



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.17-T3N-R65W

REI H17-21D Pad Sec.17-T3N-R65W

REI H17-28D

Wellbore #1

Noble NEI H17-28D Plan #2 (2-20-12)

Anticollision Report

21 February, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H17-28D
Project:	SEC.17-T3N-R65W	TVD Reference:	WELL @ 4941.0ft (Original Well Elev)
Reference Site:	REI H17-21D Pad Sec.17-T3N-R65W	MD Reference:	WELL @ 4941.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	REI H17-28D	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 NEI H17-28D Plan #2 (2-20-12)	Offset TVD Reference:	Offset Datum

Reference	Noble NEI H17-28D Plan #2 (2-20-1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	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** 2/20/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,084.0	Noble NEI H17-28D Plan #2 (2-20-12) (W	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						
REI H17-21D Pad Sec.17-T3N-R65W						
HSR-REI 3-17A (Exist.) - Wellbore #1 - Design #1	3,133.7	2,973.7	180.2	157.1	7.800	CC, ES
HSR-REI 3-17A (Exist.) - Wellbore #1 - Design #1	3,200.0	3,035.5	181.8	158.2	7.717	SF
REI H17-21D - Wellbore #1 - Noble REI H17-21D Plan #	166.5	167.5	21.9	21.4	44.004	CC
REI H17-21D - Wellbore #1 - Noble REI H17-21D Plan #	300.0	301.0	21.9	20.8	20.160	ES
REI H17-21D - Wellbore #1 - Noble REI H17-21D Plan #	500.0	500.0	26.4	24.5	13.326	SF
REI H17-30D - Wellbore #1 - Noble REI H17-30D Plan #	166.3	167.3	21.9	21.4	44.071	CC
REI H17-30D - Wellbore #1 - Noble REI H17-30D Plan #	200.0	201.0	21.9	21.2	33.769	ES
REI H17-30D - Wellbore #1 - Noble REI H17-30D Plan #	500.0	498.1	35.2	33.2	17.540	SF
UPRC 17-3J (Exist.) - Wellbore #1 - Design #1	2,723.5	2,596.3	165.7	146.4	8.603	CC, ES
UPRC 17-3J (Exist.) - Wellbore #1 - Design #1	2,800.0	2,667.7	168.0	148.2	8.497	SF

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - HSR-REI 3-17A (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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)		Reference	Offset	+N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)
0.0	0.0	0.0	0.0	0.0	0.0	35.40	652.1	463.5	800.4				
100.0	100.0	75.0	75.0	0.1	0.1	35.40	652.1	463.5	800.0	799.9	0.17 4,675.780		
200.0	200.0	175.0	175.0	0.3	0.3	35.40	652.1	463.5	800.0	799.5	0.59 1,358.565		
300.0	300.0	275.0	275.0	0.5	0.5	35.40	652.1	463.5	800.0	799.0	1.04 770.442		
400.0	400.0	375.0	375.0	0.8	0.7	35.40	652.1	463.5	800.0	798.6	1.49 537.680		
500.0	500.0	475.0	475.0	1.0	0.9	-44.70	652.1	463.5	798.8	796.9	1.93 413.976		
600.0	599.8	574.8	574.8	1.2	1.2	-45.02	652.1	463.5	795.1	792.7	2.37 335.250		
700.0	699.5	674.5	674.5	1.4	1.4	-38.81	652.1	463.5	788.8	786.0	2.83 278.844		
800.0	798.8	773.8	773.8	1.7	1.6	-30.37	652.1	463.5	779.2	775.9	3.30 236.115		
900.0	897.7	872.7	872.7	2.0	1.8	-25.37	652.1	463.5	766.3	762.5	3.78 202.905		
1,000.0	996.1	971.1	971.1	2.4	2.1	-22.26	652.1	463.5	749.9	745.7	4.26 176.157		
1,100.0	1,093.9	1,068.9	1,068.9	2.7	2.3	-20.29	652.1	463.5	730.2	725.5	4.74 153.957		
1,200.0	1,190.8	1,165.8	1,165.8	3.2	2.5	-19.05	652.1	463.5	707.2	701.9	5.24 135.072		
1,300.0	1,286.9	1,261.9	1,261.9	3.7	2.7	-18.36	652.1	463.5	680.9	675.1	5.74 118.677		
1,400.0	1,382.0	1,357.0	1,357.0	4.2	2.9	-18.09	652.1	463.5	651.4	645.1	6.25 104.200		
1,500.0	1,476.0	1,451.0	1,451.0	4.9	3.1	-18.19	652.1	463.5	618.7	612.0	6.78 91.233		
1,600.0	1,569.2	1,544.2	1,544.2	5.5	3.3	-19.18	652.1	463.5	584.2	576.8	7.36 79.321		

