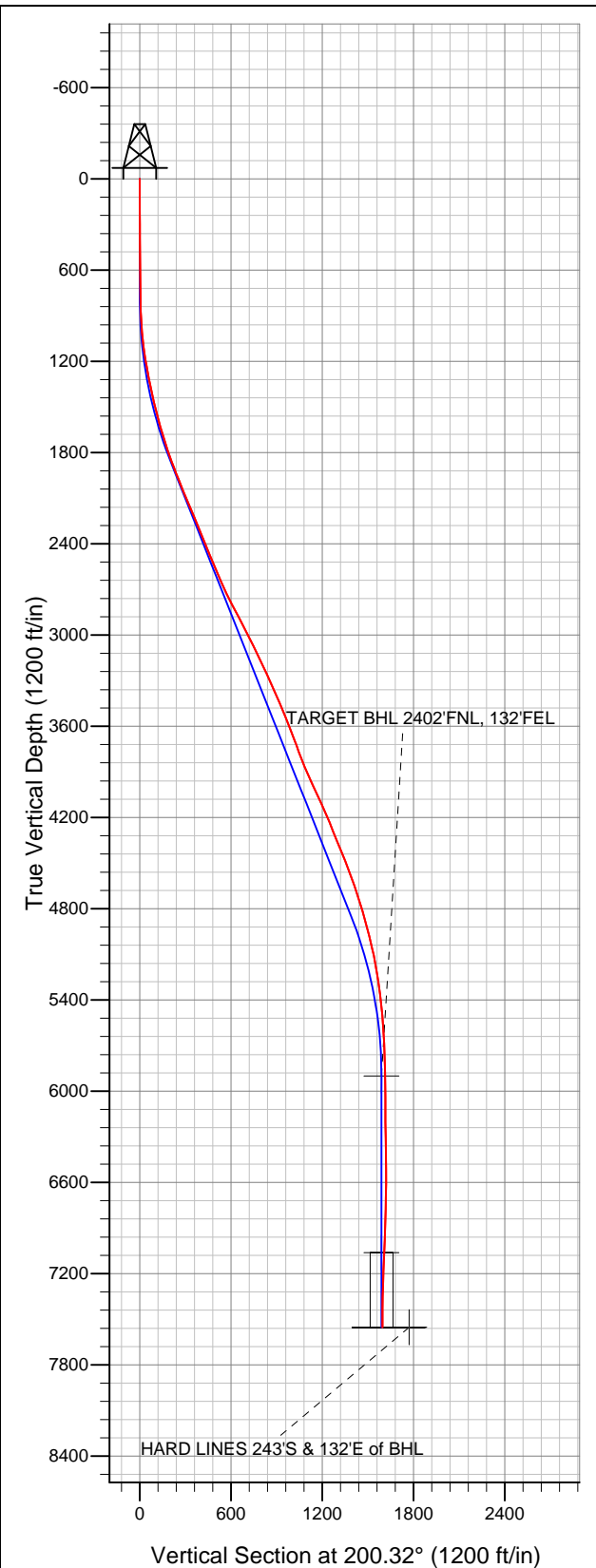


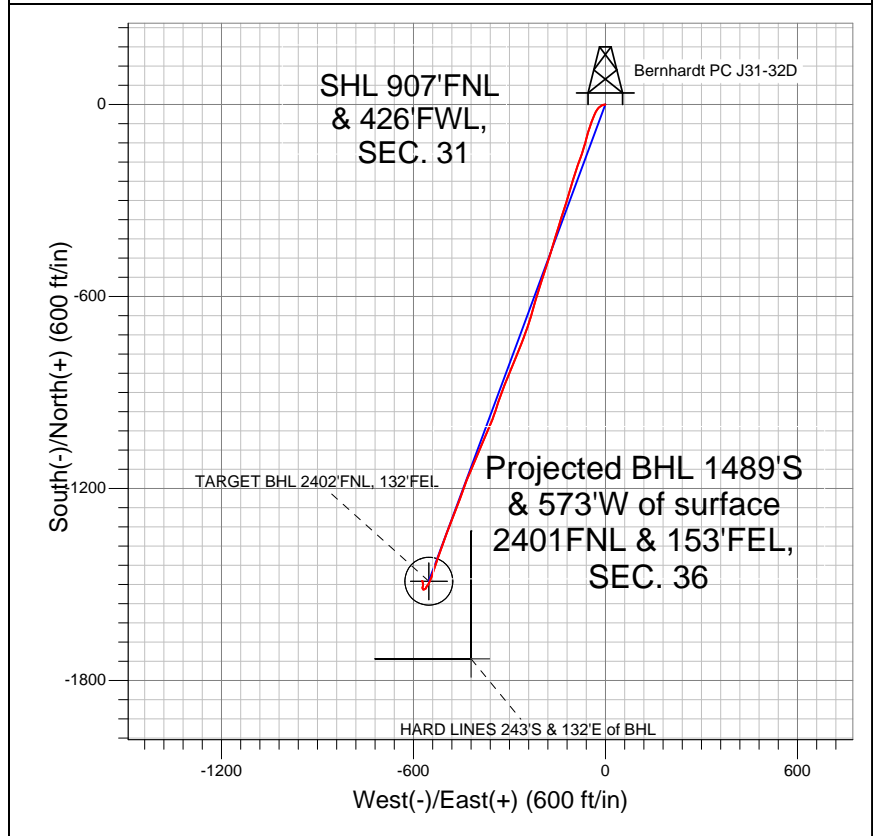
Well Name: Bernhardt PC J31-32D

Surface Location: Bernhardt PC J31-32D Pad Sec.31-T5N-R66W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4899.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1374995.21	3186565.86	40.360830	-104.830510	
		Original Well Elev	WELL @ 4912.0ft (Original Well Elev)			



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Survey #1
- Bernhardt PC J31-32D, Wellbore #1, Noble Bernhardt PC J31-32D Plan #1 (1-13-12) R V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
 7850'MD & 7552'TVD @ 1595'VS
 0.50 deg Inc 333.00 deg AZ

Project: SEC.31-T5N-R66W
 Site: Bernhardt PC J31-32D Pad Sec.31-T5N-R66W
 Well: Bernhardt PC J31-32D
 Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.31-T5N-R66W

Bernhardt PC J31-32D Pad Sec.31-T5N-R66W

Bernhardt PC J31-32D

Wellbore #1

Survey: Survey #1

Standard Survey Report

20 January, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Bernhardt PC J31-32D Pad Sec.31-T5N-R66W
Project:	SEC.31-T5N-R66W	TVD Reference:	WELL @ 4912.0ft (Original Well Elev)
Site:	Bernhardt PC J31-32D Pad Sec.31-T5N-R66W	MD Reference:	WELL @ 4912.0ft (Original Well Elev)
Well:	Bernhardt PC J31-32D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.31-T5N-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		Bernhardt PC J31-32D Pad Sec.31-T5N-R66W			
Site Position:		Northing:	1,374,995.23ft	Latitude:	40.360830
From:	Lat/Long	Easting:	3,186,565.86ft	Longitude:	-104.830510
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.43 °

Well	Bernhardt PC J31-32D					
Well Position	+N-S	0.0 ft	Northing:	1,374,995.21 ft	Latitude:	40.360830
	+E-W	0.0 ft	Easting:	3,186,565.86 ft	Longitude:	-104.830510
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,899.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/19/2011	8.83	66.99	53,049

