

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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.**Carlsbad Field Office**
OC D Artesia5. Well Serial No.
98232

If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		7. If Unit or CA/Agreement, Name and/or No. 891000326X
2. Name of Operator BOPCO LP Contact: STEPHANIE RABADUE E-Mail: stephanie_rabadue@xtoenergy.com		8. Well Name and No. BIG EDDY UNIT D1 5 24H
3a. Address P O BOX 2760 MIDLAND, TX 79702	3b. Phone No. (include area code) Ph: 432-620-6714	9. API Well No. 30-015-43444-00-X1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 27 T20S R31E SWNE 2000FNL 1873FEL 32.324529 N Lat, 103.511447 W Lon		10. Field and Pool or Exploratory Area PARALLEL 98232
		11. County or Parish, State EDDY COUNTY, NM

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

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

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

BOPCO, L.P respectfully requests a change to the original APD for:

- Pool Name
- Drilling Program, including:
 - Casing & Cement Design
 - Directional Drill Survey
 - Mud Design
 - BOP / Choke Manifold
 - Updated Flex Hose Variance

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**NM OIL CONSERVATION
ARTESIA DISTRICT

A full updated drilling plan is attached along with all pertinent attachments and an updated C-102.

APR 27 2017

14. I hereby certify that the foregoing is true and correct. Electronic Submission #372983 verified by the BLM Well Information System For BOPCO LP, sent to the Carlsbad Committed to AFMSS for processing by MUSTAFA HAQUE on 04/17/2017 (17MH0036SE)		RECEIVED	
Name (Printed/Typed) STEPHANIE RABADUE	Title REGULATORY ANALYST		
Signature (Electronic Submission)	Date 04/17/2017		
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved By <u>MUSTAFA HAQUE</u>		Title <u>PETROLEUM ENGINEER</u>	Date <u>4/18/2017</u>
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.		BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE	
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.			

(Instructions on page 2)

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

Rev 7-11-17

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

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

APR 27 2017

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-016-43444	2 Well Name Big Eddy unit DI 5	3 Well Number 24H
4 Property Code 313598	5 Operator Name BOPCO L.P.	6 Elevation 3524'
7 GRID NO. 260737		

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
G	27	20S	31E		2000	NORTH	1873	EAST	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
H	25	20S	31E		1980	NORTH	200	EAST	EDDY

12 Dedicated Acres 400	13 Joint or Infill	14 Consolidation Code	15 Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

16 GEOGETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N: 562648.5 - E: 647697.7 LAT: 32.5459152° N LONG: 103.8540218° W FTP N: 562668.4 - E: 648582.6 LAT: 32.5459591° N LONG: 103.8511499° W LTP N: 562735.2 - E: 659805.0 LAT: 32.5459977° N LONG: 103.8147308° W ID N: 562735.8 - E: 659935.0 LAT: 32.5459977° N LONG: 103.8143091° W CORNER DATA NAD 27 GRID - NM EAST A: CALCULATED POINT N: 563326.0 - E: 646933.4 B: CALCULATED POINT N: 563326.0 - E: 649567.6 C: CALCULATED POINT N: 563365.3 - E: 654844.5 D: CALCULATED POINT N: 563391.4 - E: 660131.4 E: FOUND BRASS CAP "1943" N: 562066.5 - E: 660138.6 F: FOUND BRASS CAP "1943" N: 562041.0 - E: 654851.9 G: CALCULATED POINT N: 562003.9 - E: 649572.9 H: CALCULATED POINT N: 562004.0 - E: 646936.8				GEOGETIC DATA NAD 83 GRID - NM EAST SURFACE LOCATION N: 562710.3 - E: 688878.3 LAT: 32.5460361° N LONG: 103.8545199° W FTP N: 562730.2 - E: 689763.2 LAT: 32.5460800° N LONG: 103.8516479° W LTP N: 562797.0 - E: 700985.6 LAT: 32.5461188° N LONG: 103.8152280° W ID N: 562797.7 - E: 701115.6 LAT: 32.5461189° N LONG: 103.8148062° W CORNER DATA NAD 83 GRID - NM EAST A: CALCULATED POINT N: 563387.8 - E: 688114.0 B: CALCULATED POINT N: 563387.8 - E: 690748.2 C: CALCULATED POINT N: 563427.4 - E: 696025.1 D: CALCULATED POINT N: 563453.3 - E: 701312.0 E: FOUND BRASS CAP "1943" N: 562128.3 - E: 701319.2 F: FOUND BRASS CAP "1943" N: 562102.8 - E: 696032.5 G: CALCULATED POINT N: 562065.7 - E: 690753.5 H: CALCULATED POINT N: 562065.8 - E: 688117.5			
17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: Stephanie Rabadue Date: 4-14-17 Printed Name: Stephanie Rabadue E-mail Address: stephanie-rabadue@xtoenergy.com				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. Date of Survey: 4-10-2017 Signature and Seal of Professional Surveyor: Robert M. Howett Certificate Number: 19680			

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

XTO Energy Inc.
Big Eddy Unit DI5 24H (SUNDRY)
Projected TD: 21403' MD / 9483' TVD
SHL: 2000' FNL & 1873' FEL, SECTION 27, T20S, R31E
BHL: 2180' FSL & 330' FEL, SECTION 25, T20S, R31E
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	660'	Water
Top of Salt	929'	
Base of Salt	2445'	
Capitan	2844'	
Delaware	3924'	
Brushy Canyon	5869'	Water/Oil/Gas
Bone Spring	7485'	Water/Oil/Gas
1 st Bone Spring Ss	8709'	Water/Oil/Gas
2 nd Bone Spring Lm	9100'	Water/Oil/Gas
2 nd Bone Spring Ss	9237'	Water/Oil/Gas
Target/Land Curve	9483'	Water/Oil/Gas
3 rd Bone Spring Lm	9762'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Estimated groundwater depth 660'.

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 16" casing @ 849' and circulating cement back to surface. The salt will be isolated by setting 13-3/8" casing at 2854' and circulating cement to surface. A 12-1/4" hole will be drilled to 3500' TVD where 9-5/8" casing will be set and cemented back to surface to isolate the capitan reef. An 8-3/4" hole will be drilled to TD of the pilot hole (9812' TVD). Once plugged back, an 8-3/4" curve and an 8-1/2" lateral hole will be drilled to MD/TD and 5-1/2" casing will be set at TD and cemented back to surface.

3. CASING PROGRAM:

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
18-1/8"	0' – 849'	16"	84#	BTC	J-55	New	7.67	3.63	18.59
14-3/4"	0' – 2854'	13-3/8"	68#	STC	HCL-80	New	2.28	2.17	3.48
12-1/4"	0' – 3500'	9-5/8"	40#	LTC	J-55	New	4.21	2.74	3.71
8-3/4" x 8-1/2"	0' – 21403'	5-1/2"	17#	BTC	P-110	New	1.12	1.65	2.31

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

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

WELLHEAD:

Temporary Wellhead

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

Permanent Wellhead – GE RSH Multibowl System

- A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
- B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
 - Wellhead will be installed by manufacturer's representatives.
 - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
 - Manufacturer will witness installation of test plug for initial test.
 - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

CEMENT PROGRAM:

- A. **Surface Casing:** 16", 84#, NEW J-55, BTC casing to be set at $\pm 849'$.

