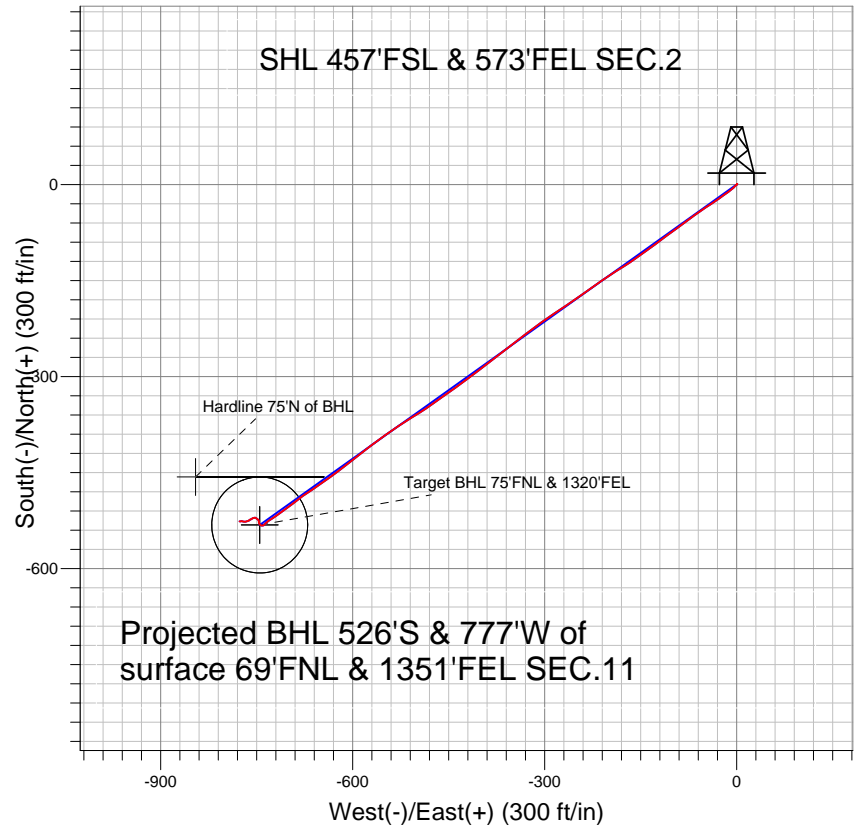
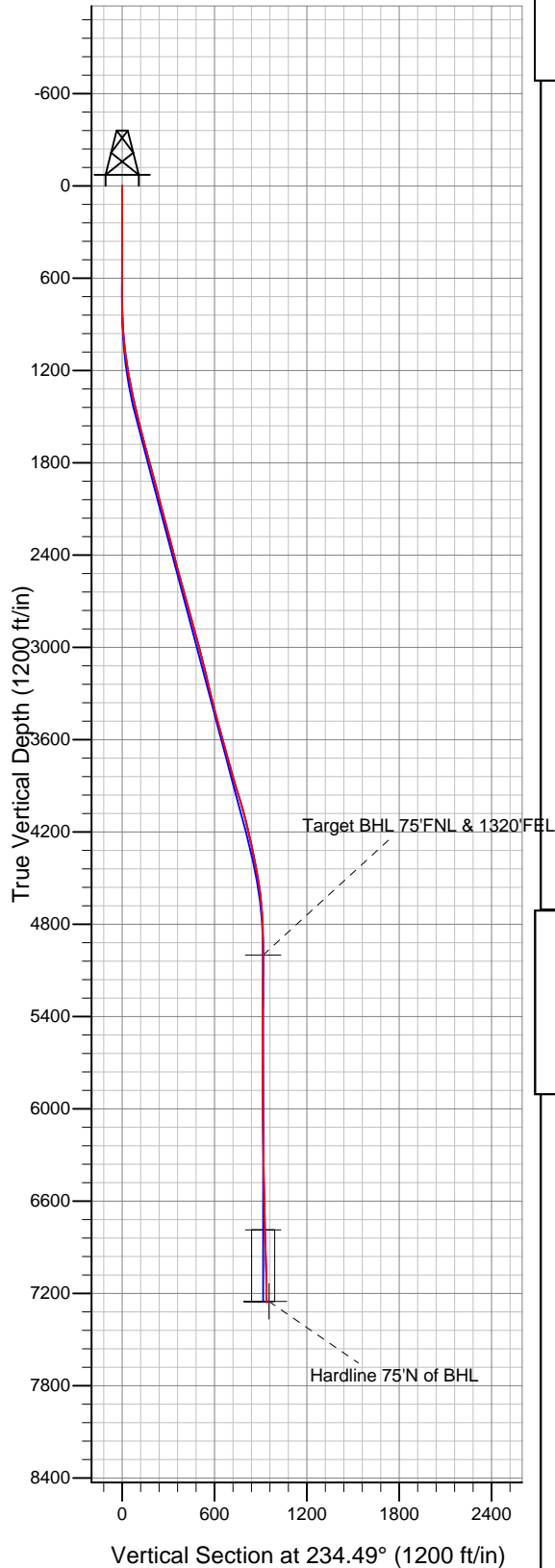


## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- ✕ Aristocrat PC H11-27D, Wellbore #1, Noble Aristocrat PC H11-27D Plan #1 (07-06-10) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7370'MD & 7258'TVD @ 938' VS  
0.7 deg Inc 262.4 deg AZ

Project: SEC.2-T3N-R65W  
Site: Aristocrat PC H11-27D Pad Sec.2-T3N-R65W  
Well: Aristocrat PC H11-27D  
Plan: Wellbore #1



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.2-T3N-R65W**

**Aristocrat PC H11-27D Pad Sec.2-T3N-R65W**

**Aristocrat PC H11-27D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**03 March, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Aristocrat PC H11-27D Pad Sec.2-T3N-R65W
<b>Project:</b>	SEC.2-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4827.0ft (Original Well Elev)
<b>Site:</b>	Aristocrat PC H11-27D Pad Sec.2-T3N-R65W	<b>MD Reference:</b>	WELL @ 4827.0ft (Original Well Elev)
<b>Well:</b>	Aristocrat PC H11-27D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.2-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 H11-27D Pad Sec.2-T3N-R65W			
Site Position:		Northing:	1,334,537.86ft	Latitude:	40° 14' 54.168 N
From:	Lat/Long	Easting:	3,244,874.01ft	Longitude:	104° 37' 21.792 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Aristocrat PC H11-27D					
Well Position	+N-S	0.0 ft	Northing:	1,334,537.85 ft	Latitude:	40° 14' 54.168 N
	+E-W	0.0 ft	Easting:	3,244,874.01 ft	Longitude:	104° 37' 21.792 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,814.0 ft

<b>Wellbore</b>	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	2/23/2011	8.82	66.96	53,100

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	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>	
	5,000.0	0.0	0.0	234.49	

