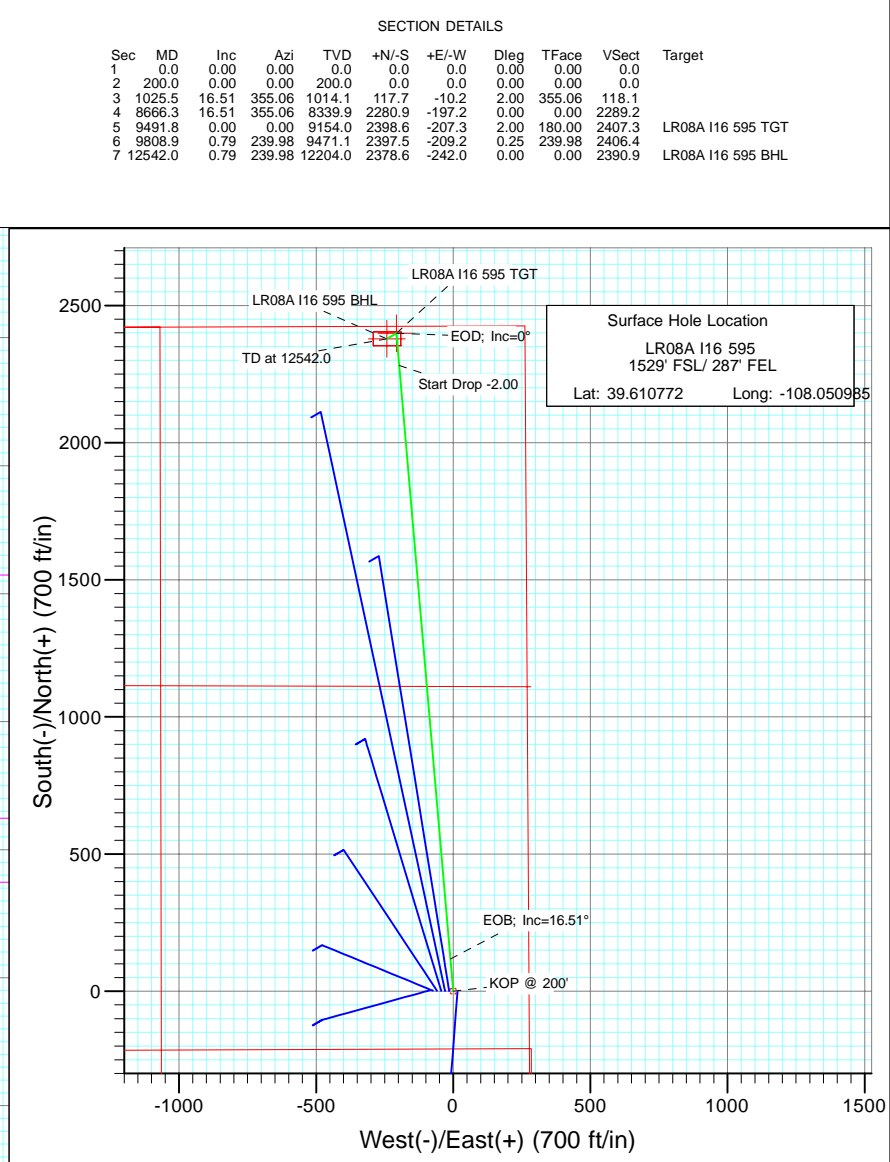
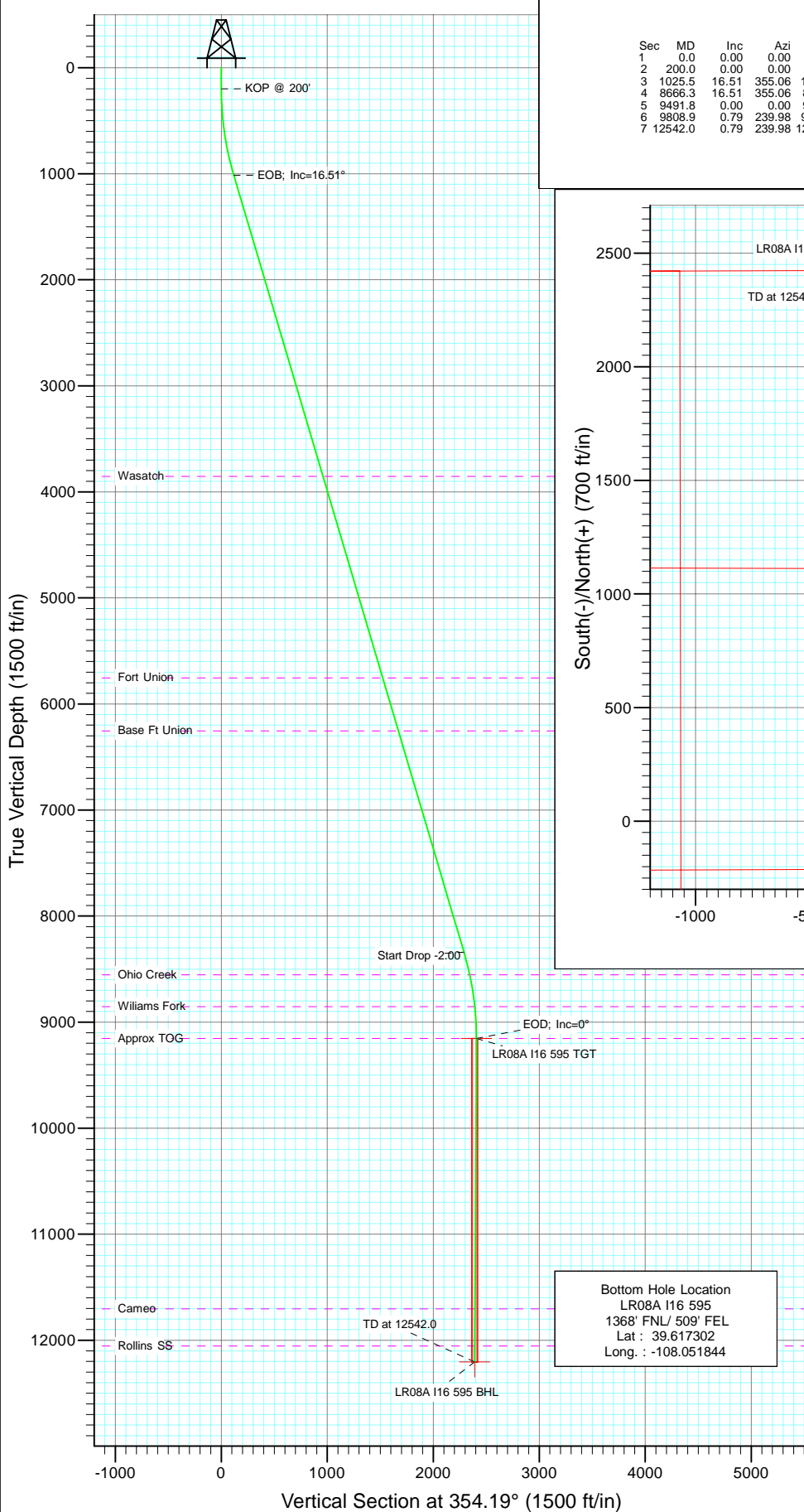




