

Berry Petroleum Company

Garfield Co., CO (CO83C)

OM C15-696 Pad (Sec.15-T6S-R96W)

SHP OM06A C15 696

Wellbore #1

Plan: Design #1

Standard Planning Report

18 October, 2013

Archer



Project: Garfield Co., CO (CO83C)
Site: OM C15-696 Pad (Sec.15-T6S-R96W)
Well: SHP OM06A C15 696
Wellbore: Wellbore #1
Design: Design #1
Latitude: 39° 31' 45.577 N
Longitude: 108° 5' 44.376 W
Ground Level: 8355.00
WELL @ 8375.00usft

Archer

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 (N/E) Reference: Well SHP OM06A C15 696, True North
Vertical (TVD) Reference: WELL @ 8375.00usft
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 8375.00usft
Calculation Method: Minimum Curvature

WELL DETAILS: SHP OM06A C15 696

+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude	Slot
0.00	0.00	1628144.686	2267949.975	39° 31' 45.577 N	108° 5' 44.376 W	

DESIGN TARGET DETAILS

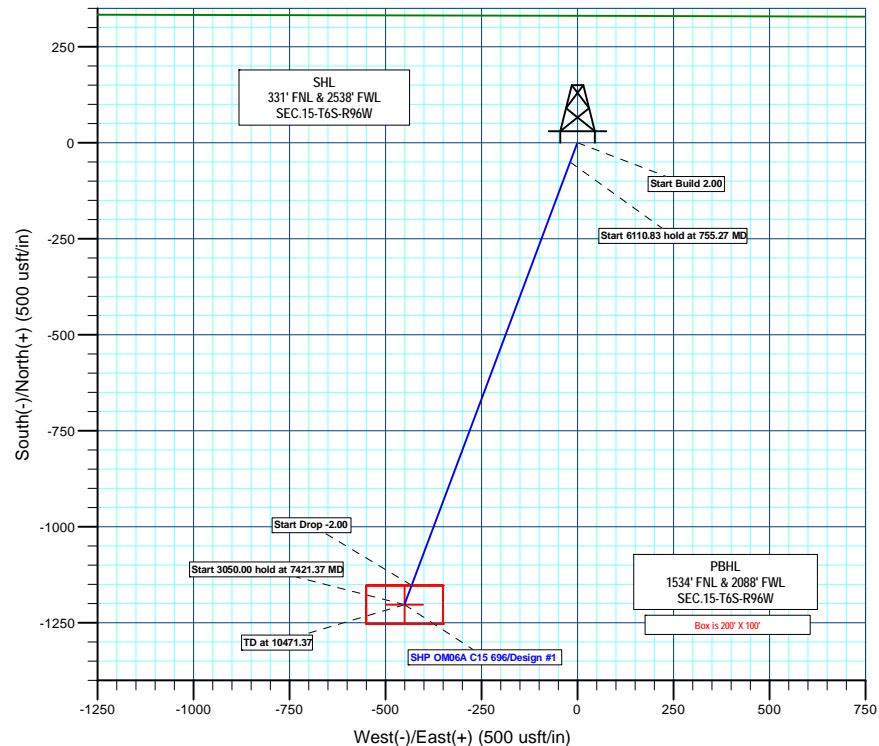
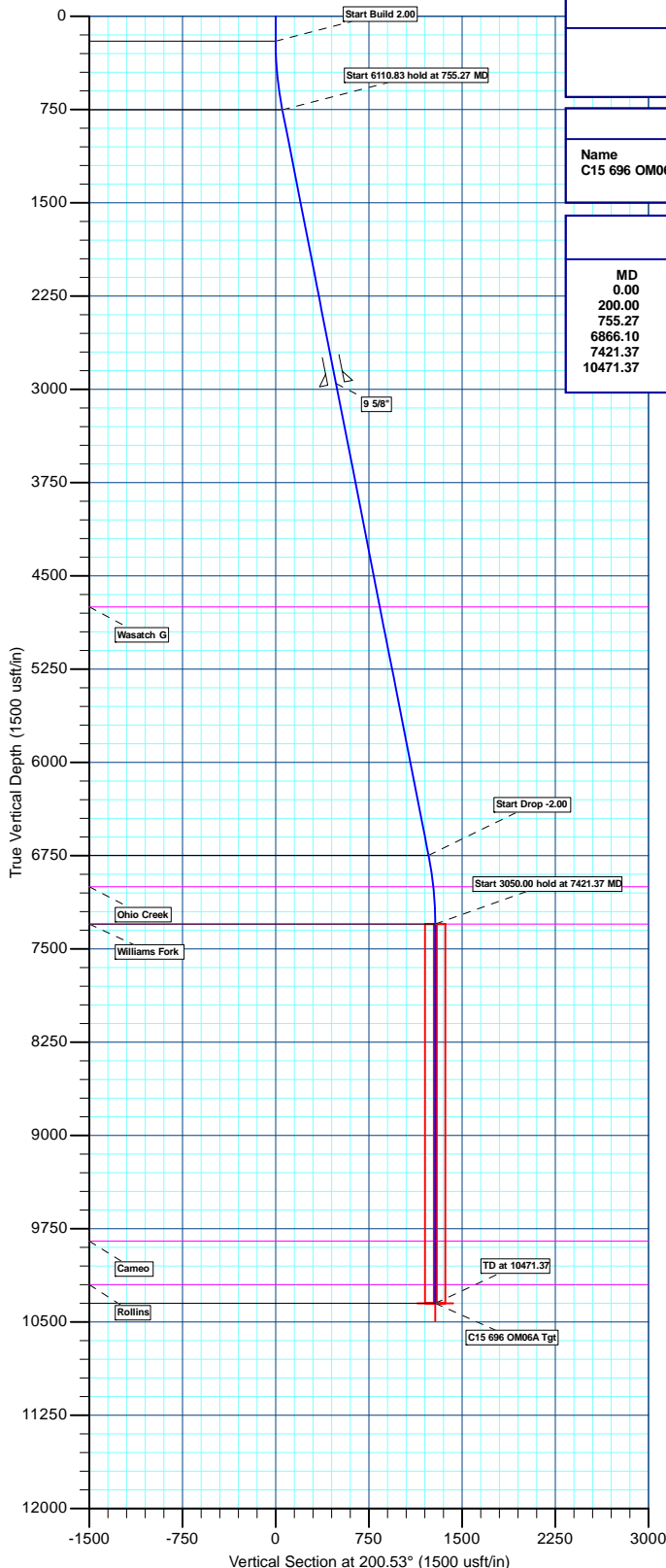
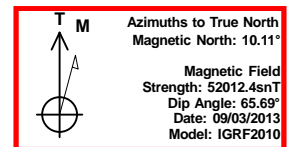
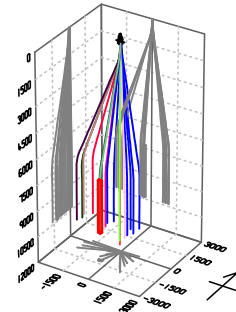
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
C15 696 OM06A Tgt	10350.00	-1202.72	-450.48	39° 31' 33.690 N	108° 5' 50.125 W	Rectangle (Sides: L100.00 W200.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	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 6110.83 hold at 755.27 MD
755.27	11.11	200.53	751.80	-50.24	-18.82	2.00	200.53	53.64	Start Drop -2.00
