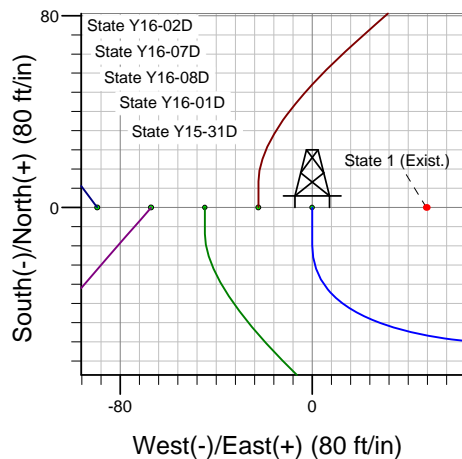
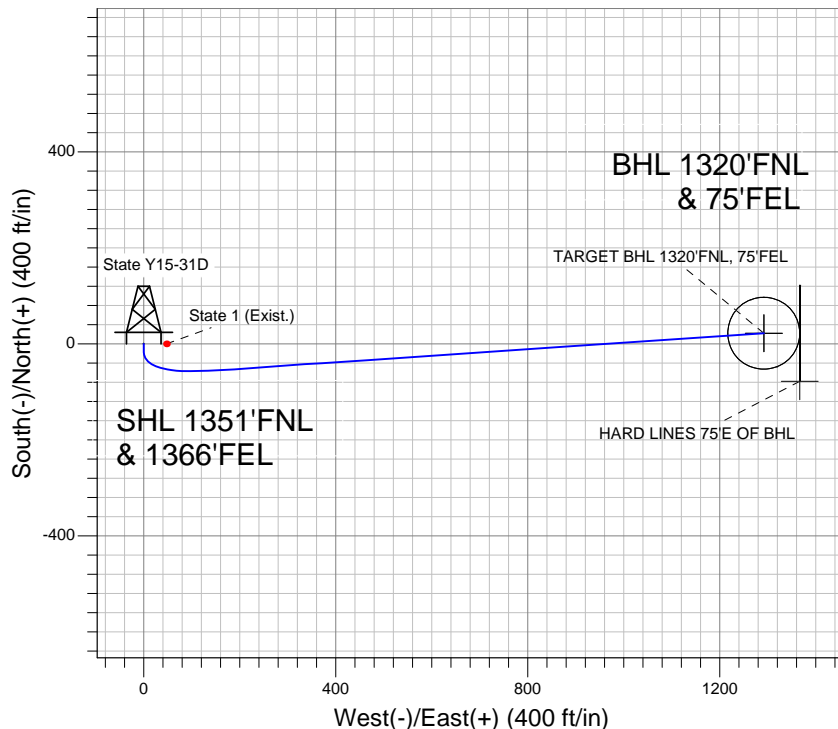
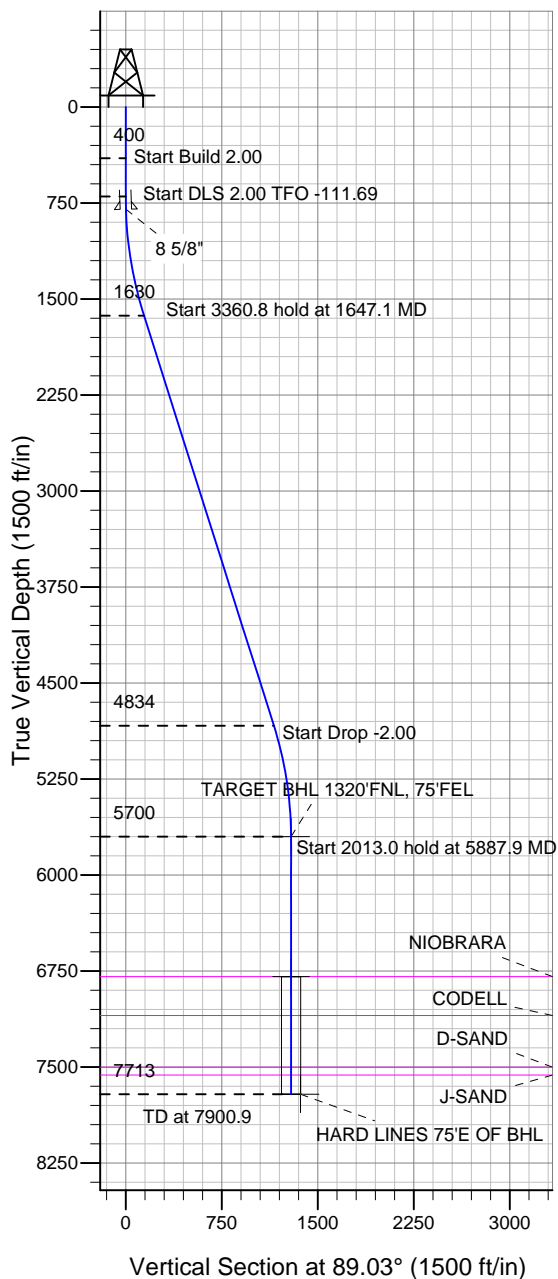