Project: Garfield County
Site: I16 595 pad
Well: LR08A I16 595
Wellbore: DD
Design: Plan #1



FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3854.0	3987.5	Wasatch
5754.0	5969.2	Fort Union
6254.0	6490.7	Base Ft Union
8554.0	8887.3	Ohio Creek
8854.0	9191.2	Williams Fork
9154.0	9491.8	Approx TOG
11704.0	12042.0	Cameo
12054.0	12392.0	Rollins SS

DESIGN DETAILS: Plan #1

105XXX; BH
KBE @ 8306.0ft (Patterson 302)

Target	Azimuth	Origin	N/S	E/W	From TVD
LR08A I16 595 BHL	354.19	Slot	0.0	0.0	0.0

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1025.5	16.51	355.06	1014.1	117.7	-10.2	2.00	355.06	118.1	
4	8666.3	16.51	355.06	8339.9	2280.9	-197.2	0.00	0.00	2289.2	
5	9491.8	0.00	0.00	9154.0	2398.6	-207.3	2.00	180.00	2407.3	LR08A I16 595 TGT
6	9808.9	0.79	239.98	9471.1	2397.5	-209.2	0.25	239.98	2406.4	
7	12542.0	0.79	239.98	12204.0	2378.6	-242.0	0.00	0.00	2390.9	LR08A I16 595 BHL

Magnetic Field
Strength: 52389.1snT
Dip Angle: 65.85°
Date: 9/29/2010
Model: IGRF200510

Azimuths to True North
Magnetic North: 10.46°

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Garfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	I16 595 pad			
Site Position:		Northing:	1,657,445.59 ft	Latitude: 39.610772
From:	Lat/Long	Easting:	2,281,383.74 ft	Longitude: -108.050985
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.61 °

Well	LR08A I16 595			
Well Position	+N/-S	0.0 ft	Northing:	1,657,445.57 ft
	+E/-W	0.0 ft	Easting:	2,281,383.74 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	8,291.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/29/2010	10.46	65.85	52,389

