

ENSIGN

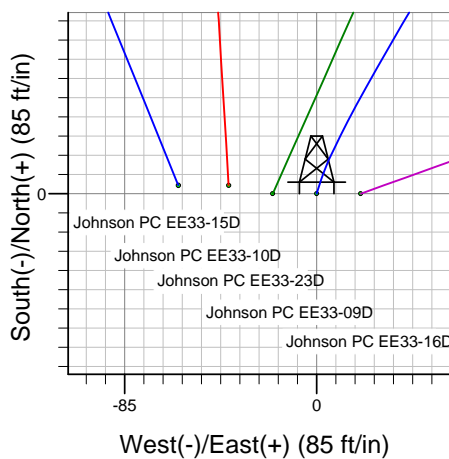
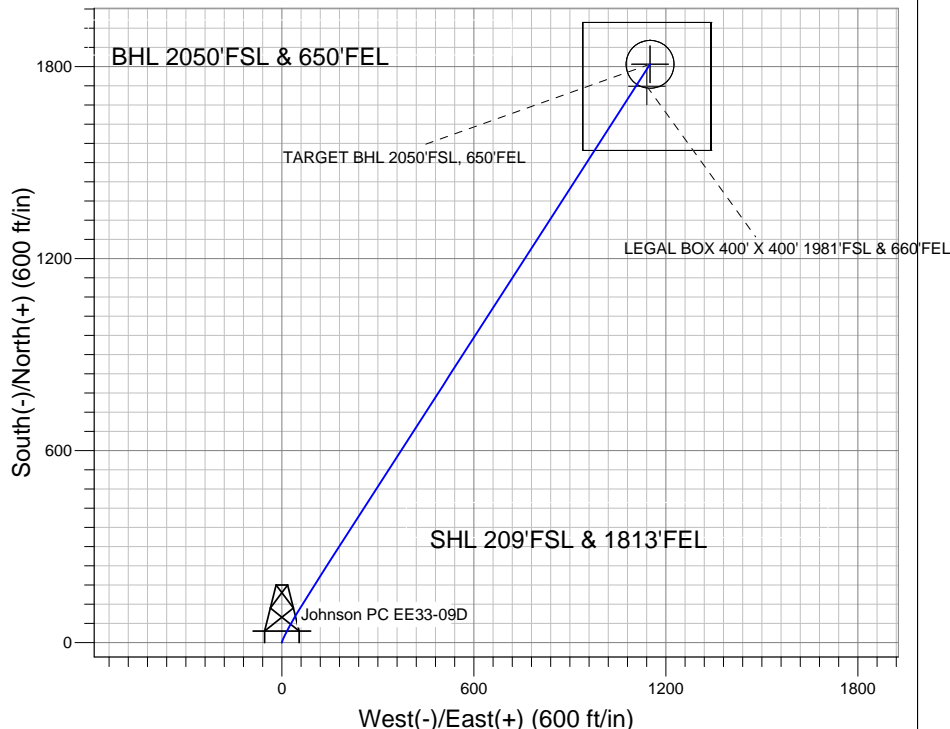
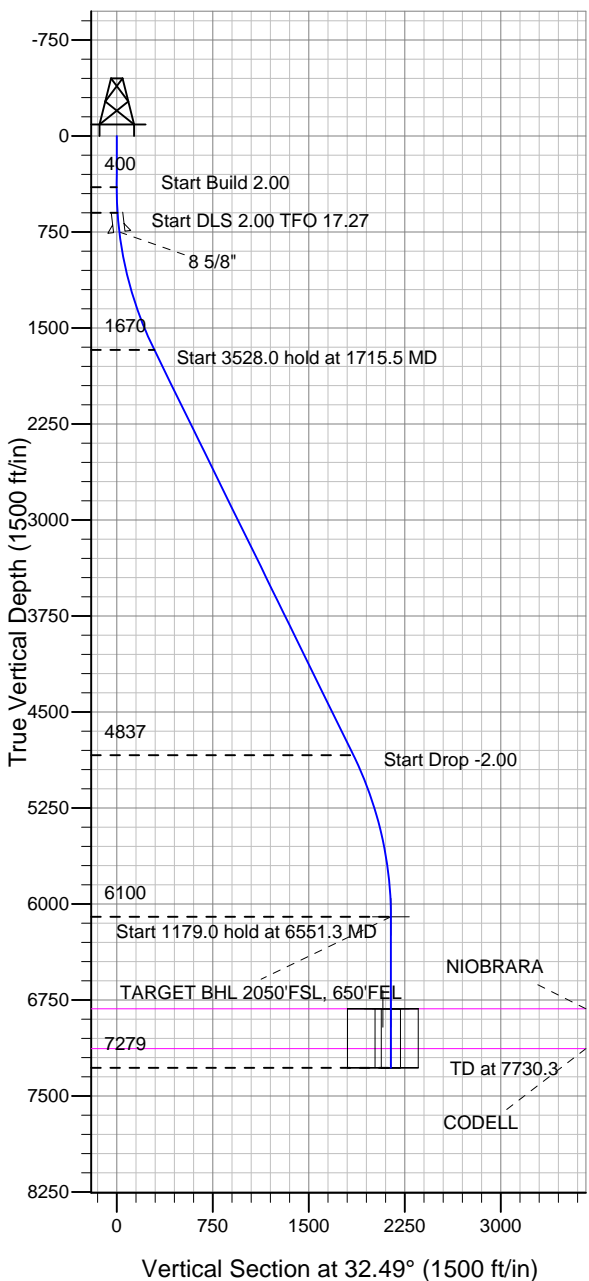
Directional

