

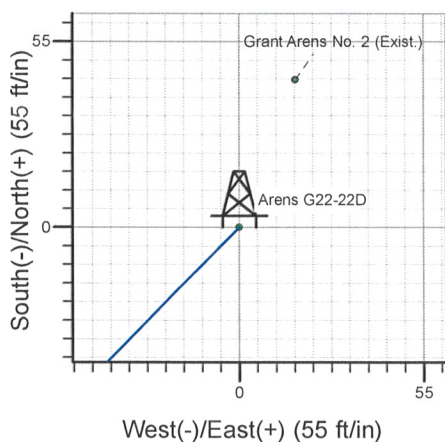
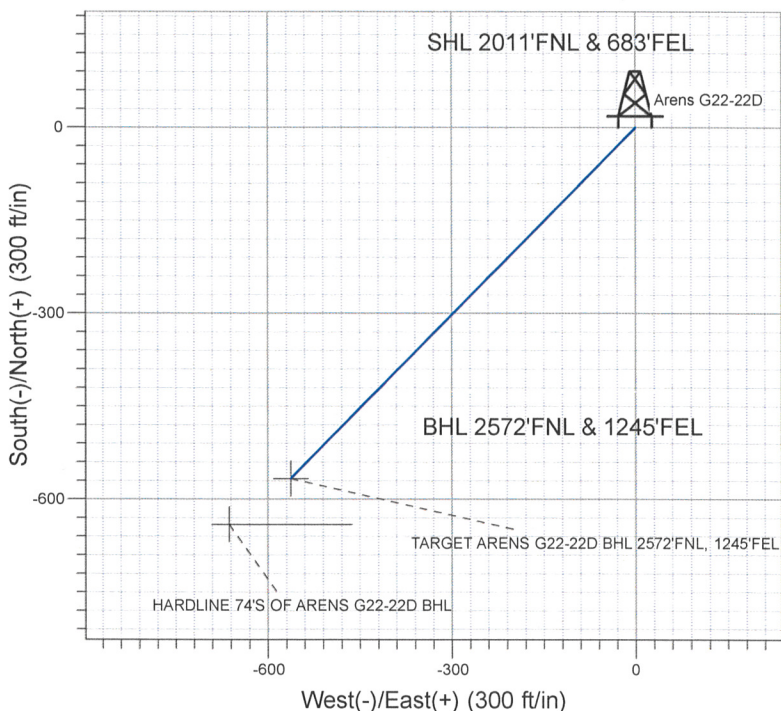
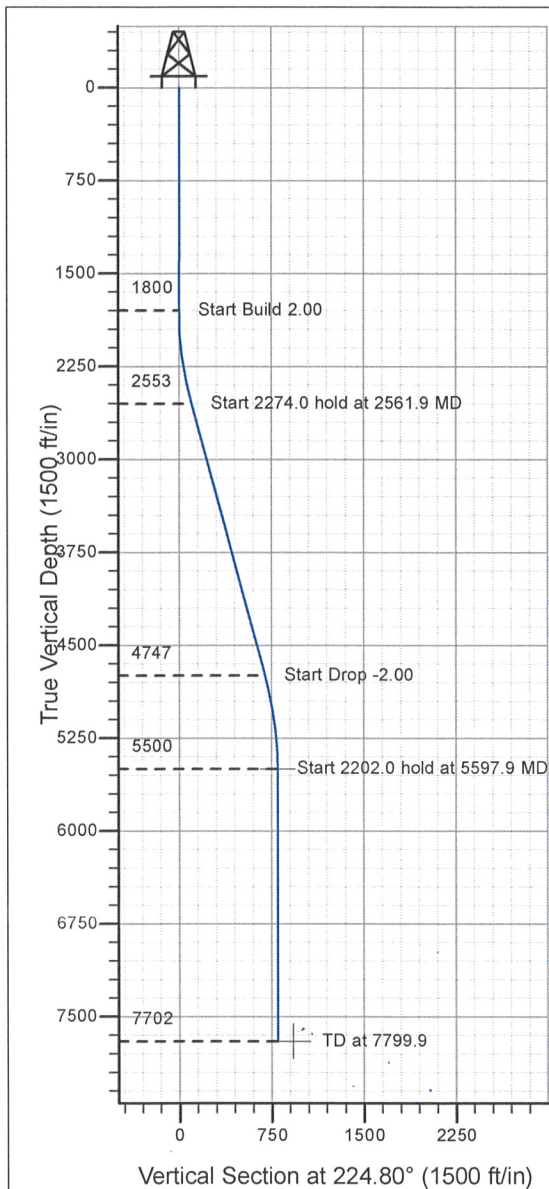
ENSIGN

