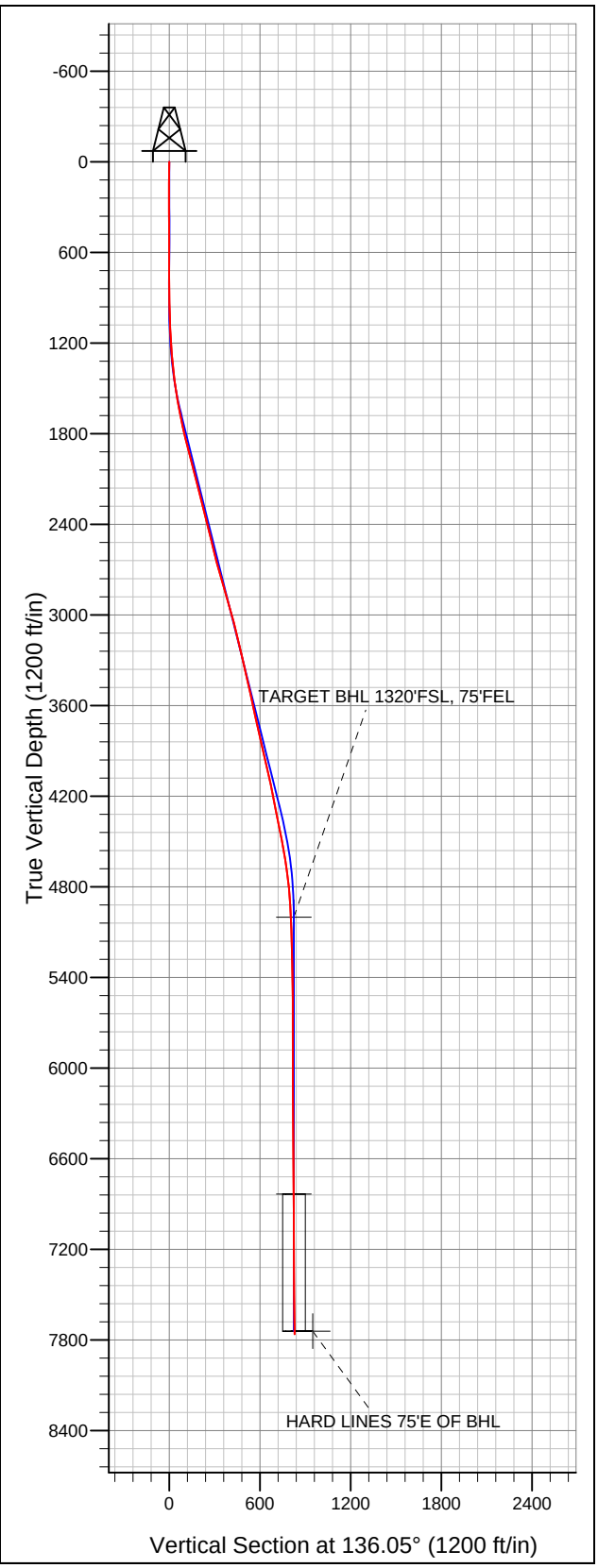
ENSIGN Directional

Well Name: Megan State H15-33D

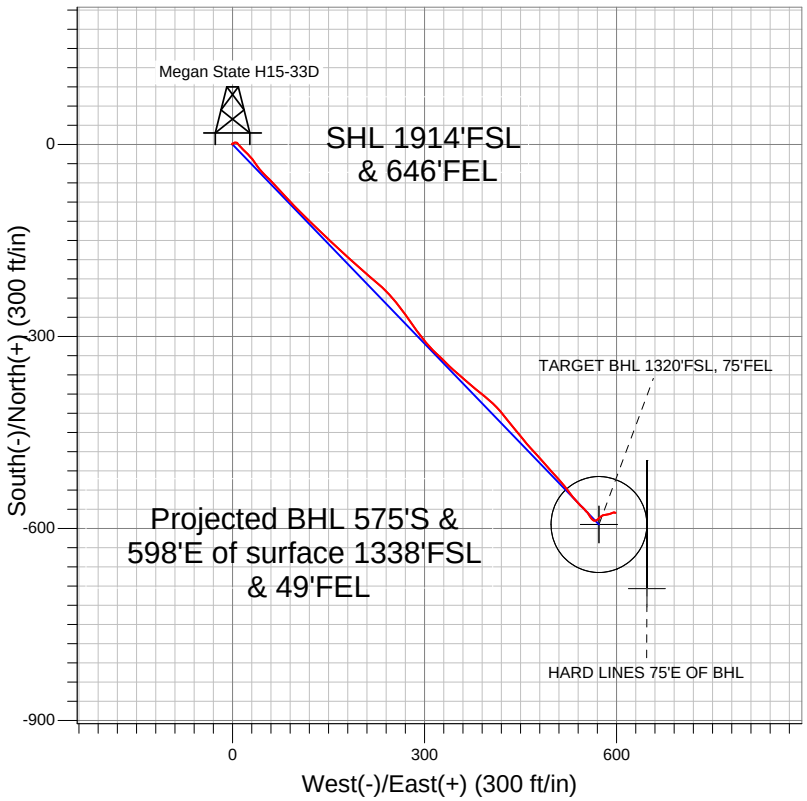
Surface Location: Megan State H15-33D Pad Sec.16-T3N-R65W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4818.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1325340.47	3234082.66	40.223420	-104.661690	