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

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - HSR-REI 3-17A (Exist.) - Wellbore #1 - Design #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
1,700.0	1,662.4	1,637.4	1,637.4	6.2	3.6	-20.41	652.1	463.5	549.8	541.9	7.98	68.915		
1,800.0	1,755.6	1,730.6	1,730.6	6.9	3.8	-21.80	652.1	463.5	515.7	507.1	8.62	59.828		
1,900.0	1,848.8	1,823.8	1,823.8	7.6	4.0	-23.38	652.1	463.5	482.0	472.7	9.30	51.848		
2,000.0	1,942.1	1,917.1	1,917.1	8.3	4.2	-25.20	652.1	463.5	448.6	438.5	10.01	44.809		
2,100.0	2,035.3	2,010.3	2,010.3	9.1	4.4	-27.30	652.1	463.5	415.6	404.9	10.77	38.578		
2,200.0	2,128.5	2,103.5	2,103.5	9.8	4.6	-29.74	652.1	463.5	383.3	371.7	11.60	33.051		
2,300.0	2,221.7	2,196.7	2,196.7	10.5	4.8	-32.61	652.1	463.5	351.7	339.2	12.49	28.150		
2,400.0	2,314.9	2,289.9	2,289.9	11.2	5.0	-36.02	652.1	463.5	321.1	307.7	13.48	23.817		
2,500.0	2,408.1	2,383.1	2,383.1	11.9	5.2	-40.09	652.1	463.5	291.9	277.3	14.58	20.013		
2,600.0	2,501.3	2,476.3	2,476.3	12.7	5.4	-44.99	652.1	463.5	264.3	248.5	15.81	16.717		
2,700.0	2,594.5	2,569.5	2,569.5	13.4	5.6	-50.89	652.1	463.5	239.1	221.9	17.17	13.922		
2,800.0	2,687.7	2,662.7	2,662.7	14.1	5.9	-57.97	652.1	463.5	217.0	198.3	18.65	11.634		
2,900.0	2,780.9	2,755.9	2,755.9	14.8	6.1	-66.35	652.1	463.5	199.1	178.9	20.17	9.867		
3,000.0	2,874.1	2,849.1	2,849.1	15.6	6.3	-75.93	652.1	463.5	186.6	164.9	21.61	8.631		
3,100.0	2,967.3	2,942.3	2,942.3	16.3	6.5	-86.39	652.1	463.5	180.6	157.8	22.79	7.924		
3,133.7	2,998.7	2,973.7	2,973.7	16.6	6.6	-90.00	652.1	463.5	180.2	157.1	23.10	7.800 CC, ES		
3,200.0	3,060.5	3,035.5	3,035.5	17.0	6.7	-97.09	652.1	463.5	181.8	158.2	23.55	7.717 SF		
3,300.0	3,153.7	3,128.7	3,128.7	17.8	6.9	-107.32	652.1	463.5	190.0	166.1	23.89	7.953		
3,400.0	3,246.9	3,221.9	3,221.9	18.5	7.1	-116.53	652.1	463.5	204.4	180.5	23.89	8.556		
3,500.0	3,340.1	3,315.1	3,315.1	19.2	7.3	-124.48	652.1	463.5	223.8	200.1	23.71	9.437		
3,600.0	3,433.3	3,408.3	3,408.3	20.0	7.5	-131.16	652.1	463.5	247.0	223.5	23.49	10.514		
3,700.0	3,526.5	3,501.5	3,501.5	20.7	7.7	-136.71	652.1	463.5	273.1	249.8	23.31	11.717		
3,800.0	3,619.7	3,594.7	3,594.7	21.4	8.0	-141.32	652.1	463.5	301.3	278.1	23.19	12.989		
3,900.0	3,712.9	3,687.9	3,687.9	22.2	8.2	-145.16	652.1	463.5	331.0	307.8	23.16	14.291		
4,000.0	3,806.1	3,781.1	3,781.1	22.9	8.4	-148.38	652.1	463.5	361.9	338.7	23.21	15.594		
4,100.0	3,899.3	3,874.3	3,874.3	23.6	8.6	-151.10	652.1	463.5	393.8	370.4	23.33	16.878		
4,200.0	3,992.5	3,967.5	3,967.5	24.4	8.8	-153.42	652.1	463.5	426.3	402.8	23.51	18.130		
4,300.0	4,085.8	4,060.8	4,060.8	25.1	9.0	-155.42	652.1	463.5	459.4	435.7	23.75	19.344		
4,400.0	4,179.0	4,154.0	4,154.0	25.8	9.2	-157.16	652.1	463.5	493.0	468.9	24.03	20.516		
4,500.0	4,272.2	4,247.2	4,247.2	26.6	9.4	-158.67	652.1	463.5	526.8	502.5	24.34	21.642		
4,600.0	4,365.4	4,340.4	4,340.4	27.3	9.6	-160.01	652.1	463.5	561.0	536.3	24.69	22.724		
4,700.0	4,458.6	4,433.6	4,433.6	28.0	9.8	-161.19	652.1	463.5	595.5	570.4	25.06	23.761		
4,800.0	4,551.8	4,526.8	4,526.8	28.8	10.0	-162.25	652.1	463.5	630.1	604.6	25.45	24.755		
4,900.0	4,645.0	4,620.0	4,620.0	29.5	10.3	-163.19	652.1	463.5	664.9	639.0	25.86	25.707		
5,000.0	4,738.2	4,713.2	4,713.2	30.2	10.5	-164.05	652.1	463.5	699.8	673.6	26.29	26.620		
5,100.0	4,831.4	4,806.4	4,806.4	31.0	10.7	-164.82	652.1	463.5	734.9	708.2	26.73	27.495		
5,200.0	4,924.9	4,899.9	4,899.9	31.6	10.9	-165.63	652.1	463.5	769.4	742.2	27.22	28.267		
5,300.0	5,019.5	4,994.5	4,994.5	32.2	11.1	-166.36	652.1	463.5	800.9	773.2	27.70	28.914		
5,400.0	5,115.1	5,090.1	5,090.1	32.6	11.3	-166.97	652.1	463.5	829.3	801.1	28.17	29.442		
5,500.0	5,211.8	5,186.8	5,186.8	33.1	11.5	-167.47	652.1	463.5	854.4	825.8	28.61	29.861		
5,600.0	5,309.3	5,284.3	5,284.3	33.4	11.8	-167.88	652.1	463.5	876.2	847.2	29.03	30.182		
5,700.0	5,407.4	5,382.4	5,382.4	33.8	12.0	-168.21	652.1	463.5	894.7	865.3	29.42	30.411		
5,800.0	5,506.2	5,481.2	5,481.2	34.1	12.2	-168.47	652.1	463.5	909.9	880.1	29.78	30.556		
5,900.0	5,605.5	5,580.5	5,580.5	34.3	12.4	-168.67	652.1	463.5	921.7	891.6	30.10	30.620		
6,000.0	5,705.1	5,680.1	5,680.1	34.5	12.6	-168.81	652.1	463.5	930.0	899.7	30.39	30.608		
6,100.0	5,805.0	5,780.0	5,780.0	34.6	12.9	-168.88	652.1	463.5	935.0	904.4	30.63	30.522		
6,200.0	5,905.0	5,880.0	5,880.0	34.7	13.1	-122.47	652.1	463.5	936.6	905.7	30.85	30.354		
6,300.0	6,005.0	5,980.0	5,980.0	34.8	13.3	-122.47	652.1	463.5	936.6	905.3	31.23	29.993		
6,400.0	6,105.0	6,080.0	6,080.0	34.9	13.5	-122.47	652.1	463.5	936.6	905.0	31.60	29.639		
6,500.0	6,205.0	6,180.0	6,180.0	35.0	13.8	-122.47	652.1	463.5	936.6	904.6	31.97	29.292		
6,600.0	6,305.0	6,280.0	6,280.0	35.0	14.0	-122.47	652.1	463.5	936.6	904.2	32.35	28.952		
6,700.0	6,405.0	6,380.0	6,380.0	35.1	14.2	-122.47	652.1	463.5	936.6	903.8	32.73	28.618		

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

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - HSR-REI 3-17A (Exist.) - Wellbore #1 - Design #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
6,800.0	6,505.0	6,480.0	6,480.0	35.2	14.4	-122.47	652.1	463.5	936.6	903.4	33.10	28.291		
6,900.0	6,605.0	6,580.0	6,580.0	35.3	14.7	-122.47	652.1	463.5	936.6	903.1	33.49	27.969		
7,000.0	6,705.0	6,680.0	6,680.0	35.4	14.9	-122.47	652.1	463.5	936.6	902.7	33.87	27.654		
7,100.0	6,805.0	6,780.0	6,780.0	35.5	15.1	-122.47	652.1	463.5	936.6	902.3	34.25	27.345		
7,200.0	6,905.0	6,880.0	6,880.0	35.6	15.3	-122.47	652.1	463.5	936.6	901.9	34.63	27.041		
7,300.0	7,005.0	6,980.0	6,980.0	35.7	15.6	-122.47	652.1	463.5	936.6	901.5	35.02	26.744		
7,400.0	7,105.0	7,080.0	7,080.0	35.7	15.8	-122.47	652.1	463.5	936.6	901.1	35.41	26.452		
7,500.0	7,205.0	7,180.0	7,180.0	35.8	16.0	-122.47	652.1	463.5	936.6	900.8	35.79	26.165		
7,600.0	7,305.0	7,280.0	7,280.0	35.9	16.2	-122.47	652.1	463.5	936.6	900.4	36.18	25.883		
7,700.0	7,405.0	7,380.0	7,380.0	36.0	16.5	-122.47	652.1	463.5	936.6	900.0	36.57	25.607		
7,800.0	7,505.0	7,480.0	7,480.0	36.1	16.7	-122.47	652.1	463.5	936.6	899.6	36.97	25.336		
7,900.0	7,605.0	7,580.0	7,580.0	36.2	16.9	-122.47	652.1	463.5	936.6	899.2	37.36	25.069		
8,000.0	7,705.0	7,680.0	7,680.0	36.3	17.1	-122.47	652.1	463.5	936.6	898.8	37.75	24.808		
8,084.0	7,789.0	7,764.0	7,764.0	36.4	17.3	-122.47	652.1	463.5	936.6	898.5	38.08	24.592		

