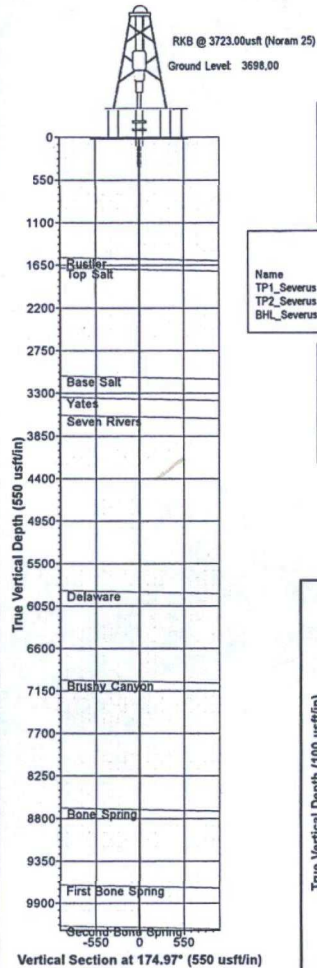


Project: Lea County, NM (NAD27)
 Site: Severus 31 Federal Com
 Well: 2H
 Wellbore: OH
 Design: Plan 1 07-14-15
 Rig: Noram 25



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 6.62°
 Magnetic Field
 Strength: 48523.3nT
 Dip Angle: 60.55°
 Date: 7/14/2015
 Model: HDGM



WELL DETAILS							
	+N-S	+E-W	North	Ground Level	3698.00	Latitude	Longitude
	0.00	0.00	559894.60	726615.90	32° 32' 13.59160 N	103° 35' 52.76970 W	

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSeet	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	10683.16	0.00	0.00	10683.16	0.00	0.00	0.00	0.00	0.00		KOP, Begin 10°/100° Build
3	11571.46	88.83	174.97	11256.00	-559.10	49.16	10.00	174.97	501.26		LP, Hold 88.83° Inc
4	16250.11	88.83	174.97	11351.53	-5218.80	458.90	0.00	0.00	5238.94	BHL Severus 31 Fed Com 2H	TD at 16250.11° MD

DESIGN TARGET DETAILS								
Name	TVD	+N-S	+E-W	North	Easting	Latitude	Longitude	Shape
TP1 Severus 31 Fed Com 2H	11267.26	-459.50	40.40	559435.10	726656.30	32° 32' 9.04205 N	103° 35' 52.33485 W	Point
TP2 Severus 31 Fed Com 2H	11348.87	-5088.90	447.40	554805.70	727063.30	32° 31' 23.20595 N	103° 35' 47.95474 W	Point
BHL Severus 31 Fed Com 2H	11351.53	-5218.80	458.90	554675.80	727074.80	32° 31' 21.91980 N	103° 35' 47.83092 W	Rectangle (Sides: L4678.65 W100.00)

