



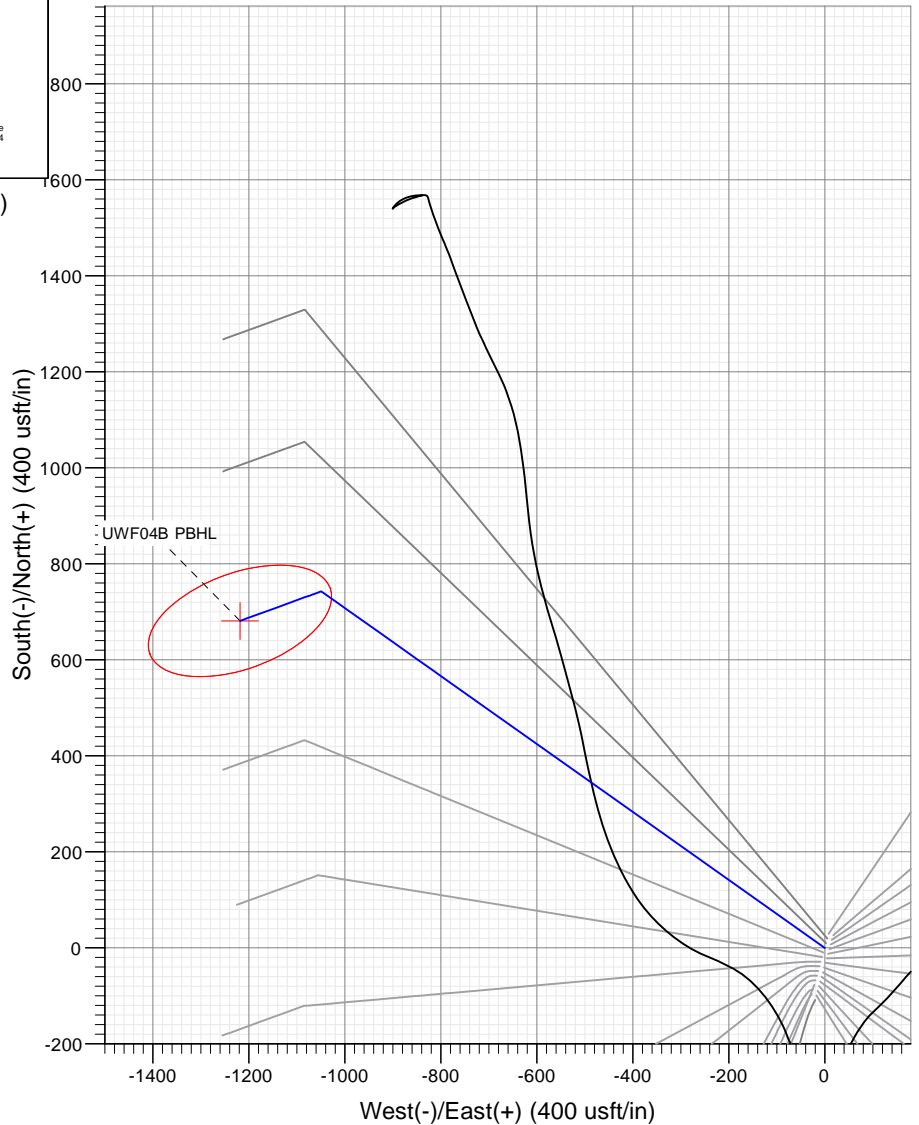
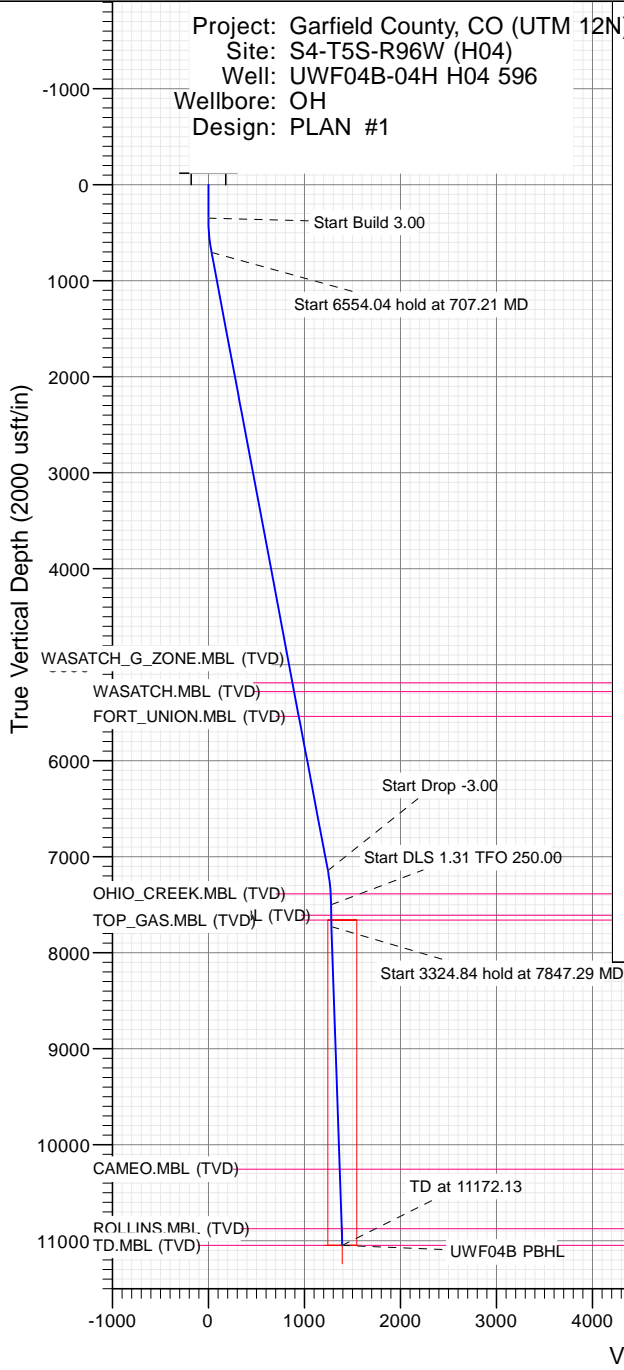
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	
3	707.21	10.72	305.30	705.13	19.25	-27.18	3.00	305.30	33.12	
4	7261.25	10.72	305.30	7144.87	723.52	-1021.78	0.00	0.00	1244.93	
5	7618.46	0.00	0.00	7500.00	742.77	-1048.96	3.00	180.00	1278.05	
6	7847.29	3.00	250.00	7728.73	740.72	-1054.59	1.31	250.00	1281.97	
7	11172.13	3.00	250.00	11049.00	681.13	-1218.29	0.00	0.00	1395.77	UWF04B PBHL