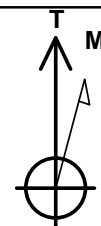
Well Name: State Y15-31D

Surface Location: State Y16-18D Pad Sec.16-T2N-R64W
 North American Datum 1983, US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4930.0
 +N/-S 0.0 +E/-W 0.0 Northing 1296005.72 Easting 3265060.94 Latitude 40.142040 Longitude -104.551880 Slot
 Original Well Elev @ 4943.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



State Y16-18D Pad Sec.16-T2N-R64W
 State Y15-31D
 Noble State Y15-31D Plan #1 (9-29-11)
 13:18, September 30 2011



Azimuths to True North
 Magnetic North: 8.69°
 Magnetic Field
 Strength: 52987.2snT
 Dip Angle: 66.87°
 Date: 9/29/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 75'FEL	5700.0	21.9	1291.7	40.142100	-104.547260	Point
TARGET CIRCLE 1320'FNL & 75'FEL	6793.0	21.9	1291.7	40.142100	-104.547260	Circle (Radius: 75.0)
HARD LINES 75'E OF BHL	7713.0	-78.1	1366.7	40.141825	-104.546992	Polygon

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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	700.0	6.00	180.00	699.5	-15.7	0.0	2.00	180.00	-0.3	
4	1647.1	17.60	86.12	1630.3	-55.9	144.2	2.00	-111.69	143.2	
5	5008.0	17.60	86.12	4833.9	12.8	1157.9	0.00	0.00	1158.0	
6	5887.9	0.00	0.00	5700.0	21.9	1291.7	2.00	180.00	1291.9	TARGET BHL 1320'FNL, 75'FEL
7	7900.9	0.00	0.00	7713.0	21.9	1291.7	0.00	0.00	1291.9	



NOBLE ENERGY INC WELD COUNTY CO

SEC.16-T2N-R64W

State Y16-18D Pad Sec.16-T2N-R64W

State Y15-31D

Wellbore #1

Plan: Noble State Y15-31D Plan #1 (9-29-11)

Standard Planning Report

30 September, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

Project	SEC.16-T2N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						State Y16-18D Pad Sec.16-T2N-R64W							
Site Position: From: Position Uncertainty:			Lat/Long 0.0 ft			Northing:		1,296,004.55 ft		Latitude:		40.142040	
						Easting:		3,264,949.12 ft		Longitude:		-104.552280	
						Slot Radius:		"		Grid Convergence:		0.61 °	

Well	State Y15-31D					
Well Position	+N/-S	0.0 ft	Northing:	1,296,005.72 ft	Latitude:	40.142040
	+E/-W	111.8 ft	Easting:	3,265,060.94 ft	Longitude:	-104.551880
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,930.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/29/2011	8.69	66.87	52,987

Design	Noble State Y15-31D Plan #1 (9-29-11)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	89.03