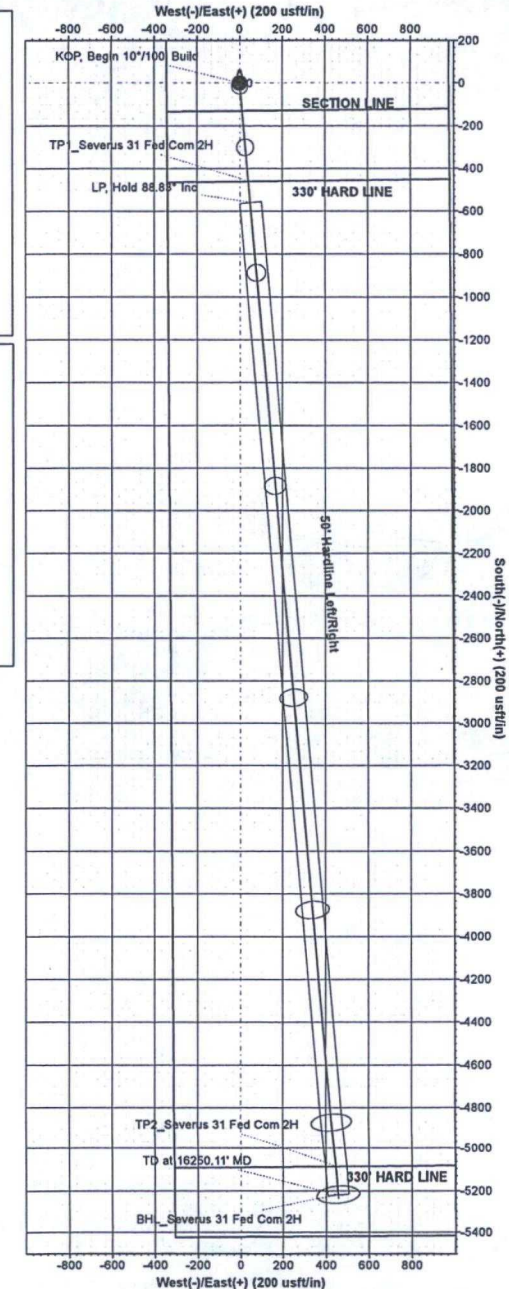
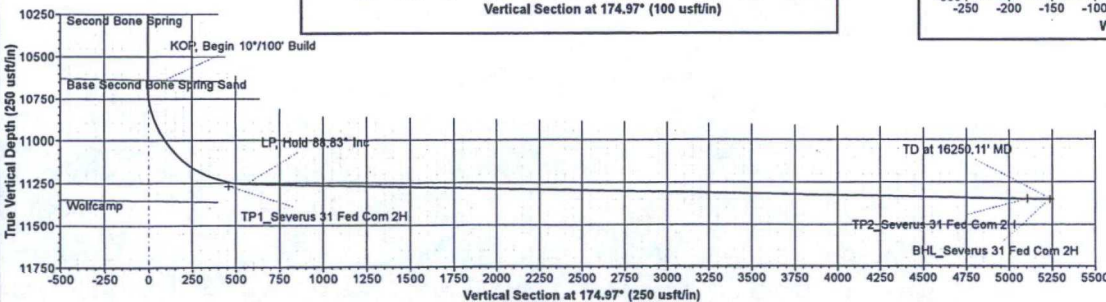
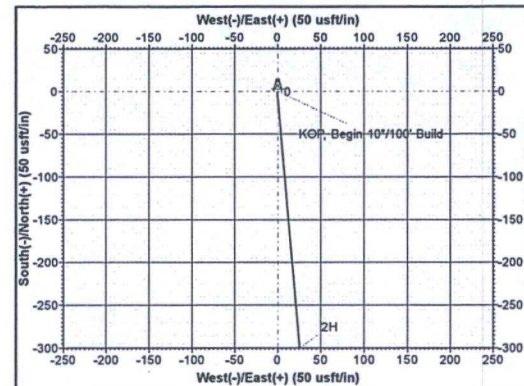
CASING DETAILS
 No casing data is available

LEGEND
 — Plan 1 07-14-15

FORMATION TOP DETAILS					
TVDPath	MDPath	Formation	DipAngle	DipDir	
1568.00	1568.00	Rustler	1.17	174.97	
1702.00	1702.00	Top Salt	1.17	174.97	
3091.00	3091.00	Base Salt	1.17	174.97	
3369.00	3369.00	Yates	1.17	174.97	
3601.00	3601.00	Seven Rivers	1.17	174.97	
5865.00	5865.00	Delaware	1.17	174.97	
7025.00	7025.00	Brushy Canyon	1.17	174.97	
8682.00	8682.00	Bone Spring	1.17	174.97	
8682.00	8682.00	First Bone Spring	1.17	174.97	
10206.00	10206.00	Second Bone Spring	1.17	174.97	
10637.00	10637.00	Base Second Bone Spring Sand	1.17	174.97	

Map System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone Name: New Mexico East 3001
 Local Origin: Well 2H, Grid North
 Latitude: 32° 32' 13.59160 N
 Longitude: 103° 35' 52.76970 W
 Grid East: 726615.90
 Grid North: 559894.60
 Scale Factor: 1.000
 Geomagnetic Model: HDGM
 Sample Date: 14-Jul-15
 Magnetic Declination: 7.02°
 Dip Angle from Horizontal: 60.55°
 Magnetic Field Strength: 48523

To convert a Magnetic Direction to a Grid Direction, Add 6.62°
 To convert a Magnetic Direction to a True Direction, Add 7.02° East
 To convert a True Direction to a Grid Direction, Subtract 0.40°



