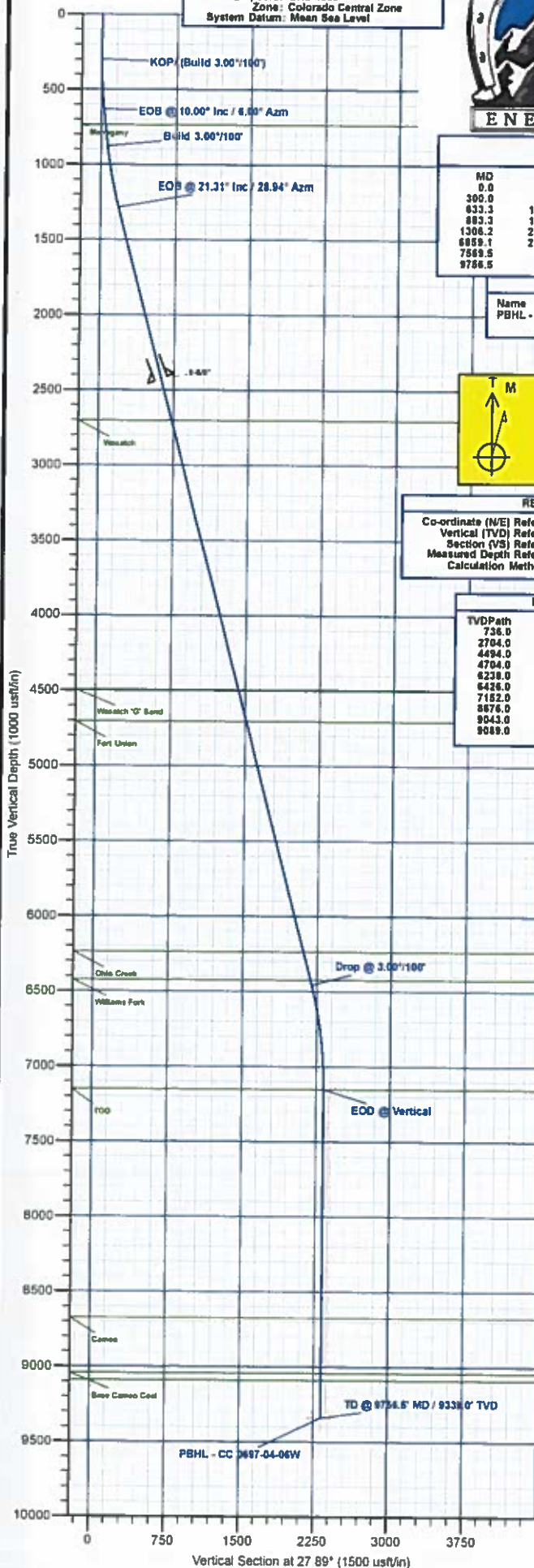


**PROJECT DETAILS: Garfield County, CO**  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Central Zone  
 System Datum: Mean Sea Level



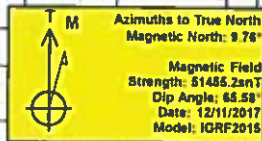
**Project: Garfield County, CO**  
 Site: CC 604-12-13 Pad  
 Well: CC 0697-04-06W  
 Wellbore: A-8  
 Design: Design #2  
 Latitude: 39.553314  
 Longitude: -108.233344  
 Ground Level: 8529.0  
 WELL @ 8559.0ustf (H&P #522)



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	KOP (Build 3.00°/100')
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	EOB @ 10.00° Inc / 6.00° Azm
633.3	10.00	6.00	631.6	28.9	3.0	3.00	6.00	26.9	Build 3.00°/100'
683.3	10.00	6.00	677.8	72.0	7.6	0.00	0.00	67.2	EOB @ 21.31° Inc / 28.94° Azm
1306.2	21.31	28.94	1284.7	174.2	48.8	0.00	0.00	178.6	Drop @ 3.00°/100'
6859.1	21.31	28.94	6487.9	1942.3	1025.4	0.00	0.00	2186.3	EOB @ Vertical
7569.5	0.00	0.00	7152.0	2056.6	1088.6	3.00	180.00	2328.9	TD @ 9756.5' MD / 9339.0' TVD
9756.5	0.00	0.00	9339.0	2056.6	1088.6	0.00	0.00	2328.9	