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	6.00	180.00	699.5	-15.7	0.0	2.00	2.00	0.00	180.00	
1,647.1	17.60	86.12	1,630.3	-55.9	144.2	2.00	1.22	-9.91	-111.69	
5,008.0	17.60	86.12	4,833.9	12.8	1,157.9	0.00	0.00	0.00	0.00	
5,887.9	0.00	0.00	5,700.0	21.9	1,291.7	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,900.9	0.00	0.00	7,713.0	21.9	1,291.7	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	180.00	440.0	-0.3	0.0	0.0	2.00	2.00	0.00
480.0	1.60	180.00	480.0	-1.1	0.0	0.0	2.00	2.00	0.00
520.0	2.40	180.00	520.0	-2.5	0.0	0.0	2.00	2.00	0.00
560.0	3.20	180.00	559.9	-4.5	0.0	-0.1	2.00	2.00	0.00
600.0	4.00	180.00	599.8	-7.0	0.0	-0.1	2.00	2.00	0.00
640.0	4.80	180.00	639.7	-10.0	0.0	-0.2	2.00	2.00	0.00
680.0	5.60	180.00	679.6	-13.7	0.0	-0.2	2.00	2.00	0.00
700.0	6.00	180.00	699.5	-15.7	0.0	-0.3	2.00	2.00	0.00
720.0	5.86	176.36	719.3	-17.8	0.1	-0.2	2.00	-0.68	-18.20
760.0	5.67	168.63	759.1	-21.7	0.6	0.2	2.00	-0.49	-19.31
800.0	5.58	160.51	799.0	-25.5	1.6	1.2	2.00	-0.22	-20.31
801.1	5.58	160.30	800.0	-25.6	1.7	1.2	2.00	-0.08	-20.56
8 5/8"									
840.0	5.60	152.30	838.8	-29.1	3.2	2.7	2.00	0.07	-20.54
880.0	5.74	144.32	878.6	-32.4	5.3	4.7	2.00	0.34	-19.95
920.0	5.98	136.84	918.4	-35.6	7.8	7.2	2.00	0.60	-18.69
960.0	6.32	130.05	958.1	-38.5	11.0	10.3	2.00	0.84	-16.98
1,000.0	6.73	124.01	997.9	-41.2	14.6	13.9	2.00	1.03	-15.10
1,040.0	7.21	118.72	1,037.6	-43.7	18.7	18.0	2.00	1.19	-13.23
1,080.0	7.74	114.11	1,077.2	-46.0	23.4	22.6	2.00	1.33	-11.51
1,120.0	8.31	110.11	1,116.8	-48.1	28.6	27.7	2.00	1.43	-9.99
1,160.0	8.92	106.65	1,156.4	-50.0	34.2	33.4	2.00	1.52	-8.67
1,200.0	9.56	103.63	1,195.9	-51.7	40.4	39.6	2.00	1.59	-7.55
1,240.0	10.22	100.99	1,235.3	-53.2	47.2	46.2	2.00	1.65	-6.60
1,280.0	10.89	98.67	1,274.6	-54.4	54.4	53.4	2.00	1.70	-5.80
1,320.0	11.59	96.62	1,313.8	-55.4	62.1	61.1	2.00	1.73	-5.12
1,360.0	12.29	94.80	1,353.0	-56.3	70.3	69.4	2.00	1.77	-4.54
1,400.0	13.01	93.18	1,392.0	-56.9	79.1	78.1	2.00	1.79	-4.05
1,440.0	13.74	91.73	1,430.9	-57.3	88.3	87.3	2.00	1.81	-3.63
1,480.0	14.47	90.42	1,469.7	-57.4	98.1	97.1	2.00	1.83	-3.27
1,520.0	15.21	89.24	1,508.4	-57.4	108.3	107.3	2.00	1.85	-2.96
1,560.0	15.96	88.16	1,546.9	-57.2	119.0	118.1	2.00	1.86	-2.69
1,600.0	16.71	87.18	1,585.3	-56.7	130.3	129.3	2.00	1.88	-2.46
1,640.0	17.46	86.27	1,623.5	-56.0	142.0	141.0	2.00	1.89	-2.25
1,647.1	17.60	86.12	1,630.3	-55.9	144.2	143.2	2.00	1.89	-2.14
1,680.0	17.60	86.12	1,661.7	-55.2	154.1	153.1	0.00	0.00	0.00
1,720.0	17.60	86.12	1,699.8	-54.4	166.1	165.2	0.00	0.00	0.00
1,760.0	17.60	86.12	1,737.9	-53.6	178.2	177.3	0.00	0.00	0.00
1,800.0	17.60	86.12	1,776.0	-52.8	190.3	189.3	0.00	0.00	0.00
1,840.0	17.60	86.12	1,814.2	-51.9	202.3	201.4	0.00	0.00	0.00
1,880.0	17.60	86.12	1,852.3	-51.1	214.4	213.5	0.00	0.00	0.00
1,920.0	17.60	86.12	1,890.4	-50.3	226.5	225.6	0.00	0.00	0.00
1,960.0	17.60	86.12	1,928.5	-49.5	238.5	237.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

