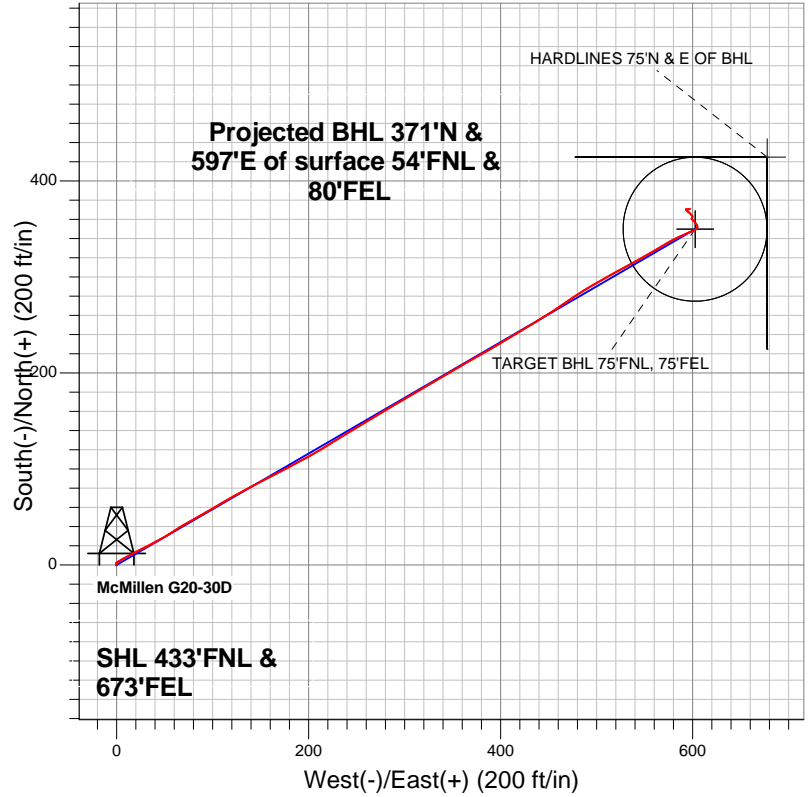


Well Name: McMillen G20-30D

Surface Location: McMillen G19-27D Pad Sec.19-T4N-R65W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 4737.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1354586.98	3223475.06	40.303970	-104.698730	
Original Well Elev		WELL @ 4750.0ft (Original Well Elev)				

NOBLE ENERGY INC WELD COUNTY CO



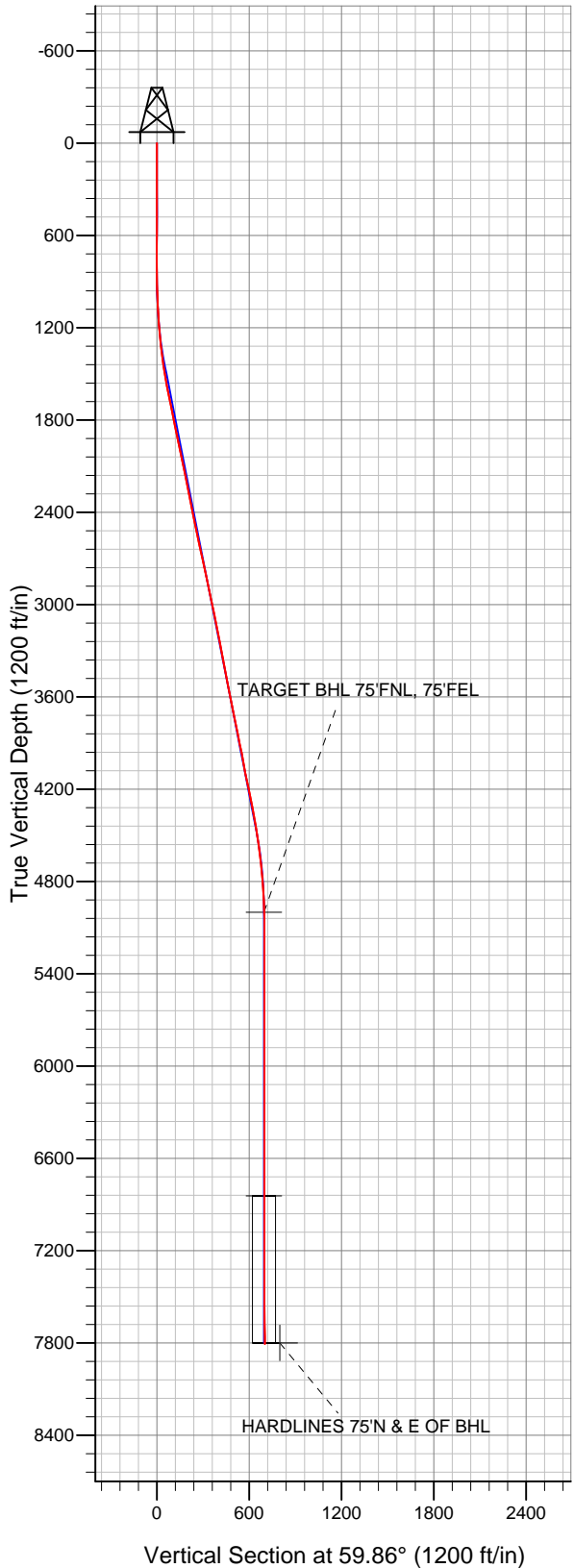
LEGEND

- Wellbore #1
- McMillen G20-30D, Wellbore #1, Noble McMillen G20-30D Plan #2 (2-20-12) V0
- Survey #1