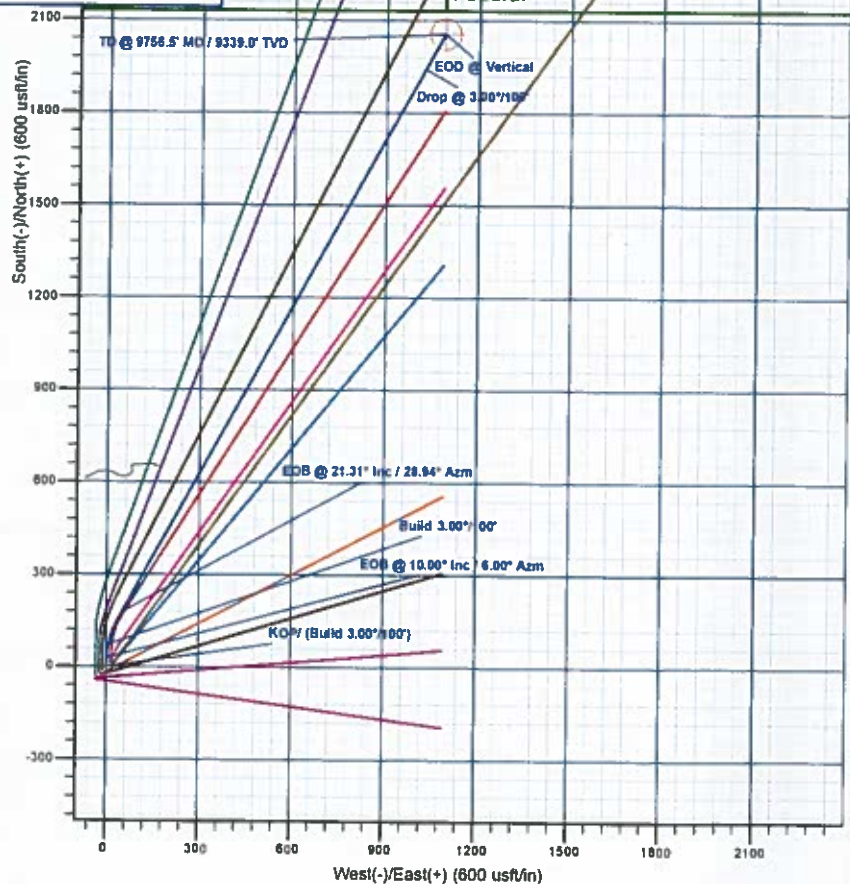
DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL - CC 0697-04-06W	9339.0	2056.6	1088.6	1640039.65	2230543.41	39.558960	-108.234493

WELL DETAILS: CC 0697-04-06W					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1638016.75	2229393.43	39.553314	-108.233344



**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference: Well CC 0697-04-06W, True North  
 Vertical (TVD) Reference: WELL @ 8559.0ustf (H&P #522)  
 Section (VS) Reference: Plot - (0.00, 0.00)  
 Measured Depth Reference: WELL @ 8559.0ustf (H&P #522)  
 Calculation Method: Minimum Curvature

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
736.0	739.3	Mahogany
2704.0	2829.7	Wasatch
4494.0	4751.1	Wasatch 'G' Sand
4704.0	4976.5	Fort Union
6238.0	6623.1	Ohio Creek
6426.0	6824.9	Williams Fork
7152.0	7569.5	TOG
8676.0	9093.5	Cameo
9043.0	9460.5	Base Cameo Coal
9509.0	9506.5	Rollings



