

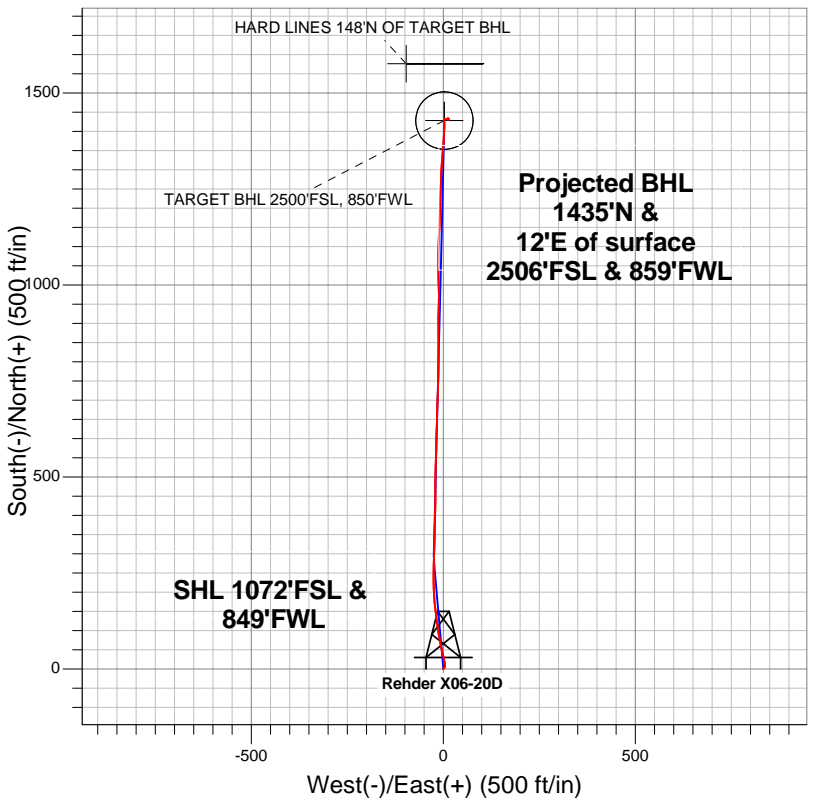
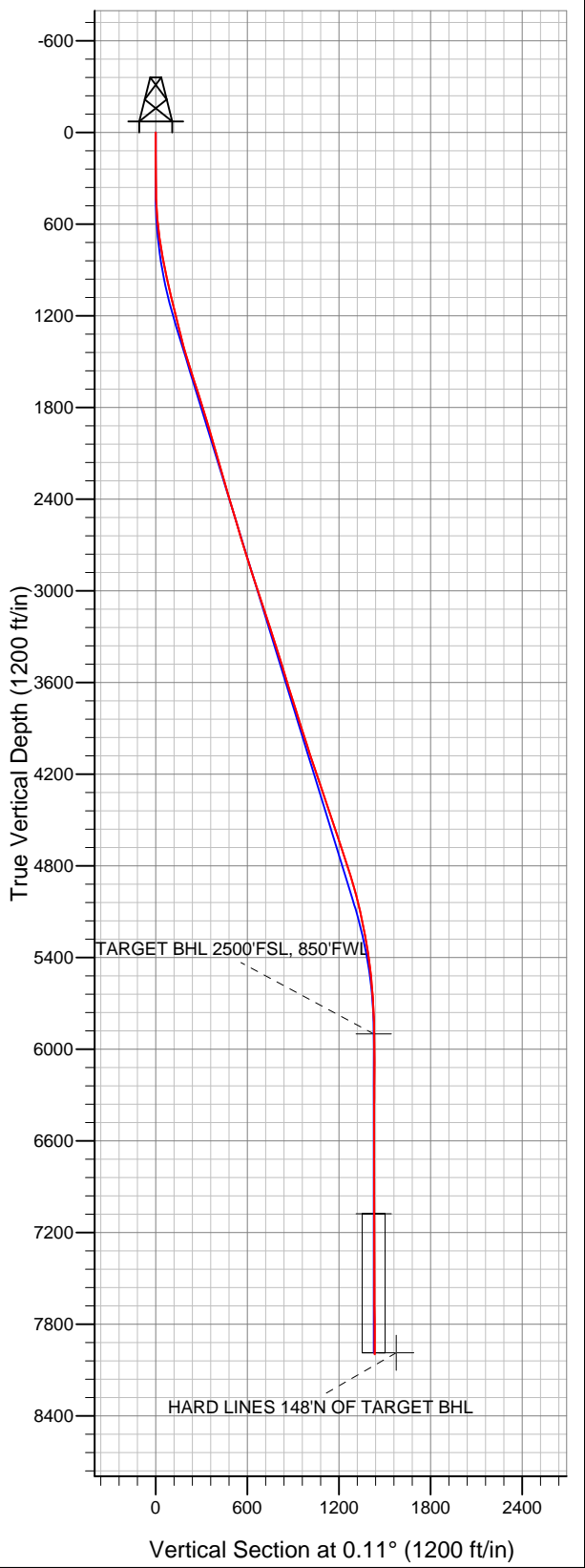


