

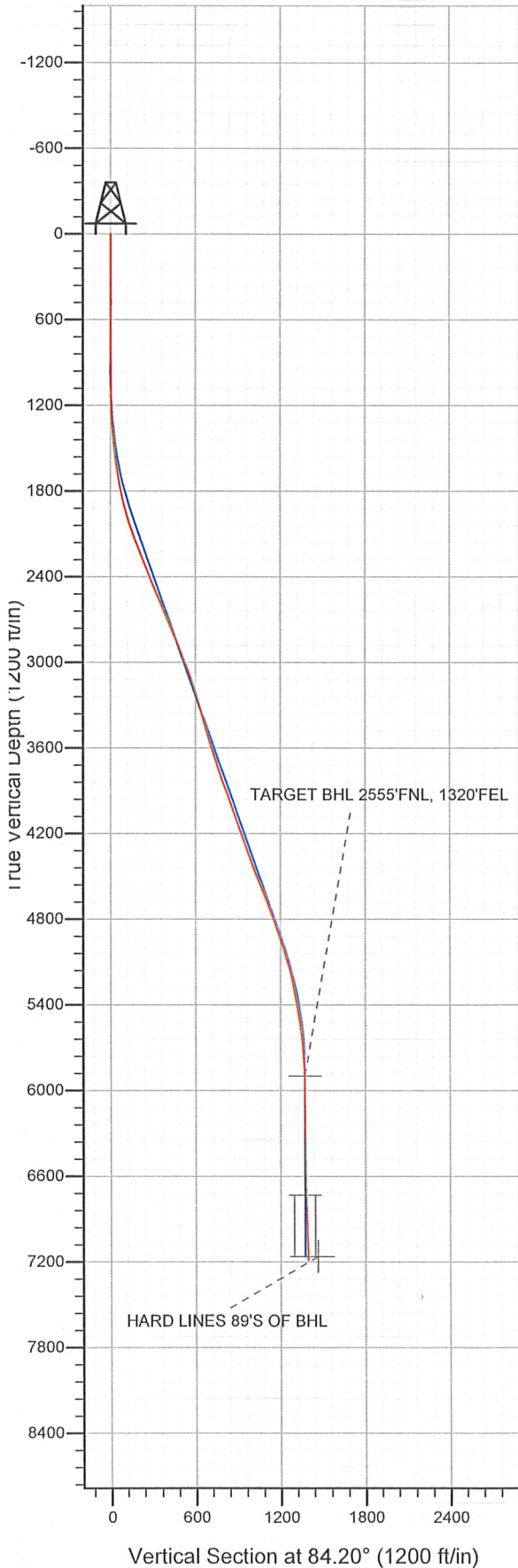
Well Name: **Rhino D27-22D**

Surface Location: Rhino D27-20D Pad Sec.27-T3N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

