

**Carlsbad Field Office**  
**QCD Artesia**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**APPLICATION FOR PERMIT TO DRILL OR REENTER**FORM APPROVED  
OMB No. 1004-0137  
Expires July 31, 2010

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SHL:NMNM041646/BHL:NMNM035607
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator XTO Energy, Incorporated		7. If Unit or CA Agreement, Name and No.
3a. Address 500 W. Illinois St. Ste 100 Midland, Texas 79701	3b. Phone No. (include area code) 432-620-6714	8. Lease Name and Well No. Ross Draw 25 #2H
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 170'FNL & 380'FWL At proposed prod. zone 170 S 870'FNL & 380'FWL		9. API Well No. 30-015-43472
14. Distance in miles and direction from nearest town or post office*		10. Field and Pool, or Exploratory WC-015 G-07 S262925D; Upr Wlfcamp
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 170'	16. No. of acres in lease SHL: 80 Acres BHL: 369.5 Acres	11. Sec., T. R. M. or Blk. and Survey or Area D-25-T26S-R29E
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1781' (Nearest Applied for: Ross Draw 25 #3H)	19. Proposed Depth TVD: 10,374' MD: 15,133'	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2927'	22. Approximate date work will start* ASAP	13. State NM
17. Spacing Unit dedicated to this well 160		
20. BLM/BIA Bond No. on file UTB000138		
23. Estimated duration 45 Days		
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature <i>Stephanie Rabadue</i>	Name (Printed/Typed) Stephanie Rabadue	Date 12/07/2014
Title Regulatory Analyst		
Approved by (Signature) <b>Steve Caffey</b>	Name (Printed/Typed)	Date NOV 23 2015
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE

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

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

(Continued on page 2)

\*(Instructions on page 2)

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

NOV 30 2015

RECEIVED

SEE ATTACHED FOR  
CONDITIONS OF APPROVALApproval Subject to General Requirements  
& Special Stipulations Attached

Carlsbad Controlled Water Basin



Certification

November 20, 2014

Stephanie Rabadue  
XTO Energy Inc.  
500 W. Illinois St Ste 100  
Midland, TX 79701  
432-620-6714  
stephanie\_rabadue@xtoenergy.com

Bureau of Land Management  
620 E. Greene  
Carlsbad, NM 88220  
575-234-5972

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with this APD package and terms and conditions under which it is approved. I also certify that I, or XTO Energy, Inc., am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 20<sup>th</sup> day of November, 2014.

Thank you,

A handwritten signature in cursive script that reads 'Stephanie Rabadue'.

Stephanie Rabadue  
Regulatory Analyst

**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, New Mexico 87505

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

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>30-015-43472</b>	Pool Code <b>98106</b>	Pool Name <b>WCL-015 6-07 52429350; upper</b>
Property Code <b>315688</b>	Property Name <b>ROSS DRAW 25</b>	
OGRID No. <b>006380</b>	Operator Name <b>XTO ENERGY</b>	Well Number <b>2H</b>
		Elevation <b>2927'</b>

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>D</b>	<b>25</b>	<b>26-S</b>	<b>29-E</b>		<b>170</b>	<b>NORTH</b>	<b>380</b>	<b>WEST</b>	<b>EDDY</b>

**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
<b>M</b>	<b>25</b>	<b>26-S</b>	<b>29-E</b>		<b>170</b>	<b>SOUTH</b>	<b>380</b>	<b>WEST</b>	<b>EDDY</b>

Dedicated Acres <b>160</b>	Joint or Infill	Consolidation Code	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

**OPERATOR CERTIFICATION**

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Stephanie Rabodue* 11-30-14  
Signature Date

*Stephanie Rabodue*  
Printed Name

*stephanie\_rabodue@xtoenergy.com*  
E-mail Address

**SURVEYOR CERTIFICATION**

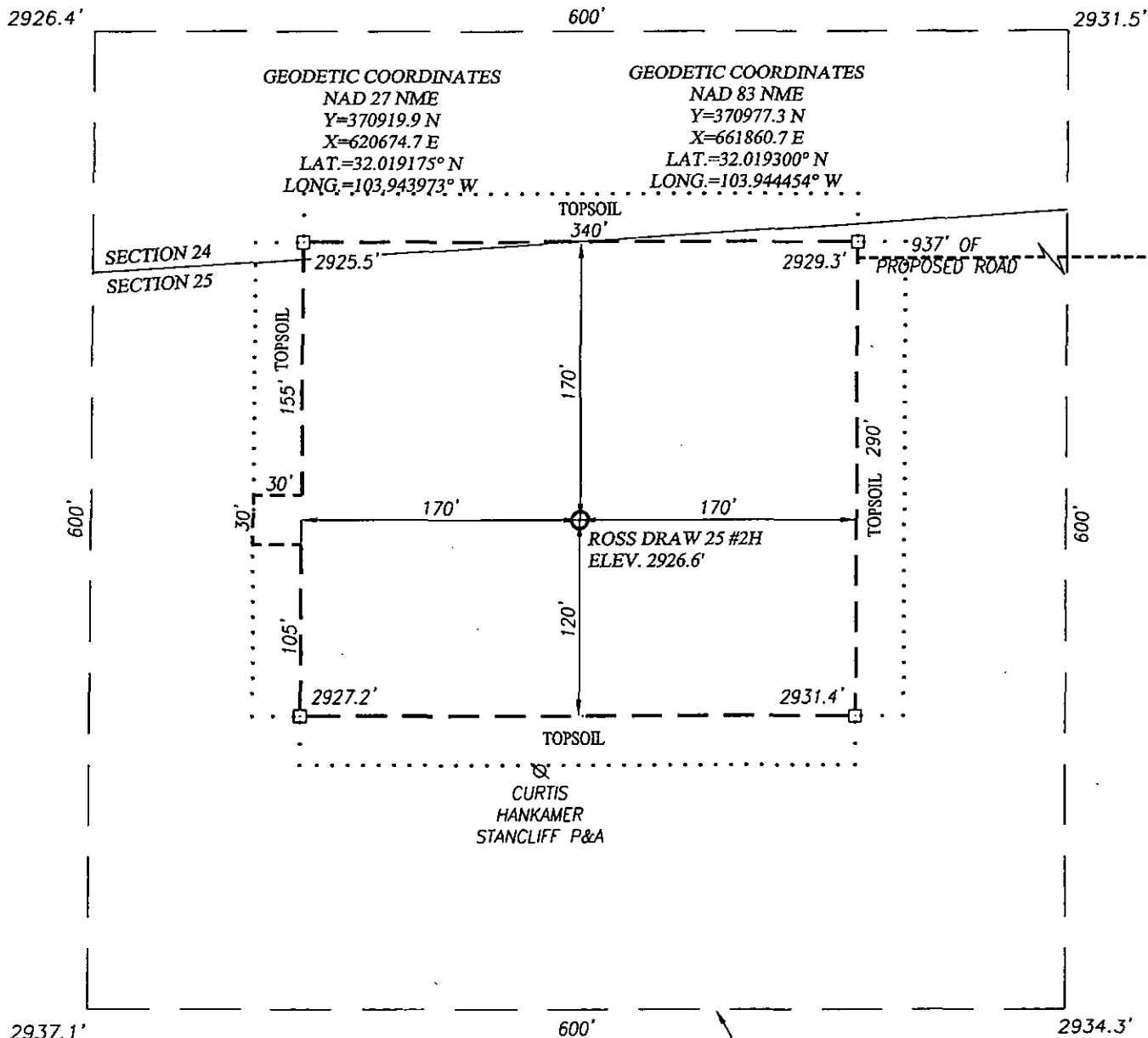
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

**MAY 6, 2014**

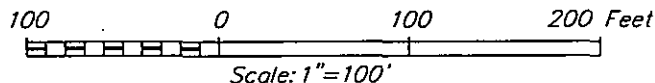
Date of Survey

Signature & Seal of Professional Surveyor:  
*Ronald J. Eidson* 05/20/2014  
Certificate Number 3239  
Gary C. Eidson 12641  
Ronald J. Eidson 3239

ACK JWSC W.O.: 14.11.0439



NOTE:  
 1) SEE "LOCATION VERIFICATION MAP"  
 FOR PROPOSED ROAD LOCATION.



DIRECTIONS TO ROSS DRAW 25 #2:

FROM THE INTERSECTION OF US HWY. 285 AND CO. RD. #725  
 (LONGHORN ROAD), FOLLOW MEANDERING CO. RD. #725  
 APPROX. 10.2 MILES. TURN RIGHT AND GO SOUTH APPROX. 0.9  
 MILES TO PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY  
 WEST APPROX. 937 FEET TO THE LOCATION.