Lead: 20 bbls FW, then 164 sx ExtendaCem-CZ (mixed at 12.8 ppg, 1.68 ft³/sk, 8.72 gal/sx wtr)

Tail: 293 sx HalCem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sk, 6.39 gal/sx wtr)
 ***All volumes 100% excess in open hole. Cement to surface.

- B. **1st Intermediate Casing:** 13-3/8", 68#, NEW HCL-80, STC casing to be set at $\pm 2854'$.

Lead: 20 bbls FW, then 528 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft³/sk, 9.61 gal/sx wtr)

Tail: 158 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft³/sk, 6.34 gal/sx wtr)
 ***All volumes 100% excess in open hole. Cement to surface.

- C. **2nd Intermediate Casing:** 9-5/8", 40#, NEW J-55, LTC casing to be set at $\pm 3500'$.

1st Stage:

Lead: 20 bbls FW, then 30 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft³/sk, 9.61 gal/sx wtr)

Tail: 235 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft³/sk, 6.34 gal/sx wtr)
 ***All volumes 100% excess in open hole. Cement to DV Tool/ECP (2915').

2nd Stage:

Lead: 20 bbls FW, then 804 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft³/sk, 9.61 gal/sx wtr)

Tail: 235 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft³/sk, 6.34 gal/sx wtr)
 ***All volumes 100% excess in open hole. Cement to Surface.

D. **Pilot Hole:** 500 sxs 14.8 ppg Class H

E. **Production Casing:** 5-1/2", 17#, NEW P-110, BTC casing to be set at $\pm 21403'$. Casing will be cemented to surface.

Low Cement
- SEE COA

Lead: 20 bbls FW, then 1025 sx Tuned Light + 0.5 lbm/sk CFR-3 + 1.5 lbm/sk salt + 0.1% HR601 (mixed at 10.5 ppg, 2.69 ft³/sk, 12.26 gal/sx wtr)

Tail: 2301 sx VersaCem PBHS2 + 0.5% LAP-1 + 0.25 lbm/sk D-air 5000 + 0.2% HR 601 + 0.4% CFR-3 + 1 pps Salt (mixed at 13.2 ppg, 1.61 ft³/sk, 8.38 gal/sx wtr)

***All volumes 30% excess in open hole. Cement to surface.

F. PRESSURE CONTROL EQUIPMENT: - SEE COA

The blow out preventer equipment (BOP) for the temporary wellhead consists of a 21-1/4" minimum 2M Hydril. MASP should not exceed 886 psi. 2M diagram attached.

The blow out preventer equipment (BOP) for the permanent wellhead consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M Double Ram BOP. MASP should not exceed 2535 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 3000psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

Because the 9-5/8" casing will be run with a mandrel hanger through the 13-3/8" BOP without breaking any connections, no additional pressure test would be required.

SEE
COA

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.

G. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 849'	18-1/8"	FW/Native	8.4 - 8.8	35 - 40	NC
849' to 2854'	14-3/4"	Brine/Gel Sweeps	9.8 - 10.2	30 - 32	NC
2854' to 3500'	12-1/4"	FW / Cut Brine / Poly-Sweeps	8.6 - 9.3	29 - 32	NC
3500' to 9891'	8-3/4"	Cut Brine	8.8 - 9.2	29 - 32	NC - 20
9891' to 21403'	8-1/2"	OBM	9.0 - 9.5	35 - 45	15 - 25

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

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

H. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- i. A Kelly cock will be in the drill string at all times.
- ii. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- iii. H2S monitors will be on location when drilling below the 18-5/8" casing.

I. LOGGING, CORING AND TESTING PROGRAM:

Mud Logger: Mud Logging Unit (2 man) on @ 2854'.
Catch 20' samples from 2854' to TD

Open hole logging to include Density/Neutron/Sonic/Spectral Gamma from TD of pilot hole to 2nd intermediate casing shoe.

J. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

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

K. 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.



Haque, Mustafa <mhaque@blm.gov>

Urgent Request; Sundry Approval for Rig Spud [BEU DI5 24H]**Farmer, Logan** <Logan_Farmer@xtoenergy.com>

Mon, Apr 17, 2017 at 3:30 PM

To: "Haque, Mustafa" <mhaque@blm.gov>

Cc: "Rabadue, Stephanie" <Stephanie_Rabadue@xtoenergy.com>

Yes, one single plug. Top of plug planned at 8,700'. 40% excess used (exact sacks is 488.8, but rounded up to 500).

Best,

Logan

Logan Farmer*Drilling Engineer* | Permian District

C: 432.234.9872 O: 432.620.4377

Logan_Farmer@xtoenergy.com

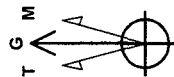
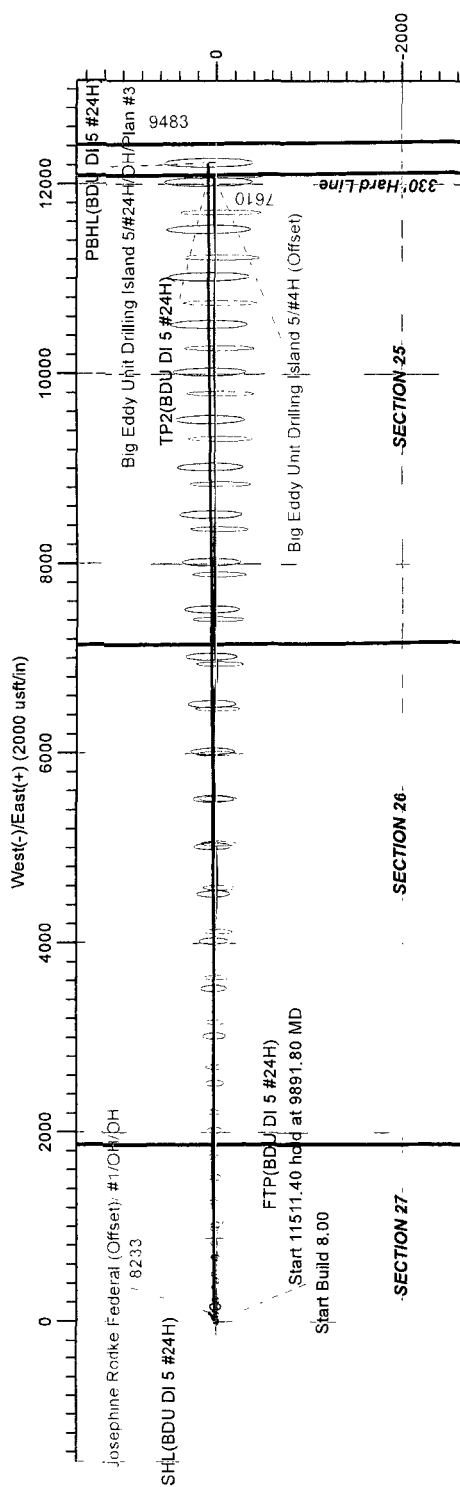
An **ExxonMobil** Subsidiary**From:** Haque, Mustafa [mailto:mhaque@blm.gov]**Sent:** Monday, April 17, 2017 4:21 PM

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XTO Energy, Inc.