XTOENERGY

XTO Energy Inc

Lea County, NM (NAD27)

Severus 31 Federal Com

2H

OH

Plan: Plan 1 07-14-15

Standard Planning Report

14 July, 2015

Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well 2H
Company:	XTO Energy Inc	TVD Reference:	RKB @ 3723.00usft (Noram 25)
Project:	Lea County, NM (NAD27)	MD Reference:	RKB @ 3723.00usft (Noram 25)
Site:	Severus 31 Federal Com	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-14-15		

Project	Lea County, NM (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Severus 31 Federal Com				
Site Position:		Northing:	559,895.80 usft	Latitude:	32° 32' 13.59493 N
From:	Map	Easting:	726,740.90 usft	Longitude:	103° 35' 51.30951 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	2H					
Well Position	+N/-S	-1.20 usft	Northing:	559,894.60 usft	Latitude:	32° 32' 13.59160 N
	+E/-W	-125.00 usft	Easting:	726,615.90 usft	Longitude:	103° 35' 52.76970 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,698.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/14/2015	7.02	60.55	48,523

Design	Plan 1 07-14-15			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	174.97

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,683.16	0.00	0.00	10,683.16	0.00	0.00	0.00	0.00	0.00	0.00	
11,571.46	88.83	174.97	11,256.00	-559.10	49.16	10.00	10.00	0.00	174.97	
16,250.11	88.83	174.97	11,351.53	-5,218.80	458.90	0.00	0.00	0.00	0.00	BHL_Severus 31 Fed

Database: Compass 5000 GCR
 Company: XTO Energy Inc
 Project: Lea County, NM (NAD27)
 Site: Severus 31 Federal Com
 Well: 2H
 Wellbore: OH
 Design: Plan 1 07-14-15

Local Co-ordinate Reference: Well 2H
 TVD Reference: RKB @ 3723.00usft (Noram 25)
 MD Reference: RKB @ 3723.00usft (Noram 25)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,568.00	0.00	0.00	1,568.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,702.00	0.00	0.00	1,702.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
3,091.00	0.00	0.00	3,091.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
3,369.00	0.00	0.00	3,369.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
3,601.00	0.00	0.00	3,601.00	0.00	0.00	0.00	0.00	0.00	0.00
Seven Rivers									
5,865.00	0.00	0.00	5,865.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
7,025.00	0.00	0.00	7,025.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
8,682.00	0.00	0.00	8,682.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring									
9,682.00	0.00	0.00	9,682.00	0.00	0.00	0.00	0.00	0.00	0.00
First Bone Spring									
10,206.00	0.00	0.00	10,206.00	0.00	0.00	0.00	0.00	0.00	0.00
Second Bone Spring									
10,637.00	0.00	0.00	10,637.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Second Bone Spring Sand									
10,683.16	0.00	0.00	10,683.16	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 10°/100' Build									
10,700.00	1.68	174.97	10,700.00	-0.25	0.02	0.25	10.00	10.00	0.00
10,800.00	11.68	174.97	10,799.19	-11.83	1.04	11.87	10.00	10.00	0.00
10,900.00	21.68	174.97	10,894.86	-40.39	3.55	40.55	10.00	10.00	0.00
11,000.00	31.68	174.97	10,984.10	-85.07	7.48	85.40	10.00	10.00	0.00
11,100.00	41.68	174.97	11,064.19	-144.50	12.71	145.06	10.00	10.00	0.00
11,200.00	51.68	174.97	11,132.70	-216.89	19.07	217.73	10.00	10.00	0.00
11,300.00	61.68	174.97	11,187.56	-300.03	26.38	301.19	10.00	10.00	0.00
11,400.00	71.68	174.97	11,227.09	-391.39	34.42	392.90	10.00	10.00	0.00
11,500.00	81.68	174.97	11,250.09	-488.21	42.93	490.09	10.00	10.00	0.00
11,571.46	88.83	174.97	11,256.00	-559.10	49.16	561.26	10.00	10.00	0.00
LP, Hold 88.83° Inc									
11,600.00	88.83	174.97	11,256.58	-587.53	51.66	589.79	0.00	0.00	0.00
11,700.00	88.83	174.97	11,258.62	-687.12	60.42	689.77	0.00	0.00	0.00
11,800.00	88.83	174.97	11,260.66	-786.72	69.18	789.75	0.00	0.00	0.00
11,900.00	88.83	174.97	11,262.71	-886.31	77.94	889.73	0.00	0.00	0.00
12,000.00	88.83	174.97	11,264.75	-985.91	86.69	989.71	0.00	0.00	0.00
12,100.00	88.83	174.97	11,266.79	-1,085.50	95.45	1,089.69	0.00	0.00	0.00
12,200.00	88.83	174.97	11,268.83	-1,185.10	104.21	1,189.67	0.00	0.00	0.00
12,300.00	88.83	174.97	11,270.87	-1,284.69	112.97	1,289.65	0.00	0.00	0.00
12,400.00	88.83	174.97	11,272.92	-1,384.29	121.72	1,389.63	0.00	0.00	0.00
12,500.00	88.83	174.97	11,274.96	-1,483.88	130.48	1,489.61	0.00	0.00	0.00
12,600.00	88.83	174.97	11,277.00	-1,583.48	139.24	1,589.59	0.00	0.00	0.00
12,700.00	88.83	174.97	11,279.04	-1,683.07	148.00	1,689.56	0.00	0.00	0.00
12,800.00	88.83	174.97	11,281.08	-1,782.67	156.75	1,789.54	0.00	0.00	0.00
12,900.00	88.83	174.97	11,283.12	-1,882.26	165.51	1,889.52	0.00	0.00	0.00
13,000.00	88.83	174.97	11,285.17	-1,981.86	174.27	1,989.50	0.00	0.00	0.00
13,100.00	88.83	174.97	11,287.21	-2,081.45	183.03	2,089.48	0.00	0.00	0.00
13,200.00	88.83	174.97	11,289.25	-2,181.04	191.78	2,189.46	0.00	0.00	0.00

