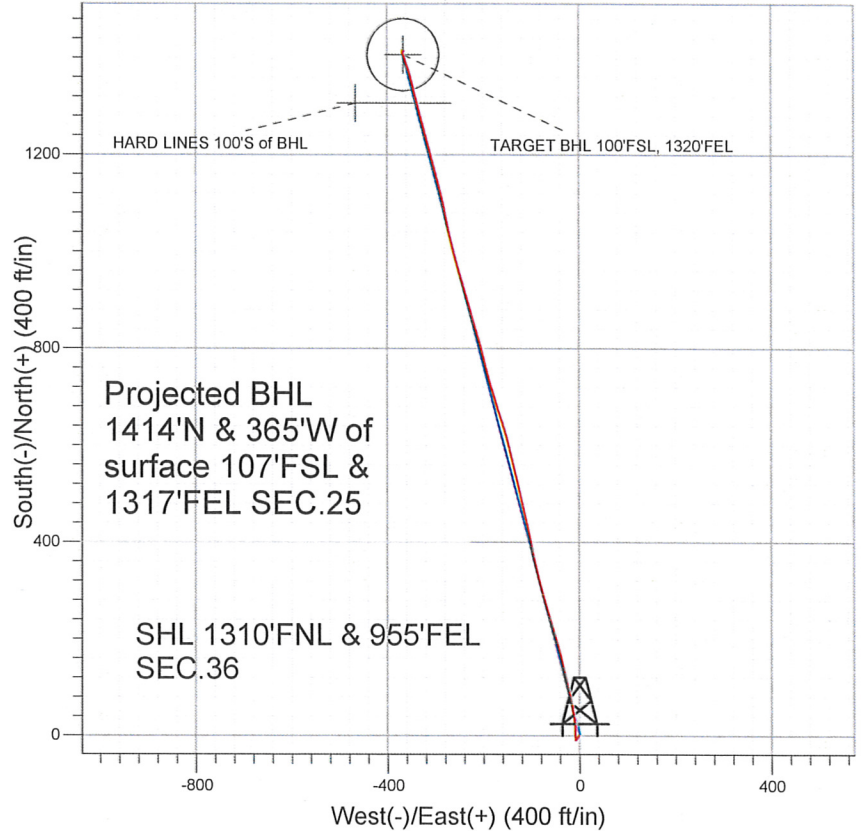


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Bernhardt State PC N36-27D, Wellbore #1, Noble Bernhardt State PC N36-27D Plan#1 (11-02-
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7794'MD & 7561'TVD @ 1460'VS
 0.6 deg Inc 80.8 deg AZ

Project: SEC.36-T5N-R67W
 Site: Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W
 Well: Bernhardt State PC N36-27D
 Plan: Wellbore #1

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W
Project:	SEC.36-T5N-R67W	TVD Reference:	WELL @ 4897.0ft (Original Well Elev)
Site:	Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W	MD Reference:	WELL @ 4897.0ft (Original Well Elev)
Well:	Bernhardt State PC N36-27D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.36-T5N-R67W, 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	Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W				
Site Position:		Northing:	1,374,576.85 ft	Latitude:	40° 21' 34.956 N
From:	Lat/Long	Easting:	3,185,189.53 ft	Longitude:	104° 50' 7.656 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.43 °

Well	Bernhardt State PC N36-27D					
Well Position	+N/-S	0.0 ft	Northing:	1,374,576.84 ft	Latitude:	40° 21' 34.956 N
	+E/-W	0.0 ft	Easting:	3,185,189.53 ft	Longitude:	104° 50' 7.656 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,884.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/2/2010	8.98	67.03	53,167