Well Name: Rehder X06-20D

Surface Location: Rehder X06-33D Pad Sec.6-T2N-R65W
 North American Datum 1983 US State Plane 1983Colorado Northern Zone
 Ground Elevation: 4977.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1303262.45	3220003.56	40.163170	-104.712810	
Original Well Elev			WELL @ 4990.0ft (Original Well Elev)			

NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Wellbore #1
- Rehder X06-20D, Wellbore #1, Noble Rehder X06-20D Plan #2 (7-02-12) R V0
- Survey #1

Final Survey Plot

Projected Final Survey -
 8200'MD & 7996'TVD @ 1435'VS
 0.30 deg Inc 261.50 deg AZ

Project: Sec.6-T2N-R65W
 Site: Rehder X06-33D Pad Sec.6-T2N-R65W
 Well: Rehder X06-20D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

Sec.6-T2N-R65W

Rehder X06-33D Pad Sec.6-T2N-R65W

Rehder X06-20D

Wellbore #1

Survey: Survey #1

Standard Survey Report

11 July, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Rehder X06-20D
Project:	Sec.6-T2N-R65W	TVD Reference:	WELL @ 4990.0ft (Original Well Elev)
Site:	Rehder X06-33D Pad Sec.6-T2N-R65W	MD Reference:	WELL @ 4990.0ft (Original Well Elev)
Well:	Rehder X06-20D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.6-T2N-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	Rehder X06-33D Pad Sec.6-T2N-R65W				
Site Position:		Northing:	1,303,261.68ft	Latitude:	40.163170
From:	Lat/Long	Easting:	3,219,914.13ft	Longitude:	-104.713130
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.51 °

Well	Rehder X06-20D					
Well Position	+N/-S	0.0 ft	Northing:	1,303,262.45 ft	Latitude:	40.163170
	+E/-W	0.0 ft	Easting:	3,220,003.56 ft	Longitude:	-104.712810
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,977.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/2/2012	8.67	66.83	52,901

