

RECEIVED

RCVD FEB 27 '12
OIL CONS. DIV.

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

NOV 26 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-035634	
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name NAVAJO NATION (SURFACE)	
2. Name of Operator XTO ENERGY, INC.		7. If Unit or CA Agreement, Name and No. N/A	
3a. Address 382 ROAD 3100 AZTC, NM 87410		8. Lease Name and Well No. H B McGRADY A 4 H	
3b. Phone No. (include area code) 505 333-3159		9. API Well No. 30-045- 35218	
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 600' FSL & 340' FEL At proposed prod zone 1900' FSL & 700' FWL		10. Field and Pool, or Exploratory BASIN FRUITLAND COAL (GAS)	
14. Distance in miles and direction from nearest town or post office* 10 AIR MILES SSW OF BLOOMFIELD, NM		11. Sec., T. R. M. or Blk. and Survey or Area SESE 14-27N-12W NMMP	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest dir. unit line, if any) 340'	16. No. of acres in lease 1,120	17. Spacing Unit dedicated to this well S2 (= 320 ACRES)	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1,286' (a DK well)	19. Proposed Depth 5,673' MD	20. BLM/BIA Bond No. on file BLM NATIONWIDE UTB-000138	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,041' UNGRADED	22. Approximate date work will start* 04/01/2011	23. Estimated duration 4 WEEKS	

24. Attachments

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

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

25. Signature 	Name (Printed/Typed) BRIAN WOOD (505 466-8120)	Date 11/23/2010
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Title
CONSULTANT (FAX 505 466-9682)

Approved by (Signature) 	Name (Printed/Typed) AFM	Date 2/23/12
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Title AFM	Office FFO
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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)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

Hold C104

for Directional Survey
and "As Drilled" plat

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP, SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

NMOC A

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

MAR 05 2012 ca

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED GENERAL REQUIREMENTS.

NOTIFY AZTEC UUD 24 HOURS PRIOR TO CASING & CEMENT

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

NOV 26 2010

☐ AMENDED REPORT

Farmington Field Office

WELL LOCATION AND ACREAGE DEDICATION

¹ API Number 30-045- 35218		² Pool Code 71629		³ Pool Name BASIN FRUITLAND COAL (GAS)	
⁴ Property Code 22783		⁵ Property Name HB McGRADY A			⁶ Well Number 4H
⁷ OGRD No. 5380		⁸ Operator Name XTO ENERGY INC.			⁹ Elevation 6041'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	14	27-N	12-W		600	SOUTH	340	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	14	27-N	12-W		1900	SOUTH	700	WEST	SAN JUAN

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16 PRELIMINARY B.H.L. B.H.L. FOOTAGES ARE APPROXIMATE AND PROVIDED BY XTO ENERGY INC. CLIENT		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Brian Wood</i> Signature Date 11-23-10 Printed Name BRIAN WOOD	
BOTTOM HOLE: LAT: 36.57315° N. (NAD 83) LONG: 108.08762° W. (NAD 83) LAT: 36°34'23.27" N. (NAD 27) LONG: 108°05'13.13" W. (NAD 27) FD. 2 1/2" BC. 1911 G.L.O.		18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plot 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 knowledge & belief. MAY 19 2005 Date of Survey Signature and Seal of Registered Professional Land Surveyor Certificate Number	
14 700' B.H.L. 1900' S 89°52'40" E 2640.03' (M) FD. 2 1/2" BC. 1911 G.L.O. SURFACE: LAT: 36.56957° N. (NAD 83) LONG: 108.07319° W. (NAD 83) LAT: 36°34'10.4" N. (NAD 27) LONG: 108°04'21.2" W. (NAD 27) N 00°02'28" E 2641.51' (M) 340' 600' N 89°52'39" W 2640.08' (M) FD. 2 1/2" BC. 1911 G.L.O.			

XTO Energy Inc.