**Plan: Design #2 (CC 0697-04-06W/A-8)**  
 Created By: Will Jircik Date: 15:11, June 23 2018



# **Laramie Energy, LLC**

**Garfield County, CO**

**CC 604-12-13 Pad**

**CC 0697-04-06W**

**A-8**

**Plan: Design #2**

## **QES Well Planning Report**

**23 June, 2018**





## Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC 0697-04-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	WELL @ 8559.0usft (H&P #522)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	WELL @ 8559.0usft (H&P #522)
<b>Site:</b>	CC 604-12-13 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 0697-04-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A-8		
<b>Design:</b>	Design #2		

<b>Project</b>	Garfield County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	CC 604-12-13 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,638,031.56 usft	<b>Latitude:</b> 39.553356
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,229,410.52 usft	<b>Longitude:</b> -108.233285
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> -1.72 °

<b>Well</b>	CC 0697-04-06W			
<b>Well Position</b>	<b>+N/-S</b>	<b>-15.3 usft</b>	<b>Northing:</b>	1,638,016.75 usft
	<b>+E/-W</b>	<b>-16.6 usft</b>	<b>Easting:</b>	2,229,393.43 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 8,529.0 usft

<b>Wellbore</b>	A-8				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	12/11/2017	9.76	65.58	51,455.23700713

<b>Design</b>	Design #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	27.89

<b>Plan Sections</b>										
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	
633.3	10.00	6.00	631.6	28.9	3.0	3.00	3.00	0.00	6.00	
883.3	10.00	6.00	877.8	72.0	7.6	0.00	0.00	0.00	0.00	
1,306.2	21.31	28.94	1,284.7	176.2	48.8	3.00	2.67	5.42	40.17	
6,859.1	21.31	28.94	6,457.9	1,942.3	1,025.4	0.00	0.00	0.00	0.00	
7,589.5	0.00	0.00	7,152.0	2,056.6	1,088.6	3.00	-3.00	0.00	180.00	
9,756.5	0.00	0.00	9,339.0	2,056.6	1,088.6	0.00	0.00	0.00	0.00	PBHL - CC 0697-04-C





