



### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SHL 2102'FNL, 165'FEL, SEC.15	1.0	0.0	0.0	39.616587	-108.146029	Point
BHL 936'FNL, 1313'FWL, SEC.14	9389.0	1164.4	1470.7	39.619783	-108.140808	Ellipse (Radii: L200.0 W100.0)

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1161.9	22.86	53.23	1161.8	89.8	120.1	3.00	53.23	149.9	
4	5663.7	22.86	53.23	5290.2	1136.5	1520.8	0.00	0.00	1897.8	
5	6425.6	0.00	0.00	6032.0	1226.3	1640.9	3.00	180.00	2047.7	
6	6749.9	3.24	250.00	6356.2	1223.1	1632.3	1.00	250.00	2039.0	
7	9787.6	3.24	250.00	9389.0	1164.4	1470.7	0.00	0.00	1875.8	BHL 936'FNL, 1313'FWL, SEC.14



## **Caerus Oil and Gas LLC**

**SEC.15-T5S-R96W**

**NPR H15 596 South Pad Sec.15-T5S-R96W**

**NPR 11D-14 596**

**Wellbore #1**

**Plan: Plan #1 (11-30-17)**

## **Standard Planning Report**

**18 December, 2017**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well NPR 11D-14 596
<b>Company:</b>	Caerus Oil and Gas LLC	<b>TVD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Project:</b>	SEC.15-T5S-R96W	<b>MD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Site:</b>	NPR H15 596 South Pad Sec.15-T5S-R96W	<b>North Reference:</b>	True
<b>Well:</b>	NPR 11D-14 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-30-17)		

<b>Project</b>	SEC.15-T5S-R96W, Garfield County, CO		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		Using Well Reference Point
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		Using geodetic scale factor

Site	NPR H15 596 South Pad Sec.15-T5S-R96W				
Site Position:		Northing:	14,399,246.79 usft	Latitude:	39.616700
From:	Lat/Long	Easting:	2,444,190.74 usft	Longitude:	-108.146093
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	1.82

Well	NPR 11D-14 596					
Well Position	+N/-S	-41.3 ft	Northing:	14,399,206.06 usft	Latitude:	39.616587
	+E/-W	17.8 ft	Easting:	2,444,209.89 usft	Longitude:	-108.146029
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	6,429.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	12/18/2017	9.63	65.85	51,521

<b>Design</b>	Plan #1 (11-30-17)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	51.63

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,161.9	22.86	53.23	1,141.8	89.8	120.1	3.00	3.00	0.00	53.23	
5,663.7	22.86	53.23	5,290.2	1,136.5	1,520.8	0.00	0.00	0.00	0.00	
6,425.6	0.00	0.00	6,032.0	1,226.3	1,640.9	3.00	-3.00	0.00	180.00	
6,749.9	3.24	250.00	6,356.2	1,223.1	1,632.3	1.00	1.00	-33.91	250.00	
9,787.6	3.24	250.00	9,389.0	1,164.4	1,470.7	0.00	0.00	0.00	0.00	BHL 936'FNL, 1313'F'

