

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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1962.9	15.26	265.65	1953.9	-7.7	-100.7	2.00	265.65	101.0	
4	4857.1	15.26	265.65	4746.1	-65.4	-860.2	0.00	0.00	862.6	
5	5620.0	0.00	0.00	5500.0	-73.1	-960.8	2.00	180.00	963.6	TARGET BHL 2567°FSL, 1297°FWL
6	7540.0	0.00	0.00	7420.0	-73.1	-960.8	0.00	0.00	963.6	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.21-T4N-R66W

Kissler K21-21D Pad Sec.21-T4N-R66W

Kissler K21-20D

Wellbore #1

Plan: Noble Kissler K21-20D Plan #2 (10-05-09)

Standard Planning Report

05 October, 2009



Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.21-T4N-R66W
Site: Kissler K21-21D Pad Sec.21-T4N-R66W
Well: Kissler K21-20D
Wellbore: Wellbore #1
Design: Noble Kissler K21-20D Plan #2 (10-05-09)

Local Co-ordinate Reference: Well Kissler K21-20D
TVD Reference: WELL @ 4769.0ft (Original Well Elev)
MD Reference: WELL @ 4769.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.21-T4N-R66W, 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		

Site	Kissler K21-21D Pad Sec.21-T4N-R66W			
Site Position:		Northing:	1,351,878.08 ft	Latitude: 40° 17' 49.524 N
From: Lat/Long		Easting:	3,199,811.57 ft	Longitude: 104° 47' 1.140 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence: 0.46 °

Well	Kissler K21-20D			
Well Position	+N/-S	0.0 ft	Northing:	1,351,877.76 ft
	+E/-W	-39.1 ft	Easting:	3,199,772.53 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
				Latitude: 40° 17' 49.524 N
				Longitude: 104° 47' 1.644 W
				Ground Level: 4,756.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/25/2009	9.07	67.03	53,285

Design	Noble Kissler K21-20D Plan #2 (10-05-09)			
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	265.65

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,962.9	15.26	265.65	1,953.9	-7.7	-100.7	2.00	2.00	0.00	265.65	
4,857.1	15.26	265.65	4,746.1	-65.4	-860.2	0.00	0.00	0.00	0.00	
5,620.0	0.00	0.00	5,500.0	-73.1	-960.8	2.00	-2.00	0.00	180.00	TARGET BHL 2567
7,540.0	0.00	0.00	7,420.0	-73.1	-960.8	0.00	0.00	0.00	0.00	

Database: EDM den0-adp01 Server Data
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.21-T4N-R66W
 Site: Kissler K21-21D Pad Sec.21-T4N-R66W
 Well: Kissler K21-20D
 Wellbore: Wellbore #1
 Design: Noble Kissler K21-20D Plan #2 (10-05-09)