Well Name: Johnson PC EE33-09D

Surface Location: Johnson PC EE33-09D Pad Sec.33-T7N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4781.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1434880.72 3232054.55 40.524150 -104.665260
Original Well Elev WELL @ 4794.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Johnson PC EE33-09D Pad Sec.33-T7N-R65W
Johnson PC EE33-09D
Noble Johnson PC EE33-09D Plan #2 (3-10-11)
14:37, March 10 2011



Azimuths to True North
Magnetic North: 8.86°

Magnetic Field
Strength: 53235.6snT
Dip Angle: 67.18°
Date: 3/10/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2050'FSL, 650'FEL	6100.0	1807.1	1150.9	40.529110	-104.661120	Point
LEGAL BOX 400' X 400' 1981'FSL & 660'FEL	6819.0	1738.0	1140.9	40.528920	-104.661156	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 2050'FSL & 650'FEL	6819.0	1807.1	1150.9	40.529110	-104.661120	Circle (Radius: 75.0)

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	600.0	4.00	18.00	599.8	6.6	2.2	2.00	18.00	6.8	
4	1715.5	26.16	32.81	1670.4	253.4	149.3	2.00	17.27	293.9	
5	5243.5	26.16	32.81	4837.2	1560.5	991.9	0.00	0.00	1849.1	
6	6551.3	0.00	0.00	6100.0	1807.1	1150.9	2.00	180.00	2142.4	TARGET BHL 2050'FSL, 650'FEL
7	7730.3	0.00	0.00	7279.0	1807.1	1150.9	0.00	0.00	2142.4	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.33-T7N-R65W

Johnson PC EE33-09D Pad Sec.33-T7N-R65W

Johnson PC EE33-09D

Wellbore #1

Plan: Noble Johnson PC EE33-09D Plan #2 (3-10-11)

Standard Planning Report

10 March, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Johnson PC EE33-09D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4794.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

Project	SEC.33-T7N-R65W, 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						Johnson PC EE33-09D Pad Sec.33-T7N-R65W											
Site Position:						Northing:			1,434,880.73 ft			Latitude:			40.524150		
From:			Lat/Long			Easting:			3,232,054.55 ft			Longitude:			-104.665260		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.54 °		

Well	Johnson PC EE33-09D					
Well Position	+N/-S	0.0 ft	Northing:	1,434,880.72 ft	Latitude:	40.524150
	+E/-W	0.0 ft	Easting:	3,232,054.55 ft	Longitude:	-104.665260
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,781.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/10/2011	8.86	67.18	53,236

Design	Noble Johnson PC EE33-09D Plan #2 (3-10-11)			
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	32.49

