

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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	600.0	4.00	358.00	599.8	7.0	-0.2	2.00	358.00	6.6	
4	1774.7	27.23	338.57	1723.8	302.2	-101.3	2.00	-22.45	318.5	
5	5109.6	27.23	338.57	4689.1	1722.7	-658.9	0.00	0.00	1844.4	
6	6471.2	0.00	0.00	6000.0	2018.3	-774.9	2.00	180.00	2161.9	TARGET BHL 1320'FNL, 1320' FEL
7	7248.2	0.00	0.00	6777.0	2018.3	-774.9	0.00	0.00	2161.9	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.5-T4N-R63W

Carmin CC05-23D Pad Sec.5-T4N-R63W

Carmin CC05-17D

Wellbore #1

Plan: Noble Carmin CC05-17D Plan #1 (3-29-11)

Standard Planning Report

30 March, 2011



Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.5-T4N-R63W
 Site: Carmin CC05-23D Pad Sec.5-T4N-R63W
 Well: Carmin CC05-17D
 Wellbore: Wellbore #1
 Design: Noble Carmin CC05-17D Plan #1 (3-29-11)

Local Co-ordinate Reference: Well Carmin CC05-17D
 TVD Reference: WELL @ 4667.0ft (Original Well Elev)
 MD Reference: WELL @ 4667.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Project	SEC.5-T4N-R63W, 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	Carmin CC05-23D Pad Sec.5-T4N-R63W				
Site Position:		Northing:	1,368,246.09ft	Latitude:	40.339520
From:	Lat/Long	Easting:	3,291,449.53ft	Longitude:	-104.454450
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.68 °

Well	Carmin CC05-17D					
Well Position	+N/-S	0.0 ft	Northing:	1,368,246.57 ft	Latitude:	40.339520
	+E/-W	41.8 ft	Easting:	3,291,491.34 ft	Longitude:	-104.454300
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,654.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/29/2011	8.72	67.06	53,157

Design	Noble Carmin CC05-17D Plan #1 (3-29-11)			
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	339.00

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	4.00	358.00	599.8	7.0	-0.2	2.00	2.00	0.00	358.00	
1,774.7	27.23	338.57	1,723.8	302.2	-101.3	2.00	1.98	-1.65	-22.45	
5,109.6	27.23	338.57	4,689.1	1,722.7	-658.9	0.00	0.00	0.00	0.00	
6,471.2	0.00	0.00	6,000.0	2,018.3	-774.9	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,248.2	0.00	0.00	6,777.0	2,018.3	-774.9	0.00	0.00	0.00	0.00	

