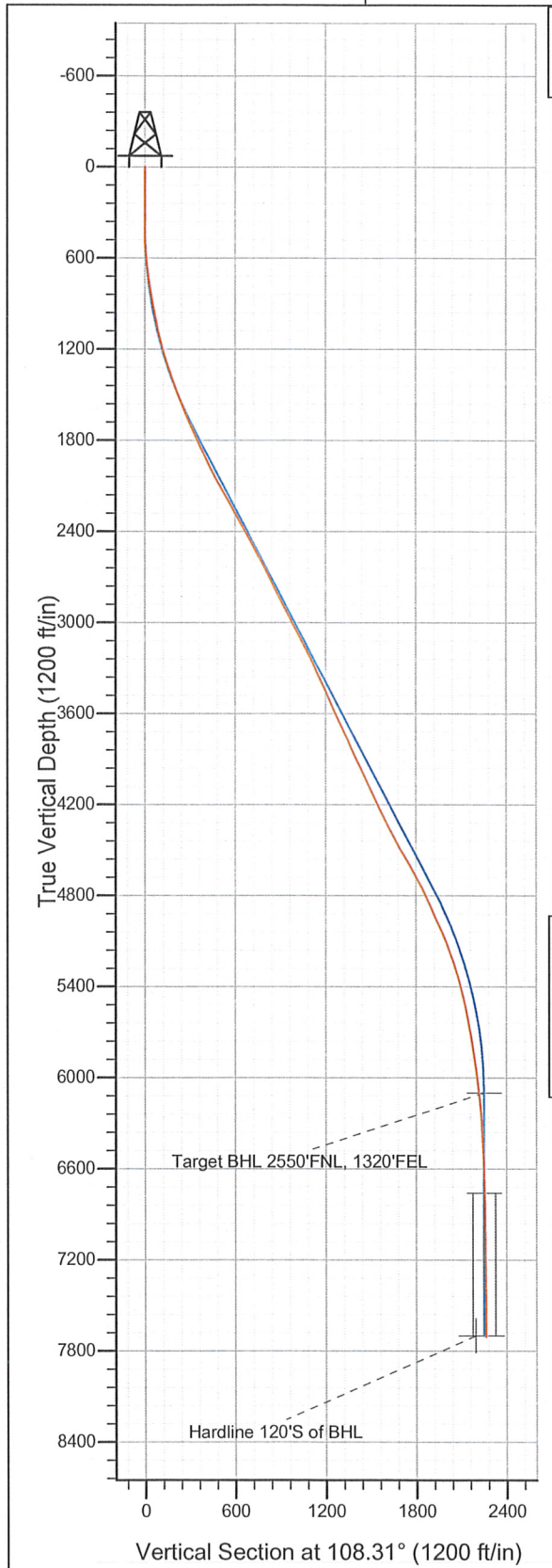
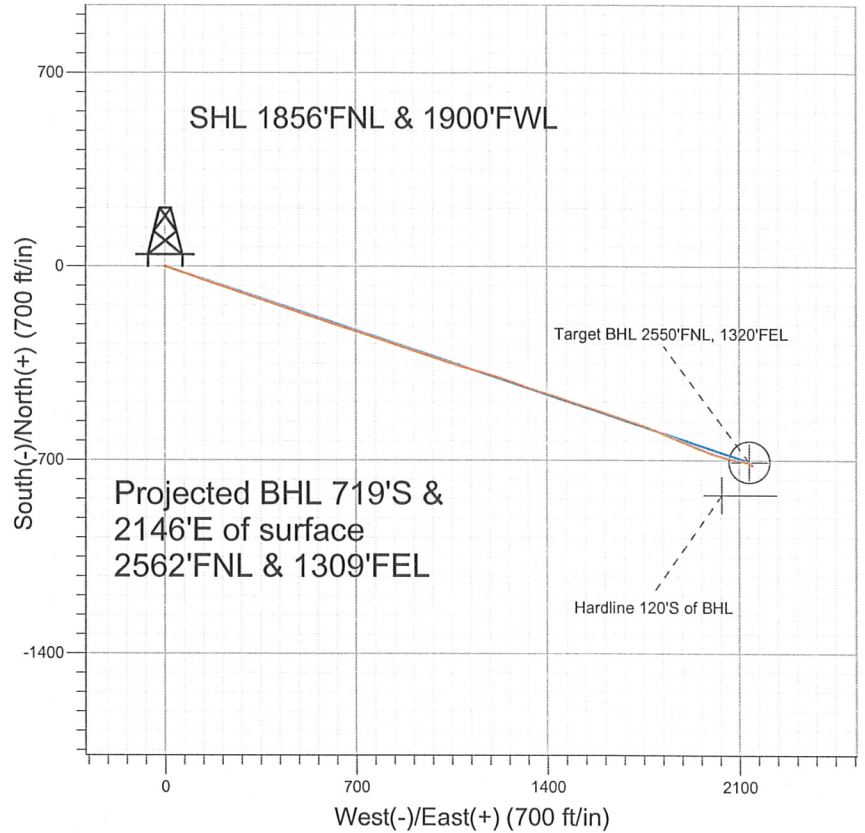


