

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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 to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMNM35607

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2
Carlsbad Field Office

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

8. Well Name and No. **ROSS DRAW 25 3H** **315688**

9. API Well No. **45395**
30-015-43473-00-X1

10. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)

11. County or Parish, State
EDDY COUNTY, NM

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

OCD Artesia

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 25 T26S R29E NENW 170FNL 2161FWL

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

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 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.

RECEIVED

XTO Energy, Inc requests permission to make the following changes to the original APD:

1. Change the well name from Ross Draw 25 3H to Ross Draw 25-36 Fed Com 103H - **324930**
2. Change the formation from Wildcat; Wolfcamp to Purple Sage; Wolfcamps
3. Change the BHL from 170'FSL & 2308'FWL to 200'FSL & 2433'FWL
4. Drilling Program/Directional Plan

JAN 17 2019

DISTRICT II-ARTESIA O.C.D.

**FOR
COM. APPROVAL**

Attachments:

1. C102 & Supplement

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

**Electronic Submission #450076 verified by the BLM Well Information System
For XTO ENERGY INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 01/10/2019 (19PP0699SE)**

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 01/10/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS

Title PETROLEUM ENGINEER

Date 01/15/2019

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

Office Carlsbad

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

(Instructions on page 2)

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

Rwp 2-24-19

Additional data for EC transaction #450076 that would not fit on the form

32. Additional remarks, continued

2. GCP
3. Drilling Program/BOP/CM/FH
4. Directional Plan

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
JAN 17 2019
AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45595	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code 324930	⁵ Property Name ROSS DRAW 25-36 FED COM	⁶ Well Number 103H
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	⁹ Elevation 2,961'

¹⁰ Surface Location

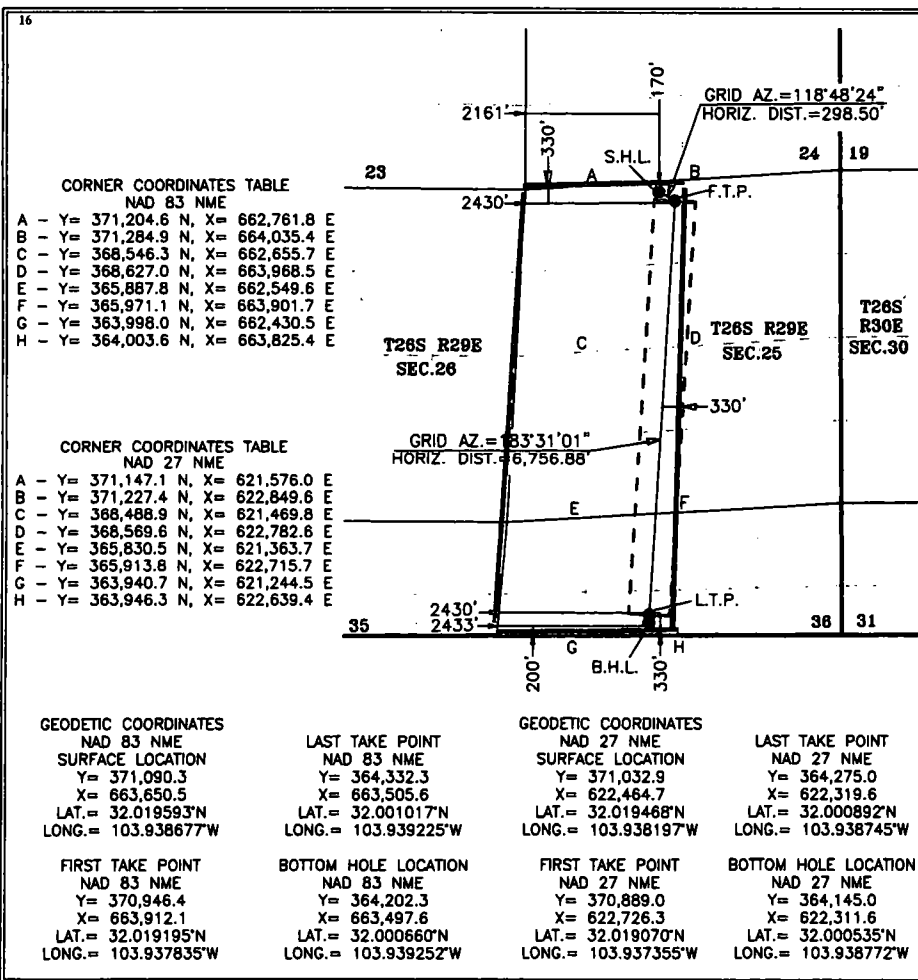
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	25	26 S	29 E		170	NORTH	2,161	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1/2 F	36	26 S	29 E	2	200	SOUTH	2,433	WEST	EDDY

¹² Dedicated Acres 847.9	¹³ Joint or Infill JUN 19 2010	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete in the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Kelly Kardos 1/10/19

Signature Date

Kelly Kardos

Printed Name

kelly_kardos@xtoenergy.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

12-18-2018

Date of Survey

Signature and Seal of
Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



JC

2018112764

RWP 2-21-19

Intent ☒ As Drilled ☐

API #
30-015-45595

Operator Name: XTO Energy Inc.	Property Name: Ross Draw 25-36 Fed Com	Well Number 103H
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Kick Off Point (KOP)

UL C	Section 25	Township 26S	Range 29E	Lot	Feet 170	From N/S North	Feet 2161	From E/W West	County Eddy
Latitude 32.019593					Longitude -103.938677			NAD NAD83	

First Take Point (FTP)

UL C	Section 25	Township 26S	Range 29E	Lot	Feet 330	From N/S North	Feet 2430	From E/W West	County Eddy
Latitude 32.019195					Longitude -103.937835			NAD NAD83	

Last Take Point (LTP)

UL	Section 36	Township 26S	Range 29E	Lot 2	Feet 330	From N/S South	Feet 2430	From E/W West	County Eddy
Latitude 32.001017					Longitude -103.939225			NAD NAD83	

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

Is this well an infill well? ☐ Y

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

API #
30-015-45585

Operator Name: XTO ENERGY, INC	Property Name: ROSS DRAW 25-36 FED COM	Well Number 102H
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KZ 06/29/2018

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

XTO Energy Inc.
Ross Draw 25-36 FED 103H
Projected TD: 17017' MD / 10225' TVD
SHL: 170' FNL & 2161' FWL , Section 25, T26S, R29E
BHL: 200' FSL & 2433' FWL , Section 36, T26S, R29E
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	509'	Water
Top of Salt	1352'	Water
Base of Salt	2983'	Water
Delaware	3158'	Water
Bone Spring	6909'	Water/Oil/Gas
1st Bone Spring Ss	7883'	Water/Oil/Gas
2nd Bone Spring Ss	8754'	Water/Oil/Gas
3rd Bone Spring Ss	9758'	Water/Oil/Gas
Wolfcamp Y	10225'	Water/Oil/Gas
Target/Land Curve	10225'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

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

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 560' (-51' into the Rustler) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 3040' and circulating cement to surface. An 8-3/4 inch vertical and curve hole will be drilled and 7 inch casing run and cemented 500' into the 9-5/8 inch casing. A 6-1/8 inch curve and lateral hole will be drilled to MD/TD and 4-1/2 inch liner will be set at TD and cemented back 250' into the 7 inch casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 560'	13-3/8"	48	STC	H-40	New	1.83	3.00	11.98
12-1/4"	0' – 3040'	9-5/8"	36	LTC	J-55	New	1.31	2.11	4.14
8-3/4"	0' – 10565'	7"	29	LTC	P-110	New	1.18	1.73	2.60
6-1/8"	9639' – 17017'	4-1/2"	13.5	BTC	P-110	New	1.31	2.56	2.44

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 9-5/8" & 4-1/2" Collapse analyzed using 50% evacuation based on regional experience.
- 4-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

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

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

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

4. Cement Program

Surface Casing: 13-3/8", 48 New H-40, STC casing to be set at +/- 560'

Lead: 190 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 300 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

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

Intermediate Casing: 9-5/8", 36 New J-55, LTC casing to be set at +/- 3040'

Lead: 840 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

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

2nd Intermediate Casing: 7", 29 New P-110, LTC casing to be set at +/- 10565'

Lead: 960 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 60 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

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

Production Liner: 4-1/2", 13.5 New P-110, BTC casing to be set at +/- 17017'

Tail: 620 sxs VersaCem (mixed at 13.2 ppg, 1.33 ft³/sx, 8.38 gal/sx water)

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

5. Pressure Control Equipment

The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M HydriL and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 4131 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When the 9-5/8" and 7" casing is set, the packoff seals will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

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

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 560'	17-1/2"	FW/Native	8.4-8.8	35-40	NC
560' to 3040'	12-1/4"	Brine/Gel Sweeps	9.8-10.2	30-32	NC
3040' to 10565'	8-3/4"	FW / Cut Brine	8.6-9.5	29-32	NC - 20
10565' to 17017'	6-1/8"	FW / Cut Brine / Polymer	11.7-12	32-50	20-Aug

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

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. A 9.8ppg-10.2ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

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

8. Logging, Coring and Testing Program

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

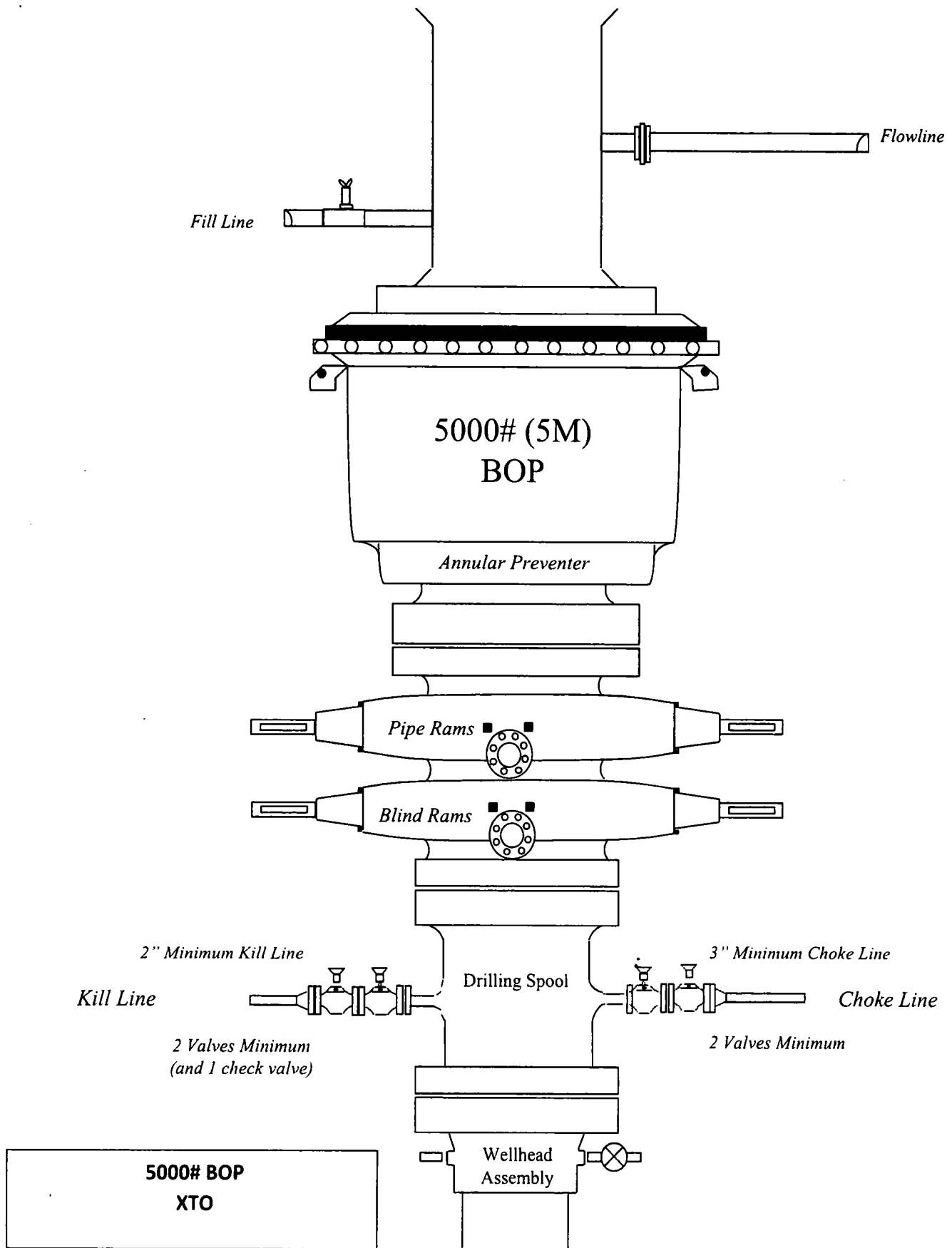
Open hole logging will include quad combo.

