



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.3-T6N-R65W

Brown PC E03-17D Pad Sec.3-T6N-R65W

Bickling PC E03-21D

Wellbore #1

Noble Bickling PC E03-21D Plan #1 (11-04-11)

Anticollision Report

04 November, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Reference	Noble Bickling PC E03-21D Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/4/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,765.9	Noble Bickling PC E03-21D Plan #1 (11-04-11)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Brown PC E02-32 Pad Sec.3-T6N-R65W						
Bickling PC E03-22D (Exist) - Wellbore #1 - Wellbore #1	731.3	733.5	70.5	67.3	22.270	CC, ES
Bickling PC E03-22D (Exist) - Wellbore #1 - Wellbore #1	900.0	901.8	77.0	73.0	19.283	SF
Brown PC E02-31D (Exist) - Wellbore #1 - Wellbore #1	504.5	504.7	38.2	36.2	19.274	CC, ES
Brown PC E02-31D (Exist) - Wellbore #1 - Wellbore #1	600.0	598.8	42.2	39.8	17.163	SF
Brown PC E02-32 (Vert.) - Wellbore #1 - Design #1	269.2	269.2	61.9	61.0	63.309	CC
Brown PC E02-32 (Vert.) - Wellbore #1 - Design #1	400.0	399.8	62.2	60.7	39.864	ES
Brown PC E02-32 (Vert.) - Wellbore #1 - Design #1	800.0	795.6	87.5	83.9	24.389	SF
Brown PC E03-17D Pad Sec.3-T6N-R65W						
Brown 3-13 (Exist.) - Wellbore #1 - Design #1	4,841.4	4,442.3	682.9	634.9	14.236	CC
Brown 3-13 (Exist.) - Wellbore #1 - Design #1	4,900.0	4,495.2	683.4	634.8	14.058	ES
Brown 3-13 (Exist.) - Wellbore #1 - Design #1	5,167.0	4,736.0	697.2	646.2	13.662	SF
Brown PC E03-17D - Wellbore #1 - Noble Brown PC E03	200.0	200.0	25.5	24.8	37.821	CC
Brown PC E03-17D - Wellbore #1 - Noble Brown PC E03	300.0	300.0	25.6	24.5	22.975	ES
Brown PC E03-17D - Wellbore #1 - Noble Brown PC E03	500.0	499.2	30.4	28.4	15.011	SF

Offset Design													
Brown PC E02-32 Pad Sec.3-T6N-R65W - Bickling PC E03-22D (Exist) - Wellbore #1 - Wellbore #1													
Survey Program: 102-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	-3.0	-3.0	0.0	0.0	180.00	-76.5	0.0	76.5				
100.0	100.0	96.8	96.8	0.1	0.1	179.91	-76.6	0.1	76.6	76.4	0.22	341.010	
200.0	200.0	196.6	196.6	0.3	0.3	179.99	-77.0	0.0	77.0	76.3	0.65	117.780	
300.0	300.0	296.6	296.6	0.6	0.5	-90.10	-77.5	-0.6	77.5	76.4	1.08	71.642	
400.0	399.8	397.5	397.5	0.8	0.7	-93.48	-77.5	-1.3	77.6	76.1	1.51	51.292	
500.0	499.5	499.4	499.4	1.0	0.9	-100.08	-75.3	-1.5	76.5	74.5	1.97	38.744	
600.0	598.7	601.8	601.5	1.3	1.2	-109.46	-69.4	-3.0	73.6	71.1	2.48	29.734	
700.0	697.5	702.4	701.8	1.7	1.4	-120.78	-60.8	-7.3	70.7	67.7	3.00	23.575	
731.3	728.2	733.5	732.6	1.8	1.5	-124.67	-58.1	-8.9	70.5	67.3	3.16	22.270	CC, ES
800.0	795.6	801.9	800.6	2.0	1.7	-133.47	-52.1	-13.3	71.6	68.1	3.51	20.420	
900.0	893.1	901.8	899.8	2.5	1.9	-145.06	-44.3	-22.1	77.0	73.0	3.99	19.283	SF
1,000.0	989.6	1,000.0	997.2	3.0	2.2	-152.90	-39.7	-33.8	86.8	82.3	4.46	19.438	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E02-32 Pad Sec.3-T6N-R65W - Bickling PC E03-22D (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 102-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,100.0	1,085.3	1,098.5	1,094.8	3.6	2.5	-156.51	-40.5	-47.4	101.2	96.3	4.96	20.406		
1,200.0	1,179.8	1,197.7	1,192.6	4.2	2.8	-157.28	-46.1	-62.9	119.3	113.7	5.52	21.613		
1,300.0	1,273.2	1,301.5	1,294.2	5.0	3.1	-157.35	-53.4	-82.5	137.9	131.8	6.13	22.496		
1,400.0	1,365.2	1,407.6	1,397.3	5.8	3.5	-158.21	-58.2	-107.2	154.8	148.1	6.76	22.912		
1,477.9	1,436.0	1,487.8	1,474.5	6.5	3.9	-158.93	-61.1	-128.6	167.5	160.2	7.27	23.033		
1,500.0	1,455.9	1,509.4	1,495.3	6.7	4.0	-159.09	-62.0	-134.6	171.1	163.7	7.43	23.032		
1,600.0	1,546.1	1,606.8	1,588.7	7.6	4.5	-159.48	-67.1	-161.6	188.1	179.9	8.17	23.021		
1,700.0	1,636.3	1,706.0	1,683.9	8.5	5.0	-159.66	-72.9	-189.0	205.3	196.4	8.92	23.023		
1,800.0	1,726.5	1,805.3	1,779.2	9.4	5.5	-160.36	-76.5	-216.4	221.9	212.3	9.64	23.035		
1,900.0	1,816.7	1,907.6	1,877.4	10.3	6.0	-161.23	-79.0	-245.1	237.8	227.4	10.33	23.007		
2,000.0	1,907.0	2,004.7	1,970.6	11.3	6.5	-162.21	-80.1	-272.3	253.4	242.4	10.98	23.083		
2,100.0	1,997.2	2,106.2	2,068.0	12.2	7.1	-163.19	-81.0	-300.9	268.8	257.2	11.62	23.123		
2,200.0	2,087.4	2,207.9	2,165.2	13.1	7.6	-164.08	-81.4	-330.7	283.1	270.8	12.28	23.055		
2,300.0	2,177.6	2,302.4	2,255.8	14.1	8.1	-165.08	-80.5	-357.9	297.5	284.6	12.87	23.121		
2,400.0	2,267.8	2,398.6	2,348.2	15.0	8.6	-166.02	-79.9	-384.3	313.5	300.0	13.45	23.305		
2,500.0	2,358.0	2,496.5	2,442.3	16.0	9.2	-166.79	-79.8	-411.3	329.6	315.5	14.06	23.440		
2,600.0	2,448.2	2,590.3	2,532.8	16.9	9.7	-167.34	-80.7	-435.8	347.2	332.5	14.68	23.649		
2,700.0	2,538.5	2,687.6	2,626.7	17.8	10.2	-167.71	-82.6	-461.4	365.1	349.7	15.34	23.806		
2,800.0	2,628.7	2,794.4	2,729.7	18.8	10.7	-168.16	-84.1	-489.6	382.7	366.7	15.99	23.929		
2,900.0	2,718.9	2,897.1	2,828.3	19.7	11.3	-168.86	-83.0	-518.4	398.2	381.6	16.60	23.991		
3,000.0	2,809.1	2,997.0	2,924.0	20.7	11.9	-169.51	-81.8	-547.0	413.2	396.0	17.20	24.017		
3,100.0	2,899.3	3,098.3	3,020.9	21.6	12.5	-170.11	-80.5	-576.3	427.9	410.0	17.82	24.017		
3,200.0	2,989.5	3,185.2	3,104.3	22.6	12.9	-170.75	-78.3	-600.9	443.1	424.7	18.37	24.126		
3,300.0	3,079.7	3,278.0	3,193.9	23.5	13.4	-171.23	-77.5	-624.8	461.1	442.2	18.95	24.335		
3,400.0	3,170.0	3,381.5	3,293.8	24.5	14.0	-171.74	-76.6	-651.8	478.9	459.4	19.56	24.487		
3,500.0	3,260.2	3,476.1	3,385.0	25.4	14.5	-172.11	-76.1	-677.0	496.2	476.1	20.16	24.609		
3,600.0	3,350.4	3,560.8	3,467.2	26.3	14.9	-172.55	-74.9	-697.5	515.8	495.1	20.72	24.893		
3,700.0	3,440.6	3,650.2	3,554.3	27.3	15.3	-173.02	-73.4	-717.7	537.1	515.8	21.27	25.247		
3,800.0	3,530.8	3,737.8	3,639.9	28.2	15.6	-173.49	-71.6	-735.7	560.3	538.5	21.81	25.687		
3,900.0	3,621.0	3,843.3	3,743.3	29.2	16.1	-173.91	-70.6	-757.1	584.1	561.7	22.41	26.068		
4,000.0	3,711.2	3,937.1	3,834.9	30.1	16.5	-174.25	-69.6	-777.2	606.7	583.7	22.99	26.394		
4,100.0	3,801.5	4,029.5	3,925.4	31.1	16.9	-174.57	-68.7	-796.1	630.3	606.7	23.56	26.752		
4,200.0	3,891.7	4,133.4	4,027.0	32.0	17.3	-174.84	-68.3	-817.5	653.7	629.6	24.17	27.043		
4,300.0	3,981.9	4,240.3	4,131.3	33.0	17.8	-174.97	-69.3	-841.1	675.9	651.1	24.82	27.229		
4,400.0	4,072.1	4,357.4	4,245.0	33.9	18.4	-175.21	-68.8	-869.0	696.2	670.7	25.49	27.315		
4,500.0	4,162.3	4,447.2	4,332.0	34.9	18.9	-175.48	-67.3	-891.0	715.7	689.6	26.07	27.447		
4,600.0	4,252.5	4,545.9	4,427.7	35.8	19.3	-175.68	-66.6	-915.1	735.3	708.7	26.70	27.543		
4,700.0	4,342.7	4,644.3	4,523.2	36.8	19.8	-175.86	-66.2	-938.6	755.6	728.3	27.32	27.654		
4,800.0	4,433.0	4,754.5	4,629.9	37.7	20.4	-176.06	-65.3	-966.3	774.6	746.6	27.98	27.685		
4,900.0	4,523.2	4,856.4	4,728.2	38.7	20.9	-176.34	-63.2	-993.0	792.4	763.8	28.61	27.700		
5,000.0	4,613.4	4,934.3	4,803.7	39.6	21.3	-176.59	-61.0	-1,012.4	811.5	782.3	29.17	27.821		
5,100.0	4,703.6	5,005.0	4,872.5	40.6	21.6	-176.82	-58.8	-1,028.4	833.1	803.4	29.71	28.042		
5,167.0	4,764.0	5,058.4	4,924.7	41.2	21.8	-176.98	-57.4	-1,039.3	849.0	818.9	30.08	28.226		
5,200.0	4,793.9	5,087.0	4,952.8	41.5	22.0	-177.07	-56.6	-1,044.6	857.2	826.9	30.29	28.299		
5,300.0	4,885.3	5,146.5	5,011.5	42.2	22.2	-177.22	-55.7	-1,054.3	882.0	851.2	30.83	28.613		
5,400.0	4,978.1	5,217.1	5,081.5	42.8	22.4	-177.30	-55.7	-1,063.5	906.8	875.5	31.34	28.937		
5,500.0	5,072.1	5,293.0	5,157.0	43.4	22.6	-177.35	-56.3	-1,071.5	930.8	899.0	31.81	29.263		
5,600.0	5,167.3	5,366.8	5,230.5	44.0	22.7	-177.36	-57.4	-1,077.7	953.5	921.2	32.22	29.596		
5,700.0	5,263.5	5,434.4	5,298.0	44.4	22.9	-177.32	-59.0	-1,081.4	975.5	943.0	32.56	29.964		
5,800.0	5,360.5	5,498.3	5,361.8	44.8	22.9	-177.30	-60.4	-1,082.8	997.5	964.7	32.83	30.384		
5,900.0	5,458.4	5,596.9	5,460.5	45.2	23.1	-177.27	-62.3	-1,083.3	1,017.6	984.5	33.10	30.740		