**XTO ENERGY**

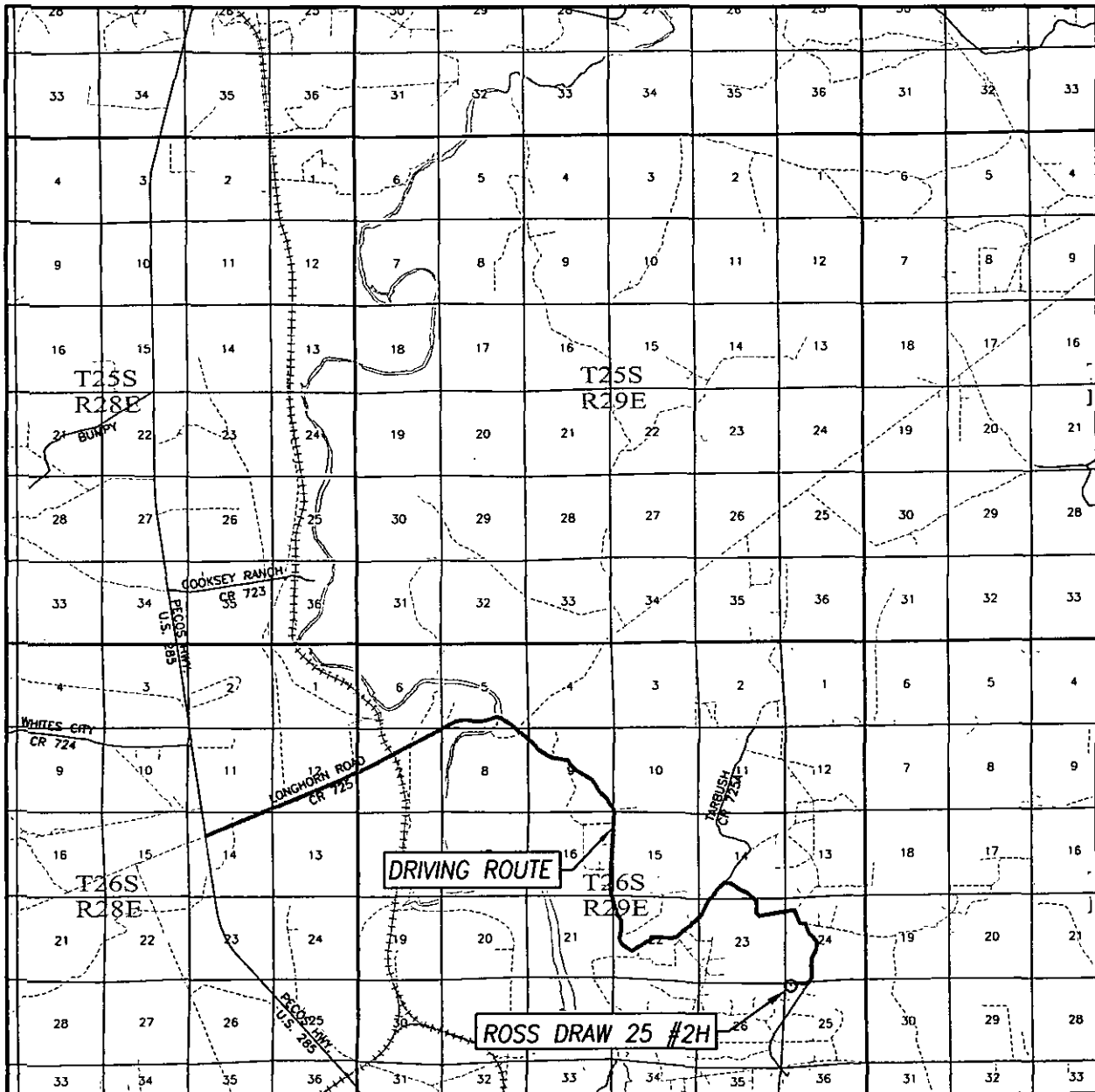
**ROSS DRAW 25 #2H WELL**  
 LOCATED 170 FEET FROM THE NORTH LINE  
 AND 380 FEET FROM THE WEST LINE OF SECTION 25,  
 TOWNSHIP 26 SOUTH, RANGE 29 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO



PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000

Survey Date: 5/6/14	CAD Date: 5/19/14	Drawn By: ACK
W.O. No.: 14110439	Rev: .	Rel. W.O.: Sheet 1 of 1

# VICINITY MAP



SCALE: 1" = 2 MILES  
DRIVING ROUTE: SEE LOCATION VERIFICATION MAP

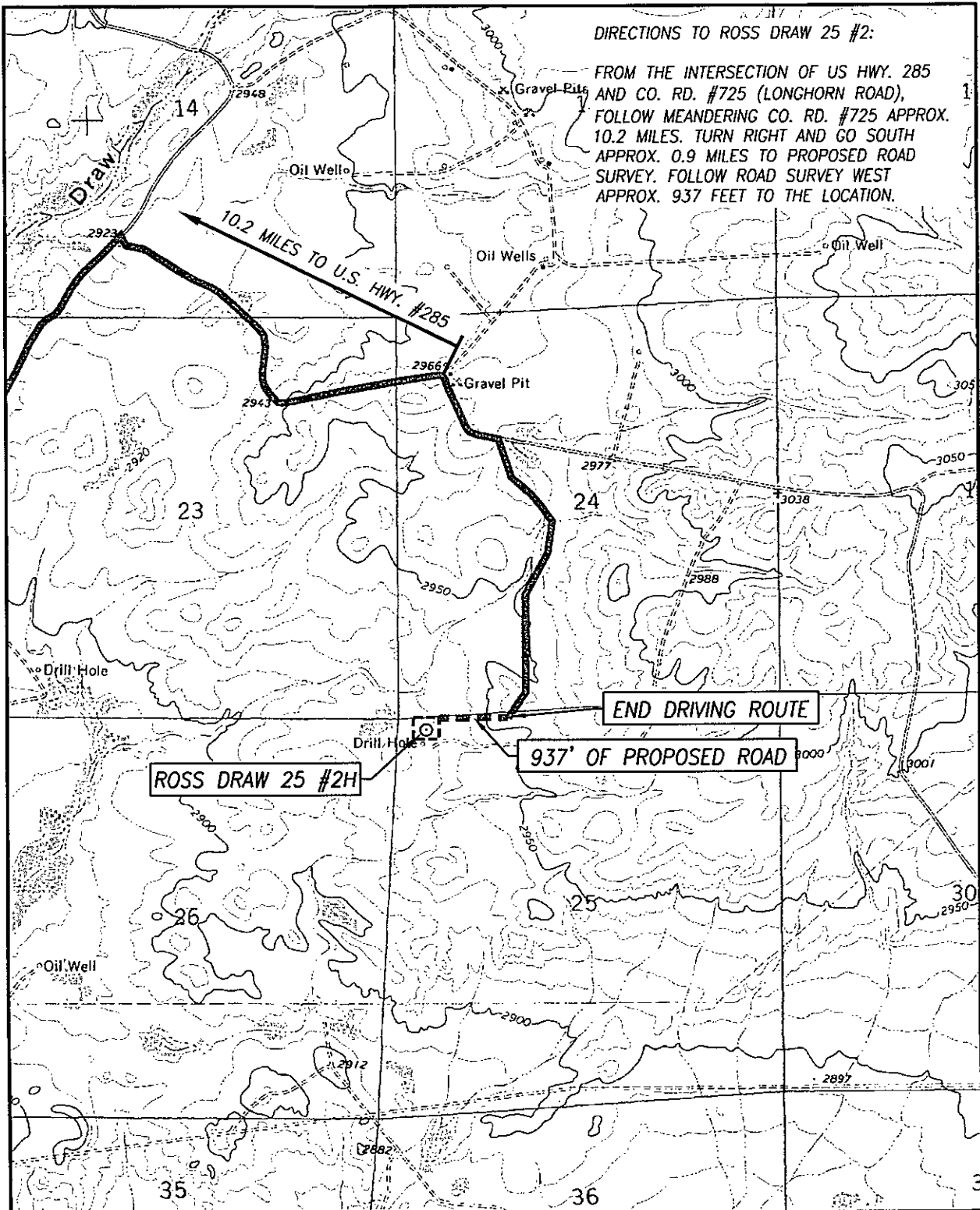
SEC. 25 TWP. 26-S RGE. 29-E  
SURVEY N.M.P.M.  
COUNTY EDDY STATE NEW MEXICO  
DESCRIPTION 170' FNL & 380' FWL  
ELEVATION 2927'  
OPERATOR XTO ENERGY  
LEASE ROSS DRAW 25

PROVIDING SURVEYING SERVICES  
SINCE 1946

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(575) 393-3117 [www.jwsc.biz](http://www.jwsc.biz)  
TBPLS# 10021000

# LOCATION VERIFICATION MAP



SEC. 25 TWP. 26-S RGE. 29-E  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 170' FNL & 380' FWL  
 ELEVATION 2927'  
 OPERATOR XTO ENERGY  
 LEASE ROSS DRAW 25  
 U.S.G.S. TOPOGRAPHIC MAP  
 ROSS RANCH, N.M. SURVEY N.M.P.M.

SCALE: 1" = 2000'

CONTOUR INTERVAL:  
 ROSS RANCH, N.M. - 10'

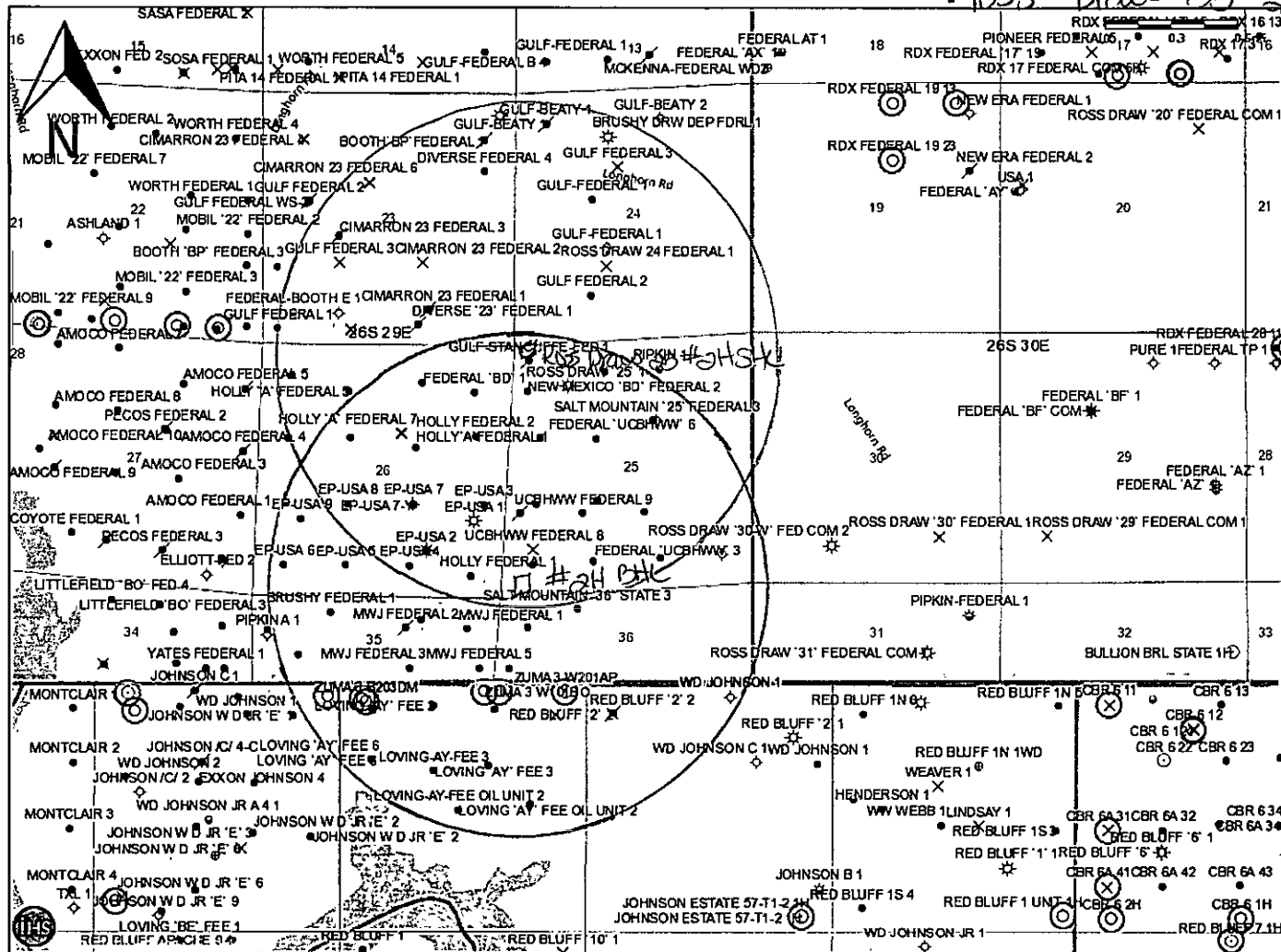


PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 [www.jwsc.biz](http://www.jwsc.biz)  
 TBPLS# 10021000

# Ross Draw 25

## One-Mile Radius Map

Ross Draw 25 #24



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

XTO Energy Inc.

