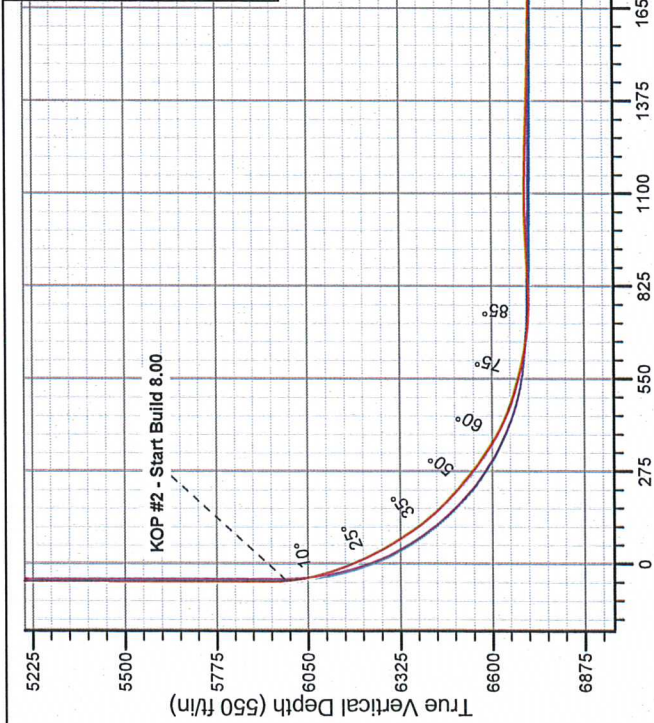
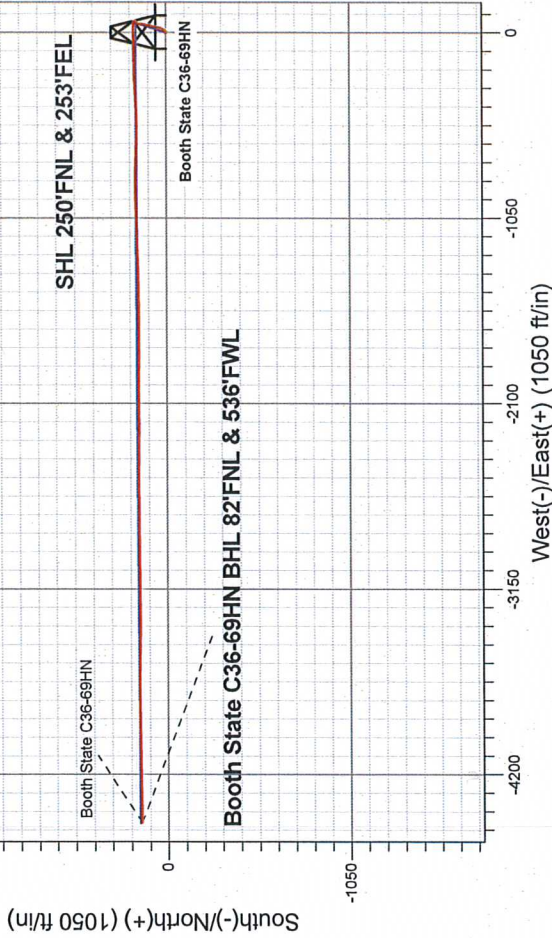


Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: Booth State C36-69HN
Surface Location: Booth State CC Pad Sec.36-T4N-R64W
North American Datum 1983 , US State Plane 1983Colorado Northern Zone
Ground Elevation: 4758.0
+N/-S +E/-W Northing Easting Longitude Slot
0.0 0.0 1344783.08 3281602.57 40.275430 -104.490730
Original Well Elev WELL @ 4771.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
10910' MD 6753' TVD 154' N & 4474' W of SHL
87.50 degree Incl @ 270.50 degree AZM



ENSIGN

Directional

Booth State CC Pad Sec.36-T4N-R64W
Booth State C36-69HN
Wellbore #1
14.03, September 05 2012

ANNOTATIONS

No annotation data is available.