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	200.32

Survey Program	Date	1/20/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
111.0	7,850.0	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	
111.0	0.30	293.00	111.0	0.1	-0.3	0.0	0.27	0.27	0.00	
203.0	0.30	235.10	203.0	0.1	-0.7	0.2	0.32	0.00	-62.93	
296.0	0.50	222.80	296.0	-0.4	-1.2	0.7	0.23	0.22	-13.23	
387.0	0.70	251.10	387.0	-0.9	-2.0	1.5	0.39	0.22	31.10	
483.0	0.70	267.10	483.0	-1.1	-3.1	2.1	0.20	0.00	16.67	
575.0	0.60	269.90	575.0	-1.1	-4.1	2.5	0.11	-0.11	3.04	
690.0	0.30	273.00	690.0	-1.1	-5.0	2.8	0.26	-0.26	2.70	
782.0	1.20	265.80	782.0	-1.1	-6.2	3.2	0.98	0.98	-7.83	
864.0	3.50	241.80	863.9	-2.4	-9.3	5.5	2.99	2.80	-29.27	
946.0	4.70	237.50	945.7	-5.4	-14.3	10.0	1.51	1.46	-5.24	
1,027.0	6.50	227.50	1,026.3	-10.3	-20.5	16.7	2.52	2.22	-12.35	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Bernhardt PC J31-32D Pad Sec.31-T5N-R66W
Project:	SEC.31-T5N-R66W	TVD Reference:	WELL @ 4912.0ft (Original Well Elev)
Site:	Bernhardt PC J31-32D Pad Sec.31-T5N-R66W	MD Reference:	WELL @ 4912.0ft (Original Well Elev)
Well:	Bernhardt PC J31-32D	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)
1,109.0	7.50	213.40	1,107.7	-17.9	-26.9	26.1	2.42	1.22	-17.20
1,191.0	8.70	205.90	1,188.9	-27.9	-32.6	37.5	1.95	1.46	-9.15
1,273.0	10.50	201.50	1,269.7	-40.4	-38.0	51.1	2.37	2.20	-5.37
1,354.0	11.60	199.40	1,349.2	-55.0	-43.4	66.6	1.45	1.36	-2.59
1,436.0	13.00	199.40	1,429.3	-71.5	-49.2	84.1	1.71	1.71	0.00
1,518.0	14.00	195.70	1,509.1	-89.7	-55.0	103.2	1.61	1.22	-4.51
1,600.0	15.00	193.80	1,588.5	-109.6	-60.2	123.6	1.35	1.22	-2.32
1,681.0	16.40	198.10	1,666.4	-130.6	-66.2	145.5	2.25	1.73	5.31
1,763.0	18.50	197.60	1,744.7	-154.0	-73.8	170.0	2.57	2.56	-0.61
1,845.0	19.20	200.30	1,822.3	-179.1	-82.4	196.5	1.36	0.85	3.29
1,926.0	20.60	198.70	1,898.4	-205.1	-91.6	224.1	1.85	1.73	-1.98
2,008.0	21.70	197.10	1,974.9	-233.2	-100.6	253.6	1.51	1.34	-1.95
2,090.0	21.80	196.20	2,051.1	-262.3	-109.3	284.0	0.42	0.12	-1.10
2,172.0	22.80	196.60	2,126.9	-292.2	-118.1	315.0	1.23	1.22	0.49
2,253.0	23.70	198.00	2,201.3	-322.7	-127.7	346.9	1.30	1.11	1.73
2,335.0	23.20	197.30	2,276.6	-353.8	-137.5	379.5	0.70	-0.61	-0.85
2,417.0	21.90	197.10	2,352.3	-383.8	-146.8	410.9	1.59	-1.59	-0.24
2,498.0	21.90	196.70	2,427.5	-412.7	-155.6	441.1	0.18	0.00	-0.49