Ross Draw 25 2H

Projected TD: 15133' MD / 10374' TVD

SHL: 170' FNL & 380' FWL, SECTION 25, T26S, R29E

1<sup>st</sup> Take Point: 870' FNL & 380' FWL, SECTION 25, T26S, R29E

2<sup>nd</sup> Take Point: 330' FSL & 380' FWL, SECTION 25, T26S, R29E

BHL: 170' FSL & 380' FWL, SECTION 25, 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	196'	Water
Top of Salt	779'	
Base of Salt	3050'	
Delaware	3100'	Water
Cherry Canyon	3970'	Water
Brushy Canyon	5635'	Water/Oil/Gas
Bone Spring	6820'	Water/Oil/Gas
1 <sup>st</sup> Bone Spring	7760'	Water/Oil/Gas
2 <sup>nd</sup> Bone Spring	8586'	Water/Oil/Gas
3 <sup>rd</sup> Bone Spring	9670'	Water/Oil/Gas
Wolfcamp	10010'	Water/Oil/Gas
Target/Land Curve	10393'	Water/Oil/Gas

\*\*\* Hydrocarbons @ Brushy Canyon

\*\*\* Groundwater depth 100' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8" casing @ 350' above the salt and circulating cement back to surface. The salt will be isolated by setting 9-5/8" casing at 3100' and circulating cement to surface. An 8-3/4" vertical and curve hole be drilled and 7" casing run and cemented 500' into the 9-5/8" casing. A 6-1/8" curve and lateral hole will be drilled to MD/TD and a 4-1/2" liner with sliding frac sleeves will be set at TD and cemented back 250' into the 7" casing shoe.



### 3. CASING PROGRAM:

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 350'	13-3/8"	48#	STC	H-40	New	6.92	4.62	19.17
12-1/4"	0' – 3100'	9-5/8"	36#	LTC	J-55	New	2.61	1.23	4.06
8-3/4"	0' – 10050'	7"	29#	LTC	P-110	New	2.88	1.72	2.73
6-1/8"	9800' – 15133'	4-1/2"	13.5#	BTC	P-110	New	1.31	1.46	5.86

### WELLHEAD:

- A. Starting Head: 13-3/8" SOW bottom x 13-5/8" 3,000 psi top flange
- B. 'B' Section/ Drilling Spool: 13-5/8" 3,000 psi bottom flange x 11" 5,000 psi top flange
- C. Tubing Head: 11" 5,000 psi bottom flange x 7-1/16" 10,000 psi top flange

### 4. CEMENT PROGRAM:

- A. **Surface Casing:** 13-3/8", 48#, NEW H-40, STC casing to be set at  $\pm 350'$ .

20bbls FW, then 390 sx HalCem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sk, 6.39 gal/sx wtr)

\*\*\*All volumes 100% excess in open hole. Cement to surface.

- B. **Intermediate Casing:** 9-5/8", 36#, NEW J-55, LTC casing to be set at  $\pm 3100'$ .

Lead: 20 bbls FW, then 620 sx EconoCem-HLC + 3 lbm/sk Kol-Seal + 0.25 lbm D-air 5000 (mixed at 11.9 ppg, 2.49 ft<sup>3</sup>/sk, 14.18 gal/sx wtr)

Tail: 250 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft<sup>3</sup>/sk, 6.34 gal/sx wtr)

\*\*\*All volumes 100% excess in open hole. Cement to surface.

- C. **Production Casing:** 7", 29#, NEW P-110, LTC casing to be set at  $\pm 10050'$ .

Lead: 20 bbls FW, then 595 sx Tuned Light + 2 lbm/sk Kol-Seal + 0.3 lbm/sk CFR-3 (mixed at 10.5 ppg, 2.99 ft<sup>3</sup>/sk, 14.5 gal/sx wtr)

Tail: 380 sx VersaCem - H + 3 lbm/sk Kol-Seal + 0.4% Halad 344 + 0.3% CFR-3 + 0.3% Super CBL + 0.25 lbm/sk D-air 5000 (mixed at 14.5 ppg, 1.22 ft<sup>3</sup>/sk, 5.33 gal/sx wtr)

\*\*\*All volumes 100% excess in open hole. Planned top of cement 500' into intermediate casing shoe

- D. **Production Liner:** 4-1/2", 13.5#, NEW P-110, BTC casing to be set at  $\pm 15133'$ . Liner top will be at  $\pm 9800'$ . Casing will be cemented and will include sliding sleeves for the completion.

Tail: 405 sx VersaCem PBHS2 + 0.25 lbm/sk D-air 5000 + 0.5% Halad 344 + 0.3% CFR-3 (mixed at 13.2 ppg, 1.59 ft<sup>3</sup>/sk, 8.31 gal/sx wtr)

\*\*\*All volumes 30% excess in open hole. Planned top of cement at liner top

## 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. Max bottom hole pressure should not exceed 6750 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" 3M bradenhead and flange, the BOP test will be limited to 3000psi. When nipping up on the 9-5/8" and 7", the BOP 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.

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.

## 6. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 350'	17-1/2"	FW/Native	8.4 - 8.8	35 - 40	NC
350' to 3100'	12-1/4"	Brine/Gel Sweeps	9.8 - 10.2	30 - 32	NC
3100' to 10050'	8-3/4"	FW / Cut Brine	8.6 - 9.5	29 - 32	NC - 20
10050' to 15133'	6-1/8"	FW / Cut Brine / Poly-Sweeps	9.5 - <del>12.5</del> 11.8	32 - 50	8 - 20

See Operator  
See CoA  
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. Cut brine will be used to drill the 8-3/4" section. A polymer mud will be used to drill the 6-1/8" section. 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. Solids control equipment will be used 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) on @ 3100'.

Catch 20' samples from 3100' to TD

Send 1 set of dry samples to Midland Sample Library.

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

**9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:**

None anticipated. BHT of 180 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.

**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.



Well: Ross Draw 25 Well No. 2H  
 Site: Ross Draw 25  
 Project: Eddy County, New Mexico  
 Design: rev0  
 Rig: Nabors 730

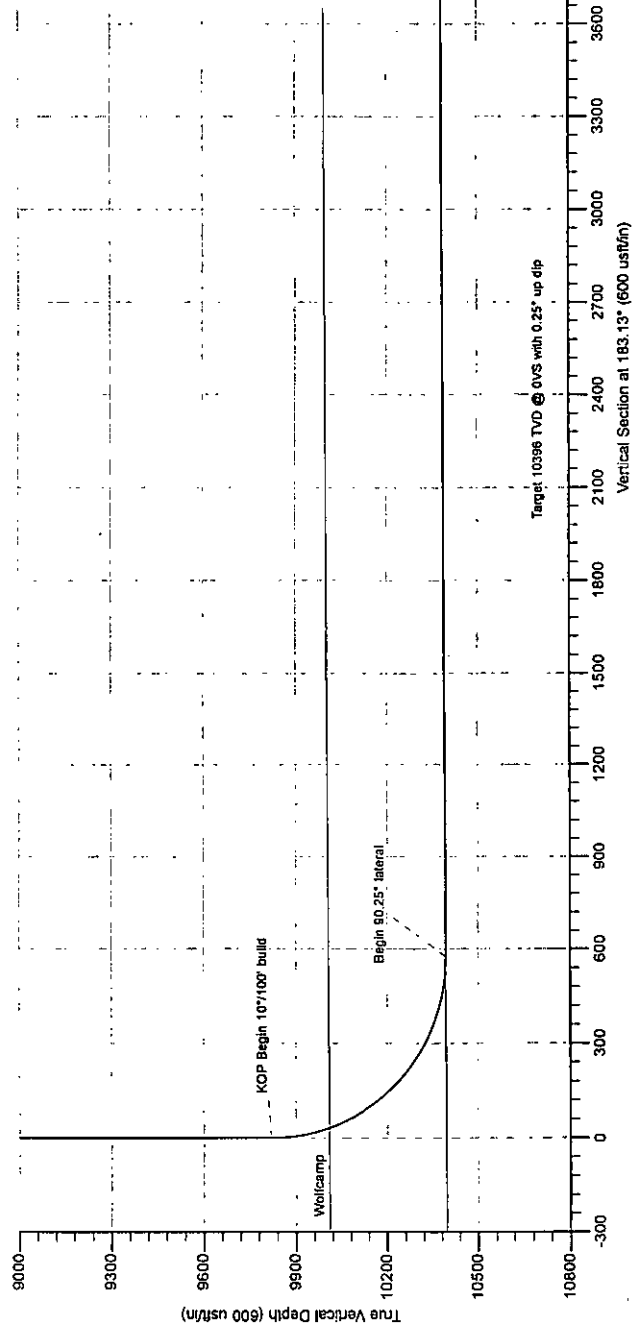
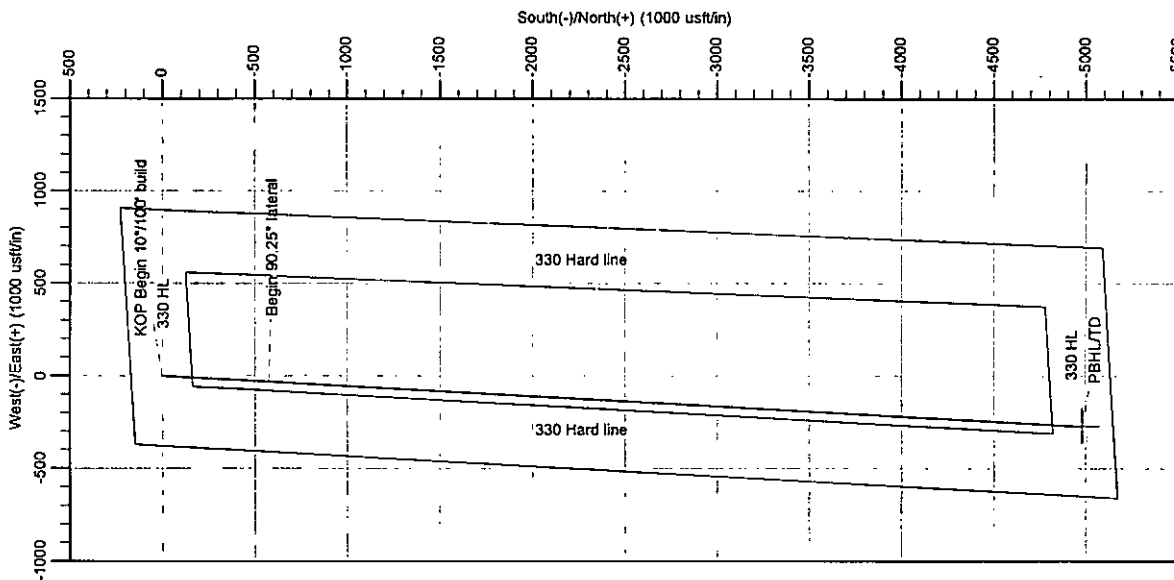
# SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9820.54	90.25	183.13	10393.45	-574.50	-91.45	10.00	183.13	574.50	KOP Begin 10°/100' build
3	10723.04	90.25	183.13	10393.45	-574.50	-91.45	10.00	183.13	574.50	Begin 90.25° lateral
4	15133.38	90.25	183.13	10393.45	-574.50	-91.45	10.00	183.13	574.50	PBHLTD