Planning Report

Database:	EDM 2003 21 Single User Db	Local Co-ordinate Reference:	Well HB McGrady A #4H
Company:	XTO Energy	TVD Reference:	Rig KB @ 6053.00ft (Aztec 507)
Project:	San Juan Basin (NAD 83)	MD Reference:	Rig KB @ 6053.00ft (Aztec 507)
Site:	HB McGrady A #4H	North Reference:	True
Well:	HB McGrady A #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HB McGrady A #4H		
Design:	Permitted Wellbore -- HB McGrady A #4H		

Project:	San Juan Basin (NAD 83), San Juan Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site: HB McGrady A #4H, 27N, 12W

Site Position:		Northing:	2,026,720.26ft	Latitude:	36° 34' 10.452 N
From:	Lat/Long	Easting:	2,652,658.70ft	Longitude:	108° 4' 23.484 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-0.14 °

Well: HB McGrady A #4H, Horizontal FC

Well Position	+N/-S	0.00 ft	Northing:	2,026,720.26 ft	Latitude:	36° 34' 10.452 N
	+E/-W	0.00 ft	Easting:	2,652,658.70 ft	Longitude:	108° 4' 23.484 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	6,041.00 ft	Ground Level:	6,041.00 ft

Wellbore: HB McGrady A #4H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	10.17	63.30	50,772

Design: Permitted Wellbore -- HB McGrady A #4H

Audit Notes:

Version:		Phase:	PROTOTYPE	Tie On Depth:	0.00
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Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	287.10

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
772.30	0.00	0.00	772.30	0.00	0.00	0.00	0.00	0.00	0.00	
2,066.58	90.60	287.10	1,590.76	243.21	-790.52	7.00	7.00	0.00	287.10	
5,672.85	90.60	287.10	1,553.00	1,303.60	-4,237.15	0.00	0.00	0.00	0.00	Proposed BHL -- H

XTO Energy Inc.