Final Survey Plot

Projected Final Survey -
 7872'MD & 7807'TVD @ 703'VS
 0.70 deg Inc 78.50 deg AZ

Project: SEC.19-T4N-R65W
 Site: McMillen G19-27D Pad Sec.19-T4N-R65W
 Well: McMillen G20-30D
 Plan: Wellbore #1





NOBLE ENERGY INC WELD COUNTY CO

SEC.19-T4N-R65W

McMillen G19-27D Pad Sec.19-T4N-R65W

McMillen G20-30D

Wellbore #1

Survey: Survey #1

Standard Survey Report

24 July, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well McMillen G20-30D
Project:	SEC.19-T4N-R65W	TVD Reference:	WELL @ 4750.0ft (Original Well Elev)
Site:	McMillen G19-27D Pad Sec.19-T4N-R65W	MD Reference:	WELL @ 4750.0ft (Original Well Elev)
Well:	McMillen G20-30D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-T4N-R65W, 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	McMillen G19-27D Pad Sec.19-T4N-R65W		
Site Position:		Northing:	1,354,608.84 ft
From:	Lat/Long	Easting:	3,223,474.86 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.304030
		Longitude:	-104.698730
		Grid Convergence:	0.52 °

Well	McMillen G20-30D		
Well Position	+N/-S	0.0 ft	Northing: 1,354,586.98 ft
	+E/-W	0.0 ft	Easting: 3,223,475.06 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.303970
		Longitude:	-104.698730
		Ground Level:	4,737.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/15/2011	8.75	66.97	53,036

