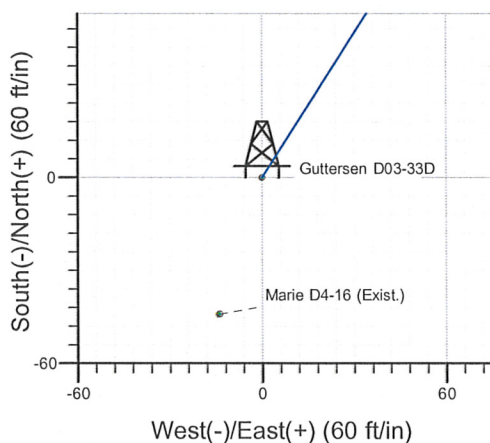
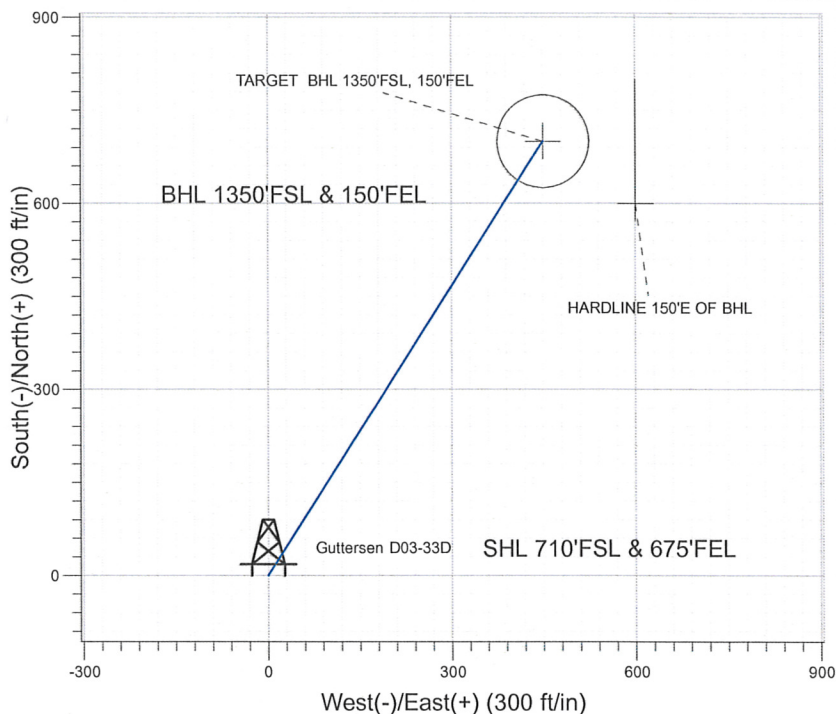
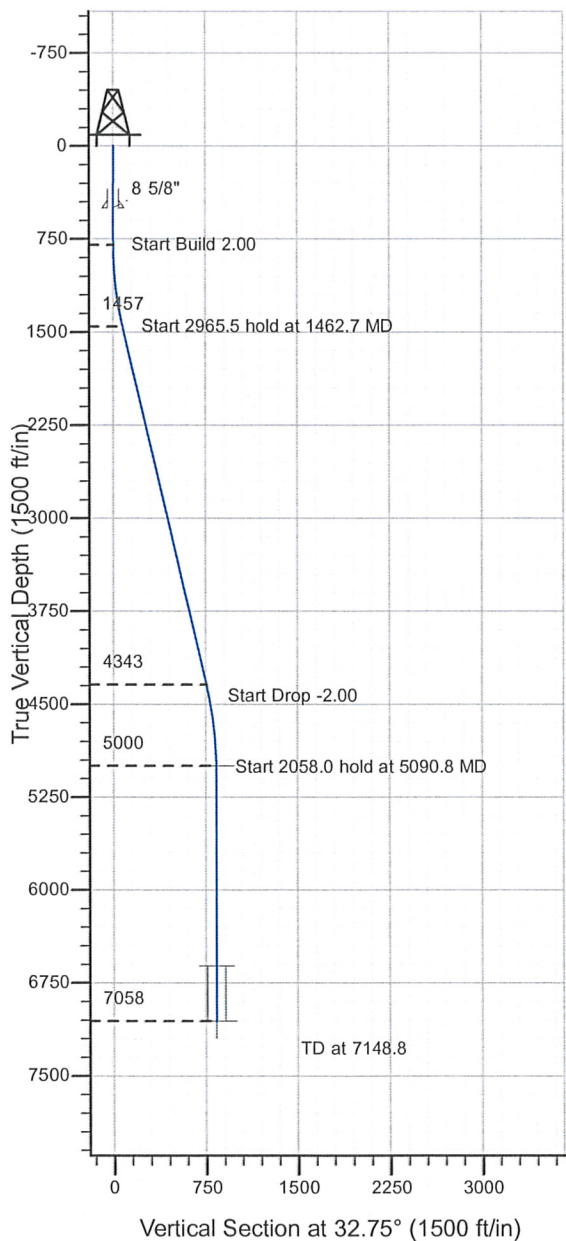


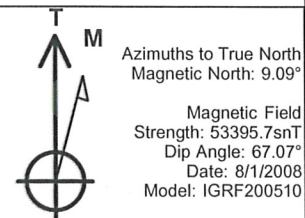
### Well Name: Guttersen D03-33D

Surface Location: Guttersen Pad Sec.4-T3N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4716.0  
 +N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1335055.84 3265436.17 40° 14' 57.192 N 104° 32' 56.544 W  
 Original Well Elev WELL @ 4729.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Guttersen Pad Sec.4-T3N-R64W  
 Guttersen D03-33D  
 Noble Guttersen D03-33D Plan #2 (06-01-10)  
 17:37, June 02 2010



### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1350'FSL, 150'FEL	5000.0	700.1	450.3	40° 15' 4.110 N	104° 32' 50.736 W	Point
TARGET CIRCLE 1350'FSL, 150'FEL	6614.0	700.1	450.3	40° 15' 4.110 N	104° 32' 50.736 W	Circle (Radius: 75.0)
HARDLINE 150'E OF BHL	7058.0	600.1	600.3	40° 15' 3.122 N	104° 32' 48.802 W	Polygon