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	
600.0	4.00	18.00	599.8	6.6	2.2	2.00	2.00	0.00	18.00	
1,715.5	26.16	32.81	1,670.4	253.4	149.3	2.00	1.99	1.33	17.27	
5,243.5	26.16	32.81	4,837.2	1,560.5	991.9	0.00	0.00	0.00	0.00	
6,551.3	0.00	0.00	6,100.0	1,807.1	1,150.9	2.00	-2.00	0.00	180.00	TARGET BHL 205C
7,730.3	0.00	0.00	7,279.0	1,807.1	1,150.9	0.00	0.00	0.00	0.00	

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Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4794.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

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	18.00	440.0	0.3	0.1	0.3	2.00	2.00	0.00
480.0	1.60	18.00	480.0	1.1	0.3	1.1	2.00	2.00	0.00
520.0	2.40	18.00	520.0	2.4	0.8	2.4	2.00	2.00	0.00
560.0	3.20	18.00	559.9	4.2	1.4	4.3	2.00	2.00	0.00
600.0	4.00	18.00	599.8	6.6	2.2	6.8	2.00	2.00	0.00
640.0	4.77	20.86	639.7	9.5	3.2	9.7	2.00	1.92	7.14
680.0	5.55	22.92	679.6	12.9	4.5	13.3	2.00	1.95	5.15
720.0	6.33	24.47	719.3	16.6	6.2	17.4	2.00	1.96	3.88
750.9	6.94	25.43	750.0	19.9	7.7	20.9	2.00	1.97	3.11
8 5/8"									
760.0	7.12	25.68	759.1	20.9	8.2	22.0	2.00	1.97	2.77
800.0	7.91	26.65	798.7	25.6	10.5	27.2	2.00	1.97	2.43
840.0	8.70	27.45	838.3	30.7	13.1	33.0	2.00	1.98	1.99
880.0	9.49	28.11	877.8	36.3	16.1	39.3	2.00	1.98	1.66
920.0	10.29	28.68	917.2	42.4	19.3	46.1	2.00	1.99	1.41
960.0	11.08	29.16	956.5	48.9	22.9	53.5	2.00	1.99	1.21
1,000.0	11.88	29.58	995.7	55.8	26.8	61.5	2.00	1.99	1.05
1,040.0	12.68	29.94	1,034.8	63.2	31.1	70.0	2.00	1.99	0.92
1,080.0	13.47	30.27	1,073.8	71.0	35.6	79.0	2.00	1.99	0.81
1,120.0	14.27	30.56	1,112.6	79.3	40.4	88.6	2.00	1.99	0.72
1,160.0	15.07	30.81	1,151.3	88.0	45.6	98.7	2.00	1.99	0.65
1,200.0	15.86	31.05	1,189.8	97.1	51.1	109.4	2.00	1.99	0.58
1,240.0	16.66	31.26	1,228.2	106.7	56.9	120.6	2.00	1.99	0.53
1,280.0	17.46	31.45	1,266.5	116.7	63.0	132.3	2.00	2.00	0.48
1,320.0	18.26	31.63	1,304.6	127.2	69.4	144.6	2.00	2.00	0.44
1,360.0	19.06	31.79	1,342.4	138.1	76.1	157.4	2.00	2.00	0.40
1,400.0	19.85	31.94	1,380.2	149.4	83.2	170.7	2.00	2.00	0.37
1,440.0	20.65	32.08	1,417.7	161.1	90.5	184.5	2.00	2.00	0.35
1,480.0	21.45	32.20	1,455.0	173.3	98.2	198.9	2.00	2.00	0.32
1,520.0	22.25	32.32	1,492.1	185.9	106.1	213.8	2.00	2.00	0.30
1,560.0	23.05	32.44	1,529.1	198.9	114.4	229.2	2.00	2.00	0.28
1,600.0	23.85	32.54	1,565.8	212.3	122.9	245.1	2.00	2.00	0.26
1,640.0	24.65	32.64	1,602.2	226.2	131.8	261.5	2.00	2.00	0.25
1,680.0	25.45	32.73	1,638.5	240.4	140.9	278.5	2.00	2.00	0.23
1,715.5	26.16	32.81	1,670.4	253.4	149.3	293.9	2.00	2.00	0.22
1,720.0	26.16	32.81	1,674.5	255.1	150.3	295.9	0.00	0.00	0.00
1,760.0	26.16	32.81	1,710.4	269.9	159.9	313.5	0.00	0.00	0.00
1,800.0	26.16	32.81	1,746.3	284.7	169.4	331.2	0.00	0.00	0.00
1,840.0	26.16	32.81	1,782.2	299.5	179.0	348.8	0.00	0.00	0.00
1,880.0	26.16	32.81	1,818.1	314.4	188.6	366.4	0.00	0.00	0.00
1,920.0	26.16	32.81	1,854.0	329.2	198.1	384.1	0.00	0.00	0.00
1,960.0	26.16	32.81	1,889.9	344.0	207.7	401.7	0.00	0.00	0.00

