

Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: **Jessica LC27-775**

Surface Location: Jessica LC34-04-A Pad Sec.34-T9N-R59W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

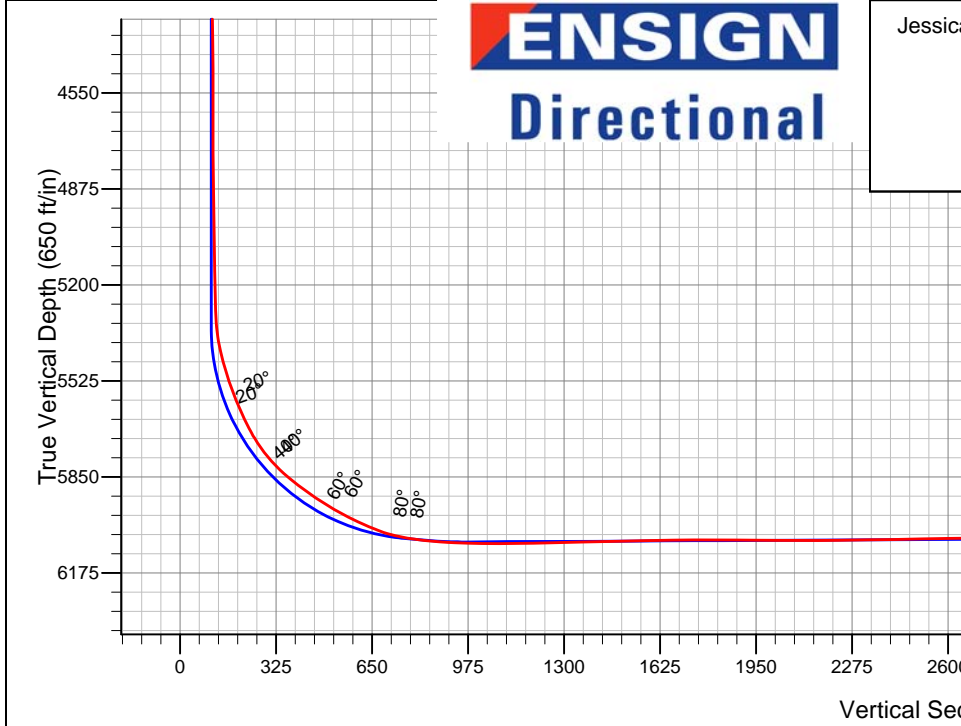
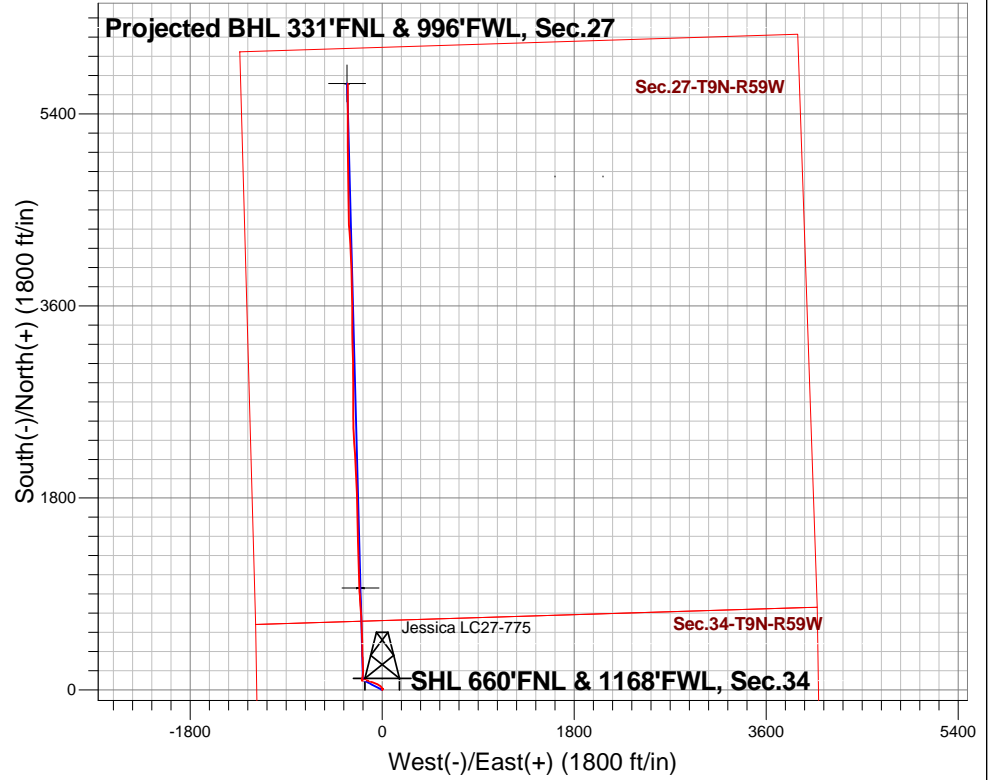
Ground Elevation: 4829.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1506020.37	3424405.22	40.712360	-103.969030	