Local Co-ordinate Reference: Well Kissler K21-20D
 TVD Reference: WELL @ 4769.0ft (Original Well Elev)
 MD Reference: WELL @ 4769.0ft (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	0.00	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
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	0.80	265.65	1,240.0	0.0	-0.3	0.3	2.00	2.00	0.00
1,280.0	1.60	265.65	1,280.0	-0.1	-1.1	1.1	2.00	2.00	0.00
1,320.0	2.40	265.65	1,320.0	-0.2	-2.5	2.5	2.00	2.00	0.00
1,360.0	3.20	265.65	1,359.9	-0.3	-4.5	4.5	2.00	2.00	0.00
1,400.0	4.00	265.65	1,399.8	-0.5	-7.0	7.0	2.00	2.00	0.00
1,440.0	4.80	265.65	1,439.7	-0.8	-10.0	10.0	2.00	2.00	0.00
1,480.0	5.60	265.65	1,479.6	-1.0	-13.6	13.7	2.00	2.00	0.00
1,520.0	6.40	265.65	1,519.3	-1.4	-17.8	17.9	2.00	2.00	0.00
1,560.0	7.20	265.65	1,559.1	-1.7	-22.5	22.6	2.00	2.00	0.00
1,600.0	8.00	265.65	1,598.7	-2.1	-27.8	27.9	2.00	2.00	0.00
1,640.0	8.80	265.65	1,638.3	-2.6	-33.6	33.7	2.00	2.00	0.00
1,680.0	9.60	265.65	1,677.8	-3.0	-40.0	40.1	2.00	2.00	0.00
1,720.0	10.40	265.65	1,717.1	-3.6	-46.9	47.1	2.00	2.00	0.00
1,760.0	11.20	265.65	1,756.4	-4.1	-54.4	54.6	2.00	2.00	0.00
1,800.0	12.00	265.65	1,795.6	-4.7	-62.4	62.6	2.00	2.00	0.00
1,840.0	12.80	265.65	1,834.7	-5.4	-71.0	71.2	2.00	2.00	0.00
1,880.0	13.60	265.65	1,873.6	-6.1	-80.1	80.3	2.00	2.00	0.00
1,920.0	14.40	265.65	1,912.4	-6.8	-89.7	90.0	2.00	2.00	0.00
1,960.0	15.20	265.65	1,951.1	-7.6	-99.9	100.2	2.00	2.00	0.00
1,962.9	15.26	265.65	1,953.9	-7.7	-100.7	101.0	2.00	2.00	0.00
2,000.0	15.26	265.65	1,989.7	-8.4	-110.4	110.7	0.00	0.00	0.00
2,040.0	15.26	265.65	2,028.3	-9.2	-120.9	121.3	0.00	0.00	0.00
2,080.0	15.26	265.65	2,066.9	-10.0	-131.4	131.8	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Kissler K21-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4769.0ft (Original Well Elev)
Project:	SEC.21-T4N-R66W	MD Reference:	WELL @ 4769.0ft (Original Well Elev)
Site:	Kissler K21-21D Pad Sec.21-T4N-R66W	North Reference:	True
Well:	Kissler K21-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Kissler K21-20D Plan #2 (10-05-09)		