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)
2,000.0	17.60	86.12	1,966.7	-48.7	250.6	249.7	0.00	0.00	0.00
2,040.0	17.60	86.12	2,004.8	-47.8	262.7	261.8	0.00	0.00	0.00
2,080.0	17.60	86.12	2,042.9	-47.0	274.7	273.9	0.00	0.00	0.00
2,120.0	17.60	86.12	2,081.1	-46.2	286.8	286.0	0.00	0.00	0.00
2,160.0	17.60	86.12	2,119.2	-45.4	298.9	298.0	0.00	0.00	0.00
2,200.0	17.60	86.12	2,157.3	-44.6	310.9	310.1	0.00	0.00	0.00
2,240.0	17.60	86.12	2,195.4	-43.8	323.0	322.2	0.00	0.00	0.00
2,280.0	17.60	86.12	2,233.6	-42.9	335.1	334.3	0.00	0.00	0.00
2,320.0	17.60	86.12	2,271.7	-42.1	347.1	346.4	0.00	0.00	0.00
2,360.0	17.60	86.12	2,309.8	-41.3	359.2	358.4	0.00	0.00	0.00
2,400.0	17.60	86.12	2,348.0	-40.5	371.3	370.5	0.00	0.00	0.00
2,440.0	17.60	86.12	2,386.1	-39.7	383.3	382.6	0.00	0.00	0.00
2,480.0	17.60	86.12	2,424.2	-38.8	395.4	394.7	0.00	0.00	0.00
2,520.0	17.60	86.12	2,462.3	-38.0	407.4	406.7	0.00	0.00	0.00
2,560.0	17.60	86.12	2,500.5	-37.2	419.5	418.8	0.00	0.00	0.00
2,600.0	17.60	86.12	2,538.6	-36.4	431.6	430.9	0.00	0.00	0.00
2,640.0	17.60	86.12	2,576.7	-35.6	443.6	443.0	0.00	0.00	0.00
2,680.0	17.60	86.12	2,614.9	-34.8	455.7	455.1	0.00	0.00	0.00
2,720.0	17.60	86.12	2,653.0	-33.9	467.8	467.1	0.00	0.00	0.00
2,760.0	17.60	86.12	2,691.1	-33.1	479.8	479.2	0.00	0.00	0.00
2,800.0	17.60	86.12	2,729.2	-32.3	491.9	491.3	0.00	0.00	0.00
2,840.0	17.60	86.12	2,767.4	-31.5	504.0	503.4	0.00	0.00	0.00
2,880.0	17.60	86.12	2,805.5	-30.7	516.0	515.4	0.00	0.00	0.00
2,920.0	17.60	86.12	2,843.6	-29.8	528.1	527.5	0.00	0.00	0.00
2,960.0	17.60	86.12	2,881.8	-29.0	540.2	539.6	0.00	0.00	0.00
3,000.0	17.60	86.12	2,919.9	-28.2	552.2	551.7	0.00	0.00	0.00
3,040.0	17.60	86.12	2,958.0	-27.4	564.3	563.8	0.00	0.00	0.00
