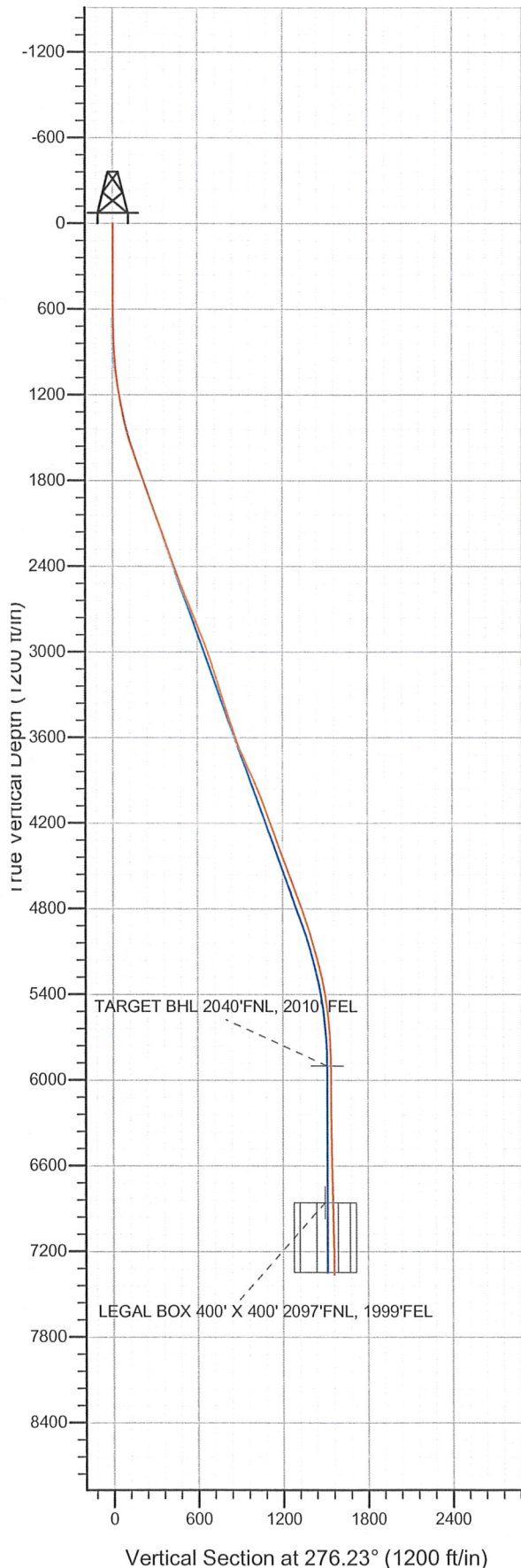
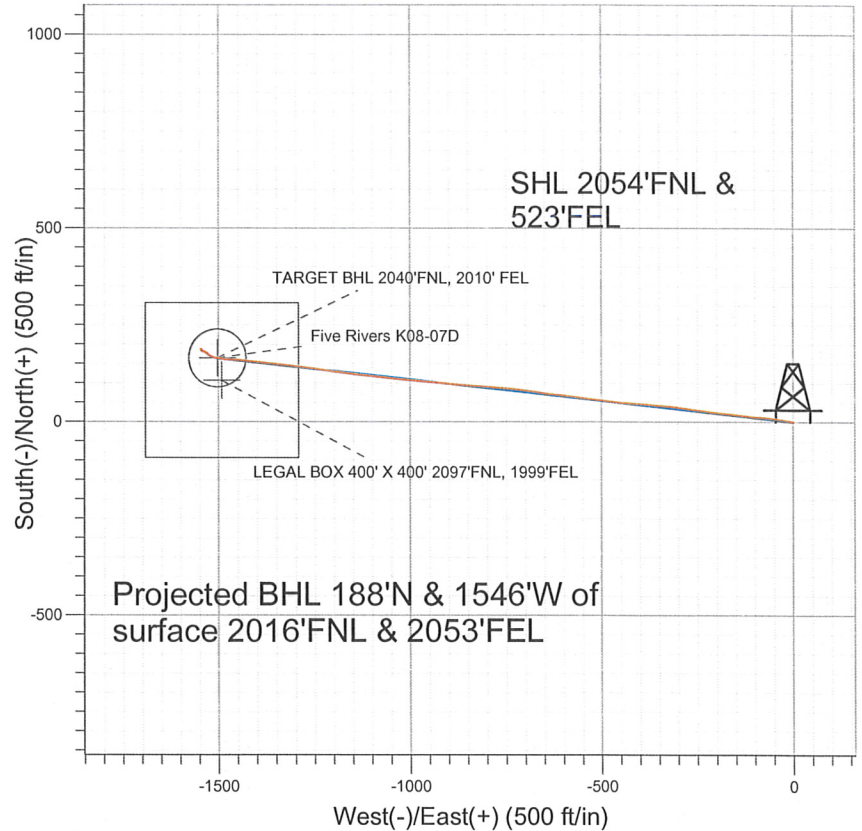


