

# **XTO Energy**

**LaPlata County Directionals**

**Hein #1-2**

**Hein #1-2**

**Hein #1-2**

**Plan: Permitted Wellbore**

## **Standard Planning Report**

**27 January, 2010**

# XTO Energy Inc.

## Planning Report

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Hein #1-2
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	Rig KB @ 6298.0ft (AWS #507)
<b>Project:</b>	LaPlata County Directionals	<b>MD Reference:</b>	Rig KB @ 6298.0ft (AWS #507)
<b>Site:</b>	Hein #1-2	<b>North Reference:</b>	True
<b>Well:</b>	Hein #1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hein #1-2		
<b>Design:</b>	Permitted Wellbore		

<b>Project</b>	LaPlata County Directionals, LaPlata County, Colorado, Directional Fruitland Coal Wells		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Southern Zone		

Site	Hein #1-2, T32N, R7W				
Site Position:		Northing:	1,143,730.29 ft	Latitude:	37° 2' 35.124 N
From:	Lat/Long	Easting:	2,397,152.11 ft	Longitude:	107° 33' 56.052 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.27 °

Well	Hein #1-2, S- Well to top of FC					
Well Position	+N/-S	0.0 ft	Northing:	1,143,730.29 ft	Latitude:	37° 2' 35.124 N
	+E/-W	0.0 ft	Easting:	2,397,152.11 ft	Longitude:	107° 33' 56.052 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	6,287.0 ft	Ground Level:	6,287.0 ft

<b>Wellbore</b>	Hein #1-2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	8/28/2007	10.30	63.86	51,334

<b>Design</b>	Permitted Wellbore			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	50.01

<b>Plan Sections</b>										
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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,585.7	45.00	50.21	1,457.6	306.9	368.4	3.50	3.50	0.00	50.21	
1,940.7	45.00	50.21	1,708.6	467.5	561.3	0.00	0.00	0.00	0.00	
2,940.7	10.00	50.21	2,581.9	758.4	910.6	3.50	-3.50	0.00	180.00	
3,314.5	10.00	50.21	2,950.0	800.0	960.5	0.00	0.00	0.00	0.00	Hein #1-2 Requested