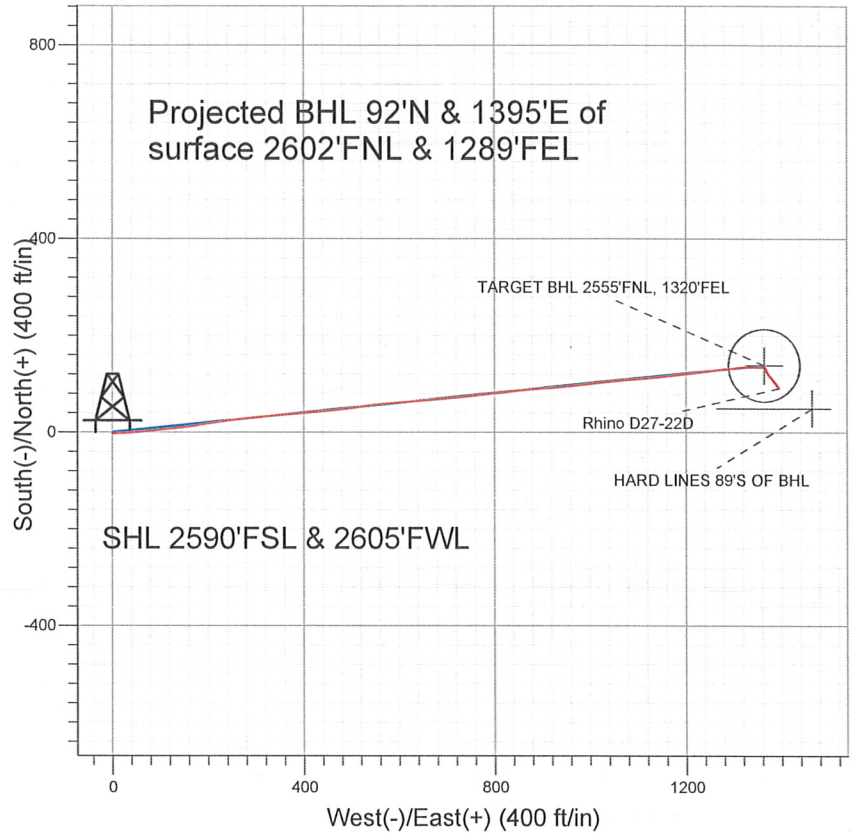
Ground Elevation: 4866.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1315787.75	3268821.97	40.196230	-104.537660	

Original Well Elev WELL @ 4879.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Rhino D27-22D, Wellbore #1, Noble Rhino D27-22D Plan #2 (8-22-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7412'MD & 7187'TVD @ 1397°VS
3.9 deg Inc 146.0 deg AZ

Project: SEC.27-T3N-R64W
Site: Rhino D27-20D Pad Sec.27-T3N-R64W
Well: Rhino D27-22D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.27-T3N-R64W

Rhino D27-20D Pad Sec.27-T3N-R64W

Rhino D27-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 September, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.27-T3N-R64W
Site: Rhino D27-20D Pad Sec.27-T3N-R64W
Well: Rhino D27-22D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rhino D27-22D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.27-T3N-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 Rhino D27-20D Pad Sec.27-T3N-R64W

Site Position:		Northing:	1,315,786.36 ft	Latitude:	40.196230
From:	Lat/Long	Easting:	3,268,687.89 ft	Longitude:	-104.538140
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Rhino D27-22D				
Well Position	+N/-S	0.0 ft	Northing:	1,315,787.75 ft	Latitude: 40.196230
	+E/-W	0.0 ft	Easting:	3,268,821.97 ft	Longitude: -104.537660
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft	Ground Level: 4,866.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/22/2011	8.70	66.92	53,029

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	84.20

Survey Program Date 9/9/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
877.0	7,412.0	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
877.0	0.20	157.60	877.0	-1.4	0.6	0.4	0.02	0.02	0.00
970.0	0.20	117.30	970.0	-1.6	0.8	0.6	0.15	0.00	-43.33
1,063.0	0.50	111.50	1,063.0	-1.9	1.3	1.1	0.32	0.32	-6.24
1,157.0	1.00	99.10	1,157.0	-2.1	2.5	2.3	0.56	0.53	-13.19
1,251.0	2.70	91.50	1,250.9	-2.3	5.5	5.3	1.82	1.81	-8.09
1,346.0	3.80	89.00	1,345.8	-2.3	10.9	10.6	1.17	1.16	-2.63
1,439.0	5.50	86.90	1,438.5	-2.0	18.4	18.1	1.84	1.83	-2.26
1,533.0	6.90	84.50	1,531.9	-1.3	28.6	28.3	1.51	1.49	-2.55
1,626.0	8.80	88.00	1,624.0	-0.5	41.2	41.0	2.11	2.04	3.76
1,720.0	9.80	85.00	1,716.8	0.5	56.4	56.1	1.18	1.06	-3.19
1,814.0	12.00	82.70	1,809.1	2.4	74.1	73.9	2.39	2.34	-2.45
1,907.0	15.20	84.60	1,899.5	4.8	95.8	95.8	3.47	3.44	2.04