Well Name: **Five Rivers K08-07D**
 Surface Location: Five Rivers K08-07D Pad Sec.8-T4N-R66W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4698.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1363142.25 3196625.73 40.328080 -104.794750
 Original Well Elev WELL @ 4711.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Five Rivers K08-07D, Wellbore #1, Noble Five Rivers K08-07D Plan #2 (7-12-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7615'MD & 7359'TVD @ 1558'VS
 1.0 deg Inc 326.2 deg AZ

Project: SEC.8-T4N-R66W
 Site: Five Rivers K08-07D Pad Sec.8-T4N-R66W
 Well: Five Rivers K08-07D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.8-T4N-R66W

Five Rivers K08-07D Pad Sec.8-T4N-R66W

Five Rivers K08-07D

Wellbore #1

Survey: Survey #1

Standard Survey Report

08 August, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.8-T4N-R66W
Site: Five Rivers K08-07D Pad Sec.8-T4N-R66W
Well: Five Rivers K08-07D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Five Rivers K08-07D
TVD Reference: WELL @ 4711.0ft (Original Well Elev)
MD Reference: WELL @ 4711.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.8-T4N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Five Rivers K08-07D Pad Sec.8-T4N-R66W

Site Position:		Northing:	1,363,142.27 ft	Latitude:	40.328080
From:	Lat/Long	Easting:	3,196,625.73 ft	Longitude:	-104.794750
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.46 °

Well	Five Rivers K08-07D				
Well Position	+N/-S	0.0 ft	Northing:	1,363,142.25 ft	Latitude: 40.328080
	+E/-W	0.0 ft	Easting:	3,196,625.73 ft	Longitude: -104.794750
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level: 4,698.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/12/2011	8.86	66.99	53,084

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	276.23

Survey Program Date 8/8/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
656.0	7,615.0	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
656.0	0.20	237.20	656.0	-0.6	-1.0	0.9	0.03	0.03	0.00
688.0	0.50	286.20	688.0	-0.6	-1.1	1.1	1.25	0.94	153.13
781.0	2.10	286.20	781.0	0.0	-3.2	3.1	1.72	1.72	0.00
875.0	3.20	293.20	874.9	1.5	-7.2	7.4	1.22	1.17	7.45
970.0	4.50	277.20	969.7	3.0	-13.4	13.6	1.76	1.37	-16.84
1,064.0	7.20	277.20	1,063.2	4.2	-22.9	23.2	2.87	2.87	0.00
1,157.0	8.70	279.40	1,155.3	6.1	-35.6	36.0	1.65	1.61	2.37
1,251.0	11.50	279.00	1,247.8	8.7	-51.9	52.5	2.98	2.98	-0.43
1,345.0	12.80	273.10	1,339.7	10.7	-71.5	72.3	1.91	1.38	-6.28
1,438.0	13.70	274.20	1,430.2	12.1	-92.8	93.6	1.00	0.97	1.18
1,532.0	16.40	277.10	1,521.0	14.6	-117.1	118.0	2.98	2.87	3.09
1,626.0	19.20	275.10	1,610.5	17.6	-145.6	146.7	3.05	2.98	-2.13