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<b>Site:</b>	Hein #1-2	<b>North Reference:</b>	True
<b>Well:</b>	Hein #1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hein #1-2		
<b>Design:</b>	Permitted Wellbore		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>8 5/8"</b>									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	3.50	50.21	399.9	2.0	2.3	3.1	3.50	3.50	0.00
500.0	7.00	50.21	499.5	7.8	9.4	12.2	3.50	3.50	0.00
600.0	10.50	50.21	598.3	17.5	21.1	27.4	3.50	3.50	0.00
700.0	14.00	50.21	696.0	31.1	37.4	48.6	3.50	3.50	0.00
800.0	17.50	50.21	792.3	48.5	58.2	75.8	3.50	3.50	0.00
900.0	21.00	50.21	886.7	69.6	83.5	108.7	3.50	3.50	0.00
1,000.0	24.50	50.21	978.9	94.3	113.3	147.4	3.50	3.50	0.00
1,100.0	28.00	50.21	1,068.5	122.6	147.2	191.6	3.50	3.50	0.00
1,200.0	31.50	50.21	1,155.3	154.4	185.4	241.2	3.50	3.50	0.00
1,300.0	35.00	50.21	1,239.0	189.5	227.5	296.0	3.50	3.50	0.00
1,328.3	35.99	50.21	1,262.0	200.0	240.1	312.5	3.50	3.50	0.00
<b>Ojo Alamo</b>									
1,400.0	38.50	50.21	1,319.1	227.8	273.4	355.9	3.50	3.50	0.00
1,441.2	39.94	50.21	1,351.0	244.4	293.5	381.9	3.50	3.50	0.00
<b>Kirtland Shale</b>									
1,500.0	42.00	50.21	1,395.4	269.1	323.1	420.5	3.50	3.50	0.00
1,585.7	45.00	50.21	1,457.6	306.9	368.4	479.5	3.50	3.50	0.00
1,600.0	45.00	50.21	1,467.7	313.3	376.2	489.6	0.00	0.00	0.00
1,700.0	45.00	50.21	1,538.4	358.6	430.5	560.3	0.00	0.00	0.00
1,800.0	45.00	50.21	1,609.1	403.8	484.8	631.0	0.00	0.00	0.00
1,900.0	45.00	50.21	1,679.8	449.1	539.2	701.7	0.00	0.00	0.00
1,940.7	45.00	50.21	1,708.6	467.5	561.3	730.5	0.00	0.00	0.00
2,000.0	42.92	50.21	1,751.2	493.8	592.9	771.6	3.50	-3.50	0.00
2,100.0	39.42	50.21	1,826.5	536.0	643.5	837.5	3.50	-3.50	0.00
2,200.0	35.92	50.21	1,905.6	575.1	690.4	898.6	3.50	-3.50	0.00
2,300.0	32.42	50.21	1,988.4	611.0	733.6	954.7	3.50	-3.50	0.00
2,400.0	28.92	50.21	2,074.4	643.7	772.8	1,005.7	3.50	-3.50	0.00
2,500.0	25.42	50.21	2,163.3	672.9	807.9	1,051.4	3.50	-3.50	0.00
2,536.0	24.16	50.21	2,196.0	682.6	819.5	1,066.5	3.50	-3.50	0.00
<b>Fruitland Formation</b>									
2,600.0	21.92	50.21	2,254.9	698.6	838.7	1,091.6	3.50	-3.50	0.00
2,700.0	18.42	50.21	2,348.7	720.7	865.2	1,126.0	3.50	-3.50	0.00
2,777.7	15.71	50.21	2,423.0	735.2	882.7	1,148.8	3.50	-3.50	0.00
<b>Upper Fruitland Coal</b>									
2,800.0	14.92	50.21	2,444.5	739.0	887.3	1,154.7	3.50	-3.50	0.00
2,839.7	13.53	50.21	2,483.0	745.3	894.8	1,164.5	3.50	-3.50	0.00
<b>Middle Fruitland Coal</b>									
2,900.0	11.42	50.21	2,541.9	753.6	904.8	1,177.5	3.50	-3.50	0.00
2,940.7	10.00	50.21	2,581.9	758.4	910.6	1,185.1	3.50	-3.50	0.00
2,964.2	10.00	50.21	2,605.0	761.1	913.7	1,189.2	0.00	0.00	0.00
<b>Pictured Cliffs Tongue</b>									
3,000.0	10.00	50.21	2,640.2	765.0	918.5	1,195.4	0.00	0.00	0.00
3,100.0	10.00	50.21	2,738.7	776.1	931.9	1,212.7	0.00	0.00	0.00
3,151.0	10.00	50.21	2,789.0	781.8	938.7	1,221.6	0.00	0.00	0.00
<b>Lower Fruitland Coal</b>									
3,164.2	10.00	50.21	2,802.0	783.3	940.4	1,223.9	0.00	0.00	0.00
<b>Pictured Cliffs SS</b>									

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<b>Project:</b>	LaPlata County Directionals	<b>MD Reference:</b>	Rig KB @ 6298.0ft (AWS #507)
<b>Site:</b>	Hein #1-2	<b>North Reference:</b>	True
<b>Well:</b>	Hein #1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hein #1-2		
<b>Design:</b>	Permitted Wellbore		

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)	
3,200.0	10.00	50.21	2,837.2	787.3	945.2	1,230.1	0.00	0.00	0.00	
3,300.0	10.00	50.21	2,935.7	798.4	958.5	1,247.5	0.00	0.00	0.00	
3,314.5	10.00	50.21	2,950.0	800.0	960.5	1,250.0	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										
Hein #1-2 Requested Bl	0.00	0.00	2,950.0	800.0	960.5	1,144,508.85	2,398,130.04	37° 2' 43.033 N	107° 33' 44.205 W	
- plan hits target										
- Point										

