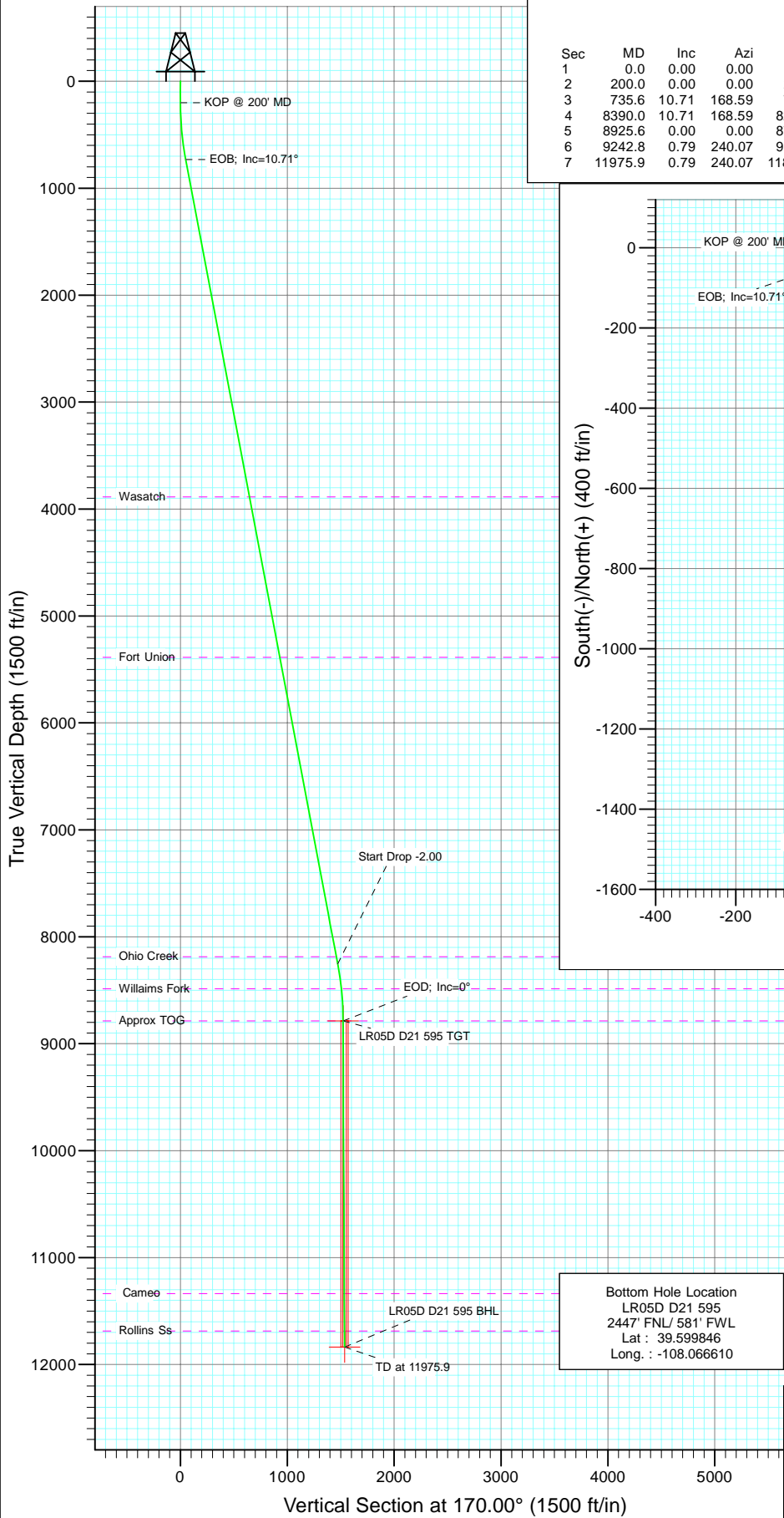
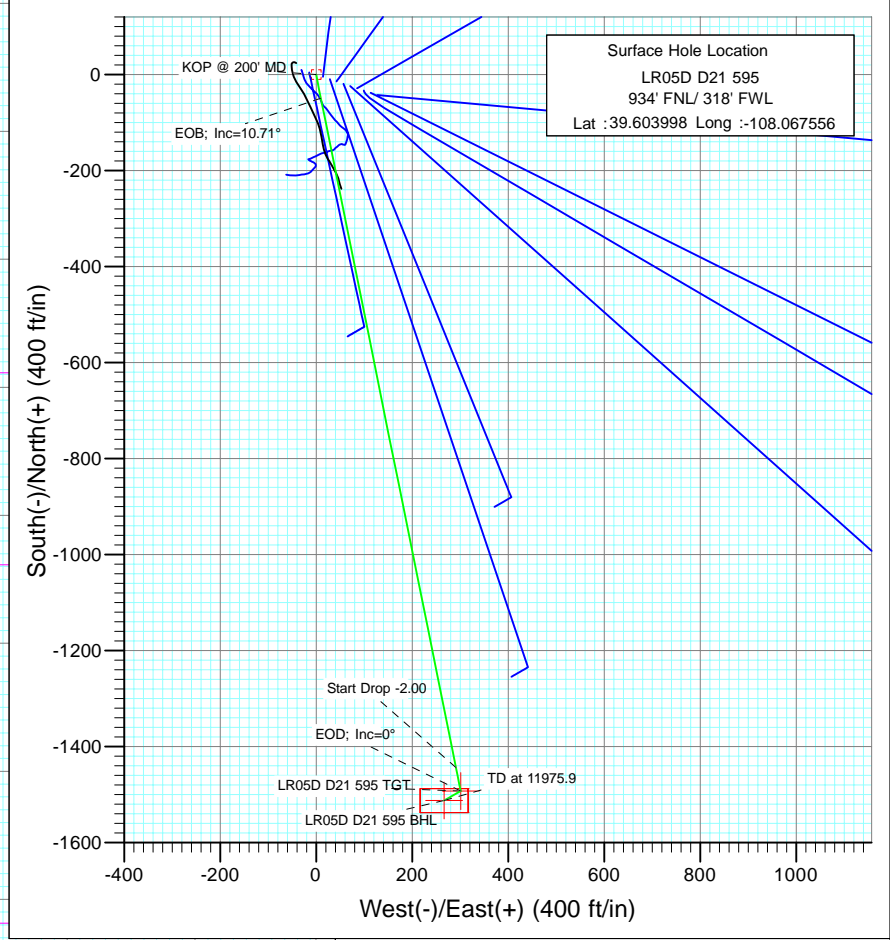