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design													Brown PC E02-32 Pad Sec.3-T6N-R65W - Bickling PC E03-22D (Exist) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft
Survey Program: 102-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
6,000.0	5,556.9	5,694.9	5,558.5	45.5	23.2	-177.23	-64.0	-1,083.9	1,034.3	1,001.0	33.32	31.037					
6,100.0	5,655.9	5,790.8	5,654.3	45.7	23.3	-177.21	-65.3	-1,084.2	1,047.7	1,014.2	33.48	31.289					
6,200.0	5,755.4	5,887.1	5,750.6	45.9	23.4	-177.29	-64.5	-1,084.2	1,058.0	1,024.4	33.58	31.505					
6,300.0	5,855.1	5,984.5	5,848.0	46.1	23.5	-177.38	-63.3	-1,083.9	1,065.1	1,031.4	33.63	31.673					
6,400.0	5,955.1	6,080.3	5,943.8	46.2	23.6	-177.47	-61.8	-1,083.3	1,069.0	1,035.4	33.62	31.798					
6,444.9	6,000.0	6,124.6	5,988.1	46.2	23.6	91.72	-61.1	-1,082.9	1,069.7	1,036.1	33.60	31.834					
6,500.0	6,055.1	6,177.9	6,041.4	46.2	23.7	91.67	-60.2	-1,082.4	1,070.2	1,036.4	33.76	31.700					
6,600.0	6,155.1	6,277.7	6,141.2	46.3	23.8	91.60	-58.9	-1,081.2	1,071.3	1,037.2	34.06	31.458					
6,700.0	6,255.1	6,377.5	6,241.0	46.4	23.9	91.53	-57.7	-1,080.2	1,072.2	1,037.9	34.35	31.212					
6,800.0	6,355.1	6,473.4	6,336.8	46.4	23.9	91.49	-57.0	-1,079.1	1,073.5	1,038.8	34.65	30.979					
6,900.0	6,455.1	6,574.4	6,437.9	46.5	24.0	91.45	-56.2	-1,077.7	1,074.8	1,039.8	34.96	30.745					
7,000.0	6,555.1	6,668.7	6,532.1	46.6	24.1	91.43	-55.8	-1,076.2	1,076.4	1,041.1	35.26	30.530					
7,100.0	6,655.1	6,767.1	6,630.5	46.6	24.2	91.43	-55.9	-1,074.2	1,078.4	1,042.8	35.57	30.320					
7,200.0	6,755.1	6,864.1	6,727.5	46.7	24.3	91.43	-56.1	-1,072.2	1,080.4	1,044.6	35.88	30.116					
7,300.0	6,855.1	6,957.5	6,820.8	46.8	24.4	91.45	-56.5	-1,069.8	1,083.0	1,046.8	36.18	29.934					
7,400.0	6,955.1	7,054.5	6,917.8	46.8	24.5	91.46	-56.8	-1,066.9	1,086.1	1,049.6	36.49	29.762					
7,500.0	7,055.1	7,149.6	7,012.8	46.9	24.6	91.46	-56.8	-1,063.7	1,089.4	1,052.6	36.80	29.606					
7,600.0	7,155.1	7,245.9	7,109.1	47.0	24.6	91.47	-57.0	-1,060.0	1,093.3	1,056.2	37.11	29.461					
7,700.0	7,255.1	7,352.5	7,215.6	47.1	24.7	91.48	-57.4	-1,056.0	1,097.0	1,059.6	37.44	29.301					
7,765.9	7,321.0	7,423.3	7,286.4	47.1	24.8	91.49	-57.7	-1,053.8	1,099.0	1,061.4	37.66	29.182					

