

XTO Energy - Western Div. (NM, CO, UT)

LaPlata County (NAD83)

Smith 1H

Smith 1H

Smith 1H -- Upper Lat.

Plan: Smith 1H -- Upper Lat.

Standard Planning Report

10 July, 2013

XTO Energy, Inc.

Planning Report

Database:	LMRKPROD	Local Co-ordinate Reference:	Site Smith 1H
Company:	XTO Energy - Western Div. (NM, CO, UT)	TVD Reference:	WELL @ 6327.00ft (Original Well Elev)
Project:	LaPlata County (NAD83)	MD Reference:	WELL @ 6327.00ft (Original Well Elev)
Site:	Smith 1H	North Reference:	True
Well:	Smith 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Smith 1H -- Upper Lat.		
Design:	Smith 1H -- Upper Lat.		

Project	LaPlata County (NAD83), LaPlata County, Colorado, Directional Fruitland Coal Wells		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Southern Zone		

Site	Smith 1H, Sec 2, T32N, R7W		
Site Position:		Northing:	1,142,558.64 usft
From:	Lat/Long	Easting:	2,392,019.74 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16"
		Latitude:	37° 2' 22.416000 N
		Longitude:	107° 34' 59.016000 W
		Grid Convergence:	-1.28 °

Well	Smith 1H, Horizontal FC		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	6,315.00 ft
		Latitude:	37° 2' 22.415948 N
		Longitude:	107° 34' 59.016000 W
		Ground Level:	6,315.00 ft

Wellbore	Smith 1H -- Upper Lat.		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF200510	3/13/2013	9.62
			Dip Angle
			(°)
			63.73
			Field Strength
			(nT)
			50,800

Design	Smith 1H -- Upper Lat.		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			2,431.02
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			353.89

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
2,431.02	12.14	334.18	2,389.42	365.16	-176.64	0.00	0.00	0.00	0.00	
2,442.79	13.52	337.54	2,400.89	367.54	-177.71	13.33	11.73	28.53	30.00	
2,481.45	13.52	337.54	2,438.48	375.90	-181.16	0.00	0.00	0.00	0.00	
2,996.17	90.00	356.23	2,735.00	746.08	-228.46	15.00	14.86	3.63	19.18	
6,620.07	90.00	356.23	2,735.00	4,362.13	-466.96	0.00	0.00	0.00	0.00	Smith 1H -- Upper Lat

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Well:	Smith 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Smith 1H -- Upper Lat.		
Design:	Smith 1H -- Upper Lat.		

