

Project: SEC.31-T7N-R66W
Site: Schneider USX II31-13D Pad Sec.31-T7N-R66W
Well: Schneider USX II31-12PD
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T7N-R66W

Schneider USX II31-13D Pad Sec.31-T7N-R66W

Schneider USX II31-12PD

Wellbore #1

Design: Wellbore #1

Standard Survey Report

05 December, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Schneider USX II31-12PD
Project:	SEC.31-T7N-R66W	TVD Reference:	WELL @ 4918.0ft (Original Well Elev)
Site:	Schneider USX II31-13D Pad Sec.31-T7N-R66W	MD Reference:	WELL @ 4918.0ft (Original Well Elev)
Well:	Schneider USX II31-12PD	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.31-T7N-R66W, 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	Schneider USX II31-13D Pad Sec.31-T7N-R66W				
Site Position:		Northing:	1,435,107.12 ft	Latitude:	40.525810
From:	Lat/Long	Easting:	3,187,602.10 ft	Longitude:	-104.825150
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.44 °

Well	Schneider USX II31-12PD					
Well Position	+N-S	0.0 ft	Northing:	1,435,103.09 ft	Latitude:	40.525800
	+E-W	0.0 ft	Easting:	3,187,554.87 ft	Longitude:	-104.825320
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,905.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/10/2011	8.89	67.14	53,174

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	311.97	

Survey Program	Date	12/2/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
354.0	7,870.0	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	
354.0	0.40	174.80	354.0	-1.2	0.1	-0.9	0.11	0.11	0.00	
444.0	0.50	319.10	444.0	-1.2	-0.1	-0.7	0.95	0.11	160.33	
536.0	1.80	347.70	536.0	0.5	-0.7	0.8	1.50	1.41	31.09	
628.0	4.50	340.70	627.8	5.3	-2.2	5.2	2.96	2.93	-7.61	
720.0	6.90	346.50	719.4	14.1	-4.7	12.9	2.68	2.61	6.30	
813.0	9.00	345.10	811.5	26.5	-7.8	23.6	2.27	2.26	-1.51	
913.0	10.50	343.90	910.0	42.8	-12.4	37.9	1.51	1.50	-1.20	
1,007.0	12.20	344.60	1,002.2	60.7	-17.4	53.5	1.81	1.81	0.74	
1,100.0	14.00	342.30	1,092.8	80.8	-23.4	71.5	2.01	1.94	-2.47	
1,194.0	16.50	340.90	1,183.4	104.3	-31.3	93.0	2.69	2.66	-1.49	
1,288.0	18.40	339.00	1,273.1	130.8	-40.9	117.9	2.11	2.02	-2.02	