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Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E02-32 Pad Sec.3-T6N-R65W - Brown PC E02-31D (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error: 0.0 ft	
Survey Program: 132-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	-2.0	-2.0	0.0	0.0	176.36	-43.7	2.8	43.8					
100.0	100.0	97.9	97.9	0.1	0.1	176.26	-43.8	2.9	43.9	43.7	0.22	195.239		
200.0	200.0	198.0	198.0	0.3	0.3	176.08	-44.0	3.0	44.1	43.4	0.62	70.656		
300.0	300.0	298.8	298.8	0.6	0.5	-95.93	-43.0	3.3	43.3	42.2	1.04	41.472		
400.0	399.8	400.0	399.9	0.8	0.7	-105.19	-39.1	4.1	40.6	39.1	1.49	27.341		
500.0	499.5	500.2	499.8	1.0	0.9	-123.67	-31.7	5.8	38.2	36.3	1.96	19.503		
504.5	504.0	504.7	504.3	1.0	1.0	-124.72	-31.3	5.9	38.2	36.2	1.98	19.274 CC, ES		
600.0	598.7	598.8	597.9	1.3	1.2	-148.34	-22.0	8.4	42.2	39.8	2.46	17.163 SF		
700.0	697.5	696.5	695.1	1.7	1.5	-167.26	-12.0	11.2	55.9	53.0	2.95	18.932		
800.0	795.6	792.6	790.6	2.0	1.7	-178.15	-2.2	14.4	77.0	73.6	3.44	22.390		
900.0	893.1	888.0	885.2	2.5	2.0	174.67	9.5	18.3	104.1	100.1	3.96	26.298		
1,000.0	989.6	980.1	976.0	3.0	2.3	169.21	24.2	22.5	136.4	131.9	4.51	30.247		
1,100.0	1,085.3	1,069.1	1,063.2	3.6	2.6	165.25	40.9	27.7	174.5	169.4	5.10	34.202		
1,200.0	1,179.8	1,156.7	1,148.7	4.2	3.0	162.42	59.1	34.0	217.6	211.9	5.72	38.012		
1,300.0	1,273.2	1,242.7	1,232.3	5.0	3.4	160.24	78.5	40.2	264.6	258.3	6.38	41.502		
1,400.0	1,365.2	1,326.1	1,313.0	5.8	3.8	158.61	98.5	46.8	315.6	308.5	7.06	44.719		
1,477.9	1,436.0	1,391.3	1,375.8	6.5	4.1	157.53	114.9	51.9	357.5	349.9	7.61	46.989		
1,500.0	1,455.9	1,410.2	1,394.0	6.7	4.2	157.33	119.9	53.3	369.7	361.9	7.78	47.505		
1,600.0	1,546.1	1,494.5	1,474.9	7.6	4.7	156.42	142.9	59.0	424.4	415.8	8.59	49.428		
1,700.0	1,636.3	1,576.0	1,553.0	8.5	5.1	155.65	165.8	64.3	479.3	469.9	9.40	50.966		
1,800.0	1,726.5	1,651.5	1,625.1	9.4	5.5	155.04	187.4	69.6	534.9	524.7	10.21	52.378		
1,900.0	1,816.7	1,733.5	1,703.4	10.3	5.9	154.62	210.4	77.0	591.9	580.8	11.03	53.657		
2,000.0	1,907.0	1,823.0	1,789.3	11.3	6.4	154.26	234.9	84.0	647.5	635.7	11.87	54.572		
2,100.0	1,997.2	1,902.3	1,865.4	12.2	6.8	154.01	256.5	90.3	703.4	690.7	12.67	55.504		
2,200.0	2,087.4	1,990.4	1,949.9	13.1	7.2	153.84	279.9	97.7	759.4	745.9	13.50	56.236		
2,300.0	2,177.6	2,071.1	2,027.6	14.1	7.6	153.72	300.9	104.0	814.7	800.4	14.30	56.954		
2,400.0	2,267.8	2,143.9	2,097.7	15.0	8.0	153.68	319.6	110.7	871.0	855.9	15.08	57.757		
2,500.0	2,358.0	2,217.7	2,168.6	16.0	8.4	153.68	338.4	118.4	928.1	912.2	15.86	58.530		
2,600.0	2,448.2	2,320.2	2,267.2	16.9	8.9	153.71	364.2	129.4	985.5	968.7	16.72	58.952		
2,700.0	2,538.5	2,453.1	2,395.8	17.8	9.6	153.64	396.6	137.1	1,038.3	1,020.6	17.68	58.710		
2,800.0	2,628.7	2,525.9	2,466.1	18.8	9.9	153.53	415.1	140.2	1,090.7	1,072.2	18.49	58.999		
2,900.0	2,718.9	2,628.4	2,565.6	19.7	10.4	153.51	439.1	144.7	1,142.3	1,122.9	19.37	58.967		
3,000.0	2,809.1	2,696.2	2,631.7	20.7	10.7	153.56	454.0	148.2	1,194.1	1,174.0	20.11	59.368		
3,100.0	2,899.3	2,758.0	2,691.9	21.6	11.0	153.65	467.3	153.1	1,247.9	1,227.1	20.83	59.899		
3,200.0	2,989.5	2,814.4	2,746.6	22.6	11.2	153.73	480.0	158.6	1,303.3	1,281.7	21.54	60.504		
3,300.0	3,079.7	2,873.8	2,803.9	23.5	11.5	153.76	494.5	164.7	1,360.0	1,337.7	22.27	61.068		
3,400.0	3,170.0	2,933.8	2,861.4	24.5	11.9	153.77	509.9	171.8	1,418.2	1,395.1	23.01	61.631		
3,500.0	3,260.2	3,022.8	2,946.2	25.4	12.4	153.66	535.0	181.6	1,476.6	1,452.8	23.88	61.826		
3,600.0	3,350.4	3,113.7	3,033.0	26.3	12.9	153.57	560.3	191.1	1,534.6	1,509.8	24.76	61.974		
3,700.0	3,440.6	3,222.5	3,136.9	27.3	13.5	153.43	591.0	201.3	1,592.0	1,566.3	25.71	61.914		
3,800.0	3,530.8	3,316.2	3,226.8	28.2	13.9	153.37	615.9	209.0	1,647.8	1,621.2	26.60	61.957		
3,900.0	3,621.0	3,386.4	3,294.2	29.2	14.3	153.30	635.2	214.7	1,703.9	1,676.5	27.41	62.160		
4,000.0	3,711.2	3,509.8	3,412.6	30.1	15.0	153.21	668.1	224.3	1,759.4	1,731.0	28.41	61.920		
4,100.0	3,801.5	3,575.0	3,475.6	31.1	15.3	153.21	684.3	229.5	1,814.4	1,785.3	29.17	62.197		
4,200.0	3,891.7	3,674.1	3,571.4	32.0	15.8	153.23	708.5	237.7	1,869.6	1,839.6	30.04	62.232		
4,300.0	3,981.9	3,797.8	3,690.9	33.0	16.4	153.20	739.3	245.3	1,923.2	1,892.2	31.02	62.005		
4,400.0	4,072.1	3,908.4	3,798.3	33.9	16.9	153.23	764.8	251.2	1,975.5	1,943.6	31.92	61.897		
4,500.0	4,162.3	3,991.4	3,879.3	34.9	17.2	153.28	782.8	255.7	2,027.3	1,994.6	32.71	61.981		
4,600.0	4,252.5	4,065.0	3,951.0	35.8	17.6	153.33	798.7	259.9	2,079.5	2,046.0	33.48	62.120		
4,700.0	4,342.7	4,147.0	4,030.8	36.8	17.9	153.37	817.0	264.7	2,131.9	2,097.6	34.28	62.191		
4,800.0	4,433.0	4,229.0	4,110.5	37.7	18.3	153.39	835.9	269.3	2,184.5	2,149.4	35.10	62.241		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E02-32 Pad Sec.3-T6N-R65W - Brown PC E02-31D (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program:		132-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,900.0	4,523.2	4,304.1	4,183.4	38.7	18.7	153.41	853.1	273.9	2,237.4	2,201.5	35.88	62.350			
5,000.0	4,613.4	4,434.3	4,310.3	39.6	19.3	153.46	881.7	280.1	2,288.4	2,251.6	36.84	62.119			
5,100.0	4,703.6	4,487.1	4,361.6	40.6	19.5	153.46	893.8	282.7	2,340.4	2,302.8	37.55	62.319			
5,167.0	4,764.0	4,526.7	4,400.1	41.2	19.7	153.47	902.9	285.0	2,375.8	2,337.7	38.05	62.439			
5,200.0	4,793.9	4,556.0	4,428.5	41.5	19.8	153.66	909.6	287.0	2,393.2	2,354.9	38.35	62.399			
5,300.0	4,885.3	4,595.5	4,466.8	42.2	20.0	154.19	918.7	290.1	2,445.0	2,406.0	39.04	62.623			
5,400.0	4,978.1	4,660.5	4,529.7	42.8	20.3	154.66	934.0	296.0	2,495.5	2,455.7	39.78	62.727			
5,500.0	5,072.1	4,801.0	4,666.1	43.4	21.0	155.00	965.9	307.2	2,542.0	2,501.2	40.76	62.362			
5,600.0	5,167.3	4,851.7	4,715.1	44.0	21.3	155.32	978.5	310.8	2,585.8	2,544.4	41.40	62.455			
5,700.0	5,263.5	5,025.4	4,883.2	44.4	22.1	155.36	1,020.4	323.4	2,627.2	2,584.7	42.51	61.801			
5,800.0	5,360.5	5,176.3	5,031.4	44.8	22.7	155.54	1,047.2	332.3	2,661.1	2,617.7	43.33	61.411			
5,900.0	5,458.4	5,533.6	5,386.6	45.2	23.5	156.11	1,072.9	353.8	2,690.8	2,646.7	44.18	60.911			
6,000.0	5,556.9	5,631.2	5,484.3	45.5	23.6	156.39	1,074.5	355.8	2,709.1	2,664.6	44.52	60.856			
6,100.0	5,655.9	5,718.5	5,571.5	45.7	23.7	156.61	1,075.9	357.9	2,724.5	2,679.7	44.80	60.818			
6,200.0	5,755.4	5,860.7	5,713.6	45.9	23.9	156.85	1,075.9	361.6	2,736.4	2,691.4	45.05	60.739			
6,300.0	5,855.1	6,036.4	5,889.3	46.1	24.0	157.04	1,073.7	361.6	2,741.7	2,696.4	45.29	60.543			
6,400.0	5,955.1	6,118.3	5,971.2	46.2	24.1	157.09	1,072.9	361.0	2,743.8	2,698.4	45.41	60.429			
6,444.9	6,000.0	6,157.0	6,009.9	46.2	24.2	66.33	1,072.5	361.0	2,743.9	2,698.4	45.45	60.377			
6,500.0	6,055.1	6,204.5	6,057.4	46.2	24.2	66.34	1,072.0	361.0	2,743.7	2,698.2	45.55	60.234			
6,530.8	6,085.9	6,231.0	6,083.9	46.3	24.2	66.35	1,071.7	361.1	2,743.7	2,698.1	45.61	60.154			
6,600.0	6,155.1	6,291.2	6,144.1	46.3	24.3	66.36	1,071.1	361.5	2,743.8	2,698.1	45.74	59.980			
6,700.0	6,255.1	6,379.5	6,232.4	46.4	24.4	66.39	1,070.0	362.6	2,744.4	2,698.4	45.94	59.738			
6,800.0	6,355.1	6,471.6	6,324.5	46.4	24.5	66.42	1,068.9	363.9	2,745.3	2,699.1	46.14	59.499			
6,900.0	6,455.1	6,558.4	6,411.2	46.5	24.6	66.46	1,067.7	365.6	2,746.5	2,700.2	46.33	59.279			
7,000.0	6,555.1	6,655.8	6,508.6	46.6	24.7	66.51	1,066.2	368.1	2,748.2	2,701.7	46.53	59.061			
7,100.0	6,655.1	6,770.7	6,623.4	46.6	24.8	66.58	1,063.8	370.9	2,749.6	2,702.9	46.74	58.829			
7,200.0	6,755.1	6,889.4	6,742.1	46.7	24.9	66.65	1,060.8	373.1	2,750.3	2,703.3	46.95	58.583			
7,300.0	6,855.1	6,990.1	6,842.8	46.8	25.0	66.71	1,058.3	374.5	2,750.6	2,703.5	47.14	58.344			
7,400.0	6,955.1	7,075.8	6,928.5	46.8	25.1	66.76	1,056.4	375.9	2,751.2	2,703.9	47.34	58.121			
7,500.0	7,055.1	7,171.7	7,024.2	46.9	25.1	66.82	1,054.4	377.8	2,752.2	2,704.7	47.54	57.891			
7,600.0	7,155.1	7,274.0	7,126.5	47.0	25.2	66.88	1,051.9	380.0	2,753.3	2,705.5	47.75	57.658			
7,700.0	7,255.1	7,381.8	7,234.2	47.1	25.4	66.96	1,048.7	382.4	2,754.1	2,706.2	47.96	57.424			
7,765.9	7,321.0	7,452.5	7,304.9	47.1	25.4	67.01	1,046.8	383.7	2,754.5	2,706.4	48.10	57.266			