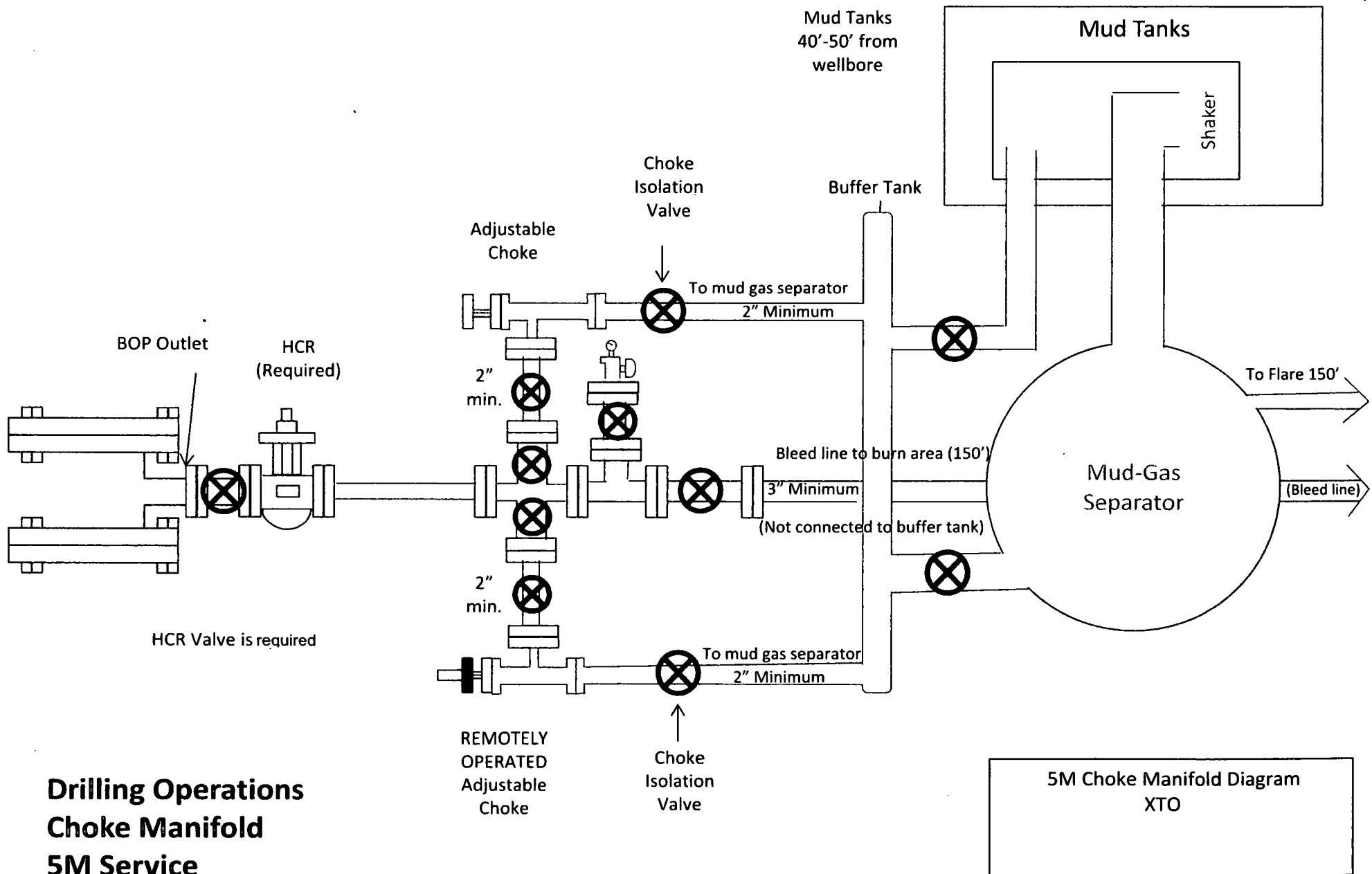
9. Abnormal Pressures and Temperatures / Potential Hazards

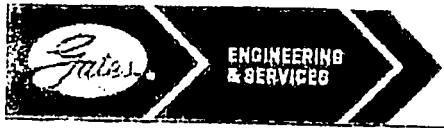
None Anticipated. BHT of 145 to 165 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. 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 6380 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.







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

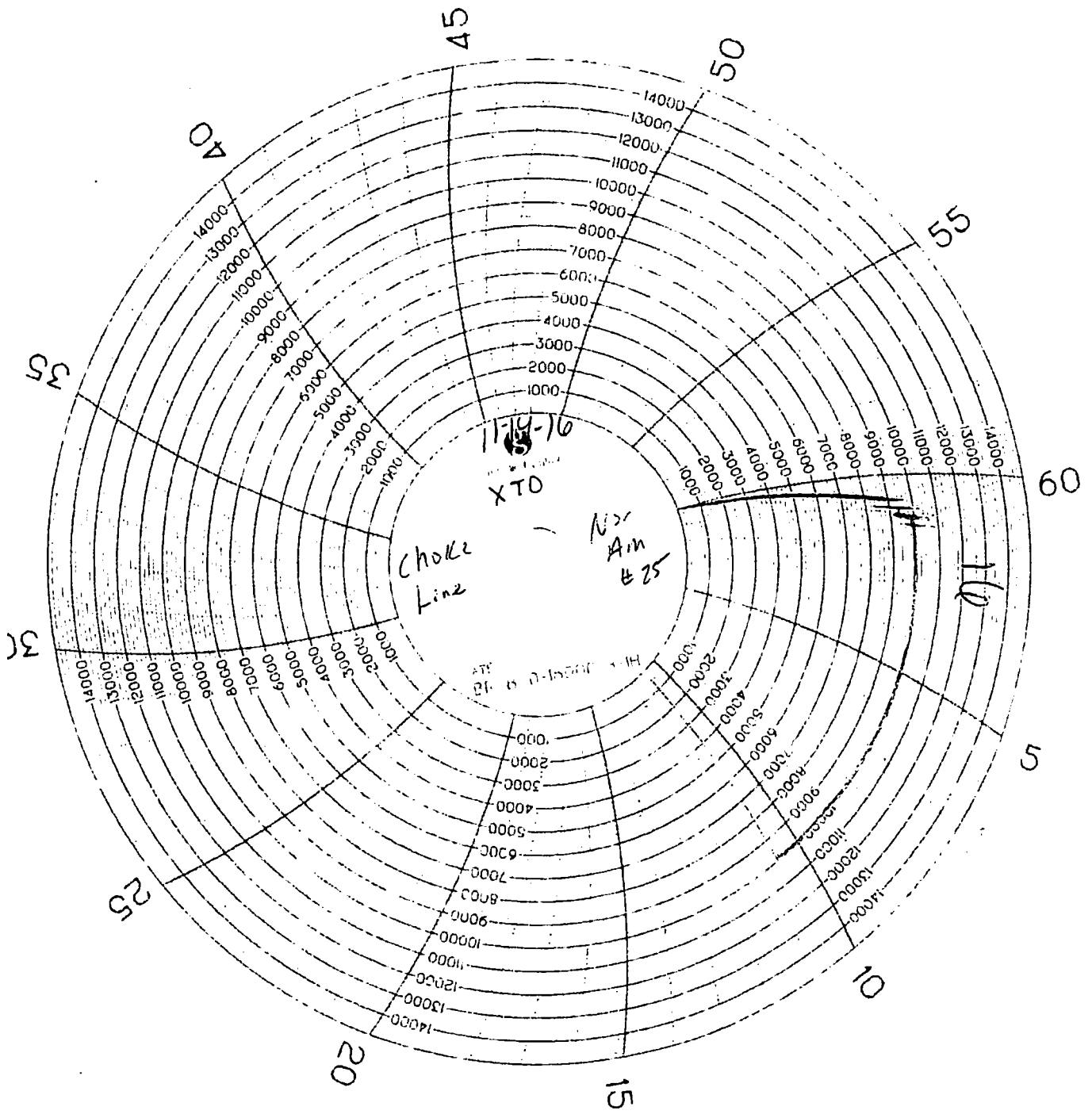
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

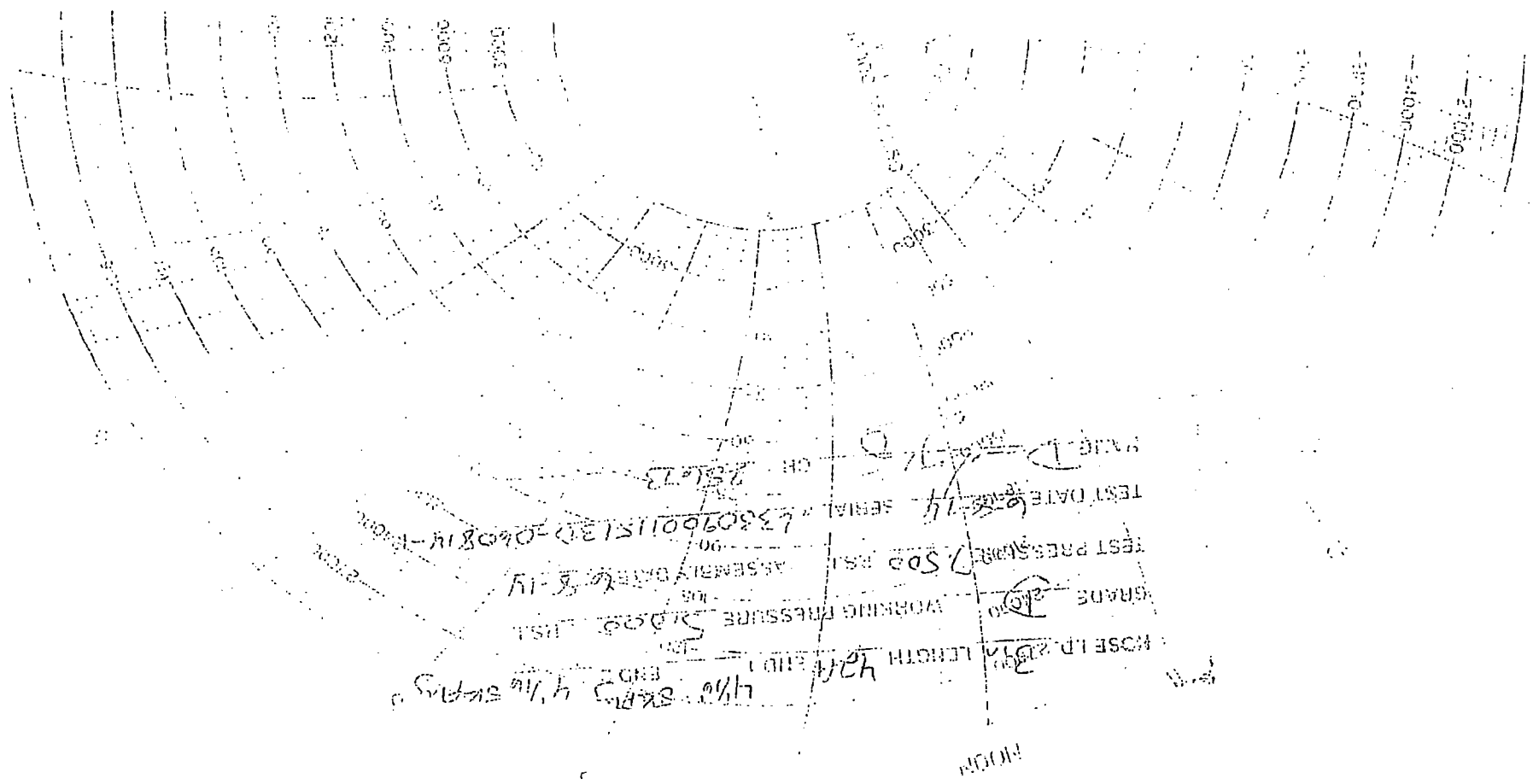
GRADE D PRESSURE TEST CERTIFICATE

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.5K FLG	End Fitting 2:	4 1/16 in.5K FLG
Gates Part No.:	4774-6001	Assembly Code:	L33090011513D-060814-1
Working Pressure:	5,000 PSI	Test Pressure:	7,500 PSI