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	0.11	

Survey Program	Date	7/11/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.0	8,200.0	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	
139.0	0.40	29.40	139.0	0.4	0.2	0.4	0.29	0.29	0.00	
287.0	1.00	44.20	287.0	1.8	1.4	1.8	0.42	0.41	10.00	
365.0	1.00	49.60	365.0	2.7	2.4	2.7	0.12	0.00	6.92	
493.0	3.00	9.20	492.9	6.8	3.8	6.8	1.82	1.56	-31.56	
620.0	5.80	351.60	619.5	16.4	3.4	16.4	2.42	2.20	-13.86	
748.0	9.70	346.00	746.3	33.3	-0.2	33.3	3.10	3.05	-4.38	
875.0	12.00	347.90	871.0	56.6	-5.5	56.5	1.83	1.81	1.50	
1,004.0	12.90	350.00	997.0	83.8	-10.9	83.8	0.78	0.70	1.63	
1,045.0	12.90	350.00	1,037.0	92.9	-12.4	92.8	0.00	0.00	0.00	
1,074.0	13.30	352.20	1,065.2	99.4	-13.5	99.3	2.20	1.38	7.59	
1,202.0	13.50	351.80	1,189.7	128.7	-17.6	128.7	0.17	0.16	-0.31	
1,330.0	14.40	354.10	1,314.0	159.3	-21.4	159.3	0.83	0.70	1.80	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Rehder X06-20D
Project:	Sec.6-T2N-R65W	TVD Reference:	WELL @ 4990.0ft (Original Well Elev)
Site:	Rehder X06-33D Pad Sec.6-T2N-R65W	MD Reference:	WELL @ 4990.0ft (Original Well Elev)
Well:	Rehder X06-20D	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)	
1,459.0	16.90	356.20	1,438.2	194.0	-24.3	194.0	1.99	1.94	1.63	
1,587.0	17.20	0.10	1,560.5	231.5	-25.5	231.5	0.92	0.23	3.05	
1,715.0	18.50	2.00	1,682.4	270.7	-24.7	270.7	1.11	1.02	1.48	
1,843.0	17.10	1.80	1,804.3	309.8	-23.4	309.8	1.09	-1.09	-0.16	
1,972.0	16.30	0.10	1,927.8	346.9	-22.8	346.9	0.73	-0.62	-1.32	
2,100.0	16.50	1.80	2,050.6	383.0	-22.2	383.0	0.41	0.16	1.33	
2,228.0	15.90	1.80	2,173.5	418.7	-21.1	418.7	0.47	-0.47	0.00	
2,356.0	15.70	358.70	2,296.7	453.6	-20.9	453.5	0.68	-0.16	-2.42	
2,485.0	16.80	1.50	2,420.5	489.6	-20.8	489.6	1.05	0.85	2.17	
2,613.0	16.70	1.50	2,543.1	526.5	-19.8	526.5	0.08	-0.08	0.00	
2,741.0	16.80	0.60	2,665.7	563.4	-19.2	563.4	0.22	0.08	-0.70	
2,869.0	17.20	2.40	2,788.1	600.8	-18.2	600.8	0.52	0.31	1.41	
2,998.0	18.30	1.80	2,910.9	640.1	-16.7	640.1	0.86	0.85	-0.47	
3,126.0	18.20	0.90	3,032.5	680.2	-15.8	680.2	0.23	-0.08	-0.70	
3,254.0	18.30	2.50	3,154.1	720.2	-14.6	720.2	0.40	0.08	1.25	
3,382.0	17.60	0.90	3,275.8	759.7	-13.4	759.6	0.67	-0.55	-1.25	
3,511.0	17.90	1.50	3,398.7	799.0	-12.6	799.0	0.27	0.23	0.47	
3,639.0	16.90	359.40	3,520.8	837.3	-12.3	837.2	0.92	-0.78	-1.64	
3,767.0	17.20	358.50	3,643.2	874.8	-13.0	874.8	0.31	0.23	-0.70	
3,895.0	17.50	1.10	3,765.4	912.9	-13.1	912.9	0.65	0.23	2.03	
4,024.0	17.90	2.50	3,888.3	952.1	-11.9	952.1	0.45	0.31	1.09	
4,152.0	17.70	358.00	4,010.2	991.2	-11.7	991.2	1.09	-0.16	-3.52	
4,280.0	19.10	359.00	4,131.6	1,031.6	-12.7	1,031.6	1.12	1.09	0.78	