Project: Eddy County, NM (NAD 27)
 Site: Big Eddy Unit Drilling Island 5
 Well: #24H
 Wellbore: OH
 Design: Plan #3



Azimuths to Grid North
 True North: -0.26°
 Magnetic North: 7.08°
 Magnetic Field
 Strength: 48367.2nT
 Dip Angle: 60.45°
 Date: 3/24/2017
 Model: HDGM

PROJECT DETAILS: Eddy County, NM (NAD 27)
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 Datum: GE 3523 + KB 30' @ 3553.00usft (Noram 25)

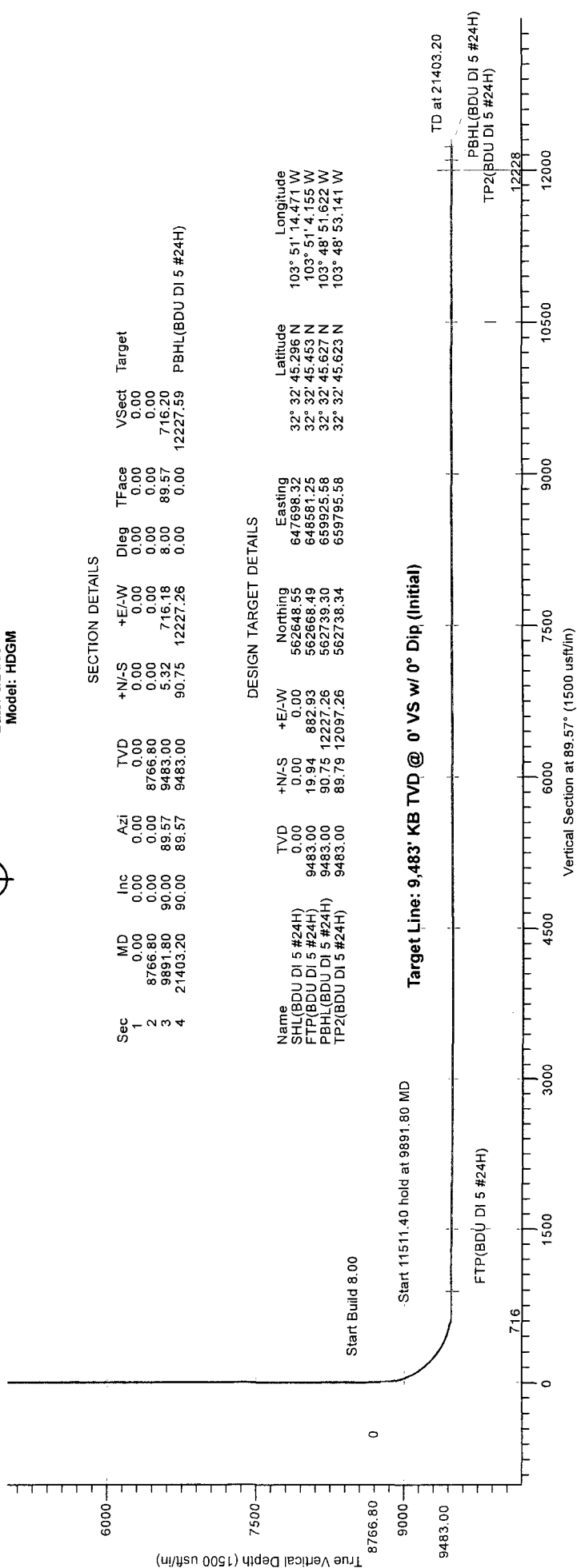
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8766.80	0.00	0.00	8766.80	0.00	0.00	0.00	0.00	0.00	
3	9891.80	90.00	89.57	9483.00	5.32	716.18	8.00	89.57	716.20	
4	21403.20	90.00	89.57	9483.00	90.75	12227.26	0.00	0.00	12227.59	PBHL(BDU DI 5 #24H)

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Nothing	Easting	Latitude	Longitude
SHL(BDU DI 5 #24H)	0.00	0.00	562648.55	647698.32	32° 32' 45.296 N	103° 51' 14.471 W
FTP(BDU DI 5 #24H)	19.94	882.93	562668.49	648581.25	32° 32' 45.453 N	103° 51' 4.155 W
PBHL(BDU DI 5 #24H)	90.75	12227.26	562739.30	658925.58	32° 32' 45.627 N	103° 48' 51.622 W
TP2(BDU DI 5 #24H)	89.79	12097.26	562738.34	659795.58	32° 32' 45.623 N	103° 48' 53.141 W

Target Line: 9,483' KB TVD @ 0° VS w/ 0° Dip (Initial)



LEAM DRILLING SERVICES
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #3 (#24H/OH)
 Big Eddy Unit Drilling Island 5
 Created By: David Vogler
 Date: 12-26, April 13 2017
 Approved: _____
 Date: _____



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Multi User DB
Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: Big Eddy Unit Drilling Island 5
Well: #24H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #24H
TVD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
MD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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

Site	Big Eddy Unit Drilling Island 5		
Site Position:		Northing:	562,648.55 usft
From:	Map	Easting:	647,698.32 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 32' 45.296 N
		Longitude:	103° 51' 14.471 W
		Grid Convergence:	0.26 °

Well	#24H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 32' 45.296 N
		Longitude:	103° 51' 14.471 W
		Ground Level:	3,523.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/24/2017			

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.57

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,766.80	0.00	0.00	8,766.80	0.00	0.00	0.00	0.00	0.00	0.00	
9,891.80	90.00	89.57	9,483.00	5.32	716.18	8.00	8.00	0.00	89.57	
21,403.20	90.00	89.57	9,483.00	90.75	12,227.26	0.00	0.00	0.00	0.00	PBHL(BDU DI 5 #24H



LEAM Drilling Systems LLC

Planning Report



Database: EDM 5000.1 Multi User DB
Company: XTO Energy, Inc.
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MD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	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