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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	3.00	334.18	399.95	2.36	-1.14	2.46	3.00	3.00	0.00
500.00	6.00	334.18	499.63	9.42	-4.56	9.85	3.00	3.00	0.00
600.00	9.00	334.18	598.77	21.17	-10.24	22.14	3.00	3.00	0.00
704.53	12.14	334.18	701.51	38.42	-18.59	40.18	3.00	3.00	0.00
800.00	12.14	334.18	794.85	56.49	-27.33	59.08	0.00	0.00	0.00
900.00	12.14	334.18	892.61	75.42	-36.48	78.87	0.00	0.00	0.00
1,000.00	12.14	334.18	990.38	94.34	-45.64	98.66	0.00	0.00	0.00
1,100.00	12.14	334.18	1,088.14	113.26	-54.79	118.45	0.00	0.00	0.00
1,200.00	12.14	334.18	1,185.91	132.19	-63.95	138.25	0.00	0.00	0.00
1,300.00	12.14	334.18	1,283.67	151.11	-73.10	158.04	0.00	0.00	0.00
1,400.00	12.14	334.18	1,381.44	170.04	-82.26	177.83	0.00	0.00	0.00
1,500.00	12.14	334.18	1,479.20	188.96	-91.41	197.62	0.00	0.00	0.00
1,600.00	12.14	334.18	1,576.97	207.89	-100.57	217.41	0.00	0.00	0.00
1,700.00	12.14	334.18	1,674.74	226.81	-109.72	237.20	0.00	0.00	0.00
1,800.00	12.14	334.18	1,772.50	245.74	-118.88	257.00	0.00	0.00	0.00
1,900.00	12.14	334.18	1,870.27	264.66	-128.03	276.79	0.00	0.00	0.00
2,000.00	12.14	334.18	1,968.03	283.59	-137.18	296.58	0.00	0.00	0.00
2,100.00	12.14	334.18	2,065.80	302.51	-146.34	316.37	0.00	0.00	0.00
2,200.00	12.14	334.18	2,163.56	321.44	-155.49	336.16	0.00	0.00	0.00
2,300.00	12.14	334.18	2,261.33	340.36	-164.65	355.96	0.00	0.00	0.00
2,400.00	12.14	334.18	2,359.09	359.29	-173.80	375.75	0.00	0.00	0.00
2,431.02	12.14	334.18	2,389.42	365.16	-176.64	381.89	0.00	0.00	0.00
2,434.69	12.56	335.31	2,393.00	365.87	-176.98	382.63	13.33	11.61	30.65
Fruitland Formation									
2,442.79	13.52	337.54	2,400.89	367.54	-177.71	384.37	13.33	11.79	27.57
2,481.45	13.52	337.54	2,438.48	375.90	-181.16	393.04	0.00	0.00	0.00
2,500.00	16.17	340.83	2,456.41	380.34	-182.84	397.64	15.00	14.30	17.70
2,525.00	19.80	343.88	2,480.19	387.70	-185.16	405.20	15.00	14.52	12.20
2,550.00	23.47	346.01	2,503.42	396.60	-187.54	414.31	15.00	14.67	8.53
2,575.00	27.16	347.59	2,526.02	407.01	-189.97	424.91	15.00	14.75	6.33
2,600.00	30.86	348.82	2,547.88	418.87	-192.44	436.98	15.00	14.81	4.92
2,625.00	34.57	349.81	2,568.91	432.15	-194.94	450.44	15.00	14.85	3.95
2,650.00	38.29	350.63	2,589.02	446.78	-197.45	465.26	15.00	14.87	3.27
2,675.00	42.01	351.32	2,608.13	462.70	-199.98	481.35	15.00	14.89	2.78
2,700.00	45.74	351.92	2,626.14	479.84	-202.50	498.66	15.00	14.91	2.40
2,725.00	49.47	352.45	2,643.00	498.12	-205.00	517.11	15.00	14.92	2.11
2,739.16	51.58	352.73	2,652.00	508.96	-206.41	528.04	15.00	14.93	1.93
Upper Fruitland Coal									
2,750.00	53.20	352.92	2,658.61	517.48	-207.49	536.63	15.00	14.93	1.84
2,775.00	56.94	353.35	2,672.93	537.83	-209.93	557.12	15.00	14.93	1.72
2,798.22	60.40	353.72	2,685.00	557.54	-212.17	576.95	15.00	14.94	1.58
Middle Fruitland Coal									
2,800.00	60.67	353.75	2,685.87	559.07	-212.33	578.50	15.00	14.94	1.52
2,825.00	64.41	354.11	2,697.40	581.13	-214.68	600.68	15.00	14.94	1.46
2,850.00	68.14	354.46	2,707.46	603.90	-216.96	623.56	15.00	14.95	1.37
2,875.00	71.88	354.78	2,716.00	627.28	-219.16	647.05	15.00	14.95	1.30
2,900.00	75.62	355.10	2,723.00	651.19	-221.27	671.04	15.00	14.95	1.25
2,925.00	79.36	355.40	2,728.41	675.51	-223.30	695.44	15.00	14.95	1.21
2,950.00	83.10	355.69	2,732.22	700.13	-225.21	720.13	15.00	14.95	1.18

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Wellbore:	Smith 1H -- Upper Lat.		
Design:	Smith 1H -- Upper Lat.		