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

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





XTO Energy

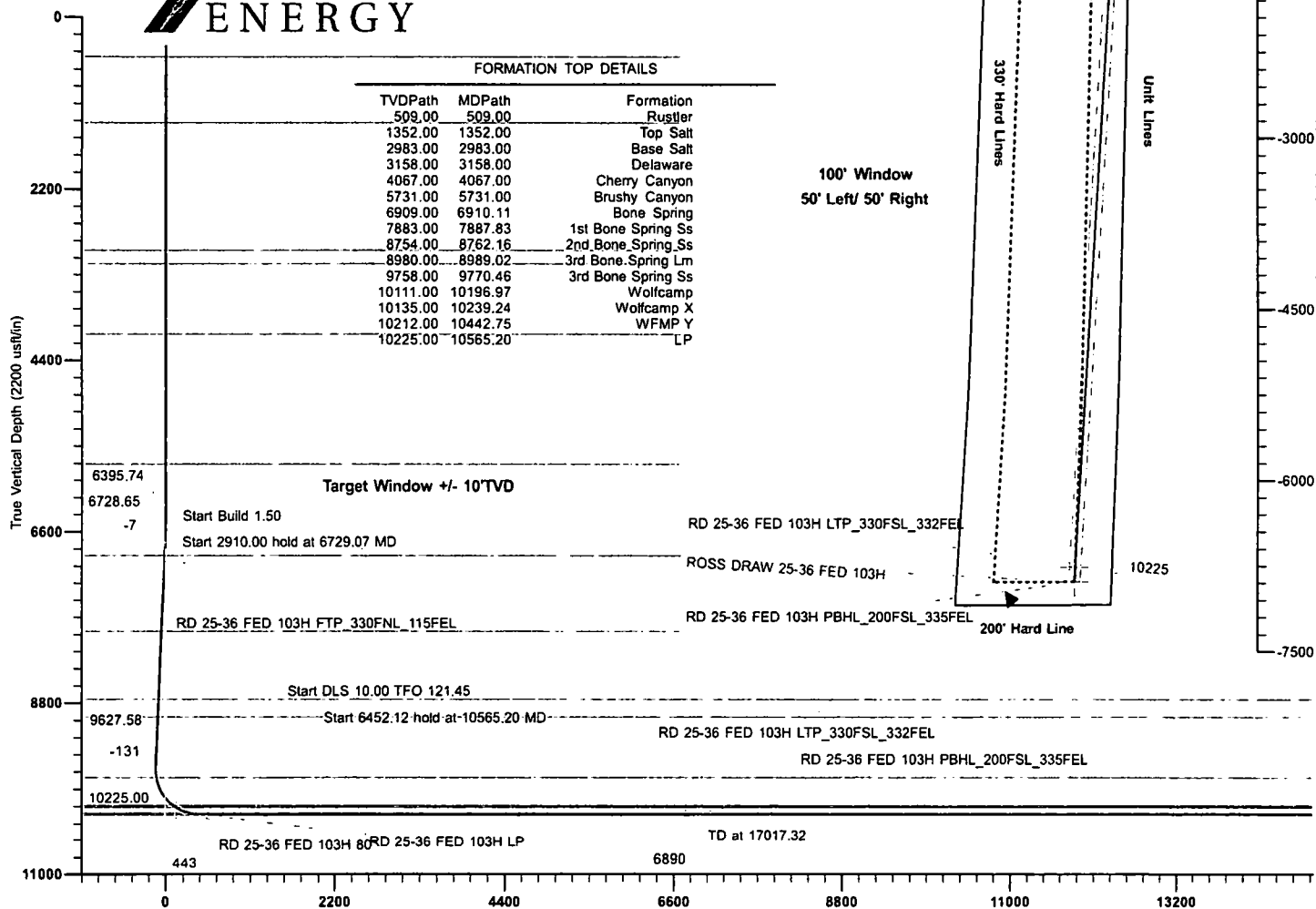
Project: Eddy County, NM (NAD27) NMEZ US
 Site: Ross Draw 25-36 Pad
 Well: ROSS DRAW 25-36 FED 103H
 Wellbore: ROSS DRAW 25-36 FED 103H
 Design: Plan #1

2960+24 @ 2984.00usft (Hercules)
 NAD 1927 (NADCON CONUS)



Azimuths to Grid North
 True North: -0.21°
 Magnetic North: 6.73°

Magnetic Field
 Strength: 47623.1nT
 Dip Angle: 59.80°
 Date: 2019/01/01
 Model: IGRF2015



Vertical Section at 181.27° (2200 usft/in)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
RD 25-36 FED 103H SHL	0.00	0.00	0.00	371032.90	622464.70
RD 25-36 FED 103H 80°	10216.27	-348.51	251.36	370684.39	622716.06
RD 25-36 FED 103H FTP_330FNL_115FEL	10225.00	-143.90	261.60	370889.00	622726.30
RD 25-36 FED 103H LP	10225.00	-448.13	245.84	370584.77	622710.54
RD 25-36 FED 103H LTP_330FSL_332FEL	10225.00	-6757.90	-145.10	364275.00	622319.60
RD 25-36 FED 103H PBHL_200FSL_335FEL	10225.00	-6887.90	-153.10	364145.00	622311.60

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6395.74	0.00	0.00	6395.74	0.00	0.00	0.00	0.00	0.00	
6729.07	5.00	62.00	6728.65	6.82	12.83	1.50	62.00	-7.11	
9639.07	5.00	62.00	9627.58	125.89	236.77	0.00	0.00	-131.12	
10565.20	90.00	183.54	10225.00	-448.13	245.84	10.00	121.45	442.55	
17017.32	90.00	183.54	10225.00	-6887.90	-153.10	0.00	0.00	6889.60	RD 25-36 FED 103H PBHL_200FSL_335FEL

Plan: Plan #1 (ROSS DRAW 25-36 FED 103H/ROSS DRAW 25-36 FED 103H)

Created By: Mekka Williams
 eSomina Well Design
 mekka@esominawelldesign.com
 20:36, January 02 2019

TRUE PERFORMANCE DIRECTIONAL DRILLING
 5075 E 52nd Street, Odessa, Texas 79762
 281.222.8366



Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Project	Eddy County, NM (NAD27) NMEZ US		
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 Ross Draw 25-36 Pad

Site Position:		Northing:	371,027.10 usft	Latitude:	32.0194530
From:	Map	Easting:	622,374.30 usft	Longitude:	-103.9384887
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.21 °

Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL

Well Position	+N/-S	5.80 usft	Northing:	371,032.90 usft	Latitude:	32.0194681
	+E/-W	90.40 usft	Easting:	622,464.70 usft	Longitude:	-103.9381970
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	2,960.00 usft

Wellbore ROSS DRAW 25-36 FED 103H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2019/01/01	6.94	59.80	47,623

Design Plan #1

Audit Notes:

Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.27

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Built Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,395.74	0.00	0.00	6,395.74	0.00	0.00	0.00	0.00	0.00	0.00	
6,729.07	5.00	62.00	6,728.65	6.82	12.83	1.50	1.50	0.00	62.00	
9,639.07	5.00	62.00	9,627.58	125.89	236.77	0.00	0.00	0.00	0.00	
10,565.21	90.00	183.54	10,225.00	-448.13	245.84	10.00	9.18	13.12	121.45	
17,017.32	90.00	183.54	10,225.00	-6,887.90	-153.10	0.00	0.00	0.00	0.00	RD 25-36 FED 103H I

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
509.00	0.00	0.00	509.00	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
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
1,352.00	0.00	0.00	1,352.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
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
2,983.00	0.00	0.00	2,983.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
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
3,158.00	0.00	0.00	3,158.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,067.00	0.00	0.00	4,067.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00

Planning Report

Database: TP_EDM

Local Co-ordinate Reference:

Well ROSS DRAW 25-36 FED 103H - Slot
RD 25-36 FED 103H SHL

Company: XTO Energy

TVD Reference:

2960+24 @ 2984.00usft (Hercules)

Project: Eddy County, NM (NAD27) NMEZ US

MD Reference:

2960+24 @ 2984.00usft (Hercules)

Site: Ross Draw 25-36 Pad

North Reference:

Grid

Well: ROSS DRAW 25-36 FED 103H

Survey Calculation Method:

Minimum Curvature

Wellbore: ROSS DRAW 25-36 FED 103H

Design: Plan #1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,731.00	0.00	0.00	5,731.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,395.74	0.00	0.00	6,395.74	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.06	62.00	6,400.00	0.00	0.00	0.00	1.50	1.50	0.00
6,500.00	1.56	62.00	6,499.99	0.67	1.26	-0.70	1.50	1.50	0.00
6,600.00	3.06	62.00	6,599.90	2.56	4.82	-2.67	1.50	1.50	0.00
6,700.00	4.56	62.00	6,699.68	5.69	10.69	-5.92	1.50	1.50	0.00
6,729.07	5.00	62.00	6,728.65	6.82	12.83	-7.11	1.50	1.50	0.00
6,800.00	5.00	62.00	6,799.31	9.73	18.29	-10.13	0.00	0.00	0.00
6,900.00	5.00	62.00	6,898.93	13.82	25.99	-14.39	0.00	0.00	0.00
6,910.11	5.00	62.00	6,909.00	14.23	26.77	-14.82	0.00	0.00	0.00
Bone Spring									
7,000.00	5.00	62.00	6,998.55	17.91	33.68	-18.65	0.00	0.00	0.00
7,100.00	5.00	62.00	7,098.17	22.00	41.38	-22.92	0.00	0.00	0.00
7,200.00	5.00	62.00	7,197.79	26.09	49.07	-27.18	0.00	0.00	0.00
7,300.00	5.00	62.00	7,297.40	30.18	56.77	-31.44	0.00	0.00	0.00
7,400.00	5.00	62.00	7,397.02	34.28	64.46	-35.70	0.00	0.00	0.00
7,500.00	5.00	62.00	7,496.64	38.37	72.16	-39.96	0.00	0.00	0.00
7,600.00	5.00	62.00	7,596.26	42.46	79.86	-44.22	0.00	0.00	0.00
7,700.00	5.00	62.00	7,695.88	46.55	87.55	-48.49	0.00	0.00	0.00
7,800.00	5.00	62.00	7,795.50	50.64	95.25	-52.75	0.00	0.00	0.00
7,887.83	5.00	62.00	7,883.00	54.24	102.00	-56.49	0.00	0.00	0.00
1st Bone Spring Ss									
7,900.00	5.00	62.00	7,895.12	54.73	102.94	-57.01	0.00	0.00	0.00
8,000.00	5.00	62.00	7,994.74	58.83	110.64	-61.27	0.00	0.00	0.00
8,100.00	5.00	62.00	8,094.36	62.92	118.33	-65.53	0.00	0.00	0.00
8,200.00	5.00	62.00	8,193.98	67.01	126.03	-69.79	0.00	0.00	0.00
8,300.00	5.00	62.00	8,293.60	71.10	133.72	-74.06	0.00	0.00	0.00
8,400.00	5.00	62.00	8,393.22	75.19	141.42	-78.32	0.00	0.00	0.00
8,500.00	5.00	62.00	8,492.84	79.29	149.11	-82.58	0.00	0.00	0.00