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	354.19

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,025.5	16.51	355.06	1,014.1	117.7	-10.2	2.00	2.00	0.00	355.06	
8,666.3	16.51	355.06	8,339.9	2,280.9	-197.2	0.00	0.00	0.00	0.00	
9,491.8	0.00	0.00	9,154.0	2,398.6	-207.3	2.00	-2.00	0.00	180.00	LR08A I16 595 TGT
9,808.9	0.79	239.98	9,471.1	2,397.5	-209.2	0.25	0.25	-37.85	239.98	
12,542.0	0.79	239.98	12,204.0	2,378.6	-242.0	0.00	0.00	0.00	0.00	LR08A I16 595 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	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	KOP @ 200'
210.0	0.20	355.06	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	355.06	240.0	0.3	0.0	0.3	2.00	2.00	
270.0	1.40	355.06	270.0	0.9	-0.1	0.9	2.00	2.00	
300.0	2.00	355.06	300.0	1.7	-0.2	1.7	2.00	2.00	
330.0	2.60	355.06	330.0	2.9	-0.3	2.9	2.00	2.00	
360.0	3.20	355.06	359.9	4.5	-0.4	4.5	2.00	2.00	
390.0	3.80	355.06	389.9	6.3	-0.5	6.3	2.00	2.00	
420.0	4.40	355.06	419.8	8.4	-0.7	8.4	2.00	2.00	
450.0	5.00	355.06	449.7	10.9	-0.9	10.9	2.00	2.00	
480.0	5.60	355.06	479.6	13.6	-1.2	13.7	2.00	2.00	
510.0	6.20	355.06	509.4	16.7	-1.4	16.8	2.00	2.00	
540.0	6.80	355.06	539.2	20.1	-1.7	20.2	2.00	2.00	
570.0	7.40	355.06	569.0	23.8	-2.1	23.9	2.00	2.00	
600.0	8.00	355.06	598.7	27.8	-2.4	27.9	2.00	2.00	
630.0	8.60	355.06	628.4	32.1	-2.8	32.2	2.00	2.00	
660.0	9.20	355.06	658.0	36.7	-3.2	36.8	2.00	2.00	
690.0	9.80	355.06	687.6	41.6	-3.6	41.8	2.00	2.00	
720.0	10.40	355.06	717.1	46.9	-4.1	47.1	2.00	2.00	
750.0	11.00	355.06	746.6	52.4	-4.5	52.6	2.00	2.00	
780.0	11.60	355.06	776.0	58.3	-5.0	58.5	2.00	2.00	
810.0	12.20	355.06	805.4	64.5	-5.6	64.7	2.00	2.00	
840.0	12.80	355.06	834.7	70.9	-6.1	71.2	2.00	2.00	
870.0	13.40	355.06	863.9	77.7	-6.7	78.0	2.00	2.00	
900.0	14.00	355.06	893.1	84.8	-7.3	85.1	2.00	2.00	
930.0	14.60	355.06	922.1	92.2	-8.0	92.5	2.00	2.00	
960.0	15.20	355.06	951.1	99.8	-8.6	100.2	2.00	2.00	
990.0	15.80	355.06	980.0	107.8	-9.3	108.2	2.00	2.00	
1,020.0	16.40	355.06	1,008.8	116.1	-10.0	116.5	2.00	2.00	
1,025.5	16.51	355.06	1,014.1	117.7	-10.2	118.1	2.00	2.00	EOB; Inc=16.51°
1,050.0	16.51	355.06	1,037.6	124.6	-10.8	125.1	0.00	0.00	
1,080.0	16.51	355.06	1,066.4	133.1	-11.5	133.6	0.00	0.00	
1,110.0	16.51	355.06	1,095.1	141.6	-12.2	142.1	0.00	0.00	
1,140.0	16.51	355.06	1,123.9	150.1	-13.0	150.6	0.00	0.00	
1,170.0	16.51	355.06	1,152.7	158.6	-13.7	159.2	0.00	0.00	
1,200.0	16.51	355.06	1,181.4	167.1	-14.4	167.7	0.00	0.00	
1,230.0	16.51	355.06	1,210.2	175.6	-15.2	176.2	0.00	0.00	
1,260.0	16.51	355.06	1,239.0	184.1	-15.9	184.7	0.00	0.00	
1,290.0	16.51	355.06	1,267.7	192.6	-16.6	193.3	0.00	0.00	
1,320.0	16.51	355.06	1,296.5	201.1	-17.4	201.8	0.00	0.00	
1,350.0	16.51	355.06	1,325.2	209.5	-18.1	210.3	0.00	0.00	
1,380.0	16.51	355.06	1,354.0	218.0	-18.8	218.8	0.00	0.00	
1,410.0	16.51	355.06	1,382.8	226.5	-19.6	227.4	0.00	0.00	
1,440.0	16.51	355.06	1,411.5	235.0	-20.3	235.9	0.00	0.00	
1,470.0	16.51	355.06	1,440.3	243.5	-21.1	244.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	16.51	355.06	1,469.1	252.0	-21.8	252.9	0.00	0.00	
1,530.0	16.51	355.06	1,497.8	260.5	-22.5	261.5	0.00	0.00	
1,560.0	16.51	355.06	1,526.6	269.0	-23.3	270.0	0.00	0.00	
1,590.0	16.51	355.06	1,555.4	277.5	-24.0	278.5	0.00	0.00	
1,620.0	16.51	355.06	1,584.1	286.0	-24.7	287.0	0.00	0.00	
1,650.0	16.51	355.06	1,612.9	294.5	-25.5	295.5	0.00	0.00	
1,680.0	16.51	355.06	1,641.6	303.0	-26.2	304.1	0.00	0.00	
1,710.0	16.51	355.06	1,670.4	311.5	-26.9	312.6	0.00	0.00	
1,740.0	16.51	355.06	1,699.2	320.0	-27.7	321.1	0.00	0.00	
1,770.0	16.51	355.06	1,727.9	328.5	-28.4	329.6	0.00	0.00	
1,800.0	16.51	355.06	1,756.7	337.0	-29.1	338.2	0.00	0.00	
1,830.0	16.51	355.06	1,785.5	345.4	-29.9	346.7	0.00	0.00	
1,860.0	16.51	355.06	1,814.2	353.9	-30.6	355.2	0.00	0.00	
1,890.0	16.51	355.06	1,843.0	362.4	-31.3	363.7	0.00	0.00	
1,920.0	16.51	355.06	1,871.7	370.9	-32.1	372.3	0.00	0.00	
1,950.0	16.51	355.06	1,900.5	379.4	-32.8	380.8	0.00	0.00	
1,980.0	16.51	355.06	1,929.3	387.9	-33.5	389.3	0.00	0.00	
2,010.0	16.51	355.06	1,958.0	396.4	-34.3	397.8	0.00	0.00	
2,040.0	16.51	355.06	1,986.8	404.9	-35.0	406.4	0.00	0.00	
2,070.0	16.51	355.06	2,015.6	413.4	-35.7	414.9	0.00	0.00	
2,100.0	16.51	355.06	2,044.3	421.9	-36.5	423.4	0.00	0.00	
2,130.0	16.51	355.06	2,073.1	430.4	-37.2	431.9	0.00	0.00	
2,160.0	16.51	355.06	2,101.9	438.9	-37.9	440.5	0.00	0.00	
2,190.0	16.51	355.06	2,130.6	447.4	-38.7	449.0	0.00	0.00	