Planning Report

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well HB McGrady A #4H
Company:	XTO Energy	TVD Reference:	Rig KB @ 6053.00ft (Aztec 507)
Project:	San Juan Basin (NAD 83)	MD Reference:	Rig KB @ 6053.00ft (Aztec 507)
Site:	HB McGrady A #4H	North Reference:	True
Well:	HB McGrady A #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HB McGrady A #4H		
Design:	Permitted Wellbore -- HB McGrady A #4H		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
425.00	0.00	0.00	425.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
546.00	0.00	0.00	546.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland Shale									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
772.30	0.00	0.00	772.30	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.94	287.10	799.99	0.14	-0.45	0.47	7.00	7.00	0.00
850.00	5.44	287.10	849.88	1.08	-3.52	3.69	7.00	7.00	0.00
900.00	8.94	287.10	899.48	2.92	-9.50	9.94	7.00	7.00	0.00
950.00	12.44	287.10	948.61	5.65	-18.36	19.21	7.00	7.00	0.00
1,000.00	15.94	287.10	997.07	9.25	-30.08	31.47	7.00	7.00	0.00
1,050.00	19.44	287.10	1,044.70	13.72	-44.60	46.66	7.00	7.00	0.00
1,100.00	22.94	287.10	1,091.32	19.03	-61.87	64.73	7.00	7.00	0.00
1,110.55	23.68	287.10	1,101.00	20.26	-65.85	68.90	7.00	7.00	0.00
Fruitland Formation									
1,150.00	26.44	287.10	1,136.74	25.17	-81.82	85.61	7.00	7.00	0.00
1,200.00	29.94	287.10	1,180.80	32.12	-104.40	109.23	7.00	7.00	0.00
1,250.00	33.44	287.10	1,223.34	39.84	-129.50	135.49	7.00	7.00	0.00
1,300.00	36.94	287.10	1,264.20	48.31	-157.03	164.30	7.00	7.00	0.00
1,350.00	40.44	287.10	1,303.22	57.50	-186.90	195.55	7.00	7.00	0.00
1,400.00	43.94	287.10	1,340.26	67.37	-218.99	229.12	7.00	7.00	0.00
1,450.00	47.44	287.10	1,375.18	77.89	-253.18	264.89	7.00	7.00	0.00
1,500.00	50.94	287.10	1,407.85	89.02	-289.35	302.73	7.00	7.00	0.00
1,534.46	53.35	287.10	1,429.00	97.02	-315.35	329.94	7.00	7.00	0.00
Upper Fruitland Coal									
1,550.00	54.44	287.10	1,438.16	100.71	-327.35	342.49	7.00	7.00	0.00
1,600.00	57.94	287.10	1,465.97	112.93	-367.05	384.03	7.00	7.00	0.00
1,650.00	61.44	287.10	1,491.20	125.62	-408.30	427.19	7.00	7.00	0.00
1,700.00	64.94	287.10	1,513.75	138.74	-450.95	471.81	7.00	7.00	0.00
1,750.00	68.44	287.10	1,533.54	152.24	-494.83	517.72	7.00	7.00	0.00
1,800.00	71.94	287.10	1,550.48	166.07	-539.78	564.75	7.00	7.00	0.00
1,850.00	75.44	287.10	1,564.52	180.18	-585.64	612.73	7.00	7.00	0.00
1,900.00	78.94	287.10	1,575.60	194.51	-632.23	661.48	7.00	7.00	0.00
1,933.54	81.29	287.10	1,581.36	204.23	-663.81	694.52	7.00	7.00	0.00
Lower Fruitland Coal									
1,950.00	82.44	287.10	1,583.69	209.02	-679.39	710.81	7.00	7.00	0.00
2,000.00	85.94	287.10	1,588.75	223.64	-726.92	760.55	7.00	7.00	0.00
2,050.00	89.44	287.10	1,590.77	238.33	-774.67	810.50	7.00	7.00	0.00
2,066.58	90.60	287.10	1,590.76	243.21	-790.52	827.08	7.00	7.00	0.00
2,067.00	90.60	287.10	1,590.76	243.33	-790.91	827.50	0.00	0.00	0.00
7"									
2,100.00	90.60	287.10	1,590.41	253.04	-822.45	860.50	0.00	0.00	0.00
2,200.00	90.60	287.10	1,589.37	282.44	-918.03	960.49	0.00	0.00	0.00
2,300.00	90.60	287.10	1,588.32	311.84	-1,013.60	1,060.49	0.00	0.00	0.00

XTO Energy Inc.

Planning Report

Database: EDM 2003.21: Single User Db
Company: XTO Energy
Project: San Juan Basin (NAD 83)
Site: HB McGrady A #4H
Well: HB McGrady A #4H
Wellbore: HB McGrady A #4H
Design: Permitted Wellbore -- HB McGrady A #4H