Database: Landmark
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 MD Reference: WELL @ 4667.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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	0.80	358.00	440.0	0.3	0.0	0.3	2.00	2.00	0.00
480.0	1.60	358.00	480.0	1.1	0.0	1.1	2.00	2.00	0.00
520.0	2.40	358.00	520.0	2.5	-0.1	2.4	2.00	2.00	0.00
560.0	3.20	358.00	559.9	4.5	-0.2	4.2	2.00	2.00	0.00
600.0	4.00	358.00	599.8	7.0	-0.2	6.6	2.00	2.00	0.00
640.0	4.75	354.31	639.7	10.0	-0.5	9.5	2.00	1.87	-9.23
650.3	4.94	353.54	650.0	10.9	-0.5	10.4	2.00	1.90	-7.47
8 5/8"									
680.0	5.51	351.63	679.6	13.6	-0.9	13.0	2.00	1.91	-6.43
720.0	6.29	349.60	719.3	17.6	-1.6	17.0	2.00	1.93	-5.07
760.0	7.06	348.02	759.1	22.2	-2.5	21.6	2.00	1.95	-3.96
800.0	7.85	346.75	798.7	27.2	-3.6	26.7	2.00	1.96	-3.17
840.0	8.63	345.71	838.3	32.8	-5.0	32.4	2.00	1.97	-2.60
880.0	9.42	344.84	877.8	38.9	-6.6	38.7	2.00	1.97	-2.17
920.0	10.21	344.11	917.2	45.4	-8.4	45.4	2.00	1.98	-1.84
960.0	11.00	343.48	956.6	52.5	-10.5	52.8	2.00	1.98	-1.57
1,000.0	11.80	342.93	995.8	60.1	-12.8	60.7	2.00	1.98	-1.37
1,040.0	12.59	342.45	1,034.9	68.2	-15.3	69.1	2.00	1.98	-1.20
1,080.0	13.38	342.03	1,073.8	76.7	-18.0	78.1	2.00	1.99	-1.06
1,120.0	14.18	341.65	1,112.7	85.8	-21.0	87.6	2.00	1.99	-0.94
1,160.0	14.97	341.32	1,151.4	95.3	-24.2	97.6	2.00	1.99	-0.84
1,200.0	15.77	341.01	1,190.0	105.3	-27.6	108.2	2.00	1.99	-0.76
1,240.0	16.57	340.74	1,228.4	115.9	-31.2	119.4	2.00	1.99	-0.69
1,280.0	17.36	340.49	1,266.7	126.9	-35.1	131.0	2.00	1.99	-0.63
1,320.0	18.16	340.26	1,304.7	138.4	-39.2	143.2	2.00	1.99	-0.57
1,360.0	18.96	340.05	1,342.7	150.3	-43.5	156.0	2.00	1.99	-0.53
1,400.0	19.75	339.86	1,380.4	162.8	-48.1	169.2	2.00	1.99	-0.49
1,440.0	20.55	339.68	1,418.0	175.7	-52.9	183.0	2.00	1.99	-0.45
1,480.0	21.35	339.51	1,455.3	189.1	-57.8	197.3	2.00	1.99	-0.42
1,520.0	22.15	339.35	1,492.5	203.0	-63.1	212.1	2.00	1.99	-0.39
1,560.0	22.95	339.21	1,529.4	217.4	-68.5	227.5	2.00	2.00	-0.36
1,600.0	23.74	339.07	1,566.1	232.2	-74.1	243.3	2.00	2.00	-0.34
1,640.0	24.54	338.95	1,602.6	247.4	-80.0	259.7	2.00	2.00	-0.32
1,680.0	25.34	338.83	1,638.9	263.2	-86.1	276.5	2.00	2.00	-0.30
1,720.0	26.14	338.71	1,674.9	279.4	-92.4	293.9	2.00	2.00	-0.28
1,760.0	26.94	338.61	1,710.7	296.0	-98.9	311.8	2.00	2.00	-0.27
1,774.7	27.23	338.57	1,723.8	302.2	-101.3	318.5	2.00	2.00	-0.26
1,800.0	27.23	338.57	1,746.3	313.0	-105.5	330.0	0.00	0.00	0.00
1,840.0	27.23	338.57	1,781.9	330.1	-112.2	348.4	0.00	0.00	0.00
1,880.0	27.23	338.57	1,817.4	347.1	-118.9	366.7	0.00	0.00	0.00
1,920.0	27.23	338.57	1,853.0	364.1	-125.6	385.0	0.00	0.00	0.00
1,960.0	27.23	338.57	1,888.6	381.2	-132.3	403.3	0.00	0.00	0.00
2,000.0	27.23	338.57	1,924.1	398.2	-139.0	421.6	0.00	0.00	0.00

Database: Landmark
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 North Reference: True
 Survey Calculation Method: Minimum Curvature