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E02-32 Pad Sec.3-T6N-R65W - Brown PC E02-32 (Vert.) - Wellbore #1 - Design #1											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-61.9	0.0	61.9	61.7	0.22	275.586		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-61.9	0.0	61.9	61.3	0.67	91.862		
269.2	269.2	269.2	269.2	0.5	0.5	-90.00	-61.9	0.0	61.9	61.0	0.98	63.309 CC		
300.0	300.0	300.0	300.0	0.6	0.6	-90.84	-61.9	0.0	61.9	60.8	1.11	55.624		
400.0	399.8	399.8	399.8	0.8	0.8	-95.65	-61.9	0.0	62.2	60.7	1.56	39.864 ES		
500.0	499.5	499.5	499.5	1.0	1.0	-103.42	-61.9	0.0	63.7	61.7	2.04	31.261		
600.0	598.7	598.7	598.7	1.3	1.2	-113.38	-61.9	0.0	67.6	65.0	2.54	26.573		
700.0	697.5	697.5	697.5	1.7	1.5	-124.17	-61.9	0.0	75.2	72.2	3.07	24.532		
800.0	795.6	795.6	795.6	2.0	1.7	-134.29	-61.9	0.0	87.5	83.9	3.59	24.389 SF		
900.0	893.1	893.1	893.1	2.5	1.9	-142.85	-61.9	0.0	104.6	100.5	4.09	25.555		
1,000.0	989.6	989.6	989.6	3.0	2.1	-149.67	-61.9	0.0	126.4	121.8	4.58	27.571		
1,100.0	1,085.3	1,085.3	1,085.3	3.6	2.3	-154.96	-61.9	0.0	152.5	147.5	5.06	30.115		
1,200.0	1,179.8	1,179.8	1,179.8	4.2	2.5	-159.03	-61.9	0.0	182.7	177.2	5.54	32.980		
1,300.0	1,273.2	1,273.2	1,273.2	5.0	2.7	-162.18	-61.9	0.0	216.8	210.8	6.02	36.036		
1,400.0	1,365.2	1,365.2	1,365.2	5.8	3.0	-164.64	-61.9	0.0	254.5	248.0	6.49	39.201		
1,477.9	1,436.0	1,436.0	1,436.0	6.5	3.1	-166.20	-61.9	0.0	286.3	279.4	6.86	41.711		
1,500.0	1,455.9	1,455.9	1,455.9	6.7	3.2	-166.64	-61.9	0.0	295.6	288.6	6.98	42.372		
1,600.0	1,546.1	1,546.1	1,546.1	7.6	3.4	-168.32	-61.9	0.0	337.9	330.4	7.49	45.112		
1,700.0	1,636.3	1,636.3	1,636.3	8.5	3.6	-169.63	-61.9	0.0	380.4	372.4	8.01	47.486		
1,800.0	1,726.5	1,726.5	1,726.5	9.4	3.8	-170.68	-61.9	0.0	423.0	414.5	8.54	49.554		
1,900.0	1,816.7	1,816.7	1,816.7	10.3	4.0	-171.54	-61.9	0.0	465.7	456.7	9.07	51.367		
2,000.0	1,907.0	1,907.0	1,907.0	11.3	4.2	-172.25	-61.9	0.0	508.5	498.9	9.60	52.965		
2,100.0	1,997.2	1,997.2	1,997.2	12.2	4.4	-172.86	-61.9	0.0	551.4	541.2	10.14	54.383		
2,200.0	2,087.4	2,087.4	2,087.4	13.1	4.6	-173.37	-61.9	0.0	594.3	583.6	10.68	55.646		
2,300.0	2,177.6	2,177.6	2,177.6	14.1	4.8	-173.82	-61.9	0.0	637.2	626.0	11.22	56.779		
2,400.0	2,267.8	2,267.8	2,267.8	15.0	5.0	-174.21	-61.9	0.0	680.1	668.4	11.77	57.798		
2,500.0	2,358.0	2,358.0	2,358.0	16.0	5.2	-174.56	-61.9	0.0	723.1	710.8	12.31	58.721		
2,600.0	2,448.2	2,448.2	2,448.2	16.9	5.4	-174.86	-61.9	0.0	766.1	753.2	12.86	59.559		
2,700.0	2,538.5	2,538.5	2,538.5	17.8	5.6	-175.14	-61.9	0.0	809.1	795.7	13.41	60.322		
2,800.0	2,628.7	2,628.7	2,628.7	18.8	5.8	-175.38	-61.9	0.0	852.1	838.2	13.96	61.021		
2,900.0	2,718.9	2,718.9	2,718.9	19.7	6.0	-175.60	-61.9	0.0	895.2	880.7	14.52	61.663		
3,000.0	2,809.1	2,809.1	2,809.1	20.7	6.2	-175.81	-61.9	0.0	938.2	923.1	15.07	62.254		
3,100.0	2,899.3	2,899.3	2,899.3	21.6	6.4	-175.99	-61.9	0.0	981.3	965.6	15.63	62.800		
3,200.0	2,989.5	2,989.5	2,989.5	22.6	6.6	-176.16	-61.9	0.0	1,024.3	1,008.1	16.18	63.305		
3,300.0	3,079.7	3,079.7	3,079.7	23.5	6.8	-176.31	-61.9	0.0	1,067.4	1,050.7	16.74	63.774		
3,400.0	3,170.0	3,170.0	3,170.0	24.5	7.0	-176.46	-61.9	0.0	1,110.5	1,093.2	17.29	64.211		
3,500.0	3,260.2	3,260.2	3,260.2	25.4	7.2	-176.59	-61.9	0.0	1,153.5	1,135.7	17.85	64.618		
3,600.0	3,350.4	3,350.4	3,350.4	26.3	7.4	-176.71	-61.9	0.0	1,196.6	1,178.2	18.41	64.998		
3,700.0	3,440.6	3,440.6	3,440.6	27.3	7.6	-176.83	-61.9	0.0	1,239.7	1,220.7	18.97	65.354		
3,800.0	3,530.8	3,530.8	3,530.8	28.2	7.8	-176.93	-61.9	0.0	1,282.8	1,263.3	19.53	65.688		
3,900.0	3,621.0	3,621.0	3,621.0	29.2	8.0	-177.03	-61.9	0.0	1,325.9	1,305.8	20.09	66.002		
4,000.0	3,711.2	3,711.2	3,711.2	30.1	8.2	-177.13	-61.9	0.0	1,369.0	1,348.3	20.65	66.298		
4,100.0	3,801.5	3,801.5	3,801.5	31.1	8.4	-177.21	-61.9	0.0	1,412.1	1,390.9	21.21	66.576		
4,200.0	3,891.7	3,891.7	3,891.7	32.0	8.6	-177.30	-61.9	0.0	1,455.2	1,433.4	21.77	66.839		
4,300.0	3,981.9	3,981.9	3,981.9	33.0	8.8	-177.37	-61.9	0.0	1,498.3	1,476.0	22.33	67.087		
4,400.0	4,072.1	4,072.1	4,072.1	33.9	9.0	-177.45	-61.9	0.0	1,541.4	1,518.5	22.90	67.323		
4,500.0	4,162.3	4,162.3	4,162.3	34.9	9.2	-177.52	-61.9	0.0	1,584.5	1,561.1	23.46	67.545		
4,600.0	4,252.5	4,252.5	4,252.5	35.8	9.4	-177.58	-61.9	0.0	1,627.6	1,603.6	24.02	67.757		
4,700.0	4,342.7	4,342.7	4,342.7	36.8	9.6	-177.65	-61.9	0.0	1,670.7	1,646.2	24.59	67.957		
4,800.0	4,433.0	4,433.0	4,433.0	37.7	9.9	-177.70	-61.9	0.0	1,713.9	1,688.7	25.15	68.148		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design												Brown PC E02-32 Pad Sec.3-T6N-R65W - Brown PC E02-32 (Vert.) - Wellbore #1 - Design #1		Offset Site Error:		0.0 ft	
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
4,900.0	4,523.2	4,523.2	4,523.2	38.7	10.1	-177.76	-61.9	0.0	1,757.0	1,731.3	25.71	68.329					
5,000.0	4,613.4	4,613.4	4,613.4	39.6	10.3	-177.81	-61.9	0.0	1,800.1	1,773.8	26.28	68.502					
5,100.0	4,703.6	4,703.6	4,703.6	40.6	10.5	-177.87	-61.9	0.0	1,843.2	1,816.4	26.84	68.667					
5,167.0	4,764.0	4,764.0	4,764.0	41.2	10.6	-177.90	-61.9	0.0	1,872.1	1,844.9	27.22	68.773					
5,200.0	4,793.9	4,793.9	4,793.9	41.5	10.7	-177.93	-61.9	0.0	1,886.2	1,858.7	27.45	68.713					
5,300.0	4,885.3	4,885.3	4,885.3	42.2	10.9	-178.00	-61.9	0.0	1,926.6	1,898.5	28.10	68.564					
5,400.0	4,978.1	4,978.1	4,978.1	42.8	11.1	-178.07	-61.9	0.0	1,963.9	1,935.2	28.71	68.402					
5,500.0	5,072.1	5,072.1	5,072.1	43.4	11.3	-178.12	-61.9	0.0	1,997.9	1,968.7	29.28	68.230					
5,600.0	5,167.3	5,167.3	5,167.3	44.0	11.5	-178.17	-61.9	0.0	2,028.7	1,998.8	29.81	68.050					
5,700.0	5,263.5	5,263.5	5,263.5	44.4	11.7	-178.21	-61.9	0.0	2,056.0	2,025.7	30.30	67.865					
5,800.0	5,360.5	5,360.5	5,360.5	44.8	11.9	-178.25	-61.9	0.0	2,080.0	2,049.3	30.74	67.675					
5,900.0	5,458.4	5,458.4	5,458.4	45.2	12.2	-178.28	-61.9	0.0	2,100.6	2,069.5	31.13	67.483					
6,000.0	5,556.9	5,556.9	5,556.9	45.5	12.4	-178.30	-61.9	0.0	2,117.8	2,086.4	31.47	67.288					
6,100.0	5,655.9	5,655.9	5,655.9	45.7	12.6	-178.32	-61.9	0.0	2,131.6	2,099.8	31.77	67.091					
6,200.0	5,755.4	5,755.4	5,755.4	45.9	12.8	-178.34	-61.9	0.0	2,141.8	2,109.8	32.02	66.893					
6,300.0	5,855.1	5,855.1	5,855.1	46.1	13.0	-178.35	-61.9	0.0	2,148.6	2,116.4	32.22	66.693					
6,400.0	5,955.1	5,955.1	5,955.1	46.2	13.3	-178.35	-61.9	0.0	2,151.9	2,119.6	32.36	66.492					
6,444.9	6,000.0	6,000.0	6,000.0	46.2	13.4	90.88	-61.9	0.0	2,152.3	2,119.9	32.42	66.396					
6,500.0	6,055.1	6,055.1	6,055.1	46.2	13.5	90.88	-61.9	0.0	2,152.3	2,119.7	32.61	66.000					
6,600.0	6,155.1	6,155.1	6,155.1	46.3	13.7	90.88	-61.9	0.0	2,152.3	2,119.3	32.97	65.290					
6,700.0	6,255.1	6,255.1	6,255.1	46.4	13.9	90.88	-61.9	0.0	2,152.3	2,119.0	33.32	64.592					
6,800.0	6,355.1	6,355.1	6,355.1	46.4	14.2	90.88	-61.9	0.0	2,152.3	2,118.6	33.68	63.905					
6,900.0	6,455.1	6,455.1	6,455.1	46.5	14.4	90.88	-61.9	0.0	2,152.3	2,118.3	34.04	63.230					
7,000.0	6,555.1	6,555.1	6,555.1	46.6	14.6	90.88	-61.9	0.0	2,152.3	2,117.9	34.40	62.566					
7,100.0	6,655.1	6,655.1	6,655.1	46.6	14.8	90.88	-61.9	0.0	2,152.3	2,117.5	34.76	61.913					
7,200.0	6,755.1	6,755.1	6,755.1	46.7	15.1	90.88	-61.9	0.0	2,152.3	2,117.2	35.13	61.270					
7,300.0	6,855.1	6,855.1	6,855.1	46.8	15.3	90.88	-61.9	0.0	2,152.3	2,116.8	35.49	60.639					
7,400.0	6,955.1	6,955.1	6,955.1	46.8	15.5	90.88	-61.9	0.0	2,152.3	2,116.4	35.86	60.017					
7,500.0	7,055.1	7,055.1	7,055.1	46.9	15.7	90.88	-61.9	0.0	2,152.3	2,116.1	36.23	59.406					
7,600.0	7,155.1	7,155.1	7,155.1	47.0	16.0	90.88	-61.9	0.0	2,152.3	2,115.7	36.60	58.805					
7,700.0	7,255.1	7,255.1	7,255.1	47.1	16.2	90.88	-61.9	0.0	2,152.3	2,115.3	36.97	58.213					
7,765.9	7,321.0	7,321.0	7,321.0	47.1	16.3	90.88	-61.9	0.0	2,152.3	2,115.1	37.22	57.829					

