ENSIGN Directional

Well Name: **Marley C01-28D**

Surface Location: Marley C01-28D Pad Sec.1-T4N-R64W

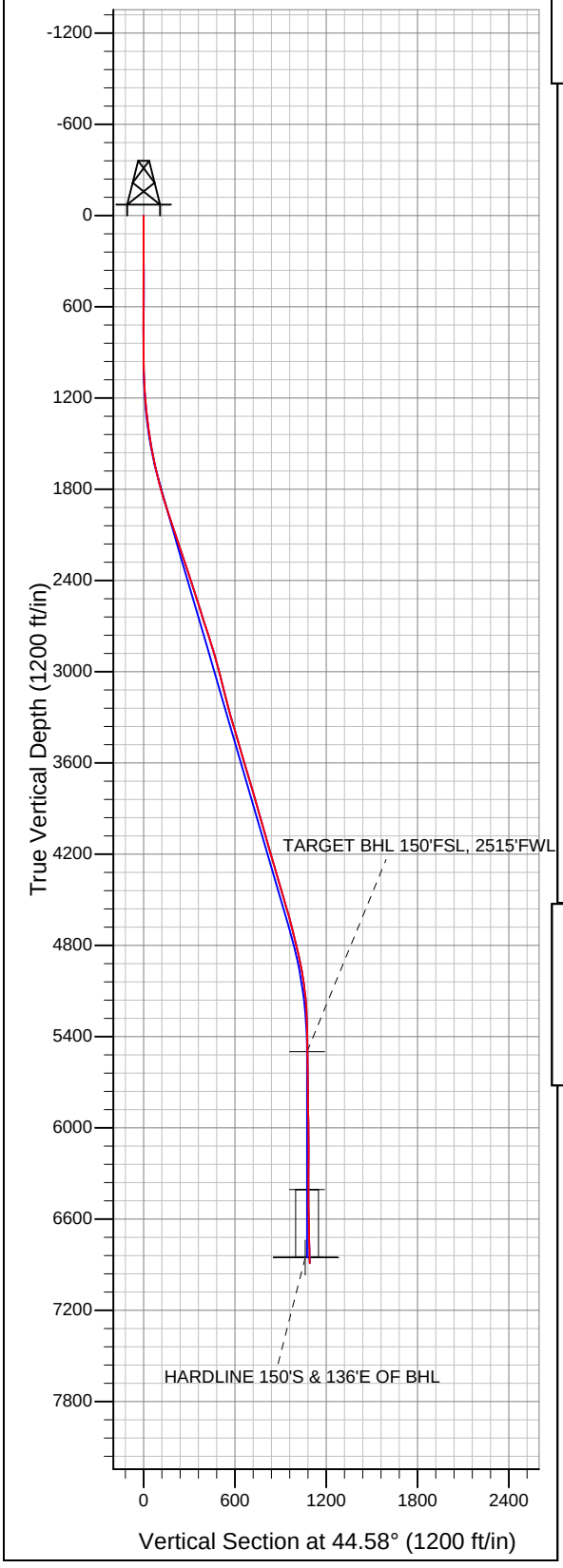
North American Datum 1983 | US State Plane 1983 | Colorado Northern Zone

