

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 31D-36-795
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 8714.0usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8714.0usft
Site:	S36-T7S-R95W (36B)	North Reference:	True
Well:	31D-36-795	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	Garfield County, CO (UTM 12N)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site	S36-T7S-R95W (36B)		
Site Position:		Northing:	14,321,539.90 usft
From:	Map	Easting:	2,503,997.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	39.398177
		Longitude:	-107.943374
		Grid Convergence:	1.94 °

Well	31D-36-795					
Well Position	+N/-S	0.0 usft	Northing:	14,321,501.50 usft	Latitude:	39.398072
	+E/-W	0.0 usft	Easting:	2,503,992.10 usft	Longitude:	-107.943399
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,684.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	12/17/2015	9.42	65.62	51,881

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	203.36

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
413.3	4.27	203.36	413.1	-7.3	-3.1	2.00	2.00	0.00	203.36	
7,509.8	4.27	203.36	7,489.9	-491.8	-212.4	0.00	0.00	0.00	0.00	
7,723.0	0.00	0.00	7,703.0	-499.1	-215.5	2.00	-2.00	0.00	180.00	
9,853.0	0.00	0.00	9,833.0	-499.1	-215.5	0.00	0.00	0.00	0.00	31D-36-795 PBHL

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Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8714.0usft
Site:	S36-T7S-R95W (36B)	North Reference:	True
Well:	31D-36-795	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	Start Build 2.00
300.0	2.00	203.36	300.0	-1.6	-0.7	1.7	2.00	2.00	
400.0	4.00	203.36	399.8	-6.4	-2.8	7.0	2.00	2.00	
413.3	4.27	203.36	413.1	-7.3	-3.1	7.9	2.00	2.00	Start 7096.5 hold at 413.3 MD
500.0	4.27	203.36	499.6	-13.2	-5.7	14.4	0.00	0.00	
600.0	4.27	203.36	599.3	-20.0	-8.7	21.8	0.00	0.00	
700.0	4.27	203.36	699.0	-26.9	-11.6	29.3	0.00	0.00	
800.0	4.27	203.36	798.7	-33.7	-14.5	36.7	0.00	0.00	
900.0	4.27	203.36	898.5	-40.5	-17.5	44.1	0.00	0.00	
1,000.0	4.27	203.36	998.2	-47.3	-20.4	51.6	0.00	0.00	
1,100.0	4.27	203.36	1,097.9	-54.2	-23.4	59.0	0.00	0.00	
1,200.0	4.27	203.36	1,197.6	-61.0	-26.3	66.4	0.00	0.00	
1,300.0	4.27	203.36	1,297.3	-67.8	-29.3	73.9	0.00	0.00	
1,400.0	4.27	203.36	1,397.1	-74.7	-32.2	81.3	0.00	0.00	
1,500.0	4.27	203.36	1,496.8	-81.5	-35.2	88.8	0.00	0.00	
1,600.0	4.27	203.36	1,596.5	-88.3	-38.1	96.2	0.00	0.00	
1,700.0	4.27	203.36	1,696.2	-95.1	-41.1	103.6	0.00	0.00	
1,800.0	4.27	203.36	1,796.0	-102.0	-44.0	111.1	0.00	0.00	
1,900.0	4.27	203.36	1,895.7	-108.8	-47.0	118.5	0.00	0.00	
2,000.0	4.27	203.36	1,995.4	-115.6	-49.9	125.9	0.00	0.00	
2,100.0	4.27	203.36	2,095.1	-122.4	-52.9	133.4	0.00	0.00	
2,200.0	4.27	203.36	2,194.9	-129.3	-55.8	140.8	0.00	0.00	
2,300.0	4.27	203.36	2,294.6	-136.1	-58.8	148.3	0.00	0.00	
2,400.0	4.27	203.36	2,394.3	-142.9	-61.7	155.7	0.00	0.00	
2,500.0	4.27	203.36	2,494.0	-149.8	-64.7	163.1	0.00	0.00	
2,600.0	4.27	203.36	2,593.7	-156.6	-67.6	170.6	0.00	0.00	
2,700.0	4.27	203.36	2,693.5	-163.4	-70.6	178.0	0.00	0.00	
2,800.0	4.27	203.36	2,793.2	-170.2	-73.5	185.4	0.00	0.00	
2,900.0	4.27	203.36	2,892.9	-177.1	-76.5	192.9	0.00	0.00	
3,000.0	4.27	203.36	2,992.6	-183.9	-79.4	200.3	0.00	0.00	
3,100.0	4.27	203.36	3,092.4	-190.7	-82.4	207.7	0.00	0.00	
3,200.0	4.27	203.36	3,192.1	-197.5	-85.3	215.2	0.00	0.00	
3,300.0	4.27	203.36	3,291.8	-204.4	-88.3	222.6	0.00	0.00	
3,400.0	4.27	203.36	3,391.5	-211.2	-91.2	230.1	0.00	0.00	
3,500.0	4.27	203.36	3,491.2	-218.0	-94.2	237.5	0.00	0.00	
3,600.0	4.27	203.36	3,591.0	-224.9	-97.1	244.9	0.00	0.00	
3,700.0	4.27	203.36	3,690.7	-231.7	-100.1	252.4	0.00	0.00	
3,800.0	4.27	203.36	3,790.4	-238.5	-103.0	259.8	0.00	0.00	
3,900.0	4.27	203.36	3,890.1	-245.3	-106.0	267.2	0.00	0.00	
4,000.0	4.27	203.36	3,989.9	-252.2	-108.9	274.7	0.00	0.00	
4,100.0	4.27	203.36	4,089.6	-259.0	-111.8	282.1	0.00	0.00	
4,200.0	4.27	203.36	4,189.3	-265.8	-114.8	289.6	0.00	0.00	
4,300.0	4.27	203.36	4,289.0	-272.7	-117.7	297.0	0.00	0.00	
4,400.0	4.27	203.36	4,388.8	-279.5	-120.7	304.4	0.00	0.00	
4,500.0	4.27	203.36	4,488.5	-286.3	-123.6	311.9	0.00	0.00	
4,600.0	4.27	203.36	4,588.2	-293.1	-126.6	319.3	0.00	0.00	
4,700.0	4.27	203.36	4,687.9	-300.0	-129.5	326.7	0.00	0.00	
4,800.0	4.27	203.36	4,787.6	-306.8	-132.5	334.2	0.00	0.00	
4,900.0	4.27	203.36	4,887.4	-313.6	-135.4	341.6	0.00	0.00	
5,000.0	4.27	203.36	4,987.1	-320.4	-138.4	349.0	0.00	0.00	