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E03-17D Pad Sec.3-T6N-R65W - Brown 3-13 (Exist.) - Wellbore #1 - Design #1											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-69.25	659.5	-1,740.5	1,861.5						
100.0	100.0	72.0	72.0	0.1	0.1	-69.25	659.5	-1,740.5	1,861.2	1,861.1	0.19	9,626.060			
200.0	200.0	172.0	172.0	0.3	0.3	-69.25	659.5	-1,740.5	1,861.2	1,860.6	0.61	3,044.415			
300.0	300.0	272.0	272.0	0.6	0.5	21.56	659.5	-1,740.5	1,859.6	1,858.6	1.06	1,759.869			
400.0	399.8	371.8	371.8	0.8	0.7	21.65	659.5	-1,740.5	1,854.8	1,853.2	1.51	1,231.687			
500.0	499.5	471.5	471.5	1.0	0.9	21.81	659.5	-1,740.5	1,846.7	1,844.7	1.96	939.836			
600.0	598.7	570.7	570.7	1.3	1.2	22.04	659.5	-1,740.5	1,835.3	1,832.9	2.43	754.341			
700.0	697.5	669.5	669.5	1.7	1.4	22.33	659.5	-1,740.5	1,820.8	1,817.9	2.91	625.296			
800.0	795.6	767.6	767.6	2.0	1.6	22.70	659.5	-1,740.5	1,803.2	1,799.8	3.40	529.702			
900.0	893.1	865.1	865.1	2.5	1.8	23.15	659.5	-1,740.5	1,782.4	1,778.4	3.91	455.549			
1,000.0	989.6	961.6	961.6	3.0	2.0	23.67	659.5	-1,740.5	1,758.5	1,754.0	4.44	395.972			
1,100.0	1,085.3	1,057.3	1,057.3	3.6	2.3	24.29	659.5	-1,740.5	1,731.6	1,726.6	4.99	346.774			
1,200.0	1,179.8	1,151.8	1,151.8	4.2	2.5	25.00	659.5	-1,740.5	1,701.7	1,696.1	5.57	305.247			
1,300.0	1,273.2	1,245.2	1,245.2	5.0	2.7	25.81	659.5	-1,740.5	1,668.9	1,662.8	6.19	269.571			
1,400.0	1,365.2	1,337.2	1,337.2	5.8	2.9	26.74	659.5	-1,740.5	1,633.4	1,626.5	6.85	238.480			
1,477.9	1,436.0	1,408.0	1,408.0	6.5	3.1	27.55	659.5	-1,740.5	1,603.8	1,596.4	7.40	216.845			
1,500.0	1,455.9	1,427.9	1,427.9	6.7	3.1	27.70	659.5	-1,740.5	1,595.2	1,587.6	7.56	211.044			
1,600.0	1,546.1	1,518.1	1,518.1	7.6	3.3	28.43	659.5	-1,740.5	1,556.3	1,548.0	8.31	187.271			
1,700.0	1,636.3	1,608.3	1,608.3	8.5	3.5	29.18	659.5	-1,740.5	1,517.6	1,508.5	9.09	167.002			
1,800.0	1,726.5	1,698.5	1,698.5	9.4	3.7	29.98	659.5	-1,740.5	1,479.2	1,469.3	9.89	149.575			
1,900.0	1,816.7	1,788.7	1,788.7	10.3	3.9	30.82	659.5	-1,740.5	1,441.1	1,430.4	10.72	134.473			
2,000.0	1,907.0	1,879.0	1,879.0	11.3	4.1	31.70	659.5	-1,740.5	1,403.2	1,391.7	11.57	121.291			
2,100.0	1,997.2	1,969.2	1,969.2	12.2	4.3	32.62	659.5	-1,740.5	1,365.7	1,353.3	12.45	109.709			
2,200.0	2,087.4	2,059.4	2,059.4	13.1	4.5	33.59	659.5	-1,740.5	1,328.5	1,315.2	13.36	99.474			
2,300.0	2,177.6	2,149.6	2,149.6	14.1	4.7	34.62	659.5	-1,740.5	1,291.7	1,277.4	14.29	90.382			
2,400.0	2,267.8	2,239.8	2,239.8	15.0	4.9	35.70	659.5	-1,740.5	1,255.3	1,240.0	15.26	82.268			
2,500.0	2,358.0	2,330.0	2,330.0	16.0	5.1	36.85	659.5	-1,740.5	1,219.3	1,203.1	16.26	74.998			
2,600.0	2,448.2	2,420.2	2,420.2	16.9	5.3	38.05	659.5	-1,740.5	1,183.8	1,166.5	17.29	68.462			
2,700.0	2,538.5	2,510.5	2,510.5	17.8	5.5	39.33	659.5	-1,740.5	1,148.9	1,130.5	18.36	62.569			
2,800.0	2,628.7	2,600.7	2,600.7	18.8	5.7	40.68	659.5	-1,740.5	1,114.5	1,095.0	19.47	57.242			
2,900.0	2,718.9	2,690.9	2,690.9	19.7	5.9	42.11	659.5	-1,740.5	1,080.7	1,060.1	20.62	52.419			
3,000.0	2,809.1	2,781.1	2,781.1	20.7	6.1	43.62	659.5	-1,740.5	1,047.6	1,025.8	21.80	48.045			
3,100.0	2,899.3	2,871.3	2,871.3	21.6	6.3	45.22	659.5	-1,740.5	1,015.3	992.2	23.04	44.074			
3,200.0	2,989.5	2,961.5	2,961.5	22.6	6.5	46.91	659.5	-1,740.5	983.8	959.5	24.31	40.468			
3,300.0	3,079.7	3,051.7	3,051.7	23.5	6.7	48.70	659.5	-1,740.5	953.2	927.6	25.63	37.192			
3,400.0	3,170.0	3,142.0	3,142.0	24.5	6.9	50.60	659.5	-1,740.5	923.6	896.6	26.99	34.219			
3,500.0	3,260.2	3,232.2	3,232.2	25.4	7.2	52.60	659.5	-1,740.5	895.1	866.7	28.40	31.523			
3,600.0	3,350.4	3,322.4	3,322.4	26.3	7.4	54.72	659.5	-1,740.5	867.9	838.0	29.84	29.082			
3,700.0	3,440.6	3,412.6	3,412.6	27.3	7.6	56.95	659.5	-1,740.5	841.9	810.6	31.32	26.878			
3,800.0	3,530.8	3,502.8	3,502.8	28.2	7.8	59.31	659.5	-1,740.5	817.4	784.6	32.84	24.892			
3,900.0	3,621.0	3,593.0	3,593.0	29.2	8.0	61.78	659.5	-1,740.5	794.6	760.2	34.38	23.110			
4,000.0	3,711.2	3,683.2	3,683.2	30.1	8.2	64.38	659.5	-1,740.5	773.4	737.4	35.94	21.519			
4,100.0	3,801.5	3,773.5	3,773.5	31.1	8.4	67.09	659.5	-1,740.5	754.1	716.6	37.50	20.107			
4,200.0	3,891.7	3,863.7	3,863.7	32.0	8.6	69.92	659.5	-1,740.5	736.8	697.8	39.07	18.862			
4,300.0	3,981.9	3,953.9	3,953.9	33.0	8.8	72.85	659.5	-1,740.5	721.7	681.1	40.61	17.774			
4,400.0	4,072.1	4,044.1	4,044.1	33.9	9.0	75.88	659.5	-1,740.5	709.0	666.8	42.11	16.834			
4,500.0	4,162.3	4,134.3	4,134.3	34.9	9.2	78.99	659.5	-1,740.5	698.6	655.0	43.57	16.033			
4,600.0	4,252.5	4,224.5	4,224.5	35.8	9.4	82.17	659.5	-1,740.5	690.8	645.8	44.96	15.363			
4,700.0	4,342.7	4,314.7	4,314.7	36.8	9.6	85.39	659.5	-1,740.5	685.6	639.3	46.28	14.816			
4,800.0	4,433.0	4,405.0	4,405.0	37.7	9.8	88.65	659.5	-1,740.5	683.1	635.6	47.50	14.383			
4,841.4	4,470.3	4,442.3	4,442.3	38.1	9.9	90.00	659.5	-1,740.5	682.9	634.9	47.97	14.236 CC			