Directional

Well Name: Arens G22-22D

Surface Location: Arens G22-22D Pad Sec.22-T4N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4707.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1353160.57 3239230.98 40° 17' 58.740 N 104° 38' 32.244 W
 Original Well Elev WELL @ 4720.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Azimuths to True North
 Magnetic North: 9.11°
 Magnetic Field
 Strength: 53391.2snT
 Dip Angle: 67.09°
 Date: 10/14/2008
 Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET ARENS G22-22D BHL 2572'FNL, 1245'FEL	5500.0	-567.1	-563.1	40° 17' 53.136 N	104° 38' 39.512 W	Point
HARDLINE 74'S OF ARENS G22-22D BHL	7702.0	-641.1	-663.1	40° 17' 52.405 N	104° 38' 40.802 W	Polygon

SECTION DETAILS

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	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2561.9	15.24	224.80	2553.0	-71.5	-71.0	2.00	224.80	100.7	
4	4835.9	15.24	224.80	4747.0	-495.6	-492.1	0.00	0.00	698.4	
5	5597.9	0.00	0.00	5500.0	-567.1	-563.1	2.00	180.00	799.2	TARGET ARENS G22-22D BHL 2572'FNL, 1245'FEL
6	7799.9	0.00	0.00	7702.0	-567.1	-563.1	0.00	0.00	799.2	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T4N-R65W

Arens G22-22D Pad Sec.22-T4N-R65W

Arens G22-22D

Arens G22-22D

Plan: Arens G22-22D

Standard Planning Report

14 October, 2008



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4720.0ft (Original Well Elev)
Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

Project	SEC.22-T4N-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		Arens G22-22D Pad Sec.22-T4N-R65W			
Site Position:		Northing:	1,353,160.58 ft	Latitude:	40° 17' 58.740 N
From:	Lat/Long	Easting:	3,239,230.98 ft	Longitude:	104° 38' 32.244 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Arens G22-22D					
Well Position	+N/-S	0.0 ft	Northing:	1,353,160.57 ft	Latitude:	40° 17' 58.740 N
	+E/-W	0.0 ft	Easting:	3,239,230.98 ft	Longitude:	104° 38' 32.244 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,707.0 ft

Wellbore	Arens G22-22D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/14/2008	9.12	67.09	53,391

Design	Arens G22-22D			
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	224.80

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	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,561.9	15.24	224.80	2,553.0	-71.5	-71.0	2.00	2.00	0.00	224.80	
4,835.9	15.24	224.80	4,747.0	-495.6	-492.1	0.00	0.00	0.00	0.00	
5,597.9	0.00	0.00	5,500.0	-567.1	-563.1	2.00	-2.00	0.00	180.00	TARGET ARENS C
7,799.9	0.00	0.00	7,702.0	-567.1	-563.1	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4720.0ft (Original Well Elev)
Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

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	0.00	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
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,840.0	0.80	224.80	1,840.0	-0.2	-0.2	0.3	2.00	2.00	0.00
1,880.0	1.60	224.80	1,880.0	-0.8	-0.8	1.1	2.00	2.00	0.00
1,920.0	2.40	224.80	1,920.0	-1.8	-1.8	2.5	2.00	2.00	0.00
1,960.0	3.20	224.80	1,959.9	-3.2	-3.1	4.5	2.00	2.00	0.00
2,000.0	4.00	224.80	1,999.8	-5.0	-4.9	7.0	2.00	2.00	0.00
2,040.0	4.80	224.80	2,039.7	-7.1	-7.1	10.0	2.00	2.00	0.00
2,080.0	5.60	224.80	2,079.6	-9.7	-9.6	13.7	2.00	2.00	0.00
2,120.0	6.40	224.80	2,119.3	-12.7	-12.6	17.9	2.00	2.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4720.0ft (Original Well Elev)
Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