LEGEND

- Booth State C36-69HN, Wellbore #1, Plan A Rev 1 tied to curve surveys V0
- Booth State C36-69HN, Wellbore #1, Plan A - Rev 0 V0
- Survey #1

Vertical Section at 272.06° (550 ft/in)



Directional

Noble Energy Inc.- Weld County, CO (Grid North)

Sec.36-T4N-R64W

Booth State CC Pad Sec.36-T4N-R64W

Booth State C36-69HN

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 September, 2012

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Booth State C36-69HN
Project:	Sec.36-T4N-R64W	TVD Reference:	WELL @ 4771.0ft (Original Well Elev)
Site:	Booth State CC Pad Sec.36-T4N-R64W	MD Reference:	WELL @ 4771.0ft (Original Well Elev)
Well:	Booth State C36-69HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.36-T4N-R64W, Weld County, CO		
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	Booth State CC Pad Sec.36-T4N-R64W				
Site Position:		Northing:	1,344,783.09ft	Latitude:	40.275430
From:	Lat/Long	Easting:	3,281,602.57ft	Longitude:	-104.490730
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.65 °

Well	Booth State C36-69HN					
Well Position	+N/-S	0.0 ft	Northing:	1,344,783.08 ft	Latitude:	40.275430
	+E/-W	0.0 ft	Easting:	3,281,602.57 ft	Longitude:	-104.490730
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,758.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/27/2012	8.56	66.96	52,978

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	272.06

Survey Program	Date 9/6/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
650.0	10,910.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

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	
21.0	0.00	0.00	21.0	0.0	0.0	0.0	0.00	0.00	0.00	
State 36-214 (Exist.)										
34.0	0.00	0.00	34.0	0.0	0.0	0.0	0.00	0.00	0.00	
State 36-314 (Exist.)										
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00	
725.0	0.40	16.70	725.0	0.3	0.1	-0.1	0.53	0.53	0.00	
818.0	0.10	26.70	818.0	0.6	0.2	-0.2	0.32	-0.32	10.75	
912.0	0.30	1.60	912.0	1.0	0.2	-0.2	0.23	0.21	-26.70	
1,005.0	0.30	357.20	1,005.0	1.4	0.2	-0.2	0.02	0.00	-4.73	
1,098.0	0.40	3.30	1,098.0	2.0	0.3	-0.2	0.11	0.11	6.56	
1,197.0	0.40	4.70	1,197.0	2.7	0.3	-0.2	0.01	0.00	1.41	

