ENSIGN Directional

Well Name: **Cricket C22-30D**

Surface Location: Cricket C22-30D Pad Sec.21-T4N-R64W

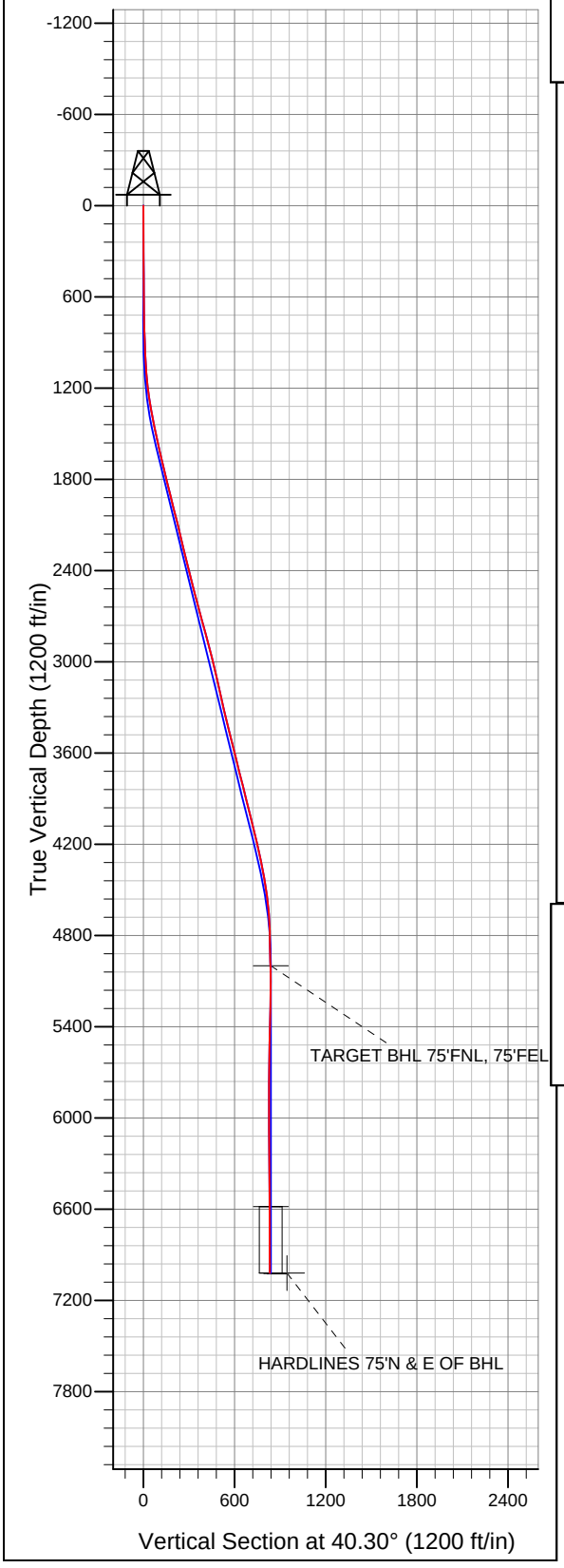
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