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - REI H17-21D - Wellbore #1 - Noble REI H17-21D Plan #2 (2-20-12)													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	1.0	1.0	0.0	0.0	-180.00	-21.9	0.0	21.9				
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-21.9	0.0	21.9	21.7	0.20	110.509	
166.5	166.5	167.5	167.5	0.2	0.2	-180.00	-21.9	0.0	21.9	21.4	0.50	44.004 CC	
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-21.9	0.0	21.9	21.2	0.65	33.771	
227.0	227.0	228.0	228.0	0.4	0.4	179.64	-21.9	0.1	21.9	21.1	0.77	28.533	
300.0	300.0	301.0	300.9	0.5	0.5	175.35	-21.9	1.8	21.9	20.8	1.09	20.160 ES	
400.0	400.0	400.7	400.5	0.8	0.8	162.18	-21.9	7.0	23.0	21.4	1.54	14.946	
500.0	500.0	500.0	499.5	1.0	1.0	68.48	-22.2	15.5	26.4	24.5	1.98	13.326 SF	
600.0	599.8	598.6	597.5	1.2	1.3	63.90	-25.1	25.9	32.7	30.2	2.43	13.432	
700.0	699.5	697.0	694.9	1.4	1.6	72.26	-30.9	38.0	41.2	38.2	2.92	14.096	
800.0	798.8	794.4	791.0	1.7	1.9	85.69	-39.5	51.7	54.0	50.6	3.47	15.563	
900.0	897.7	890.6	885.3	2.0	2.3	96.03	-50.6	66.9	72.0	67.9	4.09	17.616	
1,000.0	996.1	984.9	977.2	2.4	2.7	103.82	-64.2	83.3	95.2	90.5	4.76	20.005	
1,100.0	1,093.9	1,077.0	1,066.2	2.7	3.2	109.63	-80.0	100.9	123.8	118.3	5.49	22.554	
1,200.0	1,190.8	1,166.7	1,152.1	3.2	3.7	113.98	-97.7	119.4	157.6	151.3	6.27	25.149	
1,300.0	1,286.9	1,253.5	1,234.6	3.7	4.2	117.25	-117.1	138.6	196.3	189.2	7.08	27.721	
1,400.0	1,382.0	1,340.1	1,316.0	4.2	4.8	119.80	-138.3	158.9	239.7	231.7	7.94	30.174	
1,500.0	1,476.0	1,428.4	1,398.9	4.9	5.4	122.04	-160.4	179.9	285.7	276.9	8.85	32.295	
1,600.0	1,569.2	1,516.0	1,481.1	5.5	6.0	123.85	-182.2	200.6	333.3	323.5	9.82	33.956	
1,700.0	1,662.4	1,603.5	1,563.3	6.2	6.6	125.22	-204.0	221.3	381.1	370.3	10.80	35.296	
1,800.0	1,755.6	1,691.0	1,645.5	6.9	7.2	126.28	-225.8	242.0	429.0	417.2	11.79	36.399	
1,900.0	1,848.8	1,778.5	1,727.7	7.6	7.8	127.14	-247.6	262.8	477.0	464.3	12.78	37.323	
2,000.0	1,942.1	1,866.0	1,809.9	8.3	8.5	127.83	-269.4	283.5	525.1	511.3	13.78	38.105	
2,100.0	2,035.3	1,953.5	1,892.0	9.1	9.1	128.41	-291.3	304.2	573.3	558.5	14.78	38.776	
2,200.0	2,128.5	2,041.1	1,974.2	9.8	9.7	128.90	-313.1	324.9	621.4	605.7	15.79	39.356	
2,300.0	2,221.7	2,128.6	2,056.4	10.5	10.3	129.32	-334.9	345.6	669.6	652.8	16.80	39.863	
2,400.0	2,314.9	2,216.1	2,138.6	11.2	11.0	129.68	-356.7	366.4	717.9	700.1	17.81	40.308	
2,500.0	2,408.1	2,303.6	2,220.8	11.9	11.6	130.00	-378.5	387.1	766.1	747.3	18.82	40.703	
2,600.0	2,501.3	2,391.1	2,302.9	12.7	12.2	130.28	-400.3	407.8	814.4	794.6	19.84	41.055	
2,700.0	2,594.5	2,478.6	2,385.1	13.4	12.9	130.53	-422.2	428.5	862.7	841.8	20.85	41.370	
2,800.0	2,687.7	2,566.1	2,467.3	14.1	13.5	130.75	-444.0	449.3	911.0	889.1	21.87	41.655	
2,900.0	2,780.9	2,653.7	2,549.5	14.8	14.1	130.95	-465.8	470.0	959.3	936.4	22.89	41.913	
3,000.0	2,874.1	2,741.2	2,631.7	15.6	14.8	131.13	-487.6	490.7	1,007.6	983.7	23.91	42.147	
3,100.0	2,967.3	2,828.7	2,713.8	16.3	15.4	131.29	-509.4	511.4	1,055.9	1,031.0	24.93	42.362	
3,200.0	3,060.5	2,916.2	2,796.0	17.0	16.0	131.44	-531.2	532.2	1,104.2	1,078.3	25.95	42.558	
3,300.0	3,153.7	3,003.7	2,878.2	17.8	16.7	131.58	-553.0	552.9	1,152.5	1,125.6	26.97	42.739	
3,400.0	3,246.9	3,091.2	2,960.4	18.5	17.3	131.71	-574.9	573.6	1,200.9	1,172.9	27.99	42.906	
3,500.0	3,340.1	3,178.8	3,042.6	19.2	17.9	131.82	-596.7	594.3	1,249.2	1,220.2	29.01	43.060	
3,600.0	3,433.3	3,266.3	3,124.7	20.0	18.6	131.93	-618.5	615.0	1,297.5	1,267.5	30.03	43.203	
3,700.0	3,526.5	3,353.8	3,206.9	20.7	19.2	132.03	-640.3	635.8	1,345.9	1,314.8	31.06	43.337	
3,800.0	3,619.7	3,441.3	3,289.1	21.4	19.8	132.12	-662.1	656.5	1,394.2	1,362.1	32.08	43.461	
3,900.0	3,712.9	3,528.8	3,371.3	22.2	20.5	132.21	-683.9	677.2	1,442.6	1,409.5	33.10	43.577	
4,000.0	3,806.1	3,616.3	3,453.5	22.9	21.1	132.29	-705.8	697.9	1,490.9	1,456.8	34.13	43.686	
4,100.0	3,899.3	3,703.8	3,535.6	23.6	21.7	132.37	-727.6	718.7	1,539.3	1,504.1	35.15	43.788	
4,200.0	3,992.5	3,791.4	3,617.8	24.4	22.4	132.44	-749.4	739.4	1,587.6	1,551.5	36.18	43.885	
4,300.0	4,085.8	3,878.9	3,700.0	25.1	23.0	132.51	-771.2	760.1	1,636.0	1,598.8	37.20	43.975	
4,400.0	4,179.0	3,966.4	3,782.2	25.8	23.7	132.57	-793.0	780.8	1,684.3	1,646.1	38.23	44.060	
4,500.0	4,272.2	4,053.9	3,864.4	26.6	24.3	132.63	-814.8	801.5	1,732.7	1,693.4	39.25	44.141	
4,600.0	4,365.4	4,141.4	3,946.5	27.3	24.9	132.69	-836.6	822.3	1,781.1	1,740.8	40.28	44.217	
4,700.0	4,458.6	4,228.9	4,028.7	28.0	25.6	132.74	-858.5	843.0	1,829.4	1,788.1	41.31	44.289	
4,800.0	4,551.8	4,316.5	4,110.9	28.8	26.2	132.79	-880.3	863.7	1,877.8	1,835.5	42.33	44.358	
4,900.0	4,645.0	4,404.0	4,193.1	29.5	26.8	132.84	-902.1	884.4	1,926.2	1,882.8	43.36	44.423	