ENSIGN Directional

Ensign Directional Survey Report

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Booth State C36-69HN
Project:	Sec.36-T4N-R64W	TVD Reference:	WELL @ 4771.0ft (Original Well Elev)
Site:	Booth State CC Pad Sec.36-T4N-R64W	MD Reference:	WELL @ 4771.0ft (Original Well Elev)
Well:	Booth State C36-69HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,292.0	0.40	254.00	1,292.0	2.9	0.0	0.1	0.69	0.00	-116.53
1,387.0	0.70	262.60	1,387.0	2.8	-0.9	1.0	0.33	0.32	9.05
1,480.0	0.50	27.60	1,480.0	3.1	-1.3	1.4	1.15	-0.22	134.41
1,575.0	1.00	157.00	1,575.0	2.7	-0.7	0.8	1.45	0.53	136.21
1,670.0	0.50	126.60	1,670.0	1.7	-0.1	0.1	0.66	-0.53	-32.00
1,764.0	0.80	162.20	1,764.0	0.8	0.4	-0.4	0.52	0.32	37.87
1,859.0	0.90	160.30	1,859.0	-0.6	0.9	-0.9	0.11	0.11	-2.00
1,953.0	1.30	160.80	1,952.9	-2.3	1.5	-1.6	0.43	0.43	0.53
2,047.0	2.00	100.20	2,046.9	-3.6	3.5	-3.6	1.88	0.74	-64.47
2,141.0	2.60	45.20	2,140.8	-2.3	6.6	-6.7	2.33	0.64	-58.51
2,236.0	3.50	38.70	2,235.7	1.4	9.9	-9.9	1.01	0.95	-6.84
2,331.0	3.70	42.20	2,330.5	6.0	13.8	-13.6	0.31	0.21	3.68
2,426.0	5.50	34.30	2,425.2	12.0	18.4	-18.0	2.00	1.89	-8.32
2,521.0	6.80	24.80	2,519.7	20.9	23.4	-22.6	1.73	1.37	-10.00
2,616.0	8.40	17.20	2,613.8	32.6	27.8	-26.6	1.99	1.68	-8.00
2,711.0	10.80	12.80	2,707.5	47.9	31.8	-30.0	2.64	2.53	-4.63
2,805.0	12.30	13.70	2,799.6	66.2	36.1	-33.7	1.61	1.60	0.96
2,900.0	11.70	11.10	2,892.5	85.5	40.4	-37.3	0.85	-0.63	-2.74
2,995.0	9.80	9.70	2,985.8	102.9	43.6	-39.9	2.02	-2.00	-1.47
3,090.0	9.60	9.70	3,079.5	118.7	46.3	-42.0	0.21	-0.21	0.00
3,185.0	6.60	11.10	3,173.5	131.9	48.7	-43.9	3.16	-3.16	1.47
3,280.0	5.50	6.30	3,268.0	141.8	50.2	-45.1	1.27	-1.16	-5.05
3,375.0	4.30	4.60	3,362.6	149.8	51.0	-45.6	1.27	-1.26	-1.79
3,470.0	4.30	2.50	3,457.4	157.0	51.4	-45.8	0.17	0.00	-2.21
3,566.0	2.60	11.80	3,553.2	162.7	52.0	-46.2	1.86	-1.77	9.69
3,661.0	2.10	27.40	3,648.1	166.3	53.3	-47.3	0.85	-0.53	16.42
3,756.0	0.40	25.30	3,743.1	168.2	54.2	-48.2	1.79	-1.79	-2.21
3,851.0	0.50	81.00	3,838.1	168.5	54.8	-48.7	0.45	0.11	58.63
3,946.0	0.70	121.10	3,933.1	168.3	55.7	-49.6	0.48	0.21	42.21
4,041.0	0.70	39.70	4,028.1	168.5	56.5	-50.5	0.96	0.00	-85.68
4,136.0	0.70	5.40	4,123.1	169.5	57.0	-50.9	0.43	0.00	-36.11
4,230.0	0.90	40.40	4,217.1	170.6	57.5	-51.3	0.55	0.21	37.23
4,325.0	1.10	25.30	4,312.0	172.0	58.4	-52.2	0.35	0.21	-15.89
4,420.0	1.10	26.20	4,407.0	173.7	59.2	-52.9	0.02	0.00	0.95
4,515.0	0.70	59.10	4,502.0	174.8	60.1	-53.8	0.67	-0.42	34.63
4,610.0	1.50	72.10	4,597.0	175.4	61.8	-55.4	0.88	0.84	13.68
4,705.0	0.60	53.30	4,692.0	176.1	63.3	-57.0	1.00	-0.95	-19.79
4,800.0	0.60	43.80	4,787.0	176.8	64.1	-57.7	0.10	0.00	-10.00
4,895.0	0.90	43.90	4,882.0	177.7	64.9	-58.5	0.32	0.32	0.11
4,990.0	1.10	253.50	4,977.0	178.0	64.6	-58.2	2.04	0.21	-158.32
5,085.0	0.50	248.40	5,072.0	177.5	63.3	-56.9	0.64	-0.63	-5.37
5,180.0	0.60	234.10	5,167.0	177.1	62.5	-56.1	0.18	0.11	-15.05
5,275.0	0.90	354.50	5,261.9	177.6	62.1	-55.6	1.38	0.32	126.74
5,370.0	0.90	7.20	5,356.9	179.0	62.1	-55.6	0.21	0.00	13.37
5,465.0	1.10	15.60	5,451.9	180.7	62.4	-55.9	0.26	0.21	8.84
5,560.0	0.40	34.10	5,546.9	181.8	62.9	-56.3	0.77	-0.74	19.47
5,655.0	1.10	25.10	5,641.9	182.9	63.4	-56.8	0.74	0.74	-9.47
5,749.0	0.90	351.60	5,735.9	184.5	63.7	-57.0	0.65	-0.21	-35.64
5,844.0	1.50	5.60	5,830.9	186.4	63.7	-57.0	0.70	0.63	14.74
5,939.0	0.20	81.40	5,925.9	187.7	64.0	-57.2	1.54	-1.37	79.79
6,034.0	8.40	275.40	6,020.5	188.4	57.2	-50.4	9.05	8.63	-174.74
6,129.0	17.40	274.00	6,113.0	190.0	36.1	-29.3	9.48	9.47	-1.47
6,224.0	24.10	268.80	6,201.8	190.6	2.5	4.3	7.31	7.05	-5.47
6,319.0	30.10	267.20	6,286.4	189.0	-40.7	47.5	6.36	6.32	-1.68