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.8-T4N-R66W
Site: Five Rivers K08-07D Pad Sec.8-T4N-R66W
Well: Five Rivers K08-07D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Five Rivers K08-07D
TVD Reference: WELL @ 4711.0ft (Original Well Elev)
MD Reference: WELL @ 4711.0ft (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)
1,719.0	20.30	276.10	1,698.0	20.6	-176.9	178.1	1.24	1.18	1.08
1,812.0	20.40	276.70	1,785.2	24.3	-209.1	210.4	0.25	0.11	0.65
1,906.0	19.10	276.70	1,873.7	28.0	-240.6	242.2	1.38	-1.38	0.00
1,999.0	19.50	279.90	1,961.4	32.4	-271.0	272.9	1.22	0.43	3.44
2,093.0	21.60	277.20	2,049.5	37.3	-303.6	305.9	2.45	2.23	-2.87
2,186.0	20.30	274.20	2,136.3	40.6	-336.7	339.1	1.81	-1.40	-3.23
2,279.0	18.90	275.50	2,223.9	43.2	-367.8	370.3	1.58	-1.51	1.40
2,373.0	19.70	274.10	2,312.6	45.8	-398.7	401.4	0.98	0.85	-1.49
2,466.0	20.10	273.20	2,400.1	47.8	-430.3	433.0	0.54	0.43	-0.97
2,560.0	21.10	276.60	2,488.1	50.7	-463.3	466.0	1.66	1.06	3.62
2,653.0	22.30	277.60	2,574.5	54.9	-497.4	500.4	1.35	1.29	1.08
2,748.0	23.30	277.20	2,662.1	59.7	-533.9	537.2	1.07	1.05	-0.42
2,841.0	22.20	276.80	2,747.8	64.1	-569.6	573.2	1.19	-1.18	-0.43
2,934.0	20.90	276.40	2,834.3	68.0	-603.5	607.3	1.41	-1.40	-0.43
3,029.0	21.10	277.20	2,923.0	72.0	-637.3	641.4	0.37	0.21	0.84
3,122.0	19.90	278.70	3,010.1	76.5	-669.6	673.9	1.41	-1.29	1.61
3,215.0	17.80	275.70	3,098.1	80.3	-699.4	704.0	2.49	-2.26	-3.23
3,309.0	17.50	276.20	3,187.7	83.3	-727.7	732.5	0.36	-0.32	0.53
3,403.0	17.80	274.90	3,277.3	86.0	-756.1	761.0	0.53	0.32	-1.38
3,496.0	18.10	275.50	3,365.8	88.6	-784.6	789.6	0.38	0.32	0.65
3,590.0	18.40	273.20	3,455.0	90.8	-814.0	819.0	0.83	0.32	-2.45
3,683.0	18.80	272.70	3,543.2	92.4	-843.6	848.6	0.46	0.43	-0.54
3,777.0	19.30	277.20	3,632.0	95.0	-874.1	879.3	1.65	0.53	4.79
3,871.0	23.80	275.50	3,719.4	98.8	-908.5	913.8	4.83	4.79	-1.81
3,964.0	24.40	275.00	3,804.3	102.3	-946.3	951.8	0.68	0.65	-0.54
4,057.0	24.70	275.40	3,888.9	105.8	-984.8	990.4	0.37	0.32	0.43
4,150.0	21.90	274.80	3,974.3	109.1	-1,021.4	1,027.2	3.02	-3.01	-0.65
4,244.0	19.40	275.50	4,062.3	112.0	-1,054.4	1,060.3	2.67	-2.66	0.74
4,338.0	19.70	276.80	4,150.9	115.4	-1,085.7	1,091.8	0.56	0.32	1.38
4,432.0	20.70	277.80	4,239.1	119.5	-1,117.9	1,124.2	1.13	1.06	1.06
4,525.0	19.60	275.30	4,326.4	123.2	-1,149.7	1,156.3	1.50	-1.18	-2.69
4,619.0	20.70	277.20	4,414.6	126.7	-1,181.9	1,188.6	1.36	1.17	2.02
4,713.0	21.10	278.90	4,502.4	131.4	-1,215.1	1,222.2	0.77	0.43	1.81
4,806.0	20.80	278.80	4,589.3	136.6	-1,247.9	1,255.4	0.32	-0.32	-0.11
4,899.0	18.80	275.20	4,676.8	140.4	-1,279.2	1,286.9	2.52	-2.15	-3.87
4,993.0	19.60	278.90	4,765.6	144.2	-1,309.8	1,317.7	1.55	0.85	3.94
5,087.0	20.40	275.90	4,853.9	148.4	-1,341.7	1,349.9	1.38	0.85	-3.19
5,180.0	19.30	275.30	4,941.4	151.5	-1,373.1	1,381.5	1.20	-1.18	-0.65
5,275.0	15.60	276.80	5,032.0	154.4	-1,401.5	1,409.9	3.92	-3.89	1.58
5,369.0	14.80	275.20	5,122.7	157.0	-1,426.0	1,434.6	0.96	-0.85	-1.70
5,463.0	14.60	273.90	5,213.6	158.9	-1,449.7	1,458.4	0.41	-0.21	-1.38
5,556.0	11.30	275.70	5,304.3	160.6	-1,470.5	1,479.3	3.57	-3.55	1.94
5,649.0	9.10	274.70	5,395.8	162.1	-1,486.9	1,495.7	2.37	-2.37	-1.08
5,743.0	7.90	278.50	5,488.7	163.7	-1,500.7	1,509.6	1.41	-1.28	4.04
5,837.0	5.50	286.20	5,582.1	165.9	-1,511.4	1,520.5	2.72	-2.55	8.19
5,931.0	3.90	298.30	5,675.8	168.7	-1,518.6	1,527.9	1.99	-1.70	12.87
6,024.0	2.90	298.30	5,768.6	171.3	-1,523.4	1,533.0	1.08	-1.08	0.00
6,117.0	1.40	280.50	5,861.5	172.6	-1,526.6	1,536.3	1.75	-1.61	-19.14
6,155.1	0.87	288.35	5,899.7	172.8	-1,527.3	1,537.1	1.45	-1.40	20.59
TARGET BHL 2040'FNL, 2010' FEL									
6,210.0	0.30	354.90	5,954.5	173.0	-1,527.7	1,537.5	1.45	-1.03	121.26
6,303.0	0.40	26.20	6,047.5	173.6	-1,527.6	1,537.4	0.23	0.11	33.66
6,396.0	0.30	331.80	6,140.5	174.1	-1,527.6	1,537.5	0.36	-0.11	-58.49
6,489.0	0.80	309.80	6,233.5	174.7	-1,528.2	1,538.1	0.57	0.54	-23.66

