

Northern Region Drilling - Working

Wattenberg Field

LD (09N-58W)

Nugent LD06-645

Original Drilling

APD - Rev 0

Anticollision Report

02 December, 2014

Noble Energy Inc

Anticollision Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Nugent LD06-645
Project:	Wattenberg Field	TVD Reference:	WELL @ 4785.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4785.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Nugent LD06-645	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 0		
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 10,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	12/2/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	15,627.5	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
LD (09N-58W)						
Timbro LD06-64HN - Wellbore #1 - Wellbore #1- As Drille	8,149.0	13,278.6	327.7	201.0	2.587	CC
Timbro LD06-64HN - Wellbore #1 - Wellbore #1- As Drille	15,500.0	5,846.2	342.6	61.0	1.217	Level 2, ES, SF

Offset Design LD (09N-58W) - Timbro LD06-64HN - Wellbore #1 - Wellbore #1- As Drilled													Offset Site Error: 0.0 ft	
Survey Program: 383-ISCWSA-GYRO-3													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)			
0.0	0.0	15,376.0	5,948.3	0.0	80.7	-160.14	-831.4	-300.3	5,899.9					
100.0	100.0	15,376.0	5,948.3	0.1	80.7	-160.14	-831.4	-300.3	5,801.0	5,743.9	57.18	101.451		
200.0	200.0	15,376.0	5,948.3	0.3	80.7	-160.14	-831.4	-300.3	5,702.2	5,644.8	57.41	99.332		
300.0	300.0	15,376.0	5,948.3	0.5	80.7	-160.14	-831.4	-300.3	5,603.5	5,545.8	57.63	97.231		
400.0	400.0	15,376.0	5,948.3	0.8	80.7	-160.14	-831.4	-300.3	5,504.7	5,446.9	57.86	95.147		
500.0	500.0	15,376.0	5,948.3	1.0	80.7	-160.14	-831.4	-300.3	5,406.0	5,348.0	58.08	93.080		
600.0	600.0	15,376.0	5,948.3	1.2	80.7	-160.14	-831.4	-300.3	5,307.4	5,249.1	58.30	91.029		
700.0	700.0	15,376.0	5,948.3	1.4	80.7	-160.14	-831.4	-300.3	5,208.8	5,150.3	58.53	88.995		
800.0	800.0	15,376.0	5,948.3	1.7	80.7	-160.14	-831.4	-300.3	5,110.3	5,051.6	58.75	86.978		
900.0	900.0	15,376.0	5,948.3	1.9	80.7	-160.14	-831.4	-300.3	5,011.9	4,952.9	58.98	84.977		
1,000.0	1,000.0	15,376.0	5,948.3	2.1	80.7	-160.14	-831.4	-300.3	4,913.5	4,854.3	59.20	82.992		
1,100.0	1,100.0	15,376.0	5,948.3	2.3	80.7	-160.14	-831.4	-300.3	4,815.1	4,755.7	59.43	81.024		
1,200.0	1,200.0	15,376.0	5,948.3	2.6	80.7	-160.14	-831.4	-300.3	4,716.9	4,657.2	59.65	79.071		
1,300.0	1,300.0	15,376.0	5,948.3	2.8	80.7	55.96	-831.4	-300.3	4,618.5	4,544.5	74.00	62.414		
1,400.0	1,399.8	15,376.0	5,948.3	2.9	80.7	66.57	-831.4	-300.3	4,519.8	4,453.0	66.83	67.633		
1,500.0	1,499.5	15,376.0	5,948.3	3.1	80.7	78.91	-831.4	-300.3	4,421.0	4,364.3	56.62	78.079		
1,600.0	1,598.7	15,376.0	5,948.3	3.3	80.7	92.08	-831.4	-300.3	4,322.1	4,277.3	44.78	96.508		
1,700.0	1,697.5	15,376.0	5,948.3	3.6	80.7	104.74	-831.4	-300.3	4,223.3	4,188.4	34.88	121.091		
1,800.0	1,795.8	15,376.0	5,948.3	3.9	80.7	107.97	-831.4	-300.3	4,124.6	4,091.4	33.28	123.948		
1,900.0	1,894.1	15,376.0	5,948.3	4.2	80.7	107.97	-831.4	-300.3	4,026.0	3,992.5	33.57	119.915		
2,000.0	1,992.4	15,376.0	5,948.3	4.5	80.7	107.97	-831.4	-300.3	3,927.5	3,893.6	33.89	115.893		
2,100.0	2,090.7	15,376.0	5,948.3	4.8	80.7	107.97	-831.4	-300.3	3,829.1	3,794.9	34.22	111.898		
2,200.0	2,189.0	15,376.0	5,948.3	5.2	80.7	107.97	-831.4	-300.3	3,730.7	3,696.2	34.56	107.946		
2,300.0	2,287.3	15,376.0	5,948.3	5.6	80.7	107.97	-831.4	-300.3	3,632.5	3,597.6	34.91	104.044		
2,400.0	2,385.7	15,376.0	5,948.3	5.9	80.7	107.97	-831.4	-300.3	3,534.3	3,499.0	35.27	100.201		

