

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1350.0	0.00	0.00	1350.0	0.0	0.0	0.00	0.00	0.0	
3	1854.1	10.08	169.67	1851.6	-43.5	7.9	2.00	169.67	44.2	
4	4542.6	10.08	169.67	4498.4	-506.6	92.3	0.00	0.00	514.9	
5	5046.7	0.00	0.00	5000.0	-550.1	100.3	2.00	180.00	559.2	TARGET BHL 1250'FNL, 75'FEL
6	7100.7	0.00	0.00	7054.0	-550.1	100.3	0.00	0.00	559.2	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.24-T5N-R65W

McCauley B19-31D Pad Sec.24-T5N-R65W

McCauley B19-31D

Wellbore #1

Plan: Noble McCauley B19-31D Plan #1 (12-09-10)

Standard Planning Report

14 December, 2010



Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Project	SEC.24-T5N-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	McCauley B19-31D Pad Sec.24-T5N-R65W				
Site Position:		Northing:	1,386,157.02 ft	Latitude:	40° 23' 23.748 N
From:	Lat/Long	Easting:	3,249,990.34 ft	Longitude:	104° 36' 9.072 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.58 °

Well	McCauley B19-31D					
Well Position	+N/-S	0.0 ft	Northing:	1,386,157.00 ft	Latitude:	40° 23' 23.748 N
	+E/-W	0.0 ft	Easting:	3,249,990.34 ft	Longitude:	104° 36' 9.072 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,631.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/9/2010	8.85	67.09	53,200

Design	Noble McCauley B19-31D Plan #1 (12-09-10)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	169.67