2,580.0	22.80	196.00	2,503.3	-442.7	-164.4	472.2	1.14	1.10	-0.85
2,662.0	22.20	198.50	2,579.1	-472.6	-173.7	503.5	1.38	-0.73	3.05
2,744.0	24.00	198.70	2,654.5	-503.1	-184.0	535.7	2.20	2.20	0.24
2,825.0	26.30	197.30	2,727.8	-535.9	-194.6	570.1	2.93	2.84	-1.73
2,907.0	27.90	198.00	2,800.8	-571.5	-205.9	607.4	1.99	1.95	0.85
2,989.0	28.40	195.90	2,873.1	-608.5	-217.2	646.0	1.35	0.61	-2.56
3,070.0	27.40	196.20	2,944.7	-644.9	-227.7	683.8	1.25	-1.23	0.37
3,152.0	25.80	197.40	3,018.0	-680.0	-238.3	720.4	2.06	-1.95	1.46
3,234.0	25.30	200.60	3,092.0	-713.5	-249.8	755.8	1.79	-0.61	3.90
3,316.0	26.40	201.70	3,165.8	-746.8	-262.7	791.5	1.46	1.34	1.34
3,397.0	25.10	200.80	3,238.7	-779.6	-275.4	826.7	1.68	-1.60	-1.11
3,479.0	24.10	202.40	3,313.3	-811.3	-288.0	860.8	1.47	-1.22	1.95
3,561.0	23.80	204.10	3,388.2	-841.9	-301.1	894.1	0.92	-0.37	2.07
3,643.0	22.90	201.70	3,463.5	-871.8	-313.8	926.5	1.60	-1.10	-2.93
3,724.0	21.90	198.30	3,538.4	-900.8	-324.3	957.4	2.02	-1.23	-4.20
3,806.0	20.80	198.30	3,614.8	-929.2	-333.7	987.2	1.34	-1.34	0.00
3,888.0	21.40	199.60	3,691.3	-957.1	-343.3	1,016.7	0.93	0.73	1.59
3,969.0	20.10	201.00	3,767.0	-984.0	-353.3	1,045.4	1.72	-1.60	1.73
4,051.0	21.40	202.40	3,843.7	-1,011.0	-364.0	1,074.5	1.70	1.59	1.71
4,133.0	24.00	204.50	3,919.3	-1,040.0	-376.6	1,106.1	3.32	3.17	2.56
4,215.0	25.40	202.90	3,993.8	-1,071.4	-390.4	1,140.3	1.89	1.71	-1.95
4,296.0	25.50	202.00	4,067.0	-1,103.5	-403.7	1,175.0	0.49	0.12	-1.11
4,378.0	23.70	203.60	4,141.5	-1,135.0	-416.9	1,209.1	2.34	-2.20	1.95
4,460.0	21.30	202.50	4,217.3	-1,163.9	-429.2	1,240.5	2.97	-2.93	-1.34
4,541.0	22.60	200.40	4,292.4	-1,192.1	-440.2	1,270.7	1.87	1.60	-2.59
4,623.0	22.70	199.60	4,368.1	-1,221.7	-451.0	1,302.3	0.40	0.12	-0.98
4,705.0	21.60	200.10	4,444.0	-1,250.8	-461.5	1,333.2	1.36	-1.34	0.61
4,787.0	20.90	201.50	4,520.5	-1,278.6	-472.1	1,363.0	1.05	-0.85	1.71
4,868.0	20.70	201.30	4,596.2	-1,305.4	-482.6	1,391.7	0.26	-0.25	-0.25
4,950.0	18.60	201.70	4,673.4	-1,331.0	-492.7	1,419.3	2.57	-2.56	0.49
5,032.0	17.40	199.00	4,751.4	-1,354.8	-501.5	1,444.6	1.78	-1.46	-3.29
5,113.0	15.80	199.40	4,829.0	-1,376.6	-509.1	1,467.7	1.98	-1.98	0.49
5,195.0	14.90	199.80	4,908.1	-1,397.1	-516.4	1,489.5	1.11	-1.10	0.49
5,277.0	14.20	199.40	4,987.5	-1,416.5	-523.3	1,510.1	0.86	-0.85	-0.49
5,359.0	12.70	199.00	5,067.2	-1,434.5	-529.6	1,529.1	1.83	-1.83	-0.49

