

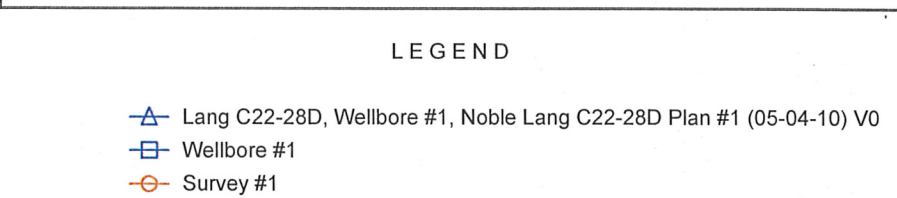
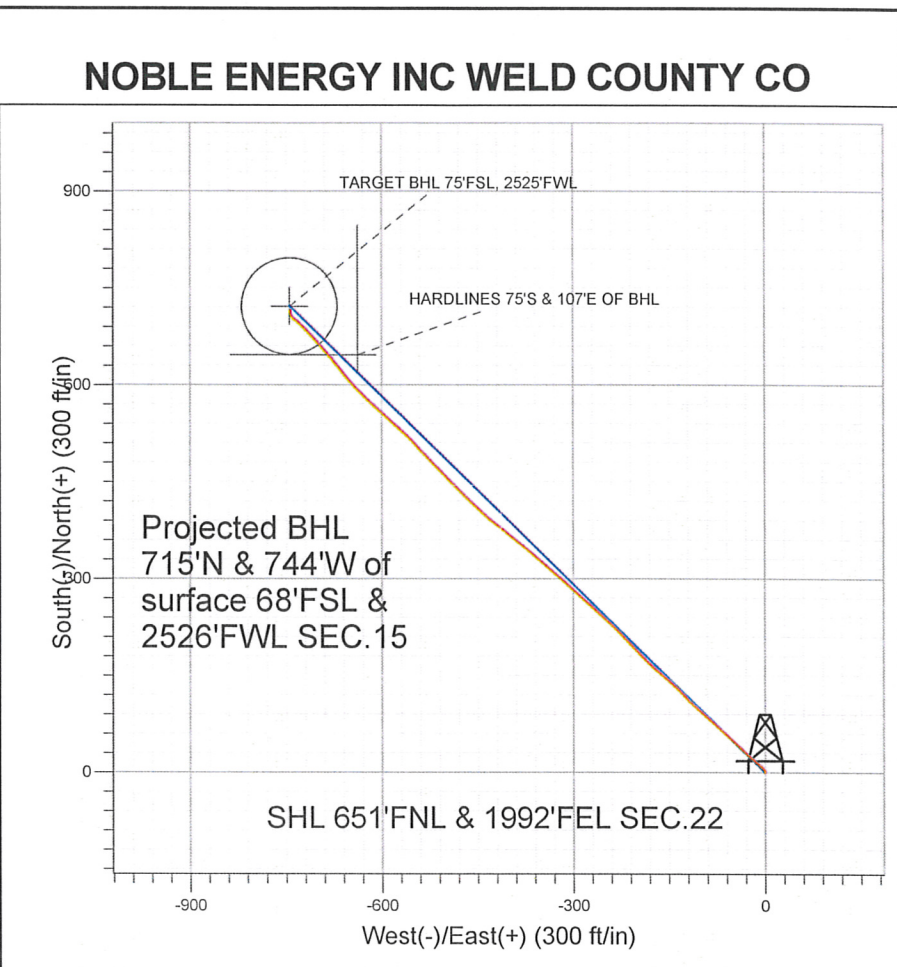
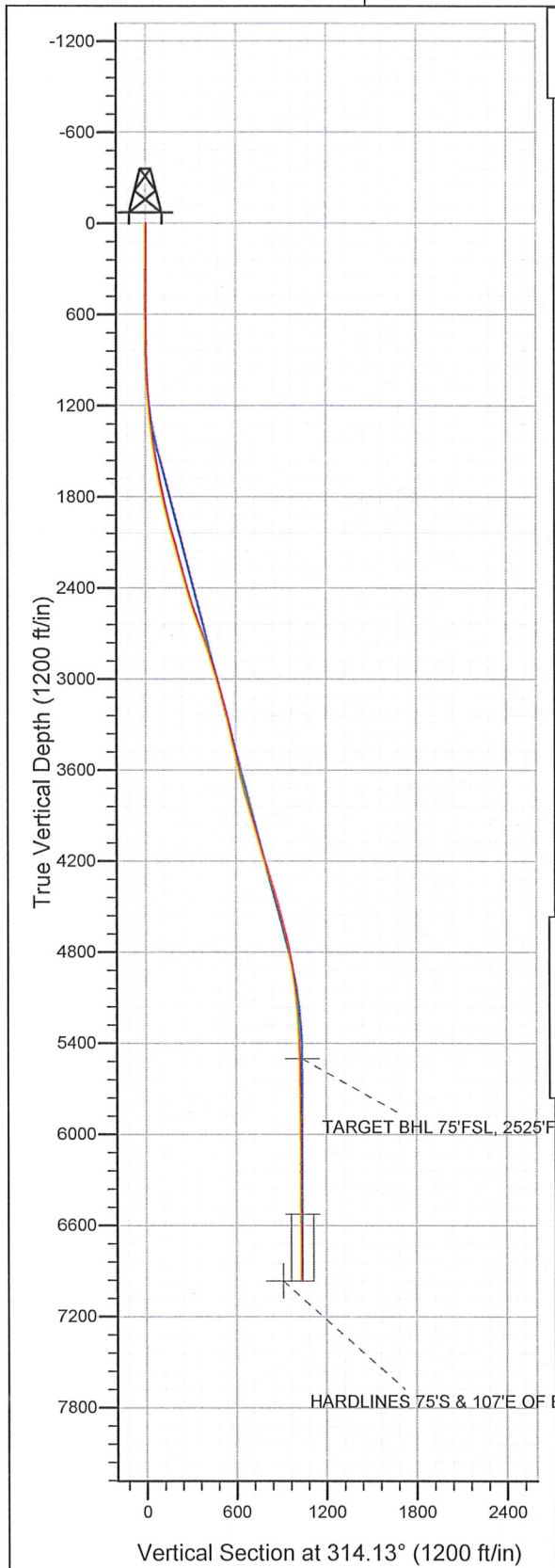
Well Name: **Lang C22-28D**

