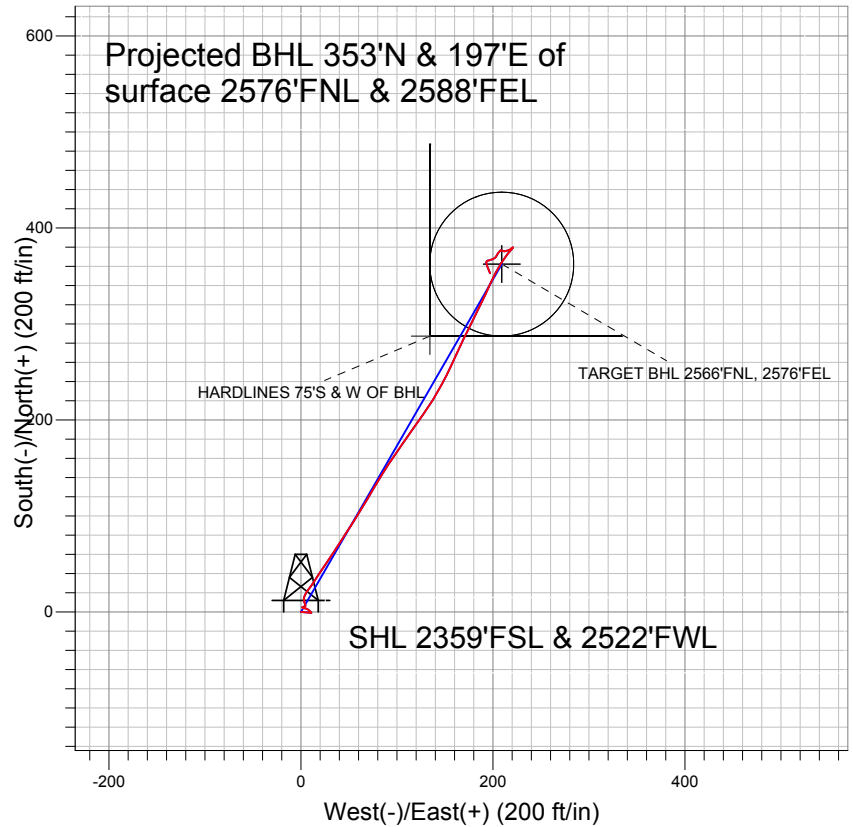
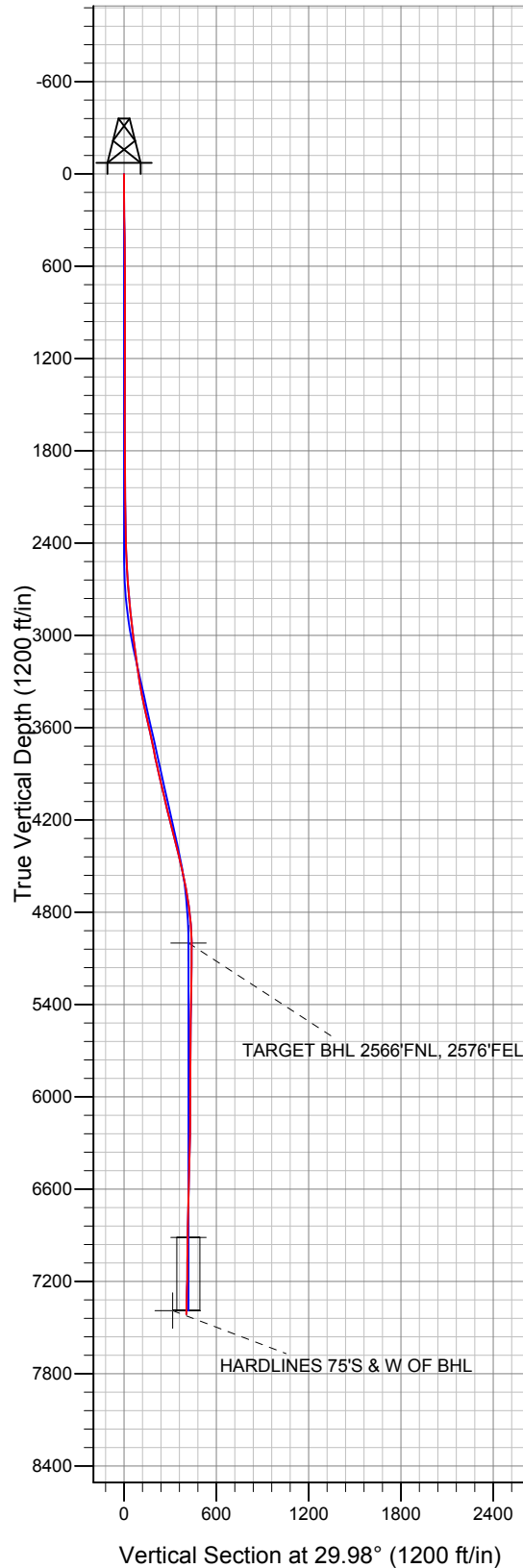