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)	
2,975.00	86.83	355.98	2,734.42	724.97	-227.02	745.01	15.00	14.96	1.16	
2,996.17	90.00	356.23	2,735.00	746.08	-228.46	766.16	15.00	14.96	1.15	
3,000.00	90.00	356.23	2,735.00	749.90	-228.71	769.98	0.00	0.00	0.00	
3,100.00	90.00	356.23	2,735.00	849.68	-235.29	869.90	0.00	0.00	0.00	
3,200.00	90.00	356.23	2,735.00	949.47	-241.87	969.82	0.00	0.00	0.00	
3,300.00	90.00	356.23	2,735.00	1,049.25	-248.45	1,069.73	0.00	0.00	0.00	
3,400.00	90.00	356.23	2,735.00	1,149.03	-255.04	1,169.65	0.00	0.00	0.00	
3,500.00	90.00	356.23	2,735.00	1,248.82	-261.62	1,269.57	0.00	0.00	0.00	
3,600.00	90.00	356.23	2,735.00	1,348.60	-268.20	1,369.48	0.00	0.00	0.00	
3,700.00	90.00	356.23	2,735.00	1,448.38	-274.78	1,469.40	0.00	0.00	0.00	
3,800.00	90.00	356.23	2,735.00	1,548.16	-281.36	1,569.32	0.00	0.00	0.00	
3,900.00	90.00	356.23	2,735.00	1,647.95	-287.94	1,669.23	0.00	0.00	0.00	
4,000.00	90.00	356.23	2,735.00	1,747.73	-294.52	1,769.15	0.00	0.00	0.00	
4,100.00	90.00	356.23	2,735.00	1,847.51	-301.10	1,869.07	0.00	0.00	0.00	
4,200.00	90.00	356.23	2,735.00	1,947.30	-307.69	1,968.99	0.00	0.00	0.00	
4,300.00	90.00	356.23	2,735.00	2,047.08	-314.27	2,068.90	0.00	0.00	0.00	
4,400.00	90.00	356.23	2,735.00	2,146.86	-320.85	2,168.82	0.00	0.00	0.00	
4,500.00	90.00	356.23	2,735.00	2,246.65	-327.43	2,268.74	0.00	0.00	0.00	
4,600.00	90.00	356.23	2,735.00	2,346.43	-334.01	2,368.65	0.00	0.00	0.00	
4,700.00	90.00	356.23	2,735.00	2,446.21	-340.59	2,468.57	0.00	0.00	0.00	
4,800.00	90.00	356.23	2,735.00	2,546.00	-347.17	2,568.49	0.00	0.00	0.00	
4,900.00	90.00	356.23	2,735.00	2,645.78	-353.75	2,668.40	0.00	0.00	0.00	
5,000.00	90.00	356.23	2,735.00	2,745.56	-360.34	2,768.32	0.00	0.00	0.00	
5,100.00	90.00	356.23	2,735.00	2,845.35	-366.92	2,868.24	0.00	0.00	0.00	
5,200.00	90.00	356.23	2,735.00	2,945.13	-373.50	2,968.15	0.00	0.00	0.00	
5,300.00	90.00	356.23	2,735.00	3,044.91	-380.08	3,068.07	0.00	0.00	0.00	
5,400.00	90.00	356.23	2,735.00	3,144.70	-386.66	3,167.99	0.00	0.00	0.00	
5,500.00	90.00	356.23	2,735.00	3,244.48	-393.24	3,267.90	0.00	0.00	0.00	
5,600.00	90.00	356.23	2,735.00	3,344.26	-399.82	3,367.82	0.00	0.00	0.00	
5,700.00	90.00	356.23	2,735.00	3,444.05	-406.40	3,467.74	0.00	0.00	0.00	
5,800.00	90.00	356.23	2,735.00	3,543.83	-412.98	3,567.65	0.00	0.00	0.00	
5,900.00	90.00	356.23	2,735.00	3,643.61	-419.57	3,667.57	0.00	0.00	0.00	
6,000.00	90.00	356.23	2,735.00	3,743.40	-426.15	3,767.49	0.00	0.00	0.00	
6,100.00	90.00	356.23	2,735.00	3,843.18	-432.73	3,867.41	0.00	0.00	0.00	
6,200.00	90.00	356.23	2,735.00	3,942.96	-439.31	3,967.32	0.00	0.00	0.00	
6,300.00	90.00	356.23	2,735.00	4,042.74	-445.89	4,067.24	0.00	0.00	0.00	
6,400.00	90.00	356.23	2,735.00	4,142.53	-452.47	4,167.16	0.00	0.00	0.00	
6,500.00	90.00	356.23	2,735.00	4,242.31	-459.05	4,267.07	0.00	0.00	0.00	
6,600.00	90.00	356.23	2,735.00	4,342.09	-465.63	4,366.99	0.00	0.00	0.00	
6,620.00	90.00	356.23	2,735.00	4,362.05	-466.95	4,386.97	0.00	0.00	0.00	
4 1/2"										
6,620.07	90.00	356.23	2,735.00	4,362.13	-466.96	4,387.05	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Smith 1H -- Upper Lat. E	0.00	0.00	2,735.00	4,362.13	-466.96	1,146,930.08	2,391,650.17	37° 3' 5.543948 N	107° 35' 4.776000 W	
- plan hits target center										
- Point										