3,080.0	17.60	86.12	2,996.1	-26.6	576.4	575.8	0.00	0.00	0.00
3,120.0	17.60	86.12	3,034.3	-25.8	588.4	587.9	0.00	0.00	0.00
3,160.0	17.60	86.12	3,072.4	-24.9	600.5	600.0	0.00	0.00	0.00
3,200.0	17.60	86.12	3,110.5	-24.1	612.6	612.1	0.00	0.00	0.00
3,240.0	17.60	86.12	3,148.7	-23.3	624.6	624.1	0.00	0.00	0.00
3,280.0	17.60	86.12	3,186.8	-22.5	636.7	636.2	0.00	0.00	0.00
3,320.0	17.60	86.12	3,224.9	-21.7	648.8	648.3	0.00	0.00	0.00
3,360.0	17.60	86.12	3,263.0	-20.9	660.8	660.4	0.00	0.00	0.00
3,400.0	17.60	86.12	3,301.2	-20.0	672.9	672.5	0.00	0.00	0.00
3,440.0	17.60	86.12	3,339.3	-19.2	685.0	684.5	0.00	0.00	0.00
3,480.0	17.60	86.12	3,377.4	-18.4	697.0	696.6	0.00	0.00	0.00
3,520.0	17.60	86.12	3,415.5	-17.6	709.1	708.7	0.00	0.00	0.00
3,560.0	17.60	86.12	3,453.7	-16.8	721.2	720.8	0.00	0.00	0.00
3,600.0	17.60	86.12	3,491.8	-15.9	733.2	732.8	0.00	0.00	0.00
3,640.0	17.60	86.12	3,529.9	-15.1	745.3	744.9	0.00	0.00	0.00
3,680.0	17.60	86.12	3,568.1	-14.3	757.3	757.0	0.00	0.00	0.00
3,720.0	17.60	86.12	3,606.2	-13.5	769.4	769.1	0.00	0.00	0.00
3,760.0	17.60	86.12	3,644.3	-12.7	781.5	781.2	0.00	0.00	0.00
3,800.0	17.60	86.12	3,682.4	-11.9	793.5	793.2	0.00	0.00	0.00
3,840.0	17.60	86.12	3,720.6	-11.0	805.6	805.3	0.00	0.00	0.00
3,880.0	17.60	86.12	3,758.7	-10.2	817.7	817.4	0.00	0.00	0.00
3,920.0	17.60	86.12	3,796.8	-9.4	829.7	829.5	0.00	0.00	0.00
3,960.0	17.60	86.12	3,835.0	-8.6	841.8	841.5	0.00	0.00	0.00
4,000.0	17.60	86.12	3,873.1	-7.8	853.9	853.6	0.00	0.00	0.00
4,040.0	17.60	86.12	3,911.2	-6.9	865.9	865.7	0.00	0.00	0.00
4,080.0	17.60	86.12	3,949.3	-6.1	878.0	877.8	0.00	0.00	0.00
4,120.0	17.60	86.12	3,987.5	-5.3	890.1	889.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