ENSIGN **Directional**

Ensign Directional **Survey Report**

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Booth State C36-69HN
Project:	Sec.36-T4N-R64W	TVD Reference:	WELL @ 4771.0ft (Original Well Elev)
Site:	Booth State CC Pad Sec.36-T4N-R64W	MD Reference:	WELL @ 4771.0ft (Original Well Elev)
Well:	Booth State C36-69HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
6,414.0	34.50	268.40	6,366.6	187.1	-91.4	98.1	4.68	4.63	1.26
6,509.0	43.60	268.60	6,440.3	185.6	-151.2	157.8	9.58	9.58	0.21
6,604.0	49.20	269.30	6,505.8	184.3	-219.9	226.4	5.92	5.89	0.74
6,699.0	54.70	267.20	6,564.4	182.0	-294.7	301.0	6.04	5.79	-2.21
6,794.0	60.60	266.30	6,615.2	177.4	-374.8	380.9	6.26	6.21	-0.95
6,889.0	70.70	268.40	6,654.3	173.5	-461.1	467.0	10.82	10.63	2.21
6,936.0	74.30	268.90	6,668.4	172.4	-505.9	511.8	7.73	7.66	1.06
6,983.0	75.20	271.60	6,680.8	172.6	-551.3	557.1	5.86	1.91	5.74
7,035.0	78.00	271.90	6,692.8	174.2	-601.8	607.7	5.41	5.38	0.58
7,148.0	85.60	271.90	6,708.9	177.9	-713.5	719.4	6.73	6.73	0.00
7,164.9	87.33	271.40	6,710.0	178.4	-730.4	736.4	10.62	10.21	-2.92
Landing Pt. (C36-69HN)									
7,196.0	90.50	270.50	6,710.6	178.9	-761.5	767.4	10.62	10.21	-2.91
7,291.0	93.50	269.80	6,707.3	179.1	-856.4	862.3	3.24	3.16	-0.74
7,386.0	92.60	268.60	6,702.2	177.8	-951.2	957.0	1.58	-0.95	-1.26
7,482.0	91.80	268.60	6,698.5	175.5	-1,047.1	1,052.8	0.83	-0.83	0.00
7,577.0	87.90	268.60	6,698.8	173.1	-1,142.1	1,147.6	4.11	-4.11	0.00
7,672.0	88.30	267.20	6,701.9	169.7	-1,237.0	1,242.3	1.53	0.42	-1.47
7,767.0	87.70	267.90	6,705.2	165.6	-1,331.8	1,336.9	0.97	-0.63	0.74
7,862.0	89.20	269.50	6,707.8	163.5	-1,426.8	1,431.7	2.31	1.58	1.68
7,957.0	88.50	269.80	6,709.7	162.9	-1,521.7	1,526.6	0.80	-0.74	0.32
8,052.0	88.70	269.60	6,712.0	162.4	-1,616.7	1,621.5	0.30	0.21	-0.21
8,147.0	90.00	270.00	6,713.1	162.0	-1,711.7	1,716.4	1.43	1.37	0.42
8,242.0	90.00	270.00	6,713.1	162.0	-1,806.7	1,811.4	0.00	0.00	0.00
8,337.0	89.30	270.70	6,713.7	162.6	-1,901.7	1,906.3	1.04	-0.74	0.74
8,432.0	89.10	269.80	6,715.0	163.0	-1,996.7	2,001.3	0.97	-0.21	-0.95
8,526.0	89.80	270.20	6,715.9	163.0	-2,090.7	2,095.2	0.86	0.74	0.43
8,621.0	87.50	269.50	6,718.2	162.8	-2,185.6	2,190.1	2.53	-2.42	-0.74
8,716.0	89.10	270.20	6,721.0	162.5	-2,280.6	2,285.0	1.84	1.68	0.74