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1462.7	13.25	32.75	1456.8	64.2	41.3	2.00	32.75	76.3	
4	4428.1	13.25	32.75	4343.2	635.9	409.0	0.00	0.00	756.1	
5	5090.8	0.00	0.00	5000.0	700.1	450.3	2.00	180.00	832.4	TARGET BHL 1350'FSL, 150'FEL
6	7148.8	0.00	0.00	7058.0	700.1	450.3	0.00	0.00	832.4	



**Directional**

**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.4-T3N-R64W**

**Guttersen Pad Sec.4-T3N-R64W**

**Guttersen D03-33D**

**Guttersen D03-33D**

**Plan: Noble Guttersen D03-33D Plan #2 (06-01-10)**

**Standard Planning Report**

**02 June, 2010**



Database: EDM den0-adp01 Server Data  
Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.4-T3N-R64W  
Site: Guttersen Pad Sec.4-T3N-R64W  
Well: Guttersen D03-33D  
Wellbore: Guttersen D03-33D  
Design: Noble Guttersen D03-33D Plan #2 (06-01-10)

Local Co-ordinate Reference: Well Guttersen D03-33D  
TVD Reference: WELL @ 4729.0ft (Original Well Elev)  
MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Project	SEC.4-T3N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Guttersen Pad Sec.4-T3N-R64W				
Site Position:		Northing:	1,335,050.13ft	Latitude:	40° 14' 57.134 N
From:	Lat/Long	Easting:	3,265,446.56ft	Longitude:	104° 32' 56.411 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.61 °

Well	Guttersen D03-33D					
Well Position	+N/-S	5.8 ft	Northing:	1,335,055.84 ft	Latitude:	40° 14' 57.192 N
	+E/-W	-10.3 ft	Easting:	3,265,436.17 ft	Longitude:	104° 32' 56.544 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,716.0 ft	

Wellbore	Guttersen D03-33D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/1/2008	9.09	67.07	53,396

Design	Noble Guttersen D03-33D Plan #2 (06-01-10)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	32.75

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,462.7	13.25	32.75	1,456.8	64.2	41.3	2.00	2.00	0.00	32.75	
4,428.1	13.25	32.75	4,343.2	635.9	409.0	0.00	0.00	0.00	0.00	
5,090.8	0.00	0.00	5,000.0	700.1	450.3	2.00	-2.00	0.00	180.00	TARGET BHL 135°
7,148.8	0.00	0.00	7,058.0	700.1	450.3	0.00	0.00	0.00	0.00	



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Local Co-ordinate Reference: Well Guttersen D03-33D  
TVD Reference: WELL @ 4729.0ft (Original Well Elev)  
MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.80	32.75	840.0	0.2	0.2	0.3	2.00	2.00	0.00
880.0	1.60	32.75	880.0	0.9	0.6	1.1	2.00	2.00	0.00
920.0	2.40	32.75	920.0	2.1	1.4	2.5	2.00	2.00	0.00
960.0	3.20	32.75	959.9	3.8	2.4	4.5	2.00	2.00	0.00
1,000.0	4.00	32.75	999.8	5.9	3.8	7.0	2.00	2.00	0.00
1,040.0	4.80	32.75	1,039.7	8.5	5.4	10.0	2.00	2.00	0.00
1,080.0	5.60	32.75	1,079.6	11.5	7.4	13.7	2.00	2.00	0.00
1,120.0	6.40	32.75	1,119.3	15.0	9.7	17.9	2.00	2.00	0.00
1,160.0	7.20	32.75	1,159.1	19.0	12.2	22.6	2.00	2.00	0.00
1,200.0	8.00	32.75	1,198.7	23.4	15.1	27.9	2.00	2.00	0.00
1,240.0	8.80	32.75	1,238.3	28.4	18.2	33.7	2.00	2.00	0.00
1,280.0	9.60	32.75	1,277.8	33.7	21.7	40.1	2.00	2.00	0.00
1,320.0	10.40	32.75	1,317.1	39.6	25.5	47.1	2.00	2.00	0.00
1,360.0	11.20	32.75	1,356.4	45.9	29.5	54.6	2.00	2.00	0.00
1,400.0	12.00	32.75	1,395.6	52.7	33.9	62.6	2.00	2.00	0.00
1,440.0	12.80	32.75	1,434.7	59.9	38.5	71.2	2.00	2.00	0.00
1,462.7	13.25	32.75	1,456.8	64.2	41.3	76.3	2.00	2.00	0.00
1,480.0	13.25	32.75	1,473.6	67.5	43.4	80.3	0.00	0.00	0.00
1,520.0	13.25	32.75	1,512.6	75.2	48.4	89.4	0.00	0.00	0.00
1,560.0	13.25	32.75	1,551.5	82.9	53.3	98.6	0.00	0.00	0.00
1,600.0	13.25	32.75	1,590.4	90.7	58.3	107.8	0.00	0.00	0.00
1,640.0	13.25	32.75	1,629.4	98.4	63.3	117.0	0.00	0.00	0.00
1,680.0	13.25	32.75	1,668.3	106.1	68.2	126.1	0.00	0.00	0.00
1,720.0	13.25	32.75	1,707.3	113.8	73.2	135.3	0.00	0.00	0.00
1,760.0	13.25	32.75	1,746.2	121.5	78.2	144.5	0.00	0.00	0.00
1,800.0	13.25	32.75	1,785.1	129.2	83.1	153.6	0.00	0.00	0.00
1,840.0	13.25	32.75	1,824.1	136.9	88.1	162.8	0.00	0.00	0.00
1,880.0	13.25	32.75	1,863.0	144.6	93.0	172.0	0.00	0.00	0.00
1,920.0	13.25	32.75	1,901.9	152.4	98.0	181.1	0.00	0.00	0.00
1,960.0	13.25	32.75	1,940.9	160.1	103.0	190.3	0.00	0.00	0.00
2,000.0	13.25	32.75	1,979.8	167.8	107.9	199.5	0.00	0.00	0.00



Database: EDM den0-adp01 Server Data  
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Well: Guttersen D03-33D  
Wellbore: Guttersen D03-33D  
Design: Noble Guttersen D03-33D Plan #2 (06-01-10)