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.8-T4N-R66W
Site: Five Rivers K08-07D Pad Sec.8-T4N-R66W
Well: Five Rivers K08-07D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Five Rivers K08-07D
TVD Reference: WELL @ 4711.0ft (Original Well Elev)
MD Reference: WELL @ 4711.0ft (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)
6,583.0	1.00	312.00	6,327.5	175.7	-1,529.3	1,539.4	0.22	0.21	2.34
6,677.0	1.10	311.90	6,421.5	176.8	-1,530.6	1,540.8	0.11	0.11	-0.11
6,770.0	1.30	305.20	6,514.5	178.0	-1,532.1	1,542.4	0.26	0.22	-7.20
6,864.0	1.20	296.20	6,608.5	179.1	-1,533.9	1,544.3	0.23	-0.11	-9.57
6,958.0	1.40	301.20	6,702.4	180.1	-1,535.7	1,546.2	0.24	0.21	5.32
7,053.0	1.40	300.00	6,797.4	181.3	-1,537.7	1,548.3	0.03	0.00	-1.26
7,112.9	1.42	279.90	6,857.3	181.8	-1,539.1	1,549.7	0.82	0.03	-33.55
LEGAL BOX 400' X 400' 2097'FNL, 1999'FEL									
7,113.6	1.42	279.67	6,858.0	181.8	-1,539.1	1,549.8	0.82	0.18	-32.40
TARGET CIRCLE 2040'FNL, 2010'FEL									
7,146.0	1.50	269.70	6,890.4	181.9	-1,539.9	1,550.6	0.82	0.25	-30.80
7,239.0	1.50	300.90	6,983.3	182.5	-1,542.2	1,552.9	0.87	0.00	33.55
7,333.0	1.00	319.30	7,077.3	183.7	-1,543.8	1,554.6	0.68	-0.53	19.57
7,428.0	0.80	328.20	7,172.3	184.9	-1,544.7	1,555.6	0.26	-0.21	9.37
7,521.0	1.00	332.00	7,265.3	186.2	-1,545.4	1,556.5	0.22	0.22	4.09
7,570.0	1.00	326.20	7,314.3	186.9	-1,545.9	1,557.0	0.21	0.00	-11.84
7,615.0	1.00	326.20	7,359.3	187.6	-1,546.3	1,557.5	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------