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

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Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Offset Design LD (09N-58W) - Timbro LD06-64HN - Wellbore #1 - Wellbore #1- As Drilled													Offset Site Error:	0.0 ft
Survey Program: 383-ISCWSA-GYRO-3													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		
2,500.0	2,484.0	15,376.0	5,948.3	6.3	80.7	107.97	-831.4	-300.3	3,436.3	3,400.6	35.64	96.420		
2,600.0	2,582.3	15,376.0	5,948.3	6.7	80.7	107.97	-831.4	-300.3	3,338.3	3,302.3	36.01	92.706		
2,700.0	2,680.6	15,376.0	5,948.3	7.1	80.7	107.97	-831.4	-300.3	3,240.5	3,204.1	36.39	89.060		
2,800.0	2,778.9	15,376.0	5,948.3	7.5	80.7	107.97	-831.4	-300.3	3,142.8	3,106.0	36.77	85.483		
2,900.0	2,877.2	15,376.0	5,948.3	7.9	80.7	107.97	-831.4	-300.3	3,045.3	3,008.1	37.15	81.976		
3,000.0	2,975.5	15,376.0	5,948.3	8.3	80.7	107.97	-831.4	-300.3	2,947.9	2,910.4	37.53	78.539		
3,100.0	3,073.8	15,376.0	5,948.3	8.7	80.7	107.97	-831.4	-300.3	2,850.7	2,812.8	37.92	75.172		
3,200.0	3,172.1	15,376.0	5,948.3	9.1	80.7	107.97	-831.4	-300.3	2,753.7	2,715.4	38.31	71.874		
3,300.0	3,270.4	15,376.0	5,948.3	9.5	80.7	107.97	-831.4	-300.3	2,657.0	2,618.3	38.71	68.646		
3,400.0	3,368.8	15,376.0	5,948.3	9.9	80.7	107.97	-831.4	-300.3	2,560.5	2,521.4	39.10	65.486		
3,500.0	3,467.1	15,376.0	5,948.3	10.3	80.7	107.97	-831.4	-300.3	2,464.2	2,424.8	39.50	62.394		
3,600.0	3,565.4	15,376.0	5,948.3	10.7	80.7	107.97	-831.4	-300.3	2,368.3	2,328.4	39.89	59.369		
3,700.0	3,663.7	15,376.0	5,948.3	11.1	80.7	107.97	-831.4	-300.3	2,272.8	2,232.5	40.29	56.411		
3,800.0	3,762.0	15,376.0	5,948.3	11.5	80.7	107.97	-831.4	-300.3	2,177.6	2,136.9	40.69	53.519		
3,900.0	3,860.3	15,376.0	5,948.3	11.9	80.7	107.97	-831.4	-300.3	2,082.9	2,041.8	41.09	50.693		
4,000.0	3,958.6	15,376.0	5,948.3	12.3	80.7	107.97	-831.4	-300.3	1,988.7	1,947.2	41.49	47.933		
4,100.0	4,056.9	15,376.0	5,948.3	12.7	80.7	107.97	-831.4	-300.3	1,895.1	1,853.2	41.89	45.239		
4,200.0	4,155.2	15,376.0	5,948.3	13.2	80.7	107.97	-831.4	-300.3	1,802.2	1,759.9	42.29	42.612		
4,300.0	4,253.5	15,376.0	5,948.3	13.6	80.7	107.97	-831.4	-300.3	1,710.1	1,667.4	42.69	40.053		
4,400.0	4,352.0	15,376.0	5,948.3	13.9	80.7	105.33	-831.4	-300.3	1,618.8	1,574.1	44.66	36.246		
4,500.0	4,450.9	15,376.0	5,948.3	14.2	80.7	101.17	-831.4	-300.3	1,528.2	1,480.3	47.91	31.897		
4,600.0	4,550.3	15,376.0	5,948.3	14.4	80.7	97.19	-831.4	-300.3	1,438.6	1,387.2	51.40	27.988		
4,700.0	4,650.0	15,376.0	5,948.3	14.6	80.7	93.43	-831.4	-300.3	1,350.3	1,295.4	54.89	24.600		
4,800.0	4,749.9	15,376.0	5,948.3	14.8	80.7	89.95	-831.4	-300.3	1,263.6	1,205.4	58.20	21.711		
