

Well Planning Proposal FOR

**Berry Petroleum Co.
SHP OM07A B21 696
Garfield Co., CO**

Well File: Design #1 (5/3/12)

Presented By:

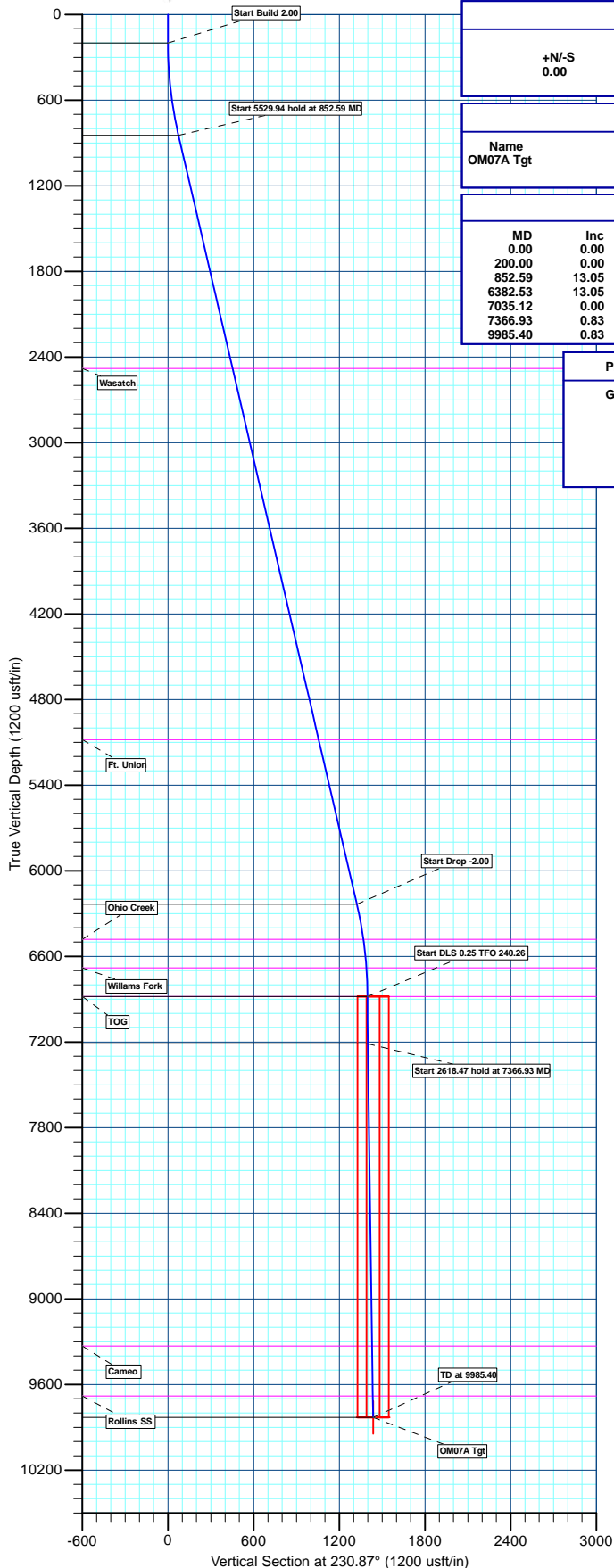
Pat Rasmussen
Regional Manager

Bret Wolford
Well Planner





Berry Petroleum Company
Project: Garfield Co., CO (CO83C)
Site: B21 696 Pad (Sec.21-T6S-R96W)
Well: OM07A B21 696
Wellbore: Wellbore #1
Design: Design #1
Latitude: 39° 30' 52.131 N
Longitude: 108° 6' 28.249 W
Ground Level: 8288.00
WELL @ 8288.00usft



WELL DETAILS: OM07A B21 696

+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	1622837.805	2264358.628	8288.00	39° 30' 52.131 N	108° 6' 28.249 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
OM07A Tgt	9831.00	-906.56	-1114.44	39° 30' 43.171 N	108° 6' 42.469 W	Rectangle (Sides: L100.00 W200.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	Start 5529.94 hold at 852.59 MD
852.59	13.05	230.60	846.96	-46.97	-57.19	2.00	230.60	74.01	Start Drop -2.00
6382.53	13.05	230.60	6234.04	-839.59	-1022.25	0.00	0.00	1322.83	Start DLS 0.25 TFO 240.26
7035.12	0.00	0.00	6881.00	-886.56	-1079.44	2.00	180.00	1396.83	Start 2618.47 hold at 7366.93 MD
7366.93	0.83	240.26	7212.80	-887.76	-1081.52	0.25	240.26	1399.20	TD at 9985.40
9985.40	0.83	240.26	9831.00	-906.56	-1114.44	0.00	0.00	1436.60	