Local Co-ordinate Reference: Well HB McGrady A #4H
TVD Reference: Rig KB @ 6053.00ft (Aztec 507)
MD Reference: Rig KB @ 6053.00ft (Aztec 507)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,400.00	90.60	287.10	1,587.27	341.25	-1,109.17	1,160.48	0.00	0.00	0.00
2,500.00	90.60	287.10	1,586.23	370.65	-1,204.75	1,260.48	0.00	0.00	0.00
2,600.00	90.60	287.10	1,585.18	400.06	-1,300.32	1,360.47	0.00	0.00	0.00
2,700.00	90.60	287.10	1,584.13	429.46	-1,395.89	1,460.46	0.00	0.00	0.00
2,800.00	90.60	287.10	1,583.08	458.86	-1,491.47	1,560.46	0.00	0.00	0.00
2,900.00	90.60	287.10	1,582.04	488.27	-1,587.04	1,660.45	0.00	0.00	0.00
3,000.00	90.60	287.10	1,580.99	517.67	-1,682.61	1,760.45	0.00	0.00	0.00
3,100.00	90.60	287.10	1,579.94	547.08	-1,778.19	1,860.44	0.00	0.00	0.00
3,200.00	90.60	287.10	1,578.90	576.48	-1,873.76	1,960.44	0.00	0.00	0.00
3,300.00	90.60	287.10	1,577.85	605.89	-1,969.33	2,060.43	0.00	0.00	0.00
3,400.00	90.60	287.10	1,576.80	635.29	-2,064.91	2,160.43	0.00	0.00	0.00
3,500.00	90.60	287.10	1,575.75	664.69	-2,160.48	2,260.42	0.00	0.00	0.00
3,600.00	90.60	287.10	1,574.71	694.10	-2,256.06	2,360.41	0.00	0.00	0.00
3,700.00	90.60	287.10	1,573.66	723.50	-2,351.63	2,460.41	0.00	0.00	0.00
3,800.00	90.60	287.10	1,572.61	752.91	-2,447.20	2,560.40	0.00	0.00	0.00
3,900.00	90.60	287.10	1,571.56	782.31	-2,542.78	2,660.40	0.00	0.00	0.00
4,000.00	90.60	287.10	1,570.52	811.71	-2,638.35	2,760.39	0.00	0.00	0.00
4,100.00	90.60	287.10	1,569.47	841.12	-2,733.92	2,860.39	0.00	0.00	0.00
4,200.00	90.60	287.10	1,568.42	870.52	-2,829.50	2,960.38	0.00	0.00	0.00
4,300.00	90.60	287.10	1,567.38	899.93	-2,925.07	3,060.38	0.00	0.00	0.00
4,400.00	90.60	287.10	1,566.33	929.33	-3,020.64	3,160.37	0.00	0.00	0.00
4,500.00	90.60	287.10	1,565.28	958.73	-3,116.22	3,260.37	0.00	0.00	0.00
4,600.00	90.60	287.10	1,564.23	988.14	-3,211.79	3,360.36	0.00	0.00	0.00
4,700.00	90.60	287.10	1,563.19	1,017.54	-3,307.36	3,460.35	0.00	0.00	0.00
4,800.00	90.60	287.10	1,562.14	1,046.95	-3,402.94	3,560.35	0.00	0.00	0.00
4,900.00	90.60	287.10	1,561.09	1,076.35	-3,498.51	3,660.34	0.00	0.00	0.00
5,000.00	90.60	287.10	1,560.05	1,105.76	-3,594.09	3,760.34	0.00	0.00	0.00
5,100.00	90.60	287.10	1,559.00	1,135.16	-3,689.66	3,860.33	0.00	0.00	0.00
5,200.00	90.60	287.10	1,557.95	1,164.56	-3,785.23	3,960.33	0.00	0.00	0.00
5,300.00	90.60	287.10	1,556.90	1,193.97	-3,880.81	4,060.32	0.00	0.00	0.00
5,400.00	90.60	287.10	1,555.86	1,223.37	-3,976.38	4,160.32	0.00	0.00	0.00
5,500.00	90.60	287.10	1,554.81	1,252.78	-4,071.95	4,260.31	0.00	0.00	0.00
5,600.00	90.60	287.10	1,553.76	1,282.18	-4,167.53	4,360.31	0.00	0.00	0.00
5,672.85	90.60	287.10	1,553.00	1,303.60	-4,237.15	4,433.15	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Proposed BHL -- HB I	0.00	0.00	1,553.00	1,303.60	-4,237.15	2,028,034.42	2,648,424.82	36° 34' 23.340 N	108° 5' 15.432 W
- plan hits target									
- Rectangle (sides W10.00 H10.00 D0.00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
225.00	225.00	9 5/8"	9.625	13.500
2,067.00	1,590.76	7"	7.000	8.750
5,672.85	1,553.00	4 1/2"	4.500	6.125

XTO Energy Inc.