Surface Location: Coleman C22-18D Pad Sec.22-T4N-R64W  
 North American Datum 1983      US State Plane 1983      Colorado Northern Zone

Ground Elevation: 4656.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1354839.26	3269276.76	40° 18' 12.276 N	104° 32' 4.236 W	

Original Well Elev      WELL @ 4669.0ft (Original Well Elev)



## Final Survey Plot

Projected Final Survey -  
 7092'MD & 6962'TVD @ 1031' VS  
 0.7 deg Inc 260.6 deg AZ

Project: SEC.22-T4N-R64W  
 Site: Coleman C22-18D Pad Sec.22-T4N-R64W  
 Well: Lang C22-28D  
 Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.22-T4N-R64W  
 Site: Coleman C22-18D Pad Sec.22-T4N-R64W  
 Well: Lang C22-28D  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Lang C22-28D  
 TVD Reference: WELL @ 4669.0ft (Original Well Elev)  
 MD Reference: WELL @ 4669.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: Landmark

Project	SEC.22-T4N-R64W, 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 Coleman C22-18D Pad Sec.22-T4N-R64W

Site Position:		Northing:	1,354,838.99 ft	Latitude:	40° 18' 12.276 N
From:	Lat/Long	Easting:	3,269,251.66 ft	Longitude:	104° 32' 4.560 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Lang C22-28D					
Well Position	+N/-S	0.0 ft	Northing:	1,354,839.26 ft	Latitude:	40° 18' 12.276 N
	+E/-W	0.0 ft	Easting:	3,269,276.76 ft	Longitude:	104° 32' 4.236 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,656.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/15/2011	8.78	67.02	53,142

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 (°)	
	5,500.0	0.0	0.0	314.13	