## Well Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well CC 0697-04-06W
Company:	Laramie Energy, LLC	TVD Reference:	WELL @ 8559.0usft (H&P #522)
Project:	Garfield County, CO	MD Reference:	WELL @ 8559.0usft (H&P #522)
Site:	CC 604-12-13 Pad	North Reference:	True
Well:	CC 0697-04-06W	Survey Calculation Method:	Minimum Curvature
Wellbore:	A-8		
Design:	Design #2		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
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
KOP/ (Build 3.00°/100')									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	3.00	6.00	400.0	2.6	0.3	2.4	3.00	3.00	0.00
500.0	6.00	6.00	499.6	10.4	1.1	9.7	3.00	3.00	0.00
600.0	9.00	6.00	598.8	23.4	2.5	21.8	3.00	3.00	0.00
EOB @ 10.00° Inc / 6.00° Azm									
633.3	10.00	6.00	631.6	28.9	3.0	26.9	3.00	3.00	0.00
700.0	10.00	6.00	697.3	40.4	4.2	37.7	0.00	0.00	0.00
Mahogany									
739.3	10.00	6.00	736.0	47.2	5.0	44.0	0.00	0.00	0.00
800.0	10.00	6.00	795.8	57.6	6.1	53.8	0.00	0.00	0.00
Build 3.00°/100'									
883.3	10.00	6.00	877.8	72.0	7.6	67.2	0.00	0.00	0.00
900.0	10.39	7.79	894.2	75.0	7.9	70.0	3.00	2.32	10.73
1,000.0	12.87	16.18	992.2	94.6	12.3	89.3	3.00	2.48	8.39
1,100.0	15.54	21.82	1,089.1	117.7	20.3	113.6	3.00	2.67	5.64
1,200.0	18.30	25.81	1,184.8	144.3	32.2	142.6	3.00	2.77	4.00
EOB @ 21.31° Inc / 28.94° Azm									
1,308.2	21.31	28.94	1,284.7	176.2	48.8	178.6	3.00	2.83	2.94
1,400.0	21.31	28.94	1,372.1	206.0	65.3	212.6	0.00	0.00	0.00
1,500.0	21.31	28.94	1,465.3	237.8	82.8	249.0	0.00	0.00	0.00
1,600.0	21.31	28.94	1,558.4	269.7	100.4	285.3	0.00	0.00	0.00
1,700.0	21.31	28.94	1,651.6	301.5	118.0	321.6	0.00	0.00	0.00
1,800.0	21.31	28.94	1,744.7	333.3	135.6	358.0	0.00	0.00	0.00
1,900.0	21.31	28.94	1,837.9	365.1	153.2	394.3	0.00	0.00	0.00
2,000.0	21.31	28.94	1,931.1	396.9	170.8	430.7	0.00	0.00	0.00
2,100.0	21.31	28.94	2,024.2	428.7	188.4	467.0	0.00	0.00	0.00
2,200.0	21.31	28.94	2,117.4	460.5	206.0	503.3	0.00	0.00	0.00
2,300.0	21.31	28.94	2,210.5	492.3	223.5	539.7	0.00	0.00	0.00
2,400.0	21.31	28.94	2,303.7	524.1	241.1	576.0	0.00	0.00	0.00
2,500.0	21.31	28.94	2,396.9	555.9	258.7	612.4	0.00	0.00	0.00
9-5/8"									
2,530.0	21.31	28.94	2,424.8	565.4	264.0	623.3	0.00	0.00	0.00
2,600.0	21.31	28.94	2,490.0	587.7	276.3	648.7	0.00	0.00	0.00
2,700.0	21.31	28.94	2,563.2	619.5	293.9	685.0	0.00	0.00	0.00
2,800.0	21.31	28.94	2,676.4	651.3	311.5	721.4	0.00	0.00	0.00
Wasatch									
2,829.7	21.31	28.94	2,704.0	660.7	316.7	732.1	0.00	0.00	0.00
2,900.0	21.31	28.94	2,769.5	683.1	329.1	757.7	0.00	0.00	0.00
3,000.0	21.31	28.94	2,862.7	714.9	346.7	794.0	0.00	0.00	0.00
3,100.0	21.31	28.94	2,955.8	746.7	364.3	830.4	0.00	0.00	0.00
3,200.0	21.31	28.94	3,049.0	778.5	381.8	866.7	0.00	0.00	0.00
3,300.0	21.31	28.94	3,142.2	810.3	399.4	903.1	0.00	0.00	0.00
3,400.0	21.31	28.94	3,235.3	842.1	417.0	939.4	0.00	0.00	0.00
3,500.0	21.31	28.94	3,328.5	873.9	434.6	975.7	0.00	0.00	0.00
3,600.0	21.31	28.94	3,421.7	905.7	452.2	1,012.1	0.00	0.00	0.00
3,700.0	21.31	28.94	3,514.8	937.6	469.8	1,048.4	0.00	0.00	0.00
3,800.0	21.31	28.94	3,608.0	969.4	487.4	1,084.7	0.00	0.00	0.00
3,900.0	21.31	28.94	3,701.1	1,001.2	505.0	1,121.1	0.00	0.00	0.00
4,000.0	21.31	28.94	3,794.3	1,033.0	522.5	1,157.4	0.00	0.00	0.00



