

Well Name: **Tye USX A15-04D**

Surface Location: Tye and Kerbs Pad Sec.15-T6N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4797.0

+N/-S +E/-W
 0.0 0.0

Northing
 1422645.70

Easting
 3267893.13

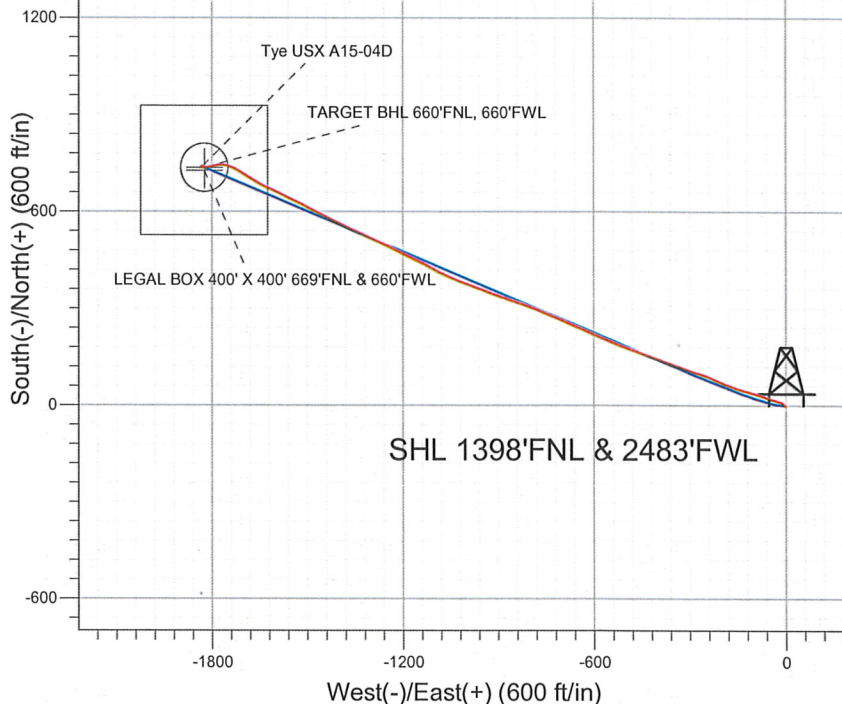
Latitude
 40.489570

Longitude
 -104.536830

Slot

NOBLE ENERGY INC WELD COUNTY CO

Projected BHL 741'N & 1830'W
 of surface 655'FNL & 655'FWL



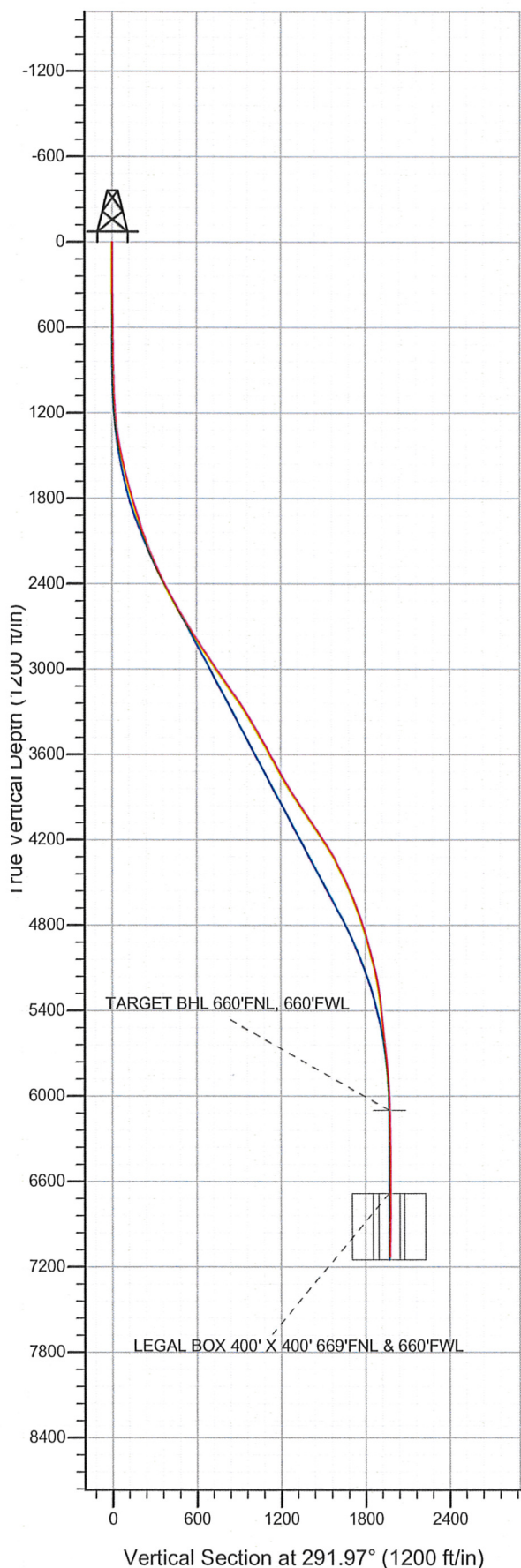
LEGEND

- Tye USX A15-04D, Wellbore #1, Noble Tye USX A15-04D Plan #2 (8-16-11) VD
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7600'MD & 7131'TVD @ 1974'VS
 0.5 deg Inc 65.0 deg AZ

Project: SEC.15-T6N-R64W
 Site: Tye and Kerbs Pad Sec.15-T6N-R64W
 Well: Tye USX A15-04D
 Plan: Wellbore #1





Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.15-T6N-R64W

Tye and Kerbs Pad Sec.15-T6N-R64W

Tye USX A15-04D

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 September, 2011



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 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Tye USX A15-04D
 TVD Reference: WELL @ 4810.0ft (Original Well Elev)
 MD Reference: WELL @ 4810.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: Landmark

Project SEC.15-T6N-R64W, Weld County, Colorado

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 Tye and Kerbs Pad Sec.15-T6N-R64W