RKB Elevation: RKB=2827+23 @ 2850.00usft (Nabors 730)  
 US State Plane 1927 (Exact solution)  
 New Mexico East 3001  
 Northing 370919.90  
 Easting 620874.70  
 Latitude 32.01917525  
 Longitude -103.94387370

Total Correction (M => G) To convert a Magnetic Direction to a Grid Direction, Add 7.16°

Azimuths to Grid North  
 True North: -0.21°  
 Magnetic North: 7.16°  
 Magnetic Field  
 Strength: 48153.8nT  
 Dip Angle: 59.85°  
 Date: 8/24/2014  
 Model: IGRF2010





Standard\_report

Company:	XTO Energy Inc	Local Co-ordinate Reference:	Well Ross Draw 25 Well No. 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Site:	Ross Draw 25	MD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Well:	Ross Draw 25 Well No. 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev0	Database:	EDM 5000.1 Database

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

Site:	Ross Draw 25	Northing:	370,919.90 usft	Latitude:	32.01917525
Site Position:		Eastings:	620,674.70 usft	Longitude:	-103.94397370
From:	Map	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °
Position Uncertainty:	0.00 usft				

Well:	Ross Draw 25 Well No. 2H, Surf Loc 170 FNL 380 FWL Sect 25	Northing:	370,919.90 usft	Latitude:	32.01917525
Well Position:	+N-S 0.00 usft	Eastings:	620,674.70 usft	Longitude:	-103.94397370
Position Uncertainty:	+E-W 0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,927.00 usft

Wellbore:	Original Hole				
Magnetics:	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/24/2014	7.37	59.86	48,154

Design:	rev0	Phase:	PROTOTYPE	Tie On Depth:	0.00
Audit Notes:					
Version:					
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	183.13	

Survey Tool Program:	Date	6/24/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,133.34	rev0 (Original Hole)	MWD	MWD - Standard	



6/24/2014 4:49:24PM



# Standard\_report

Company:	XTO Energy Inc	Local Co-ordinate Reference:	Well Ross Draw 25 Well No. 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Site:	Ross Draw 25	MD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Well:	Ross Draw 25 Well No. 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev0	Database:	EDM 5000.1 Database

Planned Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D Leg (°/100ft)	V. Sec (usft)	Northing (usft)	Easting (usft)
	2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70



Standard\_report

Company:	XTO Energy Inc	Local Co-ordinate Reference:	Well Ross Draw 25 Well No. 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Site:	Ross Draw 25	MD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Well:	Ross Draw 25 Well No. 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev0	Database:	EDM 5000.1 Database

Planned Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW/	DLeg (°/100ft)	V. Sec (usft)	Northing (usft)	Easting (usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70





# Standard\_report

Company:	XTO Energy Inc	Local Co-ordinate Reference:	Well Ross Draw 25 Well No. 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Site:	Ross Draw 25	MD Reference:	RKB=2927+23 @ 2950.00usft (Nabors 730)
Well:	Ross Draw 25 Well No. 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev0	Database:	EDM 5000.1 Database

Planned Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100ft)	V. Sec (usft)	Northing (usft)	Easting (usft)
	8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,820.50	0.00	0.00	9,820.50	0.00	0.00	0.00	0.00	370,919.90	620,674.70
KOP Begin 10°/100' build										
	9,820.54	0.00	0.00	9,820.54	0.00	0.00	0.00	0.00	370,919.90	620,674.70
	9,900.00	7.95	183.13	9,899.75	-5.49	-0.30	10.00	5.50	370,914.41	620,674.40
	10,000.00	17.95	183.13	9,997.08	-27.83	-1.52	10.00	27.88	370,892.07	620,673.18
	10,013.49	19.29	183.13	10,009.86	-32.13	-1.76	10.00	32.18	370,887.77	620,672.94
Wolfcamp										
	10,100.00	27.95	183.13	10,089.05	-66.71	-3.65	10.00	66.81	370,853.19	620,671.05
	10,200.00	37.95	183.13	10,172.86	-120.95	-6.62	10.00	121.13	370,798.95	620,668.08



Standard\_report

Company: XTO Energy Inc  
Project: Eddy County, New Mexico  
Site: Ross Draw 25  
Well: Ross Draw 25 Well No. 2H  
Wellbore: Original Hole  
Design: rev0

Local Co-ordinate Reference: Well Ross Draw 25 Well No. 2H  
TVD Reference: RKB=2927+23 @ 2950.00usft (Nabors 730)  
MD Reference: RKB=2927+23 @ 2950.00usft (Nabors 730)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Database

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	D Leg (°/100ft)	V: Sec (usft)	Northing (usft)	Easting (usft)
10,300.00	47.95	183.13	10,245.97	-188.89	-10.34	10.00	189.17	370,731.01	620,664.36
10,400.00	57.95	183.13	10,306.15	-268.48	-14.70	10.00	268.88	370,651.42	620,660.00
10,500.00	67.95	183.13	10,351.57	-357.29	-19.56	10.00	357.82	370,562.61	620,655.14
10,600.00	77.95	183.13	10,380.86	-452.63	-24.78	10.00	453.31	370,467.27	620,649.92
10,700.00	87.95	183.13	10,393.13	-551.60	-30.19	10.00	552.42	370,368.30	620,644.51
10,721.48	90.09	183.13	10,393.50	-573.04	-31.37	10.00	573.90	370,346.86	620,643.33
Target 10396 TVD @ 0VS with 0.25° up dip									
10,723.04	90.25	183.13	10,393.49	-574.60	-31.45	9.89	575.46	370,345.30	620,643.25
Begin 90.25° lateral									
10,800.00	90.25	183.13	10,393.16	-651.44	-35.66	0.00	652.42	370,268.46	620,639.04
10,900.00	90.25	183.13	10,392.72	-751.29	-41.12	0.00	752.42	370,168.61	620,633.58
11,000.00	90.25	183.13	10,392.28	-851.14	-46.59	0.00	852.42	370,068.76	620,628.11
11,100.00	90.25	183.13	10,391.85	-950.99	-52.05	0.00	952.41	369,968.91	620,622.65
11,200.00	90.25	183.13	10,391.41	-1,050.84	-57.52	0.00	1,052.41	369,869.06	620,617.18
11,300.00	90.25	183.13	10,390.97	-1,150.69	-62.99	0.00	1,152.41	369,769.21	620,611.71
11,400.00	90.25	183.13	10,390.54	-1,250.54	-68.45	0.00	1,252.41	369,669.36	620,606.25
11,500.00	90.25	183.13	10,390.10	-1,350.39	-73.92	0.00	1,352.41	369,569.51	620,600.78
11,600.00	90.25	183.13	10,389.67	-1,450.24	-79.38	0.00	1,452.41	369,469.66	620,595.32
11,700.00	90.25	183.13	10,389.23	-1,550.09	-84.85	0.00	1,552.41	369,369.81	620,589.85
11,800.00	90.25	183.13	10,388.79	-1,649.94	-90.31	0.00	1,652.41	369,269.96	620,584.39
11,900.00	90.25	183.13	10,388.36	-1,749.79	-95.78	0.00	1,752.41	369,170.11	620,578.92
12,000.00	90.25	183.13	10,387.92	-1,849.64	-101.24	0.00	1,852.41	369,070.26	620,573.46
12,100.00	90.25	183.13	10,387.48	-1,949.49	-106.71	0.00	1,952.41	368,970.41	620,567.99
12,200.00	90.25	183.13	10,387.05	-2,049.34	-112.18	0.00	2,052.40	368,870.56	620,562.52
12,300.00	90.25	183.13	10,386.61	-2,149.19	-117.64	0.00	2,152.40	368,770.71	620,557.06
12,400.00	90.25	183.13	10,386.18	-2,249.04	-123.11	0.00	2,252.40	368,670.86	620,551.59
12,500.00	90.25	183.13	10,385.74	-2,348.89	-128.57	0.00	2,352.40	368,571.01	620,546.13