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)
2,040.0	27.23	338.57	1,959.7	415.2	-145.7	439.9	0.00	0.00	0.00
2,080.0	27.23	338.57	1,995.3	432.3	-152.3	458.2	0.00	0.00	0.00
2,120.0	27.23	338.57	2,030.8	449.3	-159.0	476.5	0.00	0.00	0.00
2,160.0	27.23	338.57	2,066.4	466.4	-165.7	494.8	0.00	0.00	0.00
2,200.0	27.23	338.57	2,102.0	483.4	-172.4	513.1	0.00	0.00	0.00
2,240.0	27.23	338.57	2,137.5	500.4	-179.1	531.4	0.00	0.00	0.00
2,280.0	27.23	338.57	2,173.1	517.5	-185.8	549.7	0.00	0.00	0.00
2,320.0	27.23	338.57	2,208.7	534.5	-192.5	568.0	0.00	0.00	0.00
2,360.0	27.23	338.57	2,244.2	551.5	-199.2	586.3	0.00	0.00	0.00
2,400.0	27.23	338.57	2,279.8	568.6	-205.8	604.6	0.00	0.00	0.00
2,440.0	27.23	338.57	2,315.4	585.6	-212.5	622.9	0.00	0.00	0.00
2,480.0	27.23	338.57	2,350.9	602.7	-219.2	641.2	0.00	0.00	0.00
2,520.0	27.23	338.57	2,386.5	619.7	-225.9	659.5	0.00	0.00	0.00
2,560.0	27.23	338.57	2,422.1	636.7	-232.6	677.8	0.00	0.00	0.00
2,600.0	27.23	338.57	2,457.6	653.8	-239.3	696.1	0.00	0.00	0.00
2,640.0	27.23	338.57	2,493.2	670.8	-246.0	714.4	0.00	0.00	0.00
2,680.0	27.23	338.57	2,528.8	687.9	-252.7	732.7	0.00	0.00	0.00
2,720.0	27.23	338.57	2,564.3	704.9	-259.4	751.0	0.00	0.00	0.00
2,760.0	27.23	338.57	2,599.9	721.9	-266.0	769.3	0.00	0.00	0.00
2,800.0	27.23	338.57	2,635.5	739.0	-272.7	787.6	0.00	0.00	0.00
2,840.0	27.23	338.57	2,671.0	756.0	-279.4	805.9	0.00	0.00	0.00
2,880.0	27.23	338.57	2,706.6	773.0	-286.1	824.2	0.00	0.00	0.00
2,920.0	27.23	338.57	2,742.2	790.1	-292.8	842.5	0.00	0.00	0.00
2,960.0	27.23	338.57	2,777.7	807.1	-299.5	860.8	0.00	0.00	0.00
3,000.0	27.23	338.57	2,813.3	824.2	-306.2	879.1	0.00	0.00	0.00
3,040.0	27.23	338.57	2,848.9	841.2	-312.9	897.4	0.00	0.00	0.00
3,080.0	27.23	338.57	2,884.4	858.2	-319.5	915.7	0.00	0.00	0.00
3,120.0	27.23	338.57	2,920.0	875.3	-326.2	934.0	0.00	0.00	0.00
3,160.0	27.23	338.57	2,955.6	892.3	-332.9	952.3	0.00	0.00	0.00
3,200.0	27.23	338.57	2,991.1	909.3	-339.6	970.6	0.00	0.00	0.00
3,240.0	27.23	338.57	3,026.7	926.4	-346.3	988.9	0.00	0.00	0.00
3,280.0	27.23	338.57	3,062.3	943.4	-353.0	1,007.3	0.00	0.00	0.00
3,320.0	27.23	338.57	3,097.8	960.5	-359.7	1,025.6	0.00	0.00	0.00
3,360.0	27.23	338.57	3,133.4	977.5	-366.4	1,043.9	0.00	0.00	0.00
3,400.0	27.23	338.57	3,169.0	994.5	-373.0	1,062.2	0.00	0.00	0.00
3,440.0	27.23	338.57	3,204.5	1,011.6	-379.7	1,080.5	0.00	0.00	0.00
3,480.0	27.23	338.57	3,240.1	1,028.6	-386.4	1,098.8	0.00	0.00	0.00
3,520.0	27.23	338.57	3,275.7	1,045.6	-393.1	1,117.1	0.00	0.00	0.00
3,560.0	27.23	338.57	3,311.2	1,062.7	-399.8	1,135.4	0.00	0.00	0.00
3,600.0	27.23	338.57	3,346.8	1,079.7	-406.5	1,153.7	0.00	0.00	0.00
3,640.0	27.23	338.57	3,382.4	1,096.8	-413.2	1,172.0	0.00	0.00	0.00
3,680.0	27.23	338.57	3,417.9	1,113.8	-419.9	1,190.3	0.00	0.00	0.00
3,720.0	27.23	338.57	3,453.5	1,130.8	-426.6	1,208.6	0.00	0.00	0.00
3,760.0	27.23	338.57	3,489.1	1,147.9	-433.2	1,226.9	0.00	0.00	0.00
3,800.0	27.23	338.57	3,524.6	1,164.9	-439.9	1,245.2	0.00	0.00	0.00
3,840.0	27.23	338.57	3,560.2	1,181.9	-446.6	1,263.5	0.00	0.00	0.00
3,880.0	27.23	338.57	3,595.8	1,199.0	-453.3	1,281.8	0.00	0.00	0.00
3,920.0	27.23	338.57	3,631.3	1,216.0	-460.0	1,300.1	0.00	0.00	0.00
3,960.0	27.23	338.57	3,666.9	1,233.1	-466.7	1,318.4	0.00	0.00	0.00
4,000.0	27.23	338.57	3,702.5	1,250.1	-473.4	1,336.7	0.00	0.00	0.00
4,040.0	27.23	338.57	3,738.0	1,267.1	-480.1	1,355.0	0.00	0.00	0.00
4,080.0	27.23	338.57	3,773.6	1,284.2	-486.7	1,373.3	0.00	0.00	0.00
4,120.0	27.23	338.57	3,809.2	1,301.2	-493.4	1,391.6	0.00	0.00	0.00
4,160.0	27.23	338.57	3,844.7	1,318.2	-500.1	1,409.9	0.00	0.00	0.00