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Bernhardt PC J31-32D Pad Sec.31-T5N-R66W
Project:	SEC.31-T5N-R66W	TVD Reference:	WELL @ 4912.0ft (Original Well Elev)
Site:	Bernhardt PC J31-32D Pad Sec.31-T5N-R66W	MD Reference:	WELL @ 4912.0ft (Original Well Elev)
Well:	Bernhardt PC J31-32D	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)
5,440.0	10.90	197.40	5,146.5	-1,450.2	-534.8	1,545.7	2.26	-2.22	-1.98
5,522.0	9.30	197.60	5,227.2	-1,463.9	-539.1	1,560.0	1.95	-1.95	0.24
5,604.0	8.00	200.00	5,308.3	-1,475.6	-543.0	1,572.4	1.65	-1.59	2.93
5,686.0	6.70	201.30	5,389.6	-1,485.4	-546.7	1,582.8	1.60	-1.59	1.59
5,767.0	5.70	208.90	5,470.1	-1,493.4	-550.4	1,591.5	1.59	-1.23	9.38
5,849.0	4.50	211.70	5,551.8	-1,499.7	-554.1	1,598.7	1.49	-1.46	3.41
5,931.0	3.00	212.00	5,633.6	-1,504.2	-556.9	1,604.0	1.83	-1.83	0.37
6,012.0	2.50	218.40	5,714.5	-1,507.4	-559.1	1,607.7	0.72	-0.62	7.90
6,094.0	1.10	197.60	5,796.5	-1,509.6	-560.5	1,610.2	1.86	-1.71	-25.37
6,176.0	1.10	196.00	5,878.5	-1,511.1	-560.9	1,611.8	0.04	0.00	-1.95
6,197.1	1.10	197.85	5,899.6	-1,511.5	-561.0	1,612.2	0.17	-0.01	8.77
TARGET BHL 2402'FNL, 132'FEL									
6,258.0	1.10	203.20	5,960.5	-1,512.5	-561.4	1,613.4	0.17	0.00	8.78
6,339.0	0.60	249.50	6,041.5	-1,513.4	-562.1	1,614.4	1.00	-0.62	57.16
6,421.0	0.50	246.70	6,123.5	-1,513.7	-562.9	1,614.9	0.13	-0.12	-3.41
6,503.0	0.50	243.30	6,205.5	-1,514.0	-563.5	1,615.5	0.04	0.00	-4.15
6,584.0	0.70	244.60	6,286.4	-1,514.4	-564.3	1,616.1	0.25	0.25	1.60
6,666.0	1.00	239.30	6,368.4	-1,515.0	-565.3	1,617.0	0.38	0.37	-6.46
6,748.0	1.40	246.30	6,450.4	-1,515.7	-566.9	1,618.2	0.52	0.49	8.54
6,830.0	1.10	251.40	6,532.4	-1,516.4	-568.5	1,619.4	0.39	-0.37	6.22
6,911.0	1.40	325.80	6,613.4	-1,515.8	-569.8	1,619.3	1.89	0.37	91.85
6,993.0	1.90	333.30	6,695.4	-1,513.8	-571.0	1,617.8	0.66	0.61	9.15
7,075.0	1.50	334.90	6,777.3	-1,511.6	-572.1	1,616.2	0.49	-0.49	1.95
7,156.0	1.60	30.50	6,858.3	-1,509.6	-572.0	1,614.3	1.79	0.12	68.64
7,238.0	1.80	16.70	6,940.3	-1,507.4	-571.0	1,611.9	0.55	0.24	-16.83
7,320.0	2.30	7.80	7,022.2	-1,504.6	-570.4	1,609.0	0.72	0.61	-10.85
7,360.5	2.70	7.46	7,062.7	-1,502.8	-570.2	1,607.3	0.98	0.98	-0.84
TARGET CIRCLE 2402'FNL, 132'FEL									
7,402.0	3.10	7.20	7,104.1	-1,500.7	-569.9	1,605.2	0.98	0.98	-0.62
7,483.0	2.30	345.80	7,185.0	-1,497.0	-570.0	1,601.8	1.57	-0.99	-26.42
7,565.0	2.00	342.30	7,267.0	-1,494.0	-570.9	1,599.3	0.40	-0.37	-4.27
7,647.0	1.30	340.70	7,348.9	-1,491.8	-571.6	1,597.4	0.86	-0.85	-1.95
7,729.0	1.00	337.20	7,430.9	-1,490.2	-572.2	1,596.2	0.38	-0.37	-4.27
7,800.0	0.50	333.00	7,501.9	-1,489.4	-572.6	1,595.5	0.71	-0.70	-5.92
7,847.6	0.50	333.00	7,549.5	-1,489.0	-572.8	1,595.2	0.00	0.00	0.00
HARD LINES 243'S & 132'E of BHL									
7,850.0	0.50	333.00	7,551.9	-1,489.0	-572.8	1,595.2	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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