2,220.0	16.51	355.06	2,159.4	455.9	-39.4	457.5	0.00	0.00	
2,250.0	16.51	355.06	2,188.1	464.4	-40.1	466.0	0.00	0.00	
2,280.0	16.51	355.06	2,216.9	472.9	-40.9	474.6	0.00	0.00	
2,310.0	16.51	355.06	2,245.7	481.3	-41.6	483.1	0.00	0.00	
2,340.0	16.51	355.06	2,274.4	489.8	-42.3	491.6	0.00	0.00	
2,370.0	16.51	355.06	2,303.2	498.3	-43.1	500.1	0.00	0.00	
2,400.0	16.51	355.06	2,332.0	506.8	-43.8	508.7	0.00	0.00	
2,430.0	16.51	355.06	2,360.7	515.3	-44.5	517.2	0.00	0.00	
2,460.0	16.51	355.06	2,389.5	523.8	-45.3	525.7	0.00	0.00	
2,490.0	16.51	355.06	2,418.2	532.3	-46.0	534.2	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LR08A I16 595 TGT	0.00	0.00	9,154.0	2,398.6	-207.3	1,659,849.06	2,281,243.82	39.617357	-108.051721
- hit/miss target									
- Shape									
- plan misses target center by 6991.4ft at 2490.0ft MD (2418.2 TVD, 532.3 N, -46.0 E)									
- Point									
LR08A I16 595 BHL	0.00	0.00	12,204.0	2,378.6	-242.0	1,659,830.02	2,281,208.63	39.617302	-108.051844
- plan misses target center by 9960.3ft at 2490.0ft MD (2418.2 TVD, 532.3 N, -46.0 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	16.51	355.06	2,427.8	535.1	-46.3	537.1	0.00	0.00	
2,600.0	16.51	355.06	2,523.7	563.4	-48.7	565.5	0.00	0.00	
2,700.0	16.51	355.06	2,619.6	591.8	-51.2	593.9	0.00	0.00	
2,800.0	16.51	355.06	2,715.5	620.1	-53.6	622.3	0.00	0.00	
2,900.0	16.51	355.06	2,811.3	648.4	-56.1	650.7	0.00	0.00	
3,000.0	16.51	355.06	2,907.2	676.7	-58.5	679.1	0.00	0.00	
3,100.0	16.51	355.06	3,003.1	705.0	-60.9	707.6	0.00	0.00	
3,200.0	16.51	355.06	3,099.0	733.3	-63.4	736.0	0.00	0.00	
3,300.0	16.51	355.06	3,194.9	761.6	-65.8	764.4	0.00	0.00	
3,400.0	16.51	355.06	3,290.7	789.9	-68.3	792.8	0.00	0.00	
3,500.0	16.51	355.06	3,386.6	818.3	-70.7	821.2	0.00	0.00	
3,600.0	16.51	355.06	3,482.5	846.6	-73.2	849.6	0.00	0.00	
3,700.0	16.51	355.06	3,578.4	874.9	-75.6	878.0	0.00	0.00	
3,800.0	16.51	355.06	3,674.2	903.2	-78.1	906.5	0.00	0.00	
3,900.0	16.51	355.06	3,770.1	931.5	-80.5	934.9	0.00	0.00	
3,987.5	16.51	355.06	3,854.0	956.3	-82.7	959.7	0.00	0.00	Wasatch
4,000.0	16.51	355.06	3,866.0	959.8	-83.0	963.3	0.00	0.00	
4,100.0	16.51	355.06	3,961.9	988.1	-85.4	991.7	0.00	0.00	
4,200.0	16.51	355.06	4,057.7	1,016.4	-87.9	1,020.1	0.00	0.00	
4,300.0	16.51	355.06	4,153.6	1,044.8	-90.3	1,048.5	0.00	0.00	
4,400.0	16.51	355.06	4,249.5	1,073.1	-92.8	1,076.9	0.00	0.00	
4,500.0	16.51	355.06	4,345.4	1,101.4	-95.2	1,105.4	0.00	0.00	
4,600.0	16.51	355.06	4,441.3	1,129.7	-97.7	1,133.8	0.00	0.00	
4,700.0	16.51	355.06	4,537.1	1,158.0	-100.1	1,162.2	0.00	0.00	
4,800.0	16.51	355.06	4,633.0	1,186.3	-102.6	1,190.6	0.00	0.00	
4,900.0	16.51	355.06	4,728.9	1,214.6	-105.0	1,219.0	0.00	0.00	
5,000.0	16.51	355.06	4,824.8	1,242.9	-107.4	1,247.4	0.00	0.00	
5,100.0	16.51	355.06	4,920.6	1,271.3	-109.9	1,275.8	0.00	0.00	
5,200.0	16.51	355.06	5,016.5	1,299.6	-112.3	1,304.3	0.00	0.00	
5,300.0	16.51	355.06	5,112.4	1,327.9	-114.8	1,332.7	0.00	0.00	
5,400.0	16.51	355.06	5,208.3	1,356.2	-117.2	1,361.1	0.00	0.00	
5,500.0	16.51	355.06	5,304.1	1,384.5	-119.7	1,389.5	0.00	0.00	
5,600.0	16.51	355.06	5,400.0	1,412.8	-122.1	1,417.9	0.00	0.00	
5,700.0	16.51	355.06	5,495.9	1,441.1	-124.6	1,446.3	0.00	0.00	
5,800.0	16.51	355.06	5,591.8	1,469.4	-127.0	1,474.7	0.00	0.00	
5,900.0	16.51	355.06	5,687.7	1,497.7	-129.5	1,503.2	0.00	0.00	
5,969.2	16.51	355.06	5,754.0	1,517.3	-131.2	1,522.8	0.00	0.00	Fort Union
6,000.0	16.51	355.06	5,783.5	1,526.1	-131.9	1,531.6	0.00	0.00	
6,100.0	16.51	355.06	5,879.4	1,554.4	-134.4	1,560.0	0.00	0.00	
6,200.0	16.51	355.06	5,975.3	1,582.7	-136.8	1,588.4	0.00	0.00	
6,300.0	16.51	355.06	6,071.2	1,611.0	-139.3	1,616.8	0.00	0.00	
6,400.0	16.51	355.06	6,167.0	1,639.3	-141.7	1,645.2	0.00	0.00	
6,490.7	16.51	355.06	6,254.0	1,665.0	-143.9	1,671.0	0.00	0.00	Base Ft Union
6,500.0	16.51	355.06	6,262.9	1,667.6	-144.2	1,673.6	0.00	0.00	
6,600.0	16.51	355.06	6,358.8	1,695.9	-146.6	1,702.1	0.00	0.00	
6,700.0	16.51	355.06	6,454.7	1,724.2	-149.1	1,730.5	0.00	0.00	
6,800.0	16.51	355.06	6,550.6	1,752.6	-151.5	1,758.9	0.00	0.00	
6,900.0	16.51	355.06	6,646.4	1,780.9	-153.9	1,787.3	0.00	0.00	
7,000.0	16.51	355.06	6,742.3	1,809.2	-156.4	1,815.7	0.00	0.00	
7,100.0	16.51	355.06	6,838.2	1,837.5	-158.8	1,844.1	0.00	0.00	
7,200.0	16.51	355.06	6,934.1	1,865.8	-161.3	1,872.5	0.00	0.00	
7,300.0	16.51	355.06	7,029.9	1,894.1	-163.7	1,901.0	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,400.0	16.51	355.06	7,125.8	1,922.4	-166.2	1,929.4	0.00	0.00	