<b>Survey Program</b>	<b>Date</b>	3/3/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
718.0	7,370.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<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	
718.0	0.20	43.10	718.0	0.9	0.9	-1.2	0.03	0.03	0.00	
811.0	1.60	222.50	811.0	0.1	0.1	-0.1	1.94	1.51	192.90	
904.0	3.50	226.50	903.9	-2.8	-2.8	4.0	2.05	2.04	4.30	
998.0	5.00	228.40	997.6	-7.5	-8.0	10.9	1.60	1.60	2.02	
1,091.0	7.20	234.40	1,090.1	-13.6	-15.8	20.7	2.46	2.37	6.45	
1,185.0	9.00	235.80	1,183.2	-21.2	-26.6	34.0	1.93	1.91	1.49	
1,278.0	10.40	236.40	1,274.8	-29.9	-39.6	49.6	1.51	1.51	0.65	
1,372.0	12.10	235.10	1,367.0	-40.3	-54.8	68.0	1.83	1.81	-1.38	
1,465.0	13.50	234.30	1,457.7	-52.2	-71.6	88.6	1.52	1.51	-0.86	
1,558.0	14.90	233.30	1,547.9	-65.6	-90.0	111.4	1.53	1.51	-1.08	
1,651.0	14.80	233.10	1,637.8	-79.9	-109.1	135.2	0.12	-0.11	-0.22	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Aristocrat PC H11-27D Pad Sec.2-T3N-R65W
<b>Project:</b>	SEC.2-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4827.0ft (Original Well Elev)
<b>Site:</b>	Aristocrat PC H11-27D Pad Sec.2-T3N-R65W	<b>MD Reference:</b>	WELL @ 4827.0ft (Original Well Elev)
<b>Well:</b>	Aristocrat PC H11-27D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,745.0	14.80	234.00	1,728.6	-94.2	-128.4	159.2	0.24	0.00	0.96
1,839.0	14.90	234.30	1,819.5	-108.3	-147.9	183.3	0.13	0.11	0.32
1,932.0	14.20	235.70	1,909.5	-121.7	-167.1	206.7	0.84	-0.75	1.51
2,025.0	15.00	238.30	1,999.5	-134.5	-186.7	230.1	1.11	0.86	2.80
2,119.0	14.80	235.60	2,090.3	-147.6	-207.0	254.2	0.77	-0.21	-2.87
2,212.0	14.80	234.70	2,180.3	-161.2	-226.5	278.0	0.25	0.00	-0.97
2,305.0	15.40	235.20	2,270.1	-175.1	-246.3	302.2	0.66	0.65	0.54
2,398.0	14.40	235.80	2,359.9	-188.7	-266.0	326.1	1.09	-1.08	0.65
2,492.0	14.80	235.50	2,450.9	-202.0	-285.6	349.8	0.43	0.43	-0.32
2,585.0	14.50	235.80	2,540.9	-215.3	-305.0	373.3	0.33	-0.32	0.32
2,679.0	15.40	231.70	2,631.7	-229.7	-324.5	397.6	1.48	0.96	-4.36
2,773.0	16.00	232.20	2,722.2	-245.3	-344.6	423.0	0.65	0.64	0.53
2,867.0	15.60	233.00	2,812.6	-260.9	-364.9	448.6	0.48	-0.43	0.85
2,960.0	15.60	232.60	2,902.2	-276.0	-384.8	473.5	0.12	0.00	-0.43
3,054.0	14.40	232.10	2,993.0	-290.9	-404.1	497.9	1.28	-1.28	-0.53
3,147.0	13.90	233.90	3,083.2	-304.5	-422.2	520.6	0.72	-0.54	1.94
3,240.0	13.80	233.50	3,173.5	-317.7	-440.2	542.8	0.15	-0.11	-0.43
3,334.0	13.80	234.40	3,264.8	-330.9	-458.3	565.3	0.23	0.00	0.96
3,428.0	13.80	234.70	3,356.0	-343.9	-476.6	587.7	0.08	0.00	0.32
3,522.0	14.60	238.10	3,447.2	-356.7	-495.8	610.7	1.23	0.85	3.62
3,616.0	15.60	238.20	3,537.9	-369.6	-516.6	635.2	1.06	1.06	0.11
3,710.0	15.40	234.50	3,628.5	-383.5	-537.5	660.3	1.07	-0.21	-3.94
3,806.0	15.50	234.90	3,721.0	-398.3	-558.3	685.8	0.15	0.10	0.42
3,902.0	15.60	232.20	3,813.5	-413.6	-579.0	711.6	0.76	0.10	-2.81
3,997.0	17.00	231.30	3,904.7	-430.1	-600.0	738.2	1.50	1.47	-0.95
4,090.0	16.70	232.80	3,993.7	-446.6	-621.2	765.1	0.57	-0.32	1.61
4,183.0	15.10	234.40	4,083.2	-461.8	-641.7	790.6	1.78	-1.72	1.72
4,276.0	13.10	237.00	4,173.3	-474.6	-660.4	813.2	2.26	-2.15	2.80
4,370.0	13.00	233.50	4,264.9	-486.7	-677.8	834.4	0.85	-0.11	-3.72
4,463.0	11.60	232.90	4,355.8	-498.5	-693.7	854.3	1.51	-1.51	-0.65
4,556.0	10.30	233.00	4,447.1	-509.2	-707.8	871.9	1.40	-1.40	0.11
4,650.0	8.50	236.40	4,539.8	-518.1	-720.3	887.3	2.00	-1.91	3.62
4,744.0	6.30	236.60	4,633.0	-524.8	-730.4	899.4	2.34	-2.34	0.21
4,837.0	4.00	218.70	4,725.7	-530.1	-736.7	907.6	2.99	-2.47	-19.25
4,930.0	2.80	266.20	4,818.5	-532.8	-741.0	912.6	3.17	-1.29	51.08
5,025.0	1.10	324.60	4,913.5	-532.2	-743.8	914.6	2.54	-1.79	61.47
5,111.5	0.82	312.07	5,000.0	-531.1	-744.8	914.7	0.40	-0.32	-14.48
Target BHL 75°FNL & 1320°FEL									
5,119.0	0.80	310.60	5,007.4	-531.0	-744.9	914.8	0.40	-0.29	-19.75
5,212.0	0.90	320.00	5,100.4	-530.0	-745.8	915.0	0.18	0.11	10.11
5,305.0	0.90	1.00	5,193.4	-528.8	-746.3	914.6	0.68	0.00	44.09
5,398.0	0.70	351.20	5,286.4	-527.5	-746.3	913.9	0.26	-0.22	-10.54
5,493.0	0.40	342.20	5,381.4	-526.6	-746.5	913.5	0.33	-0.32	-9.47
5,586.0	0.40	0.60	5,474.4	-525.9	-746.6	913.3	0.14	0.00	19.78
5,680.0	0.30	33.80	5,568.4	-525.4	-746.5	912.8	0.24	-0.11	35.32
5,773.0	0.40	324.30	5,661.4	-524.9	-746.5	912.6	0.44	0.11	-74.73
5,866.0	0.70	315.20	5,754.4	-524.3	-747.1	912.7	0.33	0.32	-9.78
5,959.0	1.00	312.40	5,847.4	-523.3	-748.1	913.0	0.33	0.32	-3.01
6,053.0	1.10	306.70	5,941.4	-522.2	-749.5	913.4	0.15	0.11	-6.06
6,147.0	1.30	299.10	6,035.4	-521.2	-751.1	914.1	0.27	0.21	-8.09
6,240.0	0.60	276.60	6,128.3	-520.6	-752.5	915.0	0.84	-0.75	-24.19
6,334.0	1.00	261.90	6,222.3	-520.7	-753.8	916.0	0.47	0.43	-15.64
6,427.0	0.90	237.30	6,315.3	-521.2	-755.2	917.5	0.45	-0.11	-26.45