Project: Garfield County
 Site: D21 595 Pad
 Well: LR05D D21 595
 Wellbore: DD
 Design: Plan #2



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	735.6	10.71	168.59	732.5	-48.9	9.9	2.00	168.59	49.9	
4	8390.0	10.71	168.59	8253.5	-1443.5	291.4	0.00	0.00	1472.1	
5	8925.6	0.00	0.00	8786.0	-1492.4	301.2	2.00	180.00	1522.0	LR05D D21 595 TGT
6	9242.8	0.79	240.07	9103.2	-1493.5	299.3	0.25	240.07	1522.8	
7	11975.9	0.79	240.07	11836.0	-1512.4	266.6	0.00	0.00	1535.7	LR05D D21 595 BHL



Azimuths to True North
Magnetic North: 10.45°

Magnetic Field
Strength: 52368.8snT
Dip Angle: 65.84°
Date: 11/23/2010
Model: IGRF200510

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3886.0	3945.0	Wasatch
5386.0	5471.6	Fort Union
8186.0	8321.3	Ohio Creek
8486.0	8625.0	Willaims Fork
8786.0	8925.6	Approx TOG
11336.0	11475.8	Cameo
11686.0	11825.9	Rollins Ss

Bottom Hole Location
 LR05D D21 595
 2447' FNL/ 581' FWL
 Lat : 39.599846
 Long. : -108.066610

DESIGN DETAILS: Plan #2

1055XX; BH
 KBE @ 8278.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
LR05D D21 595 BHL	170.00	Slot	0.0	0.0	0.0

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well LR05D D21 595
Company: Berry Petroleum Company (NAD 83)	TVD Reference: KBE @ 8278.0ft (Original Well Elev)
Project: Garfield County	MD Reference: KBE @ 8278.0ft (Original Well Elev)
Site: D21 595 Pad	North Reference: True
Well: LR05D D21 595	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: Plan #2	

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 D21 595 Pad					
Site Position:		Northing:	1,655,115.77 ft	Latitude:	39.604011
From: Lat/Long		Easting:	2,276,632.91 ft	Longitude:	-108.067607
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.62 °