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Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

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	26.16	32.81	1,925.8	358.8	217.2	419.3	0.00	0.00	0.00
2,040.0	26.16	32.81	1,961.7	373.6	226.8	437.0	0.00	0.00	0.00
2,080.0	26.16	32.81	1,997.6	388.4	236.3	454.6	0.00	0.00	0.00
2,120.0	26.16	32.81	2,033.5	403.3	245.9	472.2	0.00	0.00	0.00
2,160.0	26.16	32.81	2,069.4	418.1	255.4	489.9	0.00	0.00	0.00
2,200.0	26.16	32.81	2,105.3	432.9	265.0	507.5	0.00	0.00	0.00
2,240.0	26.16	32.81	2,141.2	447.7	274.5	525.1	0.00	0.00	0.00
2,280.0	26.16	32.81	2,177.1	462.5	284.1	542.8	0.00	0.00	0.00
2,320.0	26.16	32.81	2,213.0	477.4	293.6	560.4	0.00	0.00	0.00
2,360.0	26.16	32.81	2,248.9	492.2	303.2	578.0	0.00	0.00	0.00
2,400.0	26.16	32.81	2,284.8	507.0	312.8	595.6	0.00	0.00	0.00
2,440.0	26.16	32.81	2,320.7	521.8	322.3	613.3	0.00	0.00	0.00
2,480.0	26.16	32.81	2,356.6	536.6	331.9	630.9	0.00	0.00	0.00
2,520.0	26.16	32.81	2,392.5	551.5	341.4	648.5	0.00	0.00	0.00
2,560.0	26.16	32.81	2,428.5	566.3	351.0	666.2	0.00	0.00	0.00
2,600.0	26.16	32.81	2,464.4	581.1	360.5	683.8	0.00	0.00	0.00
2,640.0	26.16	32.81	2,500.3	595.9	370.1	701.4	0.00	0.00	0.00
2,680.0	26.16	32.81	2,536.2	610.7	379.6	719.1	0.00	0.00	0.00
2,720.0	26.16	32.81	2,572.1	625.6	389.2	736.7	0.00	0.00	0.00
2,760.0	26.16	32.81	2,608.0	640.4	398.7	754.3	0.00	0.00	0.00
2,800.0	26.16	32.81	2,643.9	655.2	408.3	772.0	0.00	0.00	0.00
2,840.0	26.16	32.81	2,679.8	670.0	417.8	789.6	0.00	0.00	0.00
2,880.0	26.16	32.81	2,715.7	684.8	427.4	807.2	0.00	0.00	0.00
2,920.0	26.16	32.81	2,751.6	699.7	437.0	824.9	0.00	0.00	0.00
2,960.0	26.16	32.81	2,787.5	714.5	446.5	842.5	0.00	0.00	0.00
3,000.0	26.16	32.81	2,823.4	729.3	456.1	860.1	0.00	0.00	0.00
3,040.0	26.16	32.81	2,859.3	744.1	465.6	877.8	0.00	0.00	0.00
3,080.0	26.16	32.81	2,895.2	758.9	475.2	895.4	0.00	0.00	0.00
3,120.0	26.16	32.81	2,931.1	773.8	484.7	913.0	0.00	0.00	0.00
3,160.0	26.16	32.81	2,967.0	788.6	494.3	930.7	0.00	0.00	0.00
3,200.0	26.16	32.81	3,002.9	803.4	503.8	948.3	0.00	0.00	0.00
3,240.0	26.16	32.81	3,038.8	818.2	513.4	965.9	0.00	0.00	0.00
3,280.0	26.16	32.81	3,074.7	833.0	522.9	983.6	0.00	0.00	0.00
3,320.0	26.16	32.81	3,110.6	847.9	532.5	1,001.2	0.00	0.00	0.00
3,360.0	26.16	32.81	3,146.5	862.7	542.0	1,018.8	0.00	0.00	0.00
3,400.0	26.16	32.81	3,182.4	877.5	551.6	1,036.5	0.00	0.00	0.00
3,440.0	26.16	32.81	3,218.3	892.3	561.2	1,054.1	0.00	0.00	0.00
3,480.0	26.16	32.81	3,254.2	907.1	570.7	1,071.7	0.00	0.00	0.00
3,520.0	26.16	32.81	3,290.1	922.0	580.3	1,089.3	0.00	0.00	0.00
3,560.0	26.16	32.81	3,326.1	936.8	589.8	1,107.0	0.00	0.00	0.00
3,600.0	26.16	32.81	3,362.0	951.6	599.4	1,124.6	0.00	0.00	0.00
3,640.0	26.16	32.81	3,397.9	966.4	608.9	1,142.2	0.00	0.00	0.00
3,680.0	26.16	32.81	3,433.8	981.2	618.5	1,159.9	0.00	0.00	0.00
3,720.0	26.16	32.81	3,469.7	996.1	628.0	1,177.5	0.00	0.00	0.00
3,760.0	26.16	32.81	3,505.6	1,010.9	637.6	1,195.1	0.00	0.00	0.00
3,800.0	26.16	32.81	3,541.5	1,025.7	647.1	1,212.8	0.00	0.00	0.00
3,840.0	26.16	32.81	3,577.4	1,040.5	656.7	1,230.4	0.00	0.00	0.00
3,880.0	26.16	32.81	3,613.3	1,055.3	666.2	1,248.0	0.00	0.00	0.00
3,920.0	26.16	32.81	3,649.2	1,070.2	675.8	1,265.7	0.00	0.00	0.00
3,960.0	26.16	32.81	3,685.1	1,085.0	685.4	1,283.3	0.00	0.00	0.00
4,000.0	26.16	32.81	3,721.0	1,099.8	694.9	1,300.9	0.00	0.00	0.00
4,040.0	26.16	32.81	3,756.9	1,114.6	704.5	1,318.6	0.00	0.00	0.00
4,080.0	26.16	32.81	3,792.8	1,129.4	714.0	1,336.2	0.00	0.00	0.00