XTO Energy, Inc.

Planning Report

Database:	LMRKPROD	Local Co-ordinate Reference:	Site Smith 1H
Company:	XTO Energy - Western Div. (NM, CO, UT)	TVD Reference:	WELL @ 6327.00ft (Original Well Elev)
Project:	LaPlata County (NAD83)	MD Reference:	WELL @ 6327.00ft (Original Well Elev)
Site:	Smith 1H	North Reference:	True
Well:	Smith 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Smith 1H -- Upper Lat.		
Design:	Smith 1H -- Upper Lat.		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,620.00	2,735.00	4 1/2"	4-1/2	6-1/8	

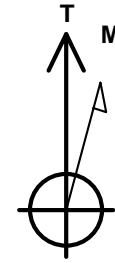
Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,562.18	1,540.00	Ojo Alamo		0.00	
1,609.24	1,586.00	Kirtland Shale		0.00	
2,434.69	2,393.00	Fruitland Formation		0.00	
2,739.16	2,652.00	Upper Fruitland Coal		0.00	
2,798.22	2,685.00	Middle Fruitland Coal		0.00	



Well Name: Smith 1H

San Juan Division
Drilling Department

Calculation Method: Minimum Curvature
Geodetic Datum: North American Datum 1983
Lat: 37° 2' 22.416000 N
Long: 107° 34' 59.016000 W

