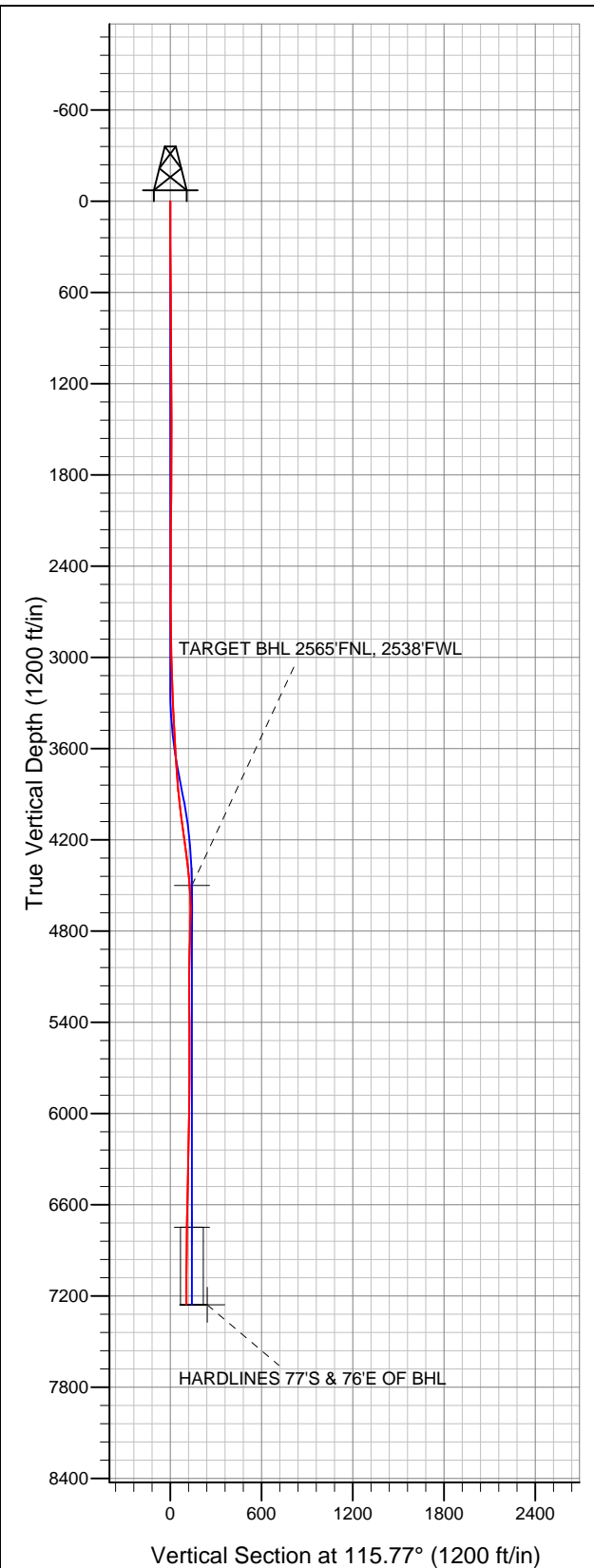


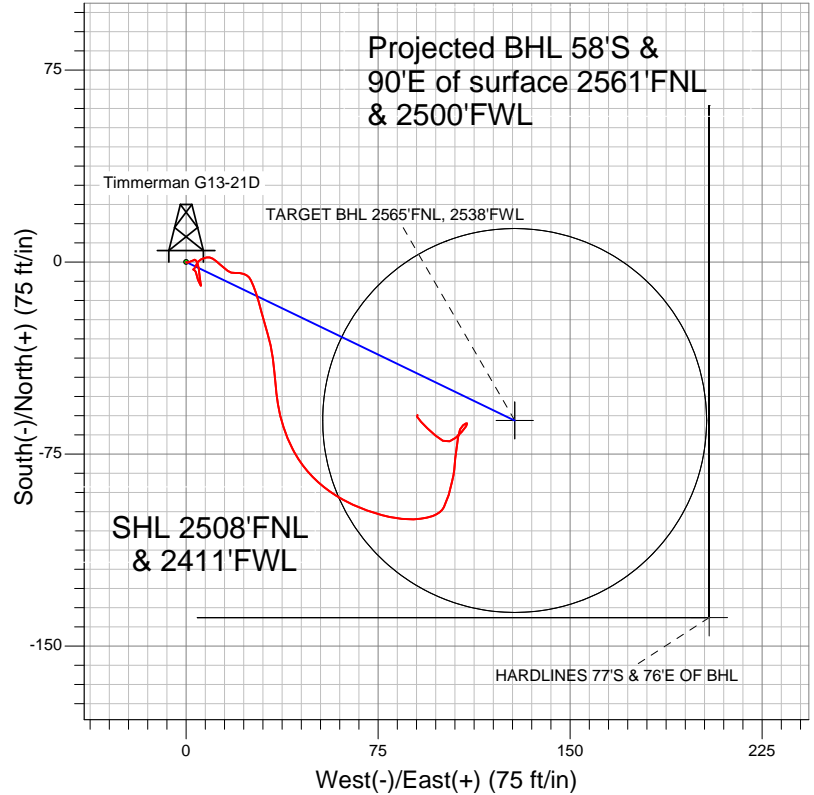
Well Name: Timmerman G13-21D

Surface Location: Timmerman G13-20D Pad Sec.13-T4N-R65W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 4775.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1358000.58	3247578.52	40.312710	-104.612190	
Original Well Elev				WELL @ 4788.0ft (Original Well Elev)		



NOBLE ENERGY INC WELD COUNTY CO



- LEGEND
- Wellbore #1
 - Timmerman G13-21D, Wellbore #1, Noble Timmerman G13-21D Plan #1 (4-23-12) R V0
 - Survey #1

Final Survey Plot

Projected Final Survey -
 7265'MD & 7254'TVD @ 107°VS
 0.20 deg Inc 20.40 deg AZ

Project: SEC.13-T4N-R65W
 Site: Timmerman G13-20D Pad Sec.13-T4N-R65W
 Well: Timmerman G13-21D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.13-T4N-R65W

Timmerman G13-20D Pad Sec.13-T4N-R65W

Timmerman G13-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

30 April, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Timmerman G13-21D
Project:	SEC.13-T4N-R65W	TVD Reference:	WELL @ 4788.0ft (Original Well Elev)
Site:	Timmerman G13-20D Pad Sec.13-T4N-R65W	MD Reference:	WELL @ 4788.0ft (Original Well Elev)
Well:	Timmerman G13-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.13-T4N-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	Timmerman G13-20D Pad Sec.13-T4N-R65W				
Site Position:		Northing:	1,357,999.70ft	Latitude:	40.312710
From:	Lat/Long	Easting:	3,247,489.28ft	Longitude:	-104.612510
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Timmerman G13-21D					
Well Position	+N/-S	0.0 ft	Northing:	1,358,000.58 ft	Latitude:	40.312710
	+E/-W	0.0 ft	Easting:	3,247,578.52 ft	Longitude:	-104.612190
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,775.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/23/2012	8.61	66.99	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 (°)	
	4,500.0	0.0	0.0	115.77	