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,600.00	5.00	62.00	8,592.46	83.38	156.81	-86.84	0.00	0.00	0.00
8,700.00	5.00	62.00	8,692.08	87.47	164.50	-91.10	0.00	0.00	0.00
8,762.16	5.00	62.00	8,754.00	90.01	169.29	-93.75	0.00	0.00	0.00
2nd Bone Spring Ss									
8,800.00	5.00	62.00	8,791.70	91.56	172.20	-95.36	0.00	0.00	0.00
8,900.00	5.00	62.00	8,891.32	95.65	179.90	-99.63	0.00	0.00	0.00
8,989.02	5.00	62.00	8,980.00	99.29	186.75	-103.42	0.00	0.00	0.00
3rd Bone Spring Lm									
9,000.00	5.00	62.00	8,990.94	99.74	187.59	-103.89	0.00	0.00	0.00
9,100.00	5.00	62.00	9,090.56	103.84	195.29	-108.15	0.00	0.00	0.00
9,200.00	5.00	62.00	9,190.17	107.93	202.98	-112.41	0.00	0.00	0.00
9,300.00	5.00	62.00	9,289.79	112.02	210.68	-116.67	0.00	0.00	0.00
9,400.00	5.00	62.00	9,389.41	116.11	218.37	-120.93	0.00	0.00	0.00
9,500.00	5.00	62.00	9,489.03	120.20	226.07	-125.20	0.00	0.00	0.00
9,600.00	5.00	62.00	9,588.65	124.29	233.76	-129.46	0.00	0.00	0.00
9,639.07	5.00	62.00	9,627.58	125.89	236.77	-131.12	0.00	0.00	0.00
9,650.00	4.53	73.90	9,638.47	126.24	237.60	-131.48	10.00	-4.33	108.87
9,700.00	5.50	132.82	9,688.30	125.15	241.26	-130.48	10.00	1.95	117.84
9,750.00	9.48	157.04	9,737.88	119.73	244.63	-125.13	10.00	7.97	48.44
9,770.46	11.35	161.73	9,758.00	116.26	245.92	-121.70	10.00	9.11	22.96
3rd Bone Spring Ss									
9,800.00	14.13	166.31	9,786.81	110.00	247.68	-115.48	10.00	9.41	15.49
9,850.00	18.95	171.00	9,834.73	96.05	250.40	-101.59	10.00	9.64	9.38
9,900.00	23.84	173.83	9,881.27	77.97	252.75	-83.57	10.00	9.79	5.66
9,950.00	28.77	175.74	9,926.08	55.91	254.73	-61.56	10.00	9.86	3.82
10,000.00	33.72	177.13	9,968.82	30.03	256.32	-35.72	10.00	9.90	2.78
10,050.00	38.68	178.20	10,009.16	0.54	257.51	-6.26	10.00	9.92	2.14
10,100.00	43.65	179.06	10,046.79	-32.35	258.28	26.60	10.00	9.94	1.72
10,150.00	48.62	179.78	10,081.42	-68.39	258.64	62.62	10.00	9.95	1.43
10,196.97	53.29	180.36	10,111.00	-104.85	258.59	99.08	10.00	9.95	1.23
Wolfcamp									
10,200.00	53.60	180.39	10,112.81	-107.29	258.57	101.52	10.00	9.96	1.15
10,239.24	57.50	180.82	10,135.00	-139.64	258.23	133.87	10.00	9.96	1.09
Wolfcamp X									
10,250.00	58.58	180.93	10,140.70	-148.77	258.09	143.00	10.00	9.96	1.03
10,300.00	63.56	181.42	10,164.88	-192.50	257.18	186.74	10.00	9.96	0.97
10,350.00	68.54	181.87	10,185.17	-238.17	255.87	232.42	10.00	9.97	0.89
10,400.00	73.53	182.28	10,201.41	-285.40	254.16	279.69	10.00	9.97	0.83
10,442.75	77.79	182.62	10,212.00	-326.78	252.39	321.09	10.00	9.97	0.79
WFMP Y									
10,450.00	78.51	182.68	10,213.49	-333.86	252.06	328.18	10.00	9.97	0.78
10,500.00	83.50	183.06	10,221.30	-383.17	249.59	377.53	10.00	9.97	0.76
10,550.00	88.48	183.43	10,224.80	-432.95	246.76	427.36	10.00	9.97	0.75
10,565.21	90.00	183.54	10,225.00	-448.13	245.84	442.55	10.00	9.97	0.74
LP									
10,600.00	90.00	183.54	10,225.00	-482.86	243.69	477.32	0.00	0.00	0.00
10,700.00	90.00	183.54	10,225.00	-582.66	237.50	577.24	0.00	0.00	0.00
10,800.00	90.00	183.54	10,225.00	-682.47	231.32	677.16	0.00	0.00	0.00
10,900.00	90.00	183.54	10,225.00	-782.28	225.14	777.09	0.00	0.00	0.00
11,000.00	90.00	183.54	10,225.00	-882.09	218.96	877.01	0.00	0.00	0.00
11,100.00	90.00	183.54	10,225.00	-981.90	212.77	976.93	0.00	0.00	0.00
11,200.00	90.00	183.54	10,225.00	-1,081.71	206.59	1,076.85	0.00	0.00	0.00

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,300.00	90.00	183.54	10,225.00	-1,181.52	200.41	1,176.77	0.00	0.00	0.00
11,400.00	90.00	183.54	10,225.00	-1,281.32	194.22	1,276.69	0.00	0.00	0.00
11,500.00	90.00	183.54	10,225.00	-1,381.13	188.04	1,376.61	0.00	0.00	0.00
11,600.00	90.00	183.54	10,225.00	-1,480.94	181.86	1,476.54	0.00	0.00	0.00
11,700.00	90.00	183.54	10,225.00	-1,580.75	175.67	1,576.46	0.00	0.00	0.00
11,800.00	90.00	183.54	10,225.00	-1,680.56	169.49	1,676.38	0.00	0.00	0.00
11,900.00	90.00	183.54	10,225.00	-1,780.37	163.31	1,776.30	0.00	0.00	0.00
12,000.00	90.00	183.54	10,225.00	-1,880.18	157.12	1,876.22	0.00	0.00	0.00
12,100.00	90.00	183.54	10,225.00	-1,979.99	150.94	1,976.14	0.00	0.00	0.00
12,200.00	90.00	183.54	10,225.00	-2,079.79	144.76	2,076.06	0.00	0.00	0.00
12,300.00	90.00	183.54	10,225.00	-2,179.60	138.58	2,175.99	0.00	0.00	0.00
12,400.00	90.00	183.54	10,225.00	-2,279.41	132.39	2,275.91	0.00	0.00	0.00
12,500.00	90.00	183.54	10,225.00	-2,379.22	126.21	2,375.83	0.00	0.00	0.00
12,600.00	90.00	183.54	10,225.00	-2,479.03	120.03	2,475.75	0.00	0.00	0.00
12,700.00	90.00	183.54	10,225.00	-2,578.84	113.84	2,575.67	0.00	0.00	0.00
12,800.00	90.00	183.54	10,225.00	-2,678.65	107.66	2,675.59	0.00	0.00	0.00
12,900.00	90.00	183.54	10,225.00	-2,778.45	101.48	2,775.51	0.00	0.00	0.00
13,000.00	90.00	183.54	10,225.00	-2,878.26	95.29	2,875.44	0.00	0.00	0.00
13,100.00	90.00	183.54	10,225.00	-2,978.07	89.11	2,975.36	0.00	0.00	0.00
13,200.00	90.00	183.54	10,225.00	-3,077.88	82.93	3,075.28	0.00	0.00	0.00
13,300.00	90.00	183.54	10,225.00	-3,177.69	76.74	3,175.20	0.00	0.00	0.00
13,400.00	90.00	183.54	10,225.00	-3,277.50	70.56	3,275.12	0.00	0.00	0.00
13,500.00	90.00	183.54	10,225.00	-3,377.31	64.38	3,375.04	0.00	0.00	0.00
13,600.00	90.00	183.54	10,225.00	-3,477.12	58.20	3,474.96	0.00	0.00	0.00
13,700.00	90.00	183.54	10,225.00	-3,576.92	52.01	3,574.89	0.00	0.00	0.00
13,800.00	90.00	183.54	10,225.00	-3,676.73	45.83	3,674.81	0.00	0.00	0.00
13,900.00	90.00	183.54	10,225.00	-3,776.54	39.65	3,774.73	0.00	0.00	0.00
14,000.00	90.00	183.54	10,225.00	-3,876.35	33.46	3,874.65	0.00	0.00	0.00
14,100.00	90.00	183.54	10,225.00	-3,976.16	27.28	3,974.57	0.00	0.00	0.00
14,200.00	90.00	183.54	10,225.00	-4,075.97	21.10	4,074.49	0.00	0.00	0.00
14,300.00	90.00	183.54	10,225.00	-4,175.78	14.91	4,174.41	0.00	0.00	0.00
14,400.00	90.00	183.54	10,225.00	-4,275.58	8.73	4,274.34	0.00	0.00	0.00
14,500.00	90.00	183.54	10,225.00	-4,375.39	2.55	4,374.26	0.00	0.00	0.00
14,600.00	90.00	183.54	10,225.00	-4,475.20	-3.64	4,474.18	0.00	0.00	0.00
14,700.00	90.00	183.54	10,225.00	-4,575.01	-9.82	4,574.10	0.00	0.00	0.00
14,800.00	90.00	183.54	10,225.00	-4,674.82	-16.00	4,674.02	0.00	0.00	0.00
14,900.00	90.00	183.54	10,225.00	-4,774.63	-22.18	4,773.94	0.00	0.00	0.00
15,000.00	90.00	183.54	10,225.00	-4,874.44	-28.37	4,873.86	0.00	0.00	0.00
15,100.00	90.00	183.54	10,225.00	-4,974.25	-34.55	4,973.78	0.00	0.00	0.00
15,200.00	90.00	183.54	10,225.00	-5,074.05	-40.73	5,073.71	0.00	0.00	0.00
15,300.00	90.00	183.54	10,225.00	-5,173.86	-46.92	5,173.63	0.00	0.00	0.00
15,400.00	90.00	183.54	10,225.00	-5,273.67	-53.10	5,273.55	0.00	0.00	0.00
15,500.00	90.00	183.54	10,225.00	-5,373.48	-59.28	5,373.47	0.00	0.00	0.00
15,600.00	90.00	183.54	10,225.00	-5,473.29	-65.47	5,473.39	0.00	0.00	0.00
15,700.00	90.00	183.54	10,225.00	-5,573.10	-71.65	5,573.31	0.00	0.00	0.00
15,800.00	90.00	183.54	10,225.00	-5,672.91	-77.83	5,673.23	0.00	0.00	0.00
15,900.00	90.00	183.54	10,225.00	-5,772.71	-84.02	5,773.16	0.00	0.00	0.00
16,000.00	90.00	183.54	10,225.00	-5,872.52	-90.20	5,873.08	0.00	0.00	0.00
16,100.00	90.00	183.54	10,225.00	-5,972.33	-96.38	5,973.00	0.00	0.00	0.00
16,200.00	90.00	183.54	10,225.00	-6,072.14	-102.56	6,072.92	0.00	0.00	0.00
16,300.00	90.00	183.54	10,225.00	-6,171.95	-108.75	6,172.84	0.00	0.00	0.00
16,400.00	90.00	183.54	10,225.00	-6,271.76	-114.93	6,272.76	0.00	0.00	0.00
16,500.00	90.00	183.54	10,225.00	-6,371.57	-121.11	6,372.68	0.00	0.00	0.00

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,600.00	90.00	183.54	10,225.00	-6,471.38	-127.30	6,472.61	0.00	0.00	0.00
16,700.00	90.00	183.54	10,225.00	-6,571.18	-133.48	6,572.53	0.00	0.00	0.00
16,800.00	90.00	183.54	10,225.00	-6,670.99	-139.66	6,672.45	0.00	0.00	0.00
16,900.00	90.00	183.54	10,225.00	-6,770.80	-145.85	6,772.37	0.00	0.00	0.00
17,000.00	90.00	183.54	10,225.00	-6,870.61	-152.03	6,872.29	0.00	0.00	0.00
17,017.32	90.00	183.54	10,225.00	-6,887.90	-153.10	6,889.60	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
RD 25-36 FED 103H SH - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	371,032.90	622,464.70	32.0194681	-103.9381970
RD 25-36 FED 103H 80' - plan hits target center - Point	0.00	0.00	10,216.27	-348.51	251.36	370,684.39	622,716.06	32.0185075	-103.9373901
RD 25-36 FED 103H PB - plan hits target center - Rectangle (sides W100.00 H6,757.00 D0.00)	0.00	0.00	10,225.00	-6,887.90	-153.10	364,145.00	622,311.60	32.0005346	-103.9387721
RD 25-36 FED 103H LP - plan hits target center - Point	0.00	0.00	10,225.00	-448.13	245.84	370,584.77	622,710.54	32.0182337	-103.9374091
RD 25-36 FED 103H FT - plan misses target center by 75.82usft at 10286.47usft MD (10158.71 TVD, -180.47 N, 257.47 E) - Point	0.00	0.00	10,225.00	-143.90	261.60	370,889.00	622,726.30	32.0190698	-103.9373546
RD 25-36 FED 103H LTI - plan misses target center by 0.05usft at 16887.08usft MD (10225.00 TVD, -6757.90 N, -145.05 E) - Point	0.00	0.00	10,225.00	-6,757.90	-145.10	364,275.00	622,319.60	32.0008919	-103.9387447