Original Well Elev — WELL @ 4831.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Wellbore #1
- Megan State H15-33D, Wellbore #1, Noble Megan State H15-33D Plan #2 (5-14-12) R V0
- Survey #1

Final Survey Plot

Projected Final Survey -
7850'MD & 7761'TVD @ 829'VS
0.70 deg Inc 102.80 deg AZ

Project: SEC.16-T3N-R65W
Site: Megan State H15-33D Pad Sec.16-T3N-R65W
Well: Megan State H15-33D
Plan: Wellbore #1

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.16-T3N-R65W
Megan State H15-33D Pad Sec.16-T3N-R65W
Megan State H15-33D

Wellbore #1

Survey: Survey #1

Standard Survey Report

21 May, 2012

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Megan State H15-33D
Project:	SEC.16-T3N-R65W	**TVD Reference:**	WELL @ 4831.0ft (Original Well Elev)
Site:	Megan State H15-33D Pad Sec.16-T3N-R65W	**MD Reference:**	WELL @ 4831.0ft (Original Well Elev)
Well:	Megan State H15-33D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.16-T3N-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 Megan State H15-33D Pad Sec.16-T3N-R65W

Site Position:		**Northing:**	1,325,340.48 ft	**Latitude:**	40.223420
From:	Lat/Long	**Easting:**	3,234,082.66 ft	**Longitude:**	-104.661690
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.54 °

Well Megan State H15-33D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,325,340.47 ft	**Latitude:**	40.223420
	+E/-W	0.0 ft	**Easting:**	3,234,082.66 ft	**Longitude:**	-104.661690
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,818.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/14/2012	8.67	66.89	52,953

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 (°)
	5,000.0	0.0	0.0	136.05

Survey Program **Date** 5/21/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
140.0	7,850.0	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
140.0	0.40	340.80	140.0	0.5	-0.2	-0.4	0.29	0.29	0.00
235.0	0.30	329.00	235.0	1.0	-0.4	-1.0	0.13	-0.11	-12.42
330.0	0.40	45.50	330.0	1.4	-0.3	-1.2	0.46	0.11	80.53
425.0	0.40	95.60	425.0	1.6	0.3	-1.0	0.36	0.00	52.74
520.0	0.40	82.10	520.0	1.6	0.9	-0.5	0.10	0.00	-14.21
615.0	0.40	38.80	615.0	2.0	1.5	-0.4	0.31	0.00	-45.58
719.0	1.10	65.90	719.0	2.6	2.6	-0.1	0.74	0.67	26.06
800.0	1.00	91.90	800.0	2.9	4.0	0.7	0.60	-0.12	32.10
913.0	0.60	103.30	913.0	2.8	5.6	1.9	0.38	-0.35	10.09
973.0	0.90	101.00	973.0	2.6	6.4	2.5	0.50	0.50	-3.83
1,054.0	1.80	132.90	1,053.9	1.6	7.9	4.3	1.41	1.11	39.38
1,136.0	2.70	143.40	1,135.9	-0.8	10.0	7.5	1.20	1.10	12.80