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Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

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)
4,120.0	26.16	32.81	3,828.7	1,144.3	723.6	1,353.8	0.00	0.00	0.00
4,160.0	26.16	32.81	3,864.6	1,159.1	733.1	1,371.5	0.00	0.00	0.00
4,200.0	26.16	32.81	3,900.5	1,173.9	742.7	1,389.1	0.00	0.00	0.00
4,240.0	26.16	32.81	3,936.4	1,188.7	752.2	1,406.7	0.00	0.00	0.00
4,280.0	26.16	32.81	3,972.3	1,203.5	761.8	1,424.4	0.00	0.00	0.00
4,320.0	26.16	32.81	4,008.2	1,218.4	771.3	1,442.0	0.00	0.00	0.00
4,360.0	26.16	32.81	4,044.1	1,233.2	780.9	1,459.6	0.00	0.00	0.00
4,400.0	26.16	32.81	4,080.0	1,248.0	790.5	1,477.3	0.00	0.00	0.00
4,440.0	26.16	32.81	4,115.9	1,262.8	800.0	1,494.9	0.00	0.00	0.00
4,480.0	26.16	32.81	4,151.8	1,277.6	809.6	1,512.5	0.00	0.00	0.00
4,520.0	26.16	32.81	4,187.7	1,292.5	819.1	1,530.2	0.00	0.00	0.00
4,560.0	26.16	32.81	4,223.7	1,307.3	828.7	1,547.8	0.00	0.00	0.00
4,600.0	26.16	32.81	4,259.6	1,322.1	838.2	1,565.4	0.00	0.00	0.00
4,640.0	26.16	32.81	4,295.5	1,336.9	847.8	1,583.1	0.00	0.00	0.00
4,680.0	26.16	32.81	4,331.4	1,351.7	857.3	1,600.7	0.00	0.00	0.00
4,720.0	26.16	32.81	4,367.3	1,366.6	866.9	1,618.3	0.00	0.00	0.00
4,760.0	26.16	32.81	4,403.2	1,381.4	876.4	1,635.9	0.00	0.00	0.00
4,800.0	26.16	32.81	4,439.1	1,396.2	886.0	1,653.6	0.00	0.00	0.00
4,840.0	26.16	32.81	4,475.0	1,411.0	895.5	1,671.2	0.00	0.00	0.00
4,880.0	26.16	32.81	4,510.9	1,425.8	905.1	1,688.8	0.00	0.00	0.00
4,920.0	26.16	32.81	4,546.8	1,440.7	914.7	1,706.5	0.00	0.00	0.00
4,960.0	26.16	32.81	4,582.7	1,455.5	924.2	1,724.1	0.00	0.00	0.00
5,000.0	26.16	32.81	4,618.6	1,470.3	933.8	1,741.7	0.00	0.00	0.00
5,040.0	26.16	32.81	4,654.5	1,485.1	943.3	1,759.4	0.00	0.00	0.00
5,080.0	26.16	32.81	4,690.4	1,499.9	952.9	1,777.0	0.00	0.00	0.00
5,120.0	26.16	32.81	4,726.3	1,514.7	962.4	1,794.6	0.00	0.00	0.00
5,160.0	26.16	32.81	4,762.2	1,529.6	972.0	1,812.3	0.00	0.00	0.00