Planning Report

Database: EDM 2003.21 Single User Db
Company: XTO Energy
Project: San Juan Basin (NAD 83)
Site: HB McGrady A #4H
Well: HB McGrady A #4H
Wellbore: HB McGrady A #4H
Design: Permitted Wellbore -- HB McGrady A #4H

Local Co-ordinate Reference: Well HB McGrady A #4H
TVD Reference: Rig KB @ 6053.00ft (Aztec 507)
MD Reference: Rig KB @ 6053.00ft (Aztec 507)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
425.00	425.00	Ojo Alamo		0.00	
546.00	546.00	Kirtland Shale		0.00	
1,110.55	1,101.00	Fruitland Formation		0.00	
1,534.46	1,429.00	Upper Fruitland Coal		0.00	
1,933.54	1,589.00	Lower Fruitland Coal		-0.63	287.00
	1,607.00	Base of Lower Coal		-0.63	287.00



Well Name: HB McGrady A #4H

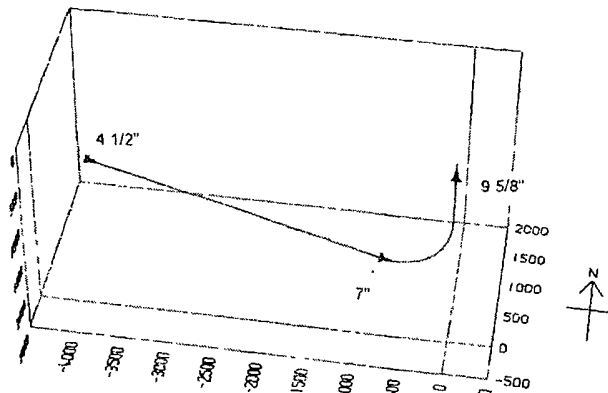
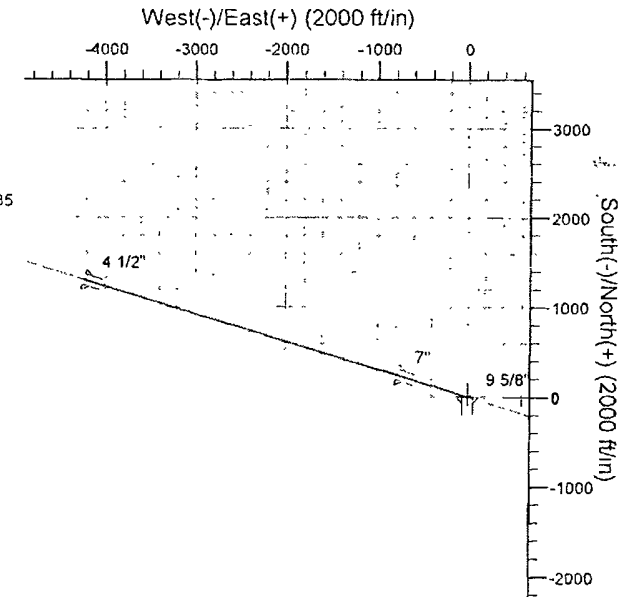
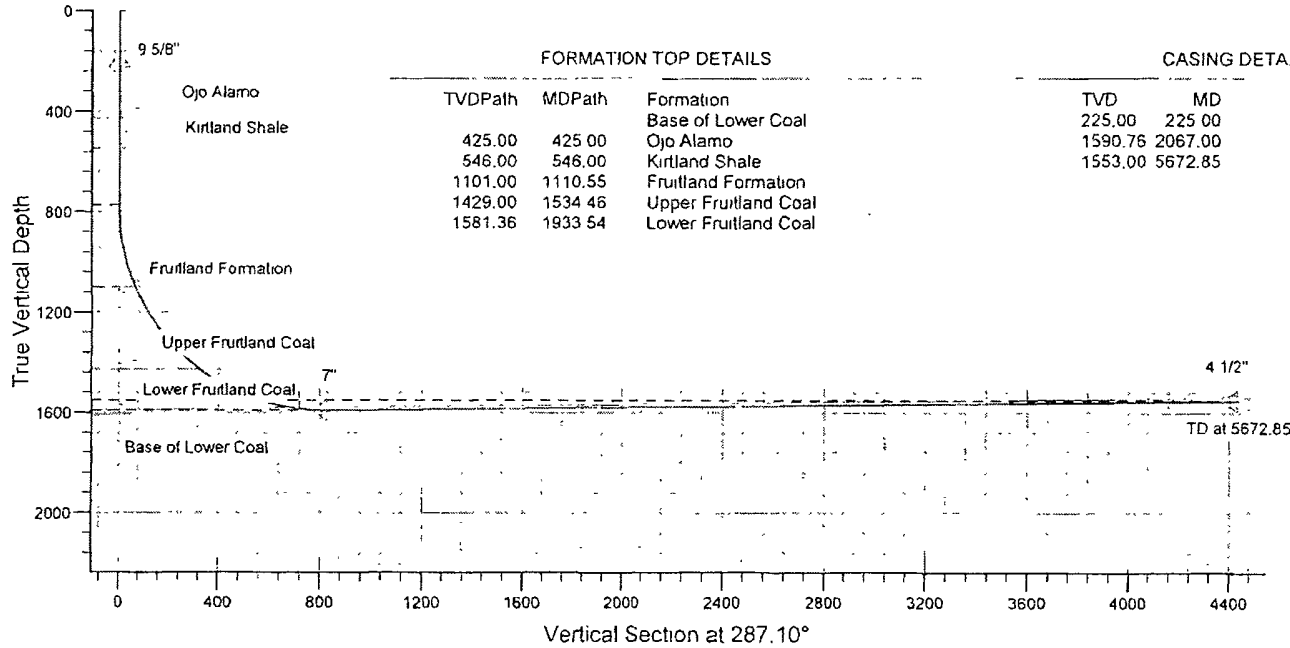
San Juan Division
Drilling Department