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)
2,160.0	7.20	224.80	2,159.1	-16.0	-15.9	22.6	2.00	2.00	0.00
2,200.0	8.00	224.80	2,198.7	-19.8	-19.6	27.9	2.00	2.00	0.00
2,240.0	8.80	224.80	2,238.3	-23.9	-23.8	33.7	2.00	2.00	0.00
2,280.0	9.60	224.80	2,277.8	-28.5	-28.3	40.1	2.00	2.00	0.00
2,320.0	10.40	224.80	2,317.1	-33.4	-33.2	47.1	2.00	2.00	0.00
2,360.0	11.20	224.80	2,356.4	-38.7	-38.4	54.6	2.00	2.00	0.00
2,400.0	12.00	224.80	2,395.6	-44.4	-44.1	62.6	2.00	2.00	0.00
2,440.0	12.80	224.80	2,434.7	-50.5	-50.2	71.2	2.00	2.00	0.00
2,480.0	13.60	224.80	2,473.6	-57.0	-56.6	80.3	2.00	2.00	0.00
2,520.0	14.40	224.80	2,512.4	-63.9	-63.4	90.0	2.00	2.00	0.00
2,560.0	15.20	224.80	2,551.1	-71.1	-70.6	100.2	2.00	2.00	0.00
2,561.9	15.24	224.80	2,553.0	-71.5	-71.0	100.7	2.00	2.00	0.00
2,600.0	15.24	224.80	2,589.7	-78.6	-78.0	110.7	0.00	0.00	0.00
2,640.0	15.24	224.80	2,628.3	-86.0	-85.4	121.2	0.00	0.00	0.00
2,680.0	15.24	224.80	2,666.9	-93.5	-92.8	131.8	0.00	0.00	0.00
2,720.0	15.24	224.80	2,705.5	-101.0	-100.3	142.3	0.00	0.00	0.00
2,721.6	15.24	224.80	2,707.0	-101.2	-100.5	142.7	0.00	0.00	0.00
PIERRE SILT									
2,760.0	15.24	224.80	2,744.1	-108.4	-107.7	152.8	0.00	0.00	0.00
2,800.0	15.24	224.80	2,782.7	-115.9	-115.1	163.3	0.00	0.00	0.00
2,840.0	15.24	224.80	2,821.3	-123.3	-122.5	173.8	0.00	0.00	0.00
2,880.0	15.24	224.80	2,859.9	-130.8	-129.9	184.3	0.00	0.00	0.00
2,920.0	15.24	224.80	2,898.5	-138.3	-137.3	194.8	0.00	0.00	0.00
2,960.0	15.24	224.80	2,937.1	-145.7	-144.7	205.4	0.00	0.00	0.00
3,000.0	15.24	224.80	2,975.6	-153.2	-152.1	215.9	0.00	0.00	0.00
3,040.0	15.24	224.80	3,014.2	-160.6	-159.5	226.4	0.00	0.00	0.00
3,080.0	15.24	224.80	3,052.8	-168.1	-166.9	236.9	0.00	0.00	0.00
3,120.0	15.24	224.80	3,091.4	-175.6	-174.3	247.4	0.00	0.00	0.00
3,160.0	15.24	224.80	3,130.0	-183.0	-181.7	257.9	0.00	0.00	0.00
3,200.0	15.24	224.80	3,168.6	-190.5	-189.2	268.4	0.00	0.00	0.00
3,240.0	15.24	224.80	3,207.2	-197.9	-196.6	279.0	0.00	0.00	0.00
3,280.0	15.24	224.80	3,245.8	-205.4	-204.0	289.5	0.00	0.00	0.00
3,320.0	15.24	224.80	3,284.4	-212.9	-211.4	300.0	0.00	0.00	0.00
3,360.0	15.24	224.80	3,323.0	-220.3	-218.8	310.5	0.00	0.00	0.00
3,400.0	15.24	224.80	3,361.6	-227.8	-226.2	321.0	0.00	0.00	0.00
3,440.0	15.24	224.80	3,400.2	-235.2	-233.6	331.5	0.00	0.00	0.00
3,480.0	15.24	224.80	3,438.8	-242.7	-241.0	342.0	0.00	0.00	0.00
3,520.0	15.24	224.80	3,477.4	-250.2	-248.4	352.5	0.00	0.00	0.00
3,560.0	15.24	224.80	3,516.0	-257.6	-255.8	363.1	0.00	0.00	0.00
3,600.0	15.24	224.80	3,554.5	-265.1	-263.2	373.6	0.00	0.00	0.00
3,640.0	15.24	224.80	3,593.1	-272.5	-270.6	384.1	0.00	0.00	0.00
3,680.0	15.24	224.80	3,631.7	-280.0	-278.1	394.6	0.00	0.00	0.00
3,720.0	15.24	224.80	3,670.3	-287.5	-285.5	405.1	0.00	0.00	0.00
3,736.2	15.24	224.80	3,686.0	-290.5	-288.5	409.4	0.00	0.00	0.00
PARKMAN									
3,760.0	15.24	224.80	3,708.9	-294.9	-292.9	415.6	0.00	0.00	0.00
3,800.0	15.24	224.80	3,747.5	-302.4	-300.3	426.1	0.00	0.00	0.00
3,840.0	15.24	224.80	3,786.1	-309.8	-307.7	436.7	0.00	0.00	0.00
3,880.0	15.24	224.80	3,824.7	-317.3	-315.1	447.2	0.00	0.00	0.00
3,920.0	15.24	224.80	3,863.3	-324.8	-322.5	457.7	0.00	0.00	0.00
3,960.0	15.24	224.80	3,901.9	-332.2	-329.9	468.2	0.00	0.00	0.00
4,000.0	15.24	224.80	3,940.5	-339.7	-337.3	478.7	0.00	0.00	0.00
4,040.0	15.24	224.80	3,979.1	-347.1	-344.7	489.2	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
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Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