PROJECT DETAILS: Garfield Co., CO (CO83C)

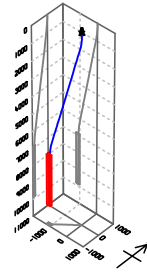
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
System Datum: Mean Sea Level

REFERENCE INFORMATION

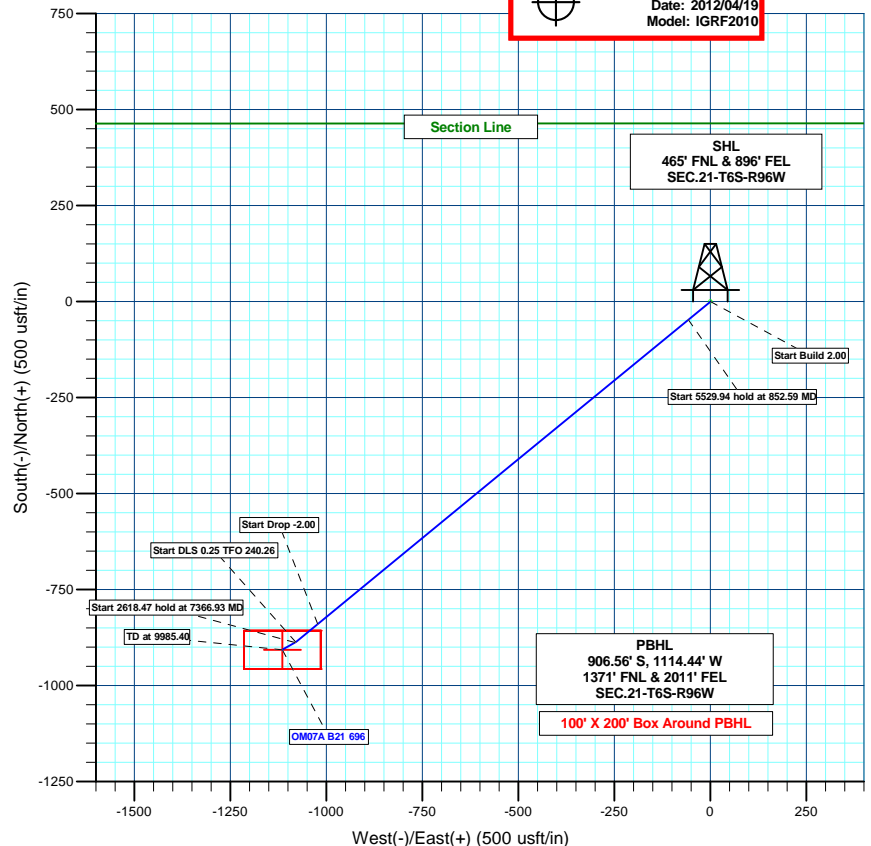
Co-ordinate (NE) Reference: Well OM07A B21 696, True North
Vertical (TVD) Reference: WELL @ 8288.00usft
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 8288.00usft
Calculation Method: Minimum Curvature

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2481.00	2529.96	Wasatch
5081.00	5198.91	Ft. Union
6481.00	6633.81	Ohio Creek
6681.00	6834.95	Williams Fork
6881.00	7035.12	TOG
9331.00	9485.35	Cameo
9681.00	9835.39	Rollins SS

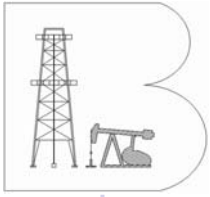


Azimuths to True North
Magnetic North: 10.29°
Magnetic Field
Strength: 52141.8snT
Dip Angle: 65.71°
Date: 2012/04/19
Model: IGRF2010



Plan: Design #1 (OM07A B21 696/Wellbore #1)