7,500.0	16.51	355.06	7,221.7	1,950.7	-168.6	1,957.8	0.00	0.00	
7,600.0	16.51	355.06	7,317.6	1,979.1	-171.1	1,986.2	0.00	0.00	
7,700.0	16.51	355.06	7,413.4	2,007.4	-173.5	2,014.6	0.00	0.00	
7,800.0	16.51	355.06	7,509.3	2,035.7	-176.0	2,043.0	0.00	0.00	
7,900.0	16.51	355.06	7,605.2	2,064.0	-178.4	2,071.4	0.00	0.00	
8,000.0	16.51	355.06	7,701.1	2,092.3	-180.9	2,099.9	0.00	0.00	
8,100.0	16.51	355.06	7,797.0	2,120.6	-183.3	2,128.3	0.00	0.00	
8,200.0	16.51	355.06	7,892.8	2,148.9	-185.8	2,156.7	0.00	0.00	
8,300.0	16.51	355.06	7,988.7	2,177.2	-188.2	2,185.1	0.00	0.00	
8,400.0	16.51	355.06	8,084.6	2,205.5	-190.7	2,213.5	0.00	0.00	
8,500.0	16.51	355.06	8,180.5	2,233.9	-193.1	2,241.9	0.00	0.00	
8,600.0	16.51	355.06	8,276.3	2,262.2	-195.6	2,270.3	0.00	0.00	
8,666.3	16.51	355.06	8,339.9	2,280.9	-197.2	2,289.2	0.00	0.00	Start Drop -2.00
8,700.0	15.84	355.06	8,372.3	2,290.3	-198.0	2,298.6	2.00	-2.00	
8,800.0	13.84	355.06	8,468.9	2,315.8	-200.2	2,324.2	2.00	-2.00	
8,887.3	12.09	355.06	8,554.0	2,335.3	-201.9	2,343.7	2.00	-2.00	Ohio Creek
8,900.0	11.84	355.06	8,566.4	2,337.9	-202.1	2,346.4	2.00	-2.00	
9,000.0	9.84	355.06	8,664.6	2,356.7	-203.7	2,365.2	2.00	-2.00	
9,100.0	7.84	355.06	8,763.5	2,372.0	-205.0	2,380.5	2.00	-2.00	
9,191.2	6.01	355.06	8,854.0	2,382.9	-206.0	2,391.5	2.00	-2.00	Williams Fork
9,200.0	5.84	355.06	8,862.7	2,383.8	-206.1	2,392.4	2.00	-2.00	
9,300.0	3.84	355.06	8,962.4	2,392.2	-206.8	2,400.9	2.00	-2.00	
9,400.0	1.84	355.06	9,062.2	2,397.1	-207.2	2,405.8	2.00	-2.00	
9,491.8	0.00	0.00	9,154.0	2,398.6	-207.3	2,407.3	2.00	-2.00	EOD; Inc=0° - Approx TOG - LR08A I16 595 TC
9,500.0	0.02	239.98	9,162.2	2,398.6	-207.4	2,407.3	0.25	0.25	
9,600.0	0.27	239.98	9,262.2	2,398.5	-207.6	2,407.2	0.25	0.25	
9,700.0	0.52	239.98	9,362.2	2,398.1	-208.2	2,406.9	0.25	0.25	
9,800.0	0.77	239.98	9,462.2	2,397.6	-209.1	2,406.4	0.25	0.25	
9,808.9	0.79	239.98	9,471.1	2,397.5	-209.2	2,406.4	0.25	0.25	
9,900.0	0.79	239.98	9,562.2	2,396.9	-210.3	2,405.9	0.00	0.00	
10,000.0	0.79	239.98	9,662.2	2,396.2	-211.5	2,405.3	0.00	0.00	
10,100.0	0.79	239.98	9,762.2	2,395.5	-212.7	2,404.7	0.00	0.00	
10,200.0	0.79	239.98	9,862.2	2,394.8	-213.9	2,404.2	0.00	0.00	
10,300.0	0.79	239.98	9,962.2	2,394.1	-215.1	2,403.6	0.00	0.00	
10,400.0	0.79	239.98	10,062.2	2,393.4	-216.3	2,403.0	0.00	0.00	
10,500.0	0.79	239.98	10,162.2	2,392.7	-217.5	2,402.5	0.00	0.00	
10,600.0	0.79	239.98	10,262.1	2,392.0	-218.7	2,401.9	0.00	0.00	
10,700.0	0.79	239.98	10,362.1	2,391.3	-219.9	2,401.3	0.00	0.00	
10,800.0	0.79	239.98	10,462.1	2,390.7	-221.1	2,400.8	0.00	0.00	
10,900.0	0.79	239.98	10,562.1	2,390.0	-222.3	2,400.2	0.00	0.00	
11,000.0	0.79	239.98	10,662.1	2,389.3	-223.5	2,399.6	0.00	0.00	
11,100.0	0.79	239.98	10,762.1	2,388.6	-224.7	2,399.1	0.00	0.00	
11,200.0	0.79	239.98	10,862.1	2,387.9	-225.9	2,398.5	0.00	0.00	
11,300.0	0.79	239.98	10,962.1	2,387.2	-227.1	2,397.9	0.00	0.00	
11,400.0	0.79	239.98	11,062.1	2,386.5	-228.3	2,397.3	0.00	0.00	
11,500.0	0.79	239.98	11,162.1	2,385.8	-229.5	2,396.8	0.00	0.00	
11,600.0	0.79	239.98	11,262.1	2,385.1	-230.7	2,396.2	0.00	0.00	
11,700.0	0.79	239.98	11,362.0	2,384.4	-231.9	2,395.6	0.00	0.00	
11,800.0	0.79	239.98	11,462.0	2,383.7	-233.1	2,395.1	0.00	0.00	
11,900.0	0.79	239.98	11,562.0	2,383.0	-234.3	2,394.5	0.00	0.00	
12,000.0	0.79	239.98	11,662.0	2,382.3	-235.5	2,393.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR08A I16 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site:	I16 595 pad	North Reference:	True
Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
12,042.0	0.79	239.98	11,704.0	2,382.1	-236.0	2,393.7	0.00	0.00	Cameo
12,100.0	0.79	239.98	11,762.0	2,381.7	-236.7	2,393.4	0.00	0.00	
12,200.0	0.79	239.98	11,862.0	2,381.0	-237.9	2,392.8	0.00	0.00	
12,300.0	0.79	239.98	11,962.0	2,380.3	-239.1	2,392.2	0.00	0.00	
12,392.0	0.79	239.98	12,054.0	2,379.6	-240.2	2,391.7	0.00	0.00	Rollins SS
12,400.0	0.79	239.98	12,062.0	2,379.6	-240.3	2,391.7	0.00	0.00	
12,500.0	0.79	239.98	12,162.0	2,378.9	-241.5	2,391.1	0.00	0.00	
12,542.0	0.79	239.98	12,204.0	2,378.6	-242.0	2,390.9	0.00	0.00	TD at 12542.0 - LR08A I16 595 BHL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LR08A I16 595 TGT - plan hits target center - Point	0.00	0.00	9,154.0	2,398.6	-207.3	1,659,849.06	2,281,243.82	39.617357	-108.051721
LR08A I16 595 BHL - plan hits target center - Rectangle (sides W50.0 H100.0 D0.0)	0.00	0.00	12,204.0	2,378.6	-242.0	1,659,830.02	2,281,208.63	39.617302	-108.051844