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)
4,080.0	15.24	224.80	4,017.7	-354.6	-352.1	499.7	0.00	0.00	0.00
4,120.0	15.24	224.80	4,056.3	-362.1	-359.5	510.3	0.00	0.00	0.00
4,160.0	15.24	224.80	4,094.9	-369.5	-367.0	520.8	0.00	0.00	0.00
4,200.0	15.24	224.80	4,133.5	-377.0	-374.4	531.3	0.00	0.00	0.00
4,240.0	15.24	224.80	4,172.0	-384.4	-381.8	541.8	0.00	0.00	0.00
4,280.0	15.24	224.80	4,210.6	-391.9	-389.2	552.3	0.00	0.00	0.00
4,320.0	15.24	224.80	4,249.2	-399.4	-396.6	562.8	0.00	0.00	0.00
4,360.0	15.24	224.80	4,287.8	-406.8	-404.0	573.3	0.00	0.00	0.00
4,360.2	15.24	224.80	4,288.0	-406.9	-404.0	573.4	0.00	0.00	0.00
SUSSEX									
4,400.0	15.24	224.80	4,326.4	-414.3	-411.4	583.9	0.00	0.00	0.00
4,440.0	15.24	224.80	4,365.0	-421.7	-418.8	594.4	0.00	0.00	0.00
4,480.0	15.24	224.80	4,403.6	-429.2	-426.2	604.9	0.00	0.00	0.00
4,520.0	15.24	224.80	4,442.2	-436.7	-433.6	615.4	0.00	0.00	0.00
4,560.0	15.24	224.80	4,480.8	-444.1	-441.0	625.9	0.00	0.00	0.00
4,600.0	15.24	224.80	4,519.4	-451.6	-448.4	636.4	0.00	0.00	0.00
4,640.0	15.24	224.80	4,558.0	-459.0	-455.9	646.9	0.00	0.00	0.00
4,680.0	15.24	224.80	4,596.6	-466.5	-463.3	657.4	0.00	0.00	0.00
4,720.0	15.24	224.80	4,635.2	-474.0	-470.7	668.0	0.00	0.00	0.00
4,760.0	15.24	224.80	4,673.8	-481.4	-478.1	678.5	0.00	0.00	0.00
4,800.0	15.24	224.80	4,712.4	-488.9	-485.5	689.0	0.00	0.00	0.00
4,835.9	15.24	224.80	4,747.0	-495.6	-492.1	698.4	0.00	0.00	0.00
4,840.0	15.16	224.80	4,750.9	-496.3	-492.9	699.5	2.00	-2.00	0.00
4,880.0	14.36	224.80	4,789.6	-503.6	-500.1	709.7	2.00	-2.00	0.00
4,920.0	13.56	224.80	4,828.4	-510.4	-506.9	719.3	2.00	-2.00	0.00
4,960.0	12.76	224.80	4,867.4	-516.9	-513.3	728.4	2.00	-2.00	0.00
5,000.0	11.96	224.80	4,906.5	-523.0	-519.3	737.0	2.00	-2.00	0.00
5,019.9	11.56	224.80	4,926.0	-525.8	-522.2	741.1	2.00	-2.00	0.00
SHANNON									
5,040.0	11.16	224.80	4,945.7	-528.6	-525.0	745.0	2.00	-2.00	0.00
5,080.0	10.36	224.80	4,985.0	-533.9	-530.2	752.5	2.00	-2.00	0.00
5,120.0	9.56	224.80	5,024.4	-538.8	-535.1	759.4	2.00	-2.00	0.00
5,160.0	8.76	224.80	5,063.8	-543.4	-539.6	765.8	2.00	-2.00	0.00
5,200.0	7.96	224.80	5,103.4	-547.5	-543.7	771.6	2.00	-2.00	0.00
5,240.0	7.16	224.80	5,143.1	-551.2	-547.4	776.8	2.00	-2.00	0.00
5,280.0	6.36	224.80	5,182.8	-554.6	-550.7	781.5	2.00	-2.00	0.00
5,320.0	5.56	224.80	5,222.6	-557.5	-553.6	785.7	2.00	-2.00	0.00
5,360.0	4.76	224.80	5,262.4	-560.1	-556.2	789.3	2.00	-2.00	0.00
5,400.0	3.96	224.80	5,302.3	-562.2	-558.3	792.3	2.00	-2.00	0.00
5,440.0	3.16	224.80	5,342.2	-564.0	-560.1	794.8	2.00	-2.00	0.00
5,480.0	2.36	224.80	5,382.2	-565.3	-561.4	796.7	2.00	-2.00	0.00
5,520.0	1.56	224.80	5,422.2	-566.3	-562.4	798.1	2.00	-2.00	0.00
5,560.0	0.76	224.80	5,462.1	-566.9	-562.9	798.9	2.00	-2.00	0.00
5,597.9	0.00	0.00	5,500.0	-567.1	-563.1	799.2	2.00	-2.00	0.00
TARGET ARENS G22-22D BHL 2572'FNL, 1245'FEL									
5,600.0	0.00	0.00	5,502.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,640.0	0.00	0.00	5,542.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,582.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,622.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,662.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,702.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,742.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,782.1	-567.1	-563.1	799.2	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4720.0ft (Original Well Elev)
Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