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)
2,120.0	15.26	265.65	2,105.5	-10.8	-141.9	142.3	0.00	0.00	0.00
2,160.0	15.26	265.65	2,144.1	-11.6	-152.4	152.9	0.00	0.00	0.00
2,200.0	15.26	265.65	2,182.7	-12.4	-162.9	163.4	0.00	0.00	0.00
2,240.0	15.26	265.65	2,221.2	-13.2	-173.4	173.9	0.00	0.00	0.00
2,280.0	15.26	265.65	2,259.8	-14.0	-183.9	184.4	0.00	0.00	0.00
2,320.0	15.26	265.65	2,298.4	-14.8	-194.4	195.0	0.00	0.00	0.00
2,360.0	15.26	265.65	2,337.0	-15.6	-204.9	205.5	0.00	0.00	0.00
2,400.0	15.26	265.65	2,375.6	-16.4	-215.4	216.0	0.00	0.00	0.00
2,440.0	15.26	265.65	2,414.2	-17.2	-225.9	226.5	0.00	0.00	0.00
2,480.0	15.26	265.65	2,452.8	-18.0	-236.4	237.1	0.00	0.00	0.00
2,520.0	15.26	265.65	2,491.4	-18.8	-246.9	247.6	0.00	0.00	0.00
2,560.0	15.26	265.65	2,530.0	-19.6	-257.4	258.1	0.00	0.00	0.00
2,600.0	15.26	265.65	2,568.6	-20.4	-267.9	268.6	0.00	0.00	0.00
2,640.0	15.26	265.65	2,607.1	-21.2	-278.4	279.2	0.00	0.00	0.00
2,680.0	15.26	265.65	2,645.7	-22.0	-288.9	289.7	0.00	0.00	0.00
2,720.0	15.26	265.65	2,684.3	-22.8	-299.4	300.2	0.00	0.00	0.00
2,760.0	15.26	265.65	2,722.9	-23.6	-309.9	310.8	0.00	0.00	0.00
2,800.0	15.26	265.65	2,761.5	-24.4	-320.4	321.3	0.00	0.00	0.00
2,840.0	15.26	265.65	2,800.1	-25.2	-330.9	331.8	0.00	0.00	0.00
2,880.0	15.26	265.65	2,838.7	-26.0	-341.3	342.3	0.00	0.00	0.00
2,920.0	15.26	265.65	2,877.3	-26.8	-351.8	352.9	0.00	0.00	0.00
2,960.0	15.26	265.65	2,915.9	-27.6	-362.3	363.4	0.00	0.00	0.00
3,000.0	15.26	265.65	2,954.5	-28.4	-372.8	373.9	0.00	0.00	0.00
3,040.0	15.26	265.65	2,993.0	-29.2	-383.3	384.4	0.00	0.00	0.00
3,080.0	15.26	265.65	3,031.6	-30.0	-393.8	395.0	0.00	0.00	0.00
3,120.0	15.26	265.65	3,070.2	-30.8	-404.3	405.5	0.00	0.00	0.00
3,160.0	15.26	265.65	3,108.8	-31.6	-414.8	416.0	0.00	0.00	0.00
3,200.0	15.26	265.65	3,147.4	-32.4	-425.3	426.5	0.00	0.00	0.00
3,240.0	15.26	265.65	3,186.0	-33.2	-435.8	437.1	0.00	0.00	0.00
3,280.0	15.26	265.65	3,224.6	-33.9	-446.3	447.6	0.00	0.00	0.00
3,320.0	15.26	265.65	3,263.2	-34.7	-456.8	458.1	0.00	0.00	0.00
3,360.0	15.26	265.65	3,301.8	-35.5	-467.3	468.7	0.00	0.00	0.00
3,400.0	15.26	265.65	3,340.4	-36.3	-477.8	479.2	0.00	0.00	0.00
3,440.0	15.26	265.65	3,378.9	-37.1	-488.3	489.7	0.00	0.00	0.00
3,480.0	15.26	265.65	3,417.5	-37.9	-498.8	500.2	0.00	0.00	0.00
3,520.0	15.26	265.65	3,456.1	-38.7	-509.3	510.8	0.00	0.00	0.00
3,560.0	15.26	265.65	3,494.7	-39.5	-519.8	521.3	0.00	0.00	0.00
3,600.0	15.26	265.65	3,533.3	-40.3	-530.3	531.8	0.00	0.00	0.00
3,640.0	15.26	265.65	3,571.9	-41.1	-540.8	542.3	0.00	0.00	0.00
3,680.0	15.26	265.65	3,610.5	-41.9	-551.3	552.9	0.00	0.00	0.00
3,720.0	15.26	265.65	3,649.1	-42.7	-561.8	563.4	0.00	0.00	0.00
3,760.0	15.26	265.65	3,687.7	-43.5	-572.3	573.9	0.00	0.00	0.00
3,800.0	15.26	265.65	3,726.3	-44.3	-582.8	584.4	0.00	0.00	0.00
3,840.0	15.26	265.65	3,764.8	-45.1	-593.3	595.0	0.00	0.00	0.00
3,880.0	15.26	265.65	3,803.4	-45.9	-603.8	605.5	0.00	0.00	0.00
3,920.0	15.26	265.65	3,842.0	-46.7	-614.3	616.0	0.00	0.00	0.00
3,960.0	15.26	265.65	3,880.6	-47.5	-624.7	626.6	0.00	0.00	0.00
4,000.0	15.26	265.65	3,919.2	-48.3	-635.2	637.1	0.00	0.00	0.00
4,040.0	15.26	265.65	3,957.8	-49.1	-645.7	647.6	0.00	0.00	0.00
4,080.0	15.26	265.65	3,996.4	-49.9	-656.2	658.1	0.00	0.00	0.00
4,120.0	15.26	265.65	4,035.0	-50.7	-666.7	668.7	0.00	0.00	0.00
4,160.0	15.26	265.65	4,073.6	-51.5	-677.2	679.2	0.00	0.00	0.00
4,200.0	15.26	265.65	4,112.2	-52.3	-687.7	689.7	0.00	0.00	0.00
4,240.0	15.26	265.65	4,150.7	-53.1	-698.2	700.2	0.00	0.00	0.00