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design													Brown PC E03-17D Pad Sec.3-T6N-R65W - Brown 3-13 (Exist.) - Wellbore #1 - Design #1		Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,523.2	4,495.2	4,495.2	38.7	10.0	91.91	659.5	-1,740.5	683.4	634.8	48.61	14.058	ES			
5,000.0	4,613.4	4,585.4	4,585.4	39.6	10.2	95.17	659.5	-1,740.5	686.3	636.7	49.61	13.833				
5,100.0	4,703.6	4,675.6	4,675.6	40.6	10.4	98.38	659.5	-1,740.5	692.0	641.5	50.50	13.701				
5,167.0	4,764.0	4,736.0	4,736.0	41.2	10.5	100.51	659.5	-1,740.5	697.2	646.2	51.03	13.662	SF			
5,200.0	4,793.9	4,765.9	4,765.9	41.5	10.6	101.60	659.5	-1,740.5	700.2	648.9	51.24	13.665				
5,300.0	4,885.3	4,857.3	4,857.3	42.2	10.8	104.74	659.5	-1,740.5	710.2	658.5	51.69	13.741				
5,400.0	4,978.1	4,950.1	4,950.1	42.8	11.0	107.63	659.5	-1,740.5	721.3	669.3	52.01	13.868				
5,500.0	5,072.1	5,044.1	5,044.1	43.4	11.2	110.26	659.5	-1,740.5	733.0	680.8	52.25	14.028				
5,600.0	5,167.3	5,139.3	5,139.3	44.0	11.4	112.60	659.5	-1,740.5	744.7	692.3	52.43	14.205				
5,700.0	5,263.5	5,235.5	5,235.5	44.4	11.7	114.66	659.5	-1,740.5	756.1	703.5	52.56	14.384				
5,800.0	5,360.5	5,332.5	5,332.5	44.8	11.9	116.45	659.5	-1,740.5	766.7	714.0	52.68	14.554				
5,900.0	5,458.4	5,430.4	5,430.4	45.2	12.1	117.96	659.5	-1,740.5	776.3	723.5	52.79	14.706				
6,000.0	5,556.9	5,528.9	5,528.9	45.5	12.3	119.20	659.5	-1,740.5	784.6	731.7	52.91	14.830				
6,100.0	5,655.9	5,627.9	5,627.9	45.7	12.5	120.18	659.5	-1,740.5	791.5	738.4	53.04	14.923				
6,200.0	5,755.4	5,727.4	5,727.4	45.9	12.8	120.91	659.5	-1,740.5	796.7	743.5	53.19	14.977				
6,300.0	5,855.1	5,827.1	5,827.1	46.1	13.0	121.39	659.5	-1,740.5	800.2	746.8	53.38	14.991				
6,400.0	5,955.1	5,927.1	5,927.1	46.2	13.2	121.62	659.5	-1,740.5	802.0	748.4	53.60	14.962				
6,444.9	6,000.0	5,972.0	5,972.0	46.2	13.3	30.87	659.5	-1,740.5	802.1	748.4	53.71	14.934				
6,500.0	6,055.1	6,027.1	6,027.1	46.2	13.4	30.87	659.5	-1,740.5	802.1	748.3	53.87	14.890				
6,600.0	6,155.1	6,127.1	6,127.1	46.3	13.7	30.87	659.5	-1,740.5	802.1	748.0	54.17	14.809				
6,700.0	6,255.1	6,227.1	6,227.1	46.4	13.9	30.87	659.5	-1,740.5	802.1	747.7	54.46	14.729				
6,800.0	6,355.1	6,327.1	6,327.1	46.4	14.1	30.87	659.5	-1,740.5	802.1	747.4	54.76	14.649				
6,900.0	6,455.1	6,427.1	6,427.1	46.5	14.3	30.87	659.5	-1,740.5	802.1	747.1	55.05	14.570				
7,000.0	6,555.1	6,527.1	6,527.1	46.6	14.6	30.87	659.5	-1,740.5	802.1	746.8	55.35	14.491				
7,100.0	6,655.1	6,627.1	6,627.1	46.6	14.8	30.87	659.5	-1,740.5	802.1	746.5	55.65	14.413				
7,200.0	6,755.1	6,727.1	6,727.1	46.7	15.0	30.87	659.5	-1,740.5	802.1	746.2	55.95	14.336				
7,300.0	6,855.1	6,827.1	6,827.1	46.8	15.2	30.87	659.5	-1,740.5	802.1	745.9	56.26	14.259				
7,400.0	6,955.1	6,927.1	6,927.1	46.8	15.5	30.87	659.5	-1,740.5	802.1	745.6	56.56	14.182				
7,500.0	7,055.1	7,027.1	7,027.1	46.9	15.7	30.87	659.5	-1,740.5	802.1	745.3	56.86	14.106				
7,600.0	7,155.1	7,127.1	7,127.1	47.0	15.9	30.87	659.5	-1,740.5	802.1	745.0	57.17	14.031				
7,700.0	7,255.1	7,227.1	7,227.1	47.1	16.1	30.87	659.5	-1,740.5	802.1	744.7	57.47	13.956				
7,765.9	7,321.0	7,293.0	7,293.0	47.1	16.3	30.87	659.5	-1,740.5	802.1	744.5	57.68	13.907				