Created By: BRET WOLFORD Date: 14:30, May 02 2012



Berry Petroleum Company

Garfield Co., CO (CO83C)

B21 696 Pad (Sec.21-T6S-R96W)

OM07A B21 696

Wellbore #1

Plan: Design #1

Standard Planning Report

02 May, 2012





Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well OM07A B21 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8288.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8288.00usft
Site:	B21 696 Pad (Sec.21-T6S-R96W)	North Reference:	True
Well:	OM07A B21 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Garfield Co., CO (CO83C)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	B21 696 Pad (Sec.21-T6S-R96W)			
Site Position:		Northing:	1,622,859.990 usft	Latitude: 39° 30' 52.358 N
From:	Lat/Long	Easting:	2,264,385.795 usft	Longitude: 108° 6' 27.911 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence: -1.64 °

Well	OM07A B21 696			
Well Position	+N/-S	-22.96 usft	Northing:	1,622,837.805 usft
	+E/-W	-26.52 usft	Easting:	2,264,358.628 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level: 8,288.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/19/12	10.29	65.71	52,142

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	9,831.00	0.00	0.00	230.87

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
0.00	0.00	0.00	0.00	0.00	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	0.00	
852.59	13.05	230.60	846.96	-46.97	-57.19	2.00	2.00	0.00	230.60	
6,382.53	13.05	230.60	6,234.04	-839.59	-1,022.25	0.00	0.00	0.00	0.00	
7,035.12	0.00	0.00	6,881.00	-886.56	-1,079.44	2.00	-2.00	0.00	180.00	
7,366.93	0.83	240.26	7,212.80	-887.76	-1,081.52	0.25	0.25	-36.09	240.26	
9,985.40	0.83	240.26	9,831.00	-906.56	-1,114.44	0.00	0.00	0.00	0.00	OM07A Tgt