Casing Points									
Measured Depth (ft)	Vertical Depth (ft)	Name			Casing Diameter (")	Hole Diameter (")			
3,314.5	2,950.0	5 1/2"			5-1/2	7-7/8			
225.0	225.0	8 5/8"			8-5/8	12-1/4			

Formations									
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)				
1,328.3	1,262.0	Ojo Alamo		0.00					
1,441.2	1,351.0	Kirtland Shale		0.00					
2,536.0	2,196.0	Fruitland Formation		0.00					
2,777.7	2,423.0	Upper Fruitland Coal		0.00					
2,839.7	2,483.0	Middle Fruitland Coal		0.00					
2,964.2	2,605.0	Pictured Cliffs Tongue		0.00					
3,151.0	2,789.0	Lower Fruitland Coal		0.00					
3,164.2	2,802.0	Pictured Cliffs SS		0.00					



**Well Name: Hein #1-2**

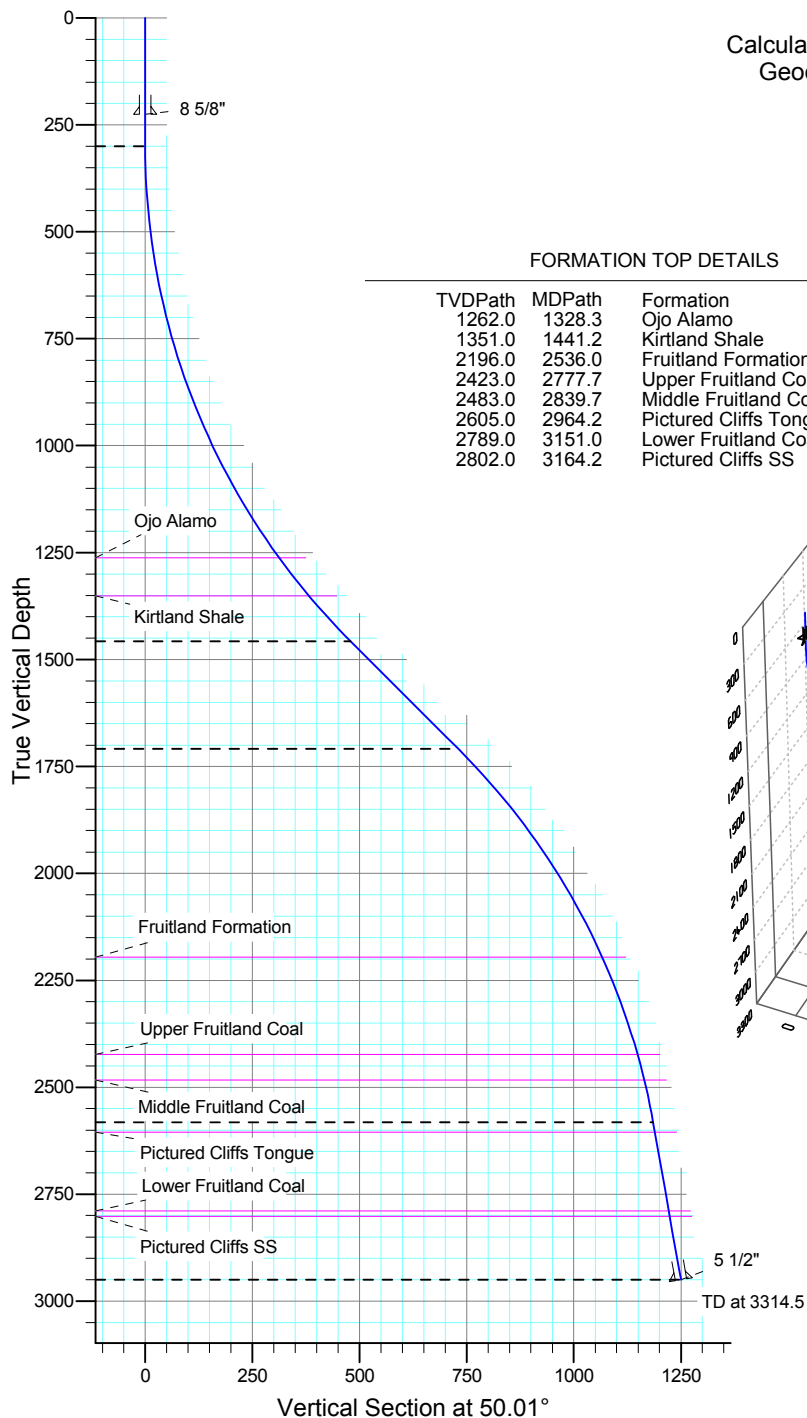
San Juan Division  
Drilling Department

Calculation Method: Minimum Curvature  
Geodetic Datum: North American Datum 1983  
Lat: 37° 2' 35.124 N  
Long: 107° 33' 56.052 W



Azimuths to True North  
Magnetic North: 10.30°