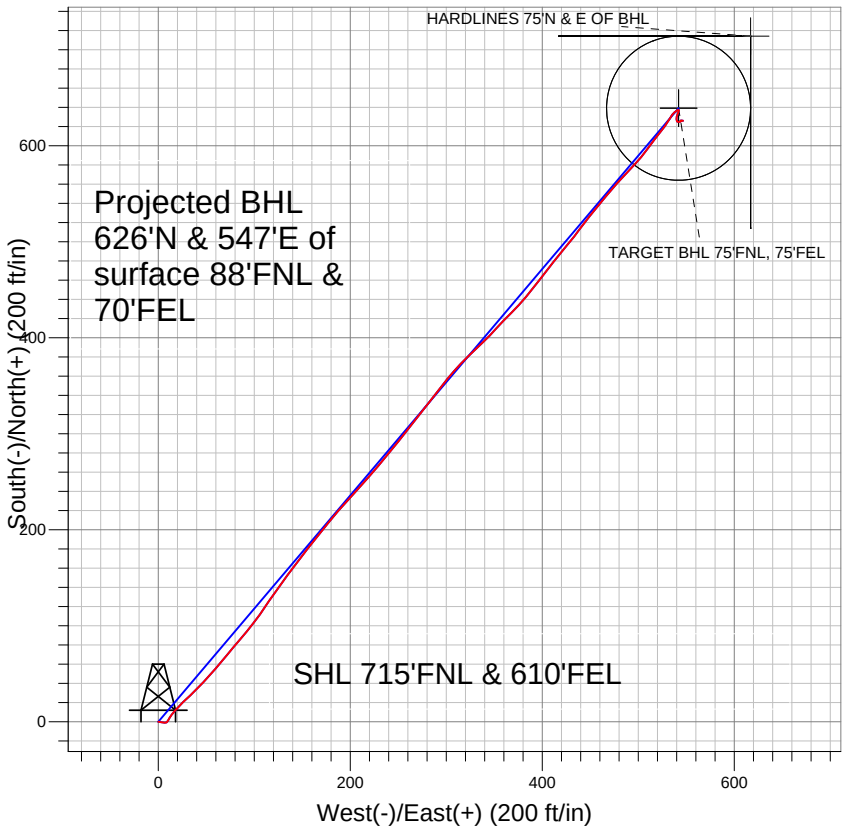
Ground Elevation: 4687.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1354717.09	3265389.88	40° 18' 11.484 N	104° 32' 54.420 W	

Original Well Elev WELL @ 4700.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO





L E G E N D

- Cricket C22-30D, Wellbore #1, Noble Cricket C22-30D Plan #2 (05-10-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7115'MD & 7021'TVD @ 831'VS
0.4 deg Inc 109.4 deg AZ

Project: SEC.21-T4N-R64W
Site: Cricket C22-30D Pad Sec.21-T4N-R64W
Well: Cricket C22-30D
Plan: Wellbore #1

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.21-T4N-R64W
Cricket C22-30D Pad Sec.21-T4N-R64W
Cricket C22-30D

Wellbore #1

Survey: Survey #1

Standard Survey Report

08 April, 2011

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Site Cricket C22-30D Pad Sec.21-T4N-R64W
Project:	SEC.21-T4N-R64W	**TVD Reference:**	WELL @ 4700.0ft (Original Well Elev)
Site:	Cricket C22-30D Pad Sec.21-T4N-R64W	**MD Reference:**	WELL @ 4700.0ft (Original Well Elev)
Well:	Cricket C22-30D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.21-T4N-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 Cricket C22-30D Pad Sec.21-T4N-R64W

Site Position:		**Northing:**	1,354,717.10 ft	**Latitude:**	40° 18' 11.484 N
From:	Lat/Long	**Easting:**	3,265,389.88 ft	**Longitude:**	104° 32' 54.420 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.61 °

Well Cricket C22-30D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,354,717.09 ft	**Latitude:**	40° 18' 11.484 N
	+E/-W	0.0 ft	**Easting:**	3,265,389.88 ft	**Longitude:**	104° 32' 54.420 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,687.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/21/2010	8.89	67.05	53,227

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	40.30

Survey Program **Date** 4/8/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
698.0	7,115.0	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
698.0	1.10	98.30	698.0	-1.0	6.6	3.6	0.16	0.16	0.00
792.0	1.40	61.00	791.9	-0.5	8.5	5.1	0.90	0.32	-39.68
886.0	2.10	29.00	885.9	1.5	10.4	7.9	1.25	0.74	-34.04
979.0	2.80	30.40	978.8	5.0	12.3	11.8	0.76	0.75	1.51
1,073.0	3.80	39.80	1,072.7	9.3	15.5	17.2	1.21	1.06	10.00
1,167.0	5.90	42.70	1,166.3	15.3	20.8	25.1	2.25	2.23	3.09
1,261.0	8.40	46.20	1,259.6	23.6	29.0	36.8	2.70	2.66	3.72
1,355.0	10.40	45.90	1,352.3	34.2	40.1	52.0	2.13	2.13	-0.32
1,449.0	11.70	42.30	1,444.6	47.2	52.6	70.0	1.57	1.38	-3.83
1,543.0	12.20	38.80	1,536.5	62.0	65.2	89.5	0.94	0.53	-3.72
1,637.0	12.70	40.80	1,628.3	77.6	78.2	109.7	0.70	0.53	2.13
1,731.0	13.80	39.80	1,719.8	94.0	92.1	131.3	1.20	1.17	-1.06