Calculation Method: Minimum Curvature
Geodetic Datum: North American Datum 1983
Lat 36° 34' 10.452 N
Long: 108° 4' 23.484 W



Azimuths to True North
Magnetic North: 10.17°

Magnetic Field
Strength: 50771.8snT
Dip Angle: 63.30°
Date: 12/31/2009
Model: IGRF200510



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	772.30	0.00	0.00	772.30	0.00	0.00	0.00	0.00	0.00	
3	2066.58	90.60	287.10	1590.76	243.21	-790.52	7.00	287.10	827.08	
4	5672.85	90.60	287.10	1553.00	1303.60	-4237.15	0.00	0.00	4433.15	Proposed BHL -- HB McGrady A #4H

XTO Energy Inc.
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Drilling Program

1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>Measured Depth</u>	<u>True Vertical Depth</u>	<u>Elevation</u>
Nacimiento	0'	0'	+6,041'
Ojo Alamo Sandstone	425'	425'	+5,616'
Kirtland Shale	546'	546'	+5,495'
Fruitland Formation	1,111'	1,101'	+4,940'
Upper Fruitland Coal	1,534'	1,429'	+4,612'
Lower Fruitland Coal	1,933'	1,589'	+4,452'
Base of Lower Coal		1,607'	+4,434'
Total Depth (TD)	5,673'	1,553'	+4,488'

2. NOTABLE ZONES

<u>Gas & Oil Zone</u>	<u>Water Zones</u>	<u>Coal Zone</u>
Fruitland	Nacimiento Ojo Alamo	Fruitland

Water zones will be protected with casing, cement, and weighted mud. Fresh water found while drilling will be recorded. Oil or gas shows will be tested for commercial potential based on the geologist's recommendations.

3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. (A typical 2,000 psi model is on PAGE 3.) An 8-5/8" x 11" 2,000 pound double ram BOP system with a choke manifold and mud cross will be tested to ≈ 200 psi and then to $\approx 1,000$ psi. Upper and lower

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Kelly cocks with valve handle and subs to fit all drill string connections which are in use will be available on the rig floor.

Tests will be run when:

- 1) installed
- 2) anytime a pressure seal is broken (test only affected equipment)
- 3) at least every 30 days
- 4) blind & pipe rams will be activated each trip, but no more than daily

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested before drilling surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated daily to ensure good mechanical working order and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs. Maximum expected bottom hole pressure will be ≈ 385 psi. BOP and mud system will control pressure.