Site Position:		Northing:	1,422,671.21 ft	Latitude:	40.489640
From:	Lat/Long	Easting:	3,267,892.85 ft	Longitude:	-104.536830
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well Tye USX A15-04D

Well Position	+N/-S	0.0 ft	Northing:	1,422,645.70 ft	Latitude:	40.489570
	+E/-W	0.0 ft	Easting:	3,267,893.13 ft	Longitude:	-104.536830
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,797.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/16/2011	8.73	67.16	53,185

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	291.97

Survey Program Date 9/6/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
168.0	7,600.0	Survey #1 (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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
168.0	0.00	157.80	168.0	0.0	0.0	0.0	0.00	0.00	0.00
230.0	0.20	111.60	230.0	0.0	0.1	-0.1	0.32	0.32	0.00
292.0	0.20	264.20	292.0	-0.1	0.1	-0.1	0.63	0.00	246.13
363.0	0.70	276.80	363.0	-0.1	-0.5	0.4	0.71	0.70	17.75
445.0	0.80	289.80	445.0	0.2	-1.5	1.5	0.24	0.12	15.85
527.0	1.10	284.90	527.0	0.6	-2.8	2.8	0.38	0.37	-5.98
609.0	0.70	326.20	609.0	1.2	-3.8	4.0	0.90	-0.49	50.37
690.0	0.60	333.60	690.0	2.0	-4.3	4.7	0.16	-0.12	9.14
772.0	0.70	344.30	772.0	2.9	-4.6	5.4	0.19	0.12	13.05
854.0	1.00	321.60	854.0	3.9	-5.2	6.3	0.54	0.37	-27.68
864.0	1.10	321.80	863.9	4.1	-5.3	6.5	1.00	1.00	2.00
954.0	1.20	326.70	953.9	5.5	-6.4	8.0	0.16	0.11	5.44