H&P 326 RKB - 30' WELL @ 4859.0ft (H&P 326 RKB - 30')

FINAL SURVEY

Projected Bottom Hole Location
 11325'MD 6040'TVD 5685'N & 322'W of SHL
 91.82 degree Incl @ 359.73 degree AZM



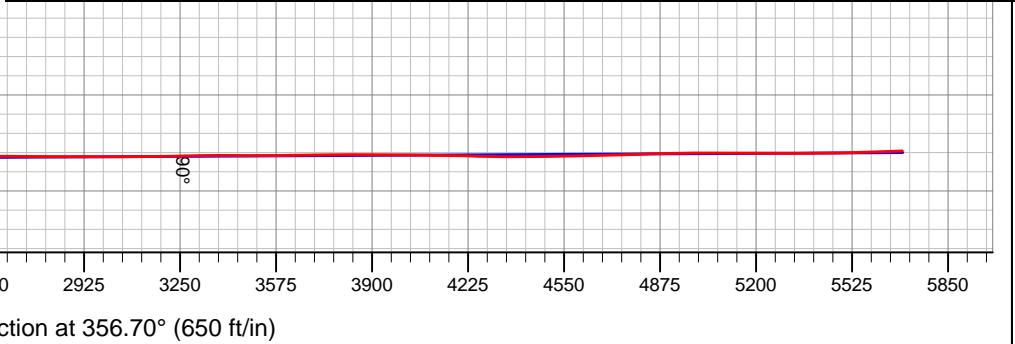
Jessica LC34-04-A Pad Sec.34-T9N-R59W
 Jessica LC27-775
 Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- ✕ Jessica LC27-775, Wellbore #1, Plan C - Rev 0 V0
- Wellbore #1





Noble Energy Inc.- Weld County, CO (Grid North)

SEC.34-T9N-R59W

Jessica LC34-04-A Pad Sec.34-T9N-R59W

Jessica LC27-775

Wellbore #1

Design: Wellbore #1

05-123-40640

Final Survey

20 April, 2015

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Jessica LC27-775
Project:	SEC.34-T9N-R59W	TVD Reference:	WELL @ 4859.0ft (H&P 326 RKB - 30')
Site:	Jessica LC34-04-A Pad Sec.34-T9N-R59W	MD Reference:	WELL @ 4859.0ft (H&P 326 RKB - 30')
Well:	Jessica LC27-775	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Project	SEC.34-T9N-R59W, Weld County, CO		
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	Jessica LC34-04-A Pad Sec.34-T9N-R59W				
Site Position:		Northing:	1,506,020.39ft	Latitude:	40.712360
From:	Lat/Long	Easting:	3,424,405.22ft	Longitude:	-103.969030
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.99 °

Well	Jessica LC27-775					
Well Position	+N/-S	0.0 ft	Northing:	1,506,020.37 ft	Latitude:	40.712360
	+E/-W	0.0 ft	Easting:	3,424,405.22 ft	Longitude:	-103.969030
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,829.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/24/2015	7.94	67.29	52,976

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	356.70	

Survey Program	Date	4/20/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
264.0	615.0	Survey #1 (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
825.0	6,379.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard	
6,555.0	11,325.0	Survey #3 (Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00
264.0	1.00	338.45	264.0	2.1	-0.8	2.2	0.38		
615.0	0.20	91.25	615.0	5.0	-1.4	5.0	0.31		
825.0	0.79	76.56	825.0	5.3	0.4	5.3	0.29		
917.0	0.84	90.45	917.0	5.4	1.7	5.3	0.22		
1,011.0	0.79	98.62	1,010.9	5.3	3.0	5.2	0.13		
1,103.0	1.00	59.20	1,102.9	5.7	4.4	5.4	0.69		
1,288.0	0.26	88.51	1,287.9	6.5	6.2	6.1	0.42		
1,381.0	0.40	132.11	1,380.9	6.3	6.6	5.9	0.30		
1,473.0	0.17	359.66	1,472.9	6.2	6.8	5.8	0.58		