4,900.0	4,849.9	15,376.0	5,948.3	15.0	80.7	-119.62	-831.4	-300.3	1,178.9	1,094.8	84.10	14.019		
5,000.0	4,949.9	15,376.0	5,948.3	15.1	80.7	-119.62	-831.4	-300.3	1,096.9	1,012.6	84.28	13.015		
5,100.0	5,049.9	15,376.0	5,948.3	15.2	80.7	-119.62	-831.4	-300.3	1,018.1	933.6	84.47	12.053		
5,200.0	5,149.7	15,376.0	5,948.3	15.3	80.7	-33.04	-831.4	-300.3	940.1	874.4	65.72	14.305		
5,300.0	5,247.4	15,376.0	5,948.3	15.4	80.7	-40.74	-831.4	-300.3	858.2	785.4	72.81	11.787		
5,400.0	5,340.6	15,376.0	5,948.3	15.4	80.7	-51.10	-831.4	-300.3	773.3	692.8	80.55	9.600		
5,500.0	5,427.0	15,376.0	5,948.3	15.4	80.7	-64.18	-831.4	-300.3	686.8	599.1	87.73	7.829		
5,600.0	5,504.6	15,376.0	5,948.3	15.4	80.7	-78.69	-831.4	-300.3	600.5	508.1	92.36	6.502		
5,700.0	5,571.3	15,376.0	5,948.3	15.3	80.7	-92.16	-831.4	-300.3	517.3	423.8	93.51	5.532		
5,800.0	5,625.6	15,376.0	5,948.3	15.3	80.7	-102.60	-831.4	-300.3	441.5	349.0	92.44	4.776		
5,900.0	5,666.1	15,376.0	5,948.3	15.5	80.7	-109.44	-831.4	-300.3	379.9	288.8	91.13	4.169		
6,000.0	5,691.8	15,376.0	5,948.3	16.7	80.7	-112.90	-831.4	-300.3	342.2	251.3	90.84	3.767		
6,072.4	5,702.5	15,371.2	5,948.1	18.1	80.6	-113.15	-831.8	-305.2	334.5	242.7	91.85	3.642		
6,100.0	5,703.3	15,343.6	5,946.9	18.6	80.4	-112.69	-834.3	-332.6	335.4	243.1	92.29	3.635		
6,200.0	5,708.9	15,241.2	5,942.7	20.6	79.4	-110.62	-843.3	-434.6	337.7	243.5	94.25	3.583		
6,300.0	5,709.5	15,138.6	5,939.5	22.9	78.4	-109.74	-850.7	-536.8	340.9	245.0	95.86	3.556		
6,400.0	5,710.1	15,036.5	5,937.0	25.2	77.4	-109.02	-857.2	-638.6	343.5	246.0	97.51	3.523		
6,500.0	5,710.7	14,934.7	5,934.5	27.6	76.5	-108.36	-863.0	-740.2	345.6	246.3	99.23	3.483		
6,600.0	5,711.4	14,831.5	5,932.5	30.1	75.5	-107.81	-867.9	-843.3	347.0	246.0	100.94	3.437		
6,700.0	5,712.0	14,727.2	5,930.0	32.6	74.5	-107.27	-871.8	-947.5	347.2	244.6	102.69	3.381		
6,800.0	5,712.6	14,627.2	5,927.9	35.2	73.6	-106.81	-874.7	-1,047.5	346.9	242.4	104.49	3.320		
6,900.0	5,713.2	14,521.2	5,923.8	37.8	72.6	-106.05	-877.4	-1,153.3	345.6	239.2	106.41	3.248		
7,000.0	5,713.8	14,420.1	5,920.2	40.5	71.6	-105.43	-878.7	-1,254.3	343.4	235.1	108.33	3.170		
7,100.0	5,714.4	14,319.0	5,919.0	43.1	70.7	-105.22	-879.3	-1,355.5	341.1	231.0	110.10	3.098		
7,200.0	5,715.0	14,217.9	5,918.6	45.8	69.8	-105.19	-878.5	-1,456.5	337.7	225.9	111.81	3.020		
7,300.0	5,715.6	14,124.9	5,920.4	48.5	68.9	-105.49	-878.9	-1,549.5	336.0	222.6	113.47	2.962		
7,397.7	5,716.2	14,030.3	5,922.1	51.1	68.0	-105.72	-880.2	-1,644.1	335.3	220.3	115.09	2.914		
7,400.0	5,716.2	14,028.2	5,922.1	51.2	68.0	-105.73	-880.3	-1,646.2	335.3	220.2	115.13	2.913		