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Multi User DB
Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: Big Eddy Unit Drilling Island 5
Well: #24H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #24H
TVD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
MD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,766.80	0.00	0.00	8,766.80	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	2.66	89.57	8,799.99	0.01	0.77	0.77	8.00	8.00	0.00
8,850.00	6.66	89.57	8,849.81	0.04	4.83	4.83	8.00	8.00	0.00
8,900.00	10.66	89.57	8,899.23	0.09	12.35	12.35	8.00	8.00	0.00
8,950.00	14.66	89.57	8,948.01	0.17	23.30	23.30	8.00	8.00	0.00
9,000.00	18.66	89.57	8,995.90	0.28	37.63	37.63	8.00	8.00	0.00
9,050.00	22.66	89.57	9,042.68	0.41	55.26	55.26	8.00	8.00	0.00
9,100.00	26.66	89.57	9,088.11	0.56	76.12	76.12	8.00	8.00	0.00
9,150.00	30.66	89.57	9,131.98	0.74	100.09	100.09	8.00	8.00	0.00
9,200.00	34.66	89.57	9,174.06	0.94	127.06	127.07	8.00	8.00	0.00
9,250.00	38.66	89.57	9,214.17	1.16	156.91	156.91	8.00	8.00	0.00
9,300.00	42.66	89.57	9,252.09	1.41	189.47	189.48	8.00	8.00	0.00
9,350.00	46.66	89.57	9,287.65	1.67	224.61	224.61	8.00	8.00	0.00
9,400.00	50.66	89.57	9,320.67	1.95	262.14	262.14	8.00	8.00	0.00
9,450.00	54.66	89.57	9,351.00	2.24	301.88	301.89	8.00	8.00	0.00
9,500.00	58.66	89.57	9,378.48	2.55	343.64	343.65	8.00	8.00	0.00
9,550.00	62.66	89.57	9,402.97	2.87	387.21	387.22	8.00	8.00	0.00
9,600.00	66.66	89.57	9,424.37	3.21	432.39	432.40	8.00	8.00	0.00
9,650.00	70.66	89.57	9,442.57	3.55	478.95	478.96	8.00	8.00	0.00
9,700.00	74.66	89.57	9,457.47	3.91	526.66	526.68	8.00	8.00	0.00



LEAM Drilling Systems LLC
Planning Report



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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,750.00	78.66	89.57	9,469.01	4.27	575.30	575.32	8.00	8.00	0.00
9,800.00	82.66	89.57	9,477.12	4.64	624.63	624.65	8.00	8.00	0.00
9,850.00	86.66	89.57	9,481.78	5.01	674.40	674.42	8.00	8.00	0.00
9,891.80	90.00	89.57	9,483.00	5.32	716.18	716.20	8.00	8.00	0.00
9,900.00	90.00	89.57	9,483.00	5.38	724.37	724.39	0.00	0.00	0.00
10,000.00	90.00	89.57	9,483.00	6.12	824.37	824.39	0.00	0.00	0.00
10,100.00	90.00	89.57	9,483.00	6.86	924.37	924.39	0.00	0.00	0.00
10,200.00	90.00	89.57	9,483.00	7.60	1,024.37	1,024.39	0.00	0.00	0.00
10,300.00	90.00	89.57	9,483.00	8.35	1,124.36	1,124.39	0.00	0.00	0.00
10,400.00	90.00	89.57	9,483.00	9.09	1,224.36	1,224.39	0.00	0.00	0.00
10,500.00	90.00	89.57	9,483.00	9.83	1,324.36	1,324.39	0.00	0.00	0.00
10,600.00	90.00	89.57	9,483.00	10.57	1,424.36	1,424.39	0.00	0.00	0.00
10,700.00	90.00	89.57	9,483.00	11.31	1,524.35	1,524.39	0.00	0.00	0.00
10,800.00	90.00	89.57	9,483.00	12.06	1,624.35	1,624.39	0.00	0.00	0.00
10,900.00	90.00	89.57	9,483.00	12.80	1,724.35	1,724.39	0.00	0.00	0.00
11,000.00	90.00	89.57	9,483.00	13.54	1,824.34	1,824.39	0.00	0.00	0.00
11,100.00	90.00	89.57	9,483.00	14.28	1,924.34	1,924.39	0.00	0.00	0.00
11,200.00	90.00	89.57	9,483.00	15.03	2,024.34	2,024.39	0.00	0.00	0.00
11,300.00	90.00	89.57	9,483.00	15.77	2,124.34	2,124.39	0.00	0.00	0.00
11,400.00	90.00	89.57	9,483.00	16.51	2,224.33	2,224.39	0.00	0.00	0.00
11,500.00	90.00	89.57	9,483.00	17.25	2,324.33	2,324.39	0.00	0.00	0.00
11,600.00	90.00	89.57	9,483.00	17.99	2,424.33	2,424.39	0.00	0.00	0.00
11,700.00	90.00	89.57	9,483.00	18.74	2,524.33	2,524.39	0.00	0.00	0.00
11,800.00	90.00	89.57	9,483.00	19.48	2,624.32	2,624.39	0.00	0.00	0.00
11,900.00	90.00	89.57	9,483.00	20.22	2,724.32	2,724.39	0.00	0.00	0.00
12,000.00	90.00	89.57	9,483.00	20.96	2,824.32	2,824.39	0.00	0.00	0.00
12,100.00	90.00	89.57	9,483.00	21.71	2,924.31	2,924.39	0.00	0.00	0.00
12,200.00	90.00	89.57	9,483.00	22.45	3,024.31	3,024.39	0.00	0.00	0.00
12,300.00	90.00	89.57	9,483.00	23.19	3,124.31	3,124.39	0.00	0.00	0.00
12,400.00	90.00	89.57	9,483.00	23.93	3,224.31	3,224.39	0.00	0.00	0.00
12,500.00	90.00	89.57	9,483.00	24.67	3,324.30	3,324.39	0.00	0.00	0.00
12,600.00	90.00	89.57	9,483.00	25.42	3,424.30	3,424.39	0.00	0.00	0.00
12,700.00	90.00	89.57	9,483.00	26.16	3,524.30	3,524.39	0.00	0.00	0.00
12,800.00	90.00	89.57	9,483.00	26.90	3,624.29	3,624.39	0.00	0.00	0.00
12,900.00	90.00	89.57	9,483.00	27.64	3,724.29	3,724.39	0.00	0.00	0.00
13,000.00	90.00	89.57	9,483.00	28.39	3,824.29	3,824.39	0.00	0.00	0.00
13,100.00	90.00	89.57	9,483.00	29.13	3,924.29	3,924.39	0.00	0.00	0.00
13,200.00	90.00	89.57	9,483.00	29.87	4,024.28	4,024.39	0.00	0.00	0.00
13,300.00	90.00	89.57	9,483.00	30.61	4,124.28	4,124.39	0.00	0.00	0.00
13,400.00	90.00	89.57	9,483.00	31.35	4,224.28	4,224.39	0.00	0.00	0.00
13,500.00	90.00	89.57	9,483.00	32.10	4,324.28	4,324.39	0.00	0.00	0.00
13,600.00	90.00	89.57	9,483.00	32.84	4,424.27	4,424.39	0.00	0.00	0.00
13,700.00	90.00	89.57	9,483.00	33.58	4,524.27	4,524.39	0.00	0.00	0.00
13,800.00	90.00	89.57	9,483.00	34.32	4,624.27	4,624.39	0.00	0.00	0.00
13,900.00	90.00	89.57	9,483.00	35.07	4,724.26	4,724.39	0.00	0.00	0.00
14,000.00	90.00	89.57	9,483.00	35.81	4,824.26	4,824.39	0.00	0.00	0.00
14,100.00	90.00	89.57	9,483.00	36.55	4,924.26	4,924.39	0.00	0.00	0.00
14,200.00	90.00	89.57	9,483.00	37.29	5,024.26	5,024.39	0.00	0.00	0.00
14,300.00	90.00	89.57	9,483.00	38.03	5,124.25	5,124.39	0.00	0.00	0.00
14,400.00	90.00	89.57	9,483.00	38.78	5,224.25	5,224.39	0.00	0.00	0.00
14,500.00	90.00	89.57	9,483.00	39.52	5,324.25	5,324.39	0.00	0.00	0.00
14,600.00	90.00	89.57	9,483.00	40.26	5,424.25	5,424.39	0.00	0.00	0.00
14,700.00	90.00	89.57	9,483.00	41.00	5,524.24	5,524.39	0.00	0.00	0.00
14,800.00	90.00	89.57	9,483.00	41.74	5,624.24	5,624.39	0.00	0.00	0.00