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well NPR 11D-14 596
<b>Company:</b>	Caerus Oil and Gas LLC	<b>TVD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Project:</b>	SEC.15-T5S-R96W	<b>MD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Site:</b>	NPR H15 596 South Pad Sec.15-T5S-R96W	<b>North Reference:</b>	True
<b>Well:</b>	NPR 11D-14 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-30-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 2102'FNL, 165'FEL, SEC.15</b>									
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	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
500.0	3.00	53.23	500.0	1.6	2.1	2.6	3.00	3.00	0.00
600.0	6.00	53.23	599.6	6.3	8.4	10.5	3.00	3.00	0.00
700.0	9.00	53.23	698.8	14.1	18.8	23.5	3.00	3.00	0.00
800.0	12.00	53.23	797.1	25.0	33.4	41.7	3.00	3.00	0.00
900.0	15.00	53.23	894.3	39.0	52.1	65.1	3.00	3.00	0.00
1,000.0	18.00	53.23	990.2	56.0	74.9	93.4	3.00	3.00	0.00
1,070.7	20.12	53.23	1,057.0	69.8	93.4	116.5	3.00	3.00	0.00
<b>WASATCH.NPC</b>									
1,100.0	21.00	53.23	1,084.4	75.9	101.6	126.8	3.00	3.00	0.00
1,161.9	22.86	53.23	1,141.8	89.8	120.1	149.9	3.00	3.00	0.00
1,200.0	22.86	53.23	1,177.0	98.6	132.0	164.7	0.00	0.00	0.00
1,300.0	22.86	53.23	1,269.1	121.9	163.1	203.5	0.00	0.00	0.00
1,400.0	22.86	53.23	1,361.3	145.1	194.2	242.4	0.00	0.00	0.00
1,500.0	22.86	53.23	1,453.4	168.4	225.3	281.2	0.00	0.00	0.00
1,600.0	22.86	53.23	1,545.6	191.6	256.4	320.0	0.00	0.00	0.00
1,700.0	22.86	53.23	1,637.7	214.9	287.5	358.8	0.00	0.00	0.00
1,800.0	22.86	53.23	1,729.9	238.1	318.7	397.7	0.00	0.00	0.00
1,900.0	22.86	53.23	1,822.0	261.4	349.8	436.5	0.00	0.00	0.00
2,000.0	22.86	53.23	1,914.1	284.6	380.9	475.3	0.00	0.00	0.00
2,100.0	22.86	53.23	2,006.3	307.9	412.0	514.1	0.00	0.00	0.00
2,200.0	22.86	53.23	2,098.4	331.1	443.1	553.0	0.00	0.00	0.00
2,300.0	22.86	53.23	2,190.6	354.4	474.2	591.8	0.00	0.00	0.00
2,400.0	22.86	53.23	2,282.7	377.6	505.3	630.6	0.00	0.00	0.00
2,500.0	22.86	53.23	2,374.9	400.9	536.5	669.4	0.00	0.00	0.00
2,600.0	22.86	53.23	2,467.0	424.2	567.6	708.3	0.00	0.00	0.00
2,635.8	22.86	53.23	2,500.0	432.5	578.7	722.2	0.00	0.00	0.00
<b>9 5/8"</b>									
2,700.0	22.86	53.23	2,559.2	447.4	598.7	747.1	0.00	0.00	0.00
2,800.0	22.86	53.23	2,651.3	470.7	629.8	785.9	0.00	0.00	0.00
2,900.0	22.86	53.23	2,743.5	493.9	660.9	824.8	0.00	0.00	0.00
3,000.0	22.86	53.23	2,835.6	517.2	692.0	863.6	0.00	0.00	0.00
3,100.0	22.86	53.23	2,927.8	540.4	723.1	902.4	0.00	0.00	0.00
3,200.0	22.86	53.23	3,019.9	563.7	754.2	941.2	0.00	0.00	0.00
3,300.0	22.86	53.23	3,112.1	586.9	785.4	980.1	0.00	0.00	0.00
3,400.0	22.86	53.23	3,204.2	610.2	816.5	1,018.9	0.00	0.00	0.00
3,500.0	22.86	53.23	3,296.4	633.4	847.6	1,057.7	0.00	0.00	0.00
3,600.0	22.86	53.23	3,388.5	656.7	878.7	1,096.5	0.00	0.00	0.00
3,674.3	22.86	53.23	3,457.0	673.9	901.8	1,125.4	0.00	0.00	0.00
<b>WASATCH_G.NPC</b>									
3,700.0	22.86	53.23	3,480.7	679.9	909.8	1,135.4	0.00	0.00	0.00
3,800.0	22.86	53.23	3,572.8	703.2	940.9	1,174.2	0.00	0.00	0.00
3,900.0	22.86	53.23	3,665.0	726.4	972.0	1,213.0	0.00	0.00	0.00
4,000.0	22.86	53.23	3,757.1	749.7	1,003.2	1,251.8	0.00	0.00	0.00
4,100.0	22.86	53.23	3,849.3	772.9	1,034.3	1,290.7	0.00	0.00	0.00
4,118.2	22.86	53.23	3,866.0	777.1	1,039.9	1,297.7	0.00	0.00	0.00
<b>FORT_UNION.NPC</b>									
4,200.0	22.86	53.23	3,941.4	796.2	1,065.4	1,329.5	0.00	0.00	0.00