Survey Program Date 2/23/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
682.0	7,092.0	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
682.0	0.20	26.50	682.0	1.1	0.5	0.4	0.03	0.03	0.00
768.0	0.40	358.60	768.0	1.5	0.6	0.6	0.28	0.23	-32.44
854.0	1.40	325.00	854.0	2.7	0.0	1.9	1.27	1.16	-39.07
939.0	2.20	319.60	938.9	4.8	-1.7	4.5	0.96	0.94	-6.35
1,025.0	3.40	316.10	1,024.8	7.8	-4.5	8.7	1.41	1.40	-4.07
1,111.0	4.40	308.00	1,110.6	11.7	-8.9	14.5	1.32	1.16	-9.42
1,196.0	4.70	309.80	1,195.4	16.0	-14.1	21.2	0.39	0.35	2.12
1,282.0	5.90	312.20	1,281.0	21.2	-20.1	29.2	1.42	1.40	2.79
1,368.0	7.40	311.90	1,366.4	27.8	-27.5	39.1	1.74	1.74	-0.35
1,452.0	8.10	313.40	1,449.7	35.5	-35.8	50.5	0.87	0.83	1.79
1,538.0	9.30	311.80	1,534.7	44.3	-45.4	63.5	1.42	1.40	-1.86
1,623.0	10.40	313.70	1,618.4	54.2	-56.1	78.0	1.35	1.29	2.24



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.22-T4N-R64W  
**Site:** Coleman C22-18D Pad Sec.22-T4N-R64W  
**Well:** Lang C22-28D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Lang C22-28D  
**TVD Reference:** WELL @ 4669.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4669.0ft (Original Well Elev)  
**North Reference:** True  
**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)
1,709.0	11.50	313.90	1,702.8	65.5	-67.9	94.3	1.28	1.28	0.23
1,794.0	12.20	311.00	1,786.0	77.3	-80.8	111.8	1.08	0.82	-3.41
1,880.0	12.80	311.50	1,870.0	89.5	-94.7	130.4	0.71	0.70	0.58
1,966.0	14.20	312.70	1,953.6	103.0	-109.6	150.4	1.66	1.63	1.40
2,051.0	15.70	316.80	2,035.7	118.5	-125.2	172.3	2.16	1.76	4.82
2,137.0	16.40	312.30	2,118.4	135.1	-142.1	196.1	1.66	0.81	-5.23
2,222.0	15.10	311.40	2,200.2	150.5	-159.3	219.1	1.56	-1.53	-1.06
2,308.0	15.30	311.00	2,283.2	165.4	-176.3	241.7	0.26	0.23	-0.47
2,393.0	15.70	315.00	2,365.1	180.9	-192.9	264.4	1.34	0.47	4.71
2,479.0	17.20	318.10	2,447.6	198.6	-209.6	288.7	2.02	1.74	3.60
2,565.0	18.30	313.90	2,529.5	217.4	-227.8	314.9	1.96	1.28	-4.88
2,651.0	20.20	312.30	2,610.7	236.7	-248.5	343.2	2.29	2.21	-1.86
2,736.0	20.00	311.80	2,690.5	256.3	-270.2	372.4	0.31	-0.24	-0.59
2,822.0	19.80	312.70	2,771.4	276.0	-291.9	401.7	0.43	-0.23	1.05
2,907.0	16.80	311.00	2,852.1	293.8	-311.7	428.3	3.58	-3.53	-2.00
2,993.0	17.40	309.80	2,934.3	310.2	-331.0	453.6	0.81	0.70	-1.40
3,078.0	17.20	311.80	3,015.4	326.7	-350.1	478.8	0.74	-0.24	2.35
3,164.0	15.20	310.30	3,098.0	342.5	-368.2	502.7	2.38	-2.33	-1.74
3,250.0	13.70	306.40	3,181.3	355.8	-385.0	524.1	2.08	-1.74	-4.53
3,335.0	13.90	309.80	3,263.8	368.3	-400.9	544.2	0.98	0.24	4.00
3,421.0	12.90	306.00	3,347.5	380.6	-416.6	564.0	1.55	-1.16	-4.42
3,507.0	13.50	309.50	3,431.2	392.6	-432.2	583.6	1.16	0.70	4.07
3,592.0	12.10	314.10	3,514.1	405.1	-446.2	602.4	2.04	-1.65	5.41
3,678.0	13.10	314.00	3,598.0	418.2	-459.7	621.1	1.16	1.16	-0.12
3,764.0	14.70	314.50	3,681.5	432.6	-474.5	641.8	1.87	1.86	0.58
3,849.0	16.50	315.50	3,763.4	448.8	-490.6	664.6	2.14	2.12	1.18
3,935.0	16.40	315.70	3,845.8	466.2	-507.7	689.0	0.13	-0.12	0.23
4,021.0	16.00	314.80	3,928.4	483.2	-524.6	713.0	0.55	-0.47	-1.05
4,106.0	15.60	320.30	4,010.2	500.2	-540.2	736.0	1.82	-0.47	6.47
4,192.0	15.80	313.50	4,093.0	517.2	-556.1	759.2	2.15	0.23	-7.91
4,278.0	17.60	311.60	4,175.4	533.9	-574.3	783.9	2.19	2.09	-2.21
4,363.0	17.60	312.20	4,256.4	551.1	-593.4	809.6	0.21	0.00	0.71
4,449.0	17.70	313.00	4,338.4	568.7	-612.6	835.7	0.31	0.12	0.93
4,534.0	15.20	312.90	4,419.9	585.1	-630.2	859.8	2.94	-2.94	-0.12
4,620.0	15.50	317.60	4,502.8	601.3	-646.2	882.5	1.49	0.35	5.47
4,705.0	15.00	322.70	4,584.8	618.4	-660.6	904.7	1.68	-0.59	6.00
4,791.0	13.70	320.60	4,668.1	635.1	-673.8	925.8	1.63	-1.51	-2.44
4,877.0	10.90	318.70	4,752.2	649.1	-685.6	944.1	3.29	-3.26	-2.21
4,962.0	11.00	318.20	4,835.6	661.2	-696.3	960.2	0.16	0.12	-0.59
5,048.0	10.00	317.20	4,920.2	672.8	-706.8	975.8	1.18	-1.16	-1.16
5,133.0	7.40	318.10	5,004.2	682.3	-715.5	988.6	3.06	-3.06	1.06
5,219.0	5.70	314.50	5,089.6	689.4	-722.3	998.4	2.03	-1.98	-4.19
5,304.0	4.90	311.10	5,174.3	694.7	-728.0	1,006.3	1.01	-0.94	-4.00
5,390.0	3.50	309.20	5,260.0	698.8	-732.8	1,012.6	1.64	-1.63	-2.21
5,475.0	2.30	303.00	5,344.9	701.4	-736.3	1,016.8	1.46	-1.41	-7.29
5,561.0	1.90	311.90	5,430.9	703.3	-738.8	1,019.9	0.60	-0.47	10.35
5,630.6	1.49	318.21	5,500.4	704.7	-740.2	1,022.0	0.65	-0.59	9.07