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MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	13.25	32.75	2,018.7	175.5	112.9	208.7	0.00	0.00	0.00
2,080.0	13.25	32.75	2,057.7	183.2	117.8	217.8	0.00	0.00	0.00
2,120.0	13.25	32.75	2,096.6	190.9	122.8	227.0	0.00	0.00	0.00
2,160.0	13.25	32.75	2,135.5	198.6	127.8	236.2	0.00	0.00	0.00
2,200.0	13.25	32.75	2,174.5	206.3	132.7	245.3	0.00	0.00	0.00
2,240.0	13.25	32.75	2,213.4	214.0	137.7	254.5	0.00	0.00	0.00
2,280.0	13.25	32.75	2,252.3	221.8	142.6	263.7	0.00	0.00	0.00
2,320.0	13.25	32.75	2,291.3	229.5	147.6	272.8	0.00	0.00	0.00
2,360.0	13.25	32.75	2,330.2	237.2	152.6	282.0	0.00	0.00	0.00
2,400.0	13.25	32.75	2,369.1	244.9	157.5	291.2	0.00	0.00	0.00
2,440.0	13.25	32.75	2,408.1	252.6	162.5	300.4	0.00	0.00	0.00
2,480.0	13.25	32.75	2,447.0	260.3	167.4	309.5	0.00	0.00	0.00
2,520.0	13.25	32.75	2,485.9	268.0	172.4	318.7	0.00	0.00	0.00
2,560.0	13.25	32.75	2,524.9	275.7	177.4	327.9	0.00	0.00	0.00
2,600.0	13.25	32.75	2,563.8	283.5	182.3	337.0	0.00	0.00	0.00
2,640.0	13.25	32.75	2,602.8	291.2	187.3	346.2	0.00	0.00	0.00
2,680.0	13.25	32.75	2,641.7	298.9	192.2	355.4	0.00	0.00	0.00
2,720.0	13.25	32.75	2,680.6	306.6	197.2	364.5	0.00	0.00	0.00
2,760.0	13.25	32.75	2,719.6	314.3	202.2	373.7	0.00	0.00	0.00
2,787.2	13.25	32.75	2,746.0	319.5	205.5	379.9	0.00	0.00	0.00
PIERRE SILT									
2,800.0	13.25	32.75	2,758.5	322.0	207.1	382.9	0.00	0.00	0.00
2,840.0	13.25	32.75	2,797.4	329.7	212.1	392.1	0.00	0.00	0.00
2,880.0	13.25	32.75	2,836.4	337.4	217.1	401.2	0.00	0.00	0.00
2,920.0	13.25	32.75	2,875.3	345.2	222.0	410.4	0.00	0.00	0.00
2,960.0	13.25	32.75	2,914.2	352.9	227.0	419.6	0.00	0.00	0.00
3,000.0	13.25	32.75	2,953.2	360.6	231.9	428.7	0.00	0.00	0.00
3,040.0	13.25	32.75	2,992.1	368.3	236.9	437.9	0.00	0.00	0.00
3,080.0	13.25	32.75	3,031.0	376.0	241.9	447.1	0.00	0.00	0.00
3,120.0	13.25	32.75	3,070.0	383.7	246.8	456.2	0.00	0.00	0.00
3,160.0	13.25	32.75	3,108.9	391.4	251.8	465.4	0.00	0.00	0.00
3,200.0	13.25	32.75	3,147.8	399.1	256.7	474.6	0.00	0.00	0.00
3,240.0	13.25	32.75	3,186.8	406.9	261.7	483.8	0.00	0.00	0.00
3,280.0	13.25	32.75	3,225.7	414.6	266.7	492.9	0.00	0.00	0.00
3,320.0	13.25	32.75	3,264.6	422.3	271.6	502.1	0.00	0.00	0.00
3,360.0	13.25	32.75	3,303.6	430.0	276.6	511.3	0.00	0.00	0.00
3,400.0	13.25	32.75	3,342.5	437.7	281.5	520.4	0.00	0.00	0.00
3,440.0	13.25	32.75	3,381.4	445.4	286.5	529.6	0.00	0.00	0.00
3,480.0	13.25	32.75	3,420.4	453.1	291.5	538.8	0.00	0.00	0.00
3,520.0	13.25	32.75	3,459.3	460.8	296.4	547.9	0.00	0.00	0.00
3,560.0	13.25	32.75	3,498.2	468.6	301.4	557.1	0.00	0.00	0.00
3,600.0	13.25	32.75	3,537.2	476.3	306.3	566.3	0.00	0.00	0.00
3,638.9	13.25	32.75	3,575.0	483.8	311.2	575.2	0.00	0.00	0.00
PARKMAN									
3,640.0	13.25	32.75	3,576.1	484.0	311.3	575.5	0.00	0.00	0.00
3,680.0	13.25	32.75	3,615.1	491.7	316.3	584.6	0.00	0.00	0.00
3,720.0	13.25	32.75	3,654.0	499.4	321.2	593.8	0.00	0.00	0.00
3,760.0	13.25	32.75	3,692.9	507.1	326.2	603.0	0.00	0.00	0.00
3,800.0	13.25	32.75	3,731.9	514.8	331.2	612.1	0.00	0.00	0.00
3,840.0	13.25	32.75	3,770.8	522.5	336.1	621.3	0.00	0.00	0.00
3,880.0	13.25	32.75	3,809.7	530.3	341.1	630.5	0.00	0.00	0.00
3,920.0	13.25	32.75	3,848.7	538.0	346.0	639.6	0.00	0.00	0.00
3,960.0	13.25	32.75	3,887.6	545.7	351.0	648.8	0.00	0.00	0.00
4,000.0	13.25	32.75	3,926.5	553.4	356.0	658.0	0.00	0.00	0.00