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Local Co-ordinate Reference: Well Tye USX A15-04D
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 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)
1,036.0	2.40	316.40	1,035.9	7.5	-8.0	10.2	1.51	1.46	-12.56
1,117.0	3.80	296.50	1,116.8	9.9	-11.6	14.5	2.16	1.73	-24.57
1,199.0	4.60	283.70	1,198.6	11.9	-17.2	20.4	1.50	0.98	-15.61
1,281.0	6.10	289.60	1,280.2	14.1	-24.5	28.0	1.95	1.83	7.20
1,363.0	8.40	284.60	1,361.5	17.1	-34.4	38.3	2.91	2.80	-6.10
1,444.0	10.90	287.70	1,441.4	20.9	-47.4	51.8	3.15	3.09	3.83
1,526.0	12.80	291.10	1,521.6	26.6	-63.3	68.7	2.47	2.32	4.15
1,608.0	14.50	287.20	1,601.3	32.9	-81.6	88.0	2.36	2.07	-4.76
1,690.0	15.50	284.70	1,680.5	38.7	-102.0	109.1	1.45	1.22	-3.05
1,771.0	16.70	283.50	1,758.3	44.2	-123.8	131.3	1.54	1.48	-1.48
1,853.0	16.30	287.70	1,837.0	50.4	-146.2	154.4	1.53	-0.49	5.12
1,935.0	17.10	290.20	1,915.5	58.1	-168.5	178.0	1.31	0.98	3.05
2,017.0	18.60	293.50	1,993.6	67.4	-191.8	203.1	2.21	1.83	4.02
2,098.0	20.00	293.50	2,070.0	78.1	-216.3	229.9	1.73	1.73	0.00
2,180.0	21.70	292.10	2,146.6	89.4	-243.2	259.0	2.16	2.07	-1.71
2,262.0	23.00	287.40	2,222.5	99.9	-272.6	290.2	2.69	1.59	-5.73
2,344.0	25.00	288.40	2,297.4	110.2	-304.3	323.4	2.49	2.44	1.22
2,425.0	26.00	289.30	2,370.5	121.4	-337.3	358.3	1.32	1.23	1.11
2,507.0	27.50	290.50	2,443.7	134.0	-372.0	395.1	1.94	1.83	1.46
2,589.0	28.80	290.00	2,516.0	147.4	-408.3	433.8	1.61	1.59	-0.61
2,670.0	31.40	287.90	2,586.1	160.6	-446.7	474.4	3.46	3.21	-2.59
2,752.0	31.70	291.20	2,656.0	174.9	-487.1	517.2	2.14	0.37	4.02
2,834.0	32.20	291.60	2,725.6	190.7	-527.5	560.6	0.66	0.61	0.49
2,916.0	32.60	292.30	2,794.8	207.2	-568.3	604.5	0.67	0.49	0.85
2,997.0	32.60	293.20	2,863.0	224.1	-608.5	648.2	0.60	0.00	1.11
3,079.0	34.40	294.70	2,931.4	242.4	-649.9	693.4	2.42	2.20	1.83
3,161.0	35.70	293.50	2,998.5	261.7	-692.9	740.5	1.79	1.59	-1.46
3,243.0	34.20	293.00	3,065.7	280.2	-736.0	787.4	1.86	-1.83	-0.61
3,324.0	34.90	290.20	3,132.5	297.1	-778.7	833.3	2.14	0.86	-3.46
3,406.0	36.00	290.20	3,199.3	313.5	-823.4	880.9	1.34	1.34	0.00
3,488.0	33.60	288.60	3,266.6	329.1	-867.5	927.6	3.13	-2.93	-1.95
3,570.0	30.50	290.50	3,336.1	343.6	-908.5	971.1	3.98	-3.78	2.32
3,651.0	30.50	289.50	3,405.9	357.7	-947.1	1,012.2	0.63	0.00	-1.23
3,733.0	29.60	290.50	3,476.9	371.7	-985.7	1,053.2	1.26	-1.10	1.22
3,815.0	29.50	291.40	3,548.2	386.2	-1,023.5	1,093.6	0.55	-0.12	1.10
3,897.0	29.90	294.00	3,619.4	401.8	-1,061.0	1,134.3	1.64	0.49	3.17
3,978.0	28.80	298.10	3,690.0	419.3	-1,096.6	1,173.8	2.83	-1.36	5.06
4,060.0	29.50	297.00	3,761.6	437.7	-1,132.0	1,213.6	1.08	0.85	-1.34
4,142.0	31.10	295.40	3,832.4	456.0	-1,169.2	1,254.8	2.19	1.95	-1.95
4,224.0	33.20	296.20	3,901.9	475.0	-1,208.4	1,298.4	2.61	2.56	0.98
4,305.0	34.50	295.60	3,969.1	494.7	-1,249.0	1,343.4	1.66	1.60	-0.74
4,387.0	35.30	294.60	4,036.4	514.6	-1,291.5	1,390.2	1.20	0.98	-1.22
4,469.0	35.00	294.70	4,103.4	534.3	-1,334.4	1,437.4	0.37	-0.37	0.12
4,551.0	33.30	294.60	4,171.3	553.5	-1,376.3	1,483.4	2.07	-2.07	-0.12
4,632.0	31.70	296.70	4,239.6	572.3	-1,415.5	1,526.8	2.42	-1.98	2.59
4,714.0	30.10	296.90	4,310.0	591.3	-1,453.1	1,568.8	1.96	-1.95	0.24
4,796.0	28.10	297.20	4,381.6	609.4	-1,488.6	1,608.5	2.45	-2.44	0.37
4,877.0	25.10	296.50	4,454.0	625.8	-1,520.9	1,644.6	3.72	-3.70	-0.86
4,959.0	23.40	296.00	4,528.8	640.7	-1,551.1	1,678.2	2.09	-2.07	-0.61
5,041.0	22.20	295.10	4,604.4	654.4	-1,579.8	1,709.9	1.52	-1.46	-1.10
5,123.0	20.70	293.50	4,680.7	666.7	-1,607.1	1,739.9	1.96	-1.83	-1.95
5,204.0	18.60	296.50	4,757.0	678.2	-1,631.8	1,767.1	2.88	-2.59	3.70
5,286.0	17.40	298.40	4,835.0	689.9	-1,654.3	1,792.3	1.63	-1.46	2.32
5,368.0	16.30	300.90	4,913.4	701.6	-1,675.0	1,815.8	1.61	-1.34	3.05