Magnetic Field  
Strength: 51334.4snT  
Dip Angle: 63.86°  
Date: 8/28/2007  
Model: IGRF200510

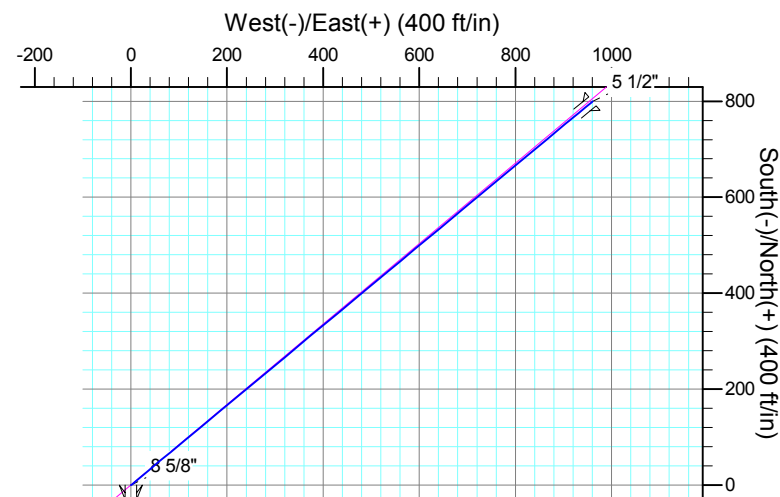
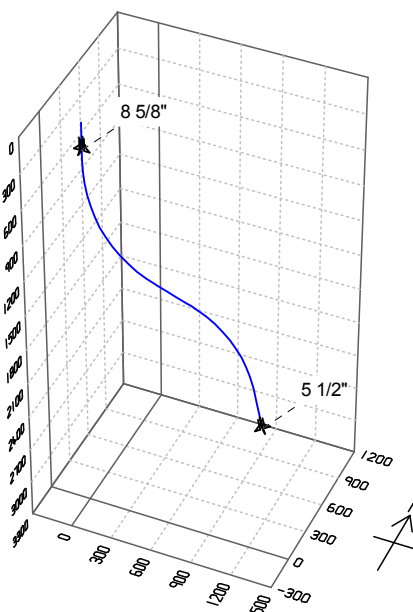


FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
1262.0	1328.3	Ojo Alamo
1351.0	1441.2	Kirtland Shale
2196.0	2536.0	Fruitland Formation
2423.0	2777.7	Upper Fruitland Coal
2483.0	2839.7	Middle Fruitland Coal
2605.0	2964.2	Pictured Cliffs Tongue
2789.0	3151.0	Lower Fruitland Coal
2802.0	3164.2	Pictured Cliffs SS

CASING DETAILS

TVD	MD	Name	Size
225.0	225.0	8 5/8"	8-5/8
2950.03314.5		5 1/2"	5-1/2



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1585.7	45.00	50.21	1457.6	306.9	368.4	3.50	50.21	479.5	
4	1940.7	45.00	50.21	1708.6	467.5	561.3	0.00	0.00	730.5	
5	2940.7	10.00	50.21	2581.9	758.4	910.6	3.50	180.00	1185.1	
6	3314.5	10.00	50.21	2950.0	800.0	960.5	0.00	0.00	1250.0	Hein #1-2 Requested BHL @ top of PC