PLAN #1
UWF04B-04H H04 596
30 KS @ 8300.00ust
Ground Level @ 8270.00
NAD 1987 - Western US
Well UWF04B-04H H04 596, True North

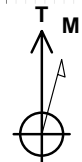
	Type	Target	Azimuth	Origin Type	N/S	E/W	From	TVD
	TD	No Target (Freehand)	299.21	Slot	0.00	0.00		0.00
Name			TVD	+N/-S	+E/-W		Latitude	Longitude
UWF04B PBHL			11049.00	681.13	-1218.29		39.648054	-108.168644

Project: Garfield County, CO (UTM 12N)
Site: S4-T5S-R96W (H04)
Well: UWF04B-04H H04 596
Wellbore: OH
Design: PLAN #1



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5189.00	5270.67	WASATCH_G_ZONE.MBL (TVD)
5280.00	5363.28	WASATCH.MBL (TVD)
5539.00	5626.88	FORT_UNION.MBL (TVD)
7387.00	7505.39	OHIO_CREEK.MBL (TVD)
7611.00	7729.47	WILLIAMS_FORK.MBL (TVD)
7661.00	7779.50	TOP_GAS.MBL (TVD)
10254.00	10376.04	CAMEO.MBL (TVD)
10874.00	10996.89	ROLLINS.MBL (TVD)
11049.00	11172.13	TD.MBL (TVD)



Azimuths to True North
Magnetic North: 9.72°

Magnetic Field
Strength: 51509.4nT
Dip Angle: 65.93°
Date: 8/31/2017
Model: HDGM

Vertical Section at 299.21° (2000 usft/in)