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.27-T3N-R64W
Site: Rhino D27-20D Pad Sec.27-T3N-R64W
Well: Rhino D27-22D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rhino D27-22D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
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)
2,000.0	16.90	85.00	1,988.9	7.1	121.4	121.5	1.83	1.83	0.43
2,093.0	18.80	82.50	2,077.4	10.3	149.7	150.0	2.20	2.04	-2.69
2,187.0	21.90	80.80	2,165.5	15.0	182.0	182.6	3.36	3.30	-1.81
2,280.0	22.20	81.00	2,251.7	20.6	216.5	217.5	0.33	0.32	0.22
2,374.0	22.20	82.90	2,338.7	25.5	251.7	253.0	0.76	0.00	2.02
2,468.0	21.40	84.50	2,426.0	29.4	286.4	287.9	1.06	-0.85	1.70
2,562.0	22.20	83.90	2,513.3	32.9	321.1	322.8	0.88	0.85	-0.64
2,655.0	22.90	85.00	2,599.2	36.3	356.6	358.5	0.88	0.75	1.18
2,748.0	22.40	86.60	2,685.0	39.0	392.3	394.2	0.85	-0.54	1.72
2,841.0	23.70	84.30	2,770.6	41.9	428.6	430.6	1.70	1.40	-2.47
2,934.0	23.50	82.50	2,855.8	46.2	465.6	467.9	0.80	-0.22	-1.94
3,028.0	21.40	83.40	2,942.7	50.6	501.2	503.8	2.26	-2.23	0.96
3,122.0	21.10	82.00	3,030.3	54.9	535.0	537.8	0.63	-0.32	-1.49
3,216.0	18.80	84.80	3,118.6	58.6	566.8	569.9	2.65	-2.45	2.98
3,310.0	16.80	83.90	3,208.1	61.4	595.4	598.6	2.15	-2.13	-0.96
3,405.0	15.80	86.10	3,299.3	63.8	622.0	625.3	1.24	-1.05	2.32
3,498.0	15.30	86.40	3,388.9	65.4	646.9	650.2	0.54	-0.54	0.32
3,591.0	16.40	85.90	3,478.4	67.1	672.2	675.6	1.19	1.18	-0.54
3,684.0	18.40	82.90	3,567.1	69.9	699.9	703.4	2.36	2.15	-3.23
3,778.0	18.00	83.90	3,656.4	73.3	729.0	732.7	0.54	-0.43	1.06
3,871.0	18.20	84.60	3,744.8	76.1	757.8	761.6	0.32	0.22	0.75
3,964.0	19.60	84.50	3,832.8	79.0	787.8	791.7	1.51	1.51	-0.11
4,058.0	20.20	83.20	3,921.2	82.4	819.6	823.7	0.79	0.64	-1.38
4,152.0	19.80	83.40	4,009.5	86.2	851.5	855.9	0.43	-0.43	0.21
4,245.0	18.30	84.80	4,097.4	89.3	881.7	886.2	1.69	-1.61	1.51
4,339.0	19.30	86.40	4,186.4	91.6	911.9	916.5	1.20	1.06	1.70
4,432.0	22.10	84.30	4,273.4	94.3	944.7	949.4	3.11	3.01	-2.26
4,526.0	19.30	84.30	4,361.3	97.6	977.7	982.6	2.98	-2.98	0.00
4,620.0	20.20	82.20	4,449.8	101.4	1,009.3	1,014.3	1.22	0.96	-2.23
4,714.0	21.90	83.40	4,537.5	105.6	1,042.8	1,048.1	1.87	1.81	1.28
4,807.0	22.70	86.10	4,623.6	108.8	1,077.9	1,083.4	1.40	0.86	2.90
4,901.0	20.60	86.10	4,710.9	111.2	1,112.5	1,118.0	2.23	-2.23	0.00
4,995.0	20.40	83.20	4,799.0	114.2	1,145.3	1,150.9	1.10	-0.21	-3.09
5,088.0	19.30	83.80	4,886.4	117.8	1,176.6	1,182.5	1.20	-1.18	0.65
5,181.0	18.50	83.20	4,974.4	121.2	1,206.6	1,212.6	0.89	-0.86	-0.65
5,275.0	17.40	81.80	5,063.9	125.0	1,235.3	1,241.6	1.26	-1.17	-1.49
5,369.0	14.90	83.40	5,154.1	128.4	1,261.2	1,267.7	2.70	-2.66	1.70
5,463.0	10.90	85.20	5,245.7	130.5	1,282.1	1,288.7	4.28	-4.26	1.91
5,556.0	9.90	83.40	5,337.2	132.2	1,298.8	1,305.5	1.13	-1.08	-1.94
5,649.0	10.20	83.90	5,428.8	134.0	1,314.9	1,321.7	0.34	0.32	0.54
5,744.0	9.30	88.20	5,522.4	135.1	1,330.9	1,337.8	1.22	-0.95	4.53
5,838.0	6.60	92.70	5,615.5	135.1	1,343.9	1,350.7	2.95	-2.87	4.79
5,932.0	5.00	86.80	5,709.0	135.1	1,353.4	1,360.1	1.81	-1.70	-6.28
6,024.0	3.50	86.10	5,800.8	135.5	1,360.2	1,366.9	1.63	-1.63	-0.76
6,118.0	1.10	81.50	5,894.7	135.8	1,364.0	1,370.7	2.56	-2.55	-4.89
6,123.3	1.06	82.58	5,900.0	135.8	1,364.1	1,370.8	0.88	-0.80	20.45
TARGET BHL 2555'FNL, 1320'FEL									
6,211.0	0.50	126.10	5,987.7	135.7	1,365.2	1,371.9	0.88	-0.64	49.62
6,304.0	1.10	142.70	6,080.7	134.8	1,366.1	1,372.7	0.69	0.65	17.85
6,397.0	1.40	151.40	6,173.6	133.0	1,367.1	1,373.6	0.38	0.32	9.35
6,491.0	1.60	158.70	6,267.6	130.8	1,368.2	1,374.4	0.29	0.21	7.77
6,584.0	1.90	167.10	6,360.6	128.1	1,369.0	1,374.9	0.42	0.32	9.03
6,678.0	2.60	163.20	6,454.5	124.5	1,369.9	1,375.5	0.76	0.74	-4.15
6,774.0	2.20	139.10	6,550.4	121.1	1,371.8	1,377.0	1.12	-0.42	-25.10