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,854.1	10.08	169.67	1,851.6	-43.5	7.9	2.00	2.00	0.00	169.67	
4,542.6	10.08	169.67	4,498.4	-506.6	92.3	0.00	0.00	0.00	0.00	
5,046.7	0.00	0.00	5,000.0	-550.1	100.3	2.00	-2.00	0.00	180.00	TARGET BHL 125C
7,100.7	0.00	0.00	7,054.0	-550.1	100.3	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.20	169.67	1,360.0	0.0	0.0	0.0	2.00	2.00	0.00
1,400.0	1.00	169.67	1,400.0	-0.4	0.1	0.4	2.00	2.00	0.00
1,440.0	1.80	169.67	1,440.0	-1.4	0.3	1.4	2.00	2.00	0.00
1,480.0	2.60	169.67	1,480.0	-2.9	0.5	2.9	2.00	2.00	0.00
1,520.0	3.40	169.67	1,519.9	-5.0	0.9	5.0	2.00	2.00	0.00
1,560.0	4.20	169.67	1,559.8	-7.6	1.4	7.7	2.00	2.00	0.00
1,600.0	5.00	169.67	1,599.7	-10.7	2.0	10.9	2.00	2.00	0.00
1,640.0	5.80	169.67	1,639.5	-14.4	2.6	14.7	2.00	2.00	0.00
1,680.0	6.60	169.67	1,679.3	-18.7	3.4	19.0	2.00	2.00	0.00
1,720.0	7.40	169.67	1,719.0	-23.5	4.3	23.9	2.00	2.00	0.00
1,760.0	8.20	169.67	1,758.6	-28.8	5.3	29.3	2.00	2.00	0.00
1,800.0	9.00	169.67	1,798.2	-34.7	6.3	35.3	2.00	2.00	0.00
1,840.0	9.80	169.67	1,837.6	-41.1	7.5	41.8	2.00	2.00	0.00
1,854.1	10.08	169.67	1,851.6	-43.5	7.9	44.2	2.00	2.00	0.00
1,880.0	10.08	169.67	1,877.0	-48.0	8.7	48.8	0.00	0.00	0.00
1,920.0	10.08	169.67	1,916.4	-54.9	10.0	55.8	0.00	0.00	0.00
1,960.0	10.08	169.67	1,955.8	-61.8	11.3	62.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Planned 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	10.08	169.67	1,995.1	-68.7	12.5	69.8	0.00	0.00	0.00
2,040.0	10.08	169.67	2,034.5	-75.6	13.8	76.8	0.00	0.00	0.00
2,080.0	10.08	169.67	2,073.9	-82.4	15.0	83.8	0.00	0.00	0.00
2,120.0	10.08	169.67	2,113.3	-89.3	16.3	90.8	0.00	0.00	0.00
2,160.0	10.08	169.67	2,152.7	-96.2	17.5	97.8	0.00	0.00	0.00
2,200.0	10.08	169.67	2,192.1	-103.1	18.8	104.8	0.00	0.00	0.00
2,240.0	10.08	169.67	2,231.4	-110.0	20.1	111.8	0.00	0.00	0.00
2,280.0	10.08	169.67	2,270.8	-116.9	21.3	118.8	0.00	0.00	0.00
2,320.0	10.08	169.67	2,310.2	-123.8	22.6	125.8	0.00	0.00	0.00
2,360.0	10.08	169.67	2,349.6	-130.7	23.8	132.8	0.00	0.00	0.00
2,400.0	10.08	169.67	2,389.0	-137.6	25.1	139.8	0.00	0.00	0.00
2,440.0	10.08	169.67	2,428.4	-144.4	26.3	146.8	0.00	0.00	0.00
2,480.0	10.08	169.67	2,467.7	-151.3	27.6	153.8	0.00	0.00	0.00
2,520.0	10.08	169.67	2,507.1	-158.2	28.8	160.8	0.00	0.00	0.00
2,560.0	10.08	169.67	2,546.5	-165.1	30.1	167.8	0.00	0.00	0.00
2,600.0	10.08	169.67	2,585.9	-172.0	31.4	174.8	0.00	0.00	0.00
2,640.0	10.08	169.67	2,625.3	-178.9	32.6	181.8	0.00	0.00	0.00
2,680.0	10.08	169.67	2,664.6	-185.8	33.9	188.8	0.00	0.00	0.00
2,720.0	10.08	169.67	2,704.0	-192.7	35.1	195.8	0.00	0.00	0.00
2,760.0	10.08	169.67	2,743.4	-199.6	36.4	202.8	0.00	0.00	0.00
2,800.0	10.08	169.67	2,782.8	-206.4	37.6	209.8	0.00	0.00	0.00
2,840.0	10.08	169.67	2,822.2	-213.3	38.9	216.8	0.00	0.00	0.00
2,880.0	10.08	169.67	2,861.6	-220.2	40.1	223.8	0.00	0.00	0.00
2,920.0	10.08	169.67	2,900.9	-227.1	41.4	230.8	0.00	0.00	0.00
2,960.0	10.08	169.67	2,940.3	-234.0	42.7	237.9	0.00	0.00	0.00
3,000.0	10.08	169.67	2,979.7	-240.9	43.9	244.9	0.00	0.00	0.00
3,040.0	10.08	169.67	3,019.1	-247.8	45.2	251.9	0.00	0.00	0.00
3,080.0	10.08	169.67	3,058.5	-254.7	46.4	258.9	0.00	0.00	0.00
3,120.0	10.08	169.67	3,097.9	-261.6	47.7	265.9	0.00	0.00	0.00
3,160.0	10.08	169.67	3,137.2	-268.5	48.9	272.9	0.00	0.00	0.00
3,200.0	10.08	169.67	3,176.6	-275.3	50.2	279.9	0.00	0.00	0.00
3,240.0	10.08	169.67	3,216.0	-282.2	51.5	286.9	0.00	0.00	0.00
3,280.0	10.08	169.67	3,255.4	-289.1	52.7	293.9	0.00	0.00	0.00
3,320.0	10.08	169.67	3,294.8	-296.0	54.0	300.9	0.00	0.00	0.00
3,360.0	10.08	169.67	3,334.1	-302.9	55.2	307.9	0.00	0.00	0.00
3,400.0	10.08	169.67	3,373.5	-309.8	56.5	314.9	0.00	0.00	0.00
3,440.0	10.08	169.67	3,412.9	-316.7	57.7	321.9	0.00	0.00	0.00
3,480.0	10.08	169.67	3,452.3	-323.6	59.0	328.9	0.00	0.00	0.00
