

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well 22D-36-795
Company: Caerus Oil & Gas	TVD Reference: KB @ 8902.0usft
Project: Garfield County, CO (UTM 12N)	MD Reference: KB @ 8902.0usft
Site: S36-T7S-R95W (36G)	North Reference: True
Well: 22D-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 (36G)		
Site Position:	Northing: 14,320,581.60 usft	Latitude: 39.395498
From: Map	Easting: 2,504,539.60 usft	Longitude: -107.941574
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16"	Grid Convergence: 1.94 °

Well 22D-36-795			
Well Position	+N/-S 0.0 usft	Northing: 14,320,642.30 usft	Latitude: 39.395664
	+E/-W 0.0 usft	Easting: 2,504,543.80 usft	Longitude: -107.941552
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 8,872.0 usft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	HDGM	12/28/2015	(°) 9.40	(°) 65.60	(nT) 51,873

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	251.47

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
466.7	5.00	265.00	466.5	-0.6	-7.2	3.00	3.00	0.00	265.00	
839.6	15.98	251.29	832.6	-18.6	-72.3	3.00	2.95	-3.68	-19.65	
6,764.0	15.98	251.29	6,528.0	-541.8	-1,617.4	0.00	0.00	0.00	0.00	
7,296.7	0.00	0.00	7,053.9	-565.4	-1,687.3	3.00	-3.00	0.00	180.00	
10,167.9	0.00	0.00	9,925.0	-565.4	-1,687.3	0.00	0.00	0.00	0.00	22D-36-795 PBHL

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Project:	Garfield County, CO (UTM 12N)	MD Reference:	KB @ 8902.0usft
Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22D-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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	Start Build 3.00
400.0	3.00	265.00	400.0	-0.2	-2.6	2.5	3.00	3.00	
466.7	5.00	265.00	466.5	-0.6	-7.2	7.1	3.00	3.00	Start DLS 3.00 TFO -19.65
500.0	5.95	261.75	499.6	-1.0	-10.4	10.2	3.00	2.85	
600.0	8.87	256.25	598.8	-3.6	-23.0	23.0	3.00	2.92	
700.0	11.83	253.47	697.2	-8.3	-40.3	40.9	3.00	2.96	
800.0	14.80	251.79	794.5	-15.2	-62.3	63.9	3.00	2.98	
839.6	15.98	251.29	832.6	-18.6	-72.3	74.4	3.00	2.98	Start 5924.4 hold at 839.6 MD
900.0	15.98	251.29	890.7	-23.9	-88.0	91.1	0.00	0.00	
1,000.0	15.98	251.29	986.8	-32.7	-114.1	118.6	0.00	0.00	
1,100.0	15.98	251.29	1,083.0	-41.6	-140.2	146.1	0.00	0.00	
1,200.0	15.98	251.29	1,179.1	-50.4	-166.3	173.7	0.00	0.00	
1,300.0	15.98	251.29	1,275.2	-59.2	-192.3	201.2	0.00	0.00	
1,400.0	15.98	251.29	1,371.4	-68.1	-218.4	228.7	0.00	0.00	
1,500.0	15.98	251.29	1,467.5	-76.9	-244.5	256.3	0.00	0.00	
1,600.0	15.98	251.29	1,563.6	-85.7	-270.6	283.8	0.00	0.00	
1,700.0	15.98	251.29	1,659.8	-94.6	-296.7	311.3	0.00	0.00	
1,800.0	15.98	251.29	1,755.9	-103.4	-322.8	338.9	0.00	0.00	
1,900.0	15.98	251.29	1,852.0	-112.2	-348.8	366.4	0.00	0.00	
2,000.0	15.98	251.29	1,948.2	-121.1	-374.9	393.9	0.00	0.00	
2,100.0	15.98	251.29	2,044.3	-129.9	-401.0	421.5	0.00	0.00	
2,200.0	15.98	251.29	2,140.4	-138.7	-427.1	449.0	0.00	0.00	
2,300.0	15.98	251.29	2,236.6	-147.5	-453.2	476.6	0.00	0.00	
2,400.0	15.98	251.29	2,332.7	-156.4	-479.2	504.1	0.00	0.00	
2,500.0	15.98	251.29	2,428.8	-165.2	-505.3	531.6	0.00	0.00	
2,600.0	15.98	251.29	2,525.0	-174.0	-531.4	559.2	0.00	0.00	
2,700.0	15.98	251.29	2,621.1	-182.9	-557.5	586.7	0.00	0.00	
2,800.0	15.98	251.29	2,717.3	-191.7	-583.6	614.2	0.00	0.00	
2,900.0	15.98	251.29	2,813.4	-200.5	-609.6	641.8	0.00	0.00	
3,000.0	15.98	251.29	2,909.5	-209.4	-635.7	669.3	0.00	0.00	
3,100.0	15.98	251.29	3,005.7	-218.2	-661.8	696.8	0.00	0.00	
3,200.0	15.98	251.29	3,101.8	-227.0	-687.9	724.4	0.00	0.00	
3,300.0	15.98	251.29	3,197.9	-235.9	-714.0	751.9	0.00	0.00	
3,400.0	15.98	251.29	3,294.1	-244.7	-740.0	779.4	0.00	0.00	
3,500.0	15.98	251.29	3,390.2	-253.5	-766.1	807.0	0.00	0.00	
3,600.0	15.98	251.29	3,486.3	-262.3	-792.2	834.5	0.00	0.00	
3,700.0	15.98	251.29	3,582.5	-271.2	-818.3	862.0	0.00	0.00	
3,800.0	15.98	251.29	3,678.6	-280.0	-844.4	889.6	0.00	0.00	
3,900.0	15.98	251.29	3,774.7	-288.8	-870.5	917.1	0.00	0.00	
4,000.0	15.98	251.29	3,870.9	-297.7	-896.5	944.7	0.00	0.00	
4,100.0	15.98	251.29	3,967.0	-306.5	-922.6	972.2	0.00	0.00	
4,200.0	15.98	251.29	4,063.1	-315.3	-948.7	999.7	0.00	0.00	
4,300.0	15.98	251.29	4,159.3	-324.2	-974.8	1,027.3	0.00	0.00	
4,400.0	15.98	251.29	4,255.4	-333.0	-1,000.9	1,054.8	0.00	0.00	
4,500.0	15.98	251.29	4,351.5	-341.8	-1,026.9	1,082.3	0.00	0.00	
4,600.0	15.98	251.29	4,447.7	-350.7	-1,053.0	1,109.9	0.00	0.00	
4,700.0	15.98	251.29	4,543.8	-359.5	-1,079.1	1,137.4	0.00	0.00	
4,800.0	15.98	251.29	4,639.9	-368.3	-1,105.2	1,164.9	0.00	0.00	
4,900.0	15.98	251.29	4,736.1	-377.1	-1,131.3	1,192.5	0.00	0.00	