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	345.34	

Survey Program	Date 5/20/2011				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
680.0	7,794.0	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	
680.0	1.60	215.60	679.9	-7.7	-5.5	-6.1	0.24	0.24	0.00	
766.0	1.00	225.30	765.9	-9.2	-6.8	-7.2	0.74	-0.70	11.28	
851.0	0.90	331.80	850.9	-9.2	-7.6	-6.9	1.79	-0.12	125.29	
937.0	2.50	1.30	936.8	-6.7	-7.9	-4.5	2.06	1.86	34.30	
1,023.0	4.30	5.00	1,022.7	-1.6	-7.6	0.4	2.11	2.09	4.30	
1,108.0	6.10	358.30	1,107.3	6.1	-7.4	7.8	2.23	2.12	-7.88	
1,194.0	8.30	357.00	1,192.7	16.8	-7.9	18.3	2.56	2.56	-1.51	
1,279.0	10.30	352.80	1,276.5	30.5	-9.1	31.8	2.48	2.35	-4.94	
1,365.0	12.50	349.80	1,360.8	47.3	-11.8	48.8	2.65	2.56	-3.49	
1,450.0	14.40	347.80	1,443.5	66.7	-15.6	68.5	2.30	2.24	-2.35	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W
Project:	SEC.36-T5N-R67W	TVD Reference:	WELL @ 4897.0ft (Original Well Elev)
Site:	Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W	MD Reference:	WELL @ 4897.0ft (Original Well Elev)
Well:	Bernhardt State PC N36-27D	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)	
1,536.0	15.60	349.30	1,526.6	88.5	-20.0	90.7	1.47	1.40	1.74	
1,622.0	17.50	345.40	1,609.0	112.4	-25.4	115.2	2.56	2.21	-4.53	
1,707.0	19.50	348.00	1,689.6	138.6	-31.6	142.1	2.54	2.35	3.06	
1,793.0	20.70	346.00	1,770.4	167.4	-38.3	171.7	1.61	1.40	-2.33	
1,878.0	21.60	341.80	1,849.6	196.9	-46.8	202.3	2.07	1.06	-4.94	
1,964.0	22.00	344.90	1,929.5	227.5	-55.9	234.2	1.42	0.47	3.60	
2,050.0	20.90	344.10	2,009.5	257.8	-64.3	265.7	1.32	-1.28	-0.93	
2,136.0	20.70	343.80	2,089.9	287.1	-72.8	296.2	0.26	-0.23	-0.35	
2,221.0	20.90	343.20	2,169.4	316.0	-81.3	326.4	0.34	0.24	-0.71	
2,306.0	19.80	346.90	2,249.1	344.6	-89.0	355.9	1.99	-1.29	4.35	
2,392.0	19.40	348.70	2,330.1	372.8	-95.1	384.7	0.84	-0.47	2.09	
2,478.0	19.40	348.90	2,411.2	400.8	-100.6	413.2	0.08	0.00	0.23	
2,563.0	20.40	348.40	2,491.2	429.2	-106.3	442.1	1.19	1.18	-0.59	
2,648.0	20.20	346.80	2,570.9	458.0	-112.7	471.6	0.69	-0.24	-1.88	
2,734.0	21.60	346.20	2,651.2	487.8	-119.8	502.3	1.65	1.63	-0.70	
2,819.0	22.80	347.50	2,729.9	519.1	-127.1	534.4	1.53	1.41	1.53	
2,905.0	23.80	345.90	2,808.9	552.2	-135.0	568.4	1.38	1.16	-1.86	
2,991.0	22.30	347.90	2,888.0	585.0	-142.6	602.0	1.97	-1.74	2.33	
3,076.0	21.10	344.00	2,967.0	615.4	-150.2	633.4	2.21	-1.41	-4.59	
3,162.0	20.90	342.30	3,047.3	644.9	-159.1	664.2	0.75	-0.23	-1.98	
3,247.0	19.90	342.80	3,127.0	673.2	-168.0	693.8	1.19	-1.18	0.59	
3,333.0	18.30	342.00	3,208.2	700.0	-176.5	721.9	1.89	-1.86	-0.93	
3,419.0	17.20	343.50	3,290.1	725.0	-184.3	748.1	1.39	-1.28	1.74	
3,505.0	17.50	345.80	3,372.2	749.8	-191.1	773.7	0.87	0.35	2.67	
3,590.0	16.90	346.20	3,453.4	774.2	-197.2	798.9	0.72	-0.71	0.47	
3,676.0	17.10	345.50	3,535.7	798.5	-203.3	824.0	0.33	0.23	-0.81	
3,761.0	16.40	342.90	3,617.1	822.1	-210.0	848.5	1.21	-0.82	-3.06	
3,847.0	14.20	341.10	3,700.0	843.7	-217.0	871.2	2.62	-2.56	-2.09	
3,933.0	15.30	345.90	3,783.2	864.7	-223.2	893.0	1.91	1.28	5.58	
4,018.0	17.40	344.80	3,864.7	887.8	-229.2	916.9	2.50	2.47	-1.29	
4,104.0	18.30	343.90	3,946.6	913.2	-236.3	943.3	1.09	1.05	-1.05	
4,189.0	19.10	343.50	4,027.1	939.4	-244.0	970.5	0.95	0.94	-0.47	
4,275.0	18.40	342.40	4,108.5	965.8	-252.1	998.2	0.91	-0.81	-1.28	
4,361.0	16.80	345.70	4,190.5	990.8	-259.3	1,024.1	2.19	-1.86	3.84	
4,446.0	15.50	345.60	4,272.2	1,013.7	-265.1	1,047.8	1.53	-1.53	-0.12	
4,532.0	17.80	347.50	4,354.5	1,037.6	-270.8	1,072.4	2.75	2.67	2.21	
4,618.0	18.20	349.00	4,436.3	1,063.7	-276.2	1,099.0	0.71	0.47	1.74	
4,703.0	19.60	347.70	4,516.7	1,090.6	-281.8	1,126.5	1.72	1.65	-1.53	
4,789.0	20.20	346.20	4,597.6	1,119.1	-288.4	1,155.7	0.92	0.70	-1.74	
4,875.0	19.00	345.70	4,678.6	1,147.1	-295.4	1,184.6	1.41	-1.40	-0.58	
4,960.0	18.30	344.70	4,759.2	1,173.4	-302.4	1,211.7	0.91	-0.82	-1.18	
5,046.0	18.40	344.00	4,840.8	1,199.5	-309.7	1,238.8	0.28	0.12	-0.81	
5,131.0	20.00	346.40	4,921.1	1,226.5	-316.8	1,266.8	2.10	1.88	2.82	
5,217.0	19.80	344.70	5,001.9	1,254.8	-324.1	1,296.0	0.71	-0.23	-1.98	
5,303.0	17.80	344.50	5,083.3	1,281.6	-331.4	1,323.7	2.33	-2.33	-0.23	
5,388.0	14.80	343.70	5,164.9	1,304.5	-338.0	1,347.6	3.54	-3.53	-0.94	
5,474.0	14.90	347.50	5,248.0	1,325.8	-343.4	1,369.6	1.14	0.12	4.42	
5,560.0	12.70	347.50	5,331.6	1,345.9	-347.9	1,390.1	2.56	-2.56	0.00	
5,645.0	11.00	344.20	5,414.7	1,362.8	-352.1	1,407.6	2.15	-2.00	-3.88	
5,731.0	8.80	341.70	5,499.5	1,376.9	-356.4	1,422.3	2.61	-2.56	-2.91	
5,816.0	6.90	339.10	5,583.7	1,387.9	-360.3	1,433.9	2.27	-2.24	-3.06	
5,902.0	5.30	342.20	5,669.2	1,396.5	-363.3	1,443.0	1.90	-1.86	3.60	
5,988.0	3.90	340.90	5,754.9	1,403.0	-365.5	1,449.9	1.63	-1.63	-1.51	