3,520.0	10.08	169.67	3,491.7	-330.5	60.2	335.9	0.00	0.00	0.00
3,560.0	10.08	169.67	3,531.1	-337.3	61.5	342.9	0.00	0.00	0.00
3,600.0	10.08	169.67	3,570.4	-344.2	62.8	349.9	0.00	0.00	0.00
3,640.0	10.08	169.67	3,609.8	-351.1	64.0	356.9	0.00	0.00	0.00
3,680.0	10.08	169.67	3,649.2	-358.0	65.3	363.9	0.00	0.00	0.00
3,720.0	10.08	169.67	3,688.6	-364.9	66.5	370.9	0.00	0.00	0.00
3,760.0	10.08	169.67	3,728.0	-371.8	67.8	377.9	0.00	0.00	0.00
3,800.0	10.08	169.67	3,767.3	-378.7	69.0	384.9	0.00	0.00	0.00
3,840.0	10.08	169.67	3,806.7	-385.6	70.3	391.9	0.00	0.00	0.00
3,880.0	10.08	169.67	3,846.1	-392.5	71.5	398.9	0.00	0.00	0.00
3,920.0	10.08	169.67	3,885.5	-399.4	72.8	405.9	0.00	0.00	0.00
3,960.0	10.08	169.67	3,924.9	-406.2	74.1	412.9	0.00	0.00	0.00
4,000.0	10.08	169.67	3,964.3	-413.1	75.3	419.9	0.00	0.00	0.00
4,040.0	10.08	169.67	4,003.6	-420.0	76.6	426.9	0.00	0.00	0.00
4,080.0	10.08	169.67	4,043.0	-426.9	77.8	433.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Planned 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)
4,120.0	10.08	169.67	4,082.4	-433.8	79.1	440.9	0.00	0.00	0.00
4,160.0	10.08	169.67	4,121.8	-440.7	80.3	447.9	0.00	0.00	0.00
4,200.0	10.08	169.67	4,161.2	-447.6	81.6	454.9	0.00	0.00	0.00
4,240.0	10.08	169.67	4,200.6	-454.5	82.8	461.9	0.00	0.00	0.00
4,280.0	10.08	169.67	4,239.9	-461.4	84.1	468.9	0.00	0.00	0.00
4,320.0	10.08	169.67	4,279.3	-468.2	85.4	476.0	0.00	0.00	0.00
4,360.0	10.08	169.67	4,318.7	-475.1	86.6	483.0	0.00	0.00	0.00
4,400.0	10.08	169.67	4,358.1	-482.0	87.9	490.0	0.00	0.00	0.00
4,440.0	10.08	169.67	4,397.5	-488.9	89.1	497.0	0.00	0.00	0.00
4,480.0	10.08	169.67	4,436.8	-495.8	90.4	504.0	0.00	0.00	0.00
4,520.0	10.08	169.67	4,476.2	-502.7	91.6	511.0	0.00	0.00	0.00
4,542.6	10.08	169.67	4,498.4	-506.6	92.3	514.9	0.00	0.00	0.00
4,560.0	9.73	169.67	4,515.6	-509.5	92.9	517.9	2.00	-2.00	0.00
4,600.0	8.93	169.67	4,555.1	-515.9	94.1	524.4	2.00	-2.00	0.00
4,640.0	8.13	169.67	4,594.6	-521.8	95.1	530.3	2.00	-2.00	0.00
4,680.0	7.33	169.67	4,634.3	-527.1	96.1	535.7	2.00	-2.00	0.00
4,720.0	6.53	169.67	4,674.0	-531.8	96.9	540.6	2.00	-2.00	0.00
4,760.0	5.73	169.67	4,713.8	-536.0	97.7	544.8	2.00	-2.00	0.00
4,800.0	4.93	169.67	4,753.6	-539.7	98.4	548.5	2.00	-2.00	0.00
4,840.0	4.13	169.67	4,793.5	-542.8	98.9	551.7	2.00	-2.00	0.00
4,880.0	3.33	169.67	4,833.4	-545.3	99.4	554.3	2.00	-2.00	0.00
4,920.0	2.53	169.67	4,873.3	-547.4	99.8	556.4	2.00	-2.00	0.00
4,960.0	1.73	169.67	4,913.3	-548.8	100.0	557.9	2.00	-2.00	0.00
5,000.0	0.93	169.67	4,953.3	-549.7	100.2	558.8	2.00	-2.00	0.00
5,040.0	0.13	169.67	4,993.3	-550.1	100.3	559.2	2.00	-2.00	0.00
5,046.7	0.00	0.00	5,000.0	-550.1	100.3	559.2	2.00	-2.00	0.00
TARGET BHL 1250'FNL, 75'FEL									
5,080.0	0.00	0.00	5,033.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,120.0	0.00	0.00	5,073.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,160.0	0.00	0.00	5,113.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,153.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,240.0	0.00	0.00	5,193.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,280.0	0.00	0.00	5,233.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,320.0	0.00	0.00	5,273.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,360.0	0.00	0.00	5,313.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,353.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,440.0	0.00	0.00	5,393.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,480.0	0.00	0.00	5,433.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,520.0	0.00	0.00	5,473.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,560.0	0.00	0.00	5,513.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,553.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,640.0	0.00	0.00	5,593.