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

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - REI H17-21D - Wellbore #1 - Noble REI H17-21D Plan #2 (2-20-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,738.2	4,491.5	4,275.3	30.2	27.5	132.89		-923.9	905.2	1,974.5	1,930.1	44.39	44.485	
5,100.0	4,831.4	4,579.0	4,357.4	31.0	28.1	132.93		-945.7	925.9	2,022.9	1,977.5	45.41	44.544	
5,200.0	4,924.9	4,666.8	4,439.9	31.6	28.8	133.49		-967.6	946.7	2,070.8	2,024.2	46.55	44.482	
5,300.0	5,019.5	4,755.6	4,523.3	32.2	29.4	134.18		-989.8	967.7	2,116.7	2,069.0	47.66	44.414	
5,400.0	5,115.1	4,845.4	4,607.7	32.6	30.1	134.75		-1,012.1	989.0	2,160.4	2,111.7	48.72	44.340	
5,500.0	5,211.8	4,936.2	4,692.9	33.1	30.7	135.21		-1,034.8	1,010.5	2,201.9	2,152.1	49.75	44.261	
5,600.0	5,309.3	5,027.7	4,778.8	33.4	31.4	135.56		-1,057.6	1,032.1	2,241.2	2,190.4	50.73	44.182	
5,700.0	5,407.4	5,119.9	4,865.4	33.8	32.1	135.81		-1,080.6	1,054.0	2,278.2	2,226.5	51.65	44.105	
5,800.0	5,506.2	5,264.1	5,001.2	34.1	32.9	135.78		-1,115.5	1,087.2	2,312.5	2,259.8	52.70	43.878	
5,900.0	5,605.5	5,484.8	5,213.3	34.3	33.9	135.52		-1,159.8	1,129.2	2,340.3	2,286.5	53.81	43.491	
6,000.0	5,705.1	5,715.1	5,438.9	34.5	34.7	135.33		-1,193.3	1,161.0	2,360.4	2,305.7	54.71	43.148	
6,100.0	5,805.0	5,952.2	5,674.2	34.6	35.2	135.21		-1,213.9	1,180.6	2,372.5	2,317.1	55.35	42.861	
6,200.0	5,905.0	6,184.3	5,906.0	34.7	35.5	-178.39		-1,220.4	1,186.8	2,376.2	2,320.4	55.74	42.627	
6,300.0	6,005.0	6,284.3	6,006.0	34.8	35.6	-178.39		-1,220.4	1,186.8	2,376.2	2,320.3	55.93	42.483	
6,400.0	6,105.0	6,384.3	6,106.0	34.9	35.7	-178.39		-1,220.4	1,186.8	2,376.2	2,320.1	56.12	42.338	
6,500.0	6,205.0	6,484.3	6,206.0	35.0	35.7	-178.39		-1,220.4	1,186.8	2,376.2	2,319.9	56.32	42.191	
6,600.0	6,305.0	6,584.3	6,306.0	35.0	35.8	-178.39		-1,220.4	1,186.8	2,376.2	2,319.7	56.52	42.044	
6,700.0	6,405.0	6,684.3	6,406.0	35.1	35.9	-178.39		-1,220.4	1,186.8	2,376.2	2,319.5	56.72	41.895	
6,800.0	6,505.0	6,784.3	6,506.0	35.2	36.0	-178.39		-1,220.4	1,186.8	2,376.2	2,319.3	56.92	41.745	
6,900.0	6,605.0	6,884.3	6,606.0	35.3	36.0	-178.39		-1,220.4	1,186.8	2,376.2	2,319.1	57.13	41.595	
7,000.0	6,705.0	6,984.3	6,706.0	35.4	36.1	-178.39		-1,220.4	1,186.8	2,376.2	2,318.9	57.34	41.443	
7,100.0	6,805.0	7,084.3	6,806.0	35.5	36.2	-178.39		-1,220.4	1,186.8	2,376.2	2,318.6	57.55	41.291	
7,200.0	6,905.0	7,184.3	6,906.0	35.6	36.3	-178.39		-1,220.4	1,186.8	2,376.2	2,318.4	57.76	41.137	
7,300.0	7,005.0	7,284.3	7,006.0	35.7	36.3	-178.39		-1,220.4	1,186.8	2,376.2	2,318.2	57.98	40.983	
7,400.0	7,105.0	7,384.3	7,106.0	35.7	36.4	-178.39		-1,220.4	1,186.8	2,376.2	2,318.0	58.20	40.828	
7,500.0	7,205.0	7,484.3	7,206.0	35.8	36.5	-178.39		-1,220.4	1,186.8	2,376.2	2,317.8	58.42	40.673	
7,600.0	7,305.0	7,584.3	7,306.0	35.9	36.6	-178.39		-1,220.4	1,186.8	2,376.2	2,317.5	58.65	40.517	
7,700.0	7,405.0	7,684.3	7,406.0	36.0	36.7	-178.39		-1,220.4	1,186.8	2,376.2	2,317.3	58.87	40.360	
7,800.0	7,505.0	7,784.3	7,506.0	36.1	36.8	-178.39		-1,220.4	1,186.8	2,376.2	2,317.1	59.10	40.203	
7,900.0	7,605.0	7,884.3	7,606.0	36.2	36.9	-178.39		-1,220.4	1,186.8	2,376.2	2,316.9	59.34	40.045	
8,000.0	7,705.0	7,984.3	7,706.0	36.3	36.9	-178.39		-1,220.4	1,186.8	2,376.2	2,316.6	59.57	39.887	
8,084.0	7,789.0	8,068.3	7,790.0	36.4	37.0	-178.39		-1,220.4	1,186.8	2,376.2	2,316.4	59.77	39.754	