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Site:	S36-T7S-R95W (36G)	North Reference:	True
Well:	22D-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
5,000.0	15.98	251.29	4,832.2	-386.0	-1,157.3	1,220.0	0.00	0.00	
5,100.0	15.98	251.29	4,928.3	-394.8	-1,183.4	1,247.5	0.00	0.00	
5,200.0	15.98	251.29	5,024.5	-403.6	-1,209.5	1,275.1	0.00	0.00	
5,300.0	15.98	251.29	5,120.6	-412.5	-1,235.6	1,302.6	0.00	0.00	
5,400.0	15.98	251.29	5,216.7	-421.3	-1,261.7	1,330.2	0.00	0.00	
5,500.0	15.98	251.29	5,312.9	-430.1	-1,287.7	1,357.7	0.00	0.00	
5,600.0	15.98	251.29	5,409.0	-439.0	-1,313.8	1,385.2	0.00	0.00	
5,700.0	15.98	251.29	5,505.1	-447.8	-1,339.9	1,412.8	0.00	0.00	
5,800.0	15.98	251.29	5,601.3	-456.6	-1,366.0	1,440.3	0.00	0.00	
5,900.0	15.98	251.29	5,697.4	-465.5	-1,392.1	1,467.8	0.00	0.00	
6,000.0	15.98	251.29	5,793.5	-474.3	-1,418.2	1,495.4	0.00	0.00	
6,100.0	15.98	251.29	5,889.7	-483.1	-1,444.2	1,522.9	0.00	0.00	
6,200.0	15.98	251.29	5,985.8	-492.0	-1,470.3	1,550.4	0.00	0.00	
6,300.0	15.98	251.29	6,081.9	-500.8	-1,496.4	1,578.0	0.00	0.00	
6,400.0	15.98	251.29	6,178.1	-509.6	-1,522.5	1,605.5	0.00	0.00	
6,500.0	15.98	251.29	6,274.2	-518.4	-1,548.6	1,633.0	0.00	0.00	
6,600.0	15.98	251.29	6,370.4	-527.3	-1,574.6	1,660.6	0.00	0.00	
6,700.0	15.98	251.29	6,466.5	-536.1	-1,600.7	1,688.1	0.00	0.00	
6,764.0	15.98	251.29	6,528.0	-541.8	-1,617.4	1,705.7	0.00	0.00	Start Drop -3.00
6,800.0	14.90	251.29	6,562.7	-544.8	-1,626.5	1,715.3	3.00	-3.00	
6,900.0	11.90	251.29	6,660.0	-552.3	-1,648.4	1,738.5	3.00	-3.00	
7,000.0	8.90	251.29	6,758.3	-558.1	-1,665.5	1,756.5	3.00	-3.00	
7,079.4	6.52	251.29	6,837.0	-561.5	-1,675.6	1,767.2	3.00	-3.00	OHIO_CREEK
7,100.0	5.90	251.29	6,857.5	-562.2	-1,677.7	1,769.4	3.00	-3.00	
7,200.0	2.90	251.29	6,957.2	-564.6	-1,685.0	1,777.1	3.00	-3.00	
7,296.7	0.00	0.00	7,053.9	-565.4	-1,687.3	1,779.6	3.00	-3.00	Start 2871.1 hold at 7296.7 MD
7,300.0	0.00	0.00	7,057.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,400.0	0.00	0.00	7,157.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,500.0	0.00	0.00	7,257.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,521.9	0.00	0.00	7,279.0	-565.4	-1,687.3	1,779.6	0.00	0.00	WILLIAMS_FORK
7,600.0	0.00	0.00	7,357.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,700.0	0.00	0.00	7,457.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,800.0	0.00	0.00	7,557.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
7,900.0	0.00	0.00	7,657.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,000.0	0.00	0.00	7,757.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,100.0	0.00	0.00	7,857.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,168.9	0.00	0.00	7,926.0	-565.4	-1,687.3	1,779.6	0.00	0.00	TOP_GAS
8,200.0	0.00	0.00	7,957.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,300.0	0.00	0.00	8,057.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,400.0	0.00	0.00	8,157.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,500.0	0.00	0.00	8,257.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,600.0	0.00	0.00	8,357.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,700.0	0.00	0.00	8,457.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,800.0	0.00	0.00	8,557.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
8,900.0	0.00	0.00	8,657.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,000.0	0.00	0.00	8,757.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,100.0	0.00	0.00	8,857.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,200.0	0.00	0.00	8,957.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,300.0	0.00	0.00	9,057.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,400.0	0.00	0.00	9,157.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,500.0	0.00	0.00	9,257.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,600.0	0.00	0.00	9,357.1	-565.4	-1,687.3	1,779.6	0.00	0.00	