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)
4,160.0	17.60	86.12	4,025.6	-4.5	902.1	901.9	0.00	0.00	0.00
4,200.0	17.60	86.12	4,063.7	-3.7	914.2	914.0	0.00	0.00	0.00
4,240.0	17.60	86.12	4,101.9	-2.9	926.3	926.1	0.00	0.00	0.00
4,280.0	17.60	86.12	4,140.0	-2.0	938.3	938.2	0.00	0.00	0.00
4,320.0	17.60	86.12	4,178.1	-1.2	950.4	950.2	0.00	0.00	0.00
4,360.0	17.60	86.12	4,216.2	-0.4	962.5	962.3	0.00	0.00	0.00
4,400.0	17.60	86.12	4,254.4	0.4	974.5	974.4	0.00	0.00	0.00
4,440.0	17.60	86.12	4,292.5	1.2	986.6	986.5	0.00	0.00	0.00
4,480.0	17.60	86.12	4,330.6	2.1	998.7	998.5	0.00	0.00	0.00
4,520.0	17.60	86.12	4,368.8	2.9	1,010.7	1,010.6	0.00	0.00	0.00
4,560.0	17.60	86.12	4,406.9	3.7	1,022.8	1,022.7	0.00	0.00	0.00
4,600.0	17.60	86.12	4,445.0	4.5	1,034.9	1,034.8	0.00	0.00	0.00
4,640.0	17.60	86.12	4,483.1	5.3	1,046.9	1,046.9	0.00	0.00	0.00
4,680.0	17.60	86.12	4,521.3	6.1	1,059.0	1,058.9	0.00	0.00	0.00
4,720.0	17.60	86.12	4,559.4	7.0	1,071.1	1,071.0	0.00	0.00	0.00
4,760.0	17.60	86.12	4,597.5	7.8	1,083.1	1,083.1	0.00	0.00	0.00
4,800.0	17.60	86.12	4,635.6	8.6	1,095.2	1,095.2	0.00	0.00	0.00
4,840.0	17.60	86.12	4,673.8	9.4	1,107.2	1,107.2	0.00	0.00	0.00
4,880.0	17.60	86.12	4,711.9	10.2	1,119.3	1,119.3	0.00	0.00	0.00
4,920.0	17.60	86.12	4,750.0	11.0	1,131.4	1,131.4	0.00	0.00	0.00
4,960.0	17.60	86.12	4,788.2	11.9	1,143.4	1,143.5	0.00	0.00	0.00
5,000.0	17.60	86.12	4,826.3	12.7	1,155.5	1,155.6	0.00	0.00	0.00
5,008.0	17.60	86.12	4,833.9	12.8	1,157.9	1,158.0	0.00	0.00	0.00
5,040.0	16.96	86.12	4,864.5	13.5	1,167.4	1,167.5	2.00	-2.00	0.00
5,080.0	16.16	86.12	4,902.8	14.3	1,178.8	1,178.8	2.00	-2.00	0.00
5,120.0	15.36	86.12	4,941.3	15.0	1,189.6	1,189.7	2.00	-2.00	0.00
5,160.0	14.56	86.12	4,980.0	15.7	1,199.9	1,200.0	2.00	-2.00	0.00
5,200.0	13.76	86.12	5,018.7	16.4	1,209.7	1,209.8	2.00	-2.00	0.00
5,240.0	12.96	86.12	5,057.7	17.0	1,218.9	1,219.0	2.00	-2.00	0.00
5,280.0	12.16	86.12	5,096.7	17.6	1,227.6	1,227.7	2.00	-2.00	0.00
5,320.0	11.36	86.12	5,135.9	18.1	1,235.7	1,235.8	2.00	-2.00	0.00
5,360.0	10.56	86.12	5,175.1	18.6	1,243.3	1,243.4	2.00	-2.00	0.00
5,400.0	9.76	86.12	5,214.5	19.1	1,250.3	1,250.5	2.00	-2.00	0.00
5,440.0	8.96	86.12	5,254.0	19.6	1,256.8	1,257.0	2.00	-2.00	0.00
5,480.0	8.16	86.12	5,293.5	20.0	1,262.8	1,262.9	2.00	-2.00	0.00
5,520.0	7.36	86.12	5,333.2	20.3	1,268.1	1,268.3	2.00	-2.00	0.00
5,560.0	6.56	86.12	5,372.9	20.6	1,273.0	1,273.1	2.00	-2.00	0.00
5,600.0	5.76	86.12	5,412.6	20.9	1,277.3	1,277.4	2.00	-2.00	0.00
5,640.0	4.96	86.12	5,452.5	21.2	1,281.0	1,281.2	2.00	-2.00	0.00
5,680.0	4.16	86.12	5,492.3	21.4	1,284.1	1,284.3	2.00	-2.00	0.00
5,720.0	3.36	86.12	5,532.2	21.6	1,286.8	1,286.9	2.00	-2.00	0.00
5,760.0	2.56	86.12	5,572.2	21.7	1,288.8	1,289.0	2.00	-2.00	0.00
5,800.0	1.76	86.12	5,612.2	21.8	1,290.3	1,290.5	2.00	-2.00	0.00
5,840.0	0.96	86.12	5,652.1	21.9	1,291.3	1,291.5	2.00	-2.00	0.00
5,880.0	0.16	86.12	5,692.1	21.9	1,291.7	1,291.8	2.00	-2.00	0.00
5,887.9	0.00	0.00	5,700.0	21.9	1,291.7	1,291.9	2.00	-2.00	0.00
TARGET BHL 1320'FNL, 75'FEL									
5,920.0	0.00	0.00	5,732.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
5,960.0	0.00	0.00	5,772.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,812.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,040.0	0.00	0.00	5,852.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,080.0	0.00	0.00	5,892.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,120.0	0.00	0.00	5,932.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,160.0	0.00	0.00	5,972.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