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - REI H17-30D - Wellbore #1 - Noble REI H17-30D Plan #2 (2-20-12)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	1.0	1.0	0.0	0.0	0.00	21.9	0.0	21.9						
100.0	100.0	101.0	101.0	0.1	0.1	0.00	21.9	0.0	21.9	21.7	0.20	110.509			
166.3	166.3	167.3	167.3	0.2	0.2	0.00	21.9	0.0	21.9	21.4	0.50	44.071 CC			
200.0	200.0	201.0	201.0	0.3	0.3	0.00	21.9	0.0	21.9	21.2	0.65	33.769 ES			
300.0	300.0	300.4	300.4	0.5	0.5	-2.99	23.1	-1.2	23.2	22.1	1.09	21.189			
400.0	400.0	399.6	399.4	0.8	0.8	-10.04	26.9	-4.8	27.4	25.8	1.55	17.702			
500.0	500.0	498.1	497.6	1.0	1.0	-100.42	33.1	-10.6	35.2	33.2	2.01	17.540 SF			
600.0	599.8	595.6	594.3	1.2	1.3	-111.72	41.7	-18.7	48.3	45.9	2.47	19.551			
700.0	699.5	691.4	689.0	1.4	1.6	-114.01	52.5	-28.8	67.3	64.3	2.95	22.832			
800.0	798.8	785.6	781.5	1.7	2.0	-111.78	65.3	-40.9	90.4	87.0	3.44	26.283			
900.0	897.7	878.0	871.7	2.0	2.4	-111.35	80.0	-54.8	117.5	113.5	3.97	29.622			
1,000.0	996.1	968.5	959.3	2.4	2.8	-111.58	96.4	-70.3	148.4	143.9	4.53	32.730			
1,100.0	1,093.9	1,056.7	1,044.0	2.7	3.3	-112.01	114.4	-87.2	183.2	178.0	5.16	35.528			
1,200.0	1,190.8	1,147.7	1,130.8	3.2	3.8	-112.71	134.2	-105.9	220.8	214.9	5.84	37.810			
1,300.0	1,286.9	1,239.0	1,217.9	3.7	4.3	-113.66	154.1	-124.7	259.6	253.1	6.57	39.508			
1,400.0	1,382.0	1,329.5	1,304.2	4.2	4.9	-114.73	173.9	-143.3	299.8	292.5	7.37	40.667			
1,500.0	1,476.0	1,419.1	1,389.7	4.9	5.4	-115.86	193.4	-161.7	341.6	333.3	8.23	41.523			
1,600.0	1,569.2	1,508.0	1,474.6	5.5	6.0	-118.26	212.9	-180.0	384.5	375.4	9.13	42.113			
1,700.0	1,662.4	1,597.0	1,559.4	6.2	6.5	-120.40	232.3	-198.3	428.1	418.0	10.05	42.587			
1,800.0	1,755.6	1,686.0	1,644.3	6.9	7.1	-122.15	251.7	-216.6	472.0	461.0	10.98	42.980			
1,900.0	1,848.8	1,774.9	1,729.2	7.6	7.6	-123.60	271.1	-234.9	516.2	504.3	11.92	43.315			
2,000.0	1,942.1	1,863.9	1,814.0	8.3	8.2	-124.83	290.5	-253.2	560.7	547.9	12.86	43.603			
2,100.0	2,035.3	1,952.8	1,898.9	9.1	8.7	-125.88	309.9	-271.5	605.4	591.6	13.80	43.853			
2,200.0	2,128.5	2,041.8	1,983.8	9.8	9.3	-126.79	329.3	-289.8	650.2	635.4	14.75	44.073			
2,300.0	2,221.7	2,130.8	2,068.6	10.5	9.8	-127.58	348.8	-308.1	695.1	679.4	15.70	44.268			
2,400.0	2,314.9	2,219.7	2,153.5	11.2	10.4	-128.27	368.2	-326.4	740.1	723.4	16.65	44.442			
2,500.0	2,408.1	2,308.7	2,238.4	11.9	10.9	-128.89	387.6	-344.7	785.1	767.5	17.60	44.598			
2,600.0	2,501.3	2,397.6	2,323.2	12.7	11.5	-129.44	407.0	-363.0	830.3	811.7	18.56	44.739			
2,700.0	2,594.5	2,486.6	2,408.1	13.4	12.0	-129.93	426.4	-381.3	875.5	856.0	19.51	44.867			
2,800.0	2,687.7	2,575.6	2,493.0	14.1	12.6	-130.37	445.8	-399.6	920.7	900.3	20.47	44.983			
2,900.0	2,780.9	2,664.5	2,577.8	14.8	13.1	-130.78	465.3	-417.9	966.0	944.6	21.42	45.090			
3,000.0	2,874.1	2,753.5	2,662.7	15.6	13.7	-131.14	484.7	-436.2	1,011.3	988.9	22.38	45.188			
3,100.0	2,967.3	2,842.5	2,747.6	16.3	14.2	-131.48	504.1	-454.5	1,056.7	1,033.3	23.34	45.278			
3,200.0	3,060.5	2,931.4	2,832.4	17.0	14.8	-131.79	523.5	-472.8	1,102.0	1,077.7	24.29	45.361			
3,300.0	3,153.7	3,020.4	2,917.3	17.8	15.3	-132.07	542.9	-491.1	1,147.4	1,122.2	25.25	45.438			
3,400.0	3,246.9	3,109.3	3,002.2	18.5	15.9	-132.33	562.3	-509.4	1,192.9	1,166.7	26.21	45.510			
3,500.0	3,340.1	3,198.3	3,087.0	19.2	16.4	-132.58	581.8	-527.7	1,238.3	1,211.1	27.17	45.577			
3,600.0	3,433.3	3,287.3	3,171.9	20.0	17.0	-132.80	601.2	-546.0	1,283.8	1,255.6	28.13	45.639			
3,700.0	3,526.5	3,376.2	3,256.8	20.7	17.6	-133.01	620.6	-564.3	1,329.2	1,300.1	29.09	45.698			
3,800.0	3,619.7	3,465.2	3,341.6	21.4	18.1	-133.21	640.0	-582.6	1,374.7	1,344.7	30.05	45.752			
3,900.0	3,712.9	3,554.2	3,426.5	22.2	18.7	-133.40	659.4	-600.9	1,420.2	1,389.2	31.01	45.804			
4,000.0	3,806.1	3,643.1	3,511.4	22.9	19.2	-133.57	678.8	-619.2	1,465.7	1,433.7	31.97	45.852			
4,100.0	3,899.3	3,732.1	3,596.2	23.6	19.8	-133.73	698.2	-637.5	1,511.2	1,478.3	32.93	45.898			
4,200.0	3,992.5	3,821.0	3,681.1	24.4	20.3	-133.88	717.7	-655.8	1,556.7	1,522.9	33.89	45.941			
4,300.0	4,085.8	3,910.0	3,766.0	25.1	20.9	-134.03	737.1	-674.1	1,602.3	1,567.4	34.85	45.981			
4,400.0	4,179.0	3,999.0	3,850.8	25.8	21.4	-134.16	756.5	-692.4	1,647.8	1,612.0	35.81	46.020			
4,500.0	4,272.2	4,087.9	3,935.7	26.6	22.0	-134.29	775.9	-710.7	1,693.4	1,656.6	36.77	46.056			
4,600.0	4,365.4	4,176.9	4,020.6	27.3	22.5	-134.41	795.3	-729.0	1,738.9	1,701.2	37.73	46.090			
4,700.0	4,458.6	4,265.9	4,105.4	28.0	23.1	-134.53	814.7	-747.3	1,784.5	1,745.8	38.69	46.123			
4,800.0	4,551.8	4,354.8	4,190.3	28.8	23.7	-134.64	834.2	-765.6	1,830.0	1,790.4	39.65	46.154			
4,900.0	4,645.0	4,443.8	4,275.2	29.5	24.2	-134.75	853.6	-783.9	1,875.6	1,835.0	40.61	46.184			
5,000.0	4,738.2	4,532.7	4,360.0	30.2	24.8	-134.85	873.0	-802.2	1,921.2	1,879.6	41.57	46.212			