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Survey Program: 383-ISCWSA-GYRO-3													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)			
7,500.0	5,716.8	13,930.3	5,925.0	53.9	67.1	-106.07	-883.1	-1,744.0	336.3	219.6	116.73	2.881		
7,600.0	5,717.5	13,824.3	5,928.2	56.6	66.2	-106.57	-884.4	-1,850.0	335.8	217.6	118.19	2.841		
7,700.0	5,718.1	13,723.8	5,932.7	59.4	65.3	-107.31	-884.4	-1,950.4	334.6	215.0	119.55	2.799		
7,800.0	5,718.7	13,622.3	5,937.4	62.1	64.3	-108.12	-884.3	-2,051.8	333.3	212.4	120.86	2.758		
7,900.0	5,719.3	13,522.4	5,939.9	64.9	63.4	-108.56	-884.3	-2,151.6	331.6	209.2	122.37	2.709		
8,000.0	5,719.9	13,420.5	5,939.9	67.6	62.5	-108.56	-885.2	-2,253.6	329.8	205.7	124.13	2.657		
8,100.0	5,720.5	13,324.2	5,940.5	70.4	61.7	-108.67	-885.7	-2,349.8	328.0	202.1	125.88	2.606		
8,149.0	5,720.8	13,278.6	5,941.5	71.7	61.3	-108.80	-886.3	-2,395.3	327.7	201.0	126.70	2.587 CC		
8,200.0	5,721.1	13,231.8	5,942.6	73.1	60.9	-108.95	-887.5	-2,442.2	328.0	200.5	127.55	2.572		
8,300.0	5,721.7	13,132.0	5,945.3	75.9	60.0	-109.23	-890.9	-2,541.9	329.6	200.5	129.16	2.552		
8,400.0	5,722.3	13,036.3	5,947.1	78.7	59.1	-109.36	-894.7	-2,637.4	331.5	200.6	130.91	2.532		
8,500.0	5,723.0	12,931.2	5,948.2	81.4	58.2	-109.30	-899.5	-2,742.4	333.6	200.9	132.71	2.514		
8,600.0	5,723.6	12,830.6	5,948.6	84.2	57.3	-109.21	-903.1	-2,843.0	334.6	200.0	134.57	2.486		
8,700.0	5,724.2	12,731.1	5,947.4	87.0	56.5	-108.81	-907.2	-2,942.4	335.5	198.9	136.66	2.455		
8,800.0	5,724.8	12,632.7	5,943.7	89.8	55.6	-107.97	-912.6	-3,040.5	337.0	197.9	139.07	2.423		
8,900.0	5,725.4	12,527.1	5,940.1	92.6	54.7	-107.16	-917.3	-3,146.0	337.7	196.3	141.39	2.388		
9,000.0	5,726.0	12,427.2	5,940.2	95.3	53.8	-107.09	-919.6	-3,245.9	337.4	194.1	143.28	2.355		
9,001.1	5,726.0	12,426.2	5,940.2	95.4	53.8	-107.09	-919.7	-3,246.9	337.4	194.1	143.30	2.355		
9,100.0	5,726.6	12,328.8	5,940.8	98.1	53.0	-107.06	-922.7	-3,344.2	338.0	192.8	145.18	2.328		
9,185.2	5,727.1	12,242.0	5,941.1	100.5	52.3	-107.02	-924.8	-3,431.0	337.9	191.1	146.77	2.302		
9,200.0	5,727.2	12,228.5	5,941.2	100.9	52.1	-107.04	-925.1	-3,444.5	337.9	190.8	147.05	2.298		
9,300.0	5,727.8	12,134.1	5,943.9	103.7	51.3	-107.34	-928.3	-3,538.8	339.4	190.6	148.75	2.281		
9,400.0	5,728.5	12,035.7	5,948.4	106.5	50.5	-107.91	-931.8	-3,637.0	341.6	191.4	150.22	2.274		
9,500.0	5,729.1	11,935.3	5,953.9	109.3	49.7	-108.62	-935.5	-3,737.3	344.3	192.7	151.56	2.272		
9,600.0	5,729.7	11,826.9	5,957.9	112.1	48.8	-109.11	-938.7	-3,845.5	345.8	192.8	152.97	2.260		
9,700.0	5,730.3	11,725.6	5,957.9	114.9	47.9	-109.05	-940.8	-3,946.8	345.1	190.3	154.87	2.229		