Well Name: **Aristocrat PC H11-22D**  
 Surface Location: Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4772.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1332210.90 3242007.60 40.242070 -104.633070  
 Original Well Elev WELL @ 4785.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- △ Aristocrat PC H11-22D, Wellbore #1, Noble Aristocrat PC H11-22D Plan #2 (8-18-10) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 8178'MD & 7703'TVD @ 2263'VS  
 0.4 deg Inc 220.0 deg AZ

Project: SEC.11-T3N-R65W  
 Site: Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W  
 Well: Aristocrat PC H11-22D  
 Plan: Wellbore #1



**Directional**

**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.11-T3N-R65W**

**Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W**

**Aristocrat PC H11-22D**

**Wellbore #1**

**Survey: Survey #1**

**Standard Survey Report**

**20 June, 2011**



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.11-T3N-R65W  
**Site:** Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W  
**Well:** Aristocrat PC H11-22D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Aristocrat PC H11-22D  
**TVD Reference:** WELL @ 4785.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4785.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

<b>Project</b>	SEC.11-T3N-R65W, Weld County Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

**Site** Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W

<b>Site Position:</b>		<b>Northing:</b>	1,332,210.42 ft	<b>Latitude:</b>	40.242070
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,241,957.35 ft	<b>Longitude:</b>	-104.633250
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.56 °

Well	Aristocrat PC H11-22D					
Well Position	+N/-S	0.0 ft	Northing:	1,332,210.90 ft	Latitude:	40.242070
	+E/-W	0.0 ft	Easting:	3,242,007.60 ft	Longitude:	-104.633070
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,772.0 ft

**Wellbore** Wellbore #1

<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/13/2011	8.78	66.95	53,064

**Design** Wellbore #1

**Audit Notes:**

**Version:** 1.0      **Phase:** ACTUAL      **Tie On Depth:** 0.0

<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	108.31

**Survey Program** Date 6/20/2011

<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
335.0	8,178.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

**Survey**

<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
335.0	0.40	339.70	335.0	1.1	-0.4	-0.7	0.12	0.12	0.00
420.0	0.40	118.90	420.0	1.2	-0.2	-0.6	0.88	0.00	163.77
505.0	2.20	115.70	505.0	0.4	1.5	1.3	2.12	2.12	-3.76
590.0	4.60	108.30	589.8	-1.4	6.2	6.3	2.86	2.82	-8.71
675.0	6.90	109.20	674.4	-4.1	14.2	14.8	2.71	2.71	1.06
705.0	7.60	108.80	704.1	-5.4	17.8	18.6	2.34	2.33	-1.33
773.0	8.70	109.20	771.5	-8.5	26.9	28.3	1.62	1.62	0.59
858.0	9.70	108.80	855.4	-12.9	39.8	41.8	1.18	1.18	-0.47
944.0	10.80	107.60	940.0	-17.7	54.3	57.1	1.30	1.28	-1.40
1,029.0	12.10	108.50	1,023.3	-22.9	70.4	74.0	1.54	1.53	1.06
1,115.0	13.90	109.70	1,107.1	-29.3	88.6	93.4	2.12	2.09	1.40
1,200.0	15.50	108.90	1,189.3	-36.4	109.0	114.9	1.90	1.88	-0.94