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Site Cricket C22-30D Pad Sec.21-T4N-R64W
Project:	SEC.21-T4N-R64W	**TVD Reference:**	WELL @ 4700.0ft (Original Well Elev)
Site:	Cricket C22-30D Pad Sec.21-T4N-R64W	**MD Reference:**	WELL @ 4700.0ft (Original Well Elev)
Well:	Cricket C22-30D	**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)
1,825.0	13.80	35.00	1,811.1	111.8	105.7	153.6	1.22	0.00	-5.11
1,919.0	14.30	34.10	1,902.3	130.6	118.6	176.3	0.58	0.53	-0.96
2,013.0	14.40	37.10	1,993.4	149.5	132.2	199.5	0.80	0.11	3.19
2,107.0	13.80	37.50	2,084.5	167.7	146.1	222.4	0.65	-0.64	0.43
2,201.0	13.60	37.10	2,175.9	185.4	159.6	244.6	0.24	-0.21	-0.43
2,295.0	13.10	39.40	2,267.3	202.5	173.0	266.3	0.78	-0.53	2.45
2,389.0	14.00	40.20	2,358.7	219.4	187.1	288.4	0.98	0.96	0.85
2,483.0	14.40	43.70	2,449.8	236.5	202.5	311.4	1.01	0.43	3.72
2,577.0	14.70	41.00	2,540.8	254.0	218.4	335.0	0.79	0.32	-2.87
2,671.0	15.00	39.90	2,631.7	272.3	234.0	359.1	0.44	0.32	-1.17
2,765.0	15.60	38.10	2,722.3	291.6	249.6	383.9	0.81	0.64	-1.91
2,859.0	15.60	38.70	2,812.9	311.4	265.3	409.1	0.17	0.00	0.64
2,953.0	14.20	37.70	2,903.7	330.4	280.3	433.3	1.51	-1.49	-1.06
3,047.0	14.20	38.00	2,994.8	348.6	294.5	456.3	0.08	0.00	0.32
3,141.0	12.60	41.10	3,086.3	365.4	308.3	478.1	1.87	-1.70	3.30
3,235.0	12.20	46.10	3,178.1	380.0	322.2	498.2	1.22	-0.43	5.32
3,329.0	13.70	46.40	3,269.7	394.6	337.4	519.2	1.60	1.60	0.32
3,422.0	13.10	42.30	3,360.2	410.0	352.5	540.7	1.21	-0.65	-4.41
3,516.0	14.10	45.00	3,451.5	426.0	367.7	562.7	1.26	1.06	2.87
3,610.0	13.80	39.60	3,542.8	442.7	383.0	585.4	1.42	-0.32	-5.74
3,704.0	14.50	37.90	3,633.9	460.6	397.4	608.3	0.87	0.74	-1.81
3,798.0	14.20	37.70	3,725.0	479.0	411.6	631.6	0.32	-0.32	-0.21
3,892.0	14.00	40.40	3,816.1	496.8	426.1	654.5	0.73	-0.21	2.87
3,986.0	13.10	36.30	3,907.5	514.1	439.7	676.5	1.40	-0.96	-4.36
4,080.0	14.20	38.80	3,998.9	531.6	453.3	698.6	1.33	1.17	2.66
4,174.0	14.70	40.70	4,089.9	549.7	468.3	722.1	0.73	0.53	2.02
4,268.0	12.00	41.80	4,181.4	566.0	482.6	743.8	2.88	-2.87	1.17
4,362.0	12.60	44.10	4,273.2	580.6	496.2	763.8	0.82	0.64	2.45
4,456.0	12.40	35.50	4,365.0	596.2	509.2	784.1	1.99	-0.21	-9.15
4,550.0	9.20	38.90	4,457.3	610.3	519.8	801.6	3.47	-3.40	3.62
4,644.0	6.50	35.50	4,550.4	620.5	527.6	814.5	2.91	-2.87	-3.62