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)
5,920.0	0.00	0.00	5,822.1	-567.1	-563.1	799.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,862.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,902.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,040.0	0.00	0.00	5,942.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,080.0	0.00	0.00	5,982.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,120.0	0.00	0.00	6,022.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,156.9	0.00	0.00	6,059.0	-567.1	-563.1	799.2	0.00	0.00	0.00
TEEPEE BUTTES									
6,160.0	0.00	0.00	6,062.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,102.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,240.0	0.00	0.00	6,142.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,280.0	0.00	0.00	6,182.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,320.0	0.00	0.00	6,222.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,360.0	0.00	0.00	6,262.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,302.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,440.0	0.00	0.00	6,342.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,480.0	0.00	0.00	6,382.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,422.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,462.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,502.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,542.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,582.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,622.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,662.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,702.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,742.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,852.9	0.00	0.00	6,755.0	-567.1	-563.1	799.2	0.00	0.00	0.00
NIOBRARA									
6,880.0	0.00	0.00	6,782.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,822.1	-567.1	-563.1	799.2	0.00	0.00	0.00
6,960.0	0.00	0.00	6,862.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,902.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,942.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,080.0	0.00	0.00	6,982.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,120.0	0.00	0.00	7,022.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,143.9	0.00	0.00	7,046.0	-567.1	-563.1	799.2	0.00	0.00	0.00
FT HAYS									
7,160.0	0.00	0.00	7,062.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,166.9	0.00	0.00	7,069.0	-567.1	-563.1	799.2	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	7,102.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,240.0	0.00	0.00	7,142.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,280.0	0.00	0.00	7,182.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,320.0	0.00	0.00	7,222.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,360.0	0.00	0.00	7,262.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,400.0	0.00	0.00	7,302.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,440.0	0.00	0.00	7,342.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,480.0	0.00	0.00	7,382.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,520.0	0.00	0.00	7,422.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,560.0	0.00	0.00	7,462.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,502.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,640.0	0.00	0.00	7,542.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,649.9	0.00	0.00	7,552.0	-567.1	-563.1	799.2	0.00	0.00	0.00
J SAND									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Arens G22-22D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4720.0ft (Original Well Elev)
Project:	SEC.22-T4N-R65W	MD Reference:	WELL @ 4720.0ft (Original Well Elev)
Site:	Arens G22-22D Pad Sec.22-T4N-R65W	North Reference:	True
Well:	Arens G22-22D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Arens G22-22D		
Design:	Arens G22-22D		

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)
7,680.0	0.00	0.00	7,582.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,720.0	0.00	0.00	7,622.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,760.0	0.00	0.00	7,662.1	-567.1	-563.1	799.2	0.00	0.00	0.00
7,799.9	0.00	0.00	7,702.0	-567.1	-563.1	799.2	0.00	0.00	0.00

HARDLINE 74'S OF ARENS G22-22D BHL

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,721.6	2,707.0	PIERRE SILT		0.00	
3,736.2	3,686.0	PARKMAN		0.00	
4,360.2	4,288.0	SUSSEX		0.00	
5,019.9	4,926.0	SHANNON		0.00	
6,156.9	6,059.0	TEEPEE BUTTES		0.00	
6,852.9	6,755.0	NIOBRARA		0.00	
7,143.9	7,046.0	FT HAYS		0.00	
7,166.9	7,069.0	CODELL		0.00	
7,649.9	7,552.0	J SAND		0.00	