4. CASING & CEMENT

<u>Type</u>	<u>Hole</u>	<u>O. D.</u>	<u>Interval</u>	<u>Length</u>	<u>Weight</u>	<u>Grade</u>	<u>Coupling</u>
Surface	13.5"	9.625"	0' - 225'	225'	36#	J-55	ST & C
Intermediate	8.75"	7"	0' - 2067'	2067'	23#	J-55	ST & C
Production liner	6.125"	4.5"	2000' - 5673'	3673'	10.5#	J-55	ST & C

<u>Type</u>	<u>Collapse</u> <u>Rating psi</u>	<u>Burst</u> <u>Rating psi</u>	<u>Joint</u> <u>Strength</u>	<u>I. D.</u>	<u>Drift</u>	*SF <u>Collapse</u>	**SF <u>Burst</u>	***SF <u>Tensile</u>
Surface	2020	3520	394 M-lbs	8.921"	8.765"	18.76	32.7	48.6
Intermediate	3270	4360	284 M-lbs	6.276"	6.151"	4.29	5.73	5.97
Production liner	4010	4790	132 M-lbs	4.052"	3.927"	5.77	6.90	3.42

* Collapse is based on evacuated annulus & hydrostatic at TVD

** Burst is based on evacuated casing & hydrostatic at TVD

*** Tensile is based on hanging air weight of casing in a vertical hole measured at depth

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Surface casing will be cemented to the surface with ≈ 220 cubic feet (≈ 188 sacks) Type V cement (or its equivalent) + accelerator + lost circulation material. Yield = 1.17 cubic feet per sack. Weight = 15.8 pounds per gallon. Water = 5.01 gallons per sack. Excess: $>100\%$. At least 3 centralizers will be installed.

Production casing will be cemented to the surface with ≈ 435 cubic feet ($\approx 40\%$ excess). Lead with 254.88 cubic feet (≈ 108 sacks) Type V or its equivalent with accelerator + lost circulation material + dispersant + fluid loss additive mixed at 12.3 pounds per gallon, 2.36 cubic feet per sack, and 12.95 gallons water per sack. Tail with 181 cubic feet (≈ 100 sacks) Type V or Class G with accelerator + lost circulation material + dispersant + fluid loss additive mixed at 13.5 pounds per gallon, 1.81 cubic feet per sack, and 8.85 gallons water per sack. Centralizers will be installed.

Production liner will be set using an uncemented liner hanger. The liner may be tied back to the surface during the well completion.

5. MUD PROGRAM

<u>RANGE</u>	<u>MUD TYPE</u>	<u>WEIGHT</u>	<u>VISCOSITY</u>	<u>WATER LOSS</u>
0' - 225'	fresh water/spud	8.6-9.0	28-32	NC
225' - 2,067'	fresh water/polymer	8.6-9.2	28-36	NC
2,067' - TD	fresh water/polymer	8.4-8.8	28-32	NC

Will use fibrous materials as needed to control seepage and lost circulation. Pump high viscosity sweeps as needed to clean hole.

6. CORES, TESTS, & LOGS

No cores or drill stem tests are planned. Mud logger will arrive at $\approx 225'$ and collect samples every $\approx 10'$ from there to TD. An open hole gamma ray log

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will be run from $\approx 225'$ to TD.

7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum expected bottom hole pressure will be ≈ 483 psi.