9,800.0	5,730.9	11,624.3	5,958.6	117.7	47.1	-109.09	-942.8	-4,048.0	344.7	188.0	156.69	2.200		
9,900.0	5,731.5	11,526.5	5,959.0	120.5	46.3	-109.07	-944.7	-4,145.8	344.2	185.6	158.60	2.170		
9,917.4	5,731.6	11,509.5	5,959.0	120.9	46.1	-109.07	-945.2	-4,162.8	344.2	185.2	158.93	2.166		
10,000.0	5,732.1	11,428.7	5,959.6	123.3	45.5	-109.07	-947.4	-4,243.6	344.4	183.9	160.49	2.146		
10,100.0	5,732.7	11,335.2	5,960.6	126.1	44.7	-109.06	-951.0	-4,337.0	345.8	183.4	162.42	2.129		
10,200.0	5,733.3	11,232.8	5,960.3	128.9	43.8	-108.78	-956.0	-4,439.3	347.8	183.3	164.52	2.114		
10,300.0	5,734.0	11,140.2	5,958.8	131.7	43.1	-108.29	-961.8	-4,531.7	350.7	183.8	166.88	2.102		
10,400.0	5,734.6	11,031.2	5,959.5	134.5	42.2	-108.13	-967.4	-4,640.5	353.3	184.4	168.84	2.092		
10,500.0	5,735.2	10,924.8	5,961.4	137.3	41.4	-108.34	-969.8	-4,746.8	353.4	182.9	170.52	2.072		
10,600.0	5,735.8	10,826.0	5,962.2	140.1	40.6	-108.40	-971.6	-4,845.7	352.8	180.5	172.38	2.047		
10,618.9	5,735.9	10,807.8	5,962.2	140.6	40.4	-108.38	-972.1	-4,863.8	352.8	180.1	172.77	2.042		
10,700.0	5,736.4	10,728.9	5,961.7	142.9	39.8	-108.20	-974.7	-4,942.7	353.1	178.6	174.49	2.024		
10,800.0	5,737.0	10,636.7	5,961.3	145.7	39.1	-107.97	-978.5	-5,034.8	354.5	177.8	176.66	2.006		
10,900.0	5,737.6	10,544.6	5,962.6	148.5	38.3	-107.88	-984.8	-5,126.7	358.8	180.1	178.72	2.008		
11,000.0	5,738.2	10,442.7	5,965.8	151.3	37.5	-108.07	-991.8	-5,228.3	363.8	183.3	180.47	2.016		
11,100.0	5,738.8	10,336.3	5,968.7	154.1	36.7	-108.23	-997.8	-5,334.5	367.4	185.2	182.20	2.017		
11,200.0	5,739.4	10,231.0	5,971.6	156.9	35.9	-108.51	-1,001.8	-5,439.7	369.3	185.5	183.85	2.009		
11,300.0	5,740.1	10,124.0	5,973.9	159.7	35.0	-108.75	-1,004.3	-5,546.6	369.7	184.2	185.50	1.993 Level 3		
11,400.0	5,740.7	10,021.9	5,975.0	162.5	34.2	-108.87	-1,005.6	-5,648.7	368.8	181.5	187.30	1.969 Level 3		
11,500.0	5,741.3	9,920.2	5,975.2	165.3	33.5	-108.89	-1,006.8	-5,750.4	367.4	178.2	189.21	1.942 Level 3		
11,600.0	5,741.9	9,817.7	5,975.9	168.1	32.7	-109.01	-1,007.0	-5,852.9	365.3	174.2	191.02	1.912 Level 3		
11,700.0	5,742.5	9,710.4	5,977.1	170.9	31.9	-109.26	-1,006.4	-5,960.2	362.6	170.0	192.65	1.882 Level 3		
11,800.0	5,743.1	9,601.1	5,977.9	173.7	31.0	-109.68	-1,001.6	-6,069.4	356.1	162.0	194.10	1.835 Level 3		
11,900.0	5,743.7	9,508.7	5,978.4	176.5	30.3	-110.01	-997.8	-6,161.6	349.8	154.1	195.76	1.787 Level 3		
12,000.0	5,744.3	9,415.6	5,978.7	179.3	29.6	-110.16	-996.6	-6,254.8	346.2	148.7	197.58	1.752 Level 3		
12,100.0	5,744.9	9,315.0	5,980.0	182.1	28.9	-110.46	-995.9	-6,355.4	343.4	144.2	199.20	1.724 Level 3		