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E03-17D Pad Sec.3-T6N-R65W - Brown PC E03-17D - Wellbore #1 - Noble Brown PC E03-1										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	25.5	0.0	25.5					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	25.5	0.0	25.5	25.3	0.22	113.462		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	25.5	0.0	25.5	24.8	0.67	37.821	CC	
214.4	214.4	214.4	214.4	0.4	0.4	90.85	25.5	0.0	25.5	24.8	0.74	34.568		
300.0	300.0	300.0	300.0	0.6	0.6	94.68	25.5	0.0	25.6	24.5	1.11	22.975	ES	
400.0	399.8	399.8	399.8	0.8	0.8	105.98	25.5	0.0	26.5	25.0	1.56	16.994		
500.0	499.5	499.2	499.2	1.0	1.0	118.80	26.6	-1.3	30.4	28.4	2.03	15.011	SF	
600.0	598.7	598.7	598.5	1.3	1.2	127.20	30.0	-5.2	37.9	35.4	2.52	15.051		
700.0	697.5	698.1	697.5	1.7	1.5	131.63	35.6	-11.8	48.1	45.1	3.04	15.833		
800.0	795.6	797.3	796.0	2.0	1.7	133.51	43.4	-20.9	60.8	57.2	3.62	16.807		
900.0	893.1	896.3	893.8	2.5	2.0	133.93	53.4	-32.5	75.8	71.5	4.27	17.731		
1,000.0	989.6	995.0	990.7	3.0	2.4	133.54	65.6	-46.7	92.9	87.9	5.02	18.506		
1,100.0	1,085.3	1,093.3	1,086.5	3.6	2.8	132.72	79.9	-63.3	112.2	106.4	5.88	19.105		
1,200.0	1,179.8	1,191.1	1,181.1	4.2	3.3	131.68	96.2	-82.3	133.7	126.9	6.85	19.537		
1,300.0	1,273.2	1,288.3	1,274.2	5.0	3.8	130.65	114.3	-103.4	157.4	149.5	7.93	19.854		
1,400.0	1,365.2	1,384.9	1,366.6	5.8	4.3	130.45	132.7	-124.8	183.3	174.2	9.06	20.223		
1,477.9	1,436.0	1,459.7	1,438.2	6.5	4.7	130.76	146.9	-141.3	205.0	195.0	9.97	20.557		
1,500.0	1,455.9	1,480.8	1,458.4	6.7	4.9	130.98	150.9	-146.0	211.3	201.1	10.23	20.659		
1,600.0	1,546.1	1,576.6	1,550.0	7.6	5.4	131.85	169.0	-167.1	240.1	228.7	11.41	21.035		
1,700.0	1,636.3	1,672.3	1,641.6	8.5	6.0	132.54	187.2	-188.2	268.9	256.2	12.61	21.323		
1,800.0	1,726.5	1,768.0	1,733.1	9.4	6.5	133.09	205.4	-209.4	297.7	283.9	13.81	21.551		
1,900.0	1,816.7	1,863.7	1,824.7	10.3	7.1	133.54	223.5	-230.5	326.5	311.5	15.02	21.734		
2,000.0	1,907.0	1,959.4	1,916.3	11.3	7.7	133.92	241.7	-251.7	355.3	339.1	16.24	21.885		
2,100.0	1,997.2	2,055.2	2,007.9	12.2	8.3	134.25	259.8	-272.8	384.2	366.8	17.46	22.011		
2,200.0	2,087.4	2,150.9	2,099.4	13.1	8.8	134.53	278.0	-294.0	413.1	394.4	18.68	22.117		
2,300.0	2,177.6	2,246.6	2,191.0	14.1	9.4	134.77	296.2	-315.1	442.0	422.1	19.90	22.208		
2,400.0	2,267.8	2,342.3	2,282.6	15.0	10.0	134.98	314.3	-336.3	470.8	449.7	21.13	22.287		
2,500.0	2,358.0	2,438.1	2,374.2	16.0	10.6	135.17	332.5	-357.4	499.7	477.4	22.35	22.356		
2,600.0	2,448.2	2,533.8	2,465.7	16.9	11.1	135.34	350.7	-378.6	528.6	505.0	23.58	22.416		
2,700.0	2,538.5	2,629.5	2,557.3	17.8	11.7	135.49	368.8	-399.7	557.5	532.7	24.81	22.470		
2,800.0	2,628.7	2,725.2	2,648.9	18.8	12.3	135.62	387.0	-420.9	586.4	560.4	26.04	22.518		
2,900.0	2,718.9	2,821.0	2,740.5	19.7	12.9	135.74	405.2	-442.0	615.3	588.0	27.27	22.560		
3,000.0	2,809.1	2,916.7	2,832.0	20.7	13.5	135.86	423.3	-463.2	644.2	615.7	28.51	22.599		
3,100.0	2,899.3	3,012.4	2,923.6	21.6	14.1	135.96	441.5	-484.3	673.1	643.4	29.74	22.634		
3,200.0	2,989.5	3,108.1	3,015.2	22.6	14.6	136.05	459.6	-505.5	702.0	671.1	30.97	22.665		
3,300.0	3,079.7	3,203.9	3,106.8	23.5	15.2	136.14	477.8	-526.6	730.9	698.7	32.21	22.694		
3,400.0	3,170.0	3,299.6	3,198.3	24.5	15.8	136.22	496.0	-547.8	759.9	726.4	33.44	22.721		
3,500.0	3,260.2	3,395.3	3,289.9	25.4	16.4	136.29	514.1	-568.9	788.8	754.1	34.68	22.745		
3,600.0	3,350.4	3,491.0	3,381.5	26.3	17.0	136.36	532.3	-590.1	817.7	781.8	35.91	22.768		
3,700.0	3,440.6	3,586.8	3,473.1	27.3	17.6	136.42	550.5	-611.2	846.6	809.5	37.15	22.789		
3,800.0	3,530.8	3,682.5	3,564.6	28.2	18.1	136.48	568.6	-632.4	875.5	837.1	38.39	22.808		
3,900.0	3,621.0	3,778.2	3,656.2	29.2	18.7	136.54	586.8	-653.5	904.4	864.8	39.62	22.826		
4,000.0	3,711.2	3,873.9	3,747.8	30.1	19.3	136.59	605.0	-674.6	933.4	892.5	40.86	22.843		
4,100.0	3,801.5	3,969.7	3,839.4	31.1	19.9	136.64	623.1	-695.8	962.3	920.2	42.10	22.859		
4,200.0	3,891.7	4,065.4	3,930.9	32.0	20.5	136.69	641.3	-716.9	991.2	947.9	43.33	22.873		
4,300.0	3,981.9	4,161.1	4,022.5	33.0	21.1	136.73	659.4	-738.1	1,020.1	975.5	44.57	22.887		
4,400.0	4,072.1	4,256.8	4,114.1	33.9	21.6	136.77	677.6	-759.2	1,049.0	1,003.2	45.81	22.900		
4,500.0	4,162.3	4,352.6	4,205.7	34.9	22.2	136.81	695.8	-780.4	1,078.0	1,030.9	47.05	22.912		
4,600.0	4,252.5	4,448.3	4,297.2	35.8	22.8	136.85	713.9	-801.5	1,106.9	1,058.6	48.29	22.924		
4,700.0	4,342.7	4,544.0	4,388.8	36.8	23.4	136.88	732.1	-822.7	1,135.8	1,086.3	49.52	22.934		
4,800.0	4,433.0	4,639.7	4,480.4	37.7	24.0	136.92	750.3	-843.8	1,164.7	1,114.0	50.76	22.945		