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Well:	Jessica LC27-775	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
1,566.0	0.62	24.18	1,565.9	6.8	7.1	6.4	0.51
1,659.0	0.62	86.32	1,658.9	7.3	7.8	6.8	0.69
1,845.0	0.44	104.60	1,844.9	7.2	9.5	6.6	0.13
1,937.0	0.13	76.03	1,936.9	7.1	9.9	6.5	0.36
2,030.0	1.50	302.09	2,029.9	7.8	9.0	7.3	1.71
2,122.0	3.87	314.92	2,121.8	10.6	5.8	10.3	2.64
2,311.0	5.93	323.18	2,310.1	22.9	-4.6	23.2	1.15
2,406.0	8.31	314.66	2,404.3	31.7	-12.4	32.4	2.73
2,501.0	9.17	305.25	2,498.2	40.9	-23.5	42.2	1.75
2,595.0	11.60	297.69	2,590.7	49.6	-38.0	51.7	2.96
2,690.0	11.96	290.92	2,683.7	57.6	-55.6	60.7	1.50
2,784.0	11.96	291.98	2,775.7	64.7	-73.8	68.8	0.23
2,879.0	11.74	290.75	2,868.6	71.8	-91.9	77.0	0.35
2,974.0	11.43	290.75	2,961.7	78.6	-109.8	84.8	0.33
3,068.0	11.30	289.34	3,053.9	84.9	-127.2	92.1	0.33
3,163.0	9.58	283.19	3,147.3	89.8	-143.7	97.9	2.15
3,258.0	8.13	274.58	3,241.2	92.1	-158.1	101.1	2.06
3,352.0	5.93	261.92	3,334.5	92.0	-169.5	101.6	2.85
3,446.0	4.18	253.84	3,428.1	90.3	-177.6	100.4	2.01
3,540.0	1.32	243.73	3,522.0	88.9	-181.9	99.2	3.07
3,635.0	1.01	236.78	3,617.0	88.0	-183.5	98.4	0.36
3,730.0	2.15	275.72	3,711.9	87.7	-186.0	98.3	1.58
3,919.0	1.54	7.21	3,900.8	90.6	-189.2	101.3	1.42
4,108.0	1.19	333.20	4,089.8	94.8	-189.8	105.6	0.46
4,202.0	0.97	335.49	4,183.8	96.4	-190.6	107.2	0.24
4,391.0	0.97	8.44	4,372.8	99.5	-191.0	110.3	0.29
4,486.0	0.70	93.87	4,467.7	100.2	-190.3	111.0	1.21
4,580.0	0.57	90.36	4,561.7	100.2	-189.2	110.9	0.14
4,675.0	0.04	54.76	4,656.7	100.2	-188.7	110.9	0.57
4,863.0	1.06	40.88	4,844.7	101.5	-187.6	112.2	0.54
5,052.0	1.19	20.13	5,033.7	104.7	-185.7	115.2	0.22
5,147.0	0.97	9.41	5,128.7	106.4	-185.3	116.9	0.31
5,242.0	0.79	0.89	5,223.7	107.9	-185.1	118.4	0.23
5,336.0	3.17	14.07	5,317.6	111.0	-184.5	121.5	2.56
5,431.0	12.00	2.03	5,411.7	123.5	-183.5	133.9	9.39
5,525.0	17.71	8.44	5,502.5	147.4	-181.0	157.6	6.31
5,619.0	22.24	359.22	5,590.9	179.4	-179.2	189.4	5.86
5,714.0	26.81	359.04	5,677.3	218.8	-179.8	228.8	4.81
5,809.0	36.13	356.49	5,758.2	268.3	-181.9	278.3	9.91
5,904.0	46.99	358.95	5,829.2	331.2	-184.2	341.2	11.56
5,998.0	53.89	358.95	5,889.0	403.6	-185.6	413.6	7.34
6,093.0	57.80	358.86	5,942.3	482.2	-187.1	492.1	4.12
6,187.0	63.82	357.63	5,988.2	564.1	-189.6	574.1	6.51
6,282.0	67.68	356.93	6,027.2	650.6	-193.7	660.7	4.12
6,379.0	79.96	355.52	6,054.2	743.4	-199.9	753.7	12.74

