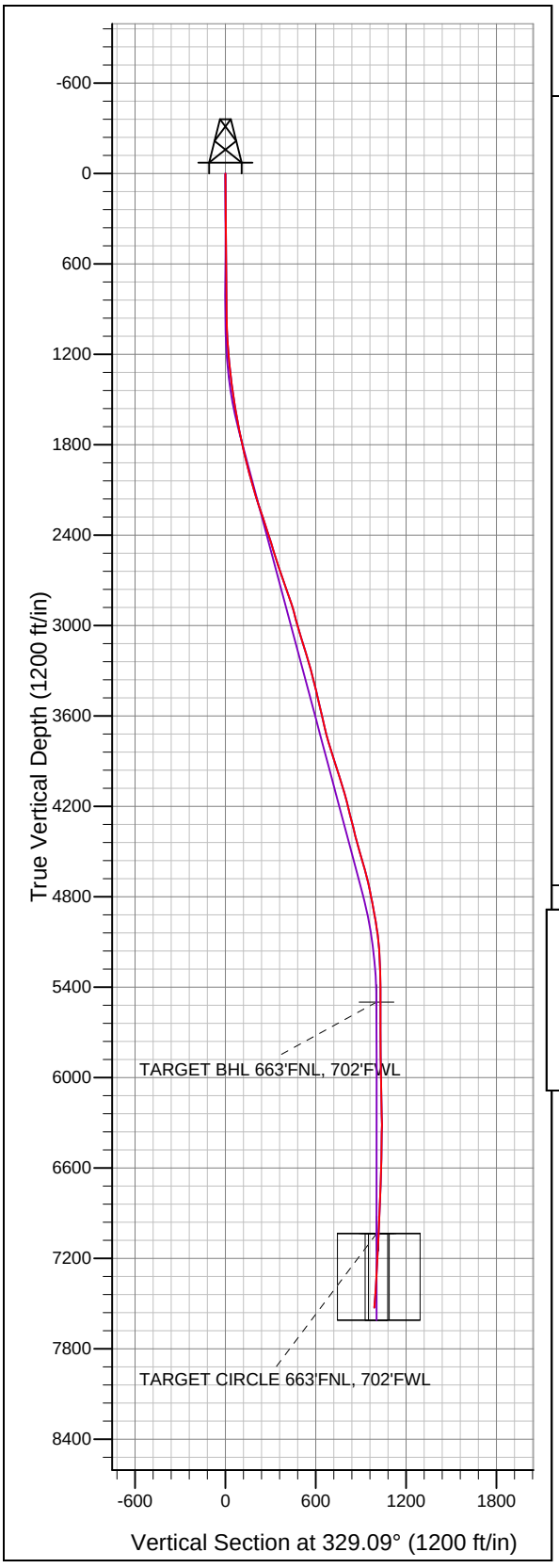
ENSIGN Directional

Well Name: **HKS 6-22**

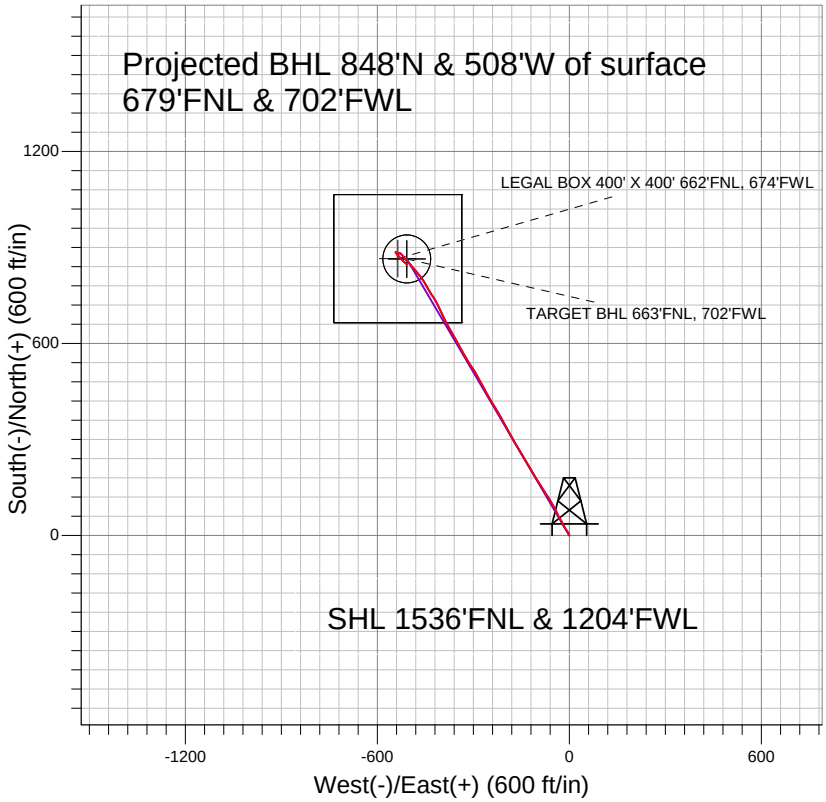
Surface Location: HKS 6-22 Pad Sec.6-T6N-R66W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4890.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1432726.09	3186855.64	40° 31' 9.444 N	104° 49' 40.440 W	

Original Well EleWELL @ 4906.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



L E G E N D

- HKS 6-22, Wellbore #1, Noble HKS 6-22 Plan #2 (08-19-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7663'MD & 7527'TVD @ 988' VS
4.7 deg Inc 128.1 deg AZ

Project: SEC.6-T6N-R66W
Site: HKS 6-22 Pad Sec.6-T6N-R66W
Well: HKS 6-22
Plan: Wellbore #1

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.6-T6N-R66W
HKS 6-22 Pad Sec.6-T6N-R66W
HKS 6-22

Wellbore #1

Survey: Survey #1

Standard Survey Report

24 September, 2010

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well HKS 6-22
Project:	SEC.6-T6N-R66W	**TVD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Site:	HKS 6-22 Pad Sec.6-T6N-R66W	**MD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Well:	HKS 6-22	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.6-T6N-R66W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site HKS 6-22 Pad Sec.6-T6N-R66W

Site Position:		**Northing:**	1,432,740.98 ft	**Latitude:**	40° 31' 9.588 N