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well OM07A B21 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8288.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8288.00usft
Site:	B21 696 Pad (Sec.21-T6S-R96W)	North Reference:	True
Well:	OM07A B21 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)
0.00	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	0.00
Start Build 2.00									
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2.00	230.60	299.98	-1.11	-1.35	1.75	2.00	2.00	0.00
400.00	4.00	230.60	399.84	-4.43	-5.39	6.98	2.00	2.00	0.00
500.00	6.00	230.60	499.45	-9.96	-12.13	15.69	2.00	2.00	0.00
600.00	8.00	230.60	598.70	-17.70	-21.54	27.88	2.00	2.00	0.00
700.00	10.00	230.60	697.47	-27.62	-33.63	43.52	2.00	2.00	0.00
800.00	12.00	230.60	795.62	-39.73	-48.38	62.60	2.00	2.00	0.00
Start 5529.94 hold at 852.59 MD									
852.59	13.05	230.60	846.96	-46.97	-57.19	74.01	2.00	2.00	0.00
900.00	13.05	230.60	893.15	-53.77	-65.46	84.71	0.00	0.00	0.00
1,000.00	13.05	230.60	990.56	-68.10	-82.92	107.30	0.00	0.00	0.00
1,100.00	13.05	230.60	1,087.98	-82.43	-100.37	129.88	0.00	0.00	0.00
1,200.00	13.05	230.60	1,185.40	-96.77	-117.82	152.46	0.00	0.00	0.00
1,300.00	13.05	230.60	1,282.81	-111.10	-135.27	175.05	0.00	0.00	0.00
1,400.00	13.05	230.60	1,380.23	-125.43	-152.72	197.63	0.00	0.00	0.00
1,500.00	13.05	230.60	1,477.65	-139.77	-170.17	220.21	0.00	0.00	0.00
1,600.00	13.05	230.60	1,575.06	-154.10	-187.63	242.79	0.00	0.00	0.00
1,700.00	13.05	230.60	1,672.48	-168.43	-205.08	265.38	0.00	0.00	0.00
1,800.00	13.05	230.60	1,769.90	-182.77	-222.53	287.96	0.00	0.00	0.00
1,900.00	13.05	230.60	1,867.31	-197.10	-239.98	310.54	0.00	0.00	0.00
2,000.00	13.05	230.60	1,964.73	-211.43	-257.43	333.13	0.00	0.00	0.00
2,100.00	13.05	230.60	2,062.15	-225.77	-274.88	355.71	0.00	0.00	0.00
2,200.00	13.05	230.60	2,159.56	-240.10	-292.33	378.29	0.00	0.00	0.00
2,300.00	13.05	230.60	2,256.98	-254.43	-309.79	400.87	0.00	0.00	0.00
2,400.00	13.05	230.60	2,354.40	-268.77	-327.24	423.46	0.00	0.00	0.00
2,500.00	13.05	230.60	2,451.81	-283.10	-344.69	446.04	0.00	0.00	0.00
Wasatch									
2,529.96	13.05	230.60	2,481.00	-287.39	-349.92	452.81	0.00	0.00	0.00
2,600.00	13.05	230.60	2,549.23	-297.43	-362.14	468.62	0.00	0.00	0.00
2,700.00	13.05	230.60	2,646.65	-311.77	-379.59	491.21	0.00	0.00	0.00
2,800.00	13.05	230.60	2,744.06	-326.10	-397.04	513.79	0.00	0.00	0.00
2,900.00	13.05	230.60	2,841.48	-340.43	-414.49	536.37	0.00	0.00	0.00
3,000.00	13.05	230.60	2,938.90	-354.77	-431.95	558.95	0.00	0.00	0.00
3,100.00	13.05	230.60	3,036.31	-369.10	-449.40	581.54	0.00	0.00	0.00
3,200.00	13.05	230.60	3,133.73	-383.43	-466.85	604.12	0.00	0.00	0.00
3,300.00	13.05	230.60	3,231.15	-397.77	-484.30	626.70	0.00	0.00	0.00
3,400.00	13.05	230.60	3,328.56	-412.10	-501.75	649.29	0.00	0.00	0.00
3,500.00	13.05	230.60	3,425.98	-426.43	-519.20	671.87	0.00	0.00	0.00
3,600.00	13.05	230.60	3,523.40	-440.77	-536.66	694.45	0.00	0.00	0.00
3,700.00	13.05	230.60	3,620.81	-455.10	-554.11	717.03	0.00	0.00	0.00
3,800.00	13.05	230.60	3,718.23	-469.43	-571.56	739.62	0.00	0.00	0.00
3,900.00	13.05	230.60	3,815.65	-483.77	-589.01	762.20	0.00	0.00	0.00
4,000.00	13.05	230.60	3,913.06	-498.10	-606.46	784.78	0.00	0.00	0.00
4,100.00	13.05	230.60	4,010.48	-512.43	-623.91	807.37	0.00	0.00	0.00
4,200.00	13.05	230.60	4,107.90	-526.76	-641.36	829.95	0.00	0.00	0.00
4,300.00	13.05	230.60	4,205.31	-541.10	-658.82	852.53	0.00	0.00	0.00