Planning Report

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Site: S36-T7S-R95W (36G)	North Reference: True
Well: 22D-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	9,457.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,762.9	0.00	0.00	9,520.0	-565.4	-1,687.3	1,779.6	0.00	0.00	CAMEO
9,800.0	0.00	0.00	9,557.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
9,900.0	0.00	0.00	9,657.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
10,000.0	0.00	0.00	9,757.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
10,017.9	0.00	0.00	9,775.0	-565.4	-1,687.3	1,779.6	0.00	0.00	ROLLINS
10,100.0	0.00	0.00	9,857.1	-565.4	-1,687.3	1,779.6	0.00	0.00	
10,167.9	0.00	0.00	9,925.0	-565.4	-1,687.3	1,779.6	0.00	0.00	TD at 10167.9 - TD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
22D-36-795 PBHL - hit/miss target - Shape - plan hits target center - Circle (radius 50.0)	0.00	0.00	9,925.0	-565.4	-1,687.3	14,320,020.00	2,502,876.60	39.394112	-107.947519

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,079.4	6,837.0	OHIO_CREEK				
7,521.9	7,279.0	WILLIAMS_FORK				
8,168.9	7,926.0	TOP_GAS				
9,762.9	9,520.0	CAMEO				
10,017.9	9,775.0	ROLLINS				
10,167.9	9,925.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
300.0	300.0	0.0	0.0	Start Build 3.00	
466.7	466.5	-0.6	-7.2	Start DLS 3.00 TFO -19.65	
839.6	832.6	-18.6	-72.3	Start 5924.4 hold at 839.6 MD	
6,764.0	6,528.0	-541.8	-1,617.4	Start Drop -3.00	
7,296.7	7,053.9	-565.4	-1,687.3	Start 2871.1 hold at 7296.7 MD	
10,167.9	9,925.0	-565.4	-1,687.3	TD at 10167.9	