Standard\_report

Company: XTO Energy Inc  
Project: Eddy County, New Mexico  
Site: Ross Draw 25  
Well: Ross Draw 25 Well No. 2H  
Wellbore: Original Hole  
Design: rev0

Local Co-ordinate Reference:  
TVL Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well Ross Draw 25 Well No. 2H  
RKB=2927+23 @ 2950.00usft (Nabors 730)  
RKB=2927+23 @ 2950.00usft (Nabors 730)  
Grid  
Minimum Curvature  
EDM 5000.1 Database

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVL (usft)	N/S (usft)	EW (usft)	DLeg (°/100ft)	V. Sec (usft)	Northing (usft)	Easting (usft)
12,600.00	90.25	183.13	10,385.30	-2,448.73	-134.04	0.00	2,452.40	368,471.17	620,540.66
12,700.00	90.25	183.13	10,384.87	-2,548.58	-139.50	0.00	2,552.40	368,371.32	620,535.20
12,800.00	90.25	183.13	10,384.43	-2,648.43	-144.97	0.00	2,652.40	368,271.47	620,529.73
12,900.00	90.25	183.13	10,383.99	-2,748.28	-150.43	0.00	2,752.40	368,171.62	620,524.27
13,000.00	90.25	183.13	10,383.56	-2,848.13	-155.90	0.00	2,852.40	368,071.77	620,518.80
13,100.00	90.25	183.13	10,383.12	-2,947.98	-161.37	0.00	2,952.40	367,971.92	620,513.33
13,200.00	90.25	183.13	10,382.68	-3,047.83	-166.83	0.00	3,052.39	367,872.07	620,507.87
13,300.00	90.25	183.13	10,382.25	-3,147.68	-172.30	0.00	3,152.39	367,772.22	620,502.40
13,400.00	90.25	183.13	10,381.81	-3,247.53	-177.76	0.00	3,252.39	367,672.37	620,496.94
13,500.00	90.25	183.13	10,381.38	-3,347.38	-183.23	0.00	3,352.39	367,572.52	620,491.47
13,600.00	90.25	183.13	10,380.94	-3,447.23	-188.69	0.00	3,452.39	367,472.67	620,486.01
13,700.00	90.25	183.13	10,380.50	-3,547.08	-194.16	0.00	3,552.39	367,372.82	620,480.54
13,800.00	90.25	183.13	10,380.07	-3,646.93	-199.62	0.00	3,652.39	367,272.97	620,475.08
13,900.00	90.25	183.13	10,379.63	-3,746.78	-205.09	0.00	3,752.39	367,173.12	620,469.61
14,000.00	90.25	183.13	10,379.19	-3,846.63	-210.56	0.00	3,852.39	367,073.27	620,464.14
14,100.00	90.25	183.13	10,378.76	-3,946.48	-216.02	0.00	3,952.39	366,973.42	620,458.68
14,200.00	90.25	183.13	10,378.32	-4,046.33	-221.49	0.00	4,052.39	366,873.57	620,453.21
14,300.00	90.25	183.13	10,377.89	-4,146.18	-226.95	0.00	4,152.38	366,773.72	620,447.75
14,400.00	90.25	183.13	10,377.45	-4,246.03	-232.42	0.00	4,252.38	366,673.87	620,442.28
14,500.00	90.25	183.13	10,377.01	-4,345.88	-237.88	0.00	4,352.38	366,574.02	620,436.82
14,600.00	90.25	183.13	10,376.58	-4,445.73	-243.35	0.00	4,452.38	366,474.17	620,431.35
14,700.00	90.25	183.13	10,376.14	-4,545.58	-248.81	0.00	4,552.38	366,374.32	620,425.89
14,800.00	90.25	183.13	10,375.70	-4,645.43	-254.28	0.00	4,652.38	366,274.47	620,420.42
14,900.00	90.25	183.13	10,375.27	-4,745.28	-259.74	0.00	4,752.38	366,174.62	620,414.96
15,000.00	90.25	183.13	10,374.83	-4,845.12	-265.21	0.00	4,852.38	366,074.78	620,409.49
15,100.00	90.25	183.13	10,374.40	-4,944.97	-270.68	0.00	4,952.38	365,974.93	620,404.02



# Standard\_report

Company: XTO Energy Inc  
 Project: Eddy County, New Mexico  
 Site: Ross Draw 25  
 Well: Ross Draw 25 Well No. 2H  
 Wellbore: Original Hole  
 Design: rev0

Local Co-ordinate Reference: Well Ross Draw 25 Well No. 2H  
 TVD Reference: RKB-2927+23 @ 2950.00usft (Nabors 730)  
 MD Reference: RKB-2927+23 @ 2950.00usft (Nabors 730)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Database

Planned Survey		MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100ft)	V. Sec (usft)	Northing (usft)	Easting (usft)
		15,133.37	90.25	183.13	10,374.25	-4,978.29	-272.50	0.00	4,985.75	365,941.61	620,402.20
PBHL/TD		15,133.38	90.25	183.13	10,374.25	-4,978.30	-272.50	0.00	4,985.75	365,941.60	620,402.20

Formations		Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
		10,013.49	10,010.00	Wolfcamp		-0.25	183.13
		10,721.48	10,396.00	Target 10396 TVD @ 0VS with 0.25° up		-0.25	183.13

Plan Annotations		Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/S (usft)	+E/W (usft)	Comment
		9,820.50	9,820.50	0.00	0.00	KOP Begin 107/100' build
		10,723.04	10,393.49	-574.60	-31.45	Begin 90.25° lateral
		15,133.37	10,374.25	-4,978.29	-272.50	PBHL/TD

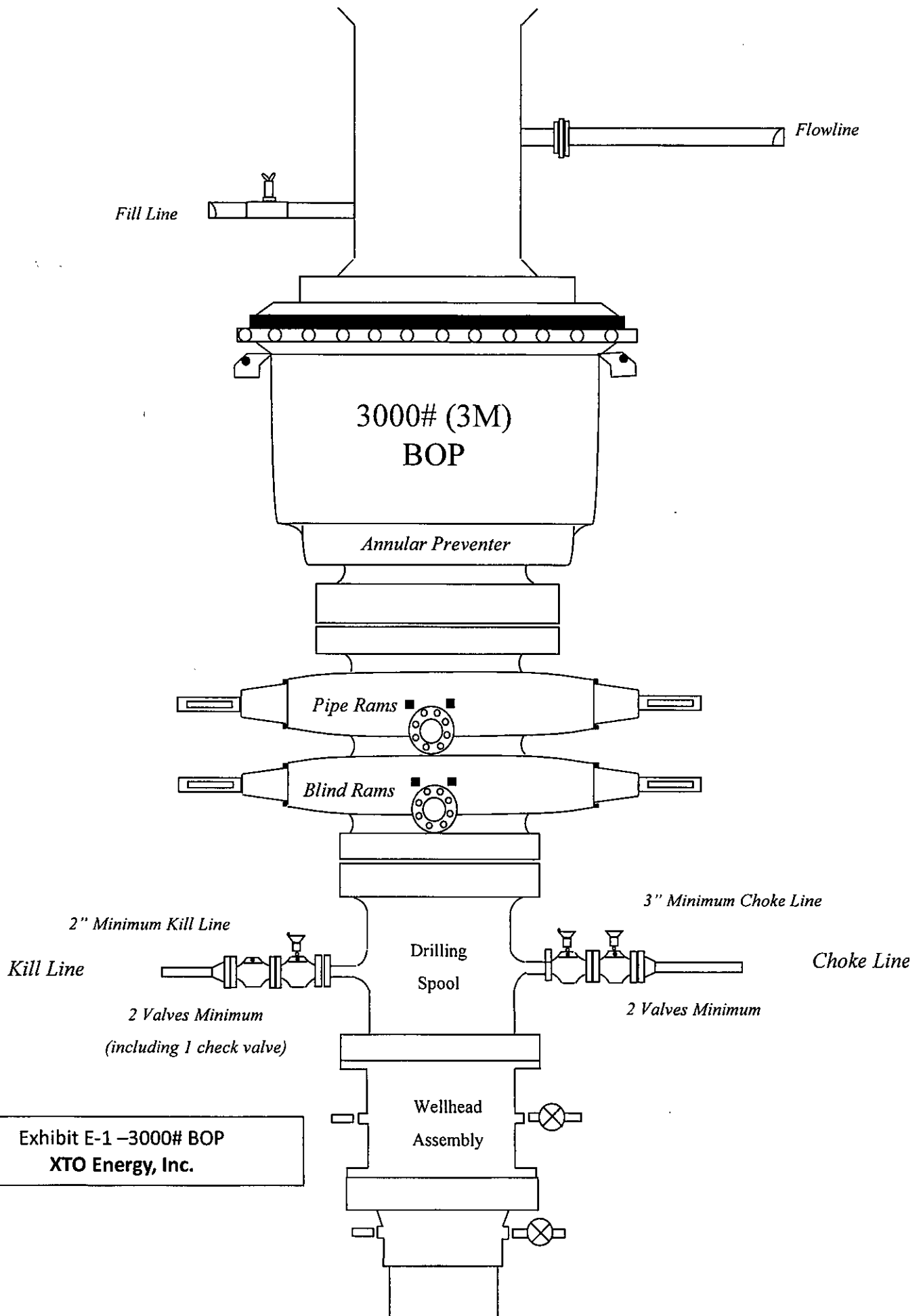
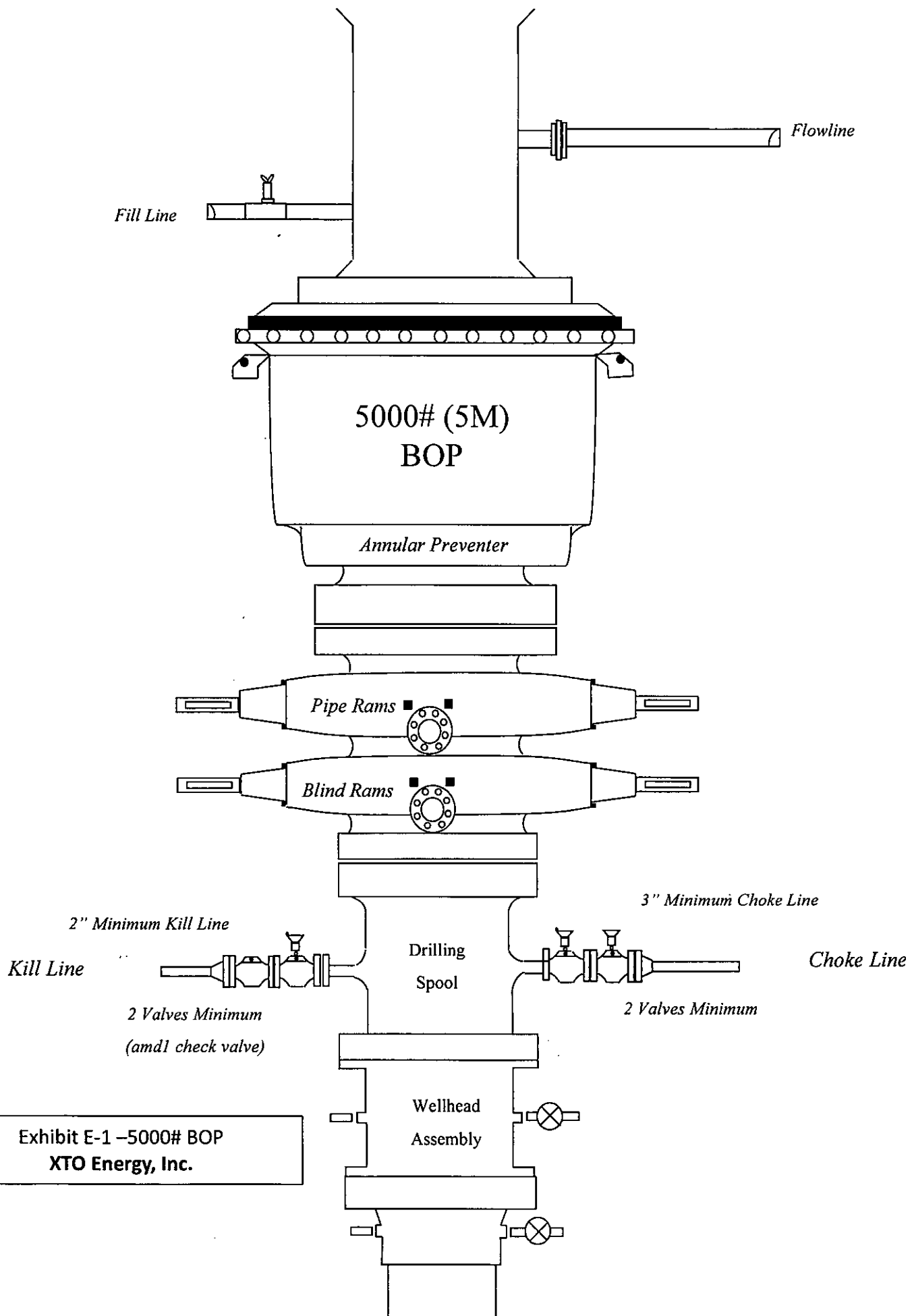