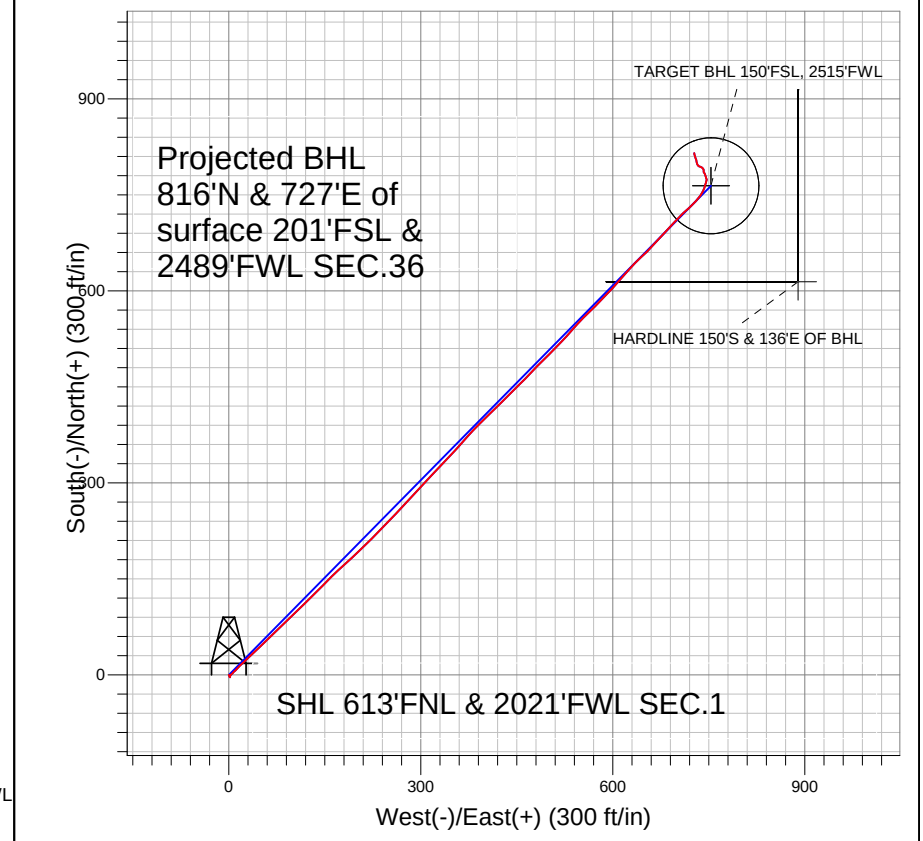
Ground Elevation: 4605.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1370814.25	3278471.43	40.346980	-104.500900	

Original Well Elev | WELL @ 4618.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO





L E G E N D

- Marley C01-28D, Wellbore #1, Noble Marley C01-28D Plan #2 (02-24-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7038'MD & 6891'TVD @ 1091'VS
2.8 deg Inc 346.4 deg AZ

Project: SEC.1-T4N-R64W
Site: Marley C01-28D Pad Sec.1-T4N-R64W
Well: Marley C01-28D
Plan: Wellbore #1

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.1-T4N-R64W
Marley C01-28D Pad Sec.1-T4N-R64W
Marley C01-28D

Wellbore #1

Survey: Survey #1

Standard Survey Report

26 April, 2011

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Marley C01-28D
Project:	SEC.1-T4N-R64W	**TVD Reference:**	WELL @ 4618.0ft (Original Well Elev)
Site:	Marley C01-28D Pad Sec.1-T4N-R64W	**MD Reference:**	WELL @ 4618.0ft (Original Well Elev)
Well:	Marley C01-28D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.1-T4N-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 Marley C01-28D Pad Sec.1-T4N-R64W

Site Position:		**Northing:**	1,370,788.77 ft	**Latitude:**	40.346910
From:	Lat/Long	**Easting:**	3,278,471.71 ft	**Longitude:**	-104.500900
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.65 °

Well Marley C01-28D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,370,814.25 ft	**Latitude:**	40.346980
	+E/-W	0.0 ft	**Easting:**	3,278,471.43 ft	**Longitude:**	-104.500900
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,605.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/13/2009	8.89	67.11	53,320

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	44.58

Survey Program **Date** 4/26/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
663.0	7,038.0	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
663.0	0.60	154.70	663.0	-3.1	1.5	-1.2	0.09	0.09	0.00
757.0	0.10	74.60	757.0	-3.6	1.8	-1.3	0.63	-0.53	-85.21
851.0	0.60	37.60	851.0	-3.1	2.2	-0.7	0.56	0.53	-39.36
945.0	0.80	333.50	945.0	-2.2	2.2	0.0	0.81	0.21	-68.19
1,039.0	1.50	39.60	1,039.0	-0.6	2.7	1.4	1.47	0.74	70.32
1,133.0	3.10	44.00	1,132.9	2.1	5.2	5.2	1.71	1.70	4.68
1,227.0	5.30	45.50	1,226.6	7.0	10.1	12.1	2.34	2.34	1.60
1,321.0	6.40	43.20	1,320.1	13.9	16.7	21.6	1.20	1.17	-2.45
1,415.0	7.90	47.30	1,413.4	22.1	25.1	33.3	1.68	1.60	4.36
1,509.0	9.30	47.10	1,506.3	31.6	35.4	47.4	1.49	1.49	-0.21
1,603.0	11.30	46.20	1,598.8	43.2	47.6	64.2	2.13	2.13	-0.96
1,697.0	13.80	45.20	1,690.6	57.4	62.2	84.6	2.67	2.66	-1.06