6866.10	11.11	200.53	6748.20	-1152.48	-431.67	0.00	0.00	1230.67	Start 3050.00 hold at 7421.37 MD
7421.37	0.00	0.00	7300.00	-1202.72	-450.48	2.00	180.00	1284.31	TD at 10471.37
10471.37	0.00	0.00	10350.00	-1202.72	-450.48	0.00	0.00	1284.31	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4750.00	4829.77	Wasatch G
7000.00	7120.82	Ohio Creek
7300.00	7421.37	Williams Fork
9850.00	9971.37	Cameo
10200.00	10321.37	Rollins



Plan: Design #1 (SHP OM06A C15 696/Wellbore #1)

Created By: Bret Wolford Date: 9:44, October 18 2013



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8375.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8375.00usft
Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	North Reference:	True
Well:	SHP OM06A C15 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		OM C15-696 Pad (Sec.15-T6S-R96W)			
Site Position:		Northing:	1,628,249.337 usft	Latitude:	39° 31' 46.614 N
From:	Lat/Long	Easting:	2,267,960.585 usft	Longitude:	108° 5' 44.279 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.64 °

Well	SHP OM06A C15 696					
Well Position	+N/-S	-104.91 usft	Northing:	1,628,144.686 usft	Latitude:	39° 31' 45.577 N
	+E/-W	-7.62 usft	Easting:	2,267,949.975 usft	Longitude:	108° 5' 44.376 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	8,355.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/03/13	10.11	65.69	52,012