4,400.00	13.05	230.60	4,302.73	-555.43	-676.27	875.11	0.00	0.00	0.00
4,500.00	13.05	230.60	4,400.15	-569.76	-693.72	897.70	0.00	0.00	0.00
4,600.00	13.05	230.60	4,497.56	-584.10	-711.17	920.28	0.00	0.00	0.00
4,700.00	13.05	230.60	4,594.98	-598.43	-728.62	942.86	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db
Company: Berry Petroleum Company
Project: Garfield Co., CO (CO83C)
Site: B21 696 Pad (Sec.21-T6S-R96W)
Well: OM07A B21 696
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well OM07A B21 696
TVD Reference: WELL @ 8288.00usft
MD Reference: WELL @ 8288.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
4,800.00	13.05	230.60	4,692.40	-612.76	-746.07	965.45	0.00	0.00	0.00
4,900.00	13.05	230.60	4,789.81	-627.10	-763.52	988.03	0.00	0.00	0.00
5,000.00	13.05	230.60	4,887.23	-641.43	-780.98	1,010.61	0.00	0.00	0.00
5,100.00	13.05	230.60	4,984.65	-655.76	-798.43	1,033.19	0.00	0.00	0.00
Ft. Union									
5,198.91	13.05	230.60	5,081.00	-669.94	-815.69	1,055.53	0.00	0.00	0.00
5,200.00	13.05	230.60	5,082.06	-670.10	-815.88	1,055.78	0.00	0.00	0.00
5,300.00	13.05	230.60	5,179.48	-684.43	-833.33	1,078.36	0.00	0.00	0.00
5,400.00	13.05	230.60	5,276.90	-698.76	-850.78	1,100.94	0.00	0.00	0.00
5,500.00	13.05	230.60	5,374.31	-713.10	-868.23	1,123.53	0.00	0.00	0.00
5,600.00	13.05	230.60	5,471.73	-727.43	-885.68	1,146.11	0.00	0.00	0.00
5,700.00	13.05	230.60	5,569.14	-741.76	-903.14	1,168.69	0.00	0.00	0.00
5,800.00	13.05	230.60	5,666.56	-756.10	-920.59	1,191.27	0.00	0.00	0.00
5,900.00	13.05	230.60	5,763.98	-770.43	-938.04	1,213.86	0.00	0.00	0.00
6,000.00	13.05	230.60	5,861.39	-784.76	-955.49	1,236.44	0.00	0.00	0.00
6,100.00	13.05	230.60	5,958.81	-799.10	-972.94	1,259.02	0.00	0.00	0.00
6,200.00	13.05	230.60	6,056.23	-813.43	-990.39	1,281.61	0.00	0.00	0.00
6,300.00	13.05	230.60	6,153.64	-827.76	-1,007.85	1,304.19	0.00	0.00	0.00
Start Drop -2.00									
6,382.53	13.05	230.60	6,234.04	-839.59	-1,022.25	1,322.83	0.00	0.00	0.00
6,400.00	12.70	230.60	6,251.07	-842.06	-1,025.26	1,326.72	2.00	-2.00	0.00
6,500.00	10.70	230.60	6,348.99	-854.94	-1,040.93	1,347.00	2.00	-2.00	0.00
6,600.00	8.70	230.60	6,447.55	-865.63	-1,053.95	1,363.85	2.00	-2.00	0.00
Ohio Creek									
6,633.81	8.03	230.60	6,481.00	-868.75	-1,057.75	1,368.77	2.00	-2.00	0.00
6,700.00	6.70	230.60	6,546.65	-874.14	-1,064.31	1,377.25	2.00	-2.00	0.00
6,800.00	4.70	230.60	6,646.15	-880.44	-1,071.99	1,387.19	2.00	-2.00	0.00
Williams Fork									
6,834.95	4.00	230.60	6,681.00	-882.13	-1,074.04	1,389.84	2.00	-2.00	0.00
6,900.00	2.70	230.60	6,745.93	-884.54	-1,076.98	1,393.65	2.00	-2.00	0.00
7,000.00	0.70	230.60	6,845.88	-886.43	-1,079.27	1,396.62	2.00	-2.00	0.00
Start DLS 0.25 TFO 240.26 - TOG									
7,035.12	0.00	0.00	6,881.00	-886.56	-1,079.44	1,396.83	2.00	-2.00	0.00
7,100.00	0.16	240.26	6,945.88	-886.61	-1,079.52	1,396.92	0.25	0.25	0.00
7,200.00	0.41	240.26	7,045.88	-886.86	-1,079.95	1,397.42	0.25	0.25	0.00
7,300.00	0.66	240.26	7,145.88	-887.32	-1,080.77	1,398.34	0.25	0.25	0.00
Start 2618.47 hold at 7366.93 MD									
7,366.93	0.83	240.26	7,212.80	-887.76	-1,081.52	1,399.20	0.25	0.25	0.00
7,400.00	0.83	240.26	7,245.87	-887.99	-1,081.94	1,399.67	0.00	0.00	0.00
7,500.00	0.83	240.26	7,345.86	-888.71	-1,083.20	1,401.10	0.00	0.00	0.00
7,600.00	0.83	240.26	7,445.85	-889.43	-1,084.45	1,402.53	0.00	0.00	0.00
7,700.00	0.83	240.26	7,545.84	-890.15	-1,085.71	1,403.96	0.00	0.00	0.00