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Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,040.0	13.25	32.75	3,965.5	561.1	360.9	667.2	0.00	0.00	0.00
4,080.0	13.25	32.75	4,004.4	568.8	365.9	676.3	0.00	0.00	0.00
4,120.0	13.25	32.75	4,043.3	576.5	370.8	685.5	0.00	0.00	0.00
4,160.0	13.25	32.75	4,082.3	584.2	375.8	694.7	0.00	0.00	0.00
4,200.0	13.25	32.75	4,121.2	592.0	380.8	703.8	0.00	0.00	0.00
4,240.0	13.25	32.75	4,160.1	599.7	385.7	713.0	0.00	0.00	0.00
4,280.0	13.25	32.75	4,199.1	607.4	390.7	722.2	0.00	0.00	0.00
4,291.2	13.25	32.75	4,210.0	609.5	392.1	724.8	0.00	0.00	0.00
<b>SUSSEX</b>									
4,320.0	13.25	32.75	4,238.0	615.1	395.6	731.3	0.00	0.00	0.00
4,360.0	13.25	32.75	4,276.9	622.8	400.6	740.5	0.00	0.00	0.00
4,400.0	13.25	32.75	4,315.9	630.5	405.6	749.7	0.00	0.00	0.00
4,428.1	13.25	32.75	4,343.2	635.9	409.0	756.1	0.00	0.00	0.00
4,440.0	13.02	32.75	4,354.8	638.2	410.5	758.8	2.00	-2.00	0.00
4,480.0	12.22	32.75	4,393.9	645.6	415.2	767.6	2.00	-2.00	0.00
4,520.0	11.42	32.75	4,433.0	652.4	419.7	775.8	2.00	-2.00	0.00
4,560.0	10.62	32.75	4,472.3	658.9	423.8	783.4	2.00	-2.00	0.00
4,600.0	9.82	32.75	4,511.6	664.8	427.6	790.5	2.00	-2.00	0.00
4,640.0	9.02	32.75	4,551.1	670.3	431.2	797.0	2.00	-2.00	0.00
4,680.0	8.22	32.75	4,590.6	675.4	434.4	803.0	2.00	-2.00	0.00
4,720.0	7.42	32.75	4,630.3	680.0	437.4	808.5	2.00	-2.00	0.00
4,760.0	6.62	32.75	4,670.0	684.1	440.0	813.4	2.00	-2.00	0.00
4,800.0	5.82	32.75	4,709.7	687.7	442.3	817.7	2.00	-2.00	0.00
4,840.0	5.02	32.75	4,749.6	690.9	444.4	821.5	2.00	-2.00	0.00
4,880.0	4.22	32.75	4,789.4	693.6	446.1	824.7	2.00	-2.00	0.00
4,897.6	3.86	32.75	4,807.0	694.6	446.8	825.9	2.00	-2.00	0.00
<b>SHANNON</b>									
4,920.0	3.42	32.75	4,829.3	695.8	447.6	827.3	2.00	-2.00	0.00
4,960.0	2.62	32.75	4,869.3	697.6	448.7	829.4	2.00	-2.00	0.00
5,000.0	1.82	32.75	4,909.3	698.9	449.5	831.0	2.00	-2.00	0.00
5,040.0	1.02	32.75	4,949.2	699.7	450.1	832.0	2.00	-2.00	0.00
5,080.0	0.22	32.75	4,989.2	700.1	450.3	832.4	2.00	-2.00	0.00
5,090.8	0.00	0.00	5,000.0	700.1	450.3	832.4	2.00	-2.00	0.00
<b>TARGET BHL 1350'FSL, 150'FEL</b>									
5,120.0	0.00	0.00	5,029.2	700.1	450.3	832.4	0.00	0.00	0.00
5,160.0	0.00	0.00	5,069.2	700.1	450.3	832.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,109.2	700.1	450.3	832.4	0.00	0.00	0.00
5,240.0	0.00	0.00	5,149.2	700.1	450.3	832.4	0.00	0.00	0.00
5,280.0	0.00	0.00	5,189.2	700.1	450.3	832.4	0.00	0.00	0.00
5,320.0	0.00	0.00	5,229.2	700.1	450.3	832.4	0.00	0.00	0.00
5,360.0	0.00	0.00	5,269.2	700.1	450.3	832.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,309.2	700.1	450.3	832.4	0.00	0.00	0.00
5,440.0	0.00	0.00	5,349.2	700.1	450.3	832.4	0.00	0.00	0.00
5,480.0	0.00	0.00	5,389.2	700.1	450.3	832.4	0.00	0.00	0.00
5,520.0	0.00	0.00	5,429.2	700.1	450.3	832.4	0.00	0.00	0.00
5,560.0	0.00	0.00	5,469.2	700.1	450.3	832.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,509.2	700.1	450.3	832.4	0.00	0.00	0.00
5,640.0	0.00	0.00	5,549.2	700.1	450.3	832.4	0.00	0.00	0.00
5,680.0	0.00	0.00	5,589.2	700.1	450.3	832.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,629.2	700.1	450.3	832.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,669.2	700.1	450.3	832.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,709.2	700.1	450.3	832.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,749.2	700.1	450.3	832.4	0.00	0.00	0.00



Database: EDM den0-adp01 Server Data  
Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.4-T3N-R64W  
Site: Guttersen Pad Sec.4-T3N-R64W  
Well: Guttersen D03-33D  
Wellbore: Guttersen D03-33D  
Design: Noble Guttersen D03-33D Plan #2 (06-01-10)