Exhibit E-1 –3000# BOP  
XTO Energy, Inc.



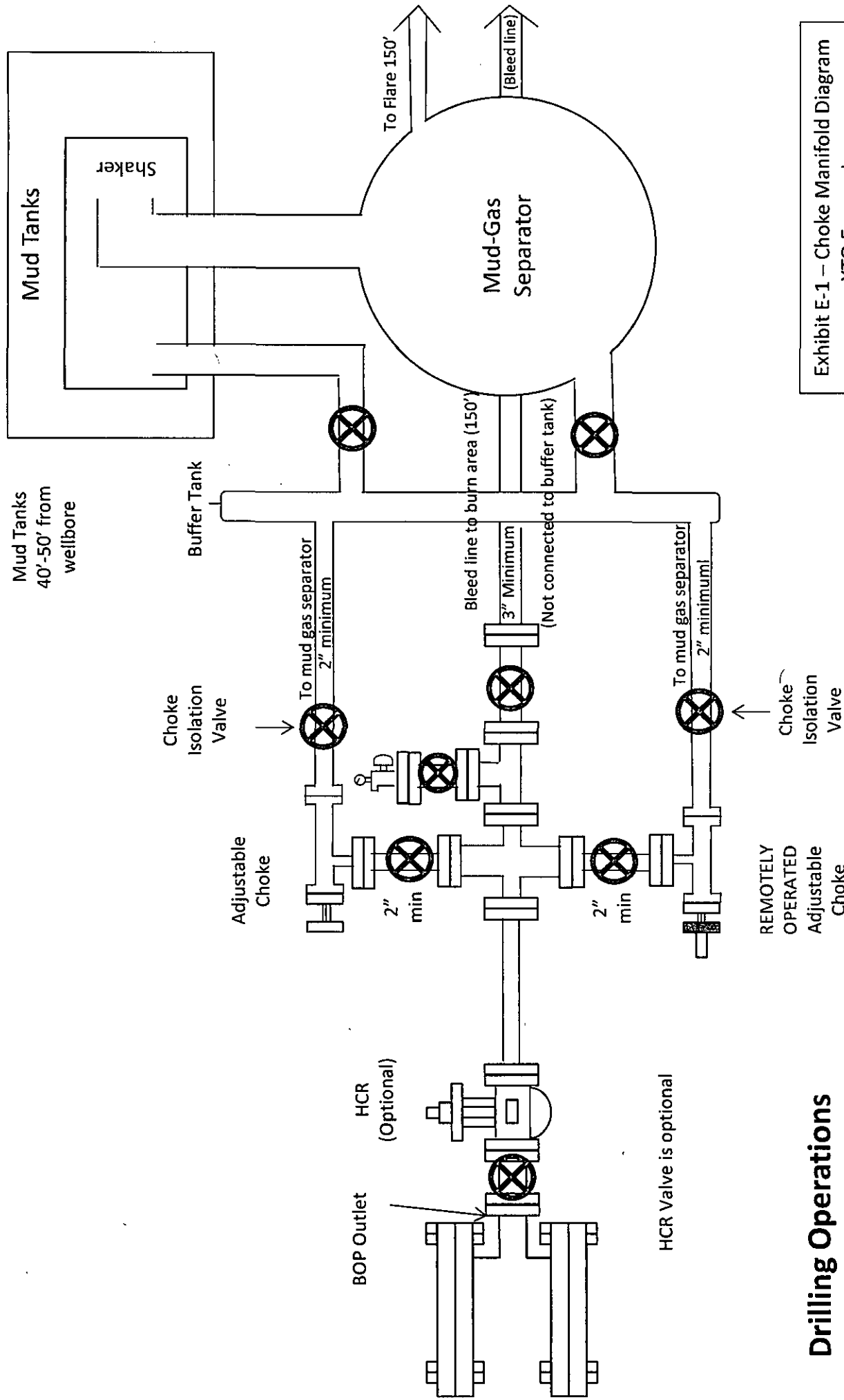
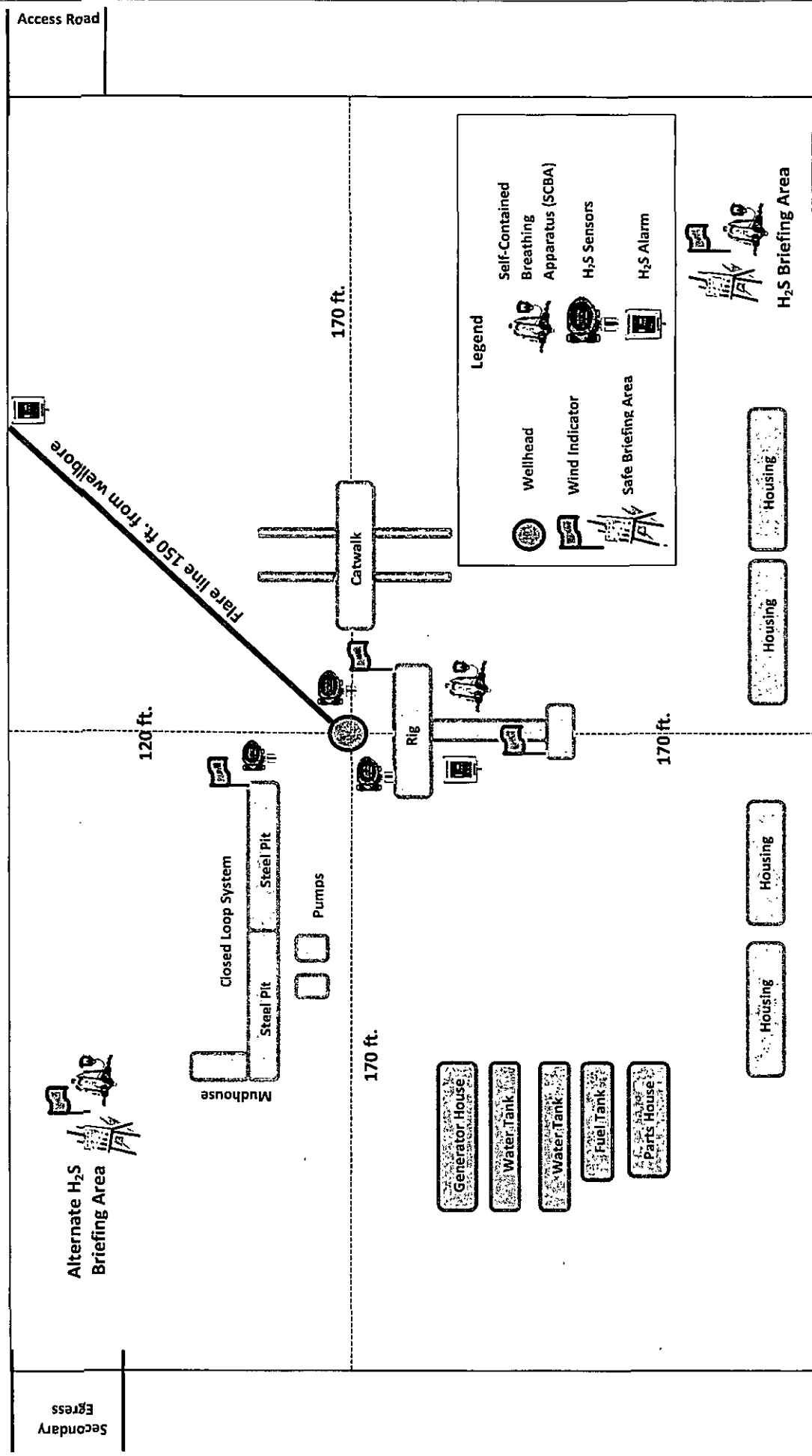
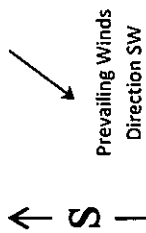


Exhibit E-1 – Choke Manifold Diagram  
XTO Energy, Inc..