4,738.0	4.60	31.00	4,644.0	628.0	532.6	823.5	2.07	-2.02	-4.79
4,832.0	2.20	34.80	4,737.8	632.7	535.6	829.0	2.56	-2.55	4.04
4,926.0	1.50	61.10	4,831.7	634.8	537.7	831.9	1.15	-0.74	27.98
5,020.0	1.40	44.70	4,925.7	636.2	539.6	834.2	0.45	-0.11	-17.45
5,094.3	0.52	52.93	5,000.0	637.1	540.5	835.5	1.19	-1.18	11.07
TARGET BHL 75'FNL, 75'FEL									
5,114.0	0.30	63.10	5,019.7	637.2	540.6	835.6	1.19	-1.14	51.73
5,208.0	0.80	93.80	5,113.7	637.2	541.5	836.2	0.60	0.53	32.66
5,302.0	0.30	114.20	5,207.7	637.1	542.4	836.7	0.56	-0.53	21.70
5,396.0	1.60	199.10	5,301.7	635.7	542.2	835.5	1.70	1.38	90.32
5,490.0	1.80	208.50	5,395.6	633.2	541.0	832.9	0.36	0.21	10.00
5,584.0	1.50	190.00	5,489.6	630.7	540.1	830.4	0.65	-0.32	-19.68
5,677.0	1.20	182.10	5,582.6	628.5	539.9	828.5	0.38	-0.32	-8.49
5,771.0	0.70	163.90	5,676.6	627.0	540.0	827.5	0.61	-0.53	-19.36
5,865.0	0.40	176.70	5,770.6	626.1	540.2	826.9	0.34	-0.32	13.62
5,959.0	0.50	131.90	5,864.6	625.5	540.5	826.6	0.38	0.11	-47.66
6,053.0	0.60	130.40	5,958.6	624.9	541.2	826.6	0.11	0.11	-1.60
6,147.0	0.50	70.60	6,052.5	624.7	541.9	827.0	0.59	-0.11	-63.62
6,241.0	0.70	84.90	6,146.5	624.9	542.9	827.8	0.26	0.21	15.21
6,334.0	0.30	81.50	6,239.5	625.0	543.7	828.3	0.43	-0.43	-3.66
6,428.0	0.30	348.90	6,333.5	625.3	543.9	828.7	0.46	0.00	-98.51
6,522.0	0.60	24.10	6,427.5	626.0	544.1	829.3	0.42	0.32	37.45
6,616.0	0.30	101.60	6,521.5	626.4	544.5	829.9	0.65	-0.32	82.45

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Site Cricket C22-30D Pad Sec.21-T4N-R64W
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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)
6,677.5	0.16	89.26	6,583.0	626.3	544.7	830.0	0.24	-0.22	-20.09
TARGET CIRCLE 75'FNL, 75'FEL									
6,710.0	0.10	69.40	6,615.5	626.4	544.8	830.1	0.24	-0.19	-61.01
6,804.0	0.50	132.50	6,709.5	626.1	545.2	830.1	0.49	0.43	67.13
6,898.0	0.40	47.60	6,803.5	626.0	545.7	830.5	0.65	-0.11	-90.32
6,992.0	0.00	108.10	6,897.5	626.3	546.0	830.8	0.43	-0.43	0.00
7,065.0	0.40	109.40	6,970.5	626.2	546.2	830.9	0.55	0.55	0.00
7,114.7	0.40	109.40	7,020.3	626.1	546.5	831.0	0.00	0.00	0.00
HARDLINES 75'N & E OF BHL									
7,115.0	0.40	109.40	7,020.5	626.1	546.5	831.0	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____