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 (°)
	0.00	0.00	0.00	200.53

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	
755.27	11.11	200.53	751.80	-50.24	-18.82	2.00	2.00	0.00	200.53	
6,866.10	11.11	200.53	6,748.20	-1,152.48	-431.67	0.00	0.00	0.00	0.00	
7,421.37	0.00	0.00	7,300.00	-1,202.72	-450.48	2.00	-2.00	0.00	180.00	
10,471.37	0.00	0.00	10,350.00	-1,202.72	-450.48	0.00	0.00	0.00	0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8375.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8375.00usft
Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	North Reference:	True
Well:	SHP OM06A C15 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	200.53	299.98	-1.63	-0.61	1.75	2.00	2.00	0.00
400.00	4.00	200.53	399.84	-6.54	-2.45	6.98	2.00	2.00	0.00
500.00	6.00	200.53	499.45	-14.70	-5.50	15.69	2.00	2.00	0.00
600.00	8.00	200.53	598.70	-26.11	-9.78	27.88	2.00	2.00	0.00
700.00	10.00	200.53	697.47	-40.76	-15.27	43.52	2.00	2.00	0.00
Start 6110.83 hold at 755.27 MD									
755.27	11.11	200.53	751.80	-50.24	-18.82	53.64	2.00	2.00	0.00
800.00	11.11	200.53	795.69	-58.30	-21.84	62.26	0.00	0.00	0.00
900.00	11.11	200.53	893.82	-76.34	-28.59	81.52	0.00	0.00	0.00
1,000.00	11.11	200.53	991.95	-94.38	-35.35	100.78	0.00	0.00	0.00
1,100.00	11.11	200.53	1,090.07	-112.42	-42.11	120.04	0.00	0.00	0.00
1,200.00	11.11	200.53	1,188.20	-130.45	-48.86	139.31	0.00	0.00	0.00
1,300.00	11.11	200.53	1,286.33	-148.49	-55.62	158.57	0.00	0.00	0.00
1,400.00	11.11	200.53	1,384.46	-166.53	-62.37	177.83	0.00	0.00	0.00
1,500.00	11.11	200.53	1,482.58	-184.57	-69.13	197.09	0.00	0.00	0.00
1,600.00	11.11	200.53	1,580.71	-202.61	-75.89	216.35	0.00	0.00	0.00
1,700.00	11.11	200.53	1,678.84	-220.64	-82.64	235.61	0.00	0.00	0.00
1,800.00	11.11	200.53	1,776.97	-238.68	-89.40	254.87	0.00	0.00	0.00
1,900.00	11.11	200.53	1,875.09	-256.72	-96.15	274.13	0.00	0.00	0.00
2,000.00	11.11	200.53	1,973.22	-274.76	-102.91	293.40	0.00	0.00	0.00
2,100.00	11.11	200.53	2,071.35	-292.79	-109.67	312.66	0.00	0.00	0.00
2,200.00	11.11	200.53	2,169.48	-310.83	-116.42	331.92	0.00	0.00	0.00
2,300.00	11.11	200.53	2,267.60	-328.87	-123.18	351.18	0.00	0.00	0.00
2,400.00	11.11	200.53	2,365.73	-346.91	-129.93	370.44	0.00	0.00	0.00
2,500.00	11.11	200.53	2,463.86	-364.94	-136.69	389.70	0.00	0.00	0.00
2,600.00	11.11	200.53	2,561.99	-382.98	-143.45	408.96	0.00	0.00	0.00
2,700.00	11.11	200.53	2,660.11	-401.02	-150.20	428.23	0.00	0.00	0.00
2,800.00	11.11	200.53	2,758.24	-419.06	-156.96	447.49	0.00	0.00	0.00
2,900.00	11.11	200.53	2,856.37	-437.09	-163.71	466.75	0.00	0.00	0.00
9 5/8"									
3,000.00	11.11	200.53	2,954.50	-455.13	-170.47	486.01	0.00	0.00	0.00
3,100.00	11.11	200.53	3,052.62	-473.17	-177.23	505.27	0.00	0.00	0.00
3,200.00	11.11	200.53	3,150.75	-491.21	-183.98	524.53	0.00	0.00	0.00
3,300.00	11.11	200.53	3,248.88	-509.24	-190.74	543.79	0.00	0.00	0.00
3,400.00	11.11	200.53	3,347.01	-527.28	-197.50	563.05	0.00	0.00	0.00
3,500.00	11.11	200.53	3,445.13	-545.32	-204.25	582.32	0.00	0.00	0.00
3,600.00	11.11	200.53	3,543.26	-563.36	-211.01	601.58	0.00	0.00	0.00
3,700.00	11.11	200.53	3,641.39	-581.39	-217.76	620.84	0.00	0.00	0.00
3,800.00	11.11	200.53	3,739.52	-599.43	-224.52	640.10	0.00	0.00	0.00
3,900.00	11.11	200.53	3,837.64	-617.47	-231.28	659.36	0.00	0.00	0.00
4,000.00	11.11	200.53	3,935.77	-635.51	-238.03	678.62	0.00	0.00	0.00
4,100.00	11.11	200.53	4,033.90	-653.54	-244.79	697.88	0.00	0.00	0.00
4,200.00	11.11	200.53	4,132.03	-671.58	-251.54	717.14	0.00	0.00	0.00
4,300.00	11.11	200.53	4,230.15	-689.62	-258.30	736.41	0.00	0.00	0.00
4,400.00	11.11	200.53	4,328.28	-707.66	-265.06	755.67	0.00	0.00	0.00
4,500.00	11.11	200.53	4,426.41	-725.70	-271.81	774.93	0.00	0.00	0.00
4,600.00	11.11	200.53	4,524.54	-743.73	-278.57	794.19	0.00	0.00	0.00
4,700.00	11.11	200.53	4,622.66	-761.77	-285.32	813.45	0.00	0.00	0.00
4,800.00	11.11	200.53	4,720.79	-779.81	-292.08	832.71	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8375.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8375.00usft
Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	North Reference:	True
Well:	SHP OM06A C15 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)
Wasatch G									
4,829.77	11.11	200.53	4,750.00	-785.18	-294.09	838.45	0.00	0.00	0.00
4,900.00	11.11	200.53	4,818.92	-797.85	-298.84	851.97	0.00	0.00	0.00
5,000.00	11.11	200.53	4,917.05	-815.88	-305.59	871.24	0.00	0.00	0.00
5,100.00	11.11	200.53	5,015.17	-833.92	-312.35	890.50	0.00	0.00	0.00
5,200.00	11.11	200.53	5,113.30	-851.96	-319.10	909.76	0.00	0.00	0.00
5,300.00	11.11	200.53	5,211.43	-870.00	-325.86	929.02	0.00	0.00	0.00
5,400.00	11.11	200.53	5,309.56	-888.03	-332.62	948.28	0.00	0.00	0.00
5,500.00	11.11	200.53	5,407.68	-906.07	-339.37	967.54	0.00	0.00	0.00
5,600.00	11.11	200.53	5,505.81	-924.11	-346.13	986.80	0.00	0.00	0.00
5,700.00	11.11	200.53	5,603.94	-942.15	-352.88	1,006.06	0.00	0.00	0.00
5,800.00	11.11	200.53	5,702.07	-960.18	-359.64	1,025.33	0.00	0.00	0.00
5,900.00	11.11	200.53	5,800.19	-978.22	-366.40	1,044.59	0.00	0.00	0.00
6,000.00	11.11	200.53	5,898.32	-996.26	-373.15	1,063.85	0.00	0.00	0.00
6,100.00	11.11	200.53	5,996.45	-1,014.30	-379.91	1,083.11	0.00	0.00	0.00
6,200.00	11.11	200.53	6,094.58	-1,032.33	-386.66	1,102.37	0.00	0.00	0.00
6,300.00	11.11	200.53	6,192.70	-1,050.37	-393.42	1,121.63	0.00	0.00	0.00
6,400.00	11.11	200.53	6,290.83	-1,068.41	-400.18	1,140.89	0.00	0.00	0.00
6,500.00	11.11	200.53	6,388.96	-1,086.45	-406.93	1,160.16	0.00	0.00	0.00
6,600.00	11.11	200.53	6,487.09	-1,104.48	-413.69	1,179.42	0.00	0.00	0.00
6,700.00	11.11	200.53	6,585.21	-1,122.52	-420.44	1,198.68	0.00	0.00	0.00
6,800.00	11.11	200.53	6,683.34	-1,140.56	-427.20	1,217.94	0.00	0.00	0.00
Start Drop -2.00									
6,866.10	11.11	200.53	6,748.20	-1,152.48	-431.67	1,230.67	0.00	0.00	0.00
6,900.00	10.43	200.53	6,781.51	-1,158.41	-433.89	1,237.00	2.00	-2.00	0.00
7,000.00	8.43	200.53	6,880.15	-1,173.75	-439.63	1,253.38	2.00	-2.00	0.00
7,100.00	6.43	200.53	6,979.31	-1,185.86	-444.17	1,266.31	2.00	-2.00	0.00
Ohio Creek									
7,120.82	6.01	200.53	7,000.00	-1,187.97	-444.96	1,268.56	2.00	-2.00	0.00
7,200.00	4.43	200.53	7,078.85	-1,194.71	-447.48	1,275.77	2.00	-2.00	0.00
7,300.00	2.43	200.53	7,178.67	-1,200.31	-449.58	1,281.74	2.00	-2.00	0.00
7,400.00	0.43	200.53	7,278.63	-1,202.64	-450.45	1,284.24	2.00	-2.00	0.00
Start 3050.00 hold at 7421.37 MD - Williams Fork									
7,421.37	0.00	0.00	7,300.00	-1,202.72	-450.48	1,284.31	2.00	-2.00	0.00
7,500.00	0.00	0.00	7,378.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
7,600.00	0.00	0.00	7,478.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
7,700.00	0.00	0.00	7,578.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
7,800.00	0.00	0.00	7,678.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
7,900.00	0.00	0.00	7,778.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,000.00	0.00	0.00	7,878.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,100.00	0.00	0.00	7,978.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,200.00	0.00	0.00	8,078.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,300.00	0.00	0.00	8,178.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,400.00	0.00	0.00	8,278.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,500.00	0.00	0.00	8,378.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,600.00	0.00	0.00	8,478.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,700.00	0.00	0.00	8,578.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,800.00	0.00	0.00	8,678.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
8,900.00	0.00	0.00	8,778.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,000.00	0.00	0.00	8,878.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,100.00	0.00	0.00	8,978.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,200.00	0.00	0.00	9,078.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,300.00	0.00	0.00	9,178.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,400.00	0.00	0.00	9,278.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00