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Megan State H15-33D
Project:	SEC.16-T3N-R65W	**TVD Reference:**	WELL @ 4831.0ft (Original Well Elev)
Site:	Megan State H15-33D Pad Sec.16-T3N-R65W	**MD Reference:**	WELL @ 4831.0ft (Original Well Elev)
Well:	Megan State H15-33D	**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)
1,218.0	4.30	136.50	1,217.7	-4.6	13.3	12.5	2.01	1.95	-8.41
1,300.0	5.30	134.30	1,299.4	-9.5	18.1	19.4	1.24	1.22	-2.68
1,381.0	6.60	135.10	1,380.0	-15.4	24.1	27.8	1.61	1.60	0.99
1,463.0	7.80	142.00	1,461.3	-23.1	30.8	38.0	1.80	1.46	8.41
1,545.0	9.60	145.00	1,542.4	-33.1	38.2	50.3	2.26	2.20	3.66
1,627.0	10.00	137.10	1,623.2	-43.9	46.9	64.2	1.71	0.49	-9.63
1,709.0	11.20	134.10	1,703.8	-54.7	57.5	79.3	1.61	1.46	-3.66
1,791.0	12.90	137.80	1,784.0	-67.0	69.4	96.4	2.28	2.07	4.51
1,872.0	14.10	137.90	1,862.7	-81.0	82.1	115.3	1.48	1.48	0.12
1,954.0	14.30	135.00	1,942.2	-95.6	95.9	135.4	0.90	0.24	-3.54
2,036.0	15.10	134.80	2,021.6	-110.3	110.7	156.2	0.98	0.98	-0.24
2,118.0	14.40	134.60	2,100.9	-124.9	125.5	177.1	0.86	-0.85	-0.24
2,199.0	14.10	132.70	2,179.4	-138.7	139.9	197.0	0.69	-0.37	-2.35
2,281.0	14.80	134.30	2,258.8	-152.8	154.8	217.4	0.98	0.85	1.95
2,363.0	14.20	130.90	2,338.2	-166.7	169.9	237.9	1.27	-0.73	-4.15
2,445.0	13.60	132.90	2,417.8	-179.8	184.5	257.5	0.94	-0.73	2.44
2,526.0	13.30	132.10	2,496.5	-192.6	198.4	276.3	0.44	-0.37	-0.99
2,608.0	14.00	130.90	2,576.2	-205.4	212.9	295.6	0.92	0.85	-1.46
2,690.0	14.60	129.90	2,655.7	-218.5	228.3	315.8	0.79	0.73	-1.22
2,772.0	16.40	138.50	2,734.7	-233.8	243.9	337.6	3.55	2.20	10.49
2,853.0	15.90	140.60	2,812.5	-251.0	258.5	360.1	0.95	-0.62	2.59
2,935.0	16.40	143.60	2,891.3	-269.0	272.5	382.8	1.19	0.61	3.66
3,017.0	16.30	146.20	2,970.0	-287.8	285.8	405.6	0.90	-0.12	3.17
3,099.0	14.40	140.90	3,049.0	-305.3	298.7	427.1	2.88	-2.32	-6.46
3,180.0	14.10	135.70	3,127.5	-320.2	311.9	447.0	1.62	-0.37	-6.42
3,262.0	13.20	132.90	3,207.2	-333.7	325.7	466.3	1.36	-1.10	-3.41
3,344.0	12.50	135.30	3,287.2	-346.4	338.8	484.5	1.07	-0.85	2.93
3,426.0	12.80	129.70	3,367.2	-358.5	352.1	502.4	1.54	0.37	-6.83
3,508.0	13.00	131.60	3,447.1	-370.4	365.9	520.7	0.57	0.24	2.32
3,589.0	12.80	128.80	3,526.1	-382.1	379.8	538.7	0.81	-0.25	-3.46
3,671.0	12.40	129.00	3,606.1	-393.3	393.7	556.4	0.49	-0.49	0.24
3,753.0	12.10	133.20	3,686.2	-404.8	406.8	573.7	1.15	-0.37	5.12
3,835.0	11.80	140.60	3,766.5	-417.1	418.4	590.7	1.90	-0.37	9.02
3,916.0	13.70	140.40	3,845.5	-430.9	429.7	608.5	2.35	2.35	-0.25
3,998.0	12.80	140.40	3,925.3	-445.4	441.7	627.2	1.10	-1.10	0.00
4,080.0	13.70	141.80	4,005.1	-460.0	453.5	645.9	1.17	1.10	1.71
4,162.0	12.20	137.20	4,085.0	-474.0	465.4	664.3	2.22	-1.83	-5.61
4,244.0	10.90	138.30	4,165.3	-486.2	476.5	680.7	1.61	-1.59	1.34
4,325.0	11.40	138.80	4,244.8	-497.9	486.8	696.3	0.63	0.62	0.62
4,407.0	10.90	138.80	4,325.3	-509.8	497.3	712.2	0.61	-0.61	0.00
4,489.0	11.30	136.20	4,405.7	-521.5	507.9	728.0	0.78	0.49	-3.17
4,571.0	11.30	141.50	4,486.1	-533.6	518.5	744.0	1.27	0.00	6.46
4,652.0	9.80	143.80	4,565.8	-545.3	527.5	758.7	1.92	-1.85	2.84
4,734.0	8.60	139.00	4,646.7	-555.6	535.7	771.8	1.74	-1.46	-5.85
4,816.0	7.20	135.00	4,727.9	-563.8	543.3	783.0	1.83	-1.71	-4.88
4,898.0	5.60	133.70	4,809.4	-570.2	549.8	792.1	1.96	-1.95	-1.59
4,980.0	3.80	141.60	4,891.1	-575.1	554.4	798.9	2.33	-2.20	9.63
5,061.0	2.70	151.80	4,972.0	-578.9	557.0	803.4	1.53	-1.36	12.59
5,089.9	2.56	149.59	5,000.8	-580.1	557.6	804.6	0.61	-0.50	-7.67
TARGET BHL 1320'FSL, 75'FEL									
5,143.0	2.30	144.80	5,053.9	-582.0	558.8	806.8	0.61	-0.48	-9.01
5,225.0	2.00	137.90	5,135.9	-584.4	560.8	809.9	0.48	-0.37	-8.41
5,307.0	1.50	132.50	5,217.8	-586.2	562.5	812.4	0.64	-0.61	-6.59
5,389.0	1.10	123.70	5,299.8	-587.3	564.0	814.2	0.54	-0.49	-10.73