Well LR05D D21 595						
Well Position	+N/-S	0.0 ft	Northing:	1,655,110.62 ft	Latitude:	39.603998
	+E/-W	0.0 ft	Easting:	2,276,647.14 ft	Longitude:	-108.067556
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,263.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	11/23/2010	(°)	(°)	(nT)
			10.44	65.84	52,369

Design Plan #2				
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	170.00

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	
735.6	10.71	168.59	732.5	-48.9	9.9	2.00	2.00	0.00	168.59	
8,390.0	10.71	168.59	8,253.5	-1,443.5	291.4	0.00	0.00	0.00	0.00	
8,925.6	0.00	0.00	8,786.0	-1,492.4	301.2	2.00	-2.00	0.00	180.00	LR05D D21 595 TGT
9,242.8	0.79	240.07	9,103.2	-1,493.5	299.3	0.25	0.25	-37.81	240.07	
11,975.9	0.79	240.07	11,836.0	-1,512.4	266.6	0.00	0.00	0.00	0.00	LR05D D21 595 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR05D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR05D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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' MD
210.0	0.20	168.59	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	168.59	240.0	-0.3	0.1	0.3	2.00	2.00	
270.0	1.40	168.59	270.0	-0.8	0.2	0.9	2.00	2.00	
300.0	2.00	168.59	300.0	-1.7	0.3	1.7	2.00	2.00	
330.0	2.60	168.59	330.0	-2.9	0.6	2.9	2.00	2.00	
360.0	3.20	168.59	359.9	-4.4	0.9	4.5	2.00	2.00	
390.0	3.80	168.59	389.9	-6.2	1.2	6.3	2.00	2.00	
420.0	4.40	168.59	419.8	-8.3	1.7	8.4	2.00	2.00	
450.0	5.00	168.59	449.7	-10.7	2.2	10.9	2.00	2.00	
480.0	5.60	168.59	479.6	-13.4	2.7	13.7	2.00	2.00	
510.0	6.20	168.59	509.4	-16.4	3.3	16.8	2.00	2.00	
540.0	6.80	168.59	539.2	-19.8	4.0	20.1	2.00	2.00	
570.0	7.40	168.59	569.0	-23.4	4.7	23.9	2.00	2.00	
600.0	8.00	168.59	598.7	-27.3	5.5	27.9	2.00	2.00	
630.0	8.60	168.59	628.4	-31.6	6.4	32.2	2.00	2.00	
660.0	9.20	168.59	658.0	-36.1	7.3	36.8	2.00	2.00	
690.0	9.80	168.59	687.6	-41.0	8.3	41.8	2.00	2.00	
720.0	10.40	168.59	717.1	-46.1	9.3	47.0	2.00	2.00	
735.6	10.71	168.59	732.5	-48.9	9.9	49.9	2.00	2.00	EOB; Inc=10.71°
750.0	10.71	168.59	746.6	-51.6	10.4	52.6	0.00	0.00	
780.0	10.71	168.59	776.1	-57.0	11.5	58.2	0.00	0.00	
810.0	10.71	168.59	805.6	-62.5	12.6	63.7	0.00	0.00	
840.0	10.71	168.59	835.1	-68.0	13.7	69.3	0.00	0.00	
870.0	10.71	168.59	864.5	-73.4	14.8	74.9	0.00	0.00	
900.0	10.71	168.59	894.0	-78.9	15.9	80.5	0.00	0.00	
930.0	10.71	168.59	923.5	-84.4	17.0	86.0	0.00	0.00	
960.0	10.71	168.59	953.0	-89.8	18.1	91.6	0.00	0.00	
990.0	10.71	168.59	982.5	-95.3	19.2	97.2	0.00	0.00	
1,020.0	10.71	168.59	1,011.9	-100.7	20.3	102.7	0.00	0.00	
1,050.0	10.71	168.59	1,041.4	-106.2	21.4	108.3	0.00	0.00	
1,080.0	10.71	168.59	1,070.9	-111.7	22.5	113.9	0.00	0.00	
1,110.0	10.71	168.59	1,100.4	-117.1	23.6	119.5	0.00	0.00	
1,140.0	10.71	168.59	1,129.8	-122.6	24.7	125.0	0.00	0.00	
1,170.0	10.71	168.59	1,159.3	-128.1	25.9	130.6	0.00	0.00	
1,200.0	10.71	168.59	1,188.8	-133.5	27.0	136.2	0.00	0.00	
1,230.0	10.71	168.59	1,218.3	-139.0	28.1	141.8	0.00	0.00	
1,260.0	10.71	168.59	1,247.7	-144.5	29.2	147.3	0.00	0.00	
1,290.0	10.71	168.59	1,277.2	-149.9	30.3	152.9	0.00	0.00	