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Design: Plan #3

Local Co-ordinate Reference: Well #24H
TVD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
MD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.00	90.00	89.57	9,483.00	42.49	5,724.24	5,724.39	0.00	0.00	0.00
15,000.00	90.00	89.57	9,483.00	43.23	5,824.23	5,824.39	0.00	0.00	0.00
15,100.00	90.00	89.57	9,483.00	43.97	5,924.23	5,924.39	0.00	0.00	0.00
15,200.00	90.00	89.57	9,483.00	44.71	6,024.23	6,024.39	0.00	0.00	0.00
15,300.00	90.00	89.57	9,483.00	45.46	6,124.23	6,124.39	0.00	0.00	0.00
15,400.00	90.00	89.57	9,483.00	46.20	6,224.22	6,224.39	0.00	0.00	0.00
15,500.00	90.00	89.57	9,483.00	46.94	6,324.22	6,324.39	0.00	0.00	0.00
15,600.00	90.00	89.57	9,483.00	47.68	6,424.22	6,424.39	0.00	0.00	0.00
15,700.00	90.00	89.57	9,483.00	48.42	6,524.21	6,524.39	0.00	0.00	0.00
15,800.00	90.00	89.57	9,483.00	49.17	6,624.21	6,624.39	0.00	0.00	0.00
15,900.00	90.00	89.57	9,483.00	49.91	6,724.21	6,724.39	0.00	0.00	0.00
16,000.00	90.00	89.57	9,483.00	50.65	6,824.21	6,824.39	0.00	0.00	0.00
16,100.00	90.00	89.57	9,483.00	51.39	6,924.20	6,924.39	0.00	0.00	0.00
16,200.00	90.00	89.57	9,483.00	52.14	7,024.20	7,024.39	0.00	0.00	0.00
16,300.00	90.00	89.57	9,483.00	52.88	7,124.20	7,124.39	0.00	0.00	0.00
16,400.00	90.00	89.57	9,483.00	53.62	7,224.20	7,224.39	0.00	0.00	0.00
16,500.00	90.00	89.57	9,483.00	54.36	7,324.19	7,324.39	0.00	0.00	0.00
16,600.00	90.00	89.57	9,483.00	55.10	7,424.19	7,424.39	0.00	0.00	0.00
16,700.00	90.00	89.57	9,483.00	55.85	7,524.19	7,524.39	0.00	0.00	0.00
16,800.00	90.00	89.57	9,483.00	56.59	7,624.18	7,624.39	0.00	0.00	0.00
16,900.00	90.00	89.57	9,483.00	57.33	7,724.18	7,724.39	0.00	0.00	0.00
17,000.00	90.00	89.57	9,483.00	58.07	7,824.18	7,824.39	0.00	0.00	0.00
17,100.00	90.00	89.57	9,483.00	58.82	7,924.18	7,924.39	0.00	0.00	0.00
17,200.00	90.00	89.57	9,483.00	59.56	8,024.17	8,024.39	0.00	0.00	0.00
17,300.00	90.00	89.57	9,483.00	60.30	8,124.17	8,124.39	0.00	0.00	0.00
17,400.00	90.00	89.57	9,483.00	61.04	8,224.17	8,224.39	0.00	0.00	0.00
17,500.00	90.00	89.57	9,483.00	61.78	8,324.17	8,324.39	0.00	0.00	0.00
17,600.00	90.00	89.57	9,483.00	62.53	8,424.16	8,424.39	0.00	0.00	0.00
17,700.00	90.00	89.57	9,483.00	63.27	8,524.16	8,524.39	0.00	0.00	0.00
17,800.00	90.00	89.57	9,483.00	64.01	8,624.16	8,624.39	0.00	0.00	0.00
17,900.00	90.00	89.57	9,483.00	64.75	8,724.15	8,724.39	0.00	0.00	0.00
18,000.00	90.00	89.57	9,483.00	65.50	8,824.15	8,824.39	0.00	0.00	0.00
18,100.00	90.00	89.57	9,483.00	66.24	8,924.15	8,924.39	0.00	0.00	0.00
18,200.00	90.00	89.57	9,483.00	66.98	9,024.15	9,024.39	0.00	0.00	0.00
18,300.00	90.00	89.57	9,483.00	67.72	9,124.14	9,124.39	0.00	0.00	0.00
18,400.00	90.00	89.57	9,483.00	68.46	9,224.14	9,224.39	0.00	0.00	0.00
18,500.00	90.00	89.57	9,483.00	69.21	9,324.14	9,324.39	0.00	0.00	0.00
18,600.00	90.00	89.57	9,483.00	69.95	9,424.14	9,424.39	0.00	0.00	0.00
18,700.00	90.00	89.57	9,483.00	70.69	9,524.13	9,524.39	0.00	0.00	0.00
18,800.00	90.00	89.57	9,483.00	71.43	9,624.13	9,624.39	0.00	0.00	0.00
18,900.00	90.00	89.57	9,483.00	72.18	9,724.13	9,724.39	0.00	0.00	0.00
19,000.00	90.00	89.57	9,483.00	72.92	9,824.12	9,824.39	0.00	0.00	0.00
19,100.00	90.00	89.57	9,483.00	73.66	9,924.12	9,924.39	0.00	0.00	0.00
19,200.00	90.00	89.57	9,483.00	74.40	10,024.12	10,024.39	0.00	0.00	0.00
19,300.00	90.00	89.57	9,483.00	75.14	10,124.12	10,124.39	0.00	0.00	0.00
19,400.00	90.00	89.57	9,483.00	75.89	10,224.11	10,224.39	0.00	0.00	0.00
19,500.00	90.00	89.57	9,483.00	76.63	10,324.11	10,324.39	0.00	0.00	0.00
19,600.00	90.00	89.57	9,483.00	77.37	10,424.11	10,424.39	0.00	0.00	0.00
19,700.00	90.00	89.57	9,483.00	78.11	10,524.10	10,524.39	0.00	0.00	0.00
19,800.00	90.00	89.57	9,483.00	78.86	10,624.10	10,624.39	0.00	0.00	0.00
19,900.00	90.00	89.57	9,483.00	79.60	10,724.10	10,724.39	0.00	0.00	0.00
20,000.00	90.00	89.57	9,483.00	80.34	10,824.10	10,824.39	0.00	0.00	0.00
20,100.00	90.00	89.57	9,483.00	81.08	10,924.09	10,924.39	0.00	0.00	0.00
20,200.00	90.00	89.57	9,483.00	81.82	11,024.09	11,024.39	0.00	0.00	0.00