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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)
4,200.0	27.23	338.57	3,880.3	1,335.3	-506.8	1,428.2	0.00	0.00	0.00
4,240.0	27.23	338.57	3,915.9	1,352.3	-513.5	1,446.5	0.00	0.00	0.00
4,280.0	27.23	338.57	3,951.4	1,369.4	-520.2	1,464.8	0.00	0.00	0.00
4,320.0	27.23	338.57	3,987.0	1,386.4	-526.9	1,483.1	0.00	0.00	0.00
4,360.0	27.23	338.57	4,022.6	1,403.4	-533.6	1,501.4	0.00	0.00	0.00
4,400.0	27.23	338.57	4,058.1	1,420.5	-540.2	1,519.7	0.00	0.00	0.00
4,440.0	27.23	338.57	4,093.7	1,437.5	-546.9	1,538.0	0.00	0.00	0.00
4,480.0	27.23	338.57	4,129.3	1,454.5	-553.6	1,556.3	0.00	0.00	0.00
4,520.0	27.23	338.57	4,164.8	1,471.6	-560.3	1,574.6	0.00	0.00	0.00
4,560.0	27.23	338.57	4,200.4	1,488.6	-567.0	1,592.9	0.00	0.00	0.00
4,600.0	27.23	338.57	4,236.0	1,505.7	-573.7	1,611.2	0.00	0.00	0.00
4,640.0	27.23	338.57	4,271.5	1,522.7	-580.4	1,629.5	0.00	0.00	0.00
4,680.0	27.23	338.57	4,307.1	1,539.7	-587.1	1,647.9	0.00	0.00	0.00
4,720.0	27.23	338.57	4,342.7	1,556.8	-593.8	1,666.2	0.00	0.00	0.00
4,760.0	27.23	338.57	4,378.2	1,573.8	-600.4	1,684.5	0.00	0.00	0.00
4,800.0	27.23	338.57	4,413.8	1,590.8	-607.1	1,702.8	0.00	0.00	0.00
4,840.0	27.23	338.57	4,449.4	1,607.9	-613.8	1,721.1	0.00	0.00	0.00
4,880.0	27.23	338.57	4,484.9	1,624.9	-620.5	1,739.4	0.00	0.00	0.00
4,920.0	27.23	338.57	4,520.5	1,642.0	-627.2	1,757.7	0.00	0.00	0.00
4,960.0	27.23	338.57	4,556.1	1,659.0	-633.9	1,776.0	0.00	0.00	0.00
5,000.0	27.23	338.57	4,591.6	1,676.0	-640.6	1,794.3	0.00	0.00	0.00
5,040.0	27.23	338.57	4,627.2	1,693.1	-647.3	1,812.6	0.00	0.00	0.00
5,080.0	27.23	338.57	4,662.8	1,710.1	-653.9	1,830.9	0.00	0.00	0.00
5,109.6	27.23	338.57	4,689.1	1,722.7	-658.9	1,844.4	0.00	0.00	0.00
5,120.0	27.02	338.57	4,698.3	1,727.1	-660.6	1,849.2	2.00	-2.00	0.00
5,160.0	26.22	338.57	4,734.1	1,743.8	-667.2	1,867.1	2.00	-2.00	0.00
5,200.0	25.42	338.57	4,770.1	1,760.0	-673.5	1,884.5	2.00	-2.00	0.00
5,240.0	24.62	338.57	4,806.3	1,775.8	-679.7	1,901.4	2.00	-2.00	0.00
5,280.0	23.82	338.57	4,842.8	1,791.1	-685.7	1,917.8	2.00	-2.00	0.00
5,320.0	23.02	338.57	4,879.5	1,805.9	-691.5	1,933.7	2.00	-2.00	0.00
5,360.0	22.22	338.57	4,916.5	1,820.2	-697.2	1,949.1	2.00	-2.00	0.00
5,400.0	21.42	338.57	4,953.6	1,834.0	-702.6	1,964.0	2.00	-2.00	0.00
5,440.0	20.62	338.57	4,990.9	1,847.4	-707.8	1,978.4	2.00	-2.00	0.00
5,480.0	19.82	338.57	5,028.5	1,860.3	-712.9	1,992.2	2.00	-2.00	0.00
5,520.0	19.02	338.57	5,066.2	1,872.6	-717.7	2,005.5	2.00	-2.00	0.00
5,560.0	18.22	338.57	5,104.1	1,884.5	-722.4	2,018.3	2.00	-2.00	0.00
5,600.0	17.42	338.57	5,142.2	1,895.9	-726.9	2,030.5	2.00	-2.00	0.00
5,640.0	16.62	338.57	5,180.4	1,906.8	-731.2	2,042.2	2.00	-2.00	0.00
5,680.0	15.82	338.57	5,218.8	1,917.2	-735.3	2,053.4	2.00	-2.00	0.00
5,720.0	15.02	338.57	5,257.4	1,927.1	-739.1	2,064.0	2.00	-2.00	0.00
5,760.0	14.22	338.57	5,296.1	1,936.5	-742.8	2,074.1	2.00	-2.00	0.00
5,800.0	13.42	338.57	5,334.9	1,945.4	-746.3	2,083.7	2.00	-2.00	0.00
5,840.0	12.62	338.57	5,373.9	1,953.8	-749.6	2,092.7	2.00	-2.00	0.00
5,880.0	11.82	338.57	5,413.0	1,961.7	-752.7	2,101.2	2.00	-2.00	0.00
5,920.0	11.02	338.57	5,452.2	1,969.1	-755.6	2,109.1	2.00	-2.00	0.00
5,960.0	10.22	338.57	5,491.5	1,975.9	-758.3	2,116.5	2.00	-2.00	0.00
6,000.0	9.42	338.57	5,530.9	1,982.3	-760.8	2,123.3	2.00	-2.00	0.00
6,040.0	8.62	338.57	5,570.4	1,988.1	-763.1	2,129.6	2.00	-2.00	0.00
6,080.0	7.82	338.57	5,610.0	1,993.5	-765.2	2,135.3	2.00	-2.00	0.00
6,120.0	7.02	338.57	5,649.7	1,998.3	-767.1	2,140.4	2.00	-2.00	0.00
6,160.0	6.22	338.57	5,689.4	2,002.6	-768.8	2,145.1	2.00	-2.00	0.00
6,200.0	5.42	338.57	5,729.2	2,006.4	-770.2	2,149.1	2.00	-2.00	0.00
6,240.0	4.62	338.57	5,769.0	2,009.6	-771.5	2,152.6	2.00	-2.00	0.00
6,280.0	3.82	338.57	5,808.9	2,012.4	-772.6	2,155.6	2.00	-2.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.5-T4N-R63W
 Site: Carmin CC05-23D Pad Sec.5-T4N-R63W
 Well: Carmin CC05-17D
 Wellbore: Wellbore #1
 Design: Noble Carmin CC05-17D Plan #1 (3-29-11)