1,320.0	10.71	168.59	1,306.7	-155.4	31.4	158.5	0.00	0.00	
1,350.0	10.71	168.59	1,336.2	-160.9	32.5	164.1	0.00	0.00	
1,380.0	10.71	168.59	1,365.7	-166.3	33.6	169.6	0.00	0.00	
1,410.0	10.71	168.59	1,395.1	-171.8	34.7	175.2	0.00	0.00	
1,440.0	10.71	168.59	1,424.6	-177.3	35.8	180.8	0.00	0.00	
1,470.0	10.71	168.59	1,454.1	-182.7	36.9	186.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR05D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR05D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	10.71	168.59	1,483.6	-188.2	38.0	191.9	0.00	0.00	
1,530.0	10.71	168.59	1,513.0	-193.7	39.1	197.5	0.00	0.00	
1,560.0	10.71	168.59	1,542.5	-199.1	40.2	203.1	0.00	0.00	
1,590.0	10.71	168.59	1,572.0	-204.6	41.3	208.7	0.00	0.00	
1,620.0	10.71	168.59	1,601.5	-210.1	42.4	214.2	0.00	0.00	
1,650.0	10.71	168.59	1,631.0	-215.5	43.5	219.8	0.00	0.00	
1,680.0	10.71	168.59	1,660.4	-221.0	44.6	225.4	0.00	0.00	
1,710.0	10.71	168.59	1,689.9	-226.5	45.7	231.0	0.00	0.00	
1,740.0	10.71	168.59	1,719.4	-231.9	46.8	236.5	0.00	0.00	
1,770.0	10.71	168.59	1,748.9	-237.4	47.9	242.1	0.00	0.00	
1,800.0	10.71	168.59	1,778.3	-242.9	49.0	247.7	0.00	0.00	
1,830.0	10.71	168.59	1,807.8	-248.3	50.1	253.3	0.00	0.00	
1,860.0	10.71	168.59	1,837.3	-253.8	51.2	258.8	0.00	0.00	
1,890.0	10.71	168.59	1,866.8	-259.3	52.3	264.4	0.00	0.00	
1,920.0	10.71	168.59	1,896.2	-264.7	53.4	270.0	0.00	0.00	
1,950.0	10.71	168.59	1,925.7	-270.2	54.5	275.5	0.00	0.00	
1,980.0	10.71	168.59	1,955.2	-275.6	55.6	281.1	0.00	0.00	
2,010.0	10.71	168.59	1,984.7	-281.1	56.7	286.7	0.00	0.00	
2,040.0	10.71	168.59	2,014.2	-286.6	57.8	292.3	0.00	0.00	
2,070.0	10.71	168.59	2,043.6	-292.0	59.0	297.8	0.00	0.00	
2,100.0	10.71	168.59	2,073.1	-297.5	60.1	303.4	0.00	0.00	
2,130.0	10.71	168.59	2,102.6	-303.0	61.2	309.0	0.00	0.00	
2,160.0	10.71	168.59	2,132.1	-308.4	62.3	314.6	0.00	0.00	
2,190.0	10.71	168.59	2,161.5	-313.9	63.4	320.1	0.00	0.00	
2,220.0	10.71	168.59	2,191.0	-319.4	64.5	325.7	0.00	0.00	
2,250.0	10.71	168.59	2,220.5	-324.8	65.6	331.3	0.00	0.00	
2,280.0	10.71	168.59	2,250.0	-330.3	66.7	336.9	0.00	0.00	
2,310.0	10.71	168.59	2,279.5	-335.8	67.8	342.4	0.00	0.00	
2,340.0	10.71	168.59	2,308.9	-341.2	68.9	348.0	0.00	0.00	
2,370.0	10.71	168.59	2,338.4	-346.7	70.0	353.6	0.00	0.00	
2,400.0	10.71	168.59	2,367.9	-352.2	71.1	359.2	0.00	0.00	
2,430.0	10.71	168.59	2,397.4	-357.6	72.2	364.7	0.00	0.00	
2,460.0	10.71	168.59	2,426.8	-363.1	73.3	370.3	0.00	0.00	
2,490.0	10.71	168.59	2,456.3	-368.6	74.4	375.9	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
LR05D D21 595 BHL - hit/miss target - Shape	0.00	0.00	11,836.0	-1,512.4	266.6	1,653,591.33	2,276,870.86	39.599846	-108.066610
- plan misses target center by 9451.1ft at 2490.0ft MD (2456.3 TVD, -368.6 N, 74.4 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									
LR05D D21 595 TGT - hit/miss target - Shape	0.00	0.00	8,786.0	-1,492.4	301.2	1,653,610.31	2,276,906.10	39.599901	-108.066487
- plan misses target center by 6432.7ft at 2490.0ft MD (2456.3 TVD, -368.6 N, 74.4 E)									
- Point									