TARGET BHL 75'FSL, 2525'FWL

5,646.0	1.40	320.10	5,515.8	705.0	-740.5	1,022.4	0.65	-0.57	12.28
5,732.0	0.90	328.90	5,601.8	706.4	-741.5	1,024.1	0.61	-0.58	10.23
5,818.0	0.90	328.60	5,687.8	707.6	-742.2	1,025.4	0.01	0.00	-0.35
5,903.0	0.90	343.50	5,772.8	708.8	-742.7	1,026.6	0.27	0.00	17.53
5,989.0	0.60	344.40	5,858.8	709.8	-743.1	1,027.6	0.35	-0.35	1.05
6,074.0	0.40	6.30	5,943.8	710.6	-743.1	1,028.2	0.32	-0.24	25.76

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**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

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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)
6,203.0	0.50	3.10	6,072.8	711.6	-743.1	1,028.8	0.08	0.08	-2.48
6,331.0	0.50	349.10	6,200.8	712.7	-743.1	1,029.6	0.10	0.00	-10.94
6,459.0	0.30	333.50	6,328.8	713.5	-743.4	1,030.4	0.18	-0.16	-12.19
6,588.0	0.20	13.50	6,457.8	714.1	-743.5	1,030.8	0.15	-0.08	31.01
6,654.3	0.23	45.94	6,524.0	714.3	-743.4	1,030.9	0.18	0.04	48.95
TARGET CIRCLE 75'FSL, 2525'FWL									
6,716.0	0.30	65.40	6,585.8	714.4	-743.1	1,030.8	0.18	0.12	31.52
6,845.0	0.20	46.20	6,714.8	714.7	-742.7	1,030.7	0.10	-0.08	-14.88
6,973.0	0.10	294.30	6,842.8	714.9	-742.6	1,030.8	0.20	-0.08	-87.42
7,041.0	0.70	260.60	6,910.8	714.9	-743.1	1,031.1	0.91	0.88	-49.56
7,092.0	0.70	260.60	6,961.7	714.8	-743.7	1,031.5	0.00	0.00	0.00
HARDLINES 75'S & 107'E OF BHL									

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