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Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8375.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8375.00usft
Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	North Reference:	True
Well:	SHP OM06A C15 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)
9,500.00	0.00	0.00	9,378.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,600.00	0.00	0.00	9,478.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,700.00	0.00	0.00	9,578.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,800.00	0.00	0.00	9,678.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
9,900.00	0.00	0.00	9,778.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
Cameo									
9,971.37	0.00	0.00	9,850.00	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
10,000.00	0.00	0.00	9,878.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
10,100.00	0.00	0.00	9,978.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
10,200.00	0.00	0.00	10,078.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
10,300.00	0.00	0.00	10,178.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
Rollins									
10,321.37	0.00	0.00	10,200.00	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
10,400.00	0.00	0.00	10,278.63	-1,202.72	-450.48	1,284.31	0.00	0.00	0.00
TD at 10471.37 - C15 696 OM06A Tgt									
10,471.37	0.00	0.00	10,350.00	-1,202.72	-450.48	1,284.31	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
- hit/miss target									
- Shape									
C15 696 OM06A Tgt	0.00	0.00	10,350.00	-1,202.72	-450.48	1,626,955.329	2,267,465.318	39° 31' 33.690 N	108° 5' 50.125 W
- plan hits target center									
- Rectangle (sides W100.00 H200.00 D0.00)									

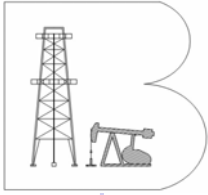
Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
3,000.00	2,954.50	9 5/8"		9-5/8	12-1/4

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,829.77	4,750.00	Wasatch G		0.00	
7,120.82	7,000.00	Ohio Creek		0.00	
7,421.37	7,300.00	Williams Fork		0.00	
9,971.37	9,850.00	Cameo		0.00	
10,321.37	10,200.00	Rollins		0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Company:	Berry Petroleum Company	TVD Reference:	WELL @ 8375.00usft
Project:	Garfield Co., CO (CO83C)	MD Reference:	WELL @ 8375.00usft
Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	North Reference:	True
Well:	SHP OM06A C15 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
755.27	751.80	-50.24	-18.82	Start 6110.83 hold at 755.27 MD
6,866.10	6,748.20	-1,152.48	-431.67	Start Drop -2.00
7,421.37	7,300.00	-1,202.72	-450.48	Start 3050.00 hold at 7421.37 MD
10,471.37	10,350.00	-1,202.72	-450.48	TD at 10471.37



Berry Petroleum Company

Garfield Co., CO (CO83C)

OM C15-696 Pad (Sec.15-T6S-R96W)