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.11-T3N-R65W  
**Site:** Aristocrat PC H11-18D Pad Sec. 11-T3N-R65W  
**Well:** Aristocrat PC H11-22D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Aristocrat PC H11-22D  
**TVD Reference:** WELL @ 4785.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4785.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
1,286.0	17.10	109.20	1,271.8	-44.3	131.8	139.1	1.86	1.86	0.35
1,371.0	18.60	108.90	1,352.7	-52.8	156.4	165.1	1.77	1.76	-0.35
1,457.0	20.10	108.40	1,433.9	-61.9	183.4	193.6	1.75	1.74	-0.58
1,542.0	22.10	108.40	1,513.2	-71.6	212.5	224.2	2.35	2.35	0.00
1,628.0	22.50	108.40	1,592.8	-81.9	243.4	256.8	0.47	0.47	0.00
1,713.0	22.90	108.70	1,671.2	-92.3	274.5	289.6	0.49	0.47	0.35
1,799.0	24.70	109.30	1,749.9	-103.6	307.4	324.3	2.11	2.09	0.70
1,884.0	25.60	108.30	1,826.8	-115.2	341.5	360.5	1.17	1.06	-1.18
1,970.0	25.90	108.20	1,904.3	-126.9	377.0	397.8	0.35	0.35	-0.12
2,055.0	27.00	108.60	1,980.4	-138.9	413.0	435.7	1.31	1.29	0.47
2,141.0	27.70	107.70	2,056.7	-151.2	450.5	475.2	0.95	0.81	-1.05
2,227.0	28.20	108.70	2,132.7	-163.8	488.8	515.5	0.80	0.58	1.16
2,312.0	30.10	109.10	2,206.9	-177.2	528.0	556.9	2.25	2.24	0.47
2,398.0	30.10	108.40	2,281.3	-191.1	568.8	600.0	0.41	0.00	-0.81
2,483.0	29.00	107.50	2,355.3	-204.0	608.7	641.9	1.40	-1.29	-1.06
2,569.0	28.70	107.30	2,430.6	-216.4	648.3	683.4	0.37	-0.35	-0.23
2,654.0	28.60	108.40	2,505.2	-228.9	687.1	724.2	0.63	-0.12	1.29
2,740.0	27.30	108.50	2,581.2	-241.6	725.3	764.5	1.51	-1.51	0.12
2,825.0	26.80	108.90	2,656.9	-254.0	761.9	803.1	0.63	-0.59	0.47
2,911.0	26.50	109.10	2,733.7	-266.6	798.4	841.7	0.36	-0.35	0.23
2,996.0	26.50	108.00	2,809.8	-278.7	834.3	879.6	0.58	0.00	-1.29
3,082.0	27.60	107.60	2,886.4	-290.6	871.6	918.7	1.30	1.28	-0.47
3,167.0	28.50	108.70	2,961.4	-303.1	909.6	958.7	1.22	1.06	1.29
3,253.0	26.50	108.30	3,037.7	-315.7	947.2	998.4	2.34	-2.33	-0.47
3,338.0	27.50	108.10	3,113.4	-327.7	983.9	1,037.0	1.18	1.18	-0.24