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Multi User DB
Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: Big Eddy Unit Drilling Island 5
Well: #24H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #24H
TVD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
MD Reference: GE 3523' + KB 30' @ 3553.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

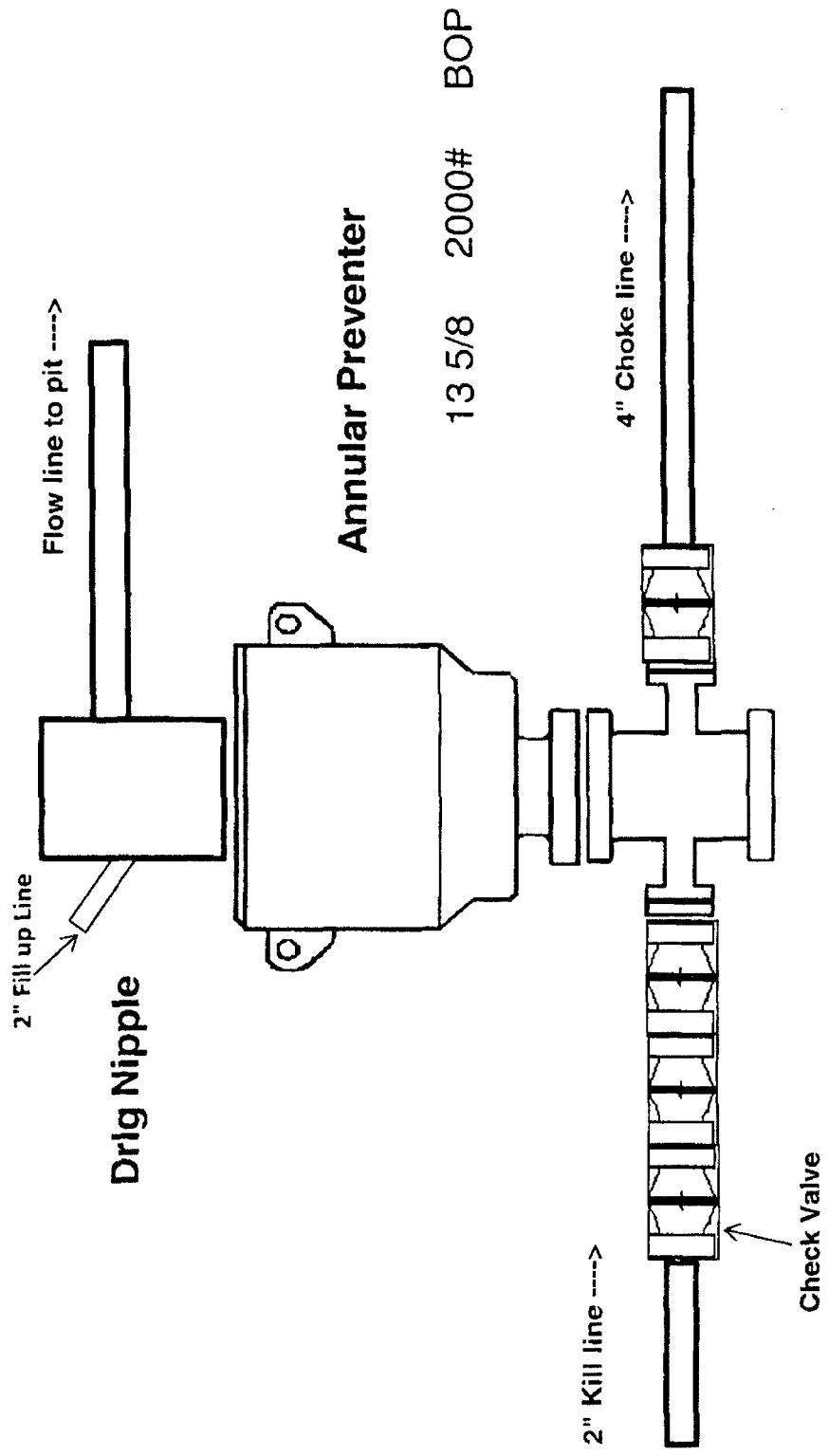
Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,300.00	90.00	89.57	9,483.00	82.57	11,124.09	11,124.39	0.00	0.00	0.00
20,400.00	90.00	89.57	9,483.00	83.31	11,224.09	11,224.39	0.00	0.00	0.00
20,500.00	90.00	89.57	9,483.00	84.05	11,324.08	11,324.39	0.00	0.00	0.00
20,600.00	90.00	89.57	9,483.00	84.79	11,424.08	11,424.39	0.00	0.00	0.00
20,700.00	90.00	89.57	9,483.00	85.54	11,524.08	11,524.39	0.00	0.00	0.00
20,800.00	90.00	89.57	9,483.00	86.28	11,624.07	11,624.39	0.00	0.00	0.00
20,900.00	90.00	89.57	9,483.00	87.02	11,724.07	11,724.39	0.00	0.00	0.00
21,000.00	90.00	89.57	9,483.00	87.76	11,824.07	11,824.39	0.00	0.00	0.00
21,100.00	90.00	89.57	9,483.00	88.50	11,924.07	11,924.39	0.00	0.00	0.00
21,200.00	90.00	89.57	9,483.00	89.25	12,024.06	12,024.39	0.00	0.00	0.00
21,300.00	90.00	89.57	9,483.00	89.99	12,124.06	12,124.39	0.00	0.00	0.00
21,403.20	90.00	89.57	9,483.00	90.75	12,227.26	12,227.59	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL(BDU DI 5 #24H) - plan hits target center - Point	0.00	0.01	0.00	0.00	0.00	562,648.55	647,698.32	32° 32' 45.296 N	103° 51' 14.471 W
PBHL(BDU DI 5 #24H) - plan hits target center - Point	0.00	0.01	9,483.00	90.75	12,227.26	562,739.31	659,925.58	32° 32' 45.627 N	103° 48' 51.622 W
FTP(BDU DI 5 #24H) - plan misses target center by 13.38usft at 10058.66usft MD (9483.00 TVD, 6.55 N, 883.03 E) - Point	0.00	0.01	9,483.00	19.94	882.93	562,668.49	648,581.25	32° 32' 45.453 N	103° 51' 4.155 W
TP2(BDU DI 5 #24H) - plan hits target center - Point	0.00	0.01	9,483.00	89.79	12,097.26	562,738.34	659,795.58	32° 32' 45.623 N	103° 48' 53.141 W

2,000 psi BOP Schematic



Fill Line

Flowline

3000# (3M)
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

Drilling Spool

Kill Line

2" Minimum Kill Line

Kill Line Valve
(Minimum)