7,800.00	0.83	240.26	7,645.83	-890.87	-1,086.97	1,405.39	0.00	0.00	0.00
7,900.00	0.83	240.26	7,745.82	-891.58	-1,088.22	1,406.82	0.00	0.00	0.00
8,000.00	0.83	240.26	7,845.81	-892.30	-1,089.48	1,408.24	0.00	0.00	0.00
8,100.00	0.83	240.26	7,945.80	-893.02	-1,090.74	1,409.67	0.00	0.00	0.00
8,200.00	0.83	240.26	8,045.78	-893.74	-1,092.00	1,411.10	0.00	0.00	0.00
8,300.00	0.83	240.26	8,145.77	-894.46	-1,093.25	1,412.53	0.00	0.00	0.00
8,400.00	0.83	240.26	8,245.76	-895.18	-1,094.51	1,413.96	0.00	0.00	0.00
8,500.00	0.83	240.26	8,345.75	-895.89	-1,095.77	1,415.39	0.00	0.00	0.00
8,600.00	0.83	240.26	8,445.74	-896.61	-1,097.02	1,416.82	0.00	0.00	0.00
8,700.00	0.83	240.26	8,545.73	-897.33	-1,098.28	1,418.24	0.00	0.00	0.00
8,800.00	0.83	240.26	8,645.72	-898.05	-1,099.54	1,419.67	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well OM07A B21 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8288.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8288.00usft
Site:	B21 696 Pad (Sec.21-T6S-R96W)	North Reference:	True
Well:	OM07A B21 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)	
8,900.00	0.83	240.26	8,745.71	-898.77	-1,100.79	1,421.10	0.00	0.00	0.00	
9,000.00	0.83	240.26	8,845.70	-899.49	-1,102.05	1,422.53	0.00	0.00	0.00	
9,100.00	0.83	240.26	8,945.69	-900.20	-1,103.31	1,423.96	0.00	0.00	0.00	
9,200.00	0.83	240.26	9,045.68	-900.92	-1,104.57	1,425.39	0.00	0.00	0.00	
9,300.00	0.83	240.26	9,145.67	-901.64	-1,105.82	1,426.81	0.00	0.00	0.00	
9,400.00	0.83	240.26	9,245.66	-902.36	-1,107.08	1,428.24	0.00	0.00	0.00	
Cameo										
9,485.35	0.83	240.26	9,331.00	-902.97	-1,108.15	1,429.46	0.00	0.00	0.00	
9,500.00	0.83	240.26	9,345.65	-903.08	-1,108.34	1,429.67	0.00	0.00	0.00	
9,600.00	0.83	240.26	9,445.64	-903.80	-1,109.59	1,431.10	0.00	0.00	0.00	
9,700.00	0.83	240.26	9,545.63	-904.51	-1,110.85	1,432.53	0.00	0.00	0.00	
9,800.00	0.83	240.26	9,645.62	-905.23	-1,112.11	1,433.96	0.00	0.00	0.00	
Rollins SS										
9,835.39	0.83	240.26	9,681.00	-905.49	-1,112.55	1,434.46	0.00	0.00	0.00	
9,900.00	0.83	240.26	9,745.61	-905.95	-1,113.37	1,435.38	0.00	0.00	0.00	
TD at 9985.40 - OM07A Tgt										
9,985.40	0.83	240.26	9,831.00	-906.56	-1,114.44	1,436.60	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	
OM07A Tgt	0.00	0.00	9,831.00	-906.56	-1,114.44	1,621,963.601	2,263,218.628	39° 30' 43.171 N	108° 6' 42.469 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Rectangle (sides W100.00 H200.00 D0.00)										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,529.96	2,481.00	Wasatch		0.00		
5,198.91	5,081.00	Ft. Union		0.00		
6,633.81	6,481.00	Ohio Creek		0.00		
6,834.95	6,681.00	Williams Fork		0.00		
7,035.12	6,881.00	TOG		0.00		
9,485.35	9,331.00	Cameo		0.00		
9,835.39	9,681.00	Rollins SS		0.00		



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well OM07A B21 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8288.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8288.00usft
Site:	B21 696 Pad (Sec.21-T6S-R96W)	North Reference:	True
Well:	OM07A B21 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	Start Build 2.00
852.59	846.96	-46.97	-57.19	Start 5529.94 hold at 852.59 MD
6,382.53	6,234.04	-839.59	-1,022.25	Start Drop -2.00
7,035.12	6,881.00	-886.56	-1,079.44	Start DLS 0.25 TFO 240.26
7,366.93	7,212.80	-887.76	-1,081.52	Start 2618.47 hold at 7366.93 MD
9,985.40	9,831.00	-906.56	-1,114.44	TD at 9985.40