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Mosier K23-21D, Wellbore #1, Noble Mosier K23-21D Plan #3 (3-22-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7455'MD & 7413'TVD @ 404'VS
 3.0 deg Inc 157.0 deg AZ

Project: SEC.23-T4N-R66W
 Site: Schmidt K23-24D Pad Sec.23-T4N-R66W
 Well: Mosier K23-21D
 Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.23-T4N-R66W

Schmidt K23-24D Pad Sec.23-T4N-R66W

Mosier K23-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 April, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Mosier K23-21D
Project:	SEC.23-T4N-R66W	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	Schmidt K23-24D Pad Sec.23-T4N-R66W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Well:	Mosier K23-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.23-T4N-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	Schmidt K23-24D Pad Sec.23-T4N-R66W				
Site Position:		Northing:	1,351,771.22 ft	Latitude:	40.296550
From:	Lat/Long	Easting:	3,210,641.06 ft	Longitude:	-104.744830
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.49 °

Well	Mosier K23-21D					
Well Position	+N/-S	0.0 ft	Northing:	1,351,803.76 ft	Latitude:	40.296640
	+E/-W	0.0 ft	Easting:	3,210,612.89 ft	Longitude:	-104.744930
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,726.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2011	8.87	66.98	53,100

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	29.98	

Survey Program	Date	4/18/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
416.0	7,455.0	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	
416.0	2.20	94.80	415.9	-0.7	8.0	3.4	0.53	0.53	0.00	
501.0	1.00	96.30	500.9	-0.9	10.3	4.4	1.41	-1.41	1.76	
567.0	0.30	303.00	566.9	-0.9	10.7	4.6	1.93	-1.06	-232.27	
643.0	0.20	320.70	642.9	-0.6	10.5	4.7	0.16	-0.13	23.29	
729.0	0.30	341.70	728.9	-0.3	10.3	4.9	0.16	0.12	24.42	
815.0	0.60	306.50	814.9	0.2	9.9	5.1	0.46	0.35	-40.93	
900.0	0.50	301.90	899.9	0.6	9.2	5.2	0.13	-0.12	-5.41	
986.0	0.70	326.80	985.8	1.3	8.6	5.4	0.38	0.23	28.95	
1,071.0	0.60	308.40	1,070.8	2.0	8.0	5.7	0.27	-0.12	-21.65	
1,157.0	0.80	307.20	1,156.8	2.6	7.2	5.8	0.23	0.23	-1.40	
1,242.0	0.40	290.00	1,241.8	3.1	6.4	5.9	0.51	-0.47	-20.24	
1,328.0	0.70	282.20	1,327.8	3.3	5.6	5.7	0.36	0.35	-9.07	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Mosier K23-21D
Project:	SEC.23-T4N-R66W	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	Schmidt K23-24D Pad Sec.23-T4N-R66W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Well:	Mosier K23-21D	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)	