From:	Lat/Long	**Easting:**	3,186,897.23 ft	**Longitude:**	104° 49' 39.900 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.43 °

Well HKS 6-22

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,432,726.09 ft	**Latitude:**	40° 31' 9.444 N
	+E/-W	0.0 ft	**Easting:**	3,186,855.64 ft	**Longitude:**	104° 49' 40.440 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,890.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/18/2010	9.02	67.17	53,274

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	329.09

Survey Program **Date** 9/24/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
947.0	7,663.0	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
947.0	0.90	335.10	947.0	6.7	-3.1	7.4	0.10	0.10	0.00
1,032.0	2.10	331.80	1,031.9	8.7	-4.1	9.6	1.41	1.41	-3.88
1,118.0	3.40	326.00	1,117.8	12.2	-6.3	13.7	1.54	1.51	-6.74
1,203.0	4.80	325.10	1,202.6	17.2	-9.8	19.8	1.65	1.65	-1.06
1,288.0	5.90	327.80	1,287.2	23.8	-14.1	27.7	1.33	1.29	3.18
1,374.0	7.20	334.80	1,372.7	32.5	-18.8	37.5	1.77	1.51	8.14
1,459.0	8.80	332.30	1,456.8	43.0	-24.1	49.3	1.93	1.88	-2.94
1,545.0	9.80	328.90	1,541.7	55.1	-30.9	63.2	1.33	1.16	-3.95
1,630.0	9.70	335.40	1,625.5	67.8	-37.6	77.5	1.30	-0.12	7.65
1,716.0	10.90	332.60	1,710.1	81.6	-44.4	92.8	1.51	1.40	-3.26
1,801.0	12.00	331.30	1,793.4	96.5	-52.3	109.7	1.33	1.29	-1.53
1,887.0	13.50	326.90	1,877.3	112.8	-62.1	128.7	2.08	1.74	-5.12