Survey Program	Date	4/30/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
83.0	7,265.0	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	
83.0	0.10	191.00	83.0	-0.1	0.0	0.0	0.12	0.12	0.00	
175.0	0.20	108.90	175.0	-0.2	0.1	0.2	0.23	0.11	-89.24	
267.0	0.30	93.40	267.0	-0.3	0.5	0.6	0.13	0.11	-16.85	
360.0	0.40	53.20	360.0	-0.1	1.0	1.0	0.28	0.11	-43.23	
452.0	0.60	80.10	452.0	0.2	1.7	1.5	0.33	0.22	29.24	
543.0	0.70	56.90	543.0	0.6	2.7	2.2	0.31	0.11	-25.49	
615.0	0.40	77.10	615.0	0.9	3.3	2.6	0.49	-0.42	28.06	
696.0	0.70	149.10	696.0	0.5	3.8	3.2	0.85	0.37	88.89	
758.0	1.00	154.60	758.0	-0.3	4.3	4.0	0.50	0.48	8.87	
803.0	1.10	162.30	803.0	-1.1	4.6	4.6	0.38	0.22	17.11	
860.0	1.00	173.90	860.0	-2.1	4.8	5.2	0.41	-0.18	20.35	
1,023.0	1.10	169.70	1,022.9	-5.0	5.2	6.9	0.08	0.06	-2.58	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Timmerman G13-21D
Project:	SEC.13-T4N-R65W	TVD Reference:	WELL @ 4788.0ft (Original Well Elev)
Site:	Timmerman G13-20D Pad Sec.13-T4N-R65W	MD Reference:	WELL @ 4788.0ft (Original Well Elev)
Well:	Timmerman G13-21D	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)
1,186.0	1.10	174.30	1,185.9	-8.1	5.6	8.6	0.05	0.00	2.82
1,350.0	0.30	350.20	1,349.9	-9.3	5.7	9.2	0.85	-0.49	107.26
1,513.0	0.30	309.60	1,512.9	-8.6	5.3	8.5	0.13	0.00	-24.91
1,676.0	1.00	342.10	1,675.9	-7.0	4.6	7.1	0.47	0.43	19.94
1,840.0	0.50	351.10	1,839.9	-4.9	4.0	5.7	0.31	-0.30	5.49
2,003.0	0.30	335.60	2,002.9	-3.8	3.7	5.0	0.14	-0.12	-9.51
2,166.0	0.30	303.70	2,165.9	-3.2	3.2	4.3	0.10	0.00	-19.57
2,329.0	0.10	275.50	2,328.9	-2.9	2.7	3.7	0.13	-0.12	-17.30
2,493.0	0.30	81.60	2,492.9	-2.9	3.0	3.9	0.24	0.12	101.28
2,656.0	0.50	3.20	2,655.9	-2.1	3.4	4.0	0.32	0.12	-48.10
2,819.0	1.20	37.30	2,818.8	0.0	4.5	4.1	0.51	0.43	20.92
2,982.0	1.70	79.40	2,981.8	1.8	7.9	6.4	0.70	0.31	25.83
3,064.0	2.10	121.50	3,063.7	1.2	10.4	8.8	1.73	0.49	51.34
3,146.0	3.00	133.80	3,145.7	-1.0	13.2	12.4	1.28	1.10	15.00
3,227.0	2.40	124.20	3,226.6	-3.5	16.2	16.1	0.93	-0.74	-11.85
3,309.0	2.20	84.60	3,308.5	-4.3	19.1	19.1	1.91	-0.24	-48.29
3,391.0	2.70	107.50	3,390.4	-4.7	22.6	22.4	1.33	0.61	27.93
3,472.0	2.90	154.40	3,471.4	-7.1	25.3	25.8	2.76	0.25	57.90
3,554.0	4.70	160.90	3,553.2	-12.2	27.3	29.8	2.25	2.20	7.93
3,636.0	6.10	166.00	3,634.8	-19.6	29.4	35.0	1.80	1.71	6.22
3,717.0	6.30	162.30	3,715.3	-28.0	31.8	40.8	0.55	0.25	-4.57
3,799.0	7.50	172.90	3,796.7	-37.6	33.8	46.8	2.13	1.46	12.93
3,881.0	9.40	174.80	3,877.8	-49.6	35.1	53.2	2.34	2.32	2.32