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Site:	S36-T7S-R95W (36B)	North Reference:	True
Well:	31D-36-795	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.0	4.27	203.36	5,086.8	-327.3	-141.3	356.5	0.00	0.00	
5,200.0	4.27	203.36	5,186.5	-334.1	-144.3	363.9	0.00	0.00	
5,300.0	4.27	203.36	5,286.3	-340.9	-147.2	371.4	0.00	0.00	
5,400.0	4.27	203.36	5,386.0	-347.8	-150.2	378.8	0.00	0.00	
5,500.0	4.27	203.36	5,485.7	-354.6	-153.1	386.2	0.00	0.00	
5,600.0	4.27	203.36	5,585.4	-361.4	-156.1	393.7	0.00	0.00	
5,700.0	4.27	203.36	5,685.2	-368.2	-159.0	401.1	0.00	0.00	
5,800.0	4.27	203.36	5,784.9	-375.1	-162.0	408.5	0.00	0.00	
5,900.0	4.27	203.36	5,884.6	-381.9	-164.9	416.0	0.00	0.00	
6,000.0	4.27	203.36	5,984.3	-388.7	-167.9	423.4	0.00	0.00	
6,100.0	4.27	203.36	6,084.0	-395.5	-170.8	430.9	0.00	0.00	
6,200.0	4.27	203.36	6,183.8	-402.4	-173.8	438.3	0.00	0.00	
6,300.0	4.27	203.36	6,283.5	-409.2	-176.7	445.7	0.00	0.00	
6,400.0	4.27	203.36	6,383.2	-416.0	-179.7	453.2	0.00	0.00	
6,500.0	4.27	203.36	6,482.9	-422.9	-182.6	460.6	0.00	0.00	
6,600.0	4.27	203.36	6,582.7	-429.7	-185.6	468.0	0.00	0.00	
6,700.0	4.27	203.36	6,682.4	-436.5	-188.5	475.5	0.00	0.00	
6,713.6	4.27	203.36	6,696.0	-437.4	-188.9	476.5	0.00	0.00	OHIO_CREEK
6,800.0	4.27	203.36	6,782.1	-443.3	-191.5	482.9	0.00	0.00	
6,900.0	4.27	203.36	6,881.8	-450.2	-194.4	490.4	0.00	0.00	
7,000.0	4.27	203.36	6,981.5	-457.0	-197.4	497.8	0.00	0.00	
7,100.0	4.27	203.36	7,081.3	-463.8	-200.3	505.2	0.00	0.00	
7,156.9	4.27	203.36	7,138.0	-467.7	-202.0	509.5	0.00	0.00	WILLIAMS_FORK
7,200.0	4.27	203.36	7,181.0	-470.6	-203.3	512.7	0.00	0.00	
7,300.0	4.27	203.36	7,280.7	-477.5	-206.2	520.1	0.00	0.00	
7,400.0	4.27	203.36	7,380.4	-484.3	-209.1	527.5	0.00	0.00	
7,500.0	4.27	203.36	7,480.2	-491.1	-212.1	535.0	0.00	0.00	
7,509.8	4.27	203.36	7,489.9	-491.8	-212.4	535.7	0.00	0.00	Start Drop -2.00
7,600.0	2.46	203.36	7,580.0	-496.7	-214.5	541.0	2.00	-2.00	
7,700.0	0.46	203.36	7,679.9	-499.0	-215.5	543.5	2.00	-2.00	
7,723.0	0.00	0.00	7,703.0	-499.1	-215.5	543.6	2.00	-2.00	Start 2130.0 hold at 7723.0 MD
7,800.0	0.00	0.00	7,779.9	-499.1	-215.5	543.6	0.00	0.00	
7,823.0	0.00	0.00	7,803.0	-499.1	-215.5	543.6	0.00	0.00	TOP_GAS
7,900.0	0.00	0.00	7,879.9	-499.1	-215.5	543.6	0.00	0.00	
8,000.0	0.00	0.00	7,979.9	-499.1	-215.5	543.6	0.00	0.00	
8,100.0	0.00	0.00	8,079.9	-499.1	-215.5	543.6	0.00	0.00	
8,200.0	0.00	0.00	8,179.9	-499.1	-215.5	543.6	0.00	0.00	
8,300.0	0.00	0.00	8,279.9	-499.1	-215.5	543.6	0.00	0.00	
8,400.0	0.00	0.00	8,379.9	-499.1	-215.5	543.6	0.00	0.00	
8,500.0	0.00	0.00	8,479.9	-499.1	-215.5	543.6	0.00	0.00	
8,600.0	0.00	0.00	8,579.9	-499.1	-215.5	543.6	0.00	0.00	
8,700.0	0.00	0.00	8,679.9	-499.1	-215.5	543.6	0.00	0.00	
8,800.0	0.00	0.00	8,779.9	-499.1	-215.5	543.6	0.00	0.00	
8,900.0	0.00	0.00	8,879.9	-499.1	-215.5	543.6	0.00	0.00	
9,000.0	0.00	0.00	8,979.9	-499.1	-215.5	543.6	0.00	0.00	
9,100.0	0.00	0.00	9,079.9	-499.1	-215.5	543.6	0.00	0.00	
9,200.0	0.00	0.00	9,179.9	-499.1	-215.5	543.6	0.00	0.00	
9,300.0	0.00	0.00	9,279.9	-499.1	-215.5	543.6	0.00	0.00	
9,400.0	0.00	0.00	9,379.9	-499.1	-215.5	543.6	0.00	0.00	
9,453.0	0.00	0.00	9,433.0	-499.1	-215.5	543.6	0.00	0.00	CAMEO
9,500.0	0.00	0.00	9,479.9	-499.1	-215.5	543.6	0.00	0.00	
9,600.0	0.00	0.00	9,579.9	-499.1	-215.5	543.6	0.00	0.00	