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

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - REI H17-30D - Wellbore #1 - Noble REI H17-30D Plan #2 (2-20-12)													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	
5,100.0	4,831.4	4,621.7	4,444.9	31.0	25.3	-134.94	892.4	-820.5	1,966.8	1,924.2	42.53	46.239	
5,200.0	4,924.9	4,710.9	4,530.0	31.6	25.9	-135.49	911.9	-838.9	2,011.8	1,968.3	43.57	46.170	
5,300.0	5,019.5	4,801.2	4,616.2	32.2	26.4	-136.15	931.6	-857.4	2,054.8	2,010.2	44.58	46.093	
5,400.0	5,115.1	4,892.5	4,703.3	32.6	27.0	-136.69	951.5	-876.2	2,095.5	2,049.9	45.55	46.001	
5,500.0	5,211.8	4,984.8	4,791.2	33.1	27.6	-137.12	971.6	-895.2	2,133.9	2,087.4	46.49	45.899	
5,600.0	5,309.3	5,077.8	4,880.0	33.4	28.2	-137.44	991.9	-914.3	2,169.9	2,122.5	47.39	45.790	
5,700.0	5,407.4	5,171.5	4,969.4	33.8	28.8	-137.66	1,012.4	-933.6	2,203.5	2,155.2	48.24	45.677	
5,800.0	5,506.2	5,265.7	5,059.3	34.1	29.3	-137.78	1,033.0	-953.0	2,234.7	2,185.7	49.05	45.564	
5,900.0	5,605.5	5,370.9	5,159.7	34.3	30.0	-137.78	1,055.9	-974.6	2,263.5	2,213.7	49.84	45.412	
6,000.0	5,705.1	5,578.5	5,360.2	34.5	30.9	-137.37	1,094.9	-1,011.4	2,287.2	2,236.4	50.85	44.977	
6,100.0	5,805.0	5,793.7	5,571.5	34.6	31.6	-137.03	1,124.1	-1,038.9	2,303.6	2,251.9	51.65	44.599	
6,200.0	5,905.0	6,014.2	5,790.6	34.7	32.1	-90.32	1,142.0	-1,055.7	2,312.3	2,260.1	52.22	44.279	
6,300.0	6,005.0	6,229.8	6,006.0	34.8	32.4	-90.18	1,147.6	-1,061.0	2,314.7	2,262.1	52.61	44.001	
6,400.0	6,105.0	6,329.8	6,106.0	34.9	32.4	-90.18	1,147.6	-1,061.0	2,314.7	2,261.9	52.81	43.834	
6,500.0	6,205.0	6,429.8	6,206.0	35.0	32.5	-90.18	1,147.6	-1,061.0	2,314.7	2,261.7	53.01	43.664	
6,600.0	6,305.0	6,529.8	6,306.0	35.0	32.6	-90.18	1,147.6	-1,061.0	2,314.7	2,261.5	53.22	43.492	
6,700.0	6,405.0	6,629.8	6,406.0	35.1	32.7	-90.18	1,147.6	-1,061.0	2,314.7	2,261.2	53.43	43.320	
6,800.0	6,505.0	6,729.8	6,506.0	35.2	32.8	-90.18	1,147.6	-1,061.0	2,314.7	2,261.0	53.65	43.146	
6,900.0	6,605.0	6,829.8	6,606.0	35.3	32.9	-90.18	1,147.6	-1,061.0	2,314.7	2,260.8	53.87	42.971	
7,000.0	6,705.0	6,929.8	6,706.0	35.4	33.0	-90.18	1,147.6	-1,061.0	2,314.7	2,260.6	54.09	42.796	
7,100.0	6,805.0	7,029.8	6,806.0	35.5	33.1	-90.18	1,147.6	-1,061.0	2,314.7	2,260.4	54.31	42.620	
7,200.0	6,905.0	7,129.8	6,906.0	35.6	33.2	-90.18	1,147.6	-1,061.0	2,314.7	2,260.1	54.54	42.443	
7,300.0	7,005.0	7,229.8	7,006.0	35.7	33.3	-90.18	1,147.6	-1,061.0	2,314.7	2,259.9	54.77	42.265	
7,400.0	7,105.0	7,329.8	7,106.0	35.7	33.4	-90.18	1,147.6	-1,061.0	2,314.7	2,259.7	55.00	42.087	
7,500.0	7,205.0	7,429.8	7,206.0	35.8	33.5	-90.18	1,147.6	-1,061.0	2,314.7	2,259.4	55.23	41.909	
7,600.0	7,305.0	7,529.8	7,306.0	35.9	33.6	-90.18	1,147.6	-1,061.0	2,314.7	2,259.2	55.47	41.729	
7,700.0	7,405.0	7,629.8	7,406.0	36.0	33.7	-90.18	1,147.6	-1,061.0	2,314.7	2,259.0	55.71	41.550	
7,800.0	7,505.0	7,729.8	7,506.0	36.1	33.8	-90.18	1,147.6	-1,061.0	2,314.7	2,258.7	55.95	41.370	
7,900.0	7,605.0	7,829.8	7,606.0	36.2	33.9	-90.18	1,147.6	-1,061.0	2,314.7	2,258.5	56.20	41.190	
8,000.0	7,705.0	7,929.8	7,706.0	36.3	34.0	-90.18	1,147.6	-1,061.0	2,314.7	2,258.2	56.44	41.009	
8,084.0	7,789.0	8,013.8	7,790.0	36.4	34.1	-90.18	1,147.6	-1,061.0	2,314.7	2,258.0	56.65	40.857	

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - UPRC 17-3J (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		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	34.15	539.2	365.8	651.8					
100.0	100.0	80.0	80.0	0.1	0.1	34.15	539.2	365.8	651.5	651.4	0.18	3,702.040		
200.0	200.0	180.0	180.0	0.3	0.3	34.15	539.2	365.8	651.5	650.9	0.60	1,085.655		
300.0	300.0	280.0	280.0	0.5	0.5	34.15	539.2	365.8	651.5	650.5	1.05	620.707		
400.0	400.0	380.0	380.0	0.8	0.7	34.15	539.2	365.8	651.5	650.0	1.50	434.588		
500.0	500.0	480.0	480.0	1.0	1.0	-45.97	539.2	365.8	650.3	648.4	1.94	335.087		
600.0	599.8	579.8	579.8	1.2	1.2	-46.36	539.2	365.8	646.7	644.3	2.38	271.402		
700.0	699.5	679.5	679.5	1.4	1.4	-40.26	539.2	365.8	640.6	637.7	2.84	225.516		
800.0	798.8	778.8	778.8	1.7	1.6	-31.96	539.2	365.8	631.2	627.8	3.31	190.516		
900.0	897.7	877.7	877.7	2.0	1.8	-27.13	539.2	365.8	618.4	614.6	3.79	163.107		
1,000.0	996.1	976.1	976.1	2.4	2.1	-24.21	539.2	365.8	602.3	598.0	4.28	140.861		
1,100.0	1,093.9	1,073.9	1,073.9	2.7	2.3	-22.45	539.2	365.8	582.8	578.1	4.77	122.252		
1,200.0	1,190.8	1,170.8	1,170.8	3.2	2.5	-21.50	539.2	365.8	560.1	554.9	5.27	106.301		
1,300.0	1,286.9	1,266.9	1,266.9	3.7	2.7	-21.14	539.2	365.8	534.2	528.5	5.79	92.347		
1,400.0	1,382.0	1,362.0	1,362.0	4.2	2.9	-21.30	539.2	365.8	505.2	498.9	6.32	79.936		
1,500.0	1,476.0	1,456.0	1,456.0	4.9	3.1	-21.95	539.2	365.8	473.2	466.3	6.88	68.745		
1,600.0	1,569.2	1,549.2	1,549.2	5.5	3.4	-23.59	539.2	365.8	439.5	432.0	7.51	58.507		
1,700.0	1,662.4	1,642.4	1,642.4	6.2	3.6	-25.61	539.2	365.8	406.2	398.0	8.19	49.612		
1,800.0	1,755.6	1,735.6	1,735.6	6.9	3.8	-27.98	539.2	365.8	373.4	364.5	8.91	41.895		
1,900.0	1,848.8	1,828.8	1,828.8	7.6	4.0	-30.78	539.2	365.8	341.3	331.6	9.70	35.183		
2,000.0	1,942.1	1,922.1	1,922.1	8.3	4.2	-34.14	539.2	365.8	310.1	299.5	10.57	29.346		
2,100.0	2,035.3	2,015.3	2,015.3	9.1	4.4	-38.20	539.2	365.8	280.1	268.6	11.53	24.293		
2,200.0	2,128.5	2,108.5	2,108.5	9.8	4.6	-43.14	539.2	365.8	251.8	239.2	12.61	19.964		
2,300.0	2,221.7	2,201.7	2,201.7	10.5	4.8	-49.20	539.2	365.8	225.8	212.0	13.83	16.327		
2,400.0	2,314.9	2,294.9	2,294.9	11.2	5.0	-56.60	539.2	365.8	202.9	187.8	15.17	13.376		
2,500.0	2,408.1	2,388.1	2,388.1	11.9	5.2	-65.51	539.2	365.8	184.4	167.8	16.58	11.119		
2,600.0	2,501.3	2,481.3	2,481.3	12.7	5.5	-75.87	539.2	365.8	171.6	153.7	17.94	9.567		
2,700.0	2,594.5	2,574.5	2,574.5	13.4	5.7	-87.26	539.2	365.8	165.9	146.8	19.05	8.708		
2,723.5	2,616.3	2,596.3	2,596.3	13.6	5.7	-90.00	539.2	365.8	165.7	146.4	19.26	8.603 CC, ES		
2,800.0	2,687.7	2,667.7	2,667.7	14.1	5.9	-98.87	539.2	365.8	168.0	148.2	19.77	8.497 SF		
2,900.0	2,780.9	2,760.9	2,760.9	14.8	6.1	-109.79	539.2	365.8	177.6	157.5	20.08	8.842		
3,000.0	2,874.1	2,854.1	2,854.1	15.6	6.3	-119.41	539.2	365.8	193.6	173.5	20.11	9.626		
3,100.0	2,967.3	2,947.3	2,947.3	16.3	6.5	-127.51	539.2	365.8	214.6	194.6	20.02	10.722		
3,200.0	3,060.5	3,040.5	3,040.5	17.0	6.7	-134.17	539.2	365.8	239.3	219.4	19.91	12.020		
3,300.0	3,153.7	3,133.7	3,133.7	17.8	6.9	-139.61	539.2	365.8	266.6	246.8	19.85	13.432		
3,400.0	3,246.9	3,226.9	3,226.9	18.5	7.1	-144.06	539.2	365.8	295.9	276.0	19.86	14.894		
3,500.0	3,340.1	3,320.1	3,320.1	19.2	7.3	-147.72	539.2	365.8	326.5	306.6	19.96	16.362		
3,600.0	3,433.3	3,413.3	3,413.3	20.0	7.5	-150.77	539.2	365.8	358.2	338.1	20.12	17.806		
3,700.0	3,526.5	3,506.5	3,506.5	20.7	7.8	-153.33	539.2	365.8	390.7	370.4	20.34	19.210		
3,800.0	3,619.7	3,599.7	3,599.7	21.4	8.0	-155.50	539.2	365.8	423.8	403.2	20.61	20.564		
3,900.0	3,712.9	3,692.9	3,692.9	22.2	8.2	-157.37	539.2	365.8	457.4	436.5	20.92	21.862		
4,000.0	3,806.1	3,786.1	3,786.1	22.9	8.4	-158.98	539.2	365.8	491.3	470.1	21.27	23.104		
4,100.0	3,899.3	3,879.3	3,879.3	23.6	8.6	-160.39	539.2	365.8	525.6	503.9	21.64	24.288		
4,200.0	3,992.5	3,972.5	3,972.5	24.4	8.8	-161.62	539.2	365.8	560.1	538.1	22.04	25.418		
4,300.0	4,085.8	4,065.8	4,065.8	25.1	9.0	-162.72	539.2	365.8	594.8	572.3	22.45	26.494		
4,400.0	4,179.0	4,159.0	4,159.0	25.8	9.2	-163.69	539.2	365.8	629.7	606.8	22.88	27.519		
4,500.0	4,272.2	4,252.2	4,252.2	26.6	9.4	-164.56	539.2	365.8	664.7	641.4	23.33	28.496		
4,600.0	4,365.4	4,345.4	4,345.4	27.3	9.6	-165.35	539.2	365.8	699.9	676.1	23.78	29.428		
4,700.0	4,458.6	4,438.6	4,438.6	28.0	9.8	-166.06	539.2	365.8	735.1	710.9	24.25	30.317		
4,800.0	4,551.8	4,531.8	4,531.8	28.8	10.1	-166.71	539.2	365.8	770.5	745.7	24.72	31.166		
4,900.0	4,645.0	4,625.0	4,625.0	29.5	10.3	-167.30	539.2	365.8	805.9	780.7	25.20	31.977		
5,000.0	4,738.2	4,718.2	4,718.2	30.2	10.5	-167.84	539.2	365.8	841.4	815.7	25.69	32.753		