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<b>Project:</b>	SEC.15-T5S-R96W	<b>MD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Site:</b>	NPR H15 596 South Pad Sec.15-T5S-R96W	<b>North Reference:</b>	True
<b>Well:</b>	NPR 11D-14 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-30-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.0	22.86	53.23	4,033.6	819.4	1,096.5	1,368.3	0.00	0.00	0.00
4,400.0	22.86	53.23	4,125.7	842.7	1,127.6	1,407.1	0.00	0.00	0.00
4,500.0	22.86	53.23	4,217.9	865.9	1,158.7	1,446.0	0.00	0.00	0.00
4,600.0	22.86	53.23	4,310.0	889.2	1,189.8	1,484.8	0.00	0.00	0.00
4,700.0	22.86	53.23	4,402.2	912.4	1,220.9	1,523.6	0.00	0.00	0.00
4,800.0	22.86	53.23	4,494.3	935.7	1,252.1	1,562.5	0.00	0.00	0.00
4,900.0	22.86	53.23	4,586.5	958.9	1,283.2	1,601.3	0.00	0.00	0.00
5,000.0	22.86	53.23	4,678.6	982.2	1,314.3	1,640.1	0.00	0.00	0.00
5,100.0	22.86	53.23	4,770.7	1,005.4	1,345.4	1,678.9	0.00	0.00	0.00
5,200.0	22.86	53.23	4,862.9	1,028.7	1,376.5	1,717.8	0.00	0.00	0.00
5,300.0	22.86	53.23	4,955.0	1,051.9	1,407.6	1,756.6	0.00	0.00	0.00
5,400.0	22.86	53.23	5,047.2	1,075.2	1,438.7	1,795.4	0.00	0.00	0.00
5,500.0	22.86	53.23	5,139.3	1,098.4	1,469.9	1,834.2	0.00	0.00	0.00
5,600.0	22.86	53.23	5,231.5	1,121.7	1,501.0	1,873.1	0.00	0.00	0.00
5,663.7	22.86	53.23	5,290.2	1,136.5	1,520.8	1,897.8	0.00	0.00	0.00
5,700.0	21.77	53.23	5,323.8	1,144.8	1,531.8	1,911.6	3.00	-3.00	0.00
5,800.0	18.77	53.23	5,417.6	1,165.5	1,559.6	1,946.2	3.00	-3.00	0.00
5,900.0	15.77	53.23	5,513.1	1,183.3	1,583.3	1,975.9	3.00	-3.00	0.00
6,000.0	12.77	53.23	5,610.0	1,198.0	1,603.1	2,000.5	3.00	-3.00	0.00
6,100.0	9.77	53.23	5,708.0	1,209.7	1,618.7	2,020.0	3.00	-3.00	0.00
6,200.0	6.77	53.23	5,807.0	1,218.3	1,630.2	2,034.4	3.00	-3.00	0.00
6,240.3	5.56	53.23	5,847.0	1,220.9	1,633.7	2,038.7	3.00	-3.00	0.00
<b>OHIO_CREEK.MBL</b>									
6,300.0	3.77	53.23	5,906.5	1,223.8	1,637.6	2,043.6	3.00	-3.00	0.00
6,400.0	0.77	53.23	6,006.4	1,226.2	1,640.8	2,047.5	3.00	-3.00	0.00
6,425.6	0.00	0.00	6,032.0	1,226.3	1,640.9	2,047.7	3.00	-3.00	0.00
6,475.6	0.50	250.00	6,082.0	1,226.2	1,640.7	2,047.5	1.00	1.00	0.00
<b>WILLIAMS_FORK.MBL</b>									
6,500.0	0.74	250.00	6,106.4	1,226.1	1,640.4	2,047.2	1.00	1.00	0.00
6,525.6	1.00	250.00	6,132.0	1,226.0	1,640.1	2,046.9	1.00	1.00	0.00
<b>TOP_GAS.MBL</b>									
6,600.0	1.74	250.00	6,206.4	1,225.4	1,638.4	2,045.2	1.00	1.00	0.00
6,700.0	2.74	250.00	6,306.3	1,224.0	1,634.7	2,041.5	1.00	1.00	0.00
6,749.9	3.24	250.00	6,356.2	1,223.1	1,632.3	2,039.0	1.00	1.00	0.00
6,800.0	3.24	250.00	6,406.2	1,222.2	1,629.6	2,036.3	0.00	0.00	0.00
6,900.0	3.24	250.00	6,506.0	1,220.2	1,624.3	2,030.9	0.00	0.00	0.00
7,000.0	3.24	250.00	6,605.9	1,218.3	1,619.0	2,025.5	0.00	0.00	0.00
7,100.0	3.24	250.00	6,705.7	1,216.4	1,613.7	2,020.2	0.00	0.00	0.00
7,200.0	3.24	250.00	6,805.6	1,214.4	1,608.3	2,014.8	0.00	0.00	0.00
7,300.0	3.24	250.00	6,905.4	1,212.5	1,603.0	2,009.4	0.00	0.00	0.00
7,400.0	3.24	250.00	7,005.2	1,210.6	1,597.7	2,004.1	0.00	0.00	0.00
7,500.0	3.24	250.00	7,105.1	1,208.6	1,592.4	1,998.7	0.00	0.00	0.00
7,600.0	3.24	250.00	7,204.9	1,206.7	1,587.1	1,993.3	0.00	0.00	0.00
7,700.0	3.24	250.00	7,304.7	1,204.7	1,581.8	1,988.0	0.00	0.00	0.00
7,800.0	3.24	250.00	7,404.6	1,202.8	1,576.4	1,982.6	0.00	0.00	0.00
7,900.0	3.24	250.00	7,504.4	1,200.9	1,571.1	1,977.2	0.00	0.00	0.00
8,000.0	3.24	250.00	7,604.3	1,198.9	1,565.8	1,971.8	0.00	0.00	0.00
8,100.0	3.24	250.00	7,704.1	1,197.0	1,560.5	1,966.5	0.00	0.00	0.00
8,200.0	3.24	250.00	7,803.9	1,195.1	1,555.2	1,961.1	0.00	0.00	0.00
8,300.0	3.24	250.00	7,903.8	1,193.1	1,549.8	1,955.7	0.00	0.00	0.00
8,400.0	3.24	250.00	8,003.6	1,191.2	1,544.5	1,950.4	0.00	0.00	0.00
8,500.0	3.24	250.00	8,103.5	1,189.3	1,539.2	1,945.0	0.00	0.00	0.00
8,600.0	3.24	250.00	8,203.3	1,187.3	1,533.9	1,939.6	0.00	0.00	0.00