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,987.5	3,854.0	Wasatch		0.00	
5,969.2	5,754.0	Fort Union		0.00	
6,490.7	6,254.0	Base Ft Union		0.00	
8,887.3	8,554.0	Ohio Creek		0.00	
9,191.2	8,854.0	Williams Fork		0.00	
9,491.8	9,154.0	Approx TOG		0.00	
12,042.0	11,704.0	Cameo		0.00	
12,392.0	12,054.0	Rollins SS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP @ 200'
1,025.5	1,014.1	117.7	-10.2	EOB; Inc=16.51°
8,666.3	8,339.9	2,280.9	-197.2	Start Drop -2.00
9,491.8	9,154.0	2,398.6	-207.3	EOD; Inc=0°
12,542.0	12,204.0	2,378.6	-242.0	TD at 12542.0

Berry Petroleum Company (NAD 83)

Garfield County

I16 595 pad

LR08A I16 595

DD

Plan #1

Anticollision Report

30 September, 2010

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 100.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	9/30/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,542.0	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
I16 595 pad						
LR08B I16 595 - DD - Plan #1	200.0	200.0	29.9	29.2	46.260	CC
LR08B I16 595 - DD - Plan #1	300.0	299.8	30.1	29.1	30.040	ES
LR08B I16 595 - DD - Plan #1	2,400.0	2,396.6	98.1	80.0	5.423	SF
LR08C I16 595 Pad - DD - Plan #1	200.0	200.0	14.7	14.0	22.694	CC
LR08C I16 595 Pad - DD - Plan #1	400.0	399.8	15.2	13.8	10.902	ES
LR08C I16 595 Pad - DD - Plan #1	900.0	899.4	20.8	16.3	4.645	SF
LR09A I16 595 - DD - Plan #1	393.8	393.6	58.8	57.5	43.734	CC
LR09A I16 595 - DD - Plan #1	400.0	399.8	58.8	57.5	42.998	ES
LR09A I16 595 - DD - Plan #1	700.0	697.5	69.5	66.9	26.606	SF
LR09B I16 595 - DD - Plan #1	200.0	200.0	44.2	43.6	68.518	CC
LR09B I16 595 - DD - Plan #1	300.0	299.5	44.6	43.6	44.551	ES
LR09B I16 595 - DD - Plan #1	1,300.0	1,294.9	85.1	77.5	11.248	SF
LR09C I16 595 - DD - Plan #1	437.9	437.6	88.8	87.3	58.444	CC
LR09C I16 595 - DD - Plan #1	500.0	499.5	89.0	87.2	50.356	ES
LR09C I16 595 - DD - Plan #1	700.0	697.5	95.0	92.3	35.722	SF
LR09D I16 595 - DD - Plan #1	416.8	416.6	73.7	72.2	51.329	CC, ES
LR09D I16 595 - DD - Plan #1	800.0	795.6	91.6	88.5	29.834	SF
LR16D I16 595 - DD - Plan #1	200.0	200.0	15.2	14.6	23.566	CC
LR16D I16 595 - DD - Plan #1	217.5	217.6	15.2	14.5	21.490	ES
LR16D I16 595 - DD - Plan #1	400.0	399.1	20.9	19.5	15.286	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR08B I16 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-88.60	0.7	-29.9	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	-88.60	0.7	-29.9	29.9	29.6	0.30	100.683		
200.0	200.0	200.0	200.0	0.3	0.3	-88.60	0.7	-29.9	29.9	29.2	0.65	46.260 CC		
300.0	300.0	299.8	299.7	0.5	0.5	-83.74	2.4	-30.2	30.1	29.1	1.00	30.040 ES		
400.0	399.8	399.5	399.3	0.7	0.7	-83.96	7.5	-31.3	30.7	29.3	1.39	22.105		
500.0	499.5	499.3	498.7	0.9	0.9	-84.30	16.0	-33.1	31.8	30.0	1.84	17.304		
600.0	598.7	599.0	597.7	1.2	1.2	-84.74	27.9	-35.7	33.3	30.9	2.37	14.077		
700.0	697.5	698.7	696.2	1.5	1.5	-85.25	43.1	-39.0	35.2	32.2	2.99	11.787		
800.0	795.6	798.5	794.1	1.9	1.9	-85.80	61.6	-42.9	37.6	33.9	3.72	10.110		
900.0	893.1	898.2	891.3	2.3	2.3	-86.37	83.5	-47.6	40.4	35.8	4.56	8.858		
1,000.0	989.6	998.0	987.9	2.8	2.7	-87.73	108.1	-52.9	43.5	38.0	5.49	7.919		
1,025.5	1,014.1	1,023.5	1,012.5	2.9	2.9	-88.67	114.5	-54.3	44.3	38.5	5.74	7.714		
1,100.0	1,085.6	1,097.9	1,084.5	3.3	3.2	-91.70	133.0	-58.3	46.6	40.2	6.46	7.216		
1,200.0	1,181.4	1,197.8	1,181.1	3.8	3.7	-95.29	157.9	-63.6	50.0	42.6	7.43	6.730		
1,300.0	1,277.3	1,297.7	1,277.7	4.3	4.1	-98.42	182.8	-69.0	53.6	45.2	8.39	6.385		
1,400.0	1,373.2	1,397.6	1,374.3	4.8	4.6	-101.15	207.7	-74.3	57.3	47.9	9.33	6.136		
1,500.0	1,469.1	1,497.5	1,470.9	5.3	5.1	-103.55	232.6	-79.6	61.1	50.8	10.26	5.952		
1,600.0	1,564.9	1,597.4	1,567.5	5.8	5.5	-105.66	257.5	-85.0	65.0	53.8	11.17	5.815		