8,811.0	88.60	270.20	6,722.9	162.9	-2,375.6	2,379.9	0.53	-0.53	0.00
8,906.0	90.00	271.20	6,724.0	164.0	-2,470.6	2,474.9	1.81	1.47	1.05
9,001.0	90.40	270.30	6,723.7	165.3	-2,565.6	2,569.8	1.04	0.42	-0.95
9,096.0	91.50	269.10	6,722.1	164.8	-2,660.5	2,664.7	1.71	1.16	-1.26
9,191.0	90.80	269.50	6,720.2	163.6	-2,755.5	2,759.6	0.85	-0.74	0.42
9,286.0	88.50	269.10	6,720.8	162.5	-2,850.5	2,854.5	2.46	-2.42	-0.42
9,381.0	90.70	269.10	6,721.5	161.0	-2,945.5	2,949.4	2.32	2.32	0.00
9,476.0	87.50	269.30	6,723.0	159.6	-3,040.4	3,044.2	3.37	-3.37	0.21
9,571.0	87.60	269.80	6,727.0	158.9	-3,135.4	3,139.0	0.54	0.11	0.53
9,666.0	88.30	270.50	6,730.4	159.1	-3,230.3	3,233.9	1.04	0.74	0.74
9,761.0	88.30	269.80	6,733.2	159.4	-3,325.2	3,328.8	0.74	0.00	-0.74
9,855.0	89.10	270.50	6,735.4	159.6	-3,419.2	3,422.7	1.13	0.85	0.74
9,950.0	90.30	271.40	6,735.9	161.2	-3,514.2	3,517.7	1.58	1.26	0.95
10,045.0	90.70	271.20	6,735.0	163.4	-3,609.2	3,612.7	0.47	0.42	-0.21
10,140.0	89.30	268.90	6,735.0	163.5	-3,704.2	3,707.6	2.83	-1.47	-2.42
10,235.0	89.80	269.80	6,735.8	162.4	-3,799.2	3,802.5	1.08	0.53	0.95
10,330.0	88.50	269.30	6,737.2	161.6	-3,894.1	3,897.4	1.47	-1.37	-0.53
10,425.0	90.00	269.60	6,738.4	160.7	-3,989.1	3,992.3	1.61	1.58	0.32
10,520.0	88.50	268.80	6,739.7	159.4	-4,084.1	4,087.2	1.79	-1.58	-0.84
10,615.0	88.50	268.60	6,742.2	157.2	-4,179.0	4,182.0	0.21	0.00	-0.21
10,710.0	88.30	268.90	6,744.8	155.2	-4,274.0	4,276.8	0.38	-0.21	0.32
10,805.0	87.70	269.30	6,748.1	153.7	-4,368.9	4,371.6	0.76	-0.63	0.42
10,854.0	87.50	270.50	6,750.2	153.6	-4,417.9	4,420.5	2.48	-0.41	2.45
10,910.0	87.50	270.50	6,752.6	154.1	-4,473.8	4,476.5	0.00	0.00	0.00

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Booth State C36-69HN
Project:	Sec.36-T4N-R64W	TVD Reference:	WELL @ 4771.0ft (Original Well Elev)
Site:	Booth State CC Pad Sec.36-T4N-R64W	MD Reference:	WELL @ 4771.0ft (Original Well Elev)
Well:	Booth State C36-69HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
---------------------------	--------------------	----------------	---------------------------	---------------	---------------	-----------------------------	-----------------------------	----------------------------	---------------------------

Booth St. C36-69HN BHL 75'FNL, 535'FWL

Checked By: _____ Approved By: _____ Date: _____