Local Co-ordinate Reference: Well Guttersen D03-33D  
TVD Reference: WELL @ 4729.0ft (Original Well Elev)  
MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,880.0	0.00	0.00	5,789.2	700.1	450.3	832.4	0.00	0.00	0.00
5,920.0	0.00	0.00	5,829.2	700.1	450.3	832.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,869.2	700.1	450.3	832.4	0.00	0.00	0.00
5,974.8	0.00	0.00	5,884.0	700.1	450.3	832.4	0.00	0.00	0.00
<b>TEEPEE BUTTES</b>									
6,000.0	0.00	0.00	5,909.2	700.1	450.3	832.4	0.00	0.00	0.00
6,040.0	0.00	0.00	5,949.2	700.1	450.3	832.4	0.00	0.00	0.00
6,080.0	0.00	0.00	5,989.2	700.1	450.3	832.4	0.00	0.00	0.00
6,120.0	0.00	0.00	6,029.2	700.1	450.3	832.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,069.2	700.1	450.3	832.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,109.2	700.1	450.3	832.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,149.2	700.1	450.3	832.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,189.2	700.1	450.3	832.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,229.2	700.1	450.3	832.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,269.2	700.1	450.3	832.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,309.2	700.1	450.3	832.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,349.2	700.1	450.3	832.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,389.2	700.1	450.3	832.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,429.2	700.1	450.3	832.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,469.2	700.1	450.3	832.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,509.2	700.1	450.3	832.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,549.2	700.1	450.3	832.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,589.2	700.1	450.3	832.4	0.00	0.00	0.00
6,704.8	0.00	0.00	6,614.0	700.1	450.3	832.4	0.00	0.00	0.00
<b>NIOBRARA - TARGET CIRCLE 1350'FSL, 150'FEL</b>									
6,720.0	0.00	0.00	6,629.2	700.1	450.3	832.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,669.2	700.1	450.3	832.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,709.2	700.1	450.3	832.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,749.2	700.1	450.3	832.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,789.2	700.1	450.3	832.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,829.2	700.1	450.3	832.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,869.2	700.1	450.3	832.4	0.00	0.00	0.00
6,972.8	0.00	0.00	6,882.0	700.1	450.3	832.4	0.00	0.00	0.00
<b>FT HAYS</b>									
6,998.8	0.00	0.00	6,908.0	700.1	450.3	832.4	0.00	0.00	0.00
<b>CODELL</b>									
7,000.0	0.00	0.00	6,909.2	700.1	450.3	832.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,949.2	700.1	450.3	832.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,989.2	700.1	450.3	832.4	0.00	0.00	0.00
7,120.0	0.00	0.00	7,029.2	700.1	450.3	832.4	0.00	0.00	0.00
7,148.8	0.00	0.00	7,058.0	700.1	450.3	832.4	0.00	0.00	0.00
<b>HARDLINE 150'E OF BHL</b>									



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Design: Noble Guttersen D03-33D Plan #2 (06-01-10)

Local Co-ordinate Reference: Well Guttersen D03-33D  
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MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

#### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET CIRCLE 13ft - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,614.0	700.1	450.3	1,335,760.70	3,265,878.92	40° 15' 4.110 N	104° 32' 50.736 W
TARGET BHL 1350'F - plan hits target center - Point	0.00	0.00	5,000.0	700.1	450.3	1,335,760.70	3,265,878.94	40° 15' 4.110 N	104° 32' 50.736 W
HARDLINE 150'E OF - plan misses target center by 180.3ft at 7148.8ft MD (7058.0 TVD, 700.1 N, 450.3 E) - Polygon	0.00	0.00	7,058.0	600.1	600.3	1,335,662.32	3,266,029.98	40° 15' 3.122 N	104° 32' 48.802 W
Point 1			7,058.0	0.0	0.0	1,335,662.32	3,266,029.98		
Point 2			7,058.0	200.0	0.0	1,335,862.30	3,266,027.83		

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	8 5/8"	8-5/8	12-1/4

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,787.2	2,746.0	PIERRE SILT		0.00	
3,638.9	3,575.0	PARKMAN		0.00	
4,291.2	4,210.0	SUSSEX		0.00	
4,897.6	4,807.0	SHANNON		0.00	
5,974.8	5,884.0	TEEPEE BUTTES		0.00	
6,704.8	6,614.0	NIOBRARA		0.00	
6,972.8	6,882.0	FT HAYS		0.00	
6,998.8	6,908.0	CODELL		0.00	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.4-T3N-R64W**

**Guttersen Pad Sec.4-T3N-R64W**

**Guttersen D03-33D**

**Guttersen D03-33D**

**Noble Guttersen D03-33D Plan #2 (06-01-10)**

## **Anticollision Report**

**02 June, 2010**





<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen D03-33D
<b>Project:</b>	SEC.4-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4729.0ft (Original Well Elev)
<b>Reference Site:</b>	Guttersen Pad Sec.4-T3N-R64W	<b>MD Reference:</b>	WELL @ 4729.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen D03-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D03-33D	<b>Database:</b>	EDM den0-adp01 Server Data
<b>Reference Design:</b>	Noble Guttersen D03-33D Plan #2 (06-01-10)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Noble Guttersen D03-33D Plan #2 (		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 2,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	6/1/2010		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,148.8	Noble Guttersen D03-33D Plan #2 (06-01-	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						
Guttersen Pad Sec.4-T3N-R64W						
Marie D4-16 (Exist.) - Wellbore #1 - Design #1	800.0	800.0	46.2	42.9	13.715 CC, ES	
Marie D4-16 (Exist.) - Wellbore #1 - Design #1	1,000.0	999.8	53.0	48.7	12.430 SF	