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.27-T3N-R64W
Site: Rhino D27-20D Pad Sec.27-T3N-R64W
Well: Rhino D27-22D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rhino D27-22D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
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)
6,868.0	2.80	139.80	6,644.3	118.0	1,374.4	1,379.3	0.64	0.64	0.74
6,955.5	2.71	139.53	6,731.7	114.7	1,377.2	1,381.7	0.11	-0.10	-0.31
TARGET CIRCLE 2555'FNL & 1320'FEL									
6,964.0	2.70	139.50	6,740.2	114.4	1,377.4	1,381.9	0.11	-0.10	-0.32
7,057.0	3.30	142.00	6,833.1	110.7	1,380.5	1,384.6	0.66	0.65	2.69
7,151.0	3.70	142.30	6,926.9	106.1	1,384.0	1,387.7	0.43	0.43	0.32
7,245.0	4.00	142.50	7,020.7	101.1	1,387.9	1,391.0	0.32	0.32	0.21
7,339.0	4.00	143.70	7,114.5	95.9	1,391.8	1,394.4	0.09	0.00	1.28
7,367.0	3.90	146.00	7,142.4	94.3	1,392.9	1,395.3	0.67	-0.36	8.21
7,392.8	3.90	146.00	7,168.1	92.9	1,393.9	1,396.1	0.00	0.00	0.00
HARD LINES 89'S OF BHL									
7,412.0	3.90	146.00	7,187.3	91.8	1,394.6	1,396.8	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____