5,200.0	26.16	32.81	4,798.1	1,544.4	981.5	1,829.9	0.00	0.00	0.00
5,240.0	26.16	32.81	4,834.0	1,559.2	991.1	1,847.5	0.00	0.00	0.00
5,243.5	26.16	32.81	4,837.2	1,560.5	991.9	1,849.1	0.00	0.00	0.00
5,280.0	25.43	32.81	4,870.0	1,573.9	1,000.5	1,865.0	2.00	-2.00	0.00
5,320.0	24.63	32.81	4,906.3	1,588.1	1,009.7	1,881.9	2.00	-2.00	0.00
5,360.0	23.83	32.81	4,942.7	1,601.9	1,018.6	1,898.3	2.00	-2.00	0.00
5,400.0	23.03	32.81	4,979.4	1,615.2	1,027.2	1,914.2	2.00	-2.00	0.00
5,440.0	22.23	32.81	5,016.4	1,628.2	1,035.5	1,929.6	2.00	-2.00	0.00
5,480.0	21.43	32.81	5,053.5	1,640.7	1,043.6	1,944.5	2.00	-2.00	0.00
5,520.0	20.63	32.81	5,090.8	1,652.7	1,051.4	1,958.8	2.00	-2.00	0.00
5,560.0	19.83	32.81	5,128.4	1,664.4	1,058.9	1,972.6	2.00	-2.00	0.00
5,600.0	19.03	32.81	5,166.1	1,675.5	1,066.1	1,985.9	2.00	-2.00	0.00
5,640.0	18.23	32.81	5,204.0	1,686.3	1,073.0	1,998.7	2.00	-2.00	0.00
5,680.0	17.43	32.81	5,242.1	1,696.6	1,079.6	2,011.0	2.00	-2.00	0.00
5,720.0	16.63	32.81	5,280.3	1,706.4	1,086.0	2,022.7	2.00	-2.00	0.00
5,760.0	15.83	32.81	5,318.7	1,715.8	1,092.0	2,033.8	2.00	-2.00	0.00
5,800.0	15.03	32.81	5,357.3	1,724.7	1,097.8	2,044.5	2.00	-2.00	0.00
5,840.0	14.23	32.81	5,396.0	1,733.2	1,103.3	2,054.6	2.00	-2.00	0.00
5,880.0	13.43	32.81	5,434.8	1,741.3	1,108.5	2,064.1	2.00	-2.00	0.00
5,920.0	12.63	32.81	5,473.8	1,748.8	1,113.3	2,073.2	2.00	-2.00	0.00
5,960.0	11.83	32.81	5,512.9	1,756.0	1,117.9	2,081.6	2.00	-2.00	0.00
6,000.0	11.03	32.81	5,552.1	1,762.6	1,122.2	2,089.5	2.00	-2.00	0.00
6,040.0	10.23	32.81	5,591.4	1,768.8	1,126.2	2,096.9	2.00	-2.00	0.00
6,080.0	9.43	32.81	5,630.8	1,774.6	1,129.9	2,103.8	2.00	-2.00	0.00
6,120.0	8.63	32.81	5,670.3	1,779.8	1,133.3	2,110.0	2.00	-2.00	0.00
6,160.0	7.83	32.81	5,709.9	1,784.6	1,136.4	2,115.7	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Johnson PC EE33-09D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4794.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