Offset Design Guttersen Pad Sec.4-T3N-R64W - Marie D4-16 (Exist.) - Wellbore #1 - Design #1													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-162.43	-44.1	-14.0	46.2					
100.0	100.0	100.0	100.0	0.1	0.1	-162.43	-44.1	-14.0	46.2	46.0	0.22	205.731		
200.0	200.0	200.0	200.0	0.3	0.3	-162.43	-44.1	-14.0	46.2	45.6	0.67	68.577		
300.0	300.0	300.0	300.0	0.6	0.6	-162.43	-44.1	-14.0	46.2	45.1	1.12	41.146		
400.0	400.0	400.0	400.0	0.8	0.8	-162.43	-44.1	-14.0	46.2	44.7	1.57	29.390		
500.0	500.0	500.0	500.0	1.0	1.0	-162.43	-44.1	-14.0	46.2	44.2	2.02	22.859		
600.0	600.0	600.0	600.0	1.2	1.2	-162.43	-44.1	-14.0	46.2	43.8	2.47	18.703		
700.0	700.0	700.0	700.0	1.5	1.5	-162.43	-44.1	-14.0	46.2	43.3	2.92	15.825		
800.0	800.0	800.0	800.0	1.7	1.7	-162.43	-44.1	-14.0	46.2	42.9	3.37	13.715 CC, ES		
900.0	900.0	900.0	900.0	1.9	1.9	165.36	-44.1	-14.0	47.9	44.1	3.82	12.549		
1,000.0	999.8	999.8	999.8	2.1	2.1	166.76	-44.1	-14.0	53.0	48.7	4.26	12.430 SF		
1,100.0	1,099.5	1,099.5	1,099.5	2.4	2.4	168.59	-44.1	-14.0	61.5	56.8	4.71	13.070		
1,200.0	1,198.7	1,198.7	1,198.7	2.6	2.6	170.43	-44.1	-14.0	73.5	68.4	5.15	14.284		
1,300.0	1,297.5	1,297.5	1,297.5	2.9	2.8	172.06	-44.1	-14.0	89.0	83.4	5.58	15.940		
1,400.0	1,395.6	1,395.6	1,395.6	3.2	3.0	173.41	-44.1	-14.0	107.9	101.9	6.01	17.944		
1,500.0	1,493.1	1,493.1	1,493.1	3.6	3.2	174.51	-44.1	-14.0	130.1	123.6	6.45	20.156		
1,600.0	1,590.4	1,590.4	1,590.4	4.0	3.5	175.33	-44.1	-14.0	152.9	146.0	6.91	22.121		
1,700.0	1,687.8	1,687.8	1,687.8	4.4	3.7	175.94	-44.1	-14.0	175.8	168.4	7.38	23.830		
1,800.0	1,785.1	1,785.1	1,785.1	4.8	3.9	176.41	-44.1	-14.0	198.6	190.8	7.84	25.327		
1,900.0	1,882.5	1,882.5	1,882.5	5.2	4.1	176.78	-44.1	-14.0	221.5	213.2	8.31	26.648		
2,000.0	1,979.8	1,979.8	1,979.8	5.7	4.3	177.08	-44.1	-14.0	244.4	235.6	8.79	27.821		
2,100.0	2,077.1	2,077.1	2,077.1	6.1	4.6	177.33	-44.1	-14.0	267.3	258.1	9.26	28.868		
2,200.0	2,174.5	2,174.5	2,174.5	6.6	4.8	177.54	-44.1	-14.0	290.2	280.5	9.74	29.808		
2,300.0	2,271.8	2,271.8	2,271.8	7.0	5.0	177.72	-44.1	-14.0	313.1	302.9	10.21	30.656		
2,400.0	2,369.1	2,369.1	2,369.1	7.5	5.2	177.88	-44.1	-14.0	336.0	325.3	10.69	31.425		



Company: NOBLE ENERGY INC WELD COUNTY CO  
Project: SEC.4-T3N-R64W  
Reference Site: Guttersen Pad Sec.4-T3N-R64W  
Site Error: 0.0ft  
Reference Well: Guttersen D03-33D  
Well Error: 0.0ft  
Reference Wellbore: Guttersen D03-33D  
Reference Design: Noble Guttersen D03-33D Plan #2 (06-01-10)

Local Co-ordinate Reference: Well Guttersen D03-33D  
TVD Reference: WELL @ 4729.0ft (Original Well Elev)  
MD Reference: WELL @ 4729.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature  
Output errors are at 2.00 sigma  
Database: EDM den0-adp01 Server Data  
Offset TVD Reference: Offset Datum