1,700.0	1,660.8	1,697.3	1,664.1	6.4	6.0	-107.53	282.4	-90.3	68.9	56.9	12.07	5.711		
1,800.0	1,756.7	1,797.2	1,760.7	6.9	6.5	-109.20	307.3	-95.7	73.0	60.0	12.96	5.632		
1,900.0	1,852.6	1,897.1	1,857.3	7.4	7.0	-110.69	332.2	-101.0	77.1	63.2	13.83	5.571		
2,000.0	1,948.4	1,997.0	1,953.9	7.9	7.4	-112.03	357.1	-106.4	81.2	66.5	14.70	5.524		
2,100.0	2,044.3	2,096.9	2,050.5	8.5	7.9	-113.24	382.0	-111.7	85.4	69.8	15.56	5.488		
2,200.0	2,140.2	2,196.8	2,147.0	9.0	8.4	-114.33	406.9	-117.1	89.6	73.2	16.41	5.460		
2,300.0	2,236.1	2,296.7	2,243.6	9.5	8.9	-115.33	431.8	-122.4	93.9	76.6	17.26	5.439		
2,400.0	2,332.0	2,396.6	2,340.2	10.0	9.3	-116.24	456.7	-127.7	98.1	80.0	18.10	5.423 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR08C I16 595 Pad - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-88.58	0.4	-14.7	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	-88.58	0.4	-14.7	14.7	14.4	0.30	49.392		
200.0	200.0	200.0	200.0	0.3	0.3	-88.58	0.4	-14.7	14.7	14.0	0.65	22.694 CC		
300.0	300.0	299.9	299.9	0.5	0.5	-83.71	2.1	-14.9	14.8	13.8	1.00	14.755		
400.0	399.8	399.8	399.6	0.7	0.7	-83.94	7.2	-15.8	15.2	13.8	1.39	10.902 ES		
500.0	499.5	499.7	499.2	0.9	0.9	-84.29	15.8	-17.2	15.8	14.0	1.84	8.590		
600.0	598.7	599.6	598.3	1.2	1.2	-84.74	27.8	-19.1	16.7	14.3	2.37	7.048		
700.0	697.5	699.5	697.0	1.5	1.5	-85.24	43.2	-21.6	17.9	14.9	3.00	5.960		
800.0	795.6	799.5	795.2	1.9	1.8	-87.56	61.5	-24.6	19.2	15.5	3.71	5.171		
900.0	893.1	899.4	893.3	2.3	2.2	-98.39	80.0	-27.5	20.8	16.3	4.47	4.645 SF		
1,000.0	989.6	999.1	991.3	2.8	2.6	-115.22	98.4	-30.5	24.3	19.2	5.07	4.789		
1,025.5	1,014.1	1,024.4	1,016.2	2.9	2.6	-119.74	103.1	-31.3	25.7	20.6	5.16	4.983		
1,100.0	1,085.6	1,098.6	1,089.0	3.3	2.9	-130.79	116.9	-33.5	30.9	25.6	5.36	5.770		
1,200.0	1,181.4	1,198.1	1,186.7	3.8	3.3	-140.57	135.3	-36.5	39.1	33.5	5.58	7.001		
1,300.0	1,277.3	1,297.6	1,284.5	4.3	3.6	-146.86	153.7	-39.5	48.0	42.1	5.83	8.231		
1,400.0	1,373.2	1,397.1	1,382.2	4.8	4.0	-151.15	172.1	-42.5	57.2	51.1	6.10	9.382		
1,500.0	1,469.1	1,496.5	1,479.9	5.3	4.4	-154.23	190.6	-45.5	66.8	60.4	6.40	10.431		
1,600.0	1,564.9	1,596.0	1,577.6	5.8	4.7	-156.54	209.0	-48.5	76.4	69.7	6.71	11.379		
1,700.0	1,660.8	1,695.5	1,675.4	6.4	5.1	-158.33	227.4	-51.4	86.2	79.1	7.04	12.234		
1,800.0	1,756.7	1,795.0	1,773.1	6.9	5.5	-159.76	245.8	-54.4	96.0	88.6	7.38	13.005		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR09A I16 595 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-88.59	1.5	-59.2	59.2				
100.0	100.0	100.0	100.0	0.1	0.1	-88.59	1.5	-59.2	59.2	58.9	0.30	199.468	
200.0	200.0	200.0	200.0	0.3	0.3	-88.59	1.5	-59.2	59.2	58.5	0.65	91.648	
300.0	300.0	300.0	300.0	0.5	0.5	-85.34	1.5	-59.2	59.0	58.0	1.00	59.105	
393.8	393.6	393.6	393.6	0.7	0.7	-90.00	1.5	-59.2	58.8	57.5	1.34	43.734 CC	
400.0	399.8	399.8	399.8	0.7	0.7	-90.42	1.5	-59.2	58.8	57.5	1.37	42.998 ES	
500.0	499.5	499.5	499.5	0.9	0.8	-98.79	1.5	-59.2	59.5	57.8	1.77	33.715	
600.0	598.7	598.7	598.7	1.2	1.0	-109.76	1.5	-59.2	62.6	60.4	2.19	28.594	
700.0	697.5	697.5	697.5	1.5	1.2	-121.76	1.5	-59.2	69.5	66.9	2.61	26.606 SF	
800.0	795.6	795.6	795.6	1.9	1.4	-132.99	1.5	-59.2	81.3	78.2	3.01	27.016	
900.0	893.1	893.1	893.1	2.3	1.5	-142.34	1.5	-59.2	98.1	94.8	3.37	29.132	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR09B I16 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-88.59	1.1	-44.2	44.2					
100.0	100.0	100.0	100.0	0.1	0.1	-88.59	1.1	-44.2	44.2	43.9	0.30	149.126		
200.0	200.0	200.0	200.0	0.3	0.3	-88.59	1.1	-44.2	44.2	43.6	0.65	68.518 CC		
300.0	300.0	299.5	299.5	0.5	0.5	-83.75	2.7	-44.7	44.6	43.6	1.00	44.551 ES		
400.0	399.8	399.0	398.9	0.7	0.7	-84.04	7.7	-46.2	45.6	44.3	1.39	32.877		