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Site:	Jessica LC34-04-A Pad Sec.34-T9N-R59W	MD Reference:	WELL @ 4859.0ft (H&P 326 RKB - 30')
Well:	Jessica LC27-775	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6,555.0	87.78	357.11	6,072.9	917.9	-211.1	928.5	4.53
6,648.0	89.19	357.55	6,075.4	1,010.8	-215.4	1,021.5	1.59
6,740.0	90.46	358.60	6,075.7	1,102.7	-218.5	1,113.5	1.79
6,925.0	91.60	358.51	6,072.4	1,287.6	-223.2	1,298.3	0.62
7,018.0	91.52	358.95	6,069.8	1,380.6	-225.2	1,391.3	0.48
7,111.0	91.12	357.81	6,067.7	1,473.5	-227.9	1,484.2	1.30
7,203.0	91.34	358.95	6,065.7	1,565.4	-230.5	1,576.1	1.26
7,297.0	91.21	358.86	6,063.6	1,659.4	-232.3	1,670.0	0.17
7,389.0	89.58	358.43	6,063.0	1,751.4	-234.4	1,762.0	1.83
7,482.0	89.58	357.99	6,063.7	1,844.3	-237.3	1,854.9	0.47
7,574.0	89.67	357.72	6,064.3	1,936.3	-240.8	1,946.9	0.31
7,668.0	89.76	357.19	6,064.7	2,030.2	-245.0	2,040.9	0.57
7,763.0	90.07	356.84	6,064.9	2,125.0	-249.9	2,135.9	0.49
7,857.0	90.55	356.58	6,064.4	2,218.9	-255.3	2,229.9	0.58
7,952.0	90.64	356.32	6,063.4	2,313.7	-261.2	2,324.9	0.29
8,046.0	91.17	357.19	6,061.9	2,407.5	-266.5	2,418.9	1.08
8,142.0	91.43	359.13	6,059.7	2,503.4	-269.6	2,514.8	2.04
8,235.0	90.86	0.01	6,057.9	2,596.4	-270.3	2,607.7	1.13
8,330.0	89.23	359.74	6,057.8	2,691.4	-270.5	2,702.5	1.74
8,425.0	89.53	359.83	6,058.8	2,786.4	-270.8	2,797.4	0.33
8,519.0	89.80	359.65	6,059.4	2,880.4	-271.3	2,891.3	0.35
8,614.0	90.10	359.30	6,059.4	2,975.4	-272.1	2,986.1	0.49
8,708.0	90.46	359.03	6,059.0	3,069.4	-273.5	3,080.1	0.48
8,803.0	90.81	358.77	6,057.9	3,164.4	-275.3	3,175.0	0.46
8,898.0	91.12	358.33	6,056.3	3,259.3	-277.7	3,269.9	0.57
8,992.0	90.63	359.03	6,054.9	3,353.3	-279.9	3,363.8	0.91
9,086.0	89.62	359.92	6,054.7	3,447.3	-280.8	3,457.7	1.43
9,180.0	89.93	359.74	6,055.1	3,541.3	-281.0	3,551.6	0.38
9,275.0	90.86	359.56	6,054.4	3,636.3	-281.6	3,646.5	1.00
9,369.0	91.30	359.60	6,052.6	3,730.3	-282.3	3,740.3	0.47
9,464.0	89.71	358.33	6,051.8	3,825.2	-284.0	3,835.2	2.14
9,559.0	89.50	358.20	6,052.4	3,920.2	-286.9	3,930.2	0.26
9,653.0	89.31	357.54	6,053.4	4,014.1	-290.4	4,024.2	0.73
9,747.0	89.30	357.40	6,054.6	4,108.0	-294.5	4,118.2	0.15
9,841.0	88.70	356.57	6,056.2	4,201.9	-299.5	4,212.1	1.09
9,935.0	88.57	355.79	6,058.4	4,295.6	-305.8	4,306.1	0.84
10,030.0	90.50	357.46	6,059.2	4,390.5	-311.3	4,401.1	2.69
10,124.0	90.81	359.39	6,058.1	4,484.4	-313.9	4,495.1	2.08
10,219.0	91.30	359.57	6,056.4	4,579.4	-314.8	4,589.9	0.55
10,313.0	91.25	359.04	6,054.3	4,673.4	-315.9	4,683.8	0.57
10,404.0	91.52	358.95	6,052.1	4,764.3	-317.5	4,774.7	0.31
10,502.0	91.87	358.78	6,049.2	4,862.3	-319.5	4,872.6	0.40
10,596.0	91.25	0.01	6,046.6	4,956.2	-320.5	4,966.4	1.46
10,690.0	89.49	0.01	6,046.0	5,050.2	-320.4	5,060.3	1.87

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Well:	Jessica LC27-775	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
10,785.0	89.58	359.83	6,046.8	5,145.2	-320.6	5,155.1	0.21
10,879.0	89.71	359.92	6,047.4	5,239.2	-320.8	5,249.0	0.17
10,973.0	90.19	359.92	6,047.5	5,333.2	-320.9	5,342.8	0.51
11,068.0	90.47	359.68	6,046.9	5,428.2	-321.2	5,437.7	0.39
11,162.0	91.79	359.90	6,045.1	5,522.2	-321.6	5,531.5	1.42
11,265.0	91.82	359.73	6,041.8	5,625.1	-321.9	5,634.3	0.17
11,325.0	91.82	359.73	6,039.9	5,685.1	-322.2	5,694.2	0.00
Jessica LC27-775 BHL 330'FNL & 990'FWL							

Checked By: _____ Approved By: _____ Date: _____