Database: Compass 5000 GCR
 Company: XTO Energy Inc
 Project: Lea County, NM (NAD27)
 Site: Severus 31 Federal Com
 Well: 2H
 Wellbore: OH
 Design: Plan 1 07-14-15

Local Co-ordinate Reference: Well 2H
 TVD Reference: RKB @ 3723.00usft (Noram 25)
 MD Reference: RKB @ 3723.00usft (Noram 25)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.00	88.83	174.97	11,291.29	-2,280.64	200.54	2,289.44	0.00	0.00	0.00
13,400.00	88.83	174.97	11,293.33	-2,380.23	209.30	2,389.42	0.00	0.00	0.00
13,500.00	88.83	174.97	11,295.38	-2,479.83	218.06	2,489.40	0.00	0.00	0.00
13,600.00	88.83	174.97	11,297.42	-2,579.42	226.81	2,589.38	0.00	0.00	0.00
13,700.00	88.83	174.97	11,299.46	-2,679.02	235.57	2,689.36	0.00	0.00	0.00
13,800.00	88.83	174.97	11,301.50	-2,778.61	244.33	2,789.34	0.00	0.00	0.00
13,900.00	88.83	174.97	11,303.54	-2,878.21	253.09	2,889.31	0.00	0.00	0.00
14,000.00	88.83	174.97	11,305.59	-2,977.80	261.84	2,989.29	0.00	0.00	0.00
14,100.00	88.83	174.97	11,307.63	-3,077.40	270.60	3,089.27	0.00	0.00	0.00
14,200.00	88.83	174.97	11,309.67	-3,176.99	279.36	3,189.25	0.00	0.00	0.00
14,300.00	88.83	174.97	11,311.71	-3,276.59	288.12	3,289.23	0.00	0.00	0.00
14,400.00	88.83	174.97	11,313.75	-3,376.18	296.87	3,389.21	0.00	0.00	0.00
14,500.00	88.83	174.97	11,315.79	-3,475.78	305.63	3,489.19	0.00	0.00	0.00
14,600.00	88.83	174.97	11,317.84	-3,575.37	314.39	3,589.17	0.00	0.00	0.00
14,700.00	88.83	174.97	11,319.88	-3,674.97	323.15	3,689.15	0.00	0.00	0.00
14,800.00	88.83	174.97	11,321.92	-3,774.56	331.91	3,789.13	0.00	0.00	0.00
14,900.00	88.83	174.97	11,323.96	-3,874.16	340.66	3,889.11	0.00	0.00	0.00
15,000.00	88.83	174.97	11,326.00	-3,973.75	349.42	3,989.09	0.00	0.00	0.00
15,100.00	88.83	174.97	11,328.05	-4,073.35	358.18	4,089.06	0.00	0.00	0.00
15,200.00	88.83	174.97	11,330.09	-4,172.94	366.94	4,189.04	0.00	0.00	0.00
15,300.00	88.83	174.97	11,332.13	-4,272.54	375.69	4,289.02	0.00	0.00	0.00
15,400.00	88.83	174.97	11,334.17	-4,372.13	384.45	4,389.00	0.00	0.00	0.00
15,500.00	88.83	174.97	11,336.21	-4,471.73	393.21	4,488.98	0.00	0.00	0.00
15,600.00	88.83	174.97	11,338.26	-4,571.32	401.97	4,588.96	0.00	0.00	0.00
15,700.00	88.83	174.97	11,340.30	-4,670.92	410.72	4,688.94	0.00	0.00	0.00
15,800.00	88.83	174.97	11,342.34	-4,770.51	419.48	4,788.92	0.00	0.00	0.00
15,900.00	88.83	174.97	11,344.38	-4,870.11	428.24	4,888.90	0.00	0.00	0.00
16,000.00	88.83	174.97	11,346.42	-4,969.70	437.00	4,988.88	0.00	0.00	0.00
16,100.00	88.83	174.97	11,348.47	-5,069.30	445.75	5,088.86	0.00	0.00	0.00
16,200.00	88.83	174.97	11,350.51	-5,168.89	454.51	5,188.84	0.00	0.00	0.00
16,250.11	88.83	174.97	11,351.53	-5,218.80	458.90	5,238.94	0.00	0.00	0.00