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)
6,200.0	0.00	0.00	6,012.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,240.0	0.00	0.00	6,052.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,280.0	0.00	0.00	6,092.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,320.0	0.00	0.00	6,132.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,360.0	0.00	0.00	6,172.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,212.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,440.0	0.00	0.00	6,252.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,480.0	0.00	0.00	6,292.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,520.0	0.00	0.00	6,332.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,560.0	0.00	0.00	6,372.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,412.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,640.0	0.00	0.00	6,452.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,680.0	0.00	0.00	6,492.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,720.0	0.00	0.00	6,532.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,760.0	0.00	0.00	6,572.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,612.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,840.0	0.00	0.00	6,652.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,880.0	0.00	0.00	6,692.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,920.0	0.00	0.00	6,732.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,960.0	0.00	0.00	6,772.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
6,980.9	0.00	0.00	6,793.0	21.9	1,291.7	1,291.9	0.00	0.00	0.00
NOBRARA - TARGET CIRCLE 1320'FNL & 75'FEL									
7,000.0	0.00	0.00	6,812.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,040.0	0.00	0.00	6,852.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,080.0	0.00	0.00	6,892.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,120.0	0.00	0.00	6,932.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,160.0	0.00	0.00	6,972.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,200.0	0.00	0.00	7,012.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,240.0	0.00	0.00	7,052.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,280.0	0.00	0.00	7,092.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,285.9	0.00	0.00	7,098.0	21.9	1,291.7	1,291.9	0.00	0.00	0.00
CODELL									
7,320.0	0.00	0.00	7,132.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,360.0	0.00	0.00	7,172.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,212.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,440.0	0.00	0.00	7,252.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,480.0	0.00	0.00	7,292.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,520.0	0.00	0.00	7,332.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,560.0	0.00	0.00	7,372.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,412.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,640.0	0.00	0.00	7,452.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,680.0	0.00	0.00	7,492.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,688.9	0.00	0.00	7,501.0	21.9	1,291.7	1,291.9	0.00	0.00	0.00
D-SAND									
7,720.0	0.00	0.00	7,532.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,750.9	0.00	0.00	7,563.0	21.9	1,291.7	1,291.9	0.00	0.00	0.00
J-SAND									
7,760.0	0.00	0.00	7,572.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,612.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,840.0	0.00	0.00	7,652.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,880.0	0.00	0.00	7,692.1	21.9	1,291.7	1,291.9	0.00	0.00	0.00
7,900.9	0.00	0.00	7,713.0	21.9	1,291.7	1,291.9	0.00	0.00	0.00
HARD LINES 75'E OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well State Y15-31D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4943.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4943.0ft (Original Well Elev)
Site:	State Y16-18D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y15-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y15-31D Plan #1 (9-29-11)		

Targets
Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
TARGET BHL 1320'F	0.00	0.00	5,700.0	21.9	1,291.7	1,296,041.44	3,266,352.25	40.142100	-104.547260
- plan hits target center									
- Point									
HARD LINES 75'E OF	0.00	0.00	7,713.0	-78.1	1,366.7	1,295,942.24	3,266,428.34	40.141825	-104.546992
- plan misses target center by 125.0ft at 7900.9ft MD (7713.0 TVD, 21.9 N, 1291.7 E)									
- Polygon									
Point 1			7,713.0	0.0	0.0	1,295,942.24	3,266,428.34		
Point 2			7,713.0	200.0	0.0	1,296,142.22	3,266,426.20		
TARGET CIRCLE 132	0.00	0.00	6,793.0	21.9	1,291.7	1,296,041.44	3,266,352.25	40.142100	-104.547260
- plan hits target center									
- Circle (radius 75.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
801.1	800.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,980.9	6,793.0	NIOBRARA		0.00	
7,285.9	7,098.0	CODELL		0.00	
7,688.9	7,501.0	D-SAND		0.00	
7,750.9	7,563.0	J-SAND		0.00	