3,424.0	27.60	107.90	3,189.7	-340.0	1,021.7	1,076.8	0.16	0.12	-0.23
3,509.0	25.90	109.00	3,265.6	-352.1	1,058.0	1,115.0	2.08	-2.00	1.29
3,595.0	23.60	106.40	3,343.7	-363.1	1,092.3	1,151.0	2.96	-2.67	-3.02
3,680.0	23.60	105.00	3,421.6	-372.3	1,125.0	1,185.0	0.66	0.00	-1.65
3,766.0	24.40	105.10	3,500.1	-381.4	1,158.8	1,220.0	0.93	0.93	0.12
3,851.0	24.50	107.10	3,577.5	-391.1	1,192.6	1,255.1	0.98	0.12	2.35
3,937.0	24.70	108.30	3,655.7	-402.0	1,226.7	1,290.9	0.63	0.23	1.40
4,022.0	25.80	109.70	3,732.6	-413.8	1,261.0	1,327.2	1.47	1.29	1.65
4,108.0	24.30	109.80	3,810.5	-426.1	1,295.3	1,363.6	1.74	-1.74	0.12
4,193.0	25.20	108.30	3,887.7	-437.7	1,328.9	1,399.1	1.29	1.06	-1.76
4,279.0	25.20	107.00	3,965.5	-448.8	1,363.8	1,435.7	0.64	0.00	-1.51
4,365.0	25.20	107.70	4,043.3	-459.8	1,398.7	1,472.4	0.35	0.00	0.81
4,450.0	24.40	107.60	4,120.5	-470.6	1,432.7	1,508.0	0.94	-0.94	-0.12
4,536.0	25.20	109.00	4,198.5	-481.9	1,467.0	1,544.1	1.15	0.93	1.63
4,621.0	27.10	107.90	4,274.8	-493.8	1,502.5	1,581.5	2.31	2.24	-1.29
4,707.0	27.00	107.80	4,351.4	-505.7	1,539.7	1,620.6	0.13	-0.12	-0.12
4,792.0	28.60	108.00	4,426.6	-517.9	1,577.4	1,660.3	1.89	1.88	0.24
4,878.0	29.40	110.20	4,501.8	-531.6	1,616.8	1,702.0	1.55	0.93	2.56
4,963.0	30.40	108.20	4,575.5	-545.5	1,656.8	1,744.3	1.66	1.18	-2.35
5,049.0	29.00	107.10	4,650.2	-558.4	1,697.4	1,786.9	1.75	-1.63	-1.28
5,134.0	27.40	107.70	4,725.1	-570.4	1,735.8	1,827.1	1.91	-1.88	0.71
5,220.0	26.20	111.30	4,801.9	-583.3	1,772.3	1,865.8	2.35	-1.40	4.19
5,305.0	23.40	114.60	4,879.1	-597.2	1,805.1	1,901.4	3.67	-3.29	3.88
5,391.0	24.20	111.80	4,957.7	-610.8	1,837.0	1,935.9	1.61	0.93	-3.26
5,476.0	24.40	111.40	5,035.2	-623.7	1,869.6	1,970.9	0.30	0.24	-0.47
5,562.0	21.20	112.10	5,114.5	-636.1	1,900.5	2,004.1	3.73	-3.72	0.81
5,647.0	20.00	113.60	5,194.1	-647.7	1,928.1	2,033.9	1.54	-1.41	1.76
5,733.0	17.70	111.30	5,275.4	-658.3	1,953.7	2,061.6	2.81	-2.67	-2.67
5,818.0	15.30	110.80	5,356.9	-667.0	1,976.3	2,085.7	2.83	-2.82	-0.59