TD at 16250.11' MD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TP1_Severus 31 Fed Cc - hit/miss target - Shape - Point	0.00	0.00	11,267.26	-459.50	40.40	559,435.10	726,656.30	32° 32' 9.04205 N	103° 35' 52.33485 W
- plan misses target center by 21.75usft at 11475.88usft MD (11246.10 TVD, -464.51 N, 40.85 E)									
TP2_Severus 31 Fed Cc - plan misses target center by 0.08usft at 16119.68usft MD (11348.87 TVD, -5088.89 N, 447.48 E) - Point	0.00	0.00	11,348.87	-5,088.90	447.40	554,805.70	727,063.30	32° 31' 23.20596 N	103° 35' 47.95474 W
BHL_Severus 31 Fed Cc - plan hits target center - Rectangle (sides W100.00 H4,678.65 D0.00)	1.17	174.97	11,351.53	-5,218.80	458.90	554,675.80	727,074.80	32° 31' 21.91980 N	103° 35' 47.83092 W

Database: Compass 5000 GCR
Company: XTO Energy Inc
Project: Lea County, NM (NAD27)
Site: Severus 31 Federal Com
Well: 2H
Wellbore: OH
Design: Plan 1 07-14-15

Local Co-ordinate Reference: Well 2H
TVD Reference: RKB @ 3723.00usft (Noram 25)
MD Reference: RKB @ 3723.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,568.00	1,568.00	Rustler		1.17	174.97
1,702.00	1,702.00	Top Salt		1.17	174.97
3,091.00	3,091.00	Base Salt		1.17	174.97
3,369.00	3,369.00	Yates		1.17	174.97
3,601.00	3,601.00	Seven Rivers		1.17	174.97
5,865.00	5,865.00	Delaware		1.17	174.97
7,025.00	7,025.00	Brushy Canyon		1.17	174.97
8,682.00	8,682.00	Bone Spring		1.17	174.97
9,682.00	9,682.00	First Bone Spring		1.17	174.97
10,206.00	10,206.00	Second Bone Spring		1.17	174.97
10,637.00	10,637.00	Base Second Bone Spring Sand		1.17	174.97

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,683.16	10,683.16	0.00	0.00	KOP, Begin 10°/100' Build
11,571.46	11,256.00	-559.10	49.16	LP, Hold 88.83° Inc
16,250.11	11,351.53	-5,218.80	458.90	TD at 16250.11' MD