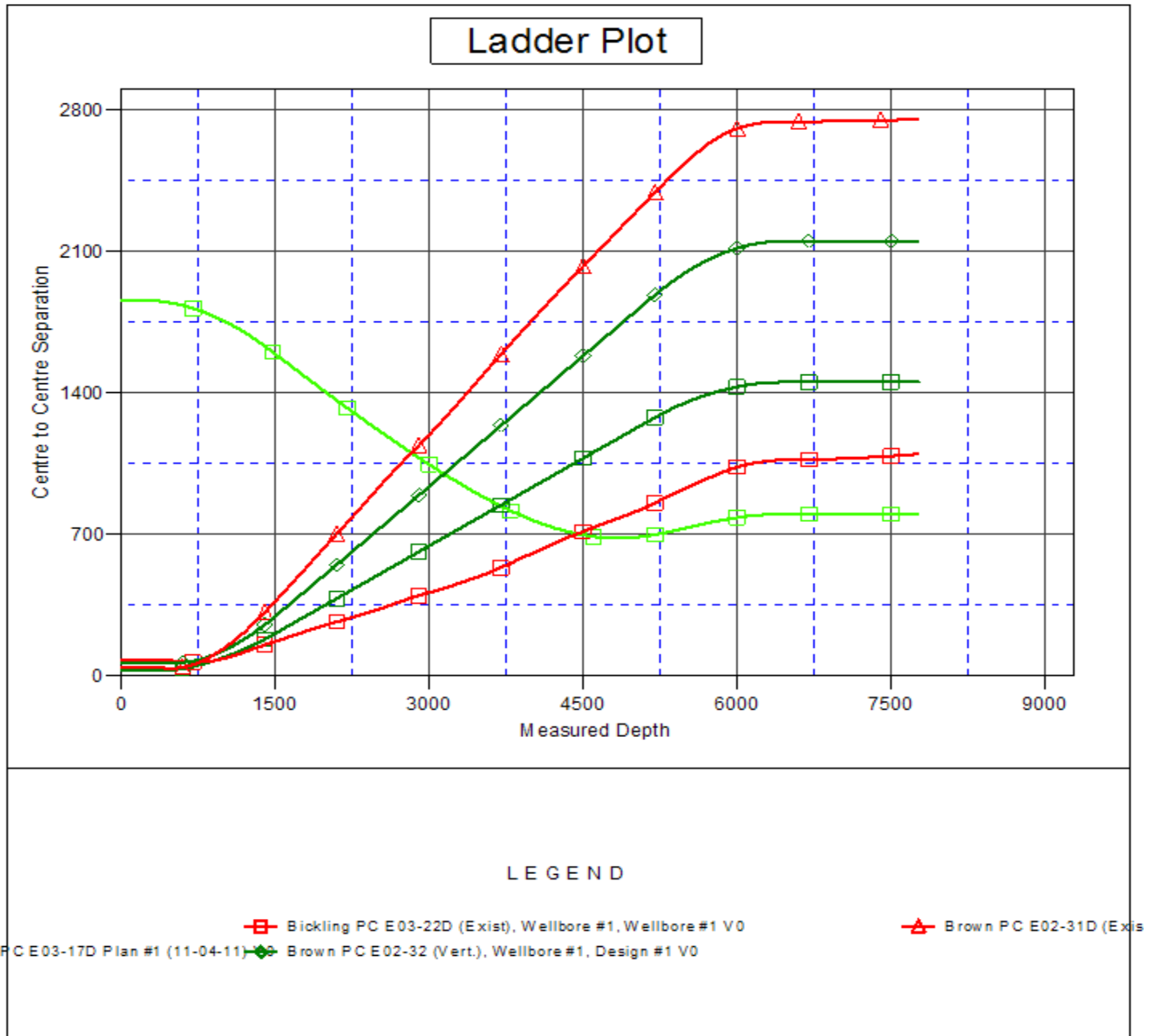
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Offset Design		Brown PC E03-17D Pad Sec.3-T6N-R65W - Brown PC E03-17D - Wellbore #1 - Noble Brown PC E03-1										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,523.2	4,735.4	4,572.0	38.7	24.6	136.95	768.4	-865.0	1,193.6	1,141.6	52.00	22.954		
5,000.0	4,613.4	4,831.2	4,663.5	39.6	25.1	136.98	786.6	-886.1	1,222.6	1,169.3	53.24	22.963		
5,100.0	4,703.6	4,926.9	4,755.1	40.6	25.7	137.01	804.8	-907.3	1,251.5	1,197.0	54.48	22.972		
5,167.0	4,764.0	4,991.0	4,816.5	41.2	26.1	137.03	816.9	-921.4	1,270.9	1,215.5	55.31	22.978		
5,200.0	4,793.9	5,022.7	4,846.7	41.5	26.3	137.16	822.9	-928.4	1,280.3	1,224.6	55.70	22.984		
5,300.0	4,885.3	5,119.0	4,938.8	42.2	26.9	137.48	841.2	-949.7	1,307.2	1,250.3	56.85	22.992		
5,400.0	4,978.1	5,215.9	5,031.5	42.8	27.5	137.65	859.6	-971.1	1,331.6	1,273.5	58.01	22.954		
5,500.0	5,072.1	5,309.6	5,121.4	43.4	28.0	137.73	877.0	-991.4	1,353.5	1,294.5	59.08	22.909		
5,600.0	5,167.3	5,400.0	5,208.8	44.0	28.4	137.81	892.1	-1,009.0	1,373.4	1,313.5	59.97	22.902		
5,700.0	5,263.5	5,494.2	5,300.6	44.4	28.8	137.89	905.9	-1,025.1	1,391.2	1,330.4	60.77	22.893		
5,800.0	5,360.5	5,587.2	5,391.8	44.8	29.1	137.99	917.7	-1,038.7	1,406.8	1,345.4	61.45	22.893		
5,900.0	5,458.4	5,680.6	5,483.9	45.2	29.4	138.08	927.5	-1,050.2	1,420.3	1,358.3	62.03	22.896		
6,000.0	5,556.9	5,774.2	5,576.7	45.5	29.6	138.18	935.3	-1,059.3	1,431.6	1,369.1	62.51	22.903		
6,100.0	5,655.9	5,868.0	5,670.1	45.7	29.8	138.29	941.2	-1,066.2	1,440.7	1,377.8	62.87	22.914		
6,200.0	5,755.4	5,961.9	5,763.8	45.9	29.9	138.40	945.2	-1,070.7	1,447.6	1,384.5	63.14	22.928		
6,300.0	5,855.1	6,055.9	5,857.8	46.1	30.0	138.51	947.1	-1,073.0	1,452.3	1,389.0	63.30	22.944		
6,400.0	5,955.1	6,153.2	5,955.1	46.2	30.1	138.62	947.3	-1,073.2	1,454.8	1,391.4	63.39	22.950		
6,444.9	6,000.0	6,198.1	6,000.0	46.2	30.2	47.86	947.3	-1,073.2	1,455.0	1,391.6	63.43	22.940		
6,500.0	6,055.1	6,253.2	6,055.1	46.2	30.2	47.86	947.3	-1,073.2	1,455.0	1,391.5	63.52	22.906		
6,600.0	6,155.1	6,353.2	6,155.1	46.3	30.3	47.86	947.3	-1,073.2	1,455.0	1,391.3	63.70	22.843		
6,700.0	6,255.1	6,453.2	6,255.1	46.4	30.4	47.86	947.3	-1,073.2	1,455.0	1,391.1	63.88	22.779		
6,800.0	6,355.1	6,553.2	6,355.1	46.4	30.5	47.86	947.3	-1,073.2	1,455.0	1,391.0	64.06	22.714		
6,900.0	6,455.1	6,653.2	6,455.1	46.5	30.6	47.86	947.3	-1,073.2	1,455.0	1,390.8	64.24	22.649		
7,000.0	6,555.1	6,753.2	6,555.1	46.6	30.7	47.86	947.3	-1,073.2	1,455.0	1,390.6	64.43	22.583		
7,100.0	6,655.1	6,853.2	6,655.1	46.6	30.8	47.86	947.3	-1,073.2	1,455.0	1,390.4	64.62	22.517		
7,200.0	6,755.1	6,953.2	6,755.1	46.7	30.9	47.86	947.3	-1,073.2	1,455.0	1,390.2	64.81	22.450		
7,300.0	6,855.1	7,053.2	6,855.1	46.8	31.0	47.86	947.3	-1,073.2	1,455.0	1,390.0	65.01	22.383		
7,400.0	6,955.1	7,153.2	6,955.1	46.8	31.1	47.86	947.3	-1,073.2	1,455.0	1,389.8	65.20	22.315		
7,500.0	7,055.1	7,253.2	7,055.1	46.9	31.2	47.86	947.3	-1,073.2	1,455.0	1,389.6	65.40	22.247		
7,600.0	7,155.1	7,353.2	7,155.1	47.0	31.4	47.86	947.3	-1,073.2	1,455.0	1,389.4	65.61	22.178		
7,700.0	7,255.1	7,453.2	7,255.1	47.1	31.5	47.86	947.3	-1,073.2	1,455.0	1,389.2	65.81	22.109		
7,765.9	7,321.0	7,519.1	7,321.0	47.1	31.5	47.86	947.3	-1,073.2	1,455.0	1,389.1	65.95	22.063		

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev) Coordinates are relative to: Bickling PC E03-21D
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Project:	SEC.3-T6N-R65W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Reference Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
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Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev) Coordinates are relative to: Bickling PC E03-21D
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
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