# Drilling Operations Choke Manifold 5M Service

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







## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN**

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

### **Ignition of Gas source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

<b>Common Name</b>	<b>Chemical Formula</b>	<b>Specific Gravity</b>	<b>Threshold Limit</b>	<b>Hazardous Limit</b>	<b>Lethal Concentration</b>
<b>Hydrogen Sulfide</b>	<b>H<sub>2</sub>S</b>	<b>1.189 Air = 1</b>	<b>10 ppm</b>	<b>100 ppm/hr</b>	<b>600 ppm</b>
<b>Sulfur Dioxide</b>	<b>SO<sub>2</sub></b>	<b>2.21 Air = 1</b>	<b>2 ppm</b>	<b>N/A</b>	<b>1000 ppm</b>

### **Contacting Authorities**

XTO Energy Inc's personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

## **EUNICE OFFICE – EDDY & LEA COUNTIES**

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175  
Eunice, NM

575-394-2089

### **XTO ENERGY INC PERSONNEL:**

Weston Turner, Drilling Engineer	817-201-6812
Bob Chance, Drilling Superintendent	432-296-3926
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
Rick Wilson, Production Foreman	575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County	575-887-7551
Lea County	575-396-3611

### **NEW MEXICO STATE POLICE:**

575-392-5588

### **FIRE DEPARTMENTS:**

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

### **HOSPITALS:**

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

### **AGENT NOTIFICATIONS:**

Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

### **CONTRACTORS:**

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305



November 20, 2014

Stephanie Rabadue  
XTO Energy Inc.  
500 W. Illinois St Ste 100  
Midland, TX 79701  
432-620-6714  
stephanie\_rabadue@xtoenergy.com

Bureau of Land Management  
620 E. Greene  
Carlsbad, NM 88220  
575-887-6544

Dear Sirs:

XTO Energy Inc. does not anticipate encountering H<sub>2</sub>S while drilling the Ross Draw 25 #2H located in Section 25, T26S, R29E, in Lea County, New Mexico. As a precaution, I have attached an H<sub>2</sub>S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

A handwritten signature in cursive script that reads 'Stephanie Rabadue'.

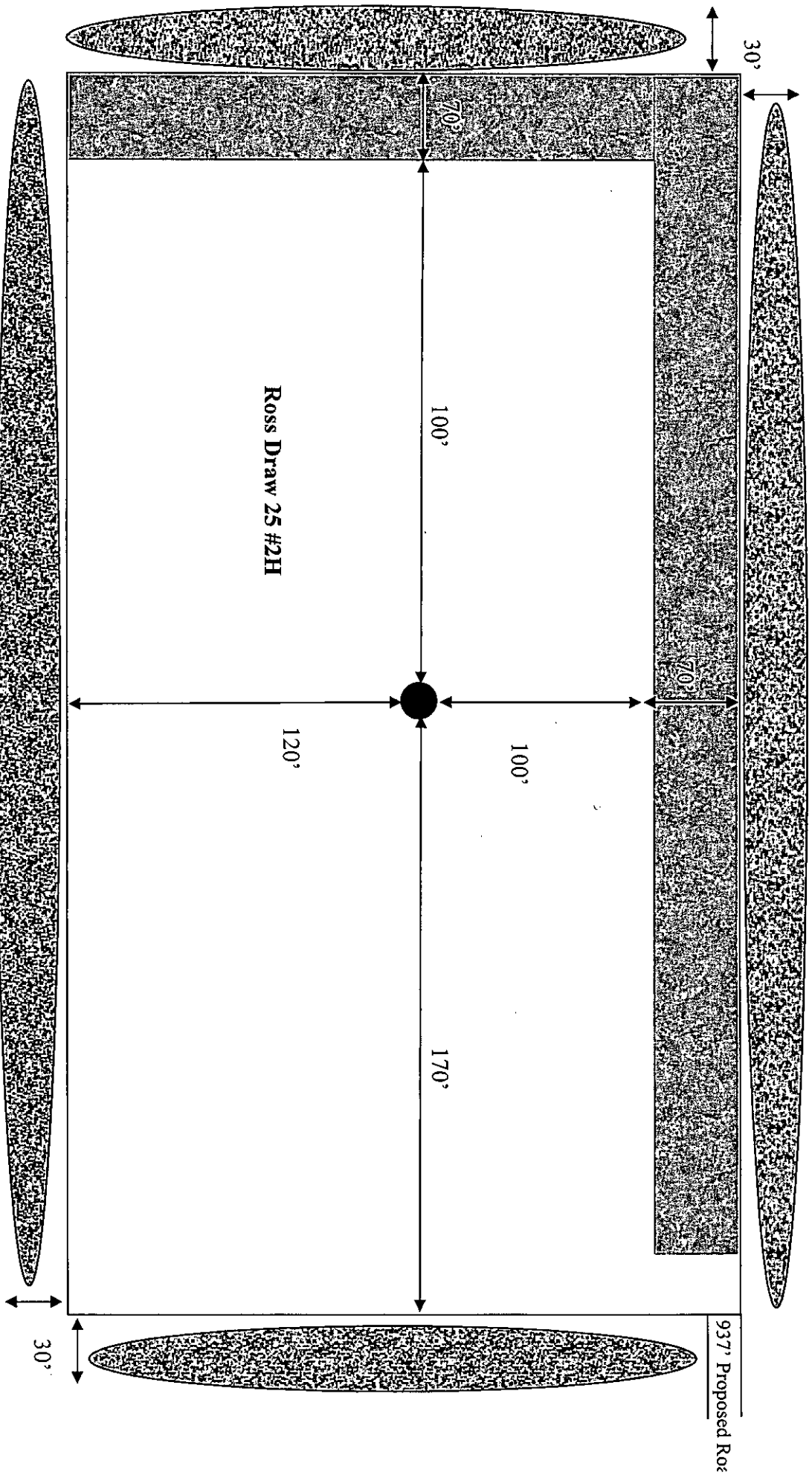
Stephanie Rabadue  
Regulatory Analyst

**EXHIBIT D**

**Interim Reclamation Diagram**

Ross Draw 25 #2H

V-Door West



**LEGEND**

-  N
-  Wellbore
-  Interim Reclamation
-  Ditch & Berm
-  Topsoil

### **SURFACE USE PLAN**

XTO Energy, Inc.

ROSS DRAW 25 #2H

SHL: 170'FNL & 380'FWL, D-25-T26S-R29E

1<sup>st</sup> Take Point: 870'FNL & 380'FWL, E-25-T26S-R29E

2<sup>nd</sup> Take Point: 330'FSL & 380'FWL, L-25-T26S-R29E

BHL: 70'FSL & 380'FWL, M-25-T26S-R29E

Eddy County, NM

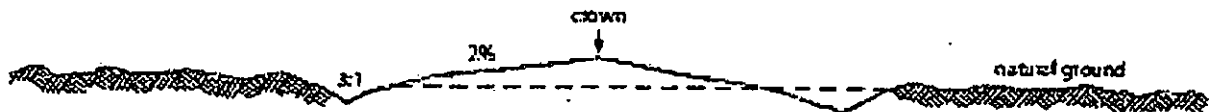
This plan is submitted with form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

#### **1. EXISTING ROADS:**

- a. DIRECTIONS: From the intersection of US Hwy 285 and Co. Rd. #725 (Longhorn Rd), follow meandering county rd. 3725 approximately 10.2 miles. Turn right and go South approximately 0.9 miles to proposed road survey. Follow road survey West approximately 937 feet to the location.
- b. See attached plats and maps provided by John West Surveying Company.
- c. The access route from Co. Rd #725 (Longhorn Rd) to the well location is depicted on maps provided by John West Surveying. The route highlighted in red will be the access and no ROW is required for this well.
- d. Existing roads on the access route will be improved and maintained to the standard set forth in Section 2 of this Surface Use Plan of Operations.

#### **2. NEW OR RECONSTRUCTED ACCESS ROADS:**

- a. 937' of new proposed road will be necessary to access the location as depicted on the maps by John West Surveying. Below regards any upgrading of the existing caliche road system to the proposed well location.
- b. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



### **Level Ground Section**

- c. Surface material will be native caliche. The average grade of the entire road will be approximately 3%.
- d. Fence Cuts: No.
- e. Cattle Guards: No
- f. Turnouts: No

- g. Culverts: No
- h. Cuts and Fills: Not significant
- i. Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.
- j. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route.
- k. The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

3. LOCATION OF EXISTING WELLS:

See attached map (Exhibit B) showing all wells within a one-mile radius.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- a. Prior to commencing drilling operations, a separate facilities pad will be staked with the BLM in attendance and be submitted for the well in conjunction with a 3160-5 BLM NOI sundry notification.
- b. No facility operations will commence without an on-site being conducted and proper notification and approval from the BLM.
- c. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted to BLM specifications.
- d. Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.

5. LOCATION AND TYPE OF WATER SUPPLY:

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck using the existing and proposed roads shown in the attached survey plats. If a commercial water well is nearby, a temporary, surface poly line, will be laid along existing roads or other ROW easements and the water pumped to the well. No water well will be drilled on the location.

6. SOURCE OF CONSTRUCTION MATERIALS:

Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. No construction materials will be removed from Federal lands without prior approval from the appropriate surface management agency. All roads will be constructed of 6" rolled and compacted caliche.

7. METHODS OF HANDLING WASTE DISPOSAL:

- a. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- b. Drilling fluids will be contained in steel mud pits.
- c. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- d. Oil produced during operations will be stored in tanks until sold.
- e. Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- f. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

8. ANCILLARY FACILITIES:

No campsite, airstrip or other facilities will be built as a result of the operation of this well. No staging areas are needed.

9. WELL SITE LAYOUT:

- a. The included 600'x600' map by John West Surveying shows the dimensions of the proposed well pad.
- b. The proposed well pad size will be 290'x370' including top soil storage (See Interim Reclamation Diagram & Maps from John West Surveying). There will be no reserve pit due to the well being drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17.
- c. John West Surveying Company's plat, Form C-102 and Exhibit D, show the direction of the pad at a V-Door West.
- d. A 600' x 600' area has been staked and flagged.
- e. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad and topsoil storage areas).

