234.72	235.31	709.71	598933.94	416620.99	32°08'42.0150"N	104°00'49.2579"W	10.00	8.75	14.85	
10549.29	90.499	0.051	10128.00	239.01	239.60	709.72	598933.94	416625.28	32°08'42.0575"N	104°00'49.2578"W	10.00	8.76	14.82	P.201 FTP
10645.00	90.499	0.051	10127.17	334.72	335.31	709.63	598934.03	416720.98	32°08'43.0046"N	104°00'49.2535"W	0.00	0.00	0.00	
10745.00	90.499	0.051	10126.30	434.71	435.31	709.54	598934.12	416820.97	32°08'43.9941"N	104°00'49.2490"W	0.00	0.00	0.00	
10845.00	90.499	0.051	10125.43	534.71	535.30	709.45	598934.21	416920.96	32°08'44.9836"N	104°00'49.2445"W	0.00	0.00	0.00	
10945.00	90.499	0.051	10124.56	634.70	635.30	709.36	598934.30	417020.95	32°08'45.9731"N	104°00'49.2401"W	0.00	0.00	0.00	
11045.00	90.499	0.051	10123.68	734.70	735.29	709.27	598934.39	417120.93	32°08'46.9626"N	104°00'49.2356"W	0.00	0.00	0.00	
11145.00	90.499	0.051	10122.81	834.70	835.29	709.18	598934.47	417220.92	32°08'47.9521"N	104°00'49.2311"W	0.00	0.00	0.00	
11245.00	90.499	0.051	10121.94	934.69	935.29	709.09	598934.56	417320.91	32°08'48.9416"N	104°00'49.2266"W	0.00	0.00	0.00	
11345.00	90.499	0.051	10121.07	1034.69	1035.28	709.00	598934.65	417420.90	32°08'49.9312"N	104°00'49.2221"W	0.00	0.00	0.00	
11445.00	90.499	0.051	10120.20	1134.68	1135.28	708.91	598934.74	417520.89	32°08'50.9207"N	104°00'49.2176"W	0.00	0.00	0.00	
11545.00	90.499	0.051	10119.33	1234.68	1235.28	708.82	598934.83	417620.87	32°08'51.9102"N	104°00'49.2131"W	0.00	0.00	0.00	
11645.00	90.499	0.051	10118.46	1334.68	1335.27	708.73	598934.92	417720.86	32°08'52.8997"N	104°00'49.2086"W	0.00	0.00	0.00	
11745.00	90.499	0.051	10117.59	1434.67	1435.27	708.65	598935.01	417820.85	32°08'53.8892"N	104°00'49.2041"W	0.00	0.00	0.00	
11845.00	90.499	0.051	10116.72	1534.67	1535.26	708.56	598935.10	417920.84	32°08'54.8787"N	104°00'49.1996"W	0.00	0.00	0.00	



Planned Wellpath Report

Corral Canyon 8-32 FED #121H Rev-B.0

Page 3 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	XTO Energy Inc.	Well	Corral Canyon 8-32 FED #121H
Field	Wolfcamp (Eddy Co., NM)	API/Lease	
Facility	Corral Canyon 8-32 FED Pad	Wellbore	Corral Canyon 8-32 FED #121H
Slot	Corral Canyon 8-32 FED #121H		

WELLPATH DATA (120 Stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	Build Rate	Turn Rate	Comments
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[1/100ft]	[1/100ft]	[1/100ft]	
11945.00	90.499	0.051	10115.85	1634.67	1635.26	-7.0847	598935.19	418020.83	32°08'55.8682"N	104°00'49.1951"W	0.00	0.00	0.00	
12045.00	90.499	0.051	10114.98	1734.66	1735.26	-7.0838	598935.28	418120.81	32°08'56.8578"N	104°00'49.1906"W	0.00	0.00	0.00	
12145.00	90.499	0.051	10114.10	1834.66	1835.25	-7.0829	598935.37	418220.80	32°08'57.8473"N	104°00'49.1861"W	0.00	0.00	0.00	
12245.00	90.499	0.051	10113.23	1934.65	1935.25	-7.0820	598935.46	418320.79	32°08'58.8368"N	104°00'49.1816"W	0.00	0.00	0.00	
12345.00	90.499	0.051	10112.36	2034.65	2035.24	-7.0811	598935.55	418420.78	32°08'59.8263"N	104°00'49.1771"W	0.00	0.00	0.00	
12445.00	90.499	0.051	10111.49	2134.65	2135.24	-7.0802	598935.64	418520.77	32°09'00.8158"N	104°00'49.1726"W	0.00	0.00	0.00	
12545.00	90.499	0.051	10110.62	2234.64	2235.24	-7.0793	598935.73	418620.75	32°09'01.8053"N	104°00'49.1681"W	0.00	0.00	0.00	
12645.00	90.499	0.051	10109.75	2334.64	2335.23	-7.0784	598935.82	418720.74	32°09'02.7948"N	104°00'49.1636"W	0.00	0.00	0.00	
12745.00	90.499	0.051	10108.88	2434.64	2435.23	-7.0775	598935.91	418820.73	32°09'03.7844"N	104°00'49.1591"W	0.00	0.00	0.00	
12845.00	90.499	0.051	10108.01	2534.63	2535.23	-7.0766	598936.00	418920.72	32°09'04.7739"N	104°00'49.1546"W	0.00	0.00	0.00	
12945.00	90.499	0.051	10107.14	2634.63	2635.22	-7.0757	598936.09	419020.71	32°09'05.7634"N	104°00'49.1501"W	0.00	0.00	0.00	
13045.00	90.499	0.051	10106.27	2734.62	2735.22	-7.0748	598936.18	419120.69	32°09'06.7529"N	104°00'49.1456"W	0.00	0.00	0.00	
13145.00	90.499	0.051	10105.40	2834.62	2835.21	-7.0739	598936.27	419220.68	32°09'07.7424"N	104°00'49.1411"W	0.00	0.00	0.00	
13245.00	90.499	0.051	10104.52	2934.62	2935.21	-7.0730	598936.36	419320.67	32°09'08.7319"N	104°00'49.1366"W	0.00	0.00	0.00	
13345.00	90.499	0.051	10103.65	3034.61	3035.21	-7.0721	598936.45	419420.66	32°09'09.7214"N	104°00'49.1321"W	0.00	0.00	0.00	
13445.00	90.499	0.051	10102.78	3134.61	3135.20	-7.0712	598936.54	419520.65	32°09'10.7109"N	104°00'49.1276"W	0.00	0.00	0.00	
13545.00	90.499	0.051	10101.91	3234.61	3235.20	-7.0703	598936.63	419620.63	32°09'11.7005"N	104°00'49.1232"W	0.00	0.00	0.00	
13645.00	90.499	0.051	10101.04	3334.60	3335.19	-7.0694	598936.72	419720.62	32°09'12.6900"N	104°00'49.1187"W	0.00	0.00	0.00	
13745.00	90.499	0.051	10100.17	3434.60	3435.19	-7.0685	598936.81	419820.61	32°09'13.6795"N	104°00'49.1142"W	0.00	0.00	0.00	
13845.00	90.499	0.051	10099.30	3534.59	3535.19	-7.0676	598936.90	419920.60	32°09'14.6690"N	104°00'49.1097"W	0.00	0.00	0.00	
13945.00	90.499	0.051	10098.43	3634.59	3635.18	-7.0667	598936.99	420020.59	32°09'15.6585"N	104°00'49.1052"W	0.00	0.00	0.00	
14045.00	90.499	0.051	10097.56	3734.59	3735.18	-7.0658	598937.08	420120.57	32°09'16.6480"N	104°00'49.1007"W	0.00	0.00	0.00	
14145.00	90.499	0.051	10096.69	3834.58	3835.18	-7.0649	598937.17	420220.56	32°09'17.6375"N	104°00'49.0962"W	0.00	0.00	0.00	
14245.00	90.499	0.051	10095.82	3934.58	3935.17	-7.0640	598937.25	420320.55	32°09'18.6270"N	104°00'49.0917"W	0.00	0.00	0.00	
14345.00	90.499	0.051	10094.94	4034.57	4035.17	-7.0631	598937.34	420420.54	32°09'19.6166"N	104°00'49.0872"W	0.00	0.00	0.00	
14445.00	90.499	0.051	10094.07	4134.57	4135.16	-7.0622	598937.43	420520.53	32°09'20.6061"N	104°00'49.0827"W	0.00	0.00	0.00	
14545.00	90.499	0.051	10093.20	4234.57	4235.16	-7.0613	598937.52	420620.51	32°09'21.5956"N	104°00'49.0782"W	0.00	0.00	0.00	
14645.00	90.499	0.051	10092.33	4334.56	4335.16	-7.0604	598937.61	420720.50	32°09'22.5851"N	104°00'49.0737"W	0.00	0.00	0.00	
14745.00	90.499	0.051	10091.46	4434.56	4435.15	-7.0595	598937.70	420820.49	32°09'23.5746"N	104°00'49.0692"W	0.00	0.00	0.00	
14845.00	90.499	0.051	10090.59	4534.56	4535.15	-7.0586	598937.79	420920.48	32°09'24.5641"N	104°00'49.0647"W	0.00	0.00	0.00	



Planned Wellpath Report

Corral Canyon 8-32 FED #121H Rev-B:0

Page 4 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	XTO Energy Inc.	Well	Corral Canyon 8-32 FED #121H
Field	Wolfcamp (Eddy Co., NM)	API/ Legal	
Facility	Corral Canyon 8-32 FED Pad	Wellbore	Corral Canyon 8-32 FED #121H
Slot	Corral Canyon 8-32 FED #121H		

WELLPATH DATA (120 Stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft/100ft)	(ft/100ft)	(ft/100ft)	
14945.00	90.499	0.051	10089.72	4634.55	4635.14	-705.78	598937.88	421020.47	32°09'25.5536"N	104°00'49.0602"W	0.00	0.00	0.00	
15045.00	90.499	0.051	10088.85	4734.55	4735.14	-705.69	598937.97	421120.45	32°09'26.5431"N	104°00'49.0557"W	0.00	0.00	0.00	
15145.00	90.499	0.051	10087.98	4834.54	4835.14	-705.60	598938.06	421220.44	32°09'27.5327"N	104°00'49.0512"W	0.00	0.00	0.00	
15245.00	90.499	0.051	10087.11	4934.54	4935.13	-705.51	598938.15	421320.43	32°09'28.5222"N	104°00'49.0467"W	0.00	0.00	0.00	
15345.00	90.499	0.051	10086.24	5034.54	5035.13	-705.42	598938.24	421420.42	32°09'29.5117"N	104°00'49.0422"W	0.00	0.00	0.00	
15445.00	90.499	0.051	10085.36	5134.53	5135.13	-705.33	598938.33	421520.41	32°09'30.5012"N	104°00'49.0377"W	0.00	0.00	0.00	
15545.00	90.499	0.051	10084.49	5234.53	5235.12	-705.24	598938.42	421620.40	32°09'31.4907"N	104°00'49.0332"W	0.00	0.00	0.00	
15645.00	90.499	0.051	10083.62	5334.53	5335.12	-705.15	598938.51	421720.38	32°09'32.4802"N	104°00'49.0287"W	0.00	0.00	0.00	
15745.00	90.499	0.051	10082.75	5434.52	5435.11	-705.06	598938.60	421820.37	32°09'33.4697"N	104°00'49.0242"W	0.00	0.00	0.00	
15845.00	90.499	0.051	10081.88	5534.52	5535.11	-704.97	598938.69	421920.36	32°09'34.4592"N	104°00'49.0197"W	0.00	0.00	0.00	
15945.00	90.499	0.051	10081.01	5634.51	5635.11	-704.88	598938.78	422020.35	32°09'35.4488"N	104°00'49.0152"W	0.00	0.00	0.00	
16045.00	90.499	0.051	10080.14	5734.51	5735.10	-704.79	598938.87	422120.34	32°09'36.4383"N	104°00'49.0107"W	0.00	0.00	0.00	
16145.00	90.499	0.051	10079.27	5834.51	5835.10	-704.70	598938.96	422220.32	32°09'37.4278"N	104°00'49.0062"W	0.00	0.00	0.00	
16245.00	90.499	0.051	10078.40	5934.50	5935.10	-704.61	598939.05	422320.31	32°09'38.4173"N	104°00'49.0017"W	0.00	0.00	0.00	
16345.00	90.499	0.051	10077.53	6034.50	6035.09	-704.52	598939.14	422420.30	32°09'39.4068"N	104°00'48.9972"W	0.00	0.00	0.00	
16445.00	90.499	0.051	10076.66	6134.50	6135.09	-704.43	598939.23	422520.29	32°09'40.3963"N	104°00'48.9927"W	0.00	0.00	0.00	
16545.00	90.499	0.051	10075.78	6234.49	6235.08	-704.34	598939.32	422620.28	32°09'41.3858"N	104°00'48.9882"W	0.00	0.00	0.00	
16645.00	90.499	0.051	10074.91	6334.49	6335.08	-704.25	598939.41	422720.26	32°09'42.3753"N	104°00'48.9837"W	0.00	0.00	0.00	
16745.00	90.499	0.051	10074.04	6434.48	6435.08	-704.16	598939.50	422820.25	32°09'43.3648"N	104°00'48.9792"W	0.00	0.00	0.00	
16845.00	90.499	0.051	10073.17	6534.48	6535.07	-704.07	598939.59	422920.24	32°09'44.3544"N	104°00'48.9747"W	0.00	0.00	0.00	
16945.00	90.499	0.051	10072.30	6634.48	6635.07	-703.98	598939.68	423020.23	32°09'45.3439"N	104°00'48.9702"W	0.00	0.00	0.00	
17045.00	90.499	0.051	10071.43	6734.47	6735.06	-703.89	598939.77	423120.22	32°09'46.3334"N	104°00'48.9657"W	0.00	0.00	0.00	
17145.00	90.499	0.051	10070.56	6834.47	6835.06	-703.80	598939.86	423220.20	32°09'47.3229"N	104°00'48.9612"W	0.00	0.00	0.00	
17245.00	90.499	0.051	10069.69	6934.46	6935.06	-703.71	598939.95	423320.19	32°09'48.3124"N	104°00'48.9567"W	0.00	0.00	0.00	
17345.00	90.499	0.051	10068.82	7034.46	7035.05	-703.62	598940.03	423420.18	32°09'49.3019"N	104°00'48.9522"W	0.00	0.00	0.00	
17445.00	90.499	0.051	10067.95	7134.46	7135.05	-703.53	598940.12	423520.17	32°09'50.2914"N	104°00'48.9477"W	0.00	0.00	0.00	
17545.00	90.499	0.051	10067.08	7234.45	7235.05	-703.44	598940.21	423620.16	32°09'51.2809"N	104°00'48.9432"W	0.00	0.00	0.00	
17645.00	90.499	0.051	10066.20	7334.45	7335.04	-703.35	598940.30	423720.14	32°09'52.2704"N	104°00'48.9387"W	0.00	0.00	0.00	
17745.00	90.499	0.051	10065.33	7434.45	7435.04	-703.26	598940.39	423820.13	32°09'53.2600"N	104°00'48.9342"W	0.00	0.00	0.00	
17845.00	90.499	0.051	10064.46	7534.44	7535.03	-703.17	598940.48	423920.12	32°09'54.2495"N	104°00'48.9297"W	0.00	0.00	0.00	



Planned Wellpath Report

Corral Canyon 8-32 FED #121H Rev-B.0

Page 5 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	XTO Energy Inc.	Well	Corral Canyon 8-32 FED #121H
Field	Wolfcamp (Eddy Co., NM)	API/Lease	
Facility	Corral Canyon 8-32 FED Pad	Wellbore	Corral Canyon 8-32 FED #121H
Slot	Corral Canyon 8-32 FED #121H		

WELLPATH DATA (120 Stations) Interpolated Extrapolated Station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
17945.00	90.499	0.051	10063.59	7634.44	7635.03	703.08	598940.57	424020.11	32°09'55.2390"N	104°00'48.9252"W	0.00	0.00	0.00	
18045.00	90.499	0.051	10062.72	7734.43	7735.03	702.99	598940.66	424120.10	32°09'56.2285"N	104°00'48.9207"W	0.00	0.00	0.00	
18145.00	90.499	0.051	10061.85	7834.43	7835.02	702.91	598940.75	424220.08	32°09'57.2180"N	104°00'48.9162"W	0.00	0.00	0.00	
18245.00	90.499	0.051	10060.98	7934.43	7935.02	702.82	598940.84	424320.07	32°09'58.2075"N	104°00'48.9117"W	0.00	0.00	0.00	
18345.00	90.499	0.051	10060.11	8034.42	8035.01	702.73	598940.93	424420.06	32°09'59.1970"N	104°00'48.9072"W	0.00	0.00	0.00	
18445.00	90.499	0.051	10059.24	8134.42	8135.01	702.64	598941.02	424520.05	32°10'00.1865"N	104°00'48.9027"W	0.00	0.00	0.00	
18545.00	90.499	0.051	10058.37	8234.42	8235.01	702.55	598941.11	424620.04	32°10'01.1760"N	104°00'48.8982"W	0.00	0.00	0.00	
18645.00	90.499	0.051	10057.50	8334.41	8335.00	702.46	598941.20	424720.02	32°10'02.1655"N	104°00'48.8937"W	0.00	0.00	0.00	
18745.00	90.499	0.051	10056.62	8434.41	8435.00	702.37	598941.29	424820.01	32°10'03.1551"N	104°00'48.8892"W	0.00	0.00	0.00	
18845.00	90.499	0.051	10055.75	8534.40	8535.00	702.28	598941.38	424920.00	32°10'04.1446"N	104°00'48.8847"W	0.00	0.00	0.00	
18945.00	90.499	0.051	10054.88	8634.40	8634.99	702.19	598941.47	425019.99	32°10'05.1341"N	104°00'48.8802"W	0.00	0.00	0.00	
19045.00	90.499	0.051	10054.01	8734.40	8734.99	702.10	598941.56	425119.98	32°10'06.1236"N	104°00'48.8757"W	0.00	0.00	0.00	
19145.00	90.499	0.051	10053.14	8834.39	8834.98	702.01	598941.65	425219.96	32°10'07.1131"N	104°00'48.8712"W	0.00	0.00	0.00	
19245.00	90.499	0.051	10052.27	8934.39	8934.98	701.92	598941.74	425319.95	32°10'08.1026"N	104°00'48.8667"W	0.00	0.00	0.00	
19345.00	90.499	0.051	10051.40	9034.39	9034.98	701.83	598941.83	425419.94	32°10'09.0921"N	104°00'48.8622"W	0.00	0.00	0.00	
19445.00	90.499	0.051	10050.53	9134.38	9134.97	701.74	598941.92	425519.93	32°10'10.0816"N	104°00'48.8577"W	0.00	0.00	0.00	
19545.00	90.499	0.051	10049.66	9234.38	9234.97	701.65	598942.01	425619.92	32°10'11.0711"N	104°00'48.8532"W	0.00	0.00	0.00	
19645.00	90.499	0.051	10048.79	9334.37	9334.96	701.56	598942.10	425719.90	32°10'12.0607"N	104°00'48.8487"W	0.00	0.00	0.00	
19745.00	90.499	0.051	10047.92	9434.37	9434.96	701.47	598942.19	425819.89	32°10'13.0502"N	104°00'48.8442"W	0.00	0.00	0.00	
19845.00	90.499	0.051	10047.04	9534.37	9534.96	701.38	598942.28	425919.88	32°10'14.0397"N	104°00'48.8397"W	0.00	0.00	0.00	
19945.00	90.499	0.051	10046.17	9634.36	9634.95	701.29	598942.37	426019.87	32°10'15.0292"N	104°00'48.8352"W	0.00	0.00	0.00	
20045.00	90.499	0.051	10045.30	9734.36	9734.95	701.20	598942.46	426119.86	32°10'16.0187"N	104°00'48.8307"W	0.00	0.00	0.00	
20145.00	90.499	0.051	10044.43	9834.35	9834.95	701.11	598942.55	426219.84	32°10'17.0082"N	104°00'48.8262"W	0.00	0.00	0.00	
20245.00	90.499	0.051	10043.56	9934.35	9934.94	701.02	598942.64	426319.83	32°10'17.9977"N	104°00'48.8217"W	0.00	0.00	0.00	
20345.00	90.499	0.051	10042.69	10034.35	10034.94	700.93	598942.73	426419.82	32°10'18.9872"N	104°00'48.8172"W	0.00	0.00	0.00	
20445.00	90.499	0.051	10041.82	10134.34	10134.93	700.84	598942.81	426519.81	32°10'19.9767"N	104°00'48.8127"W	0.00	0.00	0.00	
20545.00	90.499	0.051	10040.95	10234.34	10234.93	700.75	598942.90	426619.80	32°10'20.9662"N	104°00'48.8082"W	0.00	0.00	0.00	
20645.00	90.499	0.051	10040.08	10334.34	10334.93	700.66	598942.99	426719.78	32°10'21.9558"N	104°00'48.8037"W	0.00	0.00	0.00	
20745.00	90.499	0.051	10039.21	10434.33	10434.92	700.57	598943.08	426819.77	32°10'22.9453"N	104°00'48.7992"W	0.00	0.00	0.00	
20762.93	90.499	0.051	10038.05	10452.26	10452.83	700.62	598943.10	426837.70	32°10'23.1227"N	104°00'48.7984"W	0.00	0.00	0.00	PBHL

TARGETS

Name	MD (ft)	TVD (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Shape
1) Corral Canyon 8-32 FED #121H PBHL	20762.93	10038.05	10452.26	700.62	598943.10	426837.70	32°10'23.1227"N	104°00'48.7984"W	rectangle
	2D Rectangle: 100.13 x 100								
Corral Canyon 8-32 FED #121H TP2	N/A	10039.50	10322.84	699.26	598944.40	426707.70	32°10'21.8361"N	104°00'48.7878"W	point
Corral Canyon 8-32 FED #121H FTP	N/A	10128.00	440.24	708.86	598934.80	416825.90	32°08'44.0428"N	104°00'49.2409"W	point

SURVEY PROGRAM Ref Wellbore: Corral Canyon 8-32 FED #121H Ref Wellpath: Corral Canyon 8-32 FED #121H Rev-B.0

Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	9571.74	BH Navitrak (superseded model) (Standard)		Corral Canyon 8-32 FED #121H
9571.74	20762.93	OWSG MWD rev2 - Standard		Corral Canyon 8-32 FED #121H

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy, Inc.
LEASE NO.:	NMNM-099147
WELL NAME & NO.:	Corral Canyon 8-32 Federal 121H
SURFACE HOLE FOOTAGE:	2548' FSL & 1038' FWL
BOTTOM HOLE FOOTAGE:	2440' FSL & 0330' FWL Sec. 32, T. 24 S., R. 29 E.
LOCATION:	Section 08, T. 25 S., R. 29 E., NMPM
COUNTY:	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 type="radio"/> Low	<input checked="" 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 type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" 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.

Medium Cave/Karst

Possibility of water flows in the Salado and Castile.

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 600 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run

to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job 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.

9-5/8" 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 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. DV tool must be 50 feet below previous shoe and minimum of 200 feet above current shoe. 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 to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. 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. **Excess calculates to 22% - Additional cement may be required.**

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)

Operator to add "COM" to the well name.

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log 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 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.
3. 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.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. 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.
6. 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.

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. 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.
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.

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.

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