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5,450.0	14.50	303.70	4,992.5	713.2	-1,693.4	1,837.2	2.37	-2.20	3.41
5,531.0	13.40	300.50	5,071.1	723.6	-1,709.9	1,856.5	1.66	-1.36	-3.95
5,613.0	13.80	297.70	5,150.8	733.0	-1,726.8	1,875.6	0.94	0.49	-3.41
5,695.0	8.90	289.10	5,231.2	739.6	-1,741.4	1,891.7	6.31	-5.98	-10.49
5,777.0	6.70	287.40	5,312.4	743.1	-1,752.0	1,902.8	2.70	-2.68	-2.07
5,858.0	6.20	277.70	5,392.9	745.1	-1,760.8	1,911.7	1.48	-0.62	-11.98
5,940.0	6.10	271.20	5,474.4	745.8	-1,769.6	1,920.1	0.86	-0.12	-7.93
6,022.0	7.40	264.30	5,555.9	745.4	-1,779.2	1,928.8	1.87	1.59	-8.41
6,104.0	8.10	252.90	5,637.1	743.2	-1,790.0	1,938.0	2.06	0.85	-13.90
6,185.0	7.40	254.80	5,717.4	740.1	-1,800.4	1,946.6	0.92	-0.86	2.35
6,267.0	6.80	265.00	5,798.8	738.3	-1,810.4	1,955.1	1.70	-0.73	12.44
6,349.0	5.00	264.30	5,880.3	737.5	-1,818.8	1,962.6	2.20	-2.20	-0.85
6,431.0	3.70	269.30	5,962.1	737.1	-1,825.0	1,968.2	1.65	-1.59	6.10
6,512.0	2.60	270.30	6,043.0	737.1	-1,829.4	1,972.3	1.36	-1.36	1.23
6,568.9	1.18	280.53	6,099.8	737.2	-1,831.3	1,974.1	2.56	-2.50	17.99
TARGET BHL 660'FNL, 660'FWL									
6,594.0	0.60	300.40	6,124.9	737.3	-1,831.7	1,974.5	2.56	-2.29	79.10
6,676.0	0.40	325.70	6,206.9	737.8	-1,832.2	1,975.2	0.36	-0.24	30.85
6,757.0	0.50	342.70	6,287.9	738.4	-1,832.4	1,975.6	0.20	0.12	20.99
6,839.0	0.40	319.20	6,369.9	738.9	-1,832.7	1,976.1	0.25	-0.12	-28.66
6,921.0	0.30	341.20	6,451.9	739.3	-1,833.0	1,976.5	0.20	-0.12	26.83
7,003.0	0.20	131.60	6,533.9	739.4	-1,833.0	1,976.5	0.59	-0.12	183.42
7,084.0	0.40	78.20	6,614.9	739.4	-1,832.6	1,976.1	0.40	0.25	-65.93
7,154.1	0.20	27.95	6,685.0	739.6	-1,832.3	1,975.9	0.45	-0.28	-71.69
TARGET CIRCLE 660'FNL & 660'FWL - LEGAL BOX 400' X 400' 669'FNL & 660'FWL									
7,166.0	0.20	12.80	6,696.9	739.6	-1,832.3	1,975.9	0.45	-0.02	-127.18
7,248.0	0.20	54.80	6,778.9	739.8	-1,832.1	1,975.9	0.17	0.00	51.22
7,330.0	0.40	41.80	6,860.9	740.1	-1,831.8	1,975.7	0.26	0.24	-15.85
7,411.0	0.40	79.20	6,941.9	740.4	-1,831.3	1,975.3	0.32	0.00	46.17
7,493.0	0.40	97.90	7,023.9	740.4	-1,830.8	1,974.8	0.16	0.00	22.80
7,575.0	0.50	74.80	7,105.9	740.5	-1,830.1	1,974.3	0.25	0.12	-28.17
7,600.0	0.50	65.00	7,130.9	740.5	-1,829.9	1,974.1	0.34	0.00	-39.20

Checked By: _____ Approved By: _____ Date: _____