WELL DETAILS: UWF04B-04H H04 596

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14409822.30	2438717.20	39.646185	-108.164319

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well UWF04B-04H H04 596
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 8300.00usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8300.00usft
Site:	S4-T5S-R96W (H04)	North Reference:	True
Well:	UWF04B-04H H04 596	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	S4-T5S-R96W (H04)		
Site Position:		Northing:	14,409,713.20 usft
From:	Map	Easting:	2,438,700.39 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	39.645887
		Longitude:	-108.164391
		Grid Convergence:	1.81 °

Well	UWF04B-04H H04 596					
Well Position	+N/-S	0.00 usft	Northing:	14,409,822.30 usft	Latitude:	39.646185
	+E/-W	0.00 usft	Easting:	2,438,717.20 usft	Longitude:	-108.164319
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	8,270.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	8/31/2017	9.72	65.93	51,509.40000000

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	299.21

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
707.21	10.72	305.30	705.13	19.25	-27.18	3.00	3.00	0.00	305.30	
7,261.25	10.72	305.30	7,144.87	723.52	-1,021.78	0.00	0.00	0.00	0.00	
7,618.46	0.00	0.00	7,500.00	742.77	-1,048.96	3.00	-3.00	0.00	180.00	
7,847.29	3.00	250.00	7,728.73	740.72	-1,054.59	1.31	1.31	-48.07	250.00	
11,172.13	3.00	250.00	11,049.00	681.13	-1,218.29	0.00	0.00	0.00	0.00	UWF04B PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well UWF04B-04H H04 596
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 8300.00usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8300.00usft
Site:	S4-T5S-R96W (H04)	North Reference:	True
Well:	UWF04B-04H H04 596	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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	
400.00	1.50	305.30	399.99	0.38	-0.53	0.65	3.00	3.00	
500.00	4.50	305.30	499.85	3.40	-4.80	5.85	3.00	3.00	
600.00	7.50	305.30	599.29	9.44	-13.33	16.25	3.00	3.00	
700.00	10.50	305.30	698.04	18.48	-26.10	31.80	3.00	3.00	
707.21	10.72	305.30	705.13	19.25	-27.18	33.12	3.00	3.00	
800.00	10.72	305.30	796.30	29.22	-41.26	50.28	0.00	0.00	
900.00	10.72	305.30	894.56	39.96	-56.44	68.77	0.00	0.00	
1,000.00	10.72	305.30	992.81	50.71	-71.61	87.26	0.00	0.00	
1,100.00	10.72	305.30	1,091.07	61.46	-86.79	105.74	0.00	0.00	
1,200.00	10.72	305.30	1,189.33	72.20	-101.97	124.23	0.00	0.00	
1,300.00	10.72	305.30	1,287.58	82.95	-117.14	142.72	0.00	0.00	
1,400.00	10.72	305.30	1,385.84	93.69	-132.32	161.21	0.00	0.00	
1,500.00	10.72	305.30	1,484.09	104.44	-147.49	179.70	0.00	0.00	
1,600.00	10.72	305.30	1,582.35	115.18	-162.67	198.19	0.00	0.00	
1,700.00	10.72	305.30	1,680.61	125.93	-177.84	216.68	0.00	0.00	
1,800.00	10.72	305.30	1,778.86	136.68	-193.02	235.17	0.00	0.00	