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<b>Project:</b>	SEC.15-T5S-R96W	<b>MD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Site:</b>	NPR H15 596 South Pad Sec.15-T5S-R96W	<b>North Reference:</b>	True
<b>Well:</b>	NPR 11D-14 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-30-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,700.0	3.24	250.00	8,303.1	1,185.4	1,528.6	1,934.3	0.00	0.00	0.00
8,800.0	3.24	250.00	8,403.0	1,183.5	1,523.3	1,928.9	0.00	0.00	0.00
8,900.0	3.24	250.00	8,502.8	1,181.5	1,517.9	1,923.5	0.00	0.00	0.00
8,991.3	3.24	250.00	8,594.0	1,179.8	1,513.1	1,918.6	0.00	0.00	0.00
CAMEO.MBL									
9,000.0	3.24	250.00	8,602.7	1,179.6	1,512.6	1,918.1	0.00	0.00	0.00
9,100.0	3.24	250.00	8,702.5	1,177.7	1,507.3	1,912.8	0.00	0.00	0.00
9,200.0	3.24	250.00	8,802.3	1,175.7	1,502.0	1,907.4	0.00	0.00	0.00
9,300.0	3.24	250.00	8,902.2	1,173.8	1,496.7	1,902.0	0.00	0.00	0.00
9,400.0	3.24	250.00	9,002.0	1,171.9	1,491.4	1,896.7	0.00	0.00	0.00
9,500.0	3.24	250.00	9,101.9	1,169.9	1,486.0	1,891.3	0.00	0.00	0.00
9,600.0	3.24	250.00	9,201.7	1,168.0	1,480.7	1,885.9	0.00	0.00	0.00
9,612.3	3.24	250.00	9,214.0	1,167.7	1,480.1	1,885.3	0.00	0.00	0.00
ROLLINS.MBL									
9,700.0	3.24	250.00	9,301.5	1,166.0	1,475.4	1,880.6	0.00	0.00	0.00
9,787.6	3.24	250.00	9,389.0	1,164.4	1,470.7	1,875.8	0.00	0.00	0.00
TD.MBL - BHL 936'FNL, 1313'FWL, SEC.14									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 2102'FNL, 165'FEL	0.00	0.00	1.0	0.0	0.0	14,399,206.06	2,444,209.89	39.616587	-108.146029
- plan hits target center									
- Point									
BHL 936'FNL, 1313'FWL	0.00	0.00	9,389.0	1,164.4	1,470.7	14,400,416.97	2,445,643.37	39.619783	-108.140809
- plan hits target center									
- Ellipse (radii L200.0 W100.0 on 250.00 azi)									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,635.8	2,500.0	9 5/8"	9-5/8	12-1/4

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well NPR 11D-14 596
<b>Company:</b>	Caerus Oil and Gas LLC	<b>TVD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Project:</b>	SEC.15-T5S-R96W	<b>MD Reference:</b>	WELL @ 6453.0ft (Original Well Elev)
<b>Site:</b>	NPR H15 596 South Pad Sec.15-T5S-R96W	<b>North Reference:</b>	True
<b>Well:</b>	NPR 11D-14 596	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-30-17)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,070.7	1,057.0	WASATCH.NPC		0.00		
3,674.3	3,457.0	WASATCH_G.NPC		0.00		
4,118.2	3,866.0	FORT_UNION.NPC		0.00		
6,240.3	5,847.0	OHIO_CREEK.MBL		0.00		
6,475.6	6,082.0	WILLIAMS_FORK.MBL		0.00		
6,525.6	6,132.0	TOP_GAS.MBL		0.00		
8,991.3	8,594.0	CAMEO.MBL		0.00		
9,612.3	9,214.0	ROLLINS.MBL		0.00		
9,787.6	9,389.0	TD.MBL		0.00		