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Marley C01-28D
Project:	SEC.1-T4N-R64W	**TVD Reference:**	WELL @ 4618.0ft (Original Well Elev)
Site:	Marley C01-28D Pad Sec.1-T4N-R64W	**MD Reference:**	WELL @ 4618.0ft (Original Well Elev)
Well:	Marley C01-28D	**North Reference:**	True
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)
1,791.0	15.70	47.10	1,781.5	74.0	79.5	108.5	2.09	2.02	2.02
1,885.0	16.80	45.70	1,871.7	92.2	98.5	134.8	1.24	1.17	-1.49
1,979.0	18.70	45.60	1,961.2	112.2	119.0	163.4	2.02	2.02	-0.11
2,072.0	18.60	45.20	2,049.3	133.1	140.2	193.2	0.17	-0.11	-0.43
2,166.0	17.70	44.50	2,138.7	153.8	160.8	222.5	0.99	-0.96	-0.74
2,260.0	18.60	48.90	2,228.0	173.9	182.2	251.7	1.74	0.96	4.68
2,354.0	18.40	45.70	2,317.1	194.1	204.1	281.5	1.10	-0.21	-3.40
2,448.0	18.50	44.80	2,406.3	215.0	225.2	311.2	0.32	0.11	-0.96
2,542.0	17.50	44.20	2,495.7	235.7	245.6	340.3	1.08	-1.06	-0.64
2,636.0	17.50	43.50	2,585.4	256.1	265.1	368.5	0.22	0.00	-0.74
2,730.0	18.30	42.10	2,674.8	277.3	284.8	397.4	0.97	0.85	-1.49
2,824.0	17.80	42.70	2,764.2	298.8	304.4	426.5	0.57	-0.53	0.64
2,918.0	16.50	43.50	2,854.0	319.1	323.3	454.2	1.41	-1.38	0.85
3,012.0	15.90	43.90	2,944.3	338.0	341.5	480.4	0.65	-0.64	0.43
3,106.0	13.70	41.40	3,035.1	355.7	357.7	504.4	2.44	-2.34	-2.66
3,200.0	14.80	41.90	3,126.3	373.0	373.1	527.5	1.18	1.17	0.53
3,294.0	14.80	46.10	3,217.1	390.2	389.8	551.5	1.14	0.00	4.47
3,387.0	15.60	44.80	3,306.9	407.3	407.2	575.9	0.93	0.86	-1.40
3,481.0	16.60	45.20	3,397.2	425.8	425.6	602.0	1.07	1.06	0.43
3,575.0	15.80	45.80	3,487.5	444.1	444.3	628.2	0.87	-0.85	0.64
3,669.0	16.70	43.80	3,577.7	462.8	462.8	654.5	1.13	0.96	-2.13
3,763.0	17.10	44.70	3,667.6	482.4	481.9	681.8	0.51	0.43	0.96
3,857.0	16.20	44.80	3,757.7	501.5	500.9	708.8	0.96	-0.96	0.11
3,951.0	15.80	44.10	3,848.1	520.0	519.0	734.7	0.47	-0.43	-0.74
4,045.0	16.10	40.50	3,938.4	539.1	536.4	760.5	1.10	0.32	-3.83
4,139.0	15.90	45.90	4,028.8	558.0	554.1	786.3	1.60	-0.21	5.74
4,233.0	16.00	44.90	4,119.2	576.1	572.5	812.2	0.31	0.11	-1.06
4,327.0	15.40	43.30	4,209.7	594.4	590.2	837.6	0.79	-0.64	-1.70
4,421.0	17.20	41.90	4,299.9	613.8	608.0	864.0	1.96	1.91	-1.49
4,515.0	16.00	41.20	4,390.0	633.9	625.8	890.8	1.29	-1.28	-0.74