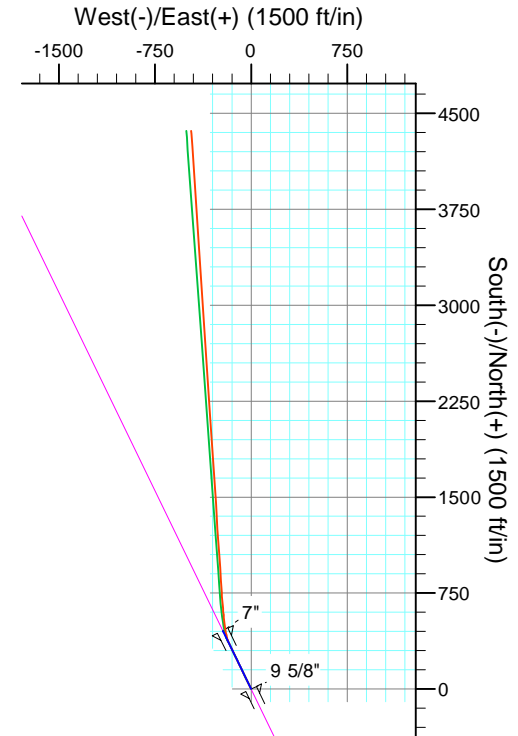
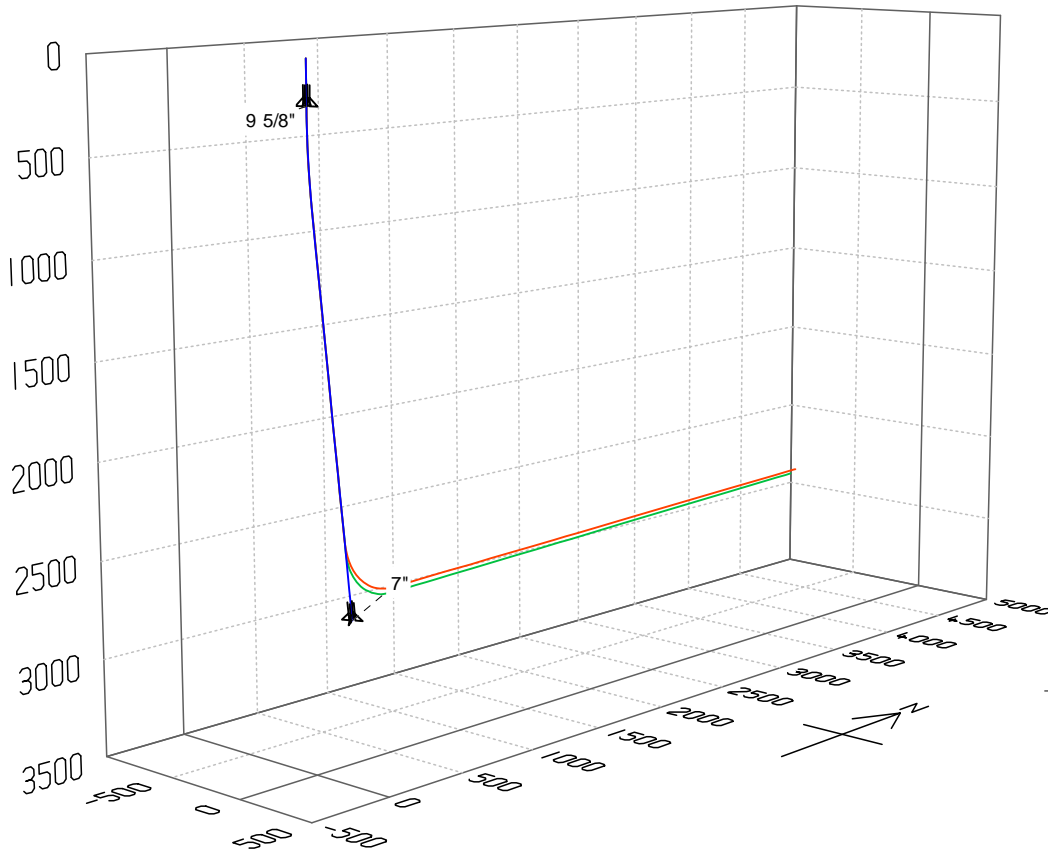
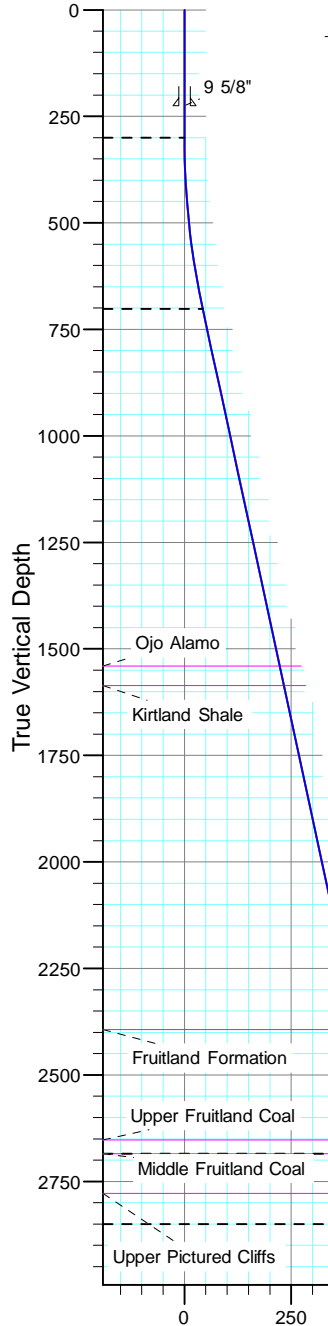


Azimuths to True North
Magnetic North: 9.62°

Magnetic Field
Strength: 50800.4snT
Dip Angle: 63.73°
Date: 3/13/2013
Model: IGRF200510

CASING DETAILS

TVD	MD	Name
225.00	225.00	9 5/8"
2850.00	2902.13	7"



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1540.00	1562.18	Ojo Alamo
1586.00	1609.24	Kirtland Shale
2393.00	2434.68	Fruitland Formation
2652.00	2699.60	Upper Fruitland Coal
2685.00	2733.36	Middle Fruitland Coal
2778.00	2828.48	Upper Pictured Cliffs

TD at 6620.07

TD at 6650.77