SHP OM06A C15 696

Wellbore #1

Design #1

Anticollision Summary Report

18 October, 2013

Archer



Archer
Anticollision Summary Report

Archer

Company:	Berry Petroleum Company	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Project:	Garfield Co., CO (CO83C)	TVD Reference:	WELL @ 8375.00usft
Reference Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	MD Reference:	WELL @ 8375.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	SHP OM06A C15 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	10/18/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	10,471.37	Design #1 (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
OM C15-696 Pad (Sec.15-T6S-R96W)						
SHP OM02A C15 696 - Wellbore #1 - Design #1	200.00	200.00	105.17	104.54	167.116	CC, ES
SHP OM02A C15 696 - Wellbore #1 - Design #1	10,471.37	10,428.16	2,015.64	1,963.64	38.763	SF
SHP OM02B C15 696 - Wellbore #1 - Design #1	200.00	200.00	90.20	89.57	143.326	CC, ES
SHP OM02B C15 696 - Wellbore #1 - Design #1	10,471.37	10,386.60	1,575.90	1,525.14	31.043	SF
SHP OM02C C15 696 - Wellbore #1 - Design #1	200.00	200.00	60.25	59.62	95.733	CC, ES
SHP OM02C C15 696 - Wellbore #1 - Design #1	10,471.37	10,445.04	1,396.12	1,337.64	23.873	SF
SHP OM02D C15 696 - Wellbore #1 - Design #1	200.00	200.00	75.23	74.60	119.529	CC, ES
SHP OM02D C15 696 - Wellbore #1 - Design #1	10,471.37	10,443.67	1,683.71	1,627.36	29.883	SF
SHP OM03A C15 696 - Wellbore #1 - Design #1	200.00	200.00	90.76	90.13	144.213	CC, ES
SHP OM03A C15 696 - Wellbore #1 - Design #1	10,471.37	10,363.14	1,270.26	1,221.73	26.174	SF
SHP OM03B C15 696 - Wellbore #1 - Design #1	200.00	200.00	31.95	31.32	50.770	CC, ES
SHP OM03B C15 696 - Wellbore #1 - Design #1	10,471.37	10,383.30	968.57	916.85	18.726	SF
SHP OM03C C15 696 - Wellbore #1 - Design #1	200.00	200.00	9.90	9.27	15.729	CC, ES
SHP OM03C C15 696 - Wellbore #1 - Design #1	10,471.37	10,438.30	383.76	324.59	6.486	SF
SHP OM03D C15 696 - Wellbore #1 - Design #1	200.00	200.00	18.39	17.76	29.227	CC, ES
SHP OM03D C15 696 - Wellbore #1 - Design #1	700.00	700.31	33.43	30.35	10.853	SF
SHP OM04A C15 696 - Wellbore #1 - Design #1	200.00	200.00	105.65	105.03	167.880	CC, ES
SHP OM04A C15 696 - Wellbore #1 - Design #1	10,471.37	10,577.68	1,889.57	1,824.66	29.112	SF
SHP OM04B C15 696 - Wellbore #1 - Design #1	200.00	200.00	75.90	75.27	120.597	CC, ES
SHP OM04B C15 696 - Wellbore #1 - Design #1	10,471.37	10,686.07	1,974.58	1,906.30	28.920	SF
SHP OM04C C15 696 - Wellbore #1 - Design #1	200.00	200.00	46.39	45.76	73.714	CC, ES
SHP OM04C C15 696 - Wellbore #1 - Design #1	1,200.00	1,184.50	163.82	156.43	22.173	SF
SHP OM04D C15 696 - Wellbore #1 - Design #1	200.00	200.00	61.09	60.46	97.069	CC, ES
SHP OM04D C15 696 - Wellbore #1 - Design #1	10,471.37	10,665.22	1,711.76	1,643.37	25.028	SF
SHP OM07A C15 696 - Wellbore #1 - Design #1	200.00	200.00	45.29	44.66	71.968	CC, ES
SHP OM07A C15 696 - Wellbore #1 - Design #1	10,471.37	10,486.62	1,351.58	1,289.37	21.728	SF
SHP OM07B C15 696 - Wellbore #1 - Design #1	200.00	200.00	15.34	14.71	24.374	CC, ES
SHP OM07B C15 696 - Wellbore #1 - Design #1	500.00	500.72	25.99	24.10	13.744	SF
SHP OM07D C15 696 - Wellbore #1 - Design #1	200.00	200.00	30.32	29.69	48.171	CC
SHP OM07D C15 696 - Wellbore #1 - Design #1	300.00	300.85	30.59	29.55	29.365	ES
SHP OM07D C15 696 - Wellbore #1 - Design #1	700.00	701.47	52.09	49.04	17.042	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Berry Petroleum Company	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Project:	Garfield Co., CO (CO83C)	TVD Reference:	WELL @ 8375.00usft
Reference Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	MD Reference:	WELL @ 8375.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	SHP OM06A C15 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to WELL @ 8375.00usft