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

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

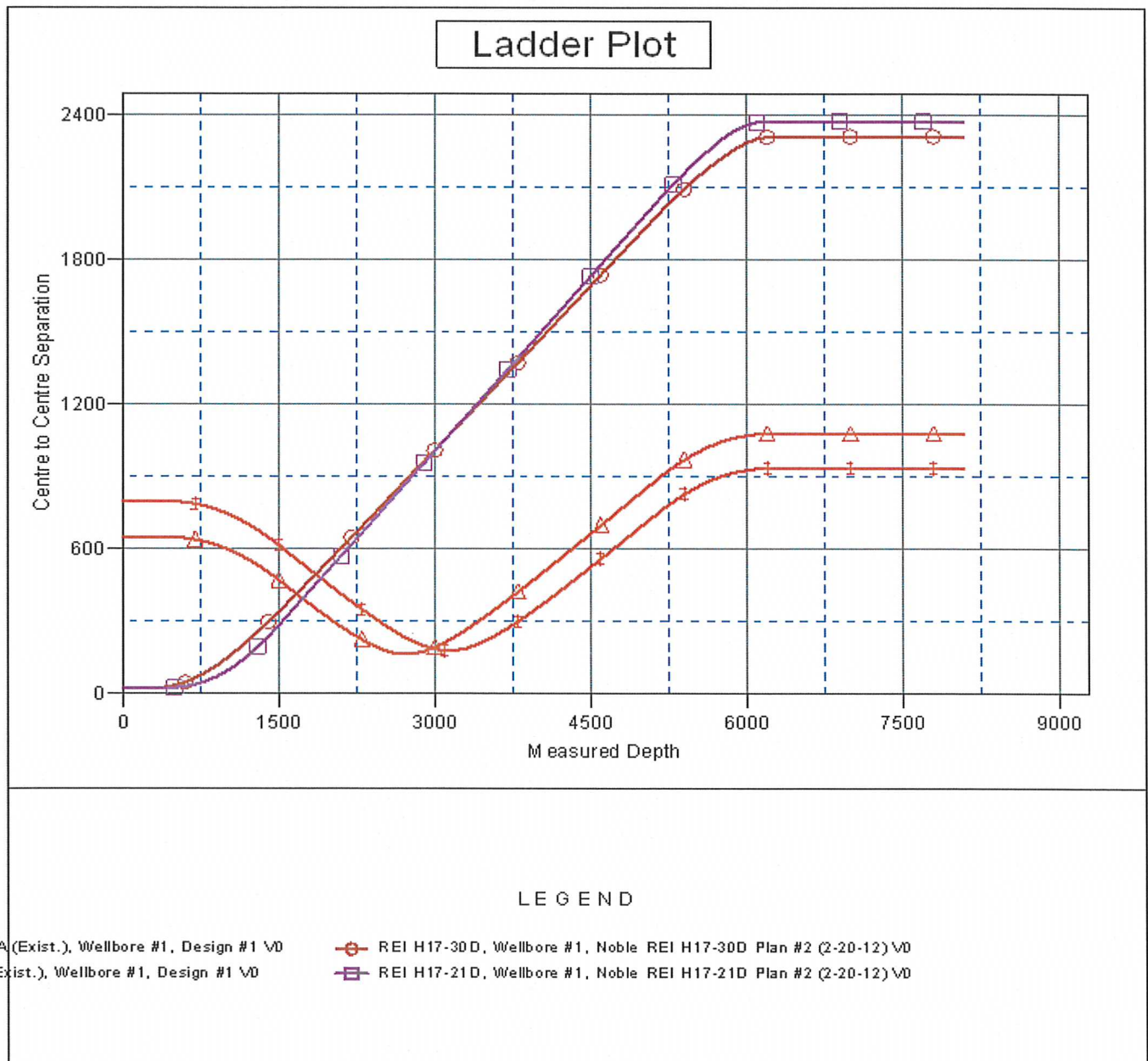
Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Offset Design REI H17-21D Pad Sec.17-T3N-R65W - UPRC 17-3J (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		
5,100.0	4,831.4	4,811.4	4,811.4	31.0	10.7	-168.34	539.2	365.8	876.9	850.7	26.18	33.495		
5,200.0	4,924.9	4,904.9	4,904.9	31.6	10.9	-168.88	539.2	365.8	911.8	885.1	26.73	34.116		
5,300.0	5,019.5	4,999.5	4,999.5	32.2	11.1	-169.39	539.2	365.8	943.7	916.4	27.26	34.617		
5,400.0	5,115.1	5,095.1	5,095.1	32.6	11.3	-169.81	539.2	365.8	972.3	944.5	27.77	35.015		
5,500.0	5,211.8	5,191.8	5,191.8	33.1	11.5	-170.16	539.2	365.8	997.7	969.4	28.25	35.321		
5,600.0	5,309.3	5,289.3	5,289.3	33.4	11.8	-170.45	539.2	365.8	1,019.7	991.0	28.69	35.541		
5,700.0	5,407.4	5,387.4	5,387.4	33.8	12.0	-170.68	539.2	365.8	1,038.3	1,009.2	29.10	35.684		
5,800.0	5,506.2	5,486.2	5,486.2	34.1	12.2	-170.87	539.2	365.8	1,053.6	1,024.1	29.47	35.753		
5,900.0	5,605.5	5,585.5	5,585.5	34.3	12.4	-171.01	539.2	365.8	1,065.5	1,035.7	29.80	35.753		
6,000.0	5,705.1	5,685.1	5,685.1	34.5	12.7	-171.11	539.2	365.8	1,073.9	1,043.8	30.09	35.687		
6,100.0	5,805.0	5,785.0	5,785.0	34.6	12.9	-171.16	539.2	365.8	1,078.9	1,048.6	30.34	35.558		
6,200.0	5,905.0	5,885.0	5,885.0	34.7	13.1	-124.74	539.2	365.8	1,080.5	1,049.9	30.56	35.354		
6,300.0	6,005.0	5,985.0	5,985.0	34.8	13.3	-124.74	539.2	365.8	1,080.5	1,049.5	30.94	34.927		
6,400.0	6,105.0	6,085.0	6,085.0	34.9	13.5	-124.74	539.2	365.8	1,080.5	1,049.2	31.31	34.508		
6,500.0	6,205.0	6,185.0	6,185.0	35.0	13.8	-124.74	539.2	365.8	1,080.5	1,048.8	31.69	34.097		
6,600.0	6,305.0	6,285.0	6,285.0	35.0	14.0	-124.74	539.2	365.8	1,080.5	1,048.4	32.07	33.695		
6,700.0	6,405.0	6,385.0	6,385.0	35.1	14.2	-124.74	539.2	365.8	1,080.5	1,048.0	32.45	33.300		
6,800.0	6,505.0	6,485.0	6,485.0	35.2	14.4	-124.74	539.2	365.8	1,080.5	1,047.7	32.83	32.913		
6,900.0	6,605.0	6,585.0	6,585.0	35.3	14.7	-124.74	539.2	365.8	1,080.5	1,047.3	33.21	32.533		
7,000.0	6,705.0	6,685.0	6,685.0	35.4	14.9	-124.74	539.2	365.8	1,080.5	1,046.9	33.60	32.161		
7,100.0	6,805.0	6,785.0	6,785.0	35.5	15.1	-124.74	539.2	365.8	1,080.5	1,046.5	33.98	31.796		
7,200.0	6,905.0	6,885.0	6,885.0	35.6	15.3	-124.74	539.2	365.8	1,080.5	1,046.1	34.37	31.438		
7,300.0	7,005.0	6,985.0	6,985.0	35.7	15.6	-124.74	539.2	365.8	1,080.5	1,045.7	34.76	31.087		
7,400.0	7,105.0	7,085.0	7,085.0	35.7	15.8	-124.74	539.2	365.8	1,080.5	1,045.3	35.15	30.742		
7,500.0	7,205.0	7,185.0	7,185.0	35.8	16.0	-124.74	539.2	365.8	1,080.5	1,044.9	35.54	30.405		
7,600.0	7,305.0	7,285.0	7,285.0	35.9	16.2	-124.74	539.2	365.8	1,080.5	1,044.6	35.93	30.073		
7,700.0	7,405.0	7,385.0	7,385.0	36.0	16.5	-124.74	539.2	365.8	1,080.5	1,044.2	36.32	29.748		
7,800.0	7,505.0	7,485.0	7,485.0	36.1	16.7	-124.74	539.2	365.8	1,080.5	1,043.8	36.72	29.428		
7,900.0	7,605.0	7,585.0	7,585.0	36.2	16.9	-124.74	539.2	365.8	1,080.5	1,043.4	37.11	29.115		
8,000.0	7,705.0	7,685.0	7,685.0	36.3	17.1	-124.74	539.2	365.8	1,080.5	1,043.0	37.51	28.807		
8,084.0	7,789.0	7,769.0	7,769.0	36.4	17.3	-124.74	539.2	365.8	1,080.5	1,042.6	37.84	28.553		