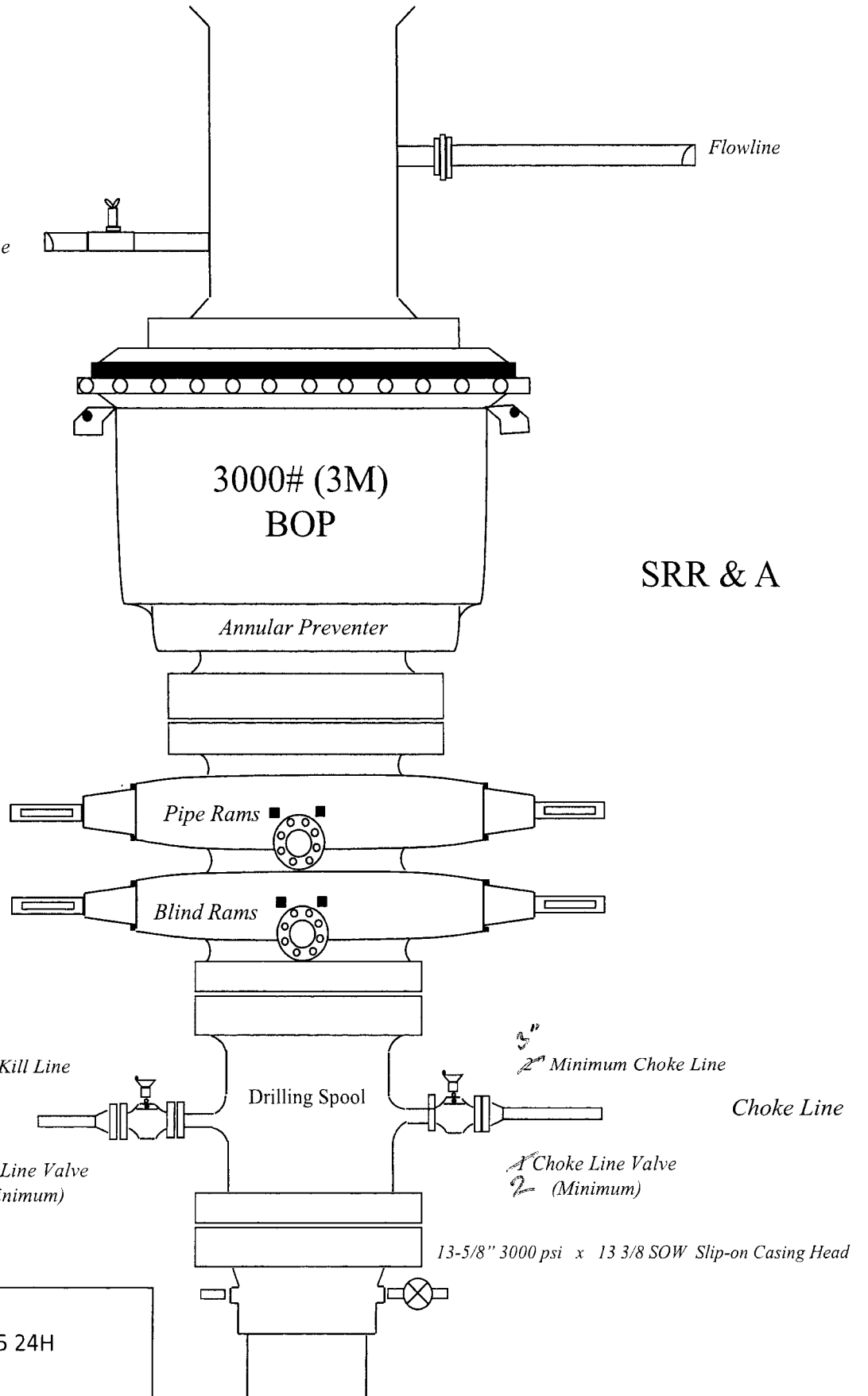
3" Minimum Choke Line

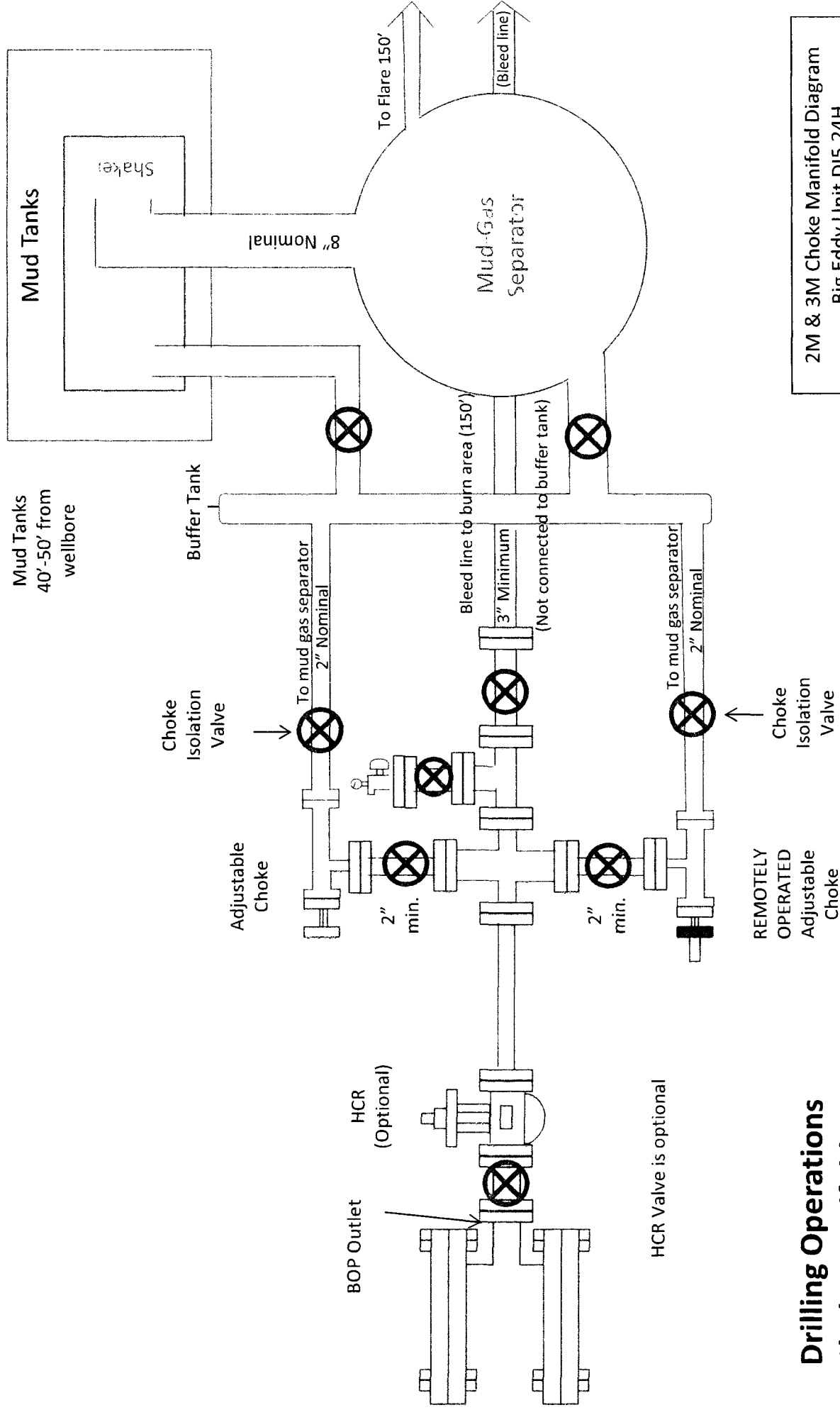
Choke Line

Choke Line Valve
(Minimum)