Offset Design Guttersen Pad Sec.4-T3N-R64W - Marie D4-16 (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 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	Warning	
2,500.0	2,466.5	2,466.5	2,466.5	7.9	5.4	178.01	-44.1	-14.0	358.9	347.8	11.17	32.124		
2,600.0	2,563.8	2,563.8	2,563.8	8.4	5.7	178.13	-44.1	-14.0	381.9	370.2	11.65	32.764		
2,700.0	2,661.2	2,661.2	2,661.2	8.9	5.9	178.24	-44.1	-14.0	404.8	392.6	12.14	33.350		
2,800.0	2,758.5	2,758.5	2,758.5	9.3	6.1	178.33	-44.1	-14.0	427.7	415.1	12.62	33.890		
2,900.0	2,855.8	2,855.8	2,855.8	9.8	6.3	178.42	-44.1	-14.0	450.6	437.5	13.10	34.388		
3,000.0	2,953.2	2,953.2	2,953.2	10.3	6.5	178.49	-44.1	-14.0	473.5	459.9	13.59	34.849		
3,100.0	3,050.5	3,050.5	3,050.5	10.8	6.7	178.56	-44.1	-14.0	496.4	482.4	14.07	35.277		
3,200.0	3,147.8	3,147.8	3,147.8	11.2	7.0	178.63	-44.1	-14.0	519.4	504.8	14.56	35.675		
3,300.0	3,245.2	3,245.2	3,245.2	11.7	7.2	178.69	-44.1	-14.0	542.3	527.2	15.04	36.047		
3,400.0	3,342.5	3,342.5	3,342.5	12.2	7.4	178.74	-44.1	-14.0	565.2	549.7	15.53	36.394		
3,500.0	3,439.8	3,439.8	3,439.8	12.7	7.6	178.79	-44.1	-14.0	588.1	572.1	16.02	36.719		
3,600.0	3,537.2	3,537.2	3,537.2	13.1	7.8	178.83	-44.1	-14.0	611.0	594.5	16.50	37.025		
3,700.0	3,634.5	3,634.5	3,634.5	13.6	8.1	178.88	-44.1	-14.0	634.0	617.0	16.99	37.312		
3,800.0	3,731.9	3,731.9	3,731.9	14.1	8.3	178.91	-44.1	-14.0	656.9	639.4	17.48	37.582		
3,900.0	3,829.2	3,829.2	3,829.2	14.6	8.5	178.95	-44.1	-14.0	679.8	661.8	17.97	37.838		
4,000.0	3,926.5	3,926.5	3,926.5	15.0	8.7	178.99	-44.1	-14.0	702.7	684.3	18.45	38.079		
4,100.0	4,023.9	4,023.9	4,023.9	15.5	8.9	179.02	-44.1	-14.0	725.6	706.7	18.94	38.307		
4,200.0	4,121.2	4,121.2	4,121.2	16.0	9.2	179.05	-44.1	-14.0	748.6	729.1	19.43	38.524		
4,300.0	4,218.5	4,218.5	4,218.5	16.5	9.4	179.08	-44.1	-14.0	771.5	751.6	19.92	38.729		
4,400.0	4,315.9	4,315.9	4,315.9	16.9	9.6	179.10	-44.1	-14.0	794.4	774.0	20.41	38.924		
4,500.0	4,413.4	4,413.4	4,413.4	17.4	9.8	179.13	-44.1	-14.0	816.5	795.5	20.93	39.007		
4,600.0	4,511.6	4,511.6	4,511.6	17.7	10.0	179.16	-44.1	-14.0	835.2	813.8	21.42	38.998		
4,700.0	4,610.4	4,610.4	4,610.4	18.0	10.3	179.18	-44.1	-14.0	850.5	828.7	21.87	38.884		
4,800.0	4,709.7	4,709.7	4,709.7	18.2	10.5	179.19	-44.1	-14.0	862.4	840.1	22.30	38.674		
4,900.0	4,809.4	4,809.4	4,809.4	18.5	10.7	179.20	-44.1	-14.0	870.8	848.1	22.69	38.373		
5,000.0	4,909.3	4,909.3	4,909.3	18.6	10.9	179.21	-44.1	-14.0	875.7	852.7	23.05	37.987		
5,100.0	5,009.2	5,009.2	5,009.2	18.7	11.1	-148.04	-44.1	-14.0	877.1	853.8	23.39	37.504		
5,200.0	5,109.2	5,109.2	5,109.2	18.9	11.4	-148.04	-44.1	-14.0	877.1	853.3	23.81	36.847		
5,300.0	5,209.2	5,209.2	5,209.2	19.0	11.6	-148.04	-44.1	-14.0	877.1	852.9	24.22	36.210		
5,400.0	5,309.2	5,309.2	5,309.2	19.1	11.8	-148.04	-44.1	-14.0	877.1	852.5	24.64	35.594		
5,500.0	5,409.2	5,409.2	5,409.2	19.3	12.0	-148.04	-44.1	-14.0	877.1	852.1	25.06	34.997		
5,600.0	5,509.2	5,509.2	5,509.2	19.4	12.3	-148.04	-44.1	-14.0	877.1	851.7	25.48	34.419		
5,700.0	5,609.2	5,609.2	5,609.2	19.5	12.5	-148.04	-44.1	-14.0	877.1	851.2	25.91	33.858		
5,800.0	5,709.2	5,709.2	5,709.2	19.7	12.7	-148.04	-44.1	-14.0	877.1	850.8	26.33	33.314		
5,900.0	5,809.2	5,809.2	5,809.2	19.8	12.9	-148.04	-44.1	-14.0	877.1	850.4	26.75	32.787		
6,000.0	5,909.2	5,909.2	5,909.2	19.9	13.2	-148.04	-44.1	-14.0	877.1	850.0	27.18	32.275		
6,100.0	6,009.2	6,009.2	6,009.2	20.1	13.4	-148.04	-44.1	-14.0	877.1	849.5	27.60	31.777		
6,200.0	6,109.2	6,109.2	6,109.2	20.2	13.6	-148.04	-44.1	-14.0	877.1	849.1	28.03	31.294		
6,300.0	6,209.2	6,209.2	6,209.2	20.4	13.8	-148.04	-44.1	-14.0	877.1	848.7	28.46	30.825		
6,400.0	6,309.2	6,309.2	6,309.2	20.5	14.1	-148.04	-44.1	-14.0	877.1	848.3	28.88	30.369		
6,500.0	6,409.2	6,409.2	6,409.2	20.7	14.3	-148.04	-44.1	-14.0	877.1	847.8	29.31	29.926		
6,600.0	6,509.2	6,509.2	6,509.2	20.8	14.5	-148.04	-44.1	-14.0	877.1	847.4	29.74	29.495		
6,700.0	6,609.2	6,609.2	6,609.2	20.9	14.7	-148.04	-44.1	-14.0	877.1	847.0	30.17	29.075		
6,800.0	6,709.2	6,709.2	6,709.2	21.1	15.0	-148.04	-44.1	-14.0	877.1	846.5	30.60	28.667		
6,900.0	6,809.2	6,809.2	6,809.2	21.3	15.2	-148.04	-44.1	-14.0	877.1	846.1	31.03	28.269		
7,000.0	6,909.2	6,909.2	6,909.2	21.4	15.4	-148.04	-44.1	-14.0	877.1	845.7	31.46	27.882		
7,100.0	7,009.2	7,009.2	7,009.2	21.6	15.6	-148.04	-44.1	-14.0	877.1	845.3	31.89	27.505		
7,126.6	7,035.8	7,035.8	7,035.8	21.6	15.7	-148.04	-44.1	-14.0	877.1	845.1	32.01	27.406		
7,148.8	7,058.0	7,045.0	7,045.0	21.6	15.7	-148.04	-44.1	-14.0	877.2	845.2	32.07	27.353		

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.4-T3N-R64W  
**Reference Site:** Gutttersen Pad Sec.4-T3N-R64W  
**Site Error:** 0.0ft  
**Reference Well:** Gutttersen D03-33D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Gutttersen D03-33D  
**Reference Design:** Noble Gutttersen D03-33D Plan #2 (06-01-10)

**Local Co-ordinate Reference:** Well Gutttersen D03-33D  
**TVD Reference:** WELL @ 4729.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4729.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM den0-adp01 Server Data  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4729.0ft (Original Well Elev) Coordinates are relative to: Gutttersen D03-33D