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Megan State H15-33D
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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)
5,470.0	0.90	91.90	5,380.8	-587.8	565.2	815.5	0.72	-0.25	-39.26
5,552.0	1.00	77.30	5,462.8	-587.6	566.6	816.3	0.32	0.12	-17.80
5,634.0	1.00	76.60	5,544.8	-587.3	568.0	817.0	0.01	0.00	-0.85
5,797.0	1.10	45.10	5,707.8	-585.9	570.5	817.7	0.35	0.06	-19.33
5,961.0	1.40	49.40	5,871.7	-583.5	573.1	817.8	0.19	0.18	2.62
6,124.0	1.30	49.40	6,034.7	-581.0	576.0	818.0	0.06	-0.06	0.00
6,288.0	0.80	72.90	6,198.7	-579.4	578.5	818.7	0.40	-0.30	14.33
6,451.0	0.80	85.60	6,361.6	-579.0	580.7	819.9	0.11	0.00	7.79
6,615.0	0.70	71.50	6,525.6	-578.6	582.8	821.1	0.13	-0.06	-8.60
6,778.0	0.60	93.70	6,688.6	-578.3	584.6	822.1	0.16	-0.06	13.62
6,922.2	0.69	79.82	6,832.8	-578.2	586.2	823.2	0.12	0.06	-9.63
TARGET CIRCLE 1320'FSL, 75'FEL									
6,942.0	0.70	78.20	6,852.6	-578.2	586.5	823.3	0.12	0.07	-8.17
7,105.0	0.70	67.30	7,015.6	-577.6	588.4	824.2	0.08	0.00	-6.69
7,269.0	1.10	65.20	7,179.6	-576.6	590.7	825.1	0.24	0.24	-1.28
7,432.0	0.90	74.10	7,342.5	-575.5	593.4	826.2	0.16	-0.12	5.46
7,595.0	0.50	83.50	7,505.5	-575.1	595.3	827.2	0.25	-0.25	5.77
7,759.0	0.70	97.30	7,669.5	-575.2	597.0	828.4	0.15	0.12	8.41
7,804.0	0.70	102.80	7,714.5	-575.3	597.5	828.9	0.15	0.00	12.22
7,831.4	0.70	102.80	7,741.9	-575.3	597.9	829.2	0.00	0.00	0.00
HARD LINES 75'E OF BHL									
7,850.0	0.70	102.80	7,760.5	-575.4	598.1	829.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____