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T3N-R65W
Reference Site: REI H17-21D Pad Sec.17-T3N-R65W
Site Error: 0.0ft
Reference Well: REI H17-28D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Noble NEI H17-28D Plan #2 (2-20-12)

Local Co-ordinate Reference: Well REI H17-28D
TVD Reference: WELL @ 4941.0ft (Original Well Elev)
MD Reference: WELL @ 4941.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4941.0ft (Original Well Elev) Coordinates are relative to: REI H17-28D
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: 0.52°

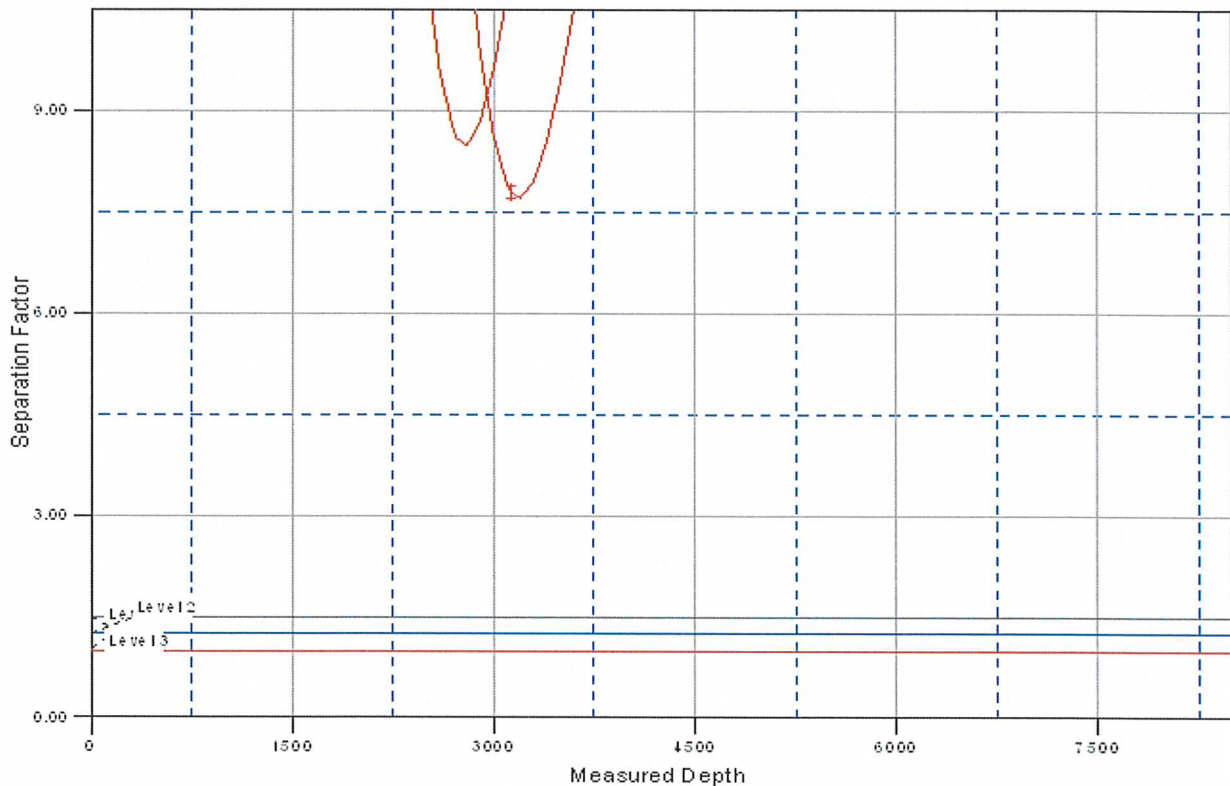


Company: NOBLE ENERGY INC WELD COUNTY CO
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Separation Factor Plot



LEGEND

^A (Exist.), Wellbore #1, Design #1 \0
(Exist.), Wellbore #1, Design #1 \0

REI H17-30D, Wellbore #1, Noble REI H17-30D Plan #2 (2-20-12) \0
REI H17-21D, Wellbore #1, Noble REI H17-21D Plan #2 (2-20-12) \0