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well HKS 6-22
Project:	SEC.6-T6N-R66W	**TVD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Site:	HKS 6-22 Pad Sec.6-T6N-R66W	**MD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Well:	HKS 6-22	**North Reference:**	True
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)
1,972.0	15.10	328.00	1,959.7	130.5	-73.4	149.7	1.91	1.88	1.29
2,058.0	16.40	327.40	2,042.4	150.2	-85.9	173.0	1.52	1.51	-0.70
2,143.0	16.00	327.20	2,124.0	170.2	-98.7	196.7	0.48	-0.47	-0.24
2,229.0	18.50	329.90	2,206.2	191.9	-111.9	222.2	3.05	2.91	3.14
2,314.0	18.60	328.30	2,286.8	215.1	-125.8	249.2	0.61	0.12	-1.88
2,399.0	17.80	329.60	2,367.5	237.9	-139.5	275.8	1.06	-0.94	1.53
2,485.0	17.40	329.60	2,449.5	260.3	-152.7	301.8	0.47	-0.47	0.00
2,570.0	18.00	329.90	2,530.5	282.6	-165.7	327.6	0.71	0.71	0.35
2,657.0	17.60	329.20	2,613.3	305.6	-179.2	354.2	0.52	-0.46	-0.80
2,742.0	18.70	331.80	2,694.1	328.6	-192.2	380.7	1.61	1.29	3.06
2,828.0	20.90	331.40	2,775.0	354.2	-206.1	409.8	2.56	2.56	-0.47
2,913.0	17.70	330.10	2,855.2	378.8	-219.8	437.8	3.80	-3.76	-1.53
2,999.0	15.40	329.30	2,937.6	399.9	-232.1	462.3	2.69	-2.67	-0.93
3,084.0	15.10	328.50	3,019.6	419.0	-243.7	484.7	0.43	-0.35	-0.94
3,170.0	17.50	331.30	3,102.2	439.9	-255.7	508.8	2.94	2.79	3.26
3,255.0	17.40	330.70	3,183.3	462.2	-268.1	534.3	0.24	-0.12	-0.71
3,341.0	15.40	331.90	3,265.7	483.5	-279.7	558.6	2.36	-2.33	1.40
3,426.0	13.90	331.90	3,348.0	502.5	-289.9	580.0	1.76	-1.76	0.00
3,512.0	13.90	324.50	3,431.5	520.0	-300.7	600.6	2.07	0.00	-8.60
3,597.0	13.20	326.80	3,514.1	536.4	-312.0	620.5	1.04	-0.82	2.71
3,683.0	13.50	330.70	3,597.8	553.4	-322.3	640.4	1.10	0.35	4.53
3,768.0	12.70	330.50	3,680.6	570.2	-331.7	659.6	0.94	-0.94	-0.24
3,854.0	16.20	330.30	3,763.8	588.9	-342.3	681.1	4.07	4.07	-0.23
3,939.0	17.60	330.70	3,845.2	610.4	-354.5	705.8	1.65	1.65	0.47
4,025.0	17.90	331.50	3,927.1	633.3	-367.2	732.0	0.45	0.35	0.93
4,111.0	17.80	331.30	4,008.9	656.5	-379.8	758.3	0.14	-0.12	-0.23
4,196.0	16.40	333.40	4,090.2	678.6	-391.4	783.3	1.80	-1.65	2.47
4,282.0	14.30	335.20	4,173.1	699.1	-401.3	805.9	2.50	-2.44	2.09
4,367.0	14.50	334.80	4,255.4	718.2	-410.2	827.0	0.26	0.24	-0.47
4,453.0	13.70	326.60	4,338.8	736.5	-420.4	847.9	2.50	-0.93	-9.53
4,538.0	14.20	328.10	4,421.3	753.7	-431.5	868.3	0.73	0.59	1.76
4,624.0	17.00	331.20	4,504.2	773.7	-443.1	891.4	3.40	3.26	3.60
4,709.0	16.30	327.40	4,585.6	794.7	-455.5	915.8	1.52	-0.82	-4.47
4,796.0	13.70	322.60	4,669.6	813.1	-468.3	938.2	3.31	-2.99	-5.52
4,881.0	12.40	316.60	4,752.4	827.8	-480.7	957.1	2.21	-1.53	-7.06
4,967.0	10.90	319.10	4,836.7	840.6	-492.4	974.2	1.84	-1.74	2.91
5,052.0	10.30	318.60	4,920.2	852.4	-502.7	989.6	0.71	-0.71	-0.59
5,138.0	8.50	321.80	5,005.1	863.2	-511.7	1,003.4	2.18	-2.09	3.72
5,223.0	6.90	320.40	5,089.3	872.0	-518.8	1,014.7	1.90	-1.88	-1.65
5,309.0	3.20	315.50	5,174.9	877.7	-523.8	1,022.1	4.33	-4.30	-5.70
5,394.0	2.00	320.30	5,259.9	880.6	-526.4	1,025.9	1.43	-1.41	5.65
5,480.0	2.00	286.50	5,345.8	882.1	-528.8	1,028.5	1.35	0.00	-39.30
5,565.0	0.30	194.90	5,430.8	882.3	-530.3	1,029.4	2.39	-2.00	-107.76
5,634.2	0.35	254.54	5,500.0	882.1	-530.6	1,029.4	0.47	0.07	86.22
TARGET BHL 663'FNL, 702'FWL									
5,651.0	0.40	263.60	5,516.8	882.1	-530.7	1,029.4	0.47	0.31	53.83
5,822.0	0.70	240.30	5,687.8	881.5	-532.2	1,029.7	0.22	0.18	-13.63
5,993.0	0.60	295.90	5,858.8	881.4	-533.9	1,030.5	0.36	-0.06	32.51
6,164.0	1.50	294.23	6,029.7	882.7	-536.7	1,033.0	0.53	0.53	-0.98
6,335.0	1.80	296.20	6,200.7	884.8	-541.2	1,037.1	0.18	0.18	1.15
6,506.0	0.70	152.30	6,371.6	885.1	-543.1	1,038.3	1.40	-0.64	-84.15
6,675.0	1.50	141.60	6,540.6	882.4	-541.2	1,035.1	0.49	0.47	-6.33
6,846.0	1.90	143.70	6,711.5	878.4	-538.2	1,030.1	0.24	0.23	1.23
7,017.0	2.40	136.60	6,882.4	873.5	-534.0	1,023.8	0.33	0.29	-4.15