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

Noble Energy Inc

Anticollision Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Nugent LD06-645
Project:	Wattenberg Field	TVD Reference:	WELL @ 4785.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4785.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Nugent LD06-645	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

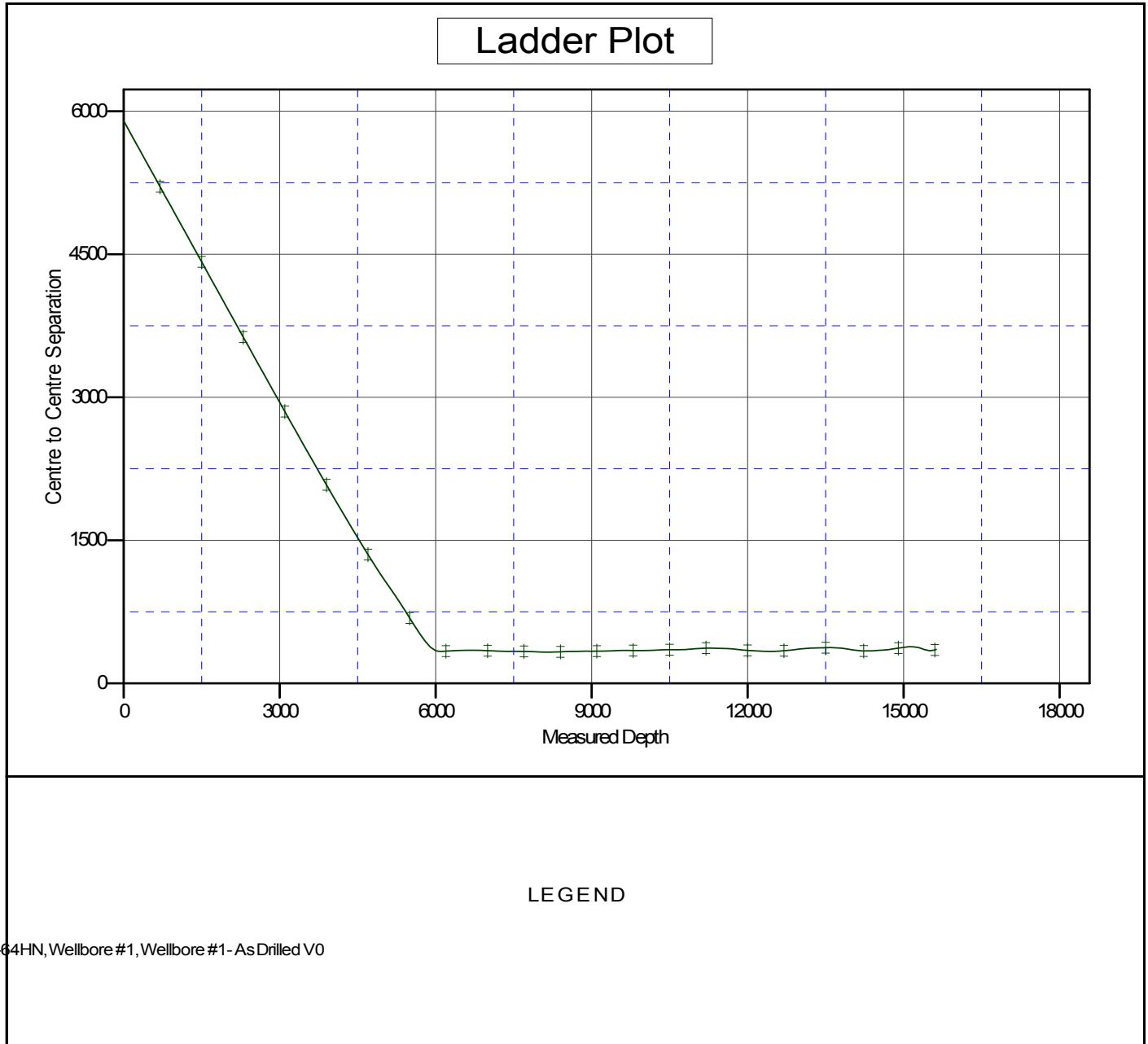
Offset Design LD (09N-58W) - Timbro LD06-64HN - Wellbore #1 - Wellbore #1- As Drilled													Offset Site Error:	0.0 ft
Survey Program: 383-ISCWSA-GYRO-3													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured 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		
12,200.0	5,745.6	9,213.8	5,981.6	184.9	28.2	-110.86	-994.3	-6,456.5	340.1	139.4	200.69	1.694	Level 3	
12,300.0	5,746.2	9,118.2	5,981.4	187.7	27.4	-110.89	-993.9	-6,552.1	337.0	134.4	202.64	1.663	Level 3	
12,400.0	5,746.8	9,022.0	5,980.0	190.5	26.7	-110.62	-995.6	-6,648.3	335.6	130.6	204.94	1.637	Level 3	
12,455.4	5,747.1	8,970.1	5,980.3	192.1	26.4	-110.65	-996.4	-6,700.2	335.2	129.2	206.02	1.627	Level 3	
12,500.0	5,747.4	8,930.1	5,981.3	193.3	26.1	-110.76	-997.5	-6,740.2	335.5	128.7	206.79	1.622	Level 3	
12,600.0	5,748.0	8,837.2	5,985.3	196.1	25.4	-111.23	-1,001.0	-6,832.9	338.1	129.9	208.25	1.624	Level 3	
12,700.0	5,748.6	8,740.1	5,989.6	199.0	24.7	-111.64	-1,006.2	-6,929.8	342.1	132.4	209.74	1.631	Level 3	
12,800.0	5,749.2	8,646.0	5,991.3	201.8	24.1	-111.53	-1,013.1	-7,023.6	347.1	135.2	211.90	1.638	Level 3	
12,900.0	5,749.8	8,550.1	5,991.6	204.6	23.4	-111.07	-1,022.6	-7,119.0	353.9	139.4	214.49	1.650	Level 3	
13,000.0	5,750.4	8,442.6	5,993.7	207.4	22.6	-110.90	-1,032.0	-7,226.1	360.3	143.7	216.66	1.663	Level 3	
13,100.0	5,751.1	8,344.9	5,995.2	210.2	22.0	-110.75	-1,039.4	-7,323.5	365.3	146.5	218.87	1.669	Level 3	
13,200.0	5,751.7	8,232.7	5,995.7	213.0	21.2	-110.45	-1,047.1	-7,435.4	369.5	148.3	221.18	1.671	Level 3	