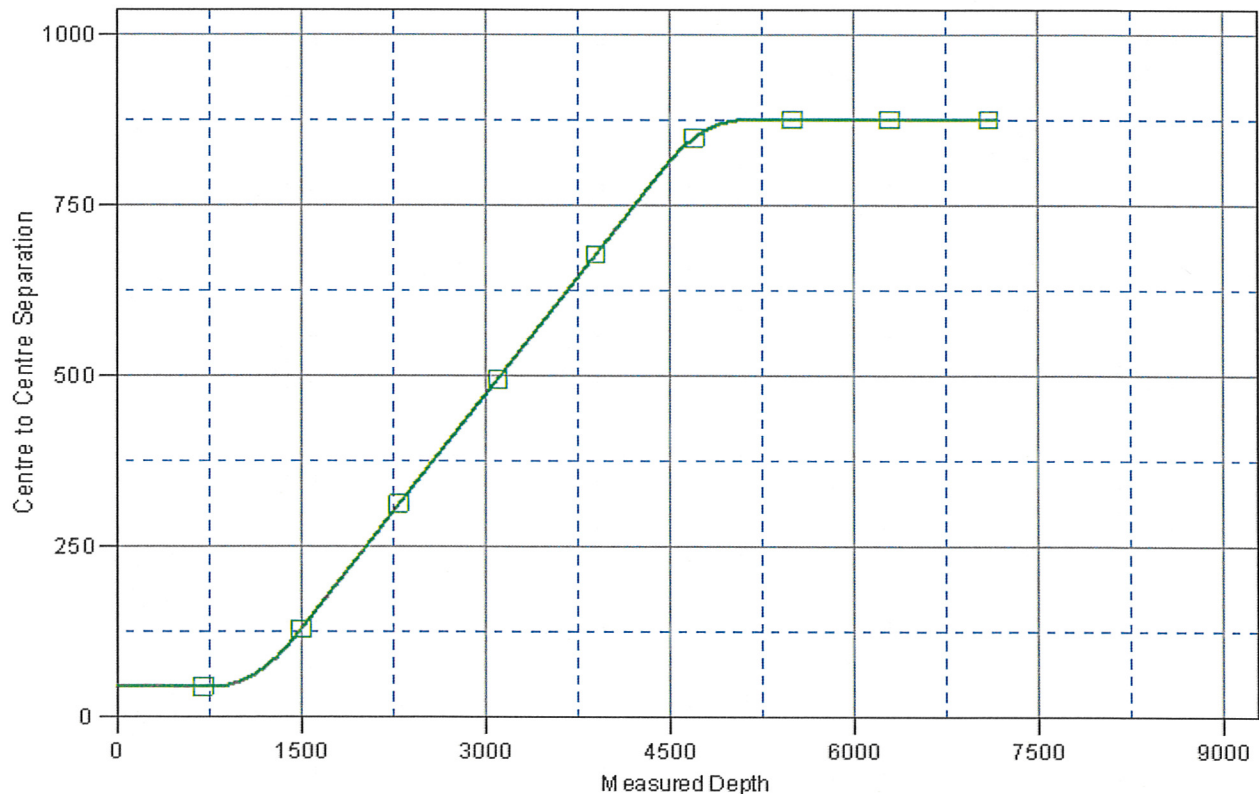
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W °

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°

## Ladder Plot



## LEGEND

Marie D4-16 (Exist), Wellbore #1, Design #1 \0

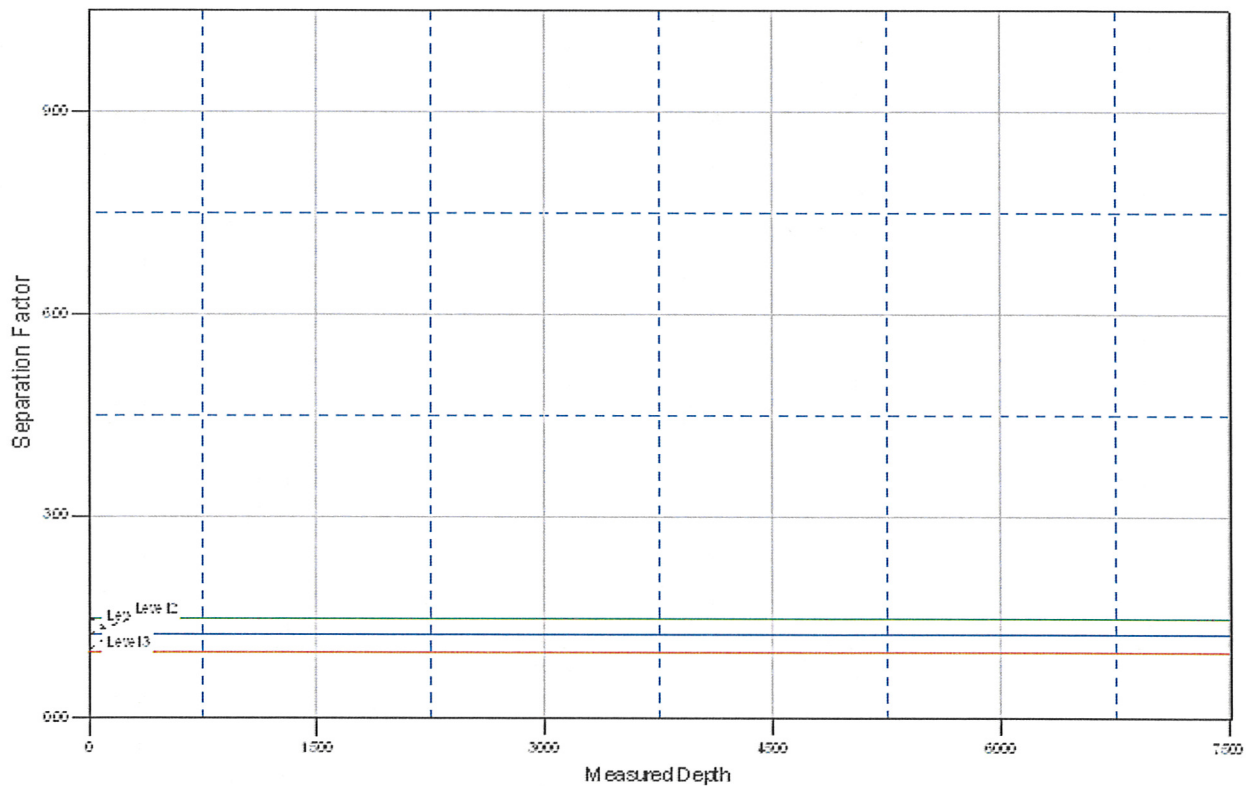


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**Database:** EDM den0-adp01 Server Data  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4729.0ft (Original Well Elev) Coordinates are relative to: Guttersen D03-33D  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.61°

## Separation Factor Plot



## LEGEND

Marie D4-16 (Exist), Wellbore #1, Design #1 V0