1,900.00	10.72	305.30	1,877.12	147.42	-208.19	253.66	0.00	0.00	
2,000.00	10.72	305.30	1,975.37	158.17	-223.37	272.15	0.00	0.00	
2,100.00	10.72	305.30	2,073.63	168.91	-238.54	290.64	0.00	0.00	
2,200.00	10.72	305.30	2,171.89	179.66	-253.72	309.13	0.00	0.00	
2,300.00	10.72	305.30	2,270.14	190.40	-268.89	327.62	0.00	0.00	
2,400.00	10.72	305.30	2,368.40	201.15	-284.07	346.11	0.00	0.00	
2,500.00	10.72	305.30	2,466.65	211.90	-299.24	364.60	0.00	0.00	
2,600.00	10.72	305.30	2,564.91	222.64	-314.42	383.09	0.00	0.00	
2,700.00	10.72	305.30	2,663.17	233.39	-329.59	401.58	0.00	0.00	
2,800.00	10.72	305.30	2,761.42	244.13	-344.77	420.07	0.00	0.00	
2,900.00	10.72	305.30	2,859.68	254.88	-359.95	438.56	0.00	0.00	
3,000.00	10.72	305.30	2,957.93	265.62	-375.12	457.05	0.00	0.00	
3,100.00	10.72	305.30	3,056.19	276.37	-390.30	475.53	0.00	0.00	
3,200.00	10.72	305.30	3,154.45	287.11	-405.47	494.02	0.00	0.00	
3,300.00	10.72	305.30	3,252.70	297.86	-420.65	512.51	0.00	0.00	
3,400.00	10.72	305.30	3,350.96	308.61	-435.82	531.00	0.00	0.00	
3,500.00	10.72	305.30	3,449.21	319.35	-451.00	549.49	0.00	0.00	
3,600.00	10.72	305.30	3,547.47	330.10	-466.17	567.98	0.00	0.00	
3,700.00	10.72	305.30	3,645.73	340.84	-481.35	586.47	0.00	0.00	
3,800.00	10.72	305.30	3,743.98	351.59	-496.52	604.96	0.00	0.00	
3,900.00	10.72	305.30	3,842.24	362.33	-511.70	623.45	0.00	0.00	
4,000.00	10.72	305.30	3,940.49	373.08	-526.87	641.94	0.00	0.00	
4,100.00	10.72	305.30	4,038.75	383.83	-542.05	660.43	0.00	0.00	
4,200.00	10.72	305.30	4,137.01	394.57	-557.22	678.92	0.00	0.00	
4,300.00	10.72	305.30	4,235.26	405.32	-572.40	697.41	0.00	0.00	
4,400.00	10.72	305.30	4,333.52	416.06	-587.57	715.90	0.00	0.00	
4,500.00	10.72	305.30	4,431.77	426.81	-602.75	734.39	0.00	0.00	
4,600.00	10.72	305.30	4,530.03	437.55	-617.92	752.88	0.00	0.00	
4,700.00	10.72	305.30	4,628.29	448.30	-633.10	771.37	0.00	0.00	
4,800.00	10.72	305.30	4,726.54	459.04	-648.28	789.86	0.00	0.00	
4,900.00	10.72	305.30	4,824.80	469.79	-663.45	808.35	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well UWF04B-04H H04 596
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 8300.00usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8300.00usft
Site:	S4-T5S-R96W (H04)	North Reference:	True
Well:	UWF04B-04H H04 596	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
5,000.00	10.72	305.30	4,923.05	480.54	-678.63	826.84	0.00	0.00	
5,100.00	10.72	305.30	5,021.31	491.28	-693.80	845.32	0.00	0.00	
5,200.00	10.72	305.30	5,119.57	502.03	-708.98	863.81	0.00	0.00	
5,270.67	10.72	305.30	5,189.00	509.62	-719.70	876.88	0.00	0.00	WASATCH_G_ZONE.MBL (TVD)
5,300.00	10.72	305.30	5,217.82	512.77	-724.15	882.30	0.00	0.00	
5,363.28	10.72	305.30	5,280.00	519.57	-733.75	894.00	0.00	0.00	WASATCH.MBL (TVD)
5,400.00	10.72	305.30	5,316.08	523.52	-739.33	900.79	0.00	0.00	