500.0	499.5	498.5	498.0	0.9	0.9	-84.50	16.0	-48.7	47.4	45.6	1.83	25.848		
600.0	598.7	598.0	596.7	1.2	1.2	-85.09	27.5	-52.2	49.8	47.5	2.36	21.140		
700.0	697.5	697.5	695.0	1.5	1.5	-85.76	42.3	-56.7	53.0	50.0	2.98	17.805		
800.0	795.6	797.1	792.9	1.9	1.8	-86.82	60.1	-62.0	56.7	53.1	3.68	15.406		
900.0	893.1	896.9	890.9	2.3	2.2	-90.56	78.4	-67.5	60.6	56.1	4.47	13.550		
1,000.0	989.6	996.6	988.7	2.8	2.6	-96.89	96.7	-73.0	65.0	59.7	5.32	12.228		
1,025.5	1,014.1	1,021.9	1,013.5	2.9	2.7	-98.82	101.3	-74.4	66.3	60.8	5.53	11.997		
1,100.0	1,085.6	1,096.0	1,086.3	3.3	2.9	-104.38	114.9	-78.5	70.7	64.6	6.13	11.540		
1,200.0	1,181.4	1,195.5	1,183.9	3.8	3.3	-110.76	133.1	-84.0	77.5	70.6	6.87	11.272		
1,300.0	1,277.3	1,294.9	1,281.4	4.3	3.7	-116.08	151.3	-89.5	85.1	77.5	7.56	11.248 SF		
1,400.0	1,373.2	1,394.3	1,379.0	4.8	4.0	-120.49	169.5	-95.0	93.2	85.0	8.21	11.365		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR09C I16 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-88.60	2.2	-89.3	89.3					
100.0	100.0	100.0	100.0	0.1	0.1	-88.60	2.2	-89.3	89.3	89.0	0.30	301.101		
200.0	200.0	200.0	200.0	0.3	0.3	-88.60	2.2	-89.3	89.3	88.7	0.65	138.344		
300.0	300.0	300.0	300.0	0.5	0.5	-84.78	2.2	-89.3	89.2	88.2	1.00	89.298		
400.0	399.8	399.8	399.8	0.7	0.7	-88.14	2.2	-89.3	88.8	87.5	1.37	64.942		
437.9	437.6	437.6	437.6	0.8	0.7	-90.00	2.2	-89.3	88.8	87.3	1.52	58.444 CC		
500.0	499.5	499.5	499.5	0.9	0.8	-93.73	2.2	-89.3	89.0	87.2	1.77	50.356 ES		
600.0	598.7	598.7	598.7	1.2	1.0	-101.36	2.2	-89.3	90.6	88.4	2.20	41.169		
700.0	697.5	697.5	697.5	1.5	1.2	-110.47	2.2	-89.3	95.0	92.3	2.66	35.722 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR09D I16 595 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-88.59	1.8	-74.1	74.1				
100.0	100.0	100.0	100.0	0.1	0.1	-88.59	1.8	-74.1	74.1	73.8	0.30	249.810	
200.0	200.0	200.0	200.0	0.3	0.3	-88.59	1.8	-74.1	74.1	73.5	0.65	114.778	
300.0	300.0	300.0	300.0	0.5	0.5	-84.99	1.8	-74.1	73.9	72.9	1.00	74.060	
400.0	399.8	399.8	399.8	0.7	0.7	-89.05	1.8	-74.1	73.7	72.3	1.37	53.856	
416.8	416.6	416.6	416.6	0.7	0.7	-90.00	1.8	-74.1	73.7	72.2	1.44	51.329 CC, ES	
500.0	499.5	499.5	499.5	0.9	0.8	-95.78	1.8	-74.1	74.0	72.3	1.77	41.914	
600.0	598.7	598.7	598.7	1.2	1.0	-104.82	1.8	-74.1	76.2	74.1	2.20	34.717	
700.0	697.5	697.5	697.5	1.5	1.2	-115.28	1.8	-74.1	81.7	79.1	2.64	30.943	
800.0	795.6	795.6	795.6	1.9	1.4	-125.84	1.8	-74.1	91.6	88.5	3.07	29.834 SF	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design I16 595 pad - LR16D I16 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	91.36	-0.4	15.2	15.2					
100.0	100.0	100.0	100.0	0.1	0.1	91.36	-0.4	15.2	15.2	14.9	0.30	51.291		
200.0	200.0	200.0	200.0	0.3	0.3	91.36	-0.4	15.2	15.2	14.6	0.65	23.566 CC		
217.5	217.5	217.6	217.6	0.4	0.4	96.70	-0.4	15.2	15.2	14.5	0.71	21.490 ES		
300.0	300.0	299.9	299.9	0.5	0.5	109.05	-2.1	15.1	15.7	14.7	1.00	15.686		
400.0	399.8	399.1	398.9	0.7	0.7	137.63	-7.3	14.7	20.9	19.5	1.37	15.286 SF		
500.0	499.5	496.9	496.3	0.9	0.9	158.42	-15.7	14.1	35.1	33.3	1.71	20.464		
600.0	598.7	592.5	591.3	1.2	1.2	168.75	-27.1	13.2	57.6	55.5	2.04	28.162		
700.0	697.5	685.5	683.2	1.5	1.5	174.03	-41.3	12.2	87.3	84.9	2.37	36.876		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR08A I16 595
Project:	Garfield County	TVD Reference:	KBE @ 8306.0ft (Patterson 302)
Reference Site:	I16 595 pad	MD Reference:	KBE @ 8306.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR08A I16 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8306.0ft (Patterson 302)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: LR08A I16 595
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.61°