13-5/8" 3000 psi x 13 3/8 SOW Slip-on Casing Head

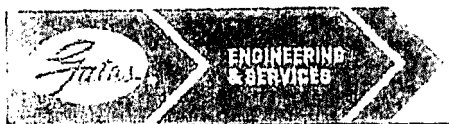
3000# BOP
Big Eddy Unit DI5 24H
BOPCO, LP





2M & 3M Choke Manifold Diagram
Big Eddy Unit DI5 24H
BOPCO, LP

Drilling Operations
Choke Manifold
2M & 3M Service



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

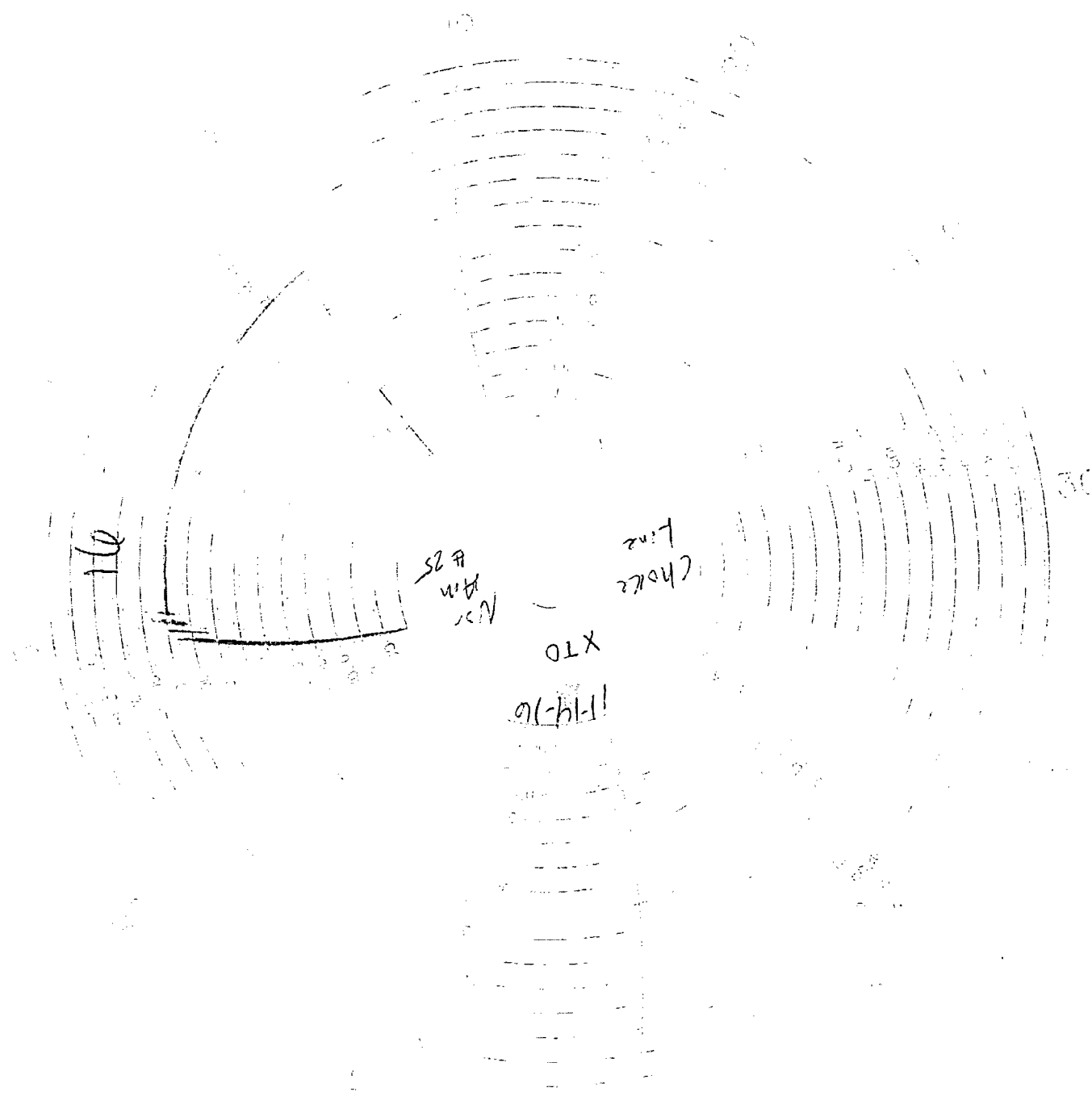
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe@s@gates.com
WEB: www.gates.com

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:	NORI-4A
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. :	4774-0001	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 :	



1740 82473 4/16 514915

[illegible][illegible]

STATE OF NEW YORK
IN SENATE
January 10, 1906.
REPORT
OF THE
COMMISSIONERS OF THE LAND OFFICE,
IN ANSWER TO A RESOLUTION PASSED BY THE SENATE
MAY 17, 1894.

TEST PRESSURE 7.500

TEST DATE 6/24/74

1000

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO
LEASE NO.:	LC065914A
WELL NAME & NO.:	24H Big Eddy Unit D15
SURFACE HOLE FOOTAGE:	2000' FNL & 1873' FEL
BOTTOM HOLE FOOTAGE	2310' FSL & 330' FEL, Sec 25
LOCATION:	Section 27, T.20 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

All previous COAs still apply except for the following:

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

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

Wait on cement (WOC) for 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.

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

Secretary's Potash

Capitan Reef

Possibility of water flows in the Artesia Group, Salado, and Capitan Reef.

Possibility of lost circulation in the Artesia Group, Rustler, Capitan Reef, and Delaware.

**Approved to drill pilot hole to 9812' TVD, the operator shall not drill deeper than this depth without prior approval from the BLM CFO geology/engineer staff.
Submit daily mudlog report via email to the BLM geologist (James Rutley at**

jrutley@blm.gov or Robert “Zeke” Salaz at rsalaz@blm.gov) beginning at the top of the Bone Spring Lime until the TD of the pilot hole is reached.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200’ in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug tops on subsequent drilling report.

1. The minimum required fill of cement behind the 5 1/2 inch production casing is:
 - ☒ Cement should tie-back at least 50 feet above the top of Capitan Reef, which is approximately 2794 feet. Operator shall provide method of verification.
Excess calculates to 19% - Additional cement might be required.
4. 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.

A. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer’s requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man’s trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 16 inch surface casing shoe shall be **2000 (2M) psi. In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch second intermediate casing shoe shall be **3000 (3M)** psi.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

MHH 04182017