4,609.0	16.20	47.30	4,480.3	652.5	644.0	916.8	1.81	0.21	6.49
4,703.0	16.70	42.50	4,570.5	671.4	662.8	943.4	1.54	0.53	-5.11
4,797.0	14.20	42.50	4,661.1	689.9	679.7	968.4	2.66	-2.66	0.00
4,891.0	13.30	43.80	4,752.4	706.2	695.0	990.8	1.01	-0.96	1.38
4,985.0	13.30	45.70	4,843.8	721.5	710.2	1,012.4	0.46	0.00	2.02
5,079.0	11.60	47.50	4,935.6	735.5	724.9	1,032.6	1.85	-1.81	1.91
5,173.0	8.70	34.00	5,028.2	747.7	735.8	1,049.1	3.97	-3.09	-14.36
5,267.0	6.40	21.60	5,121.3	758.5	741.7	1,060.9	2.99	-2.45	-13.19
5,361.0	3.80	16.60	5,215.0	766.4	744.6	1,068.5	2.80	-2.77	-5.32
5,454.0	2.50	15.20	5,307.8	771.3	746.0	1,073.0	1.40	-1.40	-1.51
5,548.0	0.70	11.30	5,401.8	773.8	746.6	1,075.2	1.92	-1.91	-4.15
5,642.0	1.50	333.10	5,495.8	775.5	746.2	1,076.1	1.11	0.85	-40.64
5,645.9	1.51	333.78	5,499.6	775.6	746.1	1,076.1	0.49	0.16	17.58
TARGET BHL 150'FSL, 2515'FWL									
5,736.0	1.70	347.90	5,589.7	777.9	745.3	1,077.3	0.49	0.22	15.67
5,830.0	2.20	343.80	5,683.7	781.0	744.5	1,078.9	0.55	0.53	-4.36
5,924.0	1.50	320.90	5,777.6	783.7	743.3	1,079.9	1.07	-0.74	-24.36
6,018.0	0.90	326.90	5,871.6	785.3	742.1	1,080.2	0.65	-0.64	6.38
6,112.0	2.00	6.00	5,965.6	787.5	741.8	1,081.6	1.51	1.17	41.60
6,206.0	2.00	326.60	6,059.5	790.5	741.1	1,083.3	1.43	0.00	-41.91
6,300.0	1.20	309.30	6,153.5	792.5	739.4	1,083.5	0.98	-0.85	-18.40
6,393.0	1.20	294.30	6,246.5	793.6	737.8	1,083.1	0.34	0.00	-16.13
6,487.0	2.00	290.00	6,340.4	794.5	735.4	1,082.1	0.86	0.85	-4.57
6,552.3	2.32	317.96	6,405.6	795.9	733.4	1,081.7	1.67	0.49	42.84

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Marley C01-28D
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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)
TARGET CIRCLE 150'FSL, 2515'FWL									
6,581.0	2.60	327.10	6,434.4	796.9	732.7	1,081.9	1.67	0.97	31.80
6,675.0	2.80	351.10	6,528.3	800.9	731.2	1,083.7	1.21	0.21	25.53
6,769.0	1.70	340.90	6,622.2	804.5	730.3	1,085.7	1.24	-1.17	-10.85
6,863.0	2.40	340.70	6,716.1	807.7	729.2	1,087.1	0.74	0.74	-0.21
6,957.0	2.80	344.30	6,810.0	811.8	728.0	1,089.2	0.46	0.43	3.83
6,988.0	2.80	346.40	6,841.0	813.2	727.6	1,089.9	0.33	0.00	6.77
HARDLINE 150'S & 136'E OF BHL									
7,038.0	2.80	346.40	6,890.9	815.6	727.0	1,091.2	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____