# Well Planning Report



<b>Database:</b>	EDM 5000 1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC 0697-04-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	WELL @ 8559 0usft (H&P #522)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	WELL @ 8559 0usft (H&P #522)
<b>Site:</b>	CC 604-12-13 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 0697-04-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A-8		
<b>Design:</b>	Design #2		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.0	21.31	28.94	3,887.5	1,064.8	540.1	1,193.6	0.00	0.00	0.00
4,200.0	21.31	28.94	3,980.6	1,096.6	557.7	1,230.1	0.00	0.00	0.00
4,300.0	21.31	28.94	4,073.8	1,128.4	575.3	1,266.4	0.00	0.00	0.00
4,400.0	21.31	28.94	4,166.9	1,160.2	592.9	1,302.8	0.00	0.00	0.00
4,500.0	21.31	28.94	4,260.1	1,192.0	610.5	1,339.1	0.00	0.00	0.00
4,600.0	21.31	28.94	4,353.3	1,223.8	628.1	1,375.4	0.00	0.00	0.00
4,700.0	21.31	28.94	4,446.4	1,255.6	645.7	1,411.8	0.00	0.00	0.00
<b>Wasatch 'G' Sand</b>									
4,751.1	21.31	28.94	4,494.0	1,271.8	654.6	1,430.3	0.00	0.00	0.00
4,800.0	21.31	28.94	4,539.6	1,287.4	663.2	1,448.1	0.00	0.00	0.00
4,900.0	21.31	28.94	4,632.8	1,319.2	680.8	1,484.5	0.00	0.00	0.00
<b>Fort Union</b>									
4,976.5	21.31	28.94	4,704.0	1,343.5	694.3	1,512.2	0.00	0.00	0.00
5,000.0	21.31	28.94	4,725.9	1,351.0	698.4	1,520.8	0.00	0.00	0.00
5,100.0	21.31	28.94	4,819.1	1,382.8	716.0	1,557.1	0.00	0.00	0.00
5,200.0	21.31	28.94	4,912.2	1,414.6	733.6	1,593.5	0.00	0.00	0.00
5,300.0	21.31	28.94	5,005.4	1,446.4	751.2	1,629.8	0.00	0.00	0.00
5,400.0	21.31	28.94	5,098.6	1,478.2	768.8	1,666.1	0.00	0.00	0.00
5,500.0	21.31	28.94	5,191.7	1,510.0	786.4	1,702.5	0.00	0.00	0.00
5,600.0	21.31	28.94	5,284.9	1,541.8	804.0	1,738.8	0.00	0.00	0.00
5,700.0	21.31	28.94	5,378.1	1,573.6	821.5	1,775.2	0.00	0.00	0.00
5,800.0	21.31	28.94	5,471.2	1,605.4	839.1	1,811.5	0.00	0.00	0.00
5,900.0	21.31	28.94	5,564.4	1,637.3	856.7	1,847.8	0.00	0.00	0.00
6,000.0	21.31	28.94	5,657.5	1,669.1	874.3	1,884.2	0.00	0.00	0.00
6,100.0	21.31	28.94	5,750.7	1,700.9	891.9	1,920.5	0.00	0.00	0.00
6,200.0	21.31	28.94	5,843.9	1,732.7	909.5	1,956.8	0.00	0.00	0.00
6,300.0	21.31	28.94	5,937.0	1,764.5	927.1	1,993.2	0.00	0.00	0.00
6,400.0	21.31	28.94	6,030.2	1,796.3	944.7	2,029.5	0.00	0.00	0.00
6,500.0	21.31	28.94	6,123.3	1,828.1	962.2	2,065.9	0.00	0.00	0.00
6,600.0	21.31	28.94	6,216.5	1,859.9	979.8	2,102.2	0.00	0.00	0.00
<b>Ohio Creek</b>									
6,623.1	21.31	28.94	6,238.0	1,867.2	983.9	2,110.6	0.00	0.00	0.00
6,700.0	21.31	28.94	6,309.7	1,891.7	997.4	2,138.5	0.00	0.00	0.00
6,800.0	21.31	28.94	6,402.8	1,923.5	1,015.0	2,174.9	0.00	0.00	0.00
<b>Williams Fork</b>									
6,824.9	21.31	28.94	6,426.0	1,931.4	1,019.4	2,183.9	0.00	0.00	0.00
<b>Drop @ 3.00°/100'</b>									
6,859.1	21.31	28.94	6,457.9	1,942.3	1,025.4	2,196.3	0.00	0.00	0.00
6,900.0	20.08	28.94	6,496.2	1,954.9	1,032.4	2,210.8	3.00	-3.00	0.00
7,000.0	17.08	28.94	6,590.9	1,982.8	1,047.8	2,242.7	3.00	-3.00	0.00
7,100.0	14.08	28.94	6,687.2	2,006.3	1,060.8	2,269.5	3.00	-3.00	0.00
7,200.0	11.08	28.94	6,784.8	2,025.4	1,071.4	2,291.3	3.00	-3.00	0.00
7,300.0	8.08	28.94	6,883.4	2,040.0	1,079.4	2,307.9	3.00	-3.00	0.00
7,400.0	5.08	28.94	6,982.7	2,050.0	1,085.0	2,319.4	3.00	-3.00	0.00
7,500.0	2.08	28.94	7,082.5	2,055.5	1,088.0	2,325.7	3.00	-3.00	0.00
<b>EOD @ Vertical - TOG</b>									
7,569.5	0.00	0.00	7,152.0	2,056.6	1,088.6	2,326.9	3.00	-3.00	0.00
7,600.0	0.00	0.00	7,182.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
7,700.0	0.00	0.00	7,282.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,382.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,482.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,582.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,100.0	0.00	0.00	7,682.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00



## Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC 0697-04-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	WELL @ 8559 0usft (H&P #522)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	WELL @ 8559 0usft (H&P #522)
<b>Site:</b>	CC 604-12-13 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 0697-04-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A-8		
<b>Design:</b>	Design #2		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.0	0.00	0.00	7,782.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,300.0	0.00	0.00	7,882.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,400.0	0.00	0.00	7,982.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,500.0	0.00	0.00	8,082.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,600.0	0.00	0.00	8,182.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,700.0	0.00	0.00	8,282.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,800.0	0.00	0.00	8,382.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
8,900.0	0.00	0.00	8,482.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,000.0	0.00	0.00	8,582.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
<b>Cameo</b>									
9,093.5	0.00	0.00	8,676.0	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,100.0	0.00	0.00	8,682.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,200.0	0.00	0.00	8,782.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,300.0	0.00	0.00	8,882.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,400.0	0.00	0.00	8,982.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
<b>Base Cameo Coal</b>									
9,460.5	0.00	0.00	9,043.0	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,500.0	0.00	0.00	9,082.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
<b>Rollings</b>									
9,506.5	0.00	0.00	9,089.0	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,600.0	0.00	0.00	9,182.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
9,700.0	0.00	0.00	9,282.5	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00
<b>TD @ 9766.5' MD / 9339.0' TVD</b>									
9,756.5	0.00	0.00	9,339.0	2,056.6	1,088.6	2,326.9	0.00	0.00	0.00

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
<ul style="list-style-type: none"> <li>- hit/miss target</li> <li>- Shape</li> </ul>									
PBHL - CC 0697-04-06V	0.00	0.00	9,339.0	2,056.6	1,088.6	1,640,039.64	2,230,543.41	39.558960	-108.229483
<ul style="list-style-type: none"> <li>- plan hits target center</li> <li>- Circle (radius 50.0)</li> </ul>									

## Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,530.0	2,424.8	9-5/8"	9-5/8	14-1/2



## Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC 0697-04-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	WELL @ 8559.0usft (H&P #522)
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	WELL @ 8559.0usft (H&P #522)
<b>Site:</b>	CC 604-12-13 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 0697-04-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A-8		
<b>Design:</b>	Design #2		

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
739.3	736.0	Mahogany			
2,829.7	2,704.0	Wasatch			
4,751.1	4,494.0	Wasatch 'G' Sand			
4,976.5	4,704.0	Fort Union			
6,623.1	6,238.0	Ohio Creek			
6,824.9	6,426.0	Williams Fork			
7,569.5	7,152.0	TOG			
9,093.5	8,676.0	Cameo			
9,460.5	9,043.0	Base Cameo Coal			
9,506.5	9,089.0	Rollings			

## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.0	300.0	0.0	0.0	KOP/ (Build 3.00"/100')
633.3	631.6	28.9	3.0	EOB @ 10.00" Inc / 6.00" Azm
883.3	877.8	72.0	7.8	Build 3.00"/100'
1,308.2	1,284.7	176.2	48.8	EOB @ 21.31" Inc / 28.94" Azm
6,859.1	6,457.9	1,942.3	1,025.4	Drop @ 3.00"/100'
7,569.5	7,152.0	2,056.6	1,088.6	EOD @ Vertical
9,756.5	9,339.0	2,056.6	1,088.6	TD @ 9756.5' MD / 9339.0' TVD