

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

Well Name: **Resolute E25-63-1HN**

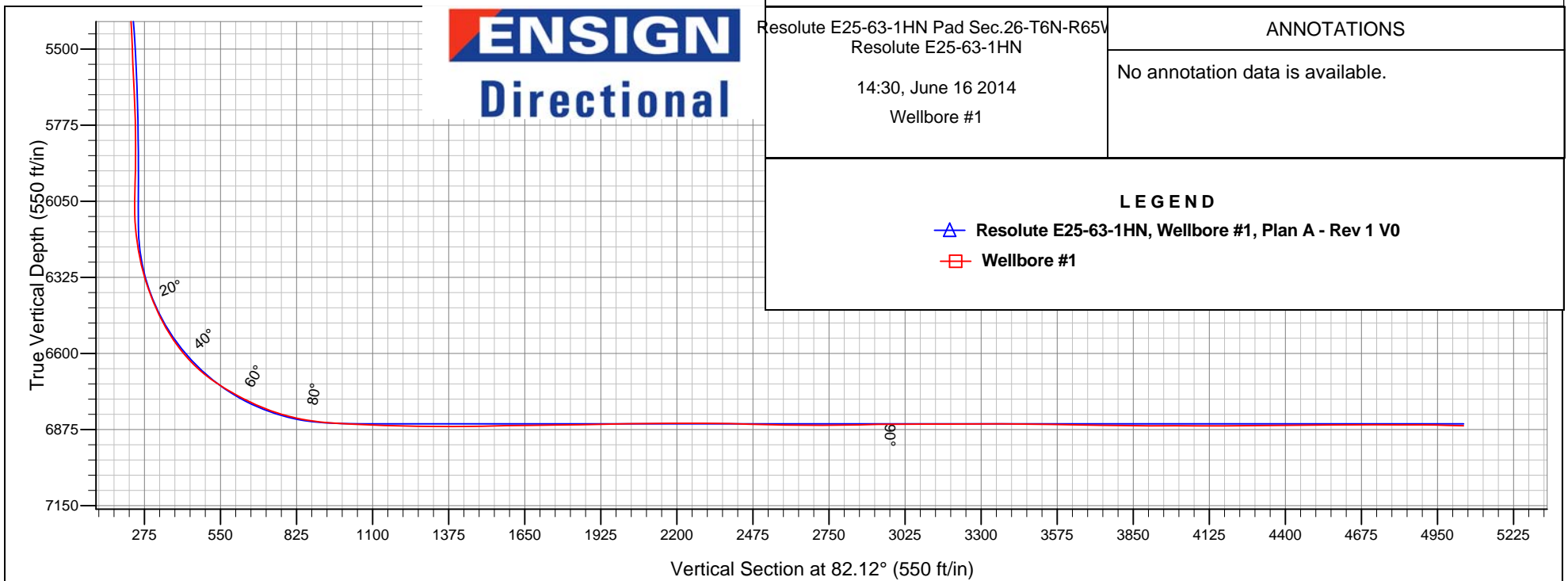
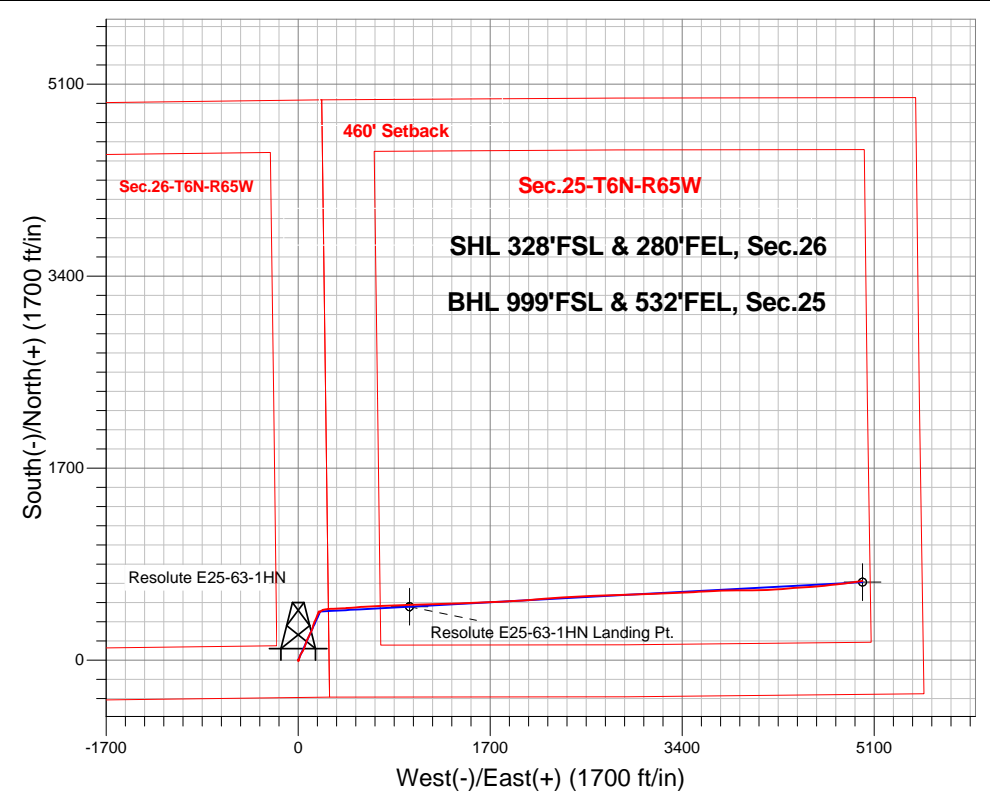
Surface Location: Resolute E25-63-1HN Pad Sec.26-T6N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4676.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1408200.65	3244415.19	40.450590	-104.621750	
Precision 828 RKB - 16' WELL @ 4692.0ft (Precision 828 RKB - 16')						

FINAL SURVEY

Projected Bottom Hole Location
11387'MD 6861'TVD 701'N & 4995'E of SHL
88.0 degree Incl @ 81.5 degree AZM





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

Sec.26-T6N-R65W

Resolute E25-63-1HN Pad Sec.26-T6N-R65W

Resolute E25-63-1HN

Wellbore #1

Design: Wellbore #1

Standard Survey Report

16 June, 2014

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Resolute E25-63-1HN
Project:	Sec.26-T6N-R65W	TVD Reference:	WELL @ 4692.0ft (Precision 828 RKB - 16')
Site:	Resolute E25-63-1HN Pad Sec.26-T6N-R65W	MD Reference:	WELL @ 4692.0ft (Precision 828 RKB - 16')
Well:	Resolute E25-63-1HN	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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,253.0	1.10	204.90	1,252.9	-1.3	1.4	1.2	0.21	0.21	-1.26
1,348.0	1.00	186.00	1,347.9	-2.9	0.9	0.5	0.38	-0.11	-19.89
1,442.0	1.00	164.90	1,441.9	-4.5	1.1	0.4	0.39	0.00	-22.45
1,537.0	1.40	165.80	1,536.9	-6.5	1.6	0.7	0.42	0.42	0.95
1,632.0	0.90	52.00	1,631.9	-7.1	2.4	1.4	2.05	-0.53	-119.79
1,727.0	2.70	32.50	1,726.8	-4.8	4.2	3.5	1.97	1.89	-20.53
1,822.0	4.50	12.70	1,821.6	0.7	6.3	6.3	2.28	1.89	-20.84
1,917.0	5.70	14.10	1,916.3	9.0	8.2	9.4	1.27	1.26	1.47
2,011.0	5.10	13.20	2,009.8	17.5	10.3	12.6	0.64	-0.64	-0.96
2,104.0	5.90	15.20	2,102.4	26.2	12.5	16.0	0.88	0.86	2.15
2,194.0	6.80	21.40	2,191.9	35.6	15.7	20.4	1.26	1.00	6.89
2,284.0	6.10	19.00	2,281.3	45.1	19.2	25.2	0.83	-0.78	-2.67
2,374.0	5.60	29.60	2,370.8	53.4	22.9	30.0	1.32	-0.56	11.78
2,464.0	5.30	32.10	2,460.4	60.8	27.3	35.3	0.43	-0.33	2.78
2,554.0	6.50	37.40	2,549.9	68.3	32.6	41.6	1.46	1.33	5.89
2,643.0	7.20	30.90	2,638.3	77.1	38.5	48.7	1.17	0.79	-7.30
2,733.0	7.20	31.30	2,727.6	86.8	44.3	55.8	0.06	0.00	0.44
2,823.0	7.90	22.00	2,816.8	97.3	49.6	62.4	1.56	0.78	-10.33
2,913.0	7.10	19.40	2,906.0	108.3	53.7	68.1	0.97	-0.89	-2.89
3,003.0	8.30	20.10	2,995.2	119.7	57.8	73.7	1.34	1.33	0.78
3,092.0	7.10	15.40	3,083.4	131.0	61.5	78.9	1.52	-1.35	-5.28
3,182.0	7.30	22.60	3,172.7	141.6	65.2	84.0	1.03	0.22	8.00
3,272.0	7.10	19.50	3,262.0	152.2	69.2	89.4	0.49	-0.22	-3.44
3,362.0	7.10	21.60	3,351.3	162.6	73.1	94.7	0.29	0.00	2.33
3,452.0	6.70	21.90	3,440.7	172.6	77.1	100.0	0.45	-0.44	0.33
3,542.0	7.00	20.20	3,530.0	182.6	81.0	105.2	0.40	0.33	-1.89
3,632.0	8.50	25.00	3,619.2	193.8	85.7	111.4	1.81	1.67	5.33
3,722.0	9.60	26.60	3,708.1	206.6	91.9	119.3	1.25	1.22	1.78
3,811.0	9.50	29.10	3,795.8	219.6	98.7	127.9	0.48	-0.11	2.81
3,901.0	8.40	23.60	3,884.8	232.1	105.0	135.8	1.55	-1.22	-6.11
3,991.0	7.80	23.00	3,973.9	243.8	110.0	142.4	0.67	-0.67	-0.67
4,081.0	7.30	27.30	4,063.1	254.5	115.0	148.8	0.84	-0.56	4.78
4,171.0	6.60	27.10	4,152.4	264.2	120.0	155.1	0.78	-0.78	-0.22
4,261.0	6.00	21.90	4,241.9	273.1	124.1	160.4	0.92	-0.67	-5.78
4,351.0	5.90	14.10	4,331.4	282.0	127.0	164.4	0.90	-0.11	-8.67
4,440.0	6.90	12.40	4,419.8	291.6	129.3	168.0	1.14	1.12	-1.91
4,530.0	7.60	13.40	4,509.1	302.7	131.8	172.0	0.79	0.78	1.11
4,620.0	8.40	17.50	4,598.2	314.8	135.1	177.0	1.09	0.89	4.56
4,710.0	8.70	19.80	4,687.2	327.4	139.4	183.0	0.51	0.33	2.56
4,799.0	8.00	29.40	4,775.3	339.2	144.8	189.9	1.75	-0.79	10.79
4,889.0	6.20	27.50	4,864.6	348.9	150.1	196.5	2.02	-2.00	-2.11
4,979.0	7.80	24.90	4,953.9	358.8	154.9	202.6	1.81	1.78	-2.89
5,069.0	6.30	21.40	5,043.2	368.9	159.3	208.3	1.73	-1.67	-3.89
5,159.0	5.90	19.90	5,132.7	377.9	162.6	212.9	0.48	-0.44	-1.67
5,249.0	5.60	18.60	5,222.3	386.4	165.6	217.0	0.36	-0.33	-1.44
5,338.0	5.80	22.80	5,310.8	394.6	168.7	221.2	0.52	0.22	4.72
5,428.0	6.80	27.70	5,400.3	403.6	173.0	226.6	1.26	1.11	5.44
5,518.0	4.50	17.30	5,489.9	411.6	176.5	231.2	2.79	-2.56	-11.56
5,608.0	6.60	16.00	5,579.4	420.0	179.0	234.8	2.34	2.33	-1.44
5,698.0	4.30	25.90	5,669.0	428.0	181.9	238.8	2.75	-2.56	11.00
5,787.0	2.20	45.20	5,757.9	432.2	184.5	242.0	2.63	-2.36	21.69
5,877.0	1.30	175.30	5,847.9	432.4	185.9	243.4	3.55	-1.00	144.56
5,967.0	2.00	194.30	5,937.8	429.9	185.6	242.7	0.98	0.78	21.11
6,057.0	3.30	209.40	6,027.7	426.1	183.9	240.5	1.63	1.44	16.78

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Site:	Resolute E25-63-1HN Pad Sec.26-T6N-R65W	MD Reference:	WELL @ 4692.0ft (Precision 828 RKB - 16')
Well:	Resolute E25-63-1HN	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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,102.0	2.10	168.00	6,072.7	424.2	183.4	239.8	4.92	-2.67	-92.00
6,146.0	3.20	109.40	6,116.6	423.0	184.8	241.0	6.28	2.50	-133.18
6,191.0	6.40	64.30	6,161.5	423.6	188.2	244.5	10.49	7.11	-100.22
6,236.0	10.40	49.20	6,206.0	427.4	193.5	250.3	10.08	8.89	-33.56
6,281.0	12.80	51.90	6,250.1	433.1	200.5	258.0	5.47	5.33	6.00
6,326.0	14.90	60.00	6,293.8	439.1	209.5	267.7	6.34	4.67	18.00
6,371.0	17.80	69.40	6,337.0	444.4	220.9	279.7	8.70	6.44	20.89
6,416.0	20.40	78.00	6,379.5	448.4	235.0	294.3	8.50	5.78	19.11
6,461.0	23.20	81.50	6,421.3	451.4	251.5	311.0	6.86	6.22	7.78
6,506.0	25.60	87.00	6,462.2	453.2	270.0	329.5	7.34	5.33	12.22
6,551.0	29.30	87.50	6,502.2	454.2	290.7	350.2	8.24	8.22	1.11
6,596.0	33.10	86.80	6,540.7	455.4	314.0	373.4	8.48	8.44	-1.56
6,640.0	37.20	87.70	6,576.6	456.6	339.3	398.6	9.39	9.32	2.05
6,685.0	41.40	88.00	6,611.4	457.6	367.7	427.0	9.34	9.33	0.67
6,730.0	46.00	87.40	6,644.0	458.9	398.8	457.9	10.26	10.22	-1.33
6,775.0	51.30	85.70	6,673.7	460.9	432.5	491.6	12.11	11.78	-3.78
6,820.0	55.40	85.30	6,700.5	463.8	468.5	527.6	9.14	9.11	-0.89
6,865.0	58.60	84.90	6,725.0	467.0	506.1	565.3	7.15	7.11	-0.89
6,910.0	61.20	85.20	6,747.6	470.3	544.9	604.2	5.81	5.78	0.67
6,955.0	63.10	86.80	6,768.6	473.1	584.5	643.9	5.26	4.22	3.56
7,000.0	66.60	87.40	6,787.8	475.2	625.2	684.4	7.87	7.78	1.33
7,045.0	69.90	87.50	6,804.4	477.0	667.0	726.0	7.34	7.33	0.22
7,090.0	73.20	87.50	6,818.7	478.9	709.6	768.5	7.33	7.33	0.00
7,135.0	76.60	88.20	6,830.4	480.5	753.0	811.8	7.70	7.56	1.56
7,180.0	80.20	87.60	6,839.4	482.1	797.1	855.6	8.11	8.00	-1.33
7,219.0	82.40	88.30	6,845.3	483.5	835.6	894.0	5.91	5.64	1.79
7,296.0	87.60	86.60	6,852.0	486.9	912.2	970.3	7.10	6.75	-2.21
7,369.2	87.06	87.85	6,855.5	490.5	985.2	1,043.1	1.86	-0.74	1.70
Resolute E25-63-1HN Landing Pt.									
7,390.0	86.90	88.20	6,856.6	491.2	1,006.0	1,063.8	1.86	-0.74	1.70
7,465.0	88.10	88.20	6,859.8	493.5	1,080.9	1,138.3	1.60	1.60	0.00
7,555.0	89.00	88.20	6,862.1	496.4	1,170.8	1,227.8	1.00	1.00	0.00
7,645.0	89.50	88.30	6,863.3	499.1	1,260.7	1,317.2	0.57	0.56	0.11
7,735.0	90.10	89.10	6,863.6	501.2	1,350.7	1,406.6	1.11	0.67	0.89
7,825.0	91.20	89.00	6,862.6	502.7	1,440.7	1,496.0	1.23	1.22	-0.11
7,914.0	91.10	87.90	6,860.8	505.1	1,529.6	1,584.4	1.24	-0.11	-1.24
8,004.0	90.30	87.10	6,859.7	509.0	1,619.6	1,674.0	1.26	-0.89	-0.89
8,094.0	91.20	87.40	6,858.5	513.3	1,709.4	1,763.7	1.05	1.00	0.33
8,184.0	90.60	87.40	6,857.1	517.4	1,799.3	1,853.3	0.67	-0.67	0.00
8,274.0	91.00	86.50	6,855.8	522.2	1,889.2	1,942.9	1.09	0.44	-1.00
8,364.0	91.60	86.00	6,853.8	528.1	1,979.0	2,032.7	0.87	0.67	-0.56
8,454.0	89.60	86.00	6,852.9	534.3	2,068.8	2,122.5	2.22	-2.22	0.00
8,543.0	90.90	85.90	6,852.5	540.6	2,157.5	2,211.3	1.46	1.46	-0.11
8,633.0	89.40	86.10	6,852.2	546.9	2,247.3	2,301.0	1.68	-1.67	0.22
8,723.0	88.90	86.40	6,853.6	552.8	2,337.1	2,390.8	0.65	-0.56	0.33
8,813.0	88.40	85.50	6,855.7	559.1	2,426.9	2,480.6	1.14	-0.56	-1.00
8,903.0	88.60	87.30	6,858.0	564.8	2,516.6	2,570.3	2.01	0.22	2.00
8,993.0	89.60	86.80	6,859.5	569.4	2,606.5	2,659.9	1.24	1.11	-0.56
9,083.0	91.00	88.20	6,859.0	573.3	2,696.4	2,749.5	2.20	1.56	1.56
9,172.0	90.80	86.90	6,857.6	577.2	2,785.3	2,838.1	1.48	-0.22	-1.46
9,262.0	90.80	89.70	6,856.3	579.8	2,875.3	2,927.6	3.11	0.00	3.11
9,352.0	90.40	88.60	6,855.4	581.2	2,965.3	3,016.9	1.30	-0.44	-1.22
9,442.0	90.10	88.20	6,855.0	583.7	3,055.2	3,106.4	0.56	-0.33	-0.44

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Survey									
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9,532.0	90.00	87.60	6,854.9	587.0	3,145.2	3,195.9	0.68	-0.11	-0.67
9,622.0	90.30	88.10	6,854.7	590.3	3,235.1	3,285.5	0.65	0.33	0.56
9,711.0	90.00	88.50	6,854.4	593.0	3,324.1	3,373.9	0.56	-0.34	0.45
9,801.0	89.50	87.00	6,854.8	596.5	3,414.0	3,463.5	1.76	-0.56	-1.67
9,891.0	88.70	85.90	6,856.3	602.1	3,503.8	3,553.2	1.51	-0.89	-1.22
9,981.0	89.20	87.40	6,857.9	607.3	3,593.6	3,642.9	1.76	0.56	1.67
10,071.0	88.90	86.80	6,859.4	611.9	3,683.5	3,732.6	0.75	-0.33	-0.67
10,161.0	89.60	87.50	6,860.6	616.4	3,773.4	3,822.2	1.10	0.78	0.78
10,251.0	90.00	90.00	6,860.9	618.3	3,863.3	3,911.6	2.81	0.44	2.78
10,341.0	89.70	89.70	6,861.1	618.6	3,953.3	4,000.8	0.47	-0.33	-0.33
10,431.0	89.50	89.40	6,861.7	619.3	4,043.3	4,090.1	0.40	-0.22	-0.33
10,521.0	90.50	87.80	6,861.7	621.5	4,133.3	4,179.5	2.10	1.11	-1.78
10,611.0	90.50	86.70	6,861.0	625.8	4,223.2	4,269.1	1.22	0.00	-1.22
10,701.0	90.80	84.60	6,859.9	632.6	4,312.9	4,358.9	2.36	0.33	-2.33
10,790.0	90.90	85.90	6,858.6	640.0	4,401.6	4,447.8	1.46	0.11	1.46
10,880.0	90.20	87.20	6,857.8	645.4	4,491.4	4,537.5	1.64	-0.78	1.44
10,970.0	90.10	84.60	6,857.5	651.8	4,581.2	4,627.3	2.89	-0.11	-2.89
11,060.0	89.50	84.60	6,857.8	660.3	4,670.8	4,717.2	0.67	-0.67	0.00
11,150.0	90.60	83.30	6,857.8	669.8	4,760.3	4,807.2	1.89	1.22	-1.44
11,240.0	89.50	82.90	6,857.7	680.6	4,849.6	4,897.2	1.30	-1.22	-0.44
11,327.0	88.50	82.10	6,859.2	692.0	4,935.9	4,984.1	1.47	-1.15	-0.92
11,387.0	88.00	81.50	6,861.0	700.5	4,995.2	5,044.1	1.30	-0.83	-1.00
Resolute E25-63-1HN BHL 990'FSL & 535'FEL									

Checked By: _____ Approved By: _____ Date: _____