5,500.00	10.72	305.30	5,414.33	534.26	-754.50	919.28	0.00	0.00	
5,600.00	10.72	305.30	5,512.59	545.01	-769.68	937.77	0.00	0.00	
5,626.88	10.72	305.30	5,539.00	547.90	-773.76	942.74	0.00	0.00	FORT_UNION.MBL (TVD)
5,700.00	10.72	305.30	5,610.85	555.76	-784.85	956.26	0.00	0.00	
5,800.00	10.72	305.30	5,709.10	566.50	-800.03	974.75	0.00	0.00	
5,900.00	10.72	305.30	5,807.36	577.25	-815.20	993.24	0.00	0.00	
6,000.00	10.72	305.30	5,905.61	587.99	-830.38	1,011.73	0.00	0.00	
6,100.00	10.72	305.30	6,003.87	598.74	-845.55	1,030.22	0.00	0.00	
6,200.00	10.72	305.30	6,102.13	609.48	-860.73	1,048.71	0.00	0.00	
6,300.00	10.72	305.30	6,200.38	620.23	-875.90	1,067.20	0.00	0.00	
6,400.00	10.72	305.30	6,298.64	630.97	-891.08	1,085.69	0.00	0.00	
6,500.00	10.72	305.30	6,396.89	641.72	-906.26	1,104.18	0.00	0.00	
6,600.00	10.72	305.30	6,495.15	652.47	-921.43	1,122.67	0.00	0.00	
6,700.00	10.72	305.30	6,593.41	663.21	-936.61	1,141.16	0.00	0.00	
6,800.00	10.72	305.30	6,691.66	673.96	-951.78	1,159.65	0.00	0.00	
6,900.00	10.72	305.30	6,789.92	684.70	-966.96	1,178.14	0.00	0.00	
7,000.00	10.72	305.30	6,888.18	695.45	-982.13	1,196.63	0.00	0.00	
7,100.00	10.72	305.30	6,986.43	706.19	-997.31	1,215.11	0.00	0.00	
7,200.00	10.72	305.30	7,084.69	716.94	-1,012.48	1,233.60	0.00	0.00	
7,261.25	10.72	305.30	7,144.87	723.52	-1,021.78	1,244.93	0.00	0.00	
7,300.00	9.55	305.30	7,183.01	727.46	-1,027.34	1,251.71	3.00	-3.00	
7,400.00	6.55	305.30	7,282.02	735.56	-1,038.77	1,265.64	3.00	-3.00	
7,500.00	3.55	305.30	7,381.62	740.65	-1,045.96	1,274.40	3.00	-3.00	
7,505.39	3.39	305.30	7,387.00	740.84	-1,046.23	1,274.72	3.00	-3.00	OHIO_CREEK.MBL (TVD)
7,600.00	0.55	305.30	7,481.54	742.72	-1,048.89	1,277.96	3.00	-3.00	
7,618.46	0.00	0.00	7,500.00	742.77	-1,048.96	1,278.05	3.00	-3.00	
7,700.00	1.07	250.00	7,581.54	742.51	-1,049.68	1,278.55	1.31	1.31	
7,729.47	1.46	250.00	7,611.00	742.29	-1,050.29	1,278.97	1.31	1.31	WILLIAMS_FORK.MBL (TVD)
7,779.50	2.11	250.00	7,661.00	741.75	-1,051.75	1,279.99	1.31	1.31	TOP_GAS.MBL (TVD)
7,800.00	2.38	250.00	7,681.49	741.48	-1,052.51	1,280.51	1.31	1.31	
7,847.29	3.00	250.00	7,728.73	740.72	-1,054.59	1,281.97	1.31	1.31	
7,900.00	3.00	250.00	7,781.36	739.77	-1,057.19	1,283.77	0.00	0.00	
8,000.00	3.00	250.00	7,881.23	737.98	-1,062.11	1,287.19	0.00	0.00	
8,100.00	3.00	250.00	7,981.09	736.19	-1,067.04	1,290.62	0.00	0.00	
8,200.00	3.00	250.00	8,080.95	734.40	-1,071.96	1,294.04	0.00	0.00	
8,300.00	3.00	250.00	8,180.81	732.60	-1,076.88	1,297.46	0.00	0.00	
8,400.00	3.00	250.00	8,280.68	730.81	-1,081.81	1,300.88	0.00	0.00	
8,500.00	3.00	250.00	8,380.54	729.02	-1,086.73	1,304.31	0.00	0.00	
8,600.00	3.00	250.00	8,480.40	727.23	-1,091.65	1,307.73	0.00	0.00	
8,700.00	3.00	250.00	8,580.26	725.44	-1,096.58	1,311.15	0.00	0.00	