13,300.0	5,752.3	8,129.8	5,996.6	215.8	20.5	-110.38	-1,051.6	-7,538.2	371.3	148.0	223.28	1.663	Level 3	
13,400.0	5,752.9	8,031.0	5,997.5	218.6	19.9	-110.35	-1,055.6	-7,636.9	372.9	147.6	225.37	1.655	Level 3	
13,500.0	5,753.5	7,929.1	5,999.0	221.4	19.2	-110.39	-1,059.6	-7,738.8	374.6	147.2	227.37	1.647	Level 3	
13,600.0	5,754.1	7,822.0	5,999.1	224.2	18.5	-110.27	-1,063.0	-7,845.8	375.0	145.5	229.54	1.634	Level 3	
13,700.0	5,754.7	7,715.4	5,997.5	227.0	17.8	-110.01	-1,064.5	-7,952.3	373.3	141.4	231.91	1.610	Level 3	
13,800.0	5,755.3	7,601.7	5,996.5	229.9	17.1	-109.97	-1,063.5	-8,066.0	369.7	135.7	233.97	1.580	Level 3	
13,900.0	5,755.9	7,490.7	5,996.8	232.7	16.5	-110.41	-1,057.0	-8,176.8	361.8	126.3	235.45	1.537	Level 3	
14,000.0	5,756.6	7,395.8	5,997.6	235.5	15.9	-110.95	-1,050.5	-8,271.5	353.1	116.3	236.86	1.491	Level 2	
14,100.0	5,757.2	7,296.3	5,998.6	238.3	15.4	-111.50	-1,044.6	-8,370.8	345.4	107.2	238.23	1.450	Level 2	
14,200.0	5,757.8	7,217.8	5,999.4	241.1	14.9	-111.82	-1,042.3	-8,449.3	340.6	100.6	240.02	1.419	Level 2	
14,232.6	5,758.0	7,191.0	5,999.7	242.0	14.8	-111.84	-1,042.8	-8,476.1	340.5	99.8	240.71	1.414	Level 2	
14,300.0	5,758.4	7,122.8	6,000.3	243.9	14.4	-111.89	-1,044.5	-8,544.3	340.5	98.4	242.09	1.407	Level 2	
14,310.8	5,758.5	7,111.8	6,000.5	244.2	14.3	-111.90	-1,044.7	-8,555.3	340.5	98.2	242.31	1.405	Level 2	
14,400.0	5,759.0	7,031.7	6,001.4	246.7	13.9	-111.92	-1,047.5	-8,635.3	341.5	97.2	244.27	1.398	Level 2	
14,500.0	5,759.6	6,937.5	6,002.0	249.5	13.5	-111.70	-1,053.5	-8,729.3	345.1	98.3	246.81	1.398	Level 2	
14,600.0	5,760.2	6,830.5	6,001.8	252.3	12.9	-111.30	-1,060.6	-8,836.1	348.7	99.2	249.58	1.397	Level 2	
14,700.0	5,760.8	6,749.9	6,001.8	255.1	12.6	-110.98	-1,066.6	-8,916.5	353.2	100.8	252.37	1.400	Level 2	
14,800.0	5,761.4	6,648.1	6,003.2	258.0	12.2	-110.59	-1,078.1	-9,017.5	361.8	106.6	255.21	1.418	Level 2	
14,900.0	5,762.1	6,552.4	6,004.8	260.8	11.8	-110.35	-1,087.5	-9,112.8	369.1	111.2	257.89	1.431	Level 2	