1,413.0	0.70	289.80	1,412.8	3.6	4.6	5.4	0.11	0.00	8.94	
1,499.0	0.70	277.80	1,498.8	3.8	3.6	5.1	0.17	0.00	-13.95	
1,585.0	0.50	287.80	1,584.8	4.0	2.7	4.8	0.26	-0.23	11.63	
1,670.0	0.60	295.00	1,669.8	4.3	2.0	4.7	0.14	0.12	8.47	
1,756.0	0.30	339.60	1,755.8	4.7	1.5	4.8	0.51	-0.35	51.86	
1,841.0	0.20	255.80	1,840.8	4.9	1.3	4.9	0.40	-0.12	-98.59	
1,927.0	0.80	87.00	1,926.8	4.9	1.7	5.1	1.16	0.70	-196.28	
2,012.0	1.00	86.40	2,011.8	5.0	3.0	5.8	0.24	0.24	-0.71	
2,098.0	0.60	24.10	2,097.8	5.4	4.0	6.7	1.04	-0.47	-72.44	
2,183.0	0.70	30.30	2,182.8	6.3	4.4	7.6	0.14	0.12	7.29	
2,269.0	1.50	331.70	2,268.8	7.7	4.2	8.8	1.49	0.93	-68.14	
2,354.0	2.10	347.80	2,353.7	10.2	3.3	10.5	0.92	0.71	18.94	
2,440.0	2.40	0.10	2,439.7	13.6	3.0	13.2	0.66	0.35	14.30	
2,525.0	2.80	24.90	2,524.6	17.2	3.8	16.8	1.39	0.47	29.18	
2,611.0	3.80	32.10	2,610.4	21.5	6.2	21.8	1.26	1.16	8.37	
2,696.0	4.40	39.60	2,695.2	26.4	9.8	27.8	0.95	0.71	8.82	
2,782.0	5.50	30.80	2,780.9	32.5	14.0	35.2	1.55	1.28	-10.23	
2,867.0	5.50	35.00	2,865.5	39.4	18.5	43.3	0.47	0.00	4.94	
2,953.0	6.40	34.50	2,951.0	46.7	23.5	52.2	1.05	1.05	-0.58	
3,038.0	7.40	33.80	3,035.4	55.1	29.3	62.4	1.18	1.18	-0.82	
3,124.0	8.20	33.50	3,120.6	64.9	35.7	74.0	0.93	0.93	-0.35	
3,209.0	8.00	30.70	3,204.8	75.0	42.1	86.0	0.52	-0.24	-3.29	
3,295.0	8.40	35.50	3,289.9	85.3	48.8	98.2	0.92	0.47	5.58	
3,380.0	11.70	31.90	3,373.6	97.6	57.0	113.0	3.95	3.88	-4.24	
3,466.0	12.40	30.90	3,457.7	113.0	66.3	131.0	0.85	0.81	-1.16	
3,551.0	12.30	29.60	3,540.7	128.7	75.5	149.2	0.35	-0.12	-1.53	
3,637.0	12.80	32.80	3,624.7	144.6	85.1	167.8	1.00	0.58	3.72	
3,723.0	10.80	34.30	3,708.8	159.3	94.9	185.4	2.35	-2.33	1.74	
3,814.0	11.80	34.80	3,798.1	174.0	105.0	203.2	1.10	1.10	0.55	
3,899.0	13.50	34.50	3,881.0	189.3	115.5	221.7	2.00	2.00	-0.35	
3,985.0	13.00	35.50	3,964.7	205.4	126.8	241.3	0.64	-0.58	1.16	
4,070.0	12.50	31.60	4,047.6	221.1	137.2	260.1	1.17	-0.59	-4.59	
4,156.0	12.80	28.90	4,131.5	237.3	146.7	278.9	0.77	0.35	-3.14	
4,241.0	13.80	24.90	4,214.3	254.8	155.5	298.4	1.60	1.18	-4.71	
4,327.0	15.60	24.60	4,297.4	274.6	164.7	320.1	2.09	2.09	-0.35	
4,412.0	14.10	26.80	4,379.6	294.2	174.1	341.8	1.88	-1.76	2.59	
4,498.0	14.20	25.70	4,463.0	313.1	183.4	362.8	0.33	0.12	-1.28	
4,583.0	12.80	26.00	4,545.6	330.9	192.0	382.6	1.65	-1.65	0.35	
4,669.0	10.80	24.30	4,629.8	346.8	199.5	400.1	2.36	-2.33	-1.98	