Database: EDM den0-adp01 Server Data
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.21-T4N-R66W
 Site: Kissler K21-21D Pad Sec.21-T4N-R66W
 Well: Kissler K21-20D
 Wellbore: Wellbore #1
 Design: Noble Kissler K21-20D Plan #2 (10-05-09)

Local Co-ordinate Reference: Well Kissler K21-20D
 TVD Reference: WELL @ 4769.0ft (Original Well Elev)
 MD Reference: WELL @ 4769.0ft (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)
4,280.0	15.26	265.65	4,189.3	-53.9	-708.7	710.8	0.00	0.00	0.00
4,320.0	15.26	265.65	4,227.9	-54.7	-719.2	721.3	0.00	0.00	0.00
4,360.0	15.26	265.65	4,266.5	-55.5	-729.7	731.8	0.00	0.00	0.00
4,400.0	15.26	265.65	4,305.1	-56.3	-740.2	742.3	0.00	0.00	0.00
4,440.0	15.26	265.65	4,343.7	-57.1	-750.7	752.9	0.00	0.00	0.00
4,480.0	15.26	265.65	4,382.3	-57.9	-761.2	763.4	0.00	0.00	0.00
4,520.0	15.26	265.65	4,420.9	-58.7	-771.7	773.9	0.00	0.00	0.00
4,560.0	15.26	265.65	4,459.5	-59.5	-782.2	784.5	0.00	0.00	0.00
4,600.0	15.26	265.65	4,498.1	-60.3	-792.7	795.0	0.00	0.00	0.00
4,640.0	15.26	265.65	4,536.6	-61.1	-803.2	805.5	0.00	0.00	0.00
4,680.0	15.26	265.65	4,575.2	-61.9	-813.7	816.0	0.00	0.00	0.00
4,720.0	15.26	265.65	4,613.8	-62.7	-824.2	826.6	0.00	0.00	0.00
4,760.0	15.26	265.65	4,652.4	-63.5	-834.7	837.1	0.00	0.00	0.00
4,800.0	15.26	265.65	4,691.0	-64.3	-845.2	847.6	0.00	0.00	0.00
4,840.0	15.26	265.65	4,729.6	-65.1	-855.7	858.1	0.00	0.00	0.00
4,857.1	15.26	265.65	4,746.1	-65.4	-860.2	862.6	0.00	0.00	0.00
4,880.0	14.80	265.65	4,768.2	-65.9	-866.1	868.6	2.00	-2.00	0.00
4,920.0	14.00	265.65	4,807.0	-66.6	-876.0	878.5	2.00	-2.00	0.00
4,960.0	13.20	265.65	4,845.8	-67.3	-885.4	887.9	2.00	-2.00	0.00
5,000.0	12.40	265.65	4,884.8	-68.0	-894.2	896.8	2.00	-2.00	0.00
5,040.0	11.60	265.65	4,924.0	-68.7	-902.5	905.1	2.00	-2.00	0.00
5,080.0	10.80	265.65	4,963.2	-69.2	-910.2	912.9	2.00	-2.00	0.00
5,120.0	10.00	265.65	5,002.5	-69.8	-917.4	920.1	2.00	-2.00	0.00
5,160.0	9.20	265.65	5,042.0	-70.3	-924.1	926.8	2.00	-2.00	0.00
5,200.0	8.40	265.65	5,081.5	-70.8	-930.2	932.9	2.00	-2.00	0.00
5,240.0	7.60	265.65	5,121.1	-71.2	-935.8	938.5	2.00	-2.00	0.00
5,280.0	6.80	265.65	5,160.8	-71.6	-940.8	943.5	2.00	-2.00	0.00
5,320.0	6.00	265.65	5,200.6	-71.9	-945.2	947.9	2.00	-2.00	0.00
5,360.0	5.20	265.65	5,240.4	-72.2	-949.1	951.8	2.00	-2.00	0.00
5,400.0	4.40	265.65	5,280.2	-72.4	-952.4	955.2	2.00	-2.00	0.00
5,440.0	3.60	265.65	5,320.1	-72.7	-955.2	958.0	2.00	-2.00	0.00
5,480.0	2.80	265.65	5,360.1	-72.8	-957.4	960.2	2.00	-2.00	0.00
5,520.0	2.00	265.65	5,400.0	-73.0	-959.1	961.9	2.00	-2.00	0.00
5,560.0	1.20	265.65	5,440.0	-73.0	-960.2	963.0	2.00	-2.00	0.00
5,600.0	0.40	265.65	5,480.0	-73.1	-960.8	963.6	2.00	-2.00	0.00
5,620.0	0.00	0.00	5,500.0	-73.1	-960.8	963.6	2.00	-2.00	471.99
TARGET BHL 2567'FSL, 1297'FWL									
5,640.0	0.00	0.00	5,520.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,680.0	0.00	0.00	5,560.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,720.0	0.00	0.00	5,600.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,760.0	0.00	0.00	5,640.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,680.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,840.0	0.00	0.00	5,720.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,880.0	0.00	0.00	5,760.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,920.0	0.00	0.00	5,800.0	-73.1	-960.8	963.6	0.00	0.00	0.00
5,960.0	0.00	0.00	5,840.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,880.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,920.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,080.0	0.00	0.00	5,960.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,120.0	0.00	0.00	6,000.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,040.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,080.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,120.0	-73.1	-960.8	963.6	0.00	0.00	0.00