8,800.00	3.00	250.00	8,680.13	723.64	-1,101.50	1,314.57	0.00	0.00	
8,900.00	3.00	250.00	8,779.99	721.85	-1,106.42	1,318.00	0.00	0.00	
9,000.00	3.00	250.00	8,879.85	720.06	-1,111.35	1,321.42	0.00	0.00	
9,100.00	3.00	250.00	8,979.71	718.27	-1,116.27	1,324.84	0.00	0.00	
9,200.00	3.00	250.00	9,079.58	716.47	-1,121.19	1,328.27	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well UWF04B-04H H04 596
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 8300.00usft
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 8300.00usft
Site:	S4-T5S-R96W (H04)	North Reference:	True
Well:	UWF04B-04H H04 596	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
9,300.00	3.00	250.00	9,179.44	714.68	-1,126.12	1,331.69	0.00	0.00	
9,400.00	3.00	250.00	9,279.30	712.89	-1,131.04	1,335.11	0.00	0.00	
9,500.00	3.00	250.00	9,379.16	711.10	-1,135.96	1,338.53	0.00	0.00	
9,600.00	3.00	250.00	9,479.03	709.30	-1,140.89	1,341.96	0.00	0.00	
9,700.00	3.00	250.00	9,578.89	707.51	-1,145.81	1,345.38	0.00	0.00	
9,800.00	3.00	250.00	9,678.75	705.72	-1,150.73	1,348.80	0.00	0.00	
9,900.00	3.00	250.00	9,778.62	703.93	-1,155.66	1,352.23	0.00	0.00	
10,000.00	3.00	250.00	9,878.48	702.13	-1,160.58	1,355.65	0.00	0.00	
10,100.00	3.00	250.00	9,978.34	700.34	-1,165.51	1,359.07	0.00	0.00	
10,200.00	3.00	250.00	10,078.20	698.55	-1,170.43	1,362.49	0.00	0.00	
10,300.00	3.00	250.00	10,178.07	696.76	-1,175.35	1,365.92	0.00	0.00	
10,376.04	3.00	250.00	10,254.00	695.39	-1,179.10	1,368.52	0.00	0.00	CAMEO.MBL (TVD)
10,400.00	3.00	250.00	10,277.93	694.97	-1,180.28	1,369.34	0.00	0.00	
10,500.00	3.00	250.00	10,377.79	693.17	-1,185.20	1,372.76	0.00	0.00	
10,600.00	3.00	250.00	10,477.65	691.38	-1,190.12	1,376.18	0.00	0.00	
10,700.00	3.00	250.00	10,577.52	689.59	-1,195.05	1,379.61	0.00	0.00	
10,800.00	3.00	250.00	10,677.38	687.80	-1,199.97	1,383.03	0.00	0.00	
10,900.00	3.00	250.00	10,777.24	686.00	-1,204.89	1,386.45	0.00	0.00	
10,996.89	3.00	250.00	10,874.00	684.27	-1,209.66	1,389.77	0.00	0.00	ROLLINS.MBL (TVD)
11,000.00	3.00	250.00	10,877.10	684.21	-1,209.82	1,389.88	0.00	0.00	
11,100.00	3.00	250.00	10,976.97	682.42	-1,214.74	1,393.30	0.00	0.00	
11,172.13	3.00	250.00	11,049.00	681.13	-1,218.29	1,395.77	0.00	0.00	TD.MBL (TVD)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
UWF04B PBHL	0.00	0.00	11,049.00	681.13	-1,218.29	14,410,464.60	2,437,478.00	39.648054	-108.168644
- plan hits target center									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,270.67	5,189.00	WASATCH_G_ZONE.MBL (TVD)			
5,363.28	5,280.00	WASATCH.MBL (TVD)			
5,626.88	5,539.00	FORT_UNION.MBL (TVD)			
7,505.39	7,387.00	OHIO_CREEK.MBL (TVD)			
7,729.47	7,611.00	WILLIAMS_FORK.MBL (TVD)			
7,779.50	7,661.00	TOP_GAS.MBL (TVD)			
10,376.04	10,254.00	CAMEO.MBL (TVD)			
10,996.89	10,874.00	ROLLINS.MBL (TVD)			
11,172.13	11,049.00	TD.MBL (TVD)			