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.11-T3N-R65W  
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**Wellbore:** Wellbore #1  
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**Local Co-ordinate Reference:** Well Aristocrat PC H11-22D  
**TVD Reference:** WELL @ 4785.0ft (Original Well Elev)  
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**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
5,904.0	14.50	109.20	5,440.0	-674.5	1,997.0	2,107.8	1.05	-0.93	-1.86
5,989.0	12.00	107.70	5,522.8	-680.7	2,015.5	2,127.3	2.97	-2.94	-1.76
6,075.0	10.70	105.90	5,607.1	-685.6	2,031.7	2,144.2	1.57	-1.51	-2.09
6,160.0	9.90	104.50	5,690.7	-689.6	2,046.4	2,159.4	0.99	-0.94	-1.65
6,246.0	9.40	105.10	5,775.5	-693.3	2,060.3	2,173.8	0.59	-0.58	0.70
6,331.0	8.70	106.00	5,859.4	-696.9	2,073.2	2,187.2	0.84	-0.82	1.06
6,417.0	8.00	105.00	5,944.5	-700.2	2,085.2	2,199.6	0.83	-0.81	-1.16
6,503.0	7.70	98.50	6,029.7	-702.6	2,096.7	2,211.3	1.09	-0.35	-7.56
6,577.5	6.47	97.05	6,103.7	-703.9	2,105.8	2,220.3	1.66	-1.65	-1.95
<b>Target BHL 2550'FNL, 1320'FEL</b>									
6,588.0	6.30	96.80	6,114.1	-704.0	2,107.0	2,221.5	1.66	-1.64	-2.38
6,674.0	5.00	99.00	6,199.7	-705.2	2,115.4	2,229.8	1.53	-1.51	2.56
6,759.0	3.80	99.00	6,284.4	-706.2	2,121.8	2,236.2	1.41	-1.41	0.00
6,845.0	2.90	100.30	6,370.3	-707.0	2,126.7	2,241.2	1.05	-1.05	1.51
6,930.0	2.50	99.70	6,455.2	-707.7	2,130.7	2,245.2	0.47	-0.47	-0.71
7,018.0	2.40	103.70	6,543.1	-708.5	2,134.4	2,248.9	0.23	-0.11	4.55
7,101.0	1.40	118.90	6,626.0	-709.4	2,137.0	2,251.6	1.34	-1.20	18.31
7,187.0	1.30	122.20	6,712.0	-710.4	2,138.7	2,253.6	0.15	-0.12	3.84
7,234.9	1.19	122.15	6,759.9	-711.0	2,139.6	2,254.6	0.24	-0.24	-0.11
<b>Target Circle 2550'FNL, 1320'FEL</b>									
7,272.0	1.10	122.10	6,797.0	-711.4	2,140.2	2,255.3	0.24	-0.24	-0.13
7,358.0	1.00	118.60	6,883.0	-712.2	2,141.6	2,256.9	0.14	-0.12	-4.07
7,443.0	0.90	122.40	6,968.0	-712.9	2,142.8	2,258.2	0.14	-0.12	4.47
7,529.0	0.90	122.30	7,054.0	-713.6	2,143.9	2,259.6	0.00	0.00	-0.12
7,614.0	0.80	121.60	7,139.0	-714.3	2,145.0	2,260.8	0.12	-0.12	-0.82
7,700.0	0.60	113.10	7,224.9	-714.8	2,145.9	2,261.8	0.26	-0.23	-9.88
7,785.0	0.60	135.30	7,309.9	-715.2	2,146.6	2,262.7	0.27	0.00	26.12
7,871.0	0.70	191.80	7,395.9	-716.1	2,146.8	2,263.1	0.72	0.12	65.70
7,956.0	0.60	181.60	7,480.9	-717.0	2,146.7	2,263.3	0.18	-0.12	-12.00
8,042.0	0.50	187.30	7,566.9	-717.9	2,146.7	2,263.5	0.13	-0.12	6.63
8,133.0	0.40	214.80	7,657.9	-718.5	2,146.4	2,263.5	0.26	-0.11	30.22
8,176.1	0.40	219.79	7,701.1	-718.7	2,146.3	2,263.4	0.08	0.00	11.56
<b>Hardline 120'S of BHL</b>									
8,178.0	0.40	220.00	7,702.9	-718.8	2,146.2	2,263.4	0.08	0.00	11.54

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_