Local Co-ordinate Reference: Well Carmin CC05-17D
 TVD Reference: WELL @ 4667.0ft (Original Well Elev)
 MD Reference: WELL @ 4667.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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)
6,320.0	3.02	338.57	5,848.9	2,014.6	-773.5	2,158.0	2.00	-2.00	0.00
6,360.0	2.22	338.57	5,888.8	2,016.3	-774.1	2,159.8	2.00	-2.00	0.00
6,400.0	1.42	338.57	5,928.8	2,017.5	-774.6	2,161.1	2.00	-2.00	0.00
6,440.0	0.62	338.57	5,968.8	2,018.1	-774.9	2,161.8	2.00	-2.00	0.00
6,471.2	0.00	0.00	6,000.0	2,018.3	-774.9	2,161.9	2.00	-2.00	0.00
TARGET BHL 1320'FNL, 1320' FEL									
6,480.0	0.00	0.00	6,008.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,520.0	0.00	0.00	6,048.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,560.0	0.00	0.00	6,088.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,128.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,640.0	0.00	0.00	6,168.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,680.0	0.00	0.00	6,208.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,720.0	0.00	0.00	6,248.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,760.0	0.00	0.00	6,288.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,328.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,813.2	0.00	0.00	6,342.0	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FNL & 1320'FEL - LEGAL BOX 800' X 800' 1355'FNL & 1310'FEL									
6,840.0	0.00	0.00	6,368.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,880.0	0.00	0.00	6,408.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,920.0	0.00	0.00	6,448.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
6,960.0	0.00	0.00	6,488.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,528.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,040.0	0.00	0.00	6,568.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,080.0	0.00	0.00	6,608.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,098.2	0.00	0.00	6,627.0	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
CODELL									
7,120.0	0.00	0.00	6,648.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,160.0	0.00	0.00	6,688.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,728.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,240.0	0.00	0.00	6,768.8	2,018.3	-774.9	2,161.9	0.00	0.00	0.00
7,248.2	0.00	0.00	6,777.0	2,018.3	-774.9	2,161.9	0.00	0.00	0.00