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR05D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR05D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	10.71	168.59	2,466.1	-370.4	74.8	377.7	0.00	0.00	
2,600.0	10.71	168.59	2,564.4	-388.6	78.4	396.3	0.00	0.00	
2,700.0	10.71	168.59	2,662.7	-406.8	82.1	414.9	0.00	0.00	
2,800.0	10.71	168.59	2,760.9	-425.0	85.8	433.5	0.00	0.00	
2,900.0	10.71	168.59	2,859.2	-443.3	89.5	452.1	0.00	0.00	
3,000.0	10.71	168.59	2,957.4	-461.5	93.2	470.6	0.00	0.00	
3,100.0	10.71	168.59	3,055.7	-479.7	96.8	489.2	0.00	0.00	
3,200.0	10.71	168.59	3,153.9	-497.9	100.5	507.8	0.00	0.00	
3,300.0	10.71	168.59	3,252.2	-516.1	104.2	526.4	0.00	0.00	
3,400.0	10.71	168.59	3,350.5	-534.4	107.9	545.0	0.00	0.00	
3,500.0	10.71	168.59	3,448.7	-552.6	111.5	563.5	0.00	0.00	
3,600.0	10.71	168.59	3,547.0	-570.8	115.2	582.1	0.00	0.00	
3,700.0	10.71	168.59	3,645.2	-589.0	118.9	600.7	0.00	0.00	
3,800.0	10.71	168.59	3,743.5	-607.2	122.6	619.3	0.00	0.00	
3,900.0	10.71	168.59	3,841.7	-625.4	126.3	637.9	0.00	0.00	
3,945.0	10.71	168.59	3,886.0	-633.7	127.9	646.2	0.00	0.00	Wasatch
4,000.0	10.71	168.59	3,940.0	-643.7	129.9	656.4	0.00	0.00	
4,100.0	10.71	168.59	4,038.3	-661.9	133.6	675.0	0.00	0.00	
4,200.0	10.71	168.59	4,136.5	-680.1	137.3	693.6	0.00	0.00	
4,300.0	10.71	168.59	4,234.8	-698.3	141.0	712.2	0.00	0.00	
4,400.0	10.71	168.59	4,333.0	-716.5	144.6	730.8	0.00	0.00	
4,500.0	10.71	168.59	4,431.3	-734.8	148.3	749.3	0.00	0.00	
4,600.0	10.71	168.59	4,529.6	-753.0	152.0	767.9	0.00	0.00	
4,700.0	10.71	168.59	4,627.8	-771.2	155.7	786.5	0.00	0.00	
4,800.0	10.71	168.59	4,726.1	-789.4	159.3	805.1	0.00	0.00	
4,900.0	10.71	168.59	4,824.3	-807.6	163.0	823.7	0.00	0.00	
5,000.0	10.71	168.59	4,922.6	-825.9	166.7	842.3	0.00	0.00	
5,100.0	10.71	168.59	5,020.8	-844.1	170.4	860.8	0.00	0.00	
5,200.0	10.71	168.59	5,119.1	-862.3	174.1	879.4	0.00	0.00	
5,300.0	10.71	168.59	5,217.4	-880.5	177.7	898.0	0.00	0.00	
5,400.0	10.71	168.59	5,315.6	-898.7	181.4	916.6	0.00	0.00	
5,471.6	10.71	168.59	5,386.0	-911.8	184.0	929.9	0.00	0.00	Fort Union
5,500.0	10.71	168.59	5,413.9	-916.9	185.1	935.2	0.00	0.00	
5,600.0	10.71	168.59	5,512.1	-935.2	188.8	953.7	0.00	0.00	
5,700.0	10.71	168.59	5,610.4	-953.4	192.4	972.3	0.00	0.00	
5,800.0	10.71	168.59	5,708.6	-971.6	196.1	990.9	0.00	0.00	
5,900.0	10.71	168.59	5,806.9	-989.8	199.8	1,009.5	0.00	0.00	