Database: EDM den0-adp01 Server Data
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.21-T4N-R66W
 Site: Kissler K21-21D Pad Sec.21-T4N-R66W
 Well: Kissler K21-20D
 Wellbore: Wellbore #1
 Design: Noble Kissler K21-20D Plan #2 (10-05-09)

Local Co-ordinate Reference: Well Kissler K21-20D
 TVD Reference: WELL @ 4769.0ft (Original Well Elev)
 MD Reference: WELL @ 4769.0ft (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)
6,280.0	0.00	0.00	6,160.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,200.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,240.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,280.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,320.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,360.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,400.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,440.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,480.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,520.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,560.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,600.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,640.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,680.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,720.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,760.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,800.0	-73.1	-960.8	963.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,840.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,880.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,920.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,064.0	0.00	0.00	6,944.0	-73.1	-960.8	963.6	0.00	0.00	0.00
NIOBRARA									
7,080.0	0.00	0.00	6,960.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,120.0	0.00	0.00	7,000.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,160.0	0.00	0.00	7,040.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,080.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,120.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,280.0	0.00	0.00	7,160.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,200.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,240.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,390.0	0.00	0.00	7,270.0	-73.1	-960.8	963.6	0.00	0.00	0.00
CODELL									
7,400.0	0.00	0.00	7,280.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,320.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,360.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,400.0	-73.1	-960.8	963.6	0.00	0.00	0.00
7,540.0	0.00	0.00	7,420.0	-73.1	-960.8	963.6	0.00	0.00	0.00
HARDLINE 75°N 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									
HARDLINE 75°N OF E	0.00	0.00	7,420.0	1.9	-1,060.8	1,351,871.09	3,198,711.75	40° 17' 49.542 N	104° 47' 15.335 W
- plan misses target center by 125.0ft at 7540.0ft MD (7420.0 TVD, -73.1 N, -960.8 E)									
- Polygon									
Point 1			7,420.0	0.0	0.0	1,351,871.09	3,198,711.75		
Point 2			7,420.0	0.0	200.0	1,351,872.71	3,198,911.74		
TARGET BHL 2567°F	0.00	0.00	5,500.0	-73.1	-960.8	1,351,796.91	3,198,812.30	40° 17' 48.801 N	104° 47' 14.045 W
- plan hits target center									
- Point									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Kissler K21-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4769.0ft (Original Well Elev)
Project:	SEC.21-T4N-R66W	MD Reference:	WELL @ 4769.0ft (Original Well Elev)
Site:	Kissler K21-21D Pad Sec.21-T4N-R66W	North Reference:	True
Well:	Kissler K21-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Kissler K21-20D Plan #2 (10-05-09)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,064.0	6,944.0	NIOBRARA		0.00		
7,390.0	7,270.0	CODELL		0.00		