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well HKS 6-22
Project:	SEC.6-T6N-R66W	**TVD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Site:	HKS 6-22 Pad Sec.6-T6N-R66W	**MD Reference:**	WELL @ 4906.0ft (Original Well Elev)
Well:	HKS 6-22	**North Reference:**	True
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)
7,170.6	2.49	138.68	7,035.9	868.6	-529.6	1,017.3	0.08	0.06	1.35
LEGAL BOX 400' X 400' 662'FNL, 674'FWL									
7,171.5	2.49	138.69	7,036.8	868.6	-529.6	1,017.3	0.08	0.06	1.30
TARGET CIRCLE 663'FNL, 702'FWL									
7,188.0	2.50	138.90	7,053.3	868.1	-529.1	1,016.6	0.08	0.06	1.30
7,359.0	3.10	137.50	7,224.1	861.9	-523.6	1,008.4	0.35	0.35	-0.82
7,530.0	4.10	130.90	7,394.7	854.4	-515.8	998.1	0.63	0.58	-3.86
7,615.0	4.60	128.10	7,479.5	850.3	-510.8	992.0	0.64	0.59	-3.29
7,663.0	4.70	128.10	7,527.3	847.9	-507.8	988.4	0.21	0.21	0.00

Checked By: _____ Approved By: _____ Date: _____