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R67W
 Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
 Well: Bernhardt State PC N36-27D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Site Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
 TVD Reference: WELL @ 4897.0ft (Original Well Elev)
 MD Reference: WELL @ 4897.0ft (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)
6,073.0	1.80	340.80	5,839.8	1,407.0	-366.9	1,454.1	2.47	-2.47	-0.12
6,133.2	0.95	332.41	5,900.0	1,408.4	-367.4	1,455.5	1.45	-1.42	-13.94
TARGET BHL 100'FSL, 1320'FEL									
6,159.0	0.60	321.60	5,925.8	1,408.7	-367.6	1,455.8	1.45	-1.34	-41.91
6,244.0	0.30	347.10	6,010.8	1,409.2	-367.9	1,456.5	0.42	-0.35	30.00
6,416.0	0.20	18.40	6,182.8	1,410.0	-367.9	1,457.2	0.10	-0.06	18.20
6,587.0	0.20	39.20	6,353.8	1,410.5	-367.6	1,457.6	0.04	0.00	12.16
6,758.0	0.40	4.90	6,524.7	1,411.3	-367.4	1,458.3	0.15	0.12	-20.06
6,929.0	0.30	7.90	6,695.7	1,412.3	-367.3	1,459.3	0.06	-0.06	1.75
7,100.0	0.20	330.10	6,866.7	1,413.0	-367.4	1,460.0	0.11	-0.06	-22.11
7,272.0	0.10	292.50	7,038.7	1,413.3	-367.7	1,460.4	0.08	-0.06	-21.86
7,275.3	0.09	292.07	7,042.0	1,413.4	-367.7	1,460.4	0.17	-0.17	-13.31
TARGET CIRCLE 100'FSL, 1320'FEL									
7,443.0	0.20	123.30	7,209.7	1,413.2	-367.6	1,460.3	0.17	0.06	-100.61
7,614.0	0.50	75.10	7,380.7	1,413.3	-366.6	1,460.1	0.23	0.18	-28.19
7,744.0	0.60	80.80	7,510.7	1,413.5	-365.4	1,460.0	0.09	0.08	4.38
HARD LINES 100'S of BHL									
7,794.0	0.60	80.80	7,560.7	1,413.6	-364.9	1,459.9	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____