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	59.86	

Survey Program	Date	7/24/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
170.0	7,872.0	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	
170.0	0.20	324.40	170.0	0.2	-0.2	0.0	0.12	0.12	0.00	
372.0	0.10	163.60	372.0	0.4	-0.3	-0.1	0.15	-0.05	-79.60	
580.0	0.10	253.00	580.0	0.1	-0.5	-0.3	0.07	0.00	42.98	
687.0	0.50	359.00	687.0	0.6	-0.5	-0.2	0.50	0.37	99.07	
815.0	0.60	359.20	815.0	1.8	-0.6	0.4	0.08	0.08	0.16	
943.0	1.10	67.20	943.0	2.9	0.6	2.0	0.81	0.39	53.13	
1,071.0	3.10	59.10	1,070.9	5.2	4.7	6.6	1.58	1.56	-6.33	
1,200.0	4.60	60.50	1,199.6	9.5	12.2	15.3	1.16	1.16	1.09	
1,328.0	6.50	64.80	1,327.0	15.2	23.2	27.7	1.52	1.48	3.36	
1,456.0	8.70	61.60	1,453.9	22.8	38.3	44.5	1.75	1.72	-2.50	
1,584.0	10.50	58.00	1,580.1	33.6	56.7	65.9	1.48	1.41	-2.81	
1,713.0	11.80	60.70	1,706.6	46.3	78.1	90.8	1.09	1.01	2.09	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well McMillen G20-30D
Project:	SEC.19-T4N-R65W	TVD Reference:	WELL @ 4750.0ft (Original Well Elev)
Site:	McMillen G19-27D Pad Sec.19-T4N-R65W	MD Reference:	WELL @ 4750.0ft (Original Well Elev)
Well:	McMillen G20-30D	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)
1,841.0	11.90	59.80	1,831.9	59.4	101.0	117.1	0.16	0.08	-0.70
1,969.0	11.60	60.40	1,957.2	72.3	123.5	143.2	0.25	-0.23	0.47
2,097.0	11.60	62.30	2,082.6	84.7	146.1	168.9	0.30	0.00	1.48
2,226.0	11.30	62.80	2,209.0	96.5	168.9	194.5	0.24	-0.23	0.39
2,354.0	11.30	62.30	2,334.6	108.1	191.1	219.5	0.08	0.00	-0.39
2,482.0	11.60	58.50	2,460.0	120.6	213.2	244.9	0.63	0.23	-2.97
2,610.0	12.30	58.30	2,585.2	134.5	235.8	271.4	0.55	0.55	-0.16
2,738.0	12.20	59.00	2,710.3	148.6	259.0	298.6	0.14	-0.08	0.55
2,867.0	11.90	59.30	2,836.5	162.4	282.1	325.5	0.24	-0.23	0.23
2,995.0	12.00	59.50	2,961.7	175.9	304.9	352.0	0.08	0.08	0.16
3,123.0	11.70	59.70	3,087.0	189.2	327.6	378.3	0.24	-0.23	0.16
3,251.0	10.20	59.10	3,212.6	201.6	348.5	402.6	1.18	-1.17	-0.47
3,380.0	10.90	60.90	3,339.5	213.4	368.9	426.2	0.60	0.54	1.40
3,508.0	11.30	59.50	3,465.1	225.6	390.3	450.9	0.38	0.31	-1.09
3,636.0	11.00	59.30	3,590.6	238.2	411.6	475.6	0.24	-0.23	-0.16
3,764.0	11.50	59.70	3,716.2	250.9	433.1	500.6	0.40	0.39	0.31
3,893.0	11.80	56.10	3,842.5	264.8	455.2	526.6	0.61	0.23	-2.79
4,021.0	10.80	55.30	3,968.0	278.9	475.9	551.6	0.79	-0.78	-0.63
4,149.0	10.30	60.40	4,093.9	291.4	495.7	575.0	0.83	-0.39	3.98
4,277.0	12.50	61.20	4,219.4	303.7	517.8	600.3	1.72	1.72	0.63
4,406.0	10.60	61.10	4,345.7	316.2	540.4	626.1	1.47	-1.47	-0.08
4,534.0	9.40	60.00	4,471.8	327.1	559.8	648.4	0.95	-0.94	-0.86
4,662.0	7.70	59.30	4,598.4	336.7	576.2	667.4	1.33	-1.33	-0.55
4,790.0	5.10	67.40	4,725.6	343.2	588.9	681.6	2.15	-2.03	6.33
4,919.0	3.50	67.60	4,854.2	347.0	597.8	691.2	1.24	-1.24	0.16
5,047.0	1.60	55.10	4,982.1	349.5	602.9	696.8	1.54	-1.48	-9.77
5,064.9	1.46	53.19	5,000.0	349.7	603.3	697.3	0.82	-0.77	-10.62
TARGET BHL 75'FNL, 75'FEL									
5,175.0	0.70	25.40	5,110.0	351.2	604.7	699.3	0.82	-0.69	-25.25
5,303.0	0.50	349.90	5,238.0	352.4	604.9	700.1	0.32	-0.16	-27.73
5,432.0	0.90	330.70	5,367.0	353.9	604.3	700.3	0.36	0.31	-14.88
5,560.0	1.10	323.70	5,495.0	355.8	603.1	700.2	0.18	0.16	-5.47
5,688.0	1.20	317.90	5,623.0	357.7	601.5	699.8	0.12	0.08	-4.53
5,816.0	0.80	315.40	5,750.9	359.4	599.9	699.3	0.31	-0.31	-1.95
5,945.0	0.40	314.50	5,879.9	360.3	599.0	698.9	0.31	-0.31	-0.70
6,073.0	0.40	29.10	6,007.9	361.0	598.9	699.2	0.38	0.00	58.28
6,201.0	0.40	35.20	6,135.9	361.8	599.4	700.0	0.03	0.00	4.77
6,329.0	0.40	24.30	6,263.9	362.6	599.8	700.8	0.06	0.00	-8.52
6,458.0	0.40	324.30	6,392.9	363.3	599.7	701.1	0.31	0.00	-46.51
6,586.0	0.70	319.60	6,520.9	364.3	599.0	700.9	0.24	0.23	-3.67
6,714.0	0.80	316.50	6,648.9	365.5	597.8	700.6	0.08	0.08	-2.42
6,842.0	0.70	310.70	6,776.9	366.7	596.6	700.1	0.10	-0.08	-4.53
6,909.9	0.59	306.41	6,844.8	367.2	596.0	699.8	0.17	-0.16	-6.32
TARGET CIRCLE 75'FNL, 75'FEL									
6,971.0	0.50	301.00	6,905.9	367.5	595.6	699.6	0.17	-0.15	-8.85
7,099.0	1.20	312.10	7,033.9	368.7	594.1	698.9	0.56	0.55	8.67
7,227.0	0.40	333.50	7,161.9	370.0	592.9	698.5	0.66	-0.63	16.72
7,355.0	0.30	45.60	7,289.9	370.6	592.9	698.9	0.33	-0.08	56.33
7,484.0	0.30	111.70	7,418.9	370.7	593.5	699.4	0.25	0.00	51.24
7,612.0	0.40	111.20	7,546.9	370.4	594.2	699.9	0.08	0.08	-0.39
7,740.0	0.80	77.80	7,674.9	370.5	595.5	701.0	0.40	0.31	-26.09
7,827.0	0.70	78.50	7,761.8	370.7	596.6	702.1	0.12	-0.11	0.80
7,866.3	0.70	78.50	7,801.1	370.8	597.1	702.5	0.00	0.00	0.00
HARDLINES 75'N & E OF BHL									

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Design:	Wellbore #1	Database:	Landmark

Survey									
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7,872.0	0.70	78.50	7,806.8	370.8	597.2	702.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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