10. PLANS FOR SURFACE RECLAMATION:

- a. After concluding the drilling and/or completion operations, if the well is found non-commercial, all the equipment will be removed, the surface material, caliche, will be removed from the well pad and road and transported to the original caliche pit or used for other roads. The original stock piled topsoil will be returned to the pad and contoured, as close as possible, to the original topography. The access road will have the caliche removed and the road ripped, barricaded and seeded as directed by the BLM.
- b. If the well is a producer, the portions of the pad not essential to production facilities or space required for workover operations, will be reclaimed and seeded as per BLM requirements for interim reclamation. (See Exhibit D for Interim Reclamation Plat for this Well).
- c. Reclamation Performance Standards

The following reclamation performance standards will be met:

Final Reclamation – Includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be disturbed for future development.

- The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.
- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.
- Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gulying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.
- The site will be free of State-or County-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

Seeding:

- Seedbed Preparation: Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
- If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4-6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- Seed Application. Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used.
- If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

11. SURFACE OWNERSHIP:

- a. The surface is owned by the Bureau of Land Management (BLM). The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.



12. OTHER INFORMATION:

- a. According to the Natural Resources Conservation Service's online database, the project area soil is Pajarito-Dune land complex, loamy sand, 0-3 percent slopes. This soil supports grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout. The project area is in a low area of deep sands amongst low to medium height dunes with some gravel and outcrops. Vegetation such as fourwing saltbrush, snakeweed and desert sage was viewed in the project area.
- b. There is no permanent or live water in the area.
- c. There are no dwellings within 2 miles of this location.
- d. A Class III Cultural Resources Examination has been completed by Boone Archaeological Services and the results will be forwarded to the BLM office.

13. BOND COVERAGE:

- a. Bond Coverage is Nationwide; Bond Number UTB000138.

OPERATORS REPRESENTATIVE:

The XTO Energy, Inc. representatives for ensuring compliance of the surface use plan are listed below:  
Surface:

Jeff Raines  
XTO Energy, Inc  
200 N. Loraine St, Suite 800  
Midland, TX 79701  
432-620-4349 (Office)

Stephanie Rabadue  
XTO Energy, Inc  
200 N. Loraine St, Suite 800  
Midland, TX 79701  
432-620-6714 (Office)

Drilling & Production:

Weston Turner  
XTO Energy, Inc.  
200 N. Loraine St, Suite 800  
Midland, TX 79701  
432-638-4380 (Office)

ON-SITE PERFORMED ON 4/24/2014 RESULTED IN NO MOVES TO THE WELL LOCATION. IT WAS AGREED TO TURN THE LOCATION TO A V-DOOR WEST. INTERIM RECLAMATION WOULD BE THE NORTH AND WEST PORTION OF THE PAD. TOP SOIL WILL BE TO THE WEST.

PRESET AT ON-SITE:

Jesse Rice, Bureau of Land Management  
Rebecca Hill, Boone Arch Surveying  
Jimie Scott, Contract Representative for XTO Energy, Inc  
John West Surveying Company

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy
LEASE NO.:	NMNM035607
WELL NAME & NO.:	2H-Ross Draw 25
SURFACE HOLE FOOTAGE:	170'/N & 380'/W
BOTTOM HOLE FOOTAGE:	170'/S & 280'/W
LOCATION:	Section 25, T. 26 S., R. 29 E., NMPM
COUNTY:	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Communitization Agreement
  - Phantom Bank Heronries
  - Cave/Karst
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Cement Requirements
  - H2S Requirements
  - Logging Requirements
  - Pressure Control Requirements
  - Waste Material and Fluids
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

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

### **Communitization Agreement:**

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

### **Phantom Bank heronries**

Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both.

Exhaust noise from engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **Cave and Karst**

**\*\*** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

### **Construction:**

In the advent that any underground voids are opened up during construction activities,

construction activities will be halted and the BLM will be notified immediately.

**No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

**Pad Berming:**

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

**Tank Battery Liners and Berms:**

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

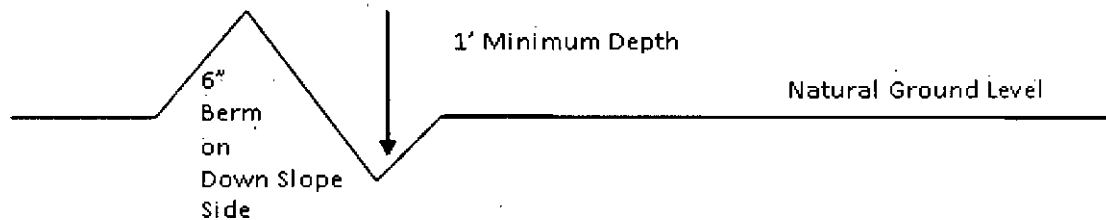
**Drainage**



Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

#### **Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

#### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

#### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

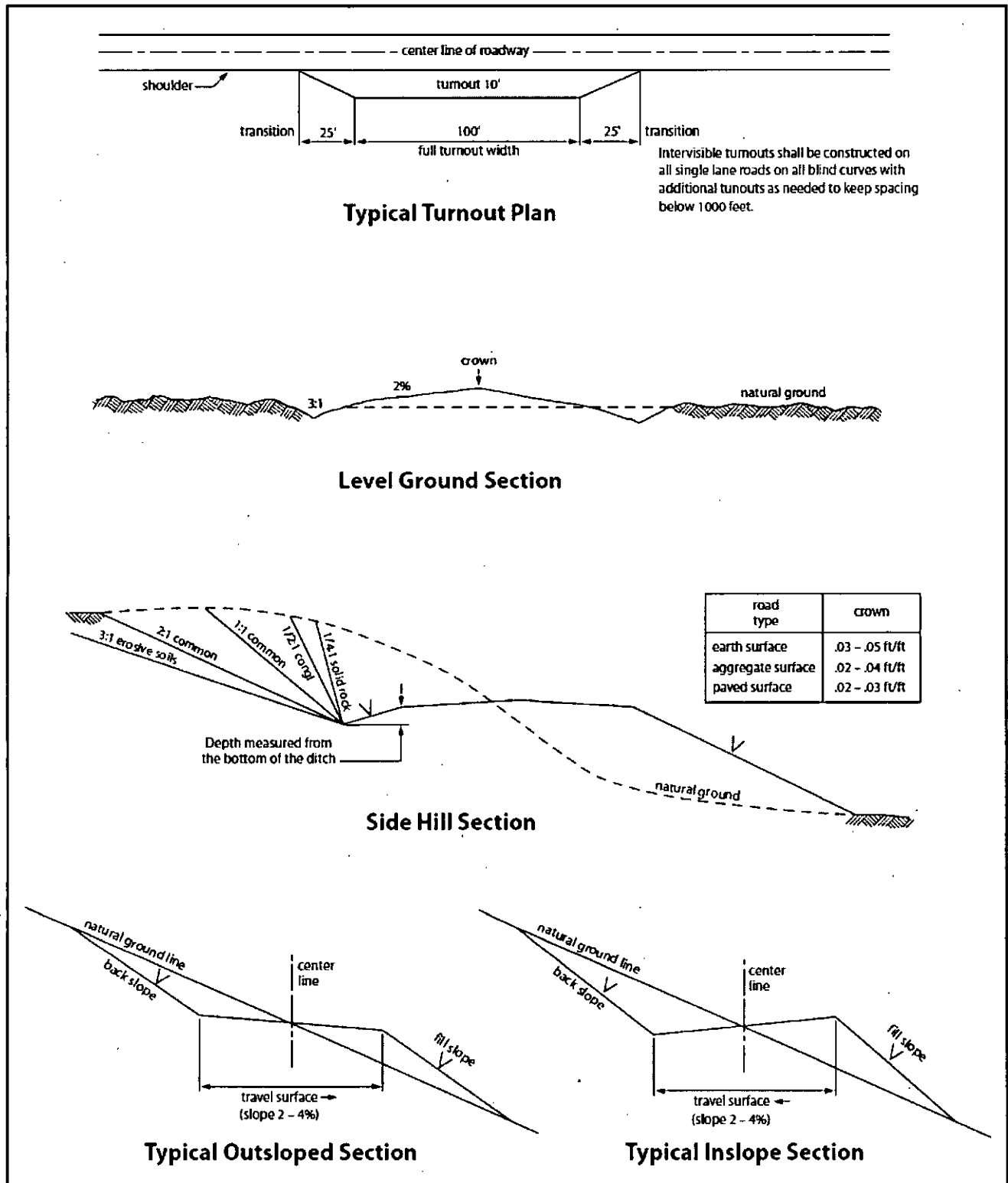


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If H<sub>2</sub>S 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, report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

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

The initial wellhead installed on the well will remain on the well with spools used as needed.

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

**Wait on cement (WOC) for Water Basin:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.**

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

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

**Risks:**

**Medium Cave/ Karst Occurrence**

**Possibility of water flows in the Castile and in the Salado.**

**Possibility of lost circulation in the Rustler, in the Delaware and Delaware.**

1. The 13 3/8 inch surface casing shall be set at approximately 350 feet (**in a competent bedrock; if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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. **If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

**Formation below the 9 5/8 inch shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

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

3. The minimum required fill of cement behind the 7 inch production casing is:

☒ Cement should tie-back at least **500** feet into previous casing string. Operator shall provide method of verification.

**Formation below the 7 inch shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

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

☒ Liner tie-back as proposed by operator is appropriate.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

## **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements,**

**specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi. (Installing a 13 5/8 inch minimum 5M Hydril and a 13 5/8 inch minimum 5M Double Ram BOP).**
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9 5/8 inch intermediate casing shoe shall be **5000 (5M) 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 a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.

- e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **3rd Bone Spring** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### **D. DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **3rd Bone Spring** formation and **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through **3rd Bone Spring** formation and **Wolfcamp** formation.

**Approved for aerated mud, but not air drilling.**

#### **E. DRILL STEM TEST**

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

#### **F. WASTE MATERIAL AND FLUIDS**

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

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

**KGR 11202015**

## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the



largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **B. PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing
  - (2) Earth-disturbing and earth-moving work
  - (3) Blasting
  - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will

be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to

the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land

shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

## **IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

#### Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed