

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

Well Name: **Rohn State LD10-64-1HN**

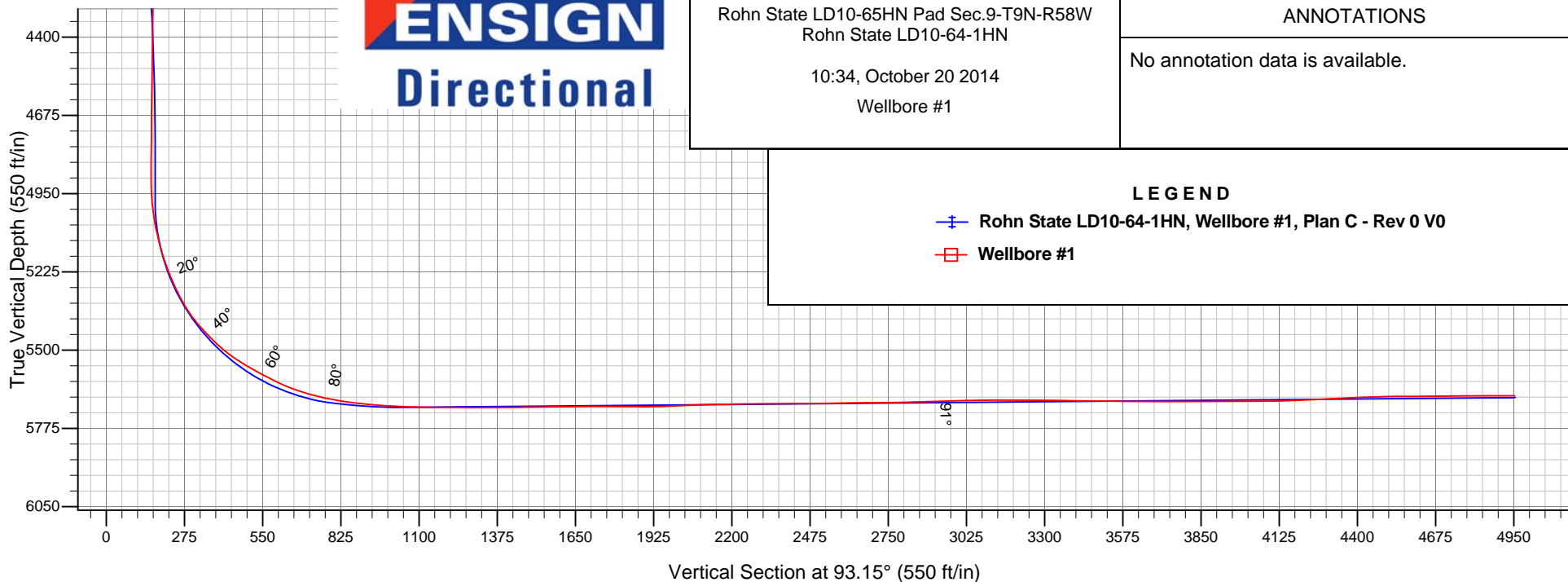
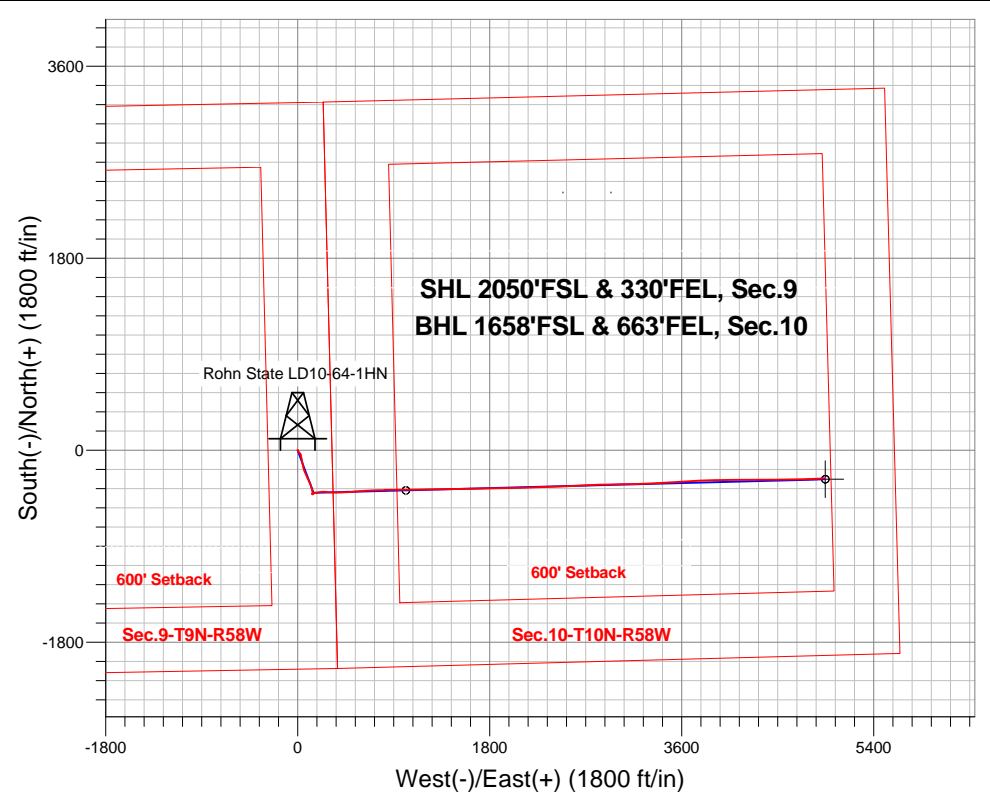
Surface Location: Rohn State LD10-65HN Pad Sec.9-T9N-R58W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4716.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1525442.45	3453972.44	40.764210	-103.861100	
RKB - 16' WELL @ 4732.0ft (RKB - 16')						

## FINAL SURVEY

Projected Bottom Hole Location  
10213'MD 5660'TVD 264'S & 4945'E of SHL  
89.8 degree Incl @ 87.5 degree AZM



Rohn State LD10-65HN Pad Sec.9-T9N-R58W  
Rohn State LD10-64-1HN

10:34, October 20 2014

Wellbore #1

### ANNOTATIONS

No annotation data is available.

### LEGEND

- +— Rohn State LD10-64-1HN, Wellbore #1, Plan C - Rev 0 V0
- Wellbore #1



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

**SEC.9-T9N-R58W**

**Rohn State LD10-65HN Pad Sec.9-T9N-R58W**

**Rohn State LD10-64-1HN**

**Wellbore #1**

**Design: Wellbore #1**

05-123-37622

## **Final Survey**

**20 October, 2014**



<b>Company:</b>	Noble Energy Inc.- Weld County, CO (Grid North)	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-64-1HN
<b>Project:</b>	SEC.9-T9N-R58W	<b>TVD Reference:</b>	WELL @ 4732.0ft (RKB - 16')
<b>Site:</b>	Rohn State LD10-65HN Pad Sec.9-T9N-R58W	<b>MD Reference:</b>	WELL @ 4732.0ft (RKB - 16')
<b>Well:</b>	Rohn State LD10-64-1HN	<b>North Reference:</b>	Grid
<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)
1,912.0	5.70	149.20	1,910.1	-36.5	27.8	29.8	2.74
2,005.0	7.90	173.50	2,002.5	-46.9	30.9	33.4	3.84
2,099.0	9.60	170.10	2,095.4	-61.0	33.0	36.3	1.89
2,191.0	10.70	165.30	2,185.9	-76.8	36.5	40.6	1.51
2,285.0	10.80	169.80	2,278.3	-93.9	40.2	45.3	0.90
2,379.0	12.00	170.60	2,370.4	-112.2	43.4	49.5	1.29
2,471.0	12.60	167.90	2,460.3	-131.5	47.1	54.2	0.90
2,578.0	12.70	166.00	2,564.7	-154.3	52.4	60.8	0.40
2,668.0	12.00	164.00	2,652.6	-172.9	57.3	66.7	0.91
2,757.0	11.20	162.40	2,739.8	-190.0	62.5	72.8	0.97
2,847.0	9.80	161.10	2,828.3	-205.6	67.6	78.8	1.58
2,936.0	9.30	154.50	2,916.1	-219.3	73.2	85.1	1.35
3,026.0	10.30	150.30	3,004.8	-232.8	80.3	93.0	1.37
3,115.0	11.50	153.20	3,092.1	-247.6	88.2	101.7	1.48
3,205.0	12.60	158.00	3,180.2	-264.8	96.0	110.4	1.65
3,294.0	12.70	158.60	3,267.0	-282.9	103.2	118.6	0.19
3,384.0	12.80	158.20	3,354.8	-301.3	110.5	126.9	0.15
3,474.0	12.90	156.90	3,442.5	-319.8	118.1	135.5	0.34
3,563.0	12.20	157.50	3,529.4	-337.7	125.6	144.0	0.80
3,653.0	11.60	162.40	3,617.5	-355.1	132.0	151.3	1.31
3,742.0	8.60	168.40	3,705.1	-370.1	136.0	156.2	3.57
3,832.0	7.30	168.00	3,794.2	-382.3	138.6	159.4	1.45
3,921.0	6.70	172.70	3,882.6	-393.0	140.4	161.8	0.93
4,011.0	5.40	175.30	3,972.1	-402.4	141.4	163.3	1.48
4,101.0	3.40	174.60	4,061.8	-409.3	142.0	164.3	2.22
4,190.0	1.70	189.50	4,150.7	-413.2	142.1	164.6	2.03
4,280.0	0.60	282.30	4,240.7	-414.4	141.4	163.9	2.03
4,370.0	0.80	236.90	4,330.7	-414.7	140.4	163.0	0.63
4,459.0	0.80	332.40	4,419.7	-414.5	139.6	162.2	1.33
4,549.0	1.40	335.70	4,509.7	-412.9	138.8	161.3	0.67
4,638.0	1.20	311.40	4,598.6	-411.3	137.7	160.1	0.65
4,728.0	0.80	302.60	4,688.6	-410.3	136.4	158.8	0.47
4,818.0	0.40	306.10	4,778.6	-409.8	135.7	158.0	0.45
4,907.0	0.30	335.50	4,867.6	-409.4	135.3	157.6	0.23
4,952.0	0.50	42.80	4,912.6	-409.2	135.4	157.7	1.05
4,997.0	3.70	69.70	4,957.6	-408.5	136.9	159.2	7.25
5,042.0	7.50	69.70	5,002.3	-407.0	141.0	163.2	8.44
5,087.0	10.90	74.70	5,046.8	-404.9	147.9	169.9	7.75
5,131.0	12.60	80.40	5,089.8	-403.0	156.6	178.5	4.67
5,176.0	15.30	79.30	5,133.5	-401.0	167.3	189.1	6.03
5,221.0	18.40	79.40	5,176.6	-398.6	180.1	201.8	6.89
5,266.0	21.60	79.90	5,218.9	-395.9	195.3	216.7	7.12
5,311.0	24.20	81.70	5,260.3	-393.1	212.5	233.8	5.98
5,356.0	26.50	87.80	5,301.0	-391.4	231.7	252.9	7.73
5,401.0	30.10	91.60	5,340.6	-391.3	253.0	274.2	8.94

<b>Company:</b>	Noble Energy Inc.- Weld County, CO (Grid North)	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-64-1HN
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<b>Site:</b>	Rohn State LD10-65HN Pad Sec.9-T9N-R58W	<b>MD Reference:</b>	WELL @ 4732.0ft (RKB - 16')
<b>Well:</b>	Rohn State LD10-64-1HN	<b>North Reference:</b>	Grid
<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)
5,445.0	35.70	93.80	5,377.5	-392.5	276.9	298.0	13.01
5,490.0	41.10	93.80	5,412.8	-394.3	304.8	326.0	12.00
5,535.0	44.00	92.30	5,445.9	-395.9	335.1	356.4	6.83
5,580.0	46.80	90.40	5,477.5	-396.7	367.2	388.4	6.91
5,625.0	51.20	88.60	5,507.0	-396.3	401.1	422.3	10.23
5,669.0	56.90	87.10	5,532.9	-395.0	436.7	457.8	13.24
5,714.0	60.50	86.20	5,556.2	-392.7	475.1	495.9	8.18
5,759.0	61.50	85.90	5,578.1	-390.0	514.3	535.0	2.30
5,804.0	62.90	86.40	5,599.0	-387.4	554.1	574.5	3.26
5,849.0	65.60	85.80	5,618.6	-384.6	594.5	614.7	6.12
5,894.0	69.60	85.40	5,635.7	-381.4	636.0	656.0	8.93
5,938.0	73.10	86.80	5,649.8	-378.6	677.5	697.3	8.51
5,983.0	76.40	87.60	5,661.6	-376.5	720.9	740.5	7.53
6,028.0	78.80	88.70	5,671.3	-375.0	764.8	784.3	5.84
6,065.0	80.60	88.80	5,677.9	-374.3	801.2	820.6	4.87
6,143.0	84.70	87.70	5,687.9	-371.9	878.5	897.6	5.44
6,188.0	84.60	88.00	5,692.1	-370.2	923.3	942.3	0.70
6,232.0	86.60	88.70	5,695.5	-368.9	967.1	986.0	4.81
6,277.0	87.50	89.00	5,697.8	-368.0	1,012.1	1,030.8	2.11
6,280.4	87.55	89.04	5,697.9	-368.0	1,015.5	1,034.2	1.91
Rohn State LD10-64-1HN Landing Pt.							
6,322.0	88.20	89.50	5,699.5	-367.5	1,057.0	1,075.6	1.91
6,367.0	89.20	90.10	5,700.5	-367.3	1,102.0	1,120.6	2.59
6,458.0	89.90	89.70	5,701.2	-367.1	1,193.0	1,211.4	0.89
6,551.0	89.60	90.10	5,701.6	-367.0	1,286.0	1,304.3	0.54
6,644.0	90.20	89.20	5,701.8	-366.4	1,379.0	1,397.1	1.16
6,737.0	91.30	89.70	5,700.6	-365.5	1,472.0	1,489.9	1.30
6,829.0	90.90	89.40	5,698.8	-364.8	1,564.0	1,581.7	0.54
6,923.0	90.30	89.00	5,697.8	-363.5	1,658.0	1,675.4	0.77
7,015.0	89.70	89.30	5,697.8	-362.1	1,750.0	1,767.2	0.73
7,109.0	89.40	88.60	5,698.5	-360.4	1,843.9	1,861.0	0.81
7,203.0	91.50	87.90	5,697.8	-357.5	1,937.9	1,954.6	2.35
7,295.0	93.10	87.70	5,694.1	-354.0	2,029.7	2,046.1	1.75
7,389.0	91.30	88.50	5,690.5	-350.9	2,123.6	2,139.7	2.10
7,482.0	90.60	87.80	5,689.0	-347.9	2,216.6	2,232.3	1.06
7,574.0	90.20	87.40	5,688.3	-344.0	2,308.5	2,323.9	0.61
7,669.0	90.50	88.90	5,687.7	-341.0	2,403.4	2,418.5	1.61
7,763.0	90.70	88.10	5,686.8	-338.5	2,497.4	2,512.2	0.88
7,857.0	90.80	87.50	5,685.5	-334.9	2,591.3	2,605.8	0.65
7,951.0	90.60	87.10	5,684.4	-330.5	2,685.2	2,699.3	0.48
8,044.0	90.70	87.00	5,683.3	-325.7	2,778.1	2,791.8	0.15
8,138.0	92.30	88.90	5,680.9	-322.3	2,872.0	2,885.3	2.64
8,231.0	91.40	89.30	5,677.9	-320.9	2,964.9	2,978.1	1.06
8,320.0	90.90	89.40	5,676.1	-319.8	3,053.9	3,066.8	0.57