4,408.0	18.70	359.70	4,252.7	1,073.1	-13.2	1,073.1	0.36	-0.31	0.55	
4,537.0	17.90	3.60	4,375.2	1,113.6	-12.1	1,113.5	1.13	-0.62	3.02	
4,665.0	18.80	2.20	4,496.7	1,153.8	-10.0	1,153.8	0.78	0.70	-1.09	
4,793.0	18.60	1.30	4,617.9	1,194.8	-8.8	1,194.8	0.27	-0.16	-0.70	
4,921.0	18.80	2.20	4,739.2	1,235.8	-7.5	1,235.8	0.27	0.16	0.70	
5,050.0	17.20	1.60	4,861.8	1,275.7	-6.2	1,275.7	1.25	-1.24	-0.47	
5,178.0	15.10	4.60	4,984.8	1,311.2	-4.3	1,311.2	1.76	-1.64	2.34	
5,306.0	12.40	3.90	5,109.1	1,341.6	-2.1	1,341.5	2.11	-2.11	-0.55	
5,434.0	10.90	5.20	5,234.5	1,367.3	0.0	1,367.3	1.19	-1.17	1.02	
5,563.0	8.70	3.80	5,361.6	1,389.2	1.7	1,389.2	1.72	-1.71	-1.09	
5,691.0	6.90	359.90	5,488.4	1,406.6	2.4	1,406.6	1.46	-1.41	-3.05	
5,819.0	4.40	0.80	5,615.8	1,419.2	2.4	1,419.2	1.95	-1.95	0.70	
5,947.0	2.70	356.70	5,743.5	1,427.1	2.3	1,427.1	1.34	-1.33	-3.20	
6,076.0	1.20	16.80	5,872.4	1,431.4	2.5	1,431.4	1.26	-1.16	15.58	
6,103.5	1.02	25.70	5,900.0	1,431.9	2.7	1,431.9	0.90	-0.65	32.34	
TARGET BHL 2500'FSL, 850'FWL										
6,204.0	0.80	83.60	6,000.4	1,432.8	3.8	1,432.8	0.90	-0.22	57.63	
6,332.0	1.20	107.30	6,128.4	1,432.5	6.0	1,432.5	0.44	0.31	18.52	
6,460.0	1.70	100.10	6,256.4	1,431.7	9.1	1,431.8	0.41	0.39	-5.63	
6,589.0	0.70	114.50	6,385.3	1,431.1	11.7	1,431.1	0.80	-0.78	11.16	
6,717.0	0.40	93.40	6,513.3	1,430.7	12.9	1,430.8	0.28	-0.23	-16.48	
6,845.0	0.50	36.40	6,641.3	1,431.2	13.6	1,431.2	0.34	0.08	-44.53	
6,973.0	0.20	50.90	6,769.3	1,431.8	14.2	1,431.8	0.24	-0.23	11.33	
7,102.0	0.40	112.40	6,898.3	1,431.7	14.7	1,431.7	0.27	0.16	47.67	
7,230.0	0.20	160.20	7,026.3	1,431.3	15.2	1,431.4	0.24	-0.16	37.34	
7,280.7	0.11	200.25	7,077.0	1,431.2	15.2	1,431.2	0.27	-0.18	78.98	
TARGET CIRCLE 2500'FSL & 850'FWL										
7,358.0	0.20	279.00	7,154.3	1,431.2	15.1	1,431.2	0.27	0.12	101.89	
7,486.0	0.40	298.70	7,282.3	1,431.4	14.5	1,431.4	0.17	0.16	15.39	
7,615.0	0.40	303.50	7,411.3	1,431.9	13.7	1,431.9	0.03	0.00	3.72	
7,743.0	0.40	342.00	7,539.3	1,432.6	13.2	1,432.6	0.21	0.00	30.08	

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Site:	Rehder X06-33D Pad Sec.6-T2N-R65W	MD Reference:	WELL @ 4990.0ft (Original Well Elev)
Well:	Rehder X06-20D	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)
7,871.0	0.50	328.40	7,667.3	1,433.5	12.8	1,433.5	0.11	0.08	-10.63
7,999.0	0.30	343.50	7,795.3	1,434.2	12.4	1,434.3	0.18	-0.16	11.80
8,128.0	0.20	250.00	7,924.3	1,434.5	12.1	1,434.5	0.29	-0.08	-72.48
8,191.0	0.29	260.51	7,987.3	1,434.4	11.8	1,434.5	0.15	0.14	16.67
HARD LINES 148'N OF TARGET BHL									
8,200.0	0.30	261.50	7,996.3	1,434.4	11.8	1,434.4	0.15	0.14	11.05

Checked By: _____ Approved By: _____ Date: _____