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,633.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,673.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,713.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,753.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,793.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,833.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,920.0	0.00	0.00	5,873.3	-550.1	100.3	559.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,913.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,953.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,040.0	0.00	0.00	5,993.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,080.0	0.00	0.00	6,033.3	-550.1	100.3	559.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Planned 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)
6,120.0	0.00	0.00	6,073.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,160.0	0.00	0.00	6,113.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,153.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,240.0	0.00	0.00	6,193.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,280.0	0.00	0.00	6,233.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,320.0	0.00	0.00	6,273.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,360.0	0.00	0.00	6,313.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,353.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,440.0	0.00	0.00	6,393.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,480.0	0.00	0.00	6,433.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,473.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,513.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,553.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,635.7	0.00	0.00	6,589.0	-550.1	100.3	559.2	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1250'FNL & 75'FEL									
6,640.0	0.00	0.00	6,593.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,633.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,673.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,713.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,753.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,793.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,833.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,873.3	-550.1	100.3	559.2	0.00	0.00	0.00
6,950.7	0.00	0.00	6,904.0	-550.1	100.3	559.2	0.00	0.00	0.00
CODELL									
6,960.0	0.00	0.00	6,913.3	-550.1	100.3	559.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,953.3	-550.1	100.3	559.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,993.3	-550.1	100.3	559.2	0.00	0.00	0.00
7,080.0	0.00	0.00	7,033.3	-550.1	100.3	559.2	0.00	0.00	0.00
7,100.7	0.00	0.00	7,054.0	-550.1	100.3	559.2	0.00	0.00	0.00
HARD LINES 75'E of BHL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
HARD LINES 75'E of	0.00	0.00	7,054.0	-650.1	175.3	1,385,508.74	3,250,172.20	40° 23' 17.324 N	104° 36' 6.807 W
- plan misses target center by 125.0ft at 7100.7ft MD (7054.0 TVD, -550.1 N, 100.3 E)									
- Polygon									
Point 1			7,054.0	0.0	0.0	1,385,508.74	3,250,172.20		
Point 2			7,054.0	200.0	0.0	1,385,708.72	3,250,170.17		
TARGET CIRCLE 125'	0.00	0.00	6,589.0	-550.1	100.3	1,385,607.97	3,250,096.18	40° 23' 18.312 N	104° 36' 7.776 W
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 1250'F	0.00	0.00	5,000.0	-550.1	100.3	1,385,607.97	3,250,096.18	40° 23' 18.312 N	104° 36' 7.776 W
- plan hits target center									
- Point									

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-31D Plan #1 (12-09-10)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
600.0	600.0	8 5/8"	8-5/8	12-1/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,635.7	6,589.0	NIOBRARA		0.00	
6,950.7	6,904.0	CODELL		0.00	