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<b>Well:</b>	Rohn State LD10-64-1HN	<b>North Reference:</b>	Grid
<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)
8,410.0	89.80	88.40	5,675.5	-318.1	3,143.9	3,156.6	1.65
8,500.0	89.80	88.00	5,675.8	-315.3	3,233.8	3,246.3	0.44
8,589.0	89.20	86.90	5,676.6	-311.3	3,322.7	3,334.8	1.41
8,679.0	89.30	87.40	5,677.8	-306.9	3,412.6	3,424.3	0.57
8,769.0	89.50	86.90	5,678.7	-302.4	3,502.5	3,513.8	0.60
8,858.0	89.30	85.60	5,679.7	-296.6	3,591.3	3,602.2	1.48
8,948.0	89.50	86.00	5,680.6	-290.0	3,681.0	3,691.4	0.50
9,038.0	90.50	88.80	5,680.6	-285.9	3,770.9	3,781.0	3.30
9,127.0	90.10	88.10	5,680.1	-283.5	3,859.9	3,869.6	0.91
9,217.0	90.30	89.30	5,679.8	-281.4	3,949.9	3,959.4	1.35
9,307.0	90.10	88.20	5,679.5	-279.5	4,039.9	4,049.1	1.24
9,396.0	91.70	90.00	5,678.1	-278.1	4,128.8	4,137.9	2.71
9,486.0	92.40	89.00	5,674.9	-277.3	4,218.8	4,227.6	1.36
9,576.0	93.50	89.30	5,670.3	-276.0	4,308.6	4,317.3	1.27
9,666.0	91.90	89.90	5,666.0	-275.3	4,398.5	4,407.0	1.90
9,755.0	90.90	90.40	5,663.8	-275.6	4,487.5	4,495.9	1.26
9,845.0	90.60	89.50	5,662.7	-275.5	4,577.5	4,585.7	1.05
9,935.0	90.70	88.90	5,661.6	-274.2	4,667.5	4,675.5	0.68
10,024.0	90.50	88.10	5,660.7	-271.9	4,756.4	4,764.2	0.93
10,114.0	90.20	87.50	5,660.2	-268.4	4,846.4	4,853.8	0.75
10,151.0	89.80	87.50	5,660.2	-266.8	4,883.3	4,890.6	1.08
10,213.0	89.80	87.50	5,660.4	-264.1	4,945.3	4,952.3	0.00
Rohn State LD10-64-1HN BHL 1650'FSL & 660'FEL							

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