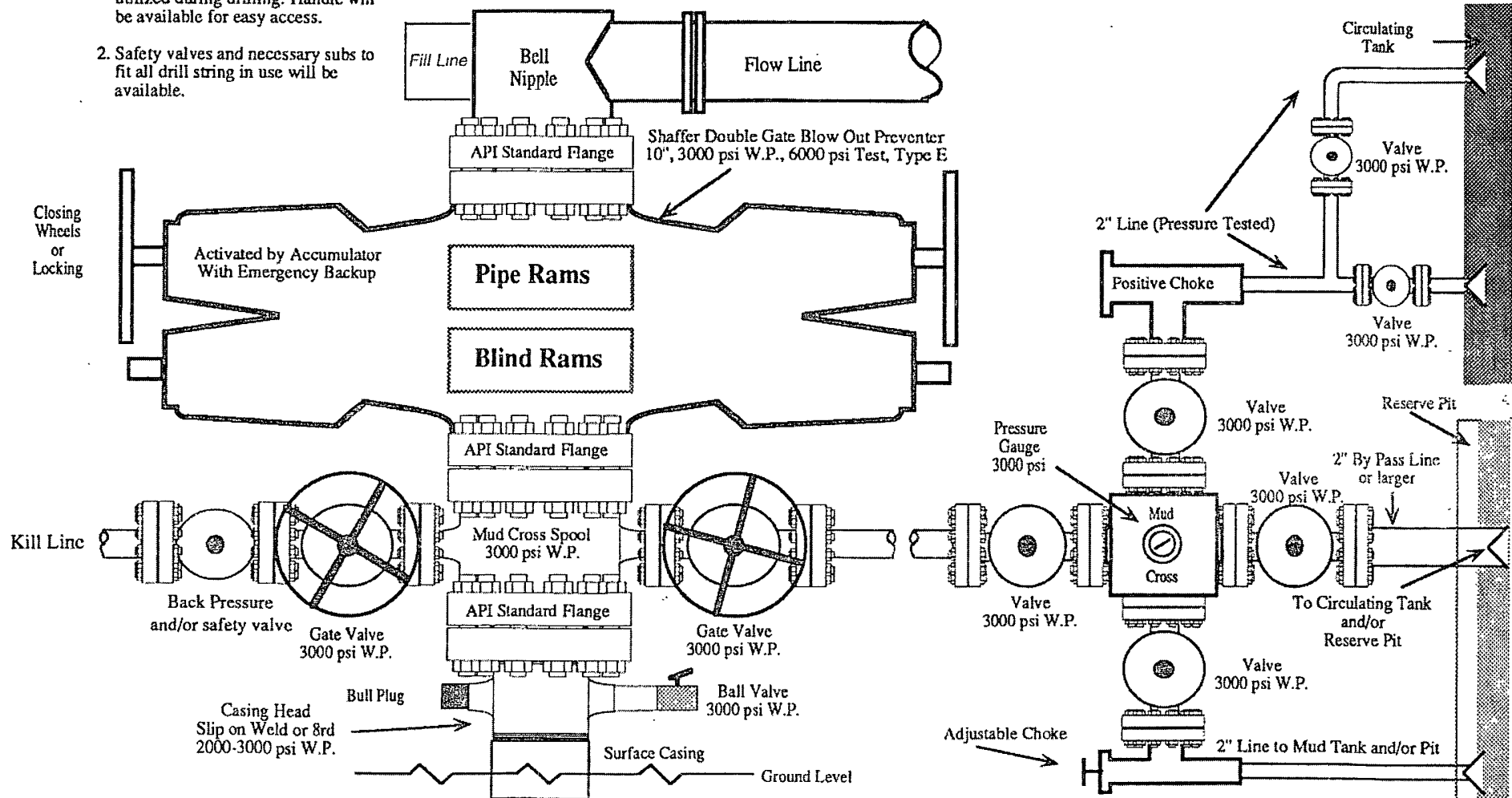
8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take approximately four weeks to drill and complete the well.

2,000 PSI BOP SYSTEM

Note: 1. An upper Kelly cock valve will be utilized during drilling. Handle will be available for easy access.

2. Safety valves and necessary subs to fit all drill string in use will be available.



Note: This equipment is designed to meet requirements for a 2-M rating standard per 43 CFR part 3160 (amended). Proper operation and testing of equipment will be carried out per standard. 2,000 psi equipment can be substituted in the drawing to meet minimum requirements per standard.

PERMITS WEST, INC.

PROVIDING PERMITS for LAND USERS

37Verano Loop, Santa Fe New Mexico 87508

(505) 466-8120