Planning Report

Database:	TP_EDM	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Company:	XTO Energy	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Project:	Eddy County, NM (NAD27) NMEZ US	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site:	Ross Draw 25-36 Pad	North Reference:	Grid
Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ROSS DRAW 25-36 FED 103H		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
509.00	509.00	Rustler		0.00	
1,352.00	1,352.00	Top Salt			
2,983.00	2,983.00	Base Salt			
3,158.00	3,158.00	Delaware			
4,067.00	4,067.00	Cherry Canyon			
5,731.00	5,731.00	Brushy Canyon			
6,910.11	6,909.00	Bone Spring			
7,887.83	7,883.00	1st Bone Spring Ss			
8,762.16	8,754.00	2nd Bone Spring Ss			
8,989.02	8,980.00	3rd Bone Spring Lm			
9,770.46	9,758.00	3rd Bone Spring Ss			
10,196.97	10,111.00	Wolfcamp			
10,239.24	10,135.00	Wolfcamp X			
10,442.75	10,212.00	WFMP Y			
10,565.21	10,225.00	LP			

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 50.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum separation factor of 4.00
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program Date 2019/01/02

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,017.32	Plan #1 (ROSS DRAW 25-36 FED 103H)	MWD	MWD v3:standard declination

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Ross Draw 25-36 Pad						
ROSS DRAW 25-36 FED 102H - ROSS DRAW 25-36 FED 102H	17,017.32	16,955.74	841.88	585.40	3.282	CC, ES, SF
ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H	6,350.00	6,350.00	30.17	1.90	1.067	Level 2, CC
ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H	6,400.00	6,400.00	30.17	1.68	1.059	Level 2, ES, SF
ROSS DRAW 25-36 FED 72H - ROSS DRAW 25-36 FED 72H	5,701.87	5,701.87	60.12	34.77	2.371	CC
ROSS DRAW 25-36 FED 72H - ROSS DRAW 25-36 FED 72H	5,750.00	5,749.82	60.14	34.57	2.352	ES
ROSS DRAW 25-36 FED 72H - ROSS DRAW 25-36 FED 72H	5,800.00	5,799.17	60.56	34.77	2.349	SF

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 102H - ROSS DRAW 25-36 FED 102H - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,750.00	10,225.00	15,688.41	10,225.00	105.68	105.49	90.00	-5,571.07	-915.22	842.08	631.28	210.80	3.995	
15,800.00	10,225.00	15,738.41	10,225.00	106.58	106.39	90.00	-5,620.97	-918.30	842.07	629.48	212.60	3.961	
15,850.00	10,225.00	15,788.41	10,225.00	107.48	107.28	90.00	-5,670.88	-921.39	842.07	627.67	214.39	3.928	
15,900.00	10,225.00	15,838.41	10,225.00	108.38	108.18	90.00	-5,720.78	-924.47	842.06	625.87	216.19	3.895	
15,950.00	10,225.00	15,888.41	10,225.00	109.27	109.08	90.00	-5,770.69	-927.55	842.05	624.06	217.99	3.863	
16,000.00	10,225.00	15,938.41	10,225.00	110.17	109.97	90.00	-5,820.59	-930.64	842.04	622.26	219.79	3.831	
16,050.00	10,225.00	15,988.41	10,225.00	111.07	110.87	90.00	-5,870.49	-933.72	842.03	620.45	221.58	3.800	
16,100.00	10,225.00	16,038.41	10,225.00	111.97	111.77	90.00	-5,920.40	-936.80	842.03	618.64	223.38	3.769	
16,150.00	10,225.00	16,088.41	10,225.00	112.87	112.66	90.00	-5,970.30	-939.89	842.02	616.83	225.18	3.739	
16,200.00	10,225.00	16,138.41	10,225.00	113.77	113.56	90.00	-6,020.21	-942.97	842.01	615.03	226.98	3.710	
16,250.00	10,225.00	16,188.41	10,225.00	114.67	114.46	90.00	-6,070.11	-946.06	842.00	613.22	228.79	3.680	
16,300.00	10,225.00	16,238.41	10,225.00	115.57	115.36	90.00	-6,120.02	-949.14	842.00	611.41	230.59	3.652	
16,350.00	10,225.00	16,288.41	10,225.00	116.47	116.26	90.00	-6,169.92	-952.22	841.99	609.60	232.39	3.623	
16,400.00	10,225.00	16,338.41	10,225.00	117.37	117.16	90.00	-6,219.83	-955.31	841.98	607.79	234.19	3.595	
16,450.00	10,225.00	16,388.41	10,225.00	118.27	118.06	90.00	-6,269.73	-958.39	841.97	605.98	236.00	3.568	
16,500.00	10,225.00	16,438.41	10,225.00	119.17	118.96	90.00	-6,319.64	-961.48	841.96	604.17	237.80	3.541	
16,550.00	10,225.00	16,488.41	10,225.00	120.07	119.86	90.00	-6,369.54	-964.56	841.96	602.35	239.60	3.514	
16,600.00	10,225.00	16,538.41	10,225.00	120.98	120.76	90.00	-6,419.45	-967.64	841.95	600.54	241.41	3.488	
16,650.00	10,225.00	16,588.41	10,225.00	121.88	121.66	90.00	-6,469.35	-970.73	841.94	598.73	243.21	3.462	
16,700.00	10,225.00	16,638.41	10,225.00	122.78	122.56	90.00	-6,519.26	-973.81	841.93	596.91	245.02	3.436	
16,750.00	10,225.00	16,688.41	10,225.00	123.68	123.46	90.00	-6,569.16	-976.89	841.93	595.10	246.82	3.411	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 102H - ROSS DRAW 25-36 FED 102H - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
16,800.00	10,225.00	16,738.41	10,225.00	124.59	124.36	90.00	-6,619.07	-979.98	841.92	593.29	248.63	3.386		
16,850.00	10,225.00	16,788.41	10,225.00	125.49	125.26	90.00	-6,668.97	-983.06	841.91	591.47	250.44	3.362		
16,900.00	10,225.00	16,838.41	10,225.00	126.39	126.16	90.00	-6,718.88	-986.15	841.90	589.66	252.25	3.338		
16,950.00	10,225.00	16,888.41	10,225.00	127.30	127.07	90.00	-6,768.78	-989.23	841.89	587.84	254.05	3.314		
17,000.00	10,225.00	16,938.41	10,225.00	128.20	127.97	90.00	-6,818.69	-992.31	841.89	586.03	255.86	3.290		
17,017.32	10,225.00	16,955.74	10,225.00	128.51	128.28	90.00	-6,835.98	-993.38	841.88	585.40	256.49	3.282	CC, ES, SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
1,750.00	1,750.00	1,750.00	1,750.00	3.79	3.79	-93.80	-2.00	-30.10	30.17	22.58	7.59	3.975		
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	-93.80	-2.00	-30.10	30.17	22.35	7.81	3.861		
1,850.00	1,850.00	1,850.00	1,850.00	4.02	4.02	-93.80	-2.00	-30.10	30.17	22.13	8.04	3.753		
1,900.00	1,900.00	1,900.00	1,900.00	4.13	4.13	-93.80	-2.00	-30.10	30.17	21.90	8.26	3.651		
1,950.00	1,950.00	1,950.00	1,950.00	4.24	4.24	-93.80	-2.00	-30.10	30.17	21.68	8.49	3.554		
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	-93.80	-2.00	-30.10	30.17	21.45	8.71	3.463		
2,050.00	2,050.00	2,050.00	2,050.00	4.47	4.47	-93.80	-2.00	-30.10	30.17	21.23	8.94	3.376		
2,100.00	2,100.00	2,100.00	2,100.00	4.58	4.58	-93.80	-2.00	-30.10	30.17	21.00	9.16	3.293		
2,150.00	2,150.00	2,150.00	2,150.00	4.69	4.69	-93.80	-2.00	-30.10	30.17	20.78	9.39	3.214		
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	-93.80	-2.00	-30.10	30.17	20.56	9.61	3.139		
2,250.00	2,250.00	2,250.00	2,250.00	4.92	4.92	-93.80	-2.00	-30.10	30.17	20.33	9.84	3.067		
2,300.00	2,300.00	2,300.00	2,300.00	5.03	5.03	-93.80	-2.00	-30.10	30.17	20.11	10.06	2.998		
2,350.00	2,350.00	2,350.00	2,350.00	5.14	5.14	-93.80	-2.00	-30.10	30.17	19.88	10.29	2.933		
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	-93.80	-2.00	-30.10	30.17	19.66	10.51	2.870		
2,450.00	2,450.00	2,450.00	2,450.00	5.37	5.37	-93.80	-2.00	-30.10	30.17	19.43	10.73	2.810		
2,500.00	2,500.00	2,500.00	2,500.00	5.48	5.48	-93.80	-2.00	-30.10	30.17	19.21	10.96	2.753		
2,550.00	2,550.00	2,550.00	2,550.00	5.59	5.59	-93.80	-2.00	-30.10	30.17	18.98	11.18	2.697		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-93.80	-2.00	-30.10	30.17	18.76	11.41	2.644		
2,650.00	2,650.00	2,650.00	2,650.00	5.82	5.82	-93.80	-2.00	-30.10	30.17	18.53	11.63	2.593		
2,700.00	2,700.00	2,700.00	2,700.00	5.93	5.93	-93.80	-2.00	-30.10	30.17	18.31	11.86	2.544		
2,750.00	2,750.00	2,750.00	2,750.00	6.04	6.04	-93.80	-2.00	-30.10	30.17	18.08	12.08	2.497		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-93.80	-2.00	-30.10	30.17	17.86	12.31	2.451		
2,850.00	2,850.00	2,850.00	2,850.00	6.27	6.27	-93.80	-2.00	-30.10	30.17	17.63	12.53	2.407		
2,900.00	2,900.00	2,900.00	2,900.00	6.38	6.38	-93.80	-2.00	-30.10	30.17	17.41	12.76	2.365		
2,950.00	2,950.00	2,950.00	2,950.00	6.49	6.49	-93.80	-2.00	-30.10	30.17	17.18	12.98	2.324		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-93.80	-2.00	-30.10	30.17	16.96	13.21	2.284		
3,050.00	3,050.00	3,050.00	3,050.00	6.72	6.72	-93.80	-2.00	-30.10	30.17	16.73	13.43	2.246		
3,100.00	3,100.00	3,100.00	3,100.00	6.83	6.83	-93.80	-2.00	-30.10	30.17	16.51	13.66	2.209		
3,150.00	3,150.00	3,150.00	3,150.00	6.94	6.94	-93.80	-2.00	-30.10	30.17	16.28	13.88	2.173		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-93.80	-2.00	-30.10	30.17	16.06	14.11	2.139		
3,250.00	3,250.00	3,250.00	3,250.00	7.17	7.17	-93.80	-2.00	-30.10	30.17	15.84	14.33	2.105		
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	-93.80	-2.00	-30.10	30.17	15.61	14.56	2.072		
3,350.00	3,350.00	3,350.00	3,350.00	7.39	7.39	-93.80	-2.00	-30.10	30.17	15.39	14.78	2.041		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-93.80	-2.00	-30.10	30.17	15.16	15.01	2.010		
3,450.00	3,450.00	3,450.00	3,450.00	7.62	7.62	-93.80	-2.00	-30.10	30.17	14.94	15.23	1.981		
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-93.80	-2.00	-30.10	30.17	14.71	15.45	1.952		
3,550.00	3,550.00	3,550.00	3,550.00	7.84	7.84	-93.80	-2.00	-30.10	30.17	14.49	15.68	1.924		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-93.80	-2.00	-30.10	30.17	14.26	15.90	1.897		
3,650.00	3,650.00	3,650.00	3,650.00	8.06	8.06	-93.80	-2.00	-30.10	30.17	14.04	16.13	1.870		
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	-93.80	-2.00	-30.10	30.17	13.81	16.35	1.845		
3,750.00	3,750.00	3,750.00	3,750.00	8.29	8.29	-93.80	-2.00	-30.10	30.17	13.59	16.58	1.820		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-93.80	-2.00	-30.10	30.17	13.36	16.80	1.795		
3,850.00	3,850.00	3,850.00	3,850.00	8.51	8.51	-93.80	-2.00	-30.10	30.17	13.14	17.03	1.772		
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	-93.80	-2.00	-30.10	30.17	12.91	17.25	1.748		
3,950.00	3,950.00	3,950.00	3,950.00	8.74	8.74	-93.80	-2.00	-30.10	30.17	12.69	17.48	1.726		
4,000.00	4,000.00	4,000.00	4,000.00	8.85	8.85	-93.80	-2.00	-30.10	30.17	12.46	17.70	1.704		
4,050.00	4,050.00	4,050.00	4,050.00	8.96	8.96	-93.80	-2.00	-30.10	30.17	12.24	17.93	1.683		
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	-93.80	-2.00	-30.10	30.17	12.01	18.15	1.662		
4,150.00	4,150.00	4,150.00	4,150.00	9.19	9.19	-93.80	-2.00	-30.10	30.17	11.79	18.38	1.642		
4,200.00	4,200.00	4,200.00	4,200.00	9.30	9.30	-93.80	-2.00	-30.10	30.17	11.56	18.60	1.622		
4,250.00	4,250.00	4,250.00	4,250.00	9.41	9.41	-93.80	-2.00	-30.10	30.17	11.34	18.83	1.602		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	-93.80	-2.00	-30.10	30.17	11.12	19.05	1.583		
4,350.00	4,350.00	4,350.00	4,350.00	9.64	9.64	-93.80	-2.00	-30.10	30.17	10.89	19.28	1.565		
4,400.00	4,400.00	4,400.00	4,400.00	9.75	9.75	-93.80	-2.00	-30.10	30.17	10.67	19.50	1.547		
4,450.00	4,450.00	4,450.00	4,450.00	9.86	9.86	-93.80	-2.00	-30.10	30.17	10.44	19.73	1.529		
4,500.00	4,500.00	4,500.00	4,500.00	9.98	9.98	-93.80	-2.00	-30.10	30.17	10.22	19.95	1.512		
4,550.00	4,550.00	4,550.00	4,550.00	10.09	10.09	-93.80	-2.00	-30.10	30.17	9.99	20.17	1.495	Level 3	
4,600.00	4,600.00	4,600.00	4,600.00	10.20	10.20	-93.80	-2.00	-30.10	30.17	9.77	20.40	1.479	Level 3	
4,650.00	4,650.00	4,650.00	4,650.00	10.31	10.31	-93.80	-2.00	-30.10	30.17	9.54	20.62	1.463	Level 3	
4,700.00	4,700.00	4,700.00	4,700.00	10.42	10.42	-93.80	-2.00	-30.10	30.17	9.32	20.85	1.447	Level 3	
4,750.00	4,750.00	4,750.00	4,750.00	10.54	10.54	-93.80	-2.00	-30.10	30.17	9.09	21.07	1.431	Level 3	
4,800.00	4,800.00	4,800.00	4,800.00	10.65	10.65	-93.80	-2.00	-30.10	30.17	8.87	21.30	1.416	Level 3	
4,850.00	4,850.00	4,850.00	4,850.00	10.76	10.76	-93.80	-2.00	-30.10	30.17	8.64	21.52	1.402	Level 3	
4,900.00	4,900.00	4,900.00	4,900.00	10.87	10.87	-93.80	-2.00	-30.10	30.17	8.42	21.75	1.387	Level 3	
4,950.00	4,950.00	4,950.00	4,950.00	10.99	10.99	-93.80	-2.00	-30.10	30.17	8.19	21.97	1.373	Level 3	
5,000.00	5,000.00	5,000.00	5,000.00	11.10	11.10	-93.80	-2.00	-30.10	30.17	7.97	22.20	1.359	Level 3	
5,050.00	5,050.00	5,050.00	5,050.00	11.21	11.21	-93.80	-2.00	-30.10	30.17	7.74	22.42	1.345	Level 3	
5,100.00	5,100.00	5,100.00	5,100.00	11.32	11.32	-93.80	-2.00	-30.10	30.17	7.52	22.65	1.332	Level 3	
5,150.00	5,150.00	5,150.00	5,150.00	11.44	11.44	-93.80	-2.00	-30.10	30.17	7.29	22.87	1.319	Level 3	
5,200.00	5,200.00	5,200.00	5,200.00	11.55	11.55	-93.80	-2.00	-30.10	30.17	7.07	23.10	1.306	Level 3	
5,250.00	5,250.00	5,250.00	5,250.00	11.66	11.66	-93.80	-2.00	-30.10	30.17	6.84	23.32	1.293	Level 3	
5,300.00	5,300.00	5,300.00	5,300.00	11.77	11.77	-93.80	-2.00	-30.10	30.17	6.62	23.55	1.281	Level 3	
5,350.00	5,350.00	5,350.00	5,350.00	11.89	11.89	-93.80	-2.00	-30.10	30.17	6.40	23.77	1.269	Level 3	
5,400.00	5,400.00	5,400.00	5,400.00	12.00	12.00	-93.80	-2.00	-30.10	30.17	6.17	24.00	1.257	Level 3	
5,450.00	5,450.00	5,450.00	5,450.00	12.11	12.11	-93.80	-2.00	-30.10	30.17	5.95	24.22	1.245	Level 2	
5,500.00	5,500.00	5,500.00	5,500.00	12.22	12.22	-93.80	-2.00	-30.10	30.17	5.72	24.45	1.234	Level 2	
5,550.00	5,550.00	5,550.00	5,550.00	12.34	12.34	-93.80	-2.00	-30.10	30.17	5.50	24.67	1.223	Level 2	
5,600.00	5,600.00	5,600.00	5,600.00	12.45	12.45	-93.80	-2.00	-30.10	30.17	5.27	24.90	1.212	Level 2	
5,650.00	5,650.00	5,650.00	5,650.00	12.56	12.56	-93.80	-2.00	-30.10	30.17	5.05	25.12	1.201	Level 2	
5,700.00	5,700.00	5,700.00	5,700.00	12.67	12.67	-93.80	-2.00	-30.10	30.17	4.82	25.34	1.190	Level 2	
5,750.00	5,750.00	5,750.00	5,750.00	12.78	12.78	-93.80	-2.00	-30.10	30.17	4.60	25.57	1.180	Level 2	
5,800.00	5,800.00	5,800.00	5,800.00	12.90	12.90	-93.80	-2.00	-30.10	30.17	4.37	25.79	1.170	Level 2	
5,850.00	5,850.00	5,850.00	5,850.00	13.01	13.01	-93.80	-2.00	-30.10	30.17	4.15	26.02	1.159	Level 2	
5,900.00	5,900.00	5,900.00	5,900.00	13.12	13.12	-93.80	-2.00	-30.10	30.17	3.92	26.24	1.149	Level 2	
5,950.00	5,950.00	5,950.00	5,950.00	13.23	13.23	-93.80	-2.00	-30.10	30.17	3.70	26.47	1.140	Level 2	
6,000.00	6,000.00	6,000.00	6,000.00	13.35	13.35	-93.80	-2.00	-30.10	30.17	3.47	26.69	1.130	Level 2	
6,050.00	6,050.00	6,050.00	6,050.00	13.46	13.46	-93.80	-2.00	-30.10	30.17	3.25	26.92	1.121	Level 2	
6,100.00	6,100.00	6,100.00	6,100.00	13.57	13.57	-93.80	-2.00	-30.10	30.17	3.02	27.14	1.111	Level 2	
6,150.00	6,150.00	6,150.00	6,150.00	13.68	13.68	-93.80	-2.00	-30.10	30.17	2.80	27.37	1.102	Level 2	
6,200.00	6,200.00	6,200.00	6,200.00	13.80	13.80	-93.80	-2.00	-30.10	30.17	2.57	27.59	1.093	Level 2	
6,250.00	6,250.00	6,250.00	6,250.00	13.91	13.91	-93.80	-2.00	-30.10	30.17	2.35	27.82	1.084	Level 2	
6,300.00	6,300.00	6,300.00	6,300.00	14.02	14.02	-93.80	-2.00	-30.10	30.17	2.12	28.04	1.076	Level 2	
6,350.00	6,350.00	6,350.00	6,350.00	14.13	14.13	-93.80	-2.00	-30.10	30.17	1.90	28.27	1.067	Level 2, CC	
6,354.03	6,354.03	6,354.03	6,354.03	14.14	14.14	-93.80	-2.00	-30.10	30.17	1.88	28.28	1.067	Level 2	
6,400.00	6,400.00	6,400.00	6,400.00	14.25	14.25	-155.80	-2.00	-30.10	30.17	1.68	28.49	1.059	Level 2, ES, SF	
6,450.00	6,450.00	6,450.00	6,450.00	14.35	14.36	-156.10	-2.00	-30.10	30.52	1.81	28.71	1.063	Level 2	
6,500.00	6,499.99	6,499.99	6,499.99	14.46	14.47	-156.86	-2.00	-30.10	31.47	2.54	28.92	1.088	Level 2	
6,550.00	6,549.96	6,549.96	6,549.96	14.56	14.58	-158.00	-2.00	-30.10	33.03	3.89	29.14	1.133	Level 2	
6,600.00	6,599.90	6,599.90	6,599.90	14.67	14.69	-159.42	-2.00	-30.10	35.22	5.86	29.36	1.200	Level 2	
6,650.00	6,649.81	6,649.81	6,649.81	14.77	14.81	-160.99	-2.00	-30.10	38.04	8.47	29.58	1.286	Level 3	
6,700.00	6,699.68	6,699.68	6,699.68	14.88	14.92	-162.62	-2.00	-30.10	41.51	11.72	29.79	1.393	Level 3	
6,750.00	6,749.50	6,749.50	6,749.50	14.99	15.03	-164.20	-2.00	-30.10	45.58	15.57	30.01	1.519		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,800.00	6,799.31	6,799.31	6,799.31	15.09	15.14	-165.57	-2.00	-30.10	49.79	19.57	30.23	1.647		
6,850.00	6,849.12	6,849.12	6,849.12	15.20	15.26	-166.72	-2.00	-30.10	54.02	23.58	30.44	1.775		
6,900.00	6,898.93	6,898.93	6,898.93	15.31	15.37	-167.70	-2.00	-30.10	58.28	27.62	30.66	1.901		
6,950.00	6,948.74	6,948.74	6,948.74	15.42	15.48	-168.55	-2.00	-30.10	62.54	31.66	30.88	2.025		
7,000.00	6,998.55	6,998.55	6,998.55	15.53	15.59	-169.30	-2.00	-30.10	66.82	35.72	31.09	2.149		
7,050.00	7,048.36	7,048.36	7,048.36	15.64	15.70	-169.95	-2.00	-30.10	71.10	39.79	31.31	2.271		
7,100.00	7,098.17	7,098.17	7,098.17	15.75	15.81	-170.53	-2.00	-30.10	75.40	43.87	31.53	2.391		
7,150.00	7,147.98	7,147.98	7,147.98	15.86	15.93	-171.04	-2.00	-30.10	79.70	47.95	31.75	2.510		
7,200.00	7,197.79	7,197.79	7,197.79	15.97	16.04	-171.50	-2.00	-30.10	84.01	52.04	31.97	2.628		
7,250.00	7,247.59	7,247.59	7,247.59	16.08	16.15	-171.92	-2.00	-30.10	88.32	56.14	32.18	2.744		
7,300.00	7,297.40	7,297.40	7,297.40	16.20	16.26	-172.30	-2.00	-30.10	92.64	60.24	32.40	2.859		
7,350.00	7,347.21	7,347.21	7,347.21	16.31	16.37	-172.65	-2.00	-30.10	96.96	64.34	32.62	2.972		
7,400.00	7,397.02	7,397.02	7,397.02	16.42	16.49	-172.96	-2.00	-30.10	101.28	68.44	32.84	3.084		
7,450.00	7,446.83	7,446.83	7,446.83	16.53	16.60	-173.25	-2.00	-30.10	105.61	72.55	33.06	3.195		
7,500.00	7,496.64	7,496.64	7,496.64	16.65	16.71	-173.52	-2.00	-30.10	109.94	76.66	33.28	3.304		
7,550.00	7,546.45	7,546.45	7,546.45	16.76	16.82	-173.76	-2.00	-30.10	114.27	80.77	33.50	3.411		
7,600.00	7,596.26	7,596.26	7,596.26	16.87	16.93	-173.99	-2.00	-30.10	118.60	84.89	33.72	3.518		
7,650.00	7,646.07	7,646.07	7,646.07	16.99	17.05	-174.21	-2.00	-30.10	122.94	89.00	33.93	3.623		
7,700.00	7,695.88	7,695.88	7,695.88	17.10	17.16	-174.40	-2.00	-30.10	127.27	93.12	34.15	3.727		
7,750.00	7,745.69	7,745.69	7,745.69	17.22	17.27	-174.59	-2.00	-30.10	131.61	97.24	34.37	3.829		
7,800.00	7,795.50	7,795.50	7,795.50	17.33	17.38	-174.76	-2.00	-30.10	135.95	101.36	34.59	3.930		
13,150.00	10,225.00	13,276.40	10,385.00	59.93	59.76	110.81	-3,001.96	-334.17	450.38	336.52	113.86	3.956		
13,200.00	10,225.00	13,326.40	10,385.00	60.78	60.61	110.81	-3,051.86	-337.26	450.37	334.92	115.46	3.901		
13,250.00	10,225.00	13,376.40	10,385.00	61.63	61.46	110.81	-3,101.77	-340.35	450.37	333.31	117.06	3.847		
13,300.00	10,225.00	13,426.40	10,385.00	62.48	62.31	110.81	-3,151.67	-343.44	450.37	331.70	118.67	3.795		
13,350.00	10,225.00	13,476.40	10,385.00	63.34	63.16	110.81	-3,201.58	-346.53	450.37	330.09	120.28	3.744		
13,400.00	10,225.00	13,526.40	10,385.00	64.20	64.02	110.81	-3,251.48	-349.62	450.37	328.47	121.90	3.695		
13,450.00	10,225.00	13,576.40	10,385.00	65.06	64.88	110.81	-3,301.38	-352.71	450.37	326.85	123.52	3.646		
13,500.00	10,225.00	13,626.40	10,385.00	65.92	65.74	110.81	-3,351.29	-355.80	450.37	325.23	125.14	3.599		
13,550.00	10,225.00	13,676.40	10,385.00	66.78	66.60	110.81	-3,401.19	-358.89	450.37	323.60	126.76	3.553		
13,600.00	10,225.00	13,726.40	10,385.00	67.65	67.46	110.81	-3,451.10	-361.98	450.36	321.97	128.39	3.508		
13,650.00	10,225.00	13,776.40	10,385.00	68.51	68.33	110.81	-3,501.00	-365.07	450.36	320.34	130.02	3.464		
13,700.00	10,225.00	13,826.40	10,385.00	69.38	69.19	110.81	-3,550.91	-368.16	450.36	318.71	131.65	3.421		
13,750.00	10,225.00	13,876.40	10,385.00	70.25	70.06	110.81	-3,600.81	-371.25	450.36	317.07	133.29	3.379		
13,800.00	10,225.00	13,926.40	10,385.00	71.12	70.93	110.81	-3,650.72	-374.34	450.36	315.43	134.93	3.338		
13,850.00	10,225.00	13,976.40	10,385.00	71.99	71.80	110.81	-3,700.62	-377.43	450.36	313.79	136.57	3.298		
13,900.00	10,225.00	14,026.40	10,385.00	72.86	72.67	110.81	-3,750.52	-380.52	450.36	312.15	138.21	3.258		
13,950.00	10,225.00	14,076.40	10,385.00	73.74	73.54	110.81	-3,800.43	-383.61	450.35	310.50	139.86	3.220		
14,000.00	10,225.00	14,126.40	10,385.00	74.61	74.41	110.81	-3,850.33	-386.70	450.35	308.85	141.50	3.183		
14,050.00	10,225.00	14,176.40	10,385.00	75.49	75.29	110.81	-3,900.24	-389.80	450.35	307.20	143.15	3.146		
14,100.00	10,225.00	14,226.40	10,385.00	76.36	76.16	110.81	-3,950.14	-392.89	450.35	305.55	144.80	3.110		
14,150.00	10,225.00	14,276.40	10,385.00	77.24	77.04	110.81	-4,000.05	-395.98	450.35	303.89	146.46	3.075		
14,200.00	10,225.00	14,326.40	10,385.00	78.12	77.92	110.81	-4,049.95	-399.07	450.35	302.23	148.11	3.041		
14,250.00	10,225.00	14,376.40	10,385.00	79.00	78.79	110.81	-4,099.85	-402.16	450.35	300.58	149.77	3.007		
14,300.00	10,225.00	14,426.40	10,385.00	79.88	79.67	110.81	-4,149.76	-405.25	450.35	298.92	151.43	2.974		
14,350.00	10,225.00	14,476.40	10,385.00	80.76	80.55	110.81	-4,199.66	-408.34	450.34	297.25	153.09	2.942		
14,400.00	10,225.00	14,526.40	10,385.00	81.64	81.43	110.81	-4,249.57	-411.43	450.34	295.59	154.75	2.910		
14,450.00	10,225.00	14,576.40	10,385.00	82.52	82.32	110.81	-4,299.47	-414.52	450.34	293.92	156.42	2.879		
14,500.00	10,225.00	14,626.40	10,385.00	83.41	83.20	110.81	-4,349.38	-417.61	450.34	292.26	158.08	2.849		
14,550.00	10,225.00	14,676.40	10,385.00	84.29	84.08	110.81	-4,399.28	-420.70	450.34	290.59	159.75	2.819		
14,600.00	10,225.00	14,726.40	10,385.00	85.17	84.96	110.81	-4,449.19	-423.79	450.34	288.92	161.42	2.790		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: XTO Energy

Local Co-ordinate Reference:

Well ROSS DRAW 25-36 FED 103H - Slot
RD 25-36 FED 103H SHL

Project: Eddy County, NM (NAD27) NMEZ US

TVD Reference:

2960+24 @ 2984.00usft (Hercules)

Reference Site: Ross Draw 25-36 Pad

MD Reference:

2960+24 @ 2984.00usft (Hercules)

Site Error: 0.00 usft

North Reference:

Grid

Reference Well: ROSS DRAW 25-36 FED 103H

Survey Calculation Method:

Minimum Curvature

Well Error: 0.00 usft

Output errors are at

2.00 sigma

Reference Wellbore: ROSS DRAW 25-36 FED 103H

Database:

TP_EDM

Reference Design: Plan #1

Offset TVD Reference:

Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 123H - ROSS DRAW 25-36 FED 123H - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centros (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centro +N-S (usft)	+E-W (usft)					
14,650.00	10,225.00	14,776.40	10,385.00	86.06	85.85	110.81	-4,499.09	-426.88	450.34	287.25	163.09	2.761	
14,700.00	10,225.00	14,826.40	10,385.00	86.95	86.73	110.81	-4,548.99	-429.97	450.34	285.58	164.76	2.733	
14,750.00	10,225.00	14,876.40	10,385.00	87.83	87.62	110.81	-4,598.90	-433.06	450.33	283.90	166.43	2.706	
14,800.00	10,225.00	14,926.40	10,385.00	88.72	88.51	110.81	-4,648.80	-436.15	450.33	282.23	168.11	2.679	
14,850.00	10,225.00	14,976.40	10,385.00	89.61	89.39	110.81	-4,698.71	-439.24	450.33	280.55	169.78	2.652	
14,900.00	10,225.00	15,026.40	10,385.00	90.50	90.28	110.81	-4,748.61	-442.33	450.33	278.87	171.46	2.626	
14,950.00	10,225.00	15,076.40	10,385.00	91.39	91.17	110.81	-4,798.52	-445.42	450.33	277.19	173.14	2.601	
15,000.00	10,225.00	15,126.40	10,385.00	92.28	92.06	110.81	-4,848.42	-448.51	450.33	275.51	174.82	2.576	
15,050.00	10,225.00	15,176.40	10,385.00	93.17	92.95	110.81	-4,898.33	-451.60	450.33	273.83	176.50	2.551	
15,100.00	10,225.00	15,226.40	10,385.00	94.06	93.84	110.81	-4,948.23	-454.69	450.32	272.15	178.18	2.527	
15,150.00	10,225.00	15,276.40	10,385.00	94.95	94.73	110.81	-4,998.13	-457.78	450.32	270.47	179.86	2.504	
15,200.00	10,225.00	15,326.40	10,385.00	95.84	95.62	110.81	-5,048.04	-460.87	450.32	268.78	181.54	2.481	
15,250.00	10,225.00	15,376.40	10,385.00	96.73	96.51	110.81	-5,097.94	-463.96	450.32	267.10	183.23	2.458	
15,300.00	10,225.00	15,426.40	10,385.00	97.63	97.41	110.81	-5,147.85	-467.05	450.32	265.41	184.91	2.435	
15,350.00	10,225.00	15,476.40	10,385.00	98.52	98.30	110.81	-5,197.75	-470.14	450.32	263.72	186.60	2.413	
15,400.00	10,225.00	15,526.40	10,385.00	99.41	99.19	110.81	-5,247.66	-473.23	450.32	262.03	188.28	2.392	
15,450.00	10,225.00	15,576.40	10,385.00	100.31	100.08	110.81	-5,297.56	-476.32	450.32	260.34	189.97	2.370	
15,500.00	10,225.00	15,626.40	10,385.00	101.20	100.98	110.81	-5,347.47	-479.41	450.31	258.65	191.66	2.350	
15,550.00	10,225.00	15,676.40	10,385.00	102.10	101.87	110.81	-5,397.37	-482.50	450.31	256.96	193.35	2.329	
15,600.00	10,225.00	15,726.40	10,385.00	102.99	102.77	110.81	-5,447.27	-485.59	450.31	255.27	195.04	2.309	
15,650.00	10,225.00	15,776.40	10,385.00	103.89	103.66	110.81	-5,497.18	-488.68	450.31	253.58	196.73	2.289	
15,700.00	10,225.00	15,826.40	10,385.00	104.79	104.56	110.81	-5,547.08	-491.77	450.31	251.89	198.42	2.269	
15,750.00	10,225.00	15,876.40	10,385.00	105.68	105.46	110.81	-5,596.99	-494.86	450.31	250.19	200.12	2.250	
15,800.00	10,225.00	15,926.40	10,385.00	106.58	106.35	110.81	-5,646.89	-497.95	450.31	248.50	201.81	2.231	
15,850.00	10,225.00	15,976.40	10,385.00	107.48	107.25	110.81	-5,696.80	-501.04	450.31	246.80	203.50	2.213	
15,900.00	10,225.00	16,026.40	10,385.00	108.38	108.15	110.81	-5,746.70	-504.13	450.30	245.11	205.20	2.194	
15,950.00	10,225.00	16,076.40	10,385.00	109.27	109.04	110.81	-5,796.61	-507.22	450.30	243.41	206.89	2.176	
16,000.00	10,225.00	16,126.40	10,385.00	110.17	109.94	110.81	-5,846.51	-510.31	450.30	241.71	208.59	2.159	
16,050.00	10,225.00	16,176.40	10,385.00	111.07	110.84	110.81	-5,896.41	-513.40	450.30	240.01	210.29	2.141	
16,100.00	10,225.00	16,226.40	10,385.00	111.97	111.74	110.81	-5,946.32	-516.49	450.30	238.31	211.98	2.124	
16,150.00	10,225.00	16,276.40	10,385.00	112.87	112.64	110.81	-5,996.22	-519.58	450.30	236.62	213.68	2.107	
16,200.00	10,225.00	16,326.40	10,385.00	113.77	113.54	110.81	-6,046.13	-522.67	450.30	234.92	215.38	2.091	
16,250.00	10,225.00	16,376.40	10,385.00	114.67	114.44	110.81	-6,096.03	-525.76	450.29	233.21	217.08	2.074	
16,300.00	10,225.00	16,426.40	10,385.00	115.57	115.34	110.81	-6,145.94	-528.85	450.29	231.51	218.78	2.058	
16,350.00	10,225.00	16,476.40	10,385.00	116.47	116.24	110.81	-6,195.84	-531.94	450.29	229.81	220.48	2.042	
16,400.00	10,225.00	16,526.40	10,385.00	117.37	117.14	110.81	-6,245.75	-535.03	450.29	228.11	222.18	2.027	
16,450.00	10,225.00	16,576.40	10,385.00	118.27	118.04	110.81	-6,295.65	-538.12	450.29	226.41	223.88	2.011	
16,500.00	10,225.00	16,626.40	10,385.00	119.17	118.94	110.81	-6,345.55	-541.21	450.29	224.70	225.59	1.996	
16,550.00	10,225.00	16,676.40	10,385.00	120.07	119.84	110.81	-6,395.46	-544.30	450.29	223.00	227.29	1.981	
16,600.00	10,225.00	16,726.40	10,385.00	120.98	120.74	110.81	-6,445.36	-547.39	450.29	221.29	228.99	1.966	
16,650.00	10,225.00	16,776.40	10,385.00	121.88	121.64	110.81	-6,495.27	-550.48	450.28	219.59	230.69	1.952	
16,700.00	10,225.00	16,826.40	10,385.00	122.78	122.54	110.81	-6,545.17	-553.57	450.28	217.88	232.40	1.938	
16,750.00	10,225.00	16,876.40	10,385.00	123.68	123.45	110.81	-6,595.08	-556.66	450.28	216.18	234.10	1.923	
16,800.00	10,225.00	16,926.40	10,385.00	124.59	124.35	110.81	-6,644.98	-559.75	450.28	214.47	235.81	1.910	
16,850.00	10,225.00	16,976.40	10,385.00	125.49	125.25	110.81	-6,694.88	-562.84	450.28	212.76	237.51	1.896	
16,900.00	10,225.00	17,026.40	10,385.00	126.39	126.15	110.81	-6,744.79	-565.93	450.28	211.06	239.22	1.882	
16,950.00	10,225.00	17,076.40	10,385.00	127.30	127.06	110.81	-6,794.69	-569.02	450.28	209.35	240.93	1.869	
17,000.00	10,225.00	17,126.40	10,385.00	128.20	127.96	110.81	-6,844.60	-572.11	450.28	207.64	242.63	1.856	
17,017.32	10,225.00	17,143.72	10,385.00	128.51	128.27	110.81	-6,861.89	-573.18	450.27	207.05	243.22	1.851	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: XTO Energy Local Co-ordinate Reference: Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL

Project: Eddy County, NM (NAD27) NMEZ US TVD Reference: 2960+24 @ 2984.00usft (Hercules)

Reference Site: Ross Draw 25-36 Pad MD Reference: 2960+24 @ 2984.00usft (Hercules)

Site Error: 0.00 usft North Reference: Grid

Reference Well: ROSS DRAW 25-36 FED 103H Survey Calculation Method: Minimum Curvature

Well Error: 0.00 usft Output errors are at 2.00 sigma

Reference Wellbore: ROSS DRAW 25-36 FED 103H Database: TP_EDM

Reference Design: Plan #1 Offset TVD Reference: Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 72H - ROSS DRAW 25-36 FED 72H - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,450.00	3,450.00	3,450.00	3,450.00	7.62	7.62	-93.62	-3.80	-60.00	60.12	44.89	15.23	3.947	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-93.62	-3.80	-60.00	60.12	44.67	15.45	3.890	
3,550.00	3,550.00	3,550.00	3,550.00	7.84	7.84	-93.62	-3.80	-60.00	60.12	44.44	15.68	3.834	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-93.62	-3.80	-60.00	60.12	44.22	15.90	3.780	
3,650.00	3,650.00	3,650.00	3,650.00	8.06	8.06	-93.62	-3.80	-60.00	60.12	43.99	16.13	3.727	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	-93.62	-3.80	-60.00	60.12	43.77	16.35	3.676	
3,750.00	3,750.00	3,750.00	3,750.00	8.29	8.29	-93.62	-3.80	-60.00	60.12	43.54	16.58	3.626	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-93.62	-3.80	-60.00	60.12	43.32	16.80	3.578	
3,850.00	3,850.00	3,850.00	3,850.00	8.51	8.51	-93.62	-3.80	-60.00	60.12	43.09	17.03	3.531	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	-93.62	-3.80	-60.00	60.12	42.87	17.25	3.485	
3,950.00	3,950.00	3,950.00	3,950.00	8.74	8.74	-93.62	-3.80	-60.00	60.12	42.64	17.48	3.440	
4,000.00	4,000.00	4,000.00	4,000.00	8.85	8.85	-93.62	-3.80	-60.00	60.12	42.42	17.70	3.396	
4,050.00	4,050.00	4,050.00	4,050.00	8.96	8.96	-93.62	-3.80	-60.00	60.12	42.19	17.93	3.354	
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	-93.62	-3.80	-60.00	60.12	41.97	18.15	3.312	
4,150.00	4,150.00	4,150.00	4,150.00	9.19	9.19	-93.62	-3.80	-60.00	60.12	41.74	18.38	3.272	
4,200.00	4,200.00	4,200.00	4,200.00	9.30	9.30	-93.62	-3.80	-60.00	60.12	41.52	18.60	3.232	
4,250.00	4,250.00	4,250.00	4,250.00	9.41	9.41	-93.62	-3.80	-60.00	60.12	41.29	18.83	3.193	
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	-93.62	-3.80	-60.00	60.12	41.07	19.05	3.156	
4,350.00	4,350.00	4,350.00	4,350.00	9.64	9.64	-93.62	-3.80	-60.00	60.12	40.84	19.28	3.119	
4,400.00	4,400.00	4,400.00	4,400.00	9.75	9.75	-93.62	-3.80	-60.00	60.12	40.62	19.50	3.083	
4,450.00	4,450.00	4,450.00	4,450.00	9.86	9.86	-93.62	-3.80	-60.00	60.12	40.39	19.73	3.048	
4,500.00	4,500.00	4,500.00	4,500.00	9.98	9.98	-93.62	-3.80	-60.00	60.12	40.17	19.95	3.014	
4,550.00	4,550.00	4,550.00	4,550.00	10.09	10.09	-93.62	-3.80	-60.00	60.12	39.95	20.17	2.980	
4,600.00	4,600.00	4,600.00	4,600.00	10.20	10.20	-93.62	-3.80	-60.00	60.12	39.72	20.40	2.947	
4,650.00	4,650.00	4,650.00	4,650.00	10.31	10.31	-93.62	-3.80	-60.00	60.12	39.50	20.62	2.915	
4,700.00	4,700.00	4,700.00	4,700.00	10.42	10.42	-93.62	-3.80	-60.00	60.12	39.27	20.85	2.884	
4,750.00	4,750.00	4,750.00	4,750.00	10.54	10.54	-93.62	-3.80	-60.00	60.12	39.05	21.07	2.853	
4,800.00	4,800.00	4,800.00	4,800.00	10.65	10.65	-93.62	-3.80	-60.00	60.12	38.82	21.30	2.823	
4,850.00	4,850.00	4,850.00	4,850.00	10.76	10.76	-93.62	-3.80	-60.00	60.12	38.60	21.52	2.793	
4,900.00	4,900.00	4,900.00	4,900.00	10.87	10.87	-93.62	-3.80	-60.00	60.12	38.37	21.75	2.764	
4,950.00	4,950.00	4,950.00	4,950.00	10.99	10.99	-93.62	-3.80	-60.00	60.12	38.15	21.97	2.736	
5,000.00	5,000.00	5,000.00	5,000.00	11.10	11.10	-93.62	-3.80	-60.00	60.12	37.92	22.20	2.708	
5,050.00	5,050.00	5,050.00	5,050.00	11.21	11.21	-93.62	-3.80	-60.00	60.12	37.70	22.42	2.681	
5,100.00	5,100.00	5,100.00	5,100.00	11.32	11.32	-93.62	-3.80	-60.00	60.12	37.47	22.65	2.655	
5,150.00	5,150.00	5,150.00	5,150.00	11.44	11.44	-93.62	-3.80	-60.00	60.12	37.25	22.87	2.629	
5,200.00	5,200.00	5,200.00	5,200.00	11.55	11.55	-93.62	-3.80	-60.00	60.12	37.02	23.10	2.603	
5,250.00	5,250.00	5,250.00	5,250.00	11.66	11.66	-93.62	-3.80	-60.00	60.12	36.80	23.32	2.578	
5,300.00	5,300.00	5,300.00	5,300.00	11.77	11.77	-93.62	-3.80	-60.00	60.12	36.57	23.55	2.553	
5,350.00	5,350.00	5,350.00	5,350.00	11.89	11.89	-93.62	-3.80	-60.00	60.12	36.35	23.77	2.529	
5,400.00	5,400.00	5,400.00	5,400.00	12.00	12.00	-93.62	-3.80	-60.00	60.12	36.12	24.00	2.505	
5,450.00	5,450.00	5,450.00	5,450.00	12.11	12.11	-93.62	-3.80	-60.00	60.12	35.90	24.22	2.482	
5,500.00	5,500.00	5,500.00	5,500.00	12.22	12.22	-93.62	-3.80	-60.00	60.12	35.67	24.45	2.459	
5,550.00	5,550.00	5,550.00	5,550.00	12.34	12.34	-93.62	-3.80	-60.00	60.12	35.45	24.67	2.437	
5,600.00	5,600.00	5,600.00	5,600.00	12.45	12.45	-93.62	-3.80	-60.00	60.12	35.23	24.90	2.415	
5,650.00	5,650.00	5,650.00	5,650.00	12.56	12.56	-93.62	-3.80	-60.00	60.12	35.00	25.12	2.393	
5,700.00	5,700.00	5,700.00	5,700.00	12.67	12.67	-93.62	-3.80	-60.00	60.12	34.78	25.34	2.372	
5,701.87	5,701.87	5,701.87	5,701.87	12.68	12.68	-93.62	-3.80	-60.00	60.12	34.77	25.35	2.371 CC	
5,750.00	5,750.00	5,749.82	5,749.82	12.78	12.78	-93.61	-3.79	-60.02	60.14	34.57	25.57	2.352 ES	
5,800.00	5,800.00	5,799.17	5,799.16	12.90	12.89	-93.35	-3.54	-60.45	60.56	34.77	25.79	2.349 SF	
5,850.00	5,850.00	5,848.49	5,848.48	13.01	13.00	-92.77	-2.97	-61.43	61.52	35.53	26.00	2.366	
5,900.00	5,900.00	5,897.78	5,897.73	13.12	13.10	-91.90	-2.09	-62.97	63.04	36.83	26.21	2.405	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well ROSS DRAW 25-36 FED 103H - Slot RD 25-36 FED 103H SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	2960+24 @ 2984.00usft (Hercules)
Reference Site:	Ross Draw 25-36 Pad	MD Reference:	2960+24 @ 2984.00usft (Hercules)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ROSS DRAW 25-36 FED 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ROSS DRAW 25-36 FED 103H	Database:	TP_EDM
Reference Design:	Plan #1	Offset TVD Reference:	Reference Datum

Offset Design Ross Draw 25-36 Pad - ROSS DRAW 25-36 FED 72H - ROSS DRAW 25-36 FED 72H - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,950.00	5,950.00	5,947.02	5,946.91	13.23	13.20	-90.78	-0.89	-65.05	65.12	38.71	26.42	2.465		
6,000.00	6,000.00	5,996.18	5,995.98	13.35	13.31	-89.47	0.63	-67.67	67.79	41.17	26.62	2.546		
6,050.00	6,050.00	6,045.26	6,044.92	13.46	13.42	-88.01	2.46	-70.83	71.06	44.23	26.83	2.649		
6,100.00	6,100.00	6,094.24	6,093.71	13.57	13.52	-86.47	4.59	-74.54	74.94	47.91	27.03	2.773		
6,150.00	6,150.00	6,143.23	6,142.46	13.68	13.63	-84.89	7.04	-78.77	79.45	52.22	27.23	2.918		
6,200.00	6,200.00	6,192.96	6,191.91	13.80	13.74	-83.40	9.64	-83.27	84.22	56.77	27.45	3.069		
6,250.00	6,250.00	6,242.68	6,241.37	13.91	13.85	-82.06	12.24	-87.78	89.04	61.38	27.66	3.219		
6,300.00	6,300.00	6,292.41	6,290.82	14.02	13.96	-80.87	14.84	-92.28	93.91	66.03	27.88	3.369		
6,350.00	6,350.00	6,342.13	6,340.27	14.13	14.07	-79.79	17.43	-96.78	98.82	70.72	28.09	3.517		
6,400.00	6,400.00	6,391.86	6,389.73	14.25	14.18	-140.81	20.03	-101.28	103.75	75.44	28.31	3.665		
6,450.00	6,450.00	6,441.56	6,439.16	14.35	14.29	-140.00	22.63	-105.78	109.01	80.49	28.52	3.822		
6,500.00	6,499.99	6,491.22	6,488.54	14.46	14.41	-139.47	25.23	-110.27	114.77	86.04	28.73	3.995		

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO ENERGY, INC
LEASE NO.:	NMNM35607
WELL NAME & NO.:	ROSS DRAW 25-35 FED COM 103H
SURFACE HOLE FOOTAGE:	170' FNL & 2161' FWL
BOTTOM HOLE FOOTAGE	200' FNL & 2433' FWL
LOCATION:	Section25; T26S; R29E NMP
COUNTY:	EDDY, NEW MEXICO

COA

All previous COAs still apply expect the following:

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

A. Hydrogen Sulfide

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **350** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength,

whichever is greater.

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

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

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

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

- ❖ 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 7 inch production casing is:

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

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

- Cement should tie-back 100' into the previous casing. Operator shall provide method of verification.

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. 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**.

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

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

393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days

from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 011519