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Well:	Schneider USX II31-12PD	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)
1,381.0	20.50	336.40	1,360.8	159.4	-52.7	145.8	2.44	2.26	-2.80
1,475.0	21.50	334.10	1,448.6	190.0	-66.8	176.7	1.38	1.06	-2.45
1,569.0	21.80	331.10	1,535.9	220.7	-82.8	209.2	1.22	0.32	-3.19
1,663.0	21.50	328.30	1,623.3	250.7	-100.3	242.2	1.14	-0.32	-2.98
1,756.0	21.10	323.60	1,710.0	278.7	-119.2	275.0	1.88	-0.43	-5.05
1,849.0	21.60	321.40	1,796.6	305.5	-139.8	308.2	1.02	0.54	-2.37
1,943.0	21.50	320.00	1,884.0	332.2	-161.7	342.4	0.56	-0.11	-1.49
2,036.0	21.50	319.60	1,970.5	358.3	-183.7	376.1	0.16	0.00	-0.43
2,130.0	21.20	318.00	2,058.1	384.0	-206.2	410.1	0.70	-0.32	-1.70
2,223.0	21.80	318.20	2,144.6	409.4	-229.0	444.0	0.65	0.65	0.22
2,317.0	22.40	320.10	2,231.7	436.1	-252.1	479.1	0.99	0.64	2.02
2,410.0	21.40	318.70	2,318.0	462.5	-274.6	513.5	1.21	-1.08	-1.51
2,504.0	21.60	319.60	2,405.5	488.5	-297.2	547.7	0.41	0.21	0.96
2,597.0	21.70	319.80	2,491.9	514.7	-319.4	581.7	0.13	0.11	0.22
2,691.0	21.60	320.50	2,579.3	541.3	-341.6	616.0	0.29	-0.11	0.74
2,784.0	20.70	317.80	2,666.0	566.7	-363.5	649.3	1.43	-0.97	-2.90
2,877.0	21.10	315.80	2,752.9	590.9	-386.2	682.3	0.88	0.43	-2.15
2,971.0	21.30	315.00	2,840.5	615.1	-410.1	716.2	0.37	0.21	-0.85
3,066.0	19.70	310.60	2,929.5	637.7	-434.5	749.5	2.34	-1.68	-4.63
3,160.0	18.90	309.20	3,018.2	657.7	-458.3	780.5	0.98	-0.85	-1.49
3,253.0	19.40	307.50	3,106.1	676.6	-482.2	811.0	0.81	0.54	-1.83
3,347.0	19.30	304.20	3,194.8	694.8	-507.4	841.9	1.17	-0.11	-3.51
3,440.0	18.80	301.10	3,282.7	711.2	-533.0	871.9	1.21	-0.54	-3.33
3,534.0	18.70	297.40	3,371.7	725.9	-559.3	901.3	1.27	-0.11	-3.94
3,628.0	19.80	299.10	3,460.4	740.6	-586.6	931.4	1.31	1.17	1.81
3,721.0	19.80	300.30	3,547.9	756.2	-614.0	962.2	0.44	0.00	1.29
3,814.0	20.30	298.10	3,635.3	771.8	-641.8	993.3	0.97	0.54	-2.37
3,907.0	20.70	298.80	3,722.4	787.3	-670.5	1,025.0	0.50	0.43	0.75
4,001.0	22.60	300.50	3,809.8	804.5	-700.6	1,058.9	2.13	2.02	1.81
4,094.0	23.90	300.60	3,895.2	823.1	-732.2	1,094.8	1.40	1.40	0.11
4,188.0	23.70	299.80	3,981.2	842.2	-765.0	1,132.0	0.40	-0.21	-0.85
4,281.0	23.10	299.90	4,066.6	860.6	-797.0	1,168.1	0.65	-0.65	0.11
4,375.0	20.40	299.30	4,153.9	877.8	-827.3	1,202.1	2.88	-2.87	-0.64
4,468.0	20.00	300.40	4,241.2	893.8	-855.1	1,233.5	0.59	-0.43	1.18
4,562.0	20.40	301.60	4,329.4	910.5	-883.0	1,265.4	0.61	0.43	1.28
4,656.0	20.10	300.30	4,417.6	927.2	-910.9	1,297.3	0.58	-0.32	-1.38
4,751.0	21.20	299.80	4,506.5	944.0	-939.9	1,330.1	1.17	1.16	-0.53
4,845.0	21.10	300.40	4,594.1	961.0	-969.2	1,363.3	0.25	-0.11	0.64
4,938.0	19.60	298.40	4,681.3	976.9	-997.4	1,394.8	1.78	-1.61	-2.15
5,032.0	19.30	301.10	4,770.0	992.4	-1,024.5	1,425.4	1.01	-0.32	2.87
5,125.0	19.30	301.10	4,857.7	1,008.3	-1,050.9	1,455.6	0.00	0.00	0.00
5,219.0	19.20	300.60	4,946.5	1,024.2	-1,077.5	1,486.0	0.21	-0.11	-0.53
5,312.0	18.50	301.80	5,034.5	1,039.8	-1,103.2	1,515.5	0.86	-0.75	1.29
5,406.0	16.80	302.20	5,124.1	1,054.9	-1,127.3	1,543.6	1.81	-1.81	0.43
5,500.0	13.30	301.00	5,214.8	1,067.7	-1,148.1	1,567.6	3.74	-3.72	-1.28
5,593.0	11.00	301.30	5,305.7	1,077.8	-1,164.9	1,586.8	2.47	-2.47	0.32
5,687.0	9.20	302.00	5,398.3	1,086.4	-1,178.9	1,603.0	1.92	-1.91	0.74
5,780.0	7.60	302.40	5,490.3	1,093.7	-1,190.4	1,616.4	1.72	-1.72	0.43
5,874.0	6.20	301.40	5,583.6	1,099.6	-1,200.0	1,627.6	1.49	-1.49	-1.06
5,967.0	4.80	298.20	5,676.2	1,104.1	-1,207.7	1,636.3	1.54	-1.51	-3.44
6,061.0	4.10	300.50	5,769.9	1,107.7	-1,214.1	1,643.4	0.77	-0.74	2.45
6,155.0	3.00	297.30	5,863.7	1,110.5	-1,219.1	1,649.1	1.19	-1.17	-3.40
6,248.0	2.30	294.60	5,956.6	1,112.4	-1,223.0	1,653.2	0.76	-0.75	-2.90

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6,342.0	1.70	289.60	6,050.5	1,113.6	-1,226.0	1,656.3	0.66	-0.64	-5.32
6,392.1	1.54	287.15	6,100.6	1,114.1	-1,227.4	1,657.6	0.35	-0.33	-4.89
DRILL TARGET 1980'FSL, 660'FWL									
6,435.0	1.40	284.60	6,143.5	1,114.4	-1,228.4	1,658.6	0.35	-0.32	-5.94
6,529.0	1.10	274.90	6,237.5	1,114.8	-1,230.4	1,660.3	0.39	-0.32	-10.32
6,623.0	1.00	273.50	6,331.5	1,114.9	-1,232.2	1,661.7	0.11	-0.11	-1.49
6,716.0	0.80	263.00	6,424.5	1,114.9	-1,233.6	1,662.7	0.28	-0.22	-11.29
6,810.0	0.80	265.30	6,518.4	1,114.7	-1,234.9	1,663.6	0.03	0.00	2.45
6,903.0	0.70	251.70	6,611.4	1,114.5	-1,236.1	1,664.3	0.22	-0.11	-14.62
7,090.0	1.00	220.90	6,798.4	1,112.9	-1,238.3	1,664.9	0.29	0.16	-16.47
7,184.0	1.10	220.00	6,892.4	1,111.6	-1,239.4	1,664.8	0.11	0.11	-0.96
7,277.0	1.30	226.70	6,985.4	1,110.2	-1,240.7	1,664.9	0.26	0.22	7.20
7,313.2	1.36	226.70	7,021.6	1,109.6	-1,241.3	1,665.0	0.16	0.16	0.00
LEGAL BOX 400' X 400' 1987'FSL, 671'FWL									
7,313.5	1.36	226.70	7,021.9	1,109.6	-1,241.3	1,665.0	0.16	0.16	0.00
TARGET CIRCLE 1980'FSL, 660'FWL									
7,402.0	1.50	226.70	7,110.3	1,108.1	-1,242.9	1,665.1	0.16	0.16	0.00
7,450.0	1.50	226.70	7,158.3	1,107.2	-1,243.8	1,665.2	0.00	0.00	0.00
7,870.0	1.50	226.70	7,578.2	1,099.7	-1,251.8	1,666.1	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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