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	7.03	32.81	5,749.6	1,789.0	1,139.2	2,120.9	2.00	-2.00	0.00
6,240.0	6.23	32.81	5,789.3	1,792.9	1,141.7	2,125.5	2.00	-2.00	0.00
6,280.0	5.43	32.81	5,829.1	1,796.3	1,143.9	2,129.6	2.00	-2.00	0.00
6,320.0	4.63	32.81	5,869.0	1,799.2	1,145.8	2,133.1	2.00	-2.00	0.00
6,360.0	3.83	32.81	5,908.8	1,801.7	1,147.4	2,136.0	2.00	-2.00	0.00
6,400.0	3.03	32.81	5,948.8	1,803.7	1,148.7	2,138.4	2.00	-2.00	0.00
6,440.0	2.23	32.81	5,988.7	1,805.3	1,149.7	2,140.3	2.00	-2.00	0.00
6,480.0	1.43	32.81	6,028.7	1,806.3	1,150.4	2,141.5	2.00	-2.00	0.00
6,520.0	0.63	32.81	6,068.7	1,806.9	1,150.8	2,142.3	2.00	-2.00	0.00
6,551.3	0.00	0.00	6,100.0	1,807.1	1,150.9	2,142.4	2.00	-2.00	0.00
TARGET BHL 2050'FSL, 650'FEL									
6,560.0	0.00	0.00	6,108.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,148.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,188.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,228.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,268.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,308.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,348.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,388.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,428.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,468.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,508.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,548.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,588.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,628.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,120.0	0.00	0.00	6,668.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,160.0	0.00	0.00	6,708.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,200.0	0.00	0.00	6,748.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,240.0	0.00	0.00	6,788.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,270.3	0.00	0.00	6,819.0	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
NIOBARRA - LEGAL BOX 400' X 400' 1981'FSL & 660'FEL - TARGET CIRCLE 2050'FSL & 650'FEL									
7,280.0	0.00	0.00	6,828.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,320.0	0.00	0.00	6,868.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,360.0	0.00	0.00	6,908.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,400.0	0.00	0.00	6,948.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,440.0	0.00	0.00	6,988.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,480.0	0.00	0.00	7,028.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,520.0	0.00	0.00	7,068.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,560.0	0.00	0.00	7,108.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,580.3	0.00	0.00	7,129.0	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
CODELL									
7,600.0	0.00	0.00	7,148.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,640.0	0.00	0.00	7,188.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,680.0	0.00	0.00	7,228.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,720.0	0.00	0.00	7,268.7	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00
7,730.3	0.00	0.00	7,279.0	1,807.1	1,150.9	2,142.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Johnson PC EE33-09D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4794.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4794.0ft (Original Well Elev)
Site:	Johnson PC EE33-09D Pad Sec.33-T7N-R65W	North Reference:	True
Well:	Johnson PC EE33-09D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Johnson PC EE33-09D Plan #2 (3-10-11)		

Targets
Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
LEGAL BOX 400' X 400'	0.00	0.00	6,819.0	1,738.0	1,140.9	1,436,629.35	3,233,179.00	40.528920	-104.661156
- plan misses target center by 69.8ft at 7270.3ft MD (6819.0 TVD, 1807.1 N, 1150.9 E)									
- Rectangle (sides W400.0 H400.0 D460.0)									
TARGET BHL 2050'F:	0.00	0.00	6,100.0	1,807.1	1,150.9	1,436,698.48	3,233,188.33	40.529110	-104.661120
- plan hits target center									
- Point									
TARGET CIRCLE 2050'F:	0.00	0.00	6,819.0	1,807.1	1,150.9	1,436,698.48	3,233,188.33	40.529110	-104.661120
- plan hits target center									
- Circle (radius 75.0)									

Casing Points

Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
750.9	750.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
7,270.3	6,819.0	NIOBRARA		0.00	
7,580.3	7,129.0	CODELL		0.00	