15,000.0	5,762.7	6,449.8	6,005.1	263.6	11.4	-109.82	-1,099.0	-9,214.7	377.2	116.3	260.98	1.445	Level 2	
15,100.0	5,763.3	6,340.7	6,000.7	266.4	11.1	-108.59	-1,112.1	-9,323.0	384.9	119.9	265.01	1.452	Level 2	
15,200.0	5,763.9	6,199.0	5,984.3	269.2	10.7	-105.94	-1,119.9	-9,463.3	383.9	113.2	270.63	1.418	Level 2	
15,300.0	5,764.5	6,066.5	5,942.0	272.0	10.3	-99.64	-1,121.0	-9,588.3	374.6	95.7	278.89	1.343	Level 2	
15,400.0	5,765.1	5,903.9	5,847.4	274.8	10.0	-84.52	-1,103.5	-9,718.3	355.4	71.7	283.71	1.253	Level 2	
15,500.0	5,765.7	5,846.2	5,805.5	277.6	9.9	-77.30	-1,092.6	-9,756.6	342.6	61.0	281.61	1.217	Level 2, ES, SF	
15,517.1	5,765.8	5,837.8	5,799.0	278.1	9.9	-76.18	-1,091.1	-9,761.7	342.3	61.4	280.97	1.218	Level 2	
15,600.0	5,766.3	5,819.0	5,784.2	280.4	9.9	-73.62	-1,087.8	-9,772.7	350.3	69.9	280.35	1.249	Level 2	
15,628.2	5,766.5	5,793.9	5,763.8	281.2	9.8	-70.14	-1,083.9	-9,786.7	355.8	79.3	276.41	1.287	Level 2	

Noble Energy Inc
Anticollision Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Nugent LD06-645
Project:	Wattenberg Field	TVD Reference:	WELL @ 4785.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4785.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Nugent LD06-645	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4785.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Nugent LD06-645
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°



Noble Energy Inc
Anticollision Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Nugent LD06-645
Project:	Wattenberg Field	TVD Reference:	WELL @ 4785.0ft (Original Well Elev)
Reference Site:	LD (09N-58W)	MD Reference:	WELL @ 4785.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Nugent LD06-645	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM01P
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4785.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Nugent LD06-645
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°