3,891.0	9.40	174.80	3,887.7	-51.2	35.2	54.0	0.00	0.00	0.00
3,972.0	10.00	162.30	3,967.6	-64.5	38.0	62.2	2.70	0.74	-15.43
4,054.0	9.30	146.70	4,048.4	-76.8	43.8	72.8	3.29	-0.85	-19.02
4,135.0	7.50	131.90	4,128.6	-85.8	51.3	83.5	3.46	-2.22	-18.27
4,217.0	7.60	120.10	4,209.8	-92.1	60.0	94.1	1.89	0.12	-14.39
4,299.0	7.40	111.00	4,291.1	-96.7	69.6	104.7	1.47	-0.24	-11.10
4,380.0	7.10	101.70	4,371.5	-99.6	79.4	114.8	1.49	-0.37	-11.48
4,462.0	6.20	88.30	4,453.0	-100.5	88.8	123.6	2.18	-1.10	-16.34
4,513.1	5.20	78.00	4,503.8	-99.9	93.8	127.9	2.80	-1.96	-20.16
TARGET BHL 2565'FNL, 2538'FWL									
4,544.0	4.70	69.80	4,534.6	-99.2	96.4	129.9	2.80	-1.61	-26.53
4,625.0	3.60	27.70	4,615.4	-95.8	100.7	132.3	3.89	-1.36	-51.98
4,707.0	3.60	15.00	4,697.2	-91.0	102.5	131.9	0.97	0.00	-15.49
4,789.0	4.00	14.10	4,779.1	-85.8	103.9	130.8	0.49	0.49	-1.10
4,870.0	2.80	2.40	4,859.9	-81.1	104.7	129.5	1.70	-1.48	-14.44
4,952.0	3.30	7.30	4,941.8	-76.7	105.0	127.9	0.69	0.61	5.98
5,115.0	2.60	8.30	5,104.6	-68.4	106.2	125.3	0.43	-0.43	0.61
5,278.0	1.20	55.30	5,267.5	-63.8	108.1	125.1	1.22	-0.86	28.83
5,442.0	0.20	128.00	5,431.5	-63.0	109.7	126.2	0.71	-0.61	44.33
5,605.0	0.80	211.50	5,594.5	-64.1	109.4	126.4	0.49	0.37	51.23
5,768.0	1.20	222.10	5,757.4	-66.4	107.6	125.8	0.27	0.25	6.50
5,931.0	1.10	228.40	5,920.4	-68.7	105.3	124.7	0.10	-0.06	3.87
6,095.0	0.90	252.70	6,084.4	-70.1	102.9	123.1	0.28	-0.12	14.82
6,258.0	1.10	293.90	6,247.4	-69.8	100.3	120.6	0.45	0.12	25.28
6,421.0	1.50	312.60	6,410.3	-67.8	97.3	117.0	0.35	0.25	11.47
6,585.0	1.40	311.70	6,574.3	-65.0	94.2	113.1	0.06	-0.06	-0.55
6,748.0	1.10	320.70	6,737.2	-62.4	91.7	109.7	0.22	-0.18	5.52
6,758.5	1.05	320.89	6,747.7	-62.3	91.6	109.5	0.43	-0.43	1.79
TARGET CIRCLE 2565'FNL, 2538'FWL									
6,911.0	0.40	328.40	6,900.2	-60.7	90.4	107.8	0.43	-0.43	4.93
7,074.0	0.10	179.90	7,063.2	-60.4	90.1	107.4	0.30	-0.18	-91.10

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Timmerman G13-21D
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Site:	Timmerman G13-20D Pad Sec.13-T4N-R65W	MD Reference:	WELL @ 4788.0ft (Original Well Elev)
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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)
7,220.0	0.40	17.00	7,209.2	-60.0	90.3	107.4	0.34	0.21	-111.58
7,265.0	0.20	20.40	7,254.2	-59.8	90.3	107.4	0.45	-0.44	7.56
HARDLINES 77'S & 76'E OF BHL									

Checked By: _____ Approved By: _____ Date: _____