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									
TARGET BHL 1320'F	0.00	0.00	6,000.0	2,018.3	-774.9	1,370,255.50	3,290,692.71	40.345060	-104.457080
- plan hits target center									
- Point									
TARGET CIRCLE 1320'F	0.00	0.00	6,342.0	2,018.3	-774.9	1,370,255.50	3,290,692.71	40.345060	-104.457080
- plan hits target center									
- Circle (radius 75.0)									
LEGAL BOX 800' X 800'	0.00	0.00	6,342.0	1,983.3	-764.9	1,370,220.63	3,290,703.14	40.344964	-104.457044
- plan misses target center by 36.4ft at 6813.2ft MD (6342.0 TVD, 2018.3 N, -774.9 E)									
- Rectangle (sides W800.0 H800.0 D435.0)									

Database: Landmark
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Project: SEC.5-T4N-R63W
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Wellbore: Wellbore #1
Design: Noble Carmin CC05-17D Plan #1 (3-29-11)

Local Co-ordinate Reference: Well Carmin CC05-17D
TVD Reference: WELL @ 4667.0ft (Original Well Elev)
MD Reference: WELL @ 4667.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
650.3	650.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,813.2	6,342.0	NIOBRARA		0.00	
7,098.2	6,627.0	CODELL		0.00	