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Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8714.0usft
Site:	S36-T7S-R95W (36B)	North Reference:	True
Well:	31D-36-795	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,700.0	0.00	0.00	9,679.9	-499.1	-215.5	543.6	0.00	0.00	
9,703.0	0.00	0.00	9,683.0	-499.1	-215.5	543.6	0.00	0.00	ROLLINS
9,800.0	0.00	0.00	9,779.9	-499.1	-215.5	543.6	0.00	0.00	
9,853.0	0.00	0.00	9,833.0	-499.1	-215.5	543.6	0.00	0.00	TD at 9853.0 - TD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
31D-36-795 PBHL - hit/miss target - Shape	0.00	0.00	9,833.0	-499.1	-215.5	14,320,995.40	2,503,793.60	39.396702	-107.944161
- plan hits target center - Circle (radius 50.0)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,713.6	6,696.0	OHIO_CREEK				
7,156.9	7,138.0	WILLIAMS_FORK				
7,823.0	7,803.0	TOP_GAS				
9,453.0	9,433.0	CAMEO				
9,703.0	9,683.0	ROLLINS				
9,853.0	9,833.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
200.0	200.0	0.0	0.0	Start Build 2.00	
413.3	413.1	-7.3	-3.1	Start 7096.5 hold at 413.3 MD	
7,509.8	7,489.9	-491.8	-212.4	Start Drop -2.00	
7,723.0	7,703.0	-499.1	-215.5	Start 2130.0 hold at 7723.0 MD	
9,853.0	9,833.0	-499.1	-215.5	TD at 9853.0	