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Site Aristocrat PC H11-27D Pad Sec.2-T3N-R65W
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<b>Well:</b>	Aristocrat PC H11-27D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
6,520.0	1.70	246.30	6,408.3	-522.1	-757.1	919.6	0.89	0.86	9.68
6,613.0	0.50	246.90	6,501.3	-522.8	-758.8	921.3	1.29	-1.29	0.65
6,706.0	1.50	238.10	6,594.3	-523.6	-760.2	922.9	1.08	1.08	-9.46
6,800.0	0.40	212.70	6,688.2	-524.6	-761.4	924.5	1.23	-1.17	-27.02
6,894.0	2.40	247.60	6,782.2	-525.6	-763.4	926.7	2.22	2.13	37.13
6,898.1	2.41	248.24	6,786.3	-525.7	-763.5	926.9	0.67	0.14	15.66
<b>Target Circle 75'FNL, 1320'FEL</b>									
6,987.0	2.60	261.20	6,875.1	-526.7	-767.3	930.5	0.67	0.22	14.58
7,081.0	2.10	287.30	6,969.1	-526.5	-771.0	933.4	1.24	-0.53	27.77
7,175.0	1.30	271.90	7,063.0	-525.9	-773.7	935.3	0.97	-0.85	-16.38
7,268.0	0.70	252.50	7,156.0	-526.1	-775.3	936.7	0.73	-0.65	-20.86
7,323.0	0.70	262.40	7,211.0	-526.2	-776.0	937.3	0.22	0.00	18.00
7,364.7	0.70	262.40	7,252.7	-526.3	-776.5	937.7	0.00	0.00	0.00
<b>Hardline 75'N of BHL</b>									
7,370.0	0.70	262.40	7,258.0	-526.3	-776.5	937.8	0.00	0.00	0.00

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