4,754.0	8.00	30.90	4,713.7	359.2	205.8	414.0	3.52	-3.29	7.76	
4,840.0	6.00	36.70	4,799.0	367.9	211.6	424.4	2.46	-2.33	6.74	
4,925.0	5.10	39.60	4,883.6	374.4	216.7	432.6	1.11	-1.06	3.41	
5,011.0	1.90	33.40	4,969.5	378.5	219.9	437.8	3.74	-3.72	-7.21	
5,041.2	1.29	32.43	4,999.6	379.2	220.3	438.6	2.01	-2.01	-3.22	
TARGET BHL 2566'FNL, 2576'FEL										
5,096.0	0.20	15.40	5,054.4	379.8	220.7	439.3	2.01	-1.99	-31.06	
5,182.0	0.60	227.10	5,140.4	379.7	220.4	439.0	0.90	0.47	-172.44	
5,267.0	0.60	215.80	5,225.4	379.0	219.8	438.2	0.14	0.00	-13.29	
5,353.0	1.20	248.00	5,311.4	378.3	218.7	437.0	0.89	0.70	37.44	
5,439.0	1.10	231.40	5,397.4	377.5	217.2	435.5	0.40	-0.12	-19.30	
5,524.0	1.50	254.40	5,482.4	376.7	215.5	434.0	0.76	0.47	27.06	
5,610.0	1.50	252.20	5,568.4	376.0	213.4	432.3	0.07	0.00	-2.56	
5,695.0	0.50	250.90	5,653.3	375.6	212.0	431.2	1.18	-1.18	-1.53	
5,781.0	0.80	308.50	5,739.3	375.8	211.1	431.0	0.79	0.35	66.98	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
5,866.0	1.10	279.80	5,824.3	376.3	209.9	430.8	0.65	0.35	-33.76
5,952.0	0.90	286.70	5,910.3	376.6	208.4	430.4	0.27	-0.23	8.02
6,037.0	0.30	120.10	5,995.3	376.7	208.0	430.2	1.40	-0.71	-196.00
6,123.0	0.40	194.10	6,081.3	376.3	208.1	430.0	0.50	0.12	86.05
6,208.0	0.70	256.70	6,166.3	375.9	207.5	429.3	0.74	0.35	73.65
6,294.0	0.90	232.60	6,252.3	375.4	206.5	428.3	0.45	0.23	-28.02
6,379.0	1.10	212.80	6,337.3	374.3	205.5	426.9	0.47	0.24	-23.29
6,465.0	1.50	212.70	6,423.3	372.7	204.4	424.9	0.47	0.47	-0.12
6,550.0	1.70	203.30	6,508.2	370.6	203.3	422.6	0.39	0.24	-11.06
6,636.0	2.50	240.50	6,594.2	368.5	201.2	419.7	1.79	0.93	43.26
6,721.0	2.10	250.10	6,679.1	367.0	198.1	416.9	0.65	-0.47	11.29
6,807.0	1.40	258.00	6,765.1	366.3	195.6	415.0	0.86	-0.81	9.19
6,892.0	0.60	255.40	6,850.1	365.9	194.2	414.0	0.94	-0.94	-3.06
6,955.8	0.64	220.90	6,913.9	365.6	193.6	413.4	0.58	0.06	-54.04
TARGET CIRCLE 2566'FNL, 2576'FEL									
6,978.0	0.70	211.20	6,936.0	365.4	193.5	413.2	0.58	0.27	-43.78
7,063.0	0.80	200.70	7,021.0	364.4	193.0	412.1	0.20	0.12	-12.35
7,149.0	0.60	151.40	7,107.0	363.4	193.0	411.2	0.71	-0.23	-57.33
7,234.0	1.50	171.50	7,192.0	361.9	193.4	410.1	1.13	1.06	23.65
7,320.0	2.70	156.10	7,278.0	359.0	194.3	408.0	1.53	1.40	-17.91
7,405.0	2.90	157.20	7,362.9	355.1	196.0	405.6	0.24	0.24	1.29
7,433.1	2.96	157.09	7,390.9	353.8	196.5	404.7	0.20	0.20	-0.41
HARDLINES 75'S & W OF BHL									
7,455.0	3.00	157.00	7,412.8	352.8	197.0	404.0	0.20	0.20	-0.39

Checked By: _____ Approved By: _____ Date: _____