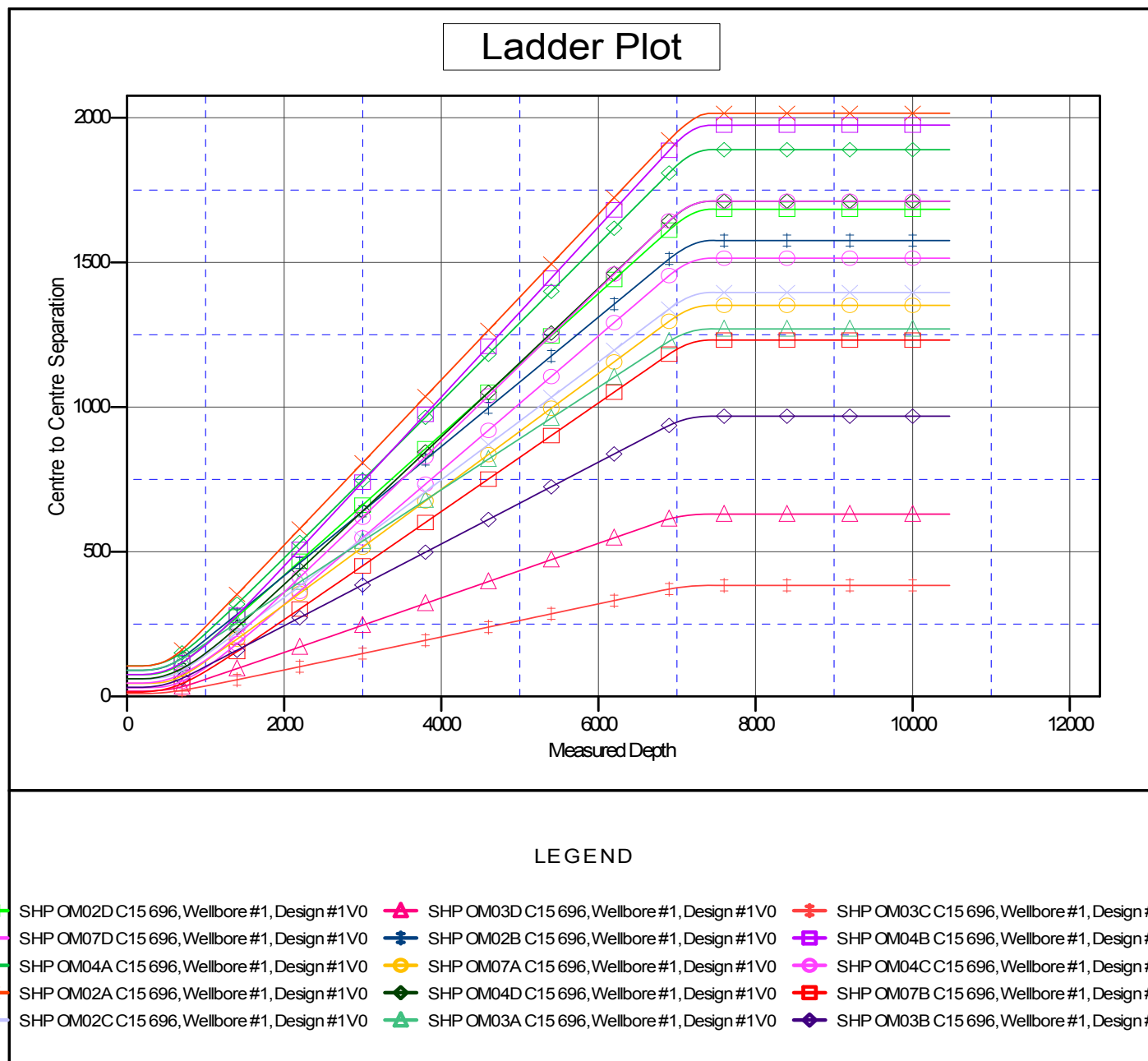
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: SHP OM06A C15 696

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.64°



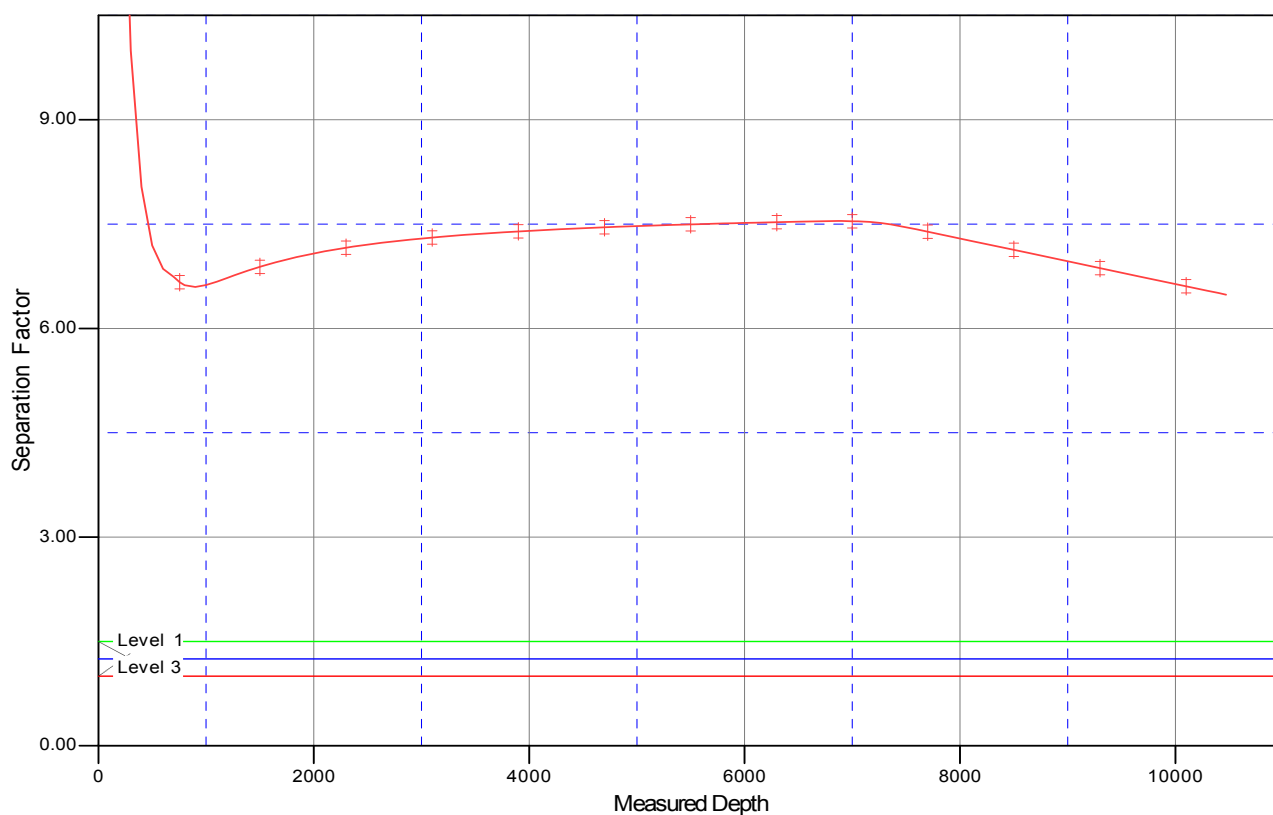


Company:	Berry Petroleum Company	Local Co-ordinate Reference:	Well SHP OM06A C15 696
Project:	Garfield Co., CO (CO83C)	TVD Reference:	WELL @ 8375.00usft
Reference Site:	OM C15-696 Pad (Sec.15-T6S-R96W)	MD Reference:	WELL @ 8375.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	SHP OM06A C15 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to WELL @ 8375.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: SHP OM06A C15 696
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.64°

Separation Factor Plot



LEGEND

SHP OM02D C15 696, Wellbore #1, Design #1V0	SHP OM03D C15 696, Wellbore #1, Design #1V0	SHP OM03C C15 696, Wellbore #1, Design #1V0
SHP OM07D C15 696, Wellbore #1, Design #1V0	SHP OM02B C15 696, Wellbore #1, Design #1V0	SHP OM04B C15 696, Wellbore #1, Design #1V0
SHP OM04A C15 696, Wellbore #1, Design #1V0	SHP OM07A C15 696, Wellbore #1, Design #1V0	SHP OM04C C15 696, Wellbore #1, Design #1V0
SHP OM02A C15 696, Wellbore #1, Design #1V0	SHP OM04D C15 696, Wellbore #1, Design #1V0	SHP OM07B C15 696, Wellbore #1, Design #1V0
SHP OM02C C15 696, Wellbore #1, Design #1V0	SHP OM03A C15 696, Wellbore #1, Design #1V0	SHP OM03B C15 696, Wellbore #1, Design #1V0