6,000.0	10.71	168.59	5,905.2	-1,008.0	203.5	1,028.1	0.00	0.00	
6,100.0	10.71	168.59	6,003.4	-1,026.3	207.2	1,046.6	0.00	0.00	
6,200.0	10.71	168.59	6,101.7	-1,044.5	210.8	1,065.2	0.00	0.00	
6,300.0	10.71	168.59	6,199.9	-1,062.7	214.5	1,083.8	0.00	0.00	
6,400.0	10.71	168.59	6,298.2	-1,080.9	218.2	1,102.4	0.00	0.00	
6,500.0	10.71	168.59	6,396.4	-1,099.1	221.9	1,121.0	0.00	0.00	
6,600.0	10.71	168.59	6,494.7	-1,117.4	225.5	1,139.5	0.00	0.00	
6,700.0	10.71	168.59	6,593.0	-1,135.6	229.2	1,158.1	0.00	0.00	
6,800.0	10.71	168.59	6,691.2	-1,153.8	232.9	1,176.7	0.00	0.00	
6,900.0	10.71	168.59	6,789.5	-1,172.0	236.6	1,195.3	0.00	0.00	
7,000.0	10.71	168.59	6,887.7	-1,190.2	240.3	1,213.9	0.00	0.00	
7,100.0	10.71	168.59	6,986.0	-1,208.4	243.9	1,232.4	0.00	0.00	
7,200.0	10.71	168.59	7,084.2	-1,226.7	247.6	1,251.0	0.00	0.00	
7,300.0	10.71	168.59	7,182.5	-1,244.9	251.3	1,269.6	0.00	0.00	
7,400.0	10.71	168.59	7,280.8	-1,263.1	255.0	1,288.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR05D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR05D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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
7,500.0	10.71	168.59	7,379.0	-1,281.3	258.6	1,306.8	0.00	0.00	
7,600.0	10.71	168.59	7,477.3	-1,299.5	262.3	1,325.3	0.00	0.00	
7,700.0	10.71	168.59	7,575.5	-1,317.8	266.0	1,343.9	0.00	0.00	
7,800.0	10.71	168.59	7,673.8	-1,336.0	269.7	1,362.5	0.00	0.00	
7,900.0	10.71	168.59	7,772.1	-1,354.2	273.4	1,381.1	0.00	0.00	
8,000.0	10.71	168.59	7,870.3	-1,372.4	277.0	1,399.7	0.00	0.00	
8,100.0	10.71	168.59	7,968.6	-1,390.6	280.7	1,418.2	0.00	0.00	
8,200.0	10.71	168.59	8,066.8	-1,408.8	284.4	1,436.8	0.00	0.00	
8,300.0	10.71	168.59	8,165.1	-1,427.1	288.1	1,455.4	0.00	0.00	
8,321.3	10.71	168.59	8,186.0	-1,430.9	288.8	1,459.4	0.00	0.00	Ohio Creek
8,390.0	10.71	168.59	8,253.5	-1,443.5	291.4	1,472.1	0.00	0.00	Start Drop -2.00
8,400.0	10.51	168.59	8,263.3	-1,445.3	291.7	1,474.0	2.00	-2.00	
8,500.0	8.51	168.59	8,362.0	-1,461.5	295.0	1,490.5	2.00	-2.00	
8,600.0	6.51	168.59	8,461.1	-1,474.3	297.6	1,503.6	2.00	-2.00	
8,625.0	6.01	168.59	8,486.0	-1,477.0	298.1	1,506.3	2.00	-2.00	Willaims Fork
8,700.0	4.51	168.59	8,560.6	-1,483.7	299.5	1,513.2	2.00	-2.00	
8,800.0	2.51	168.59	8,660.4	-1,489.7	300.7	1,519.3	2.00	-2.00	
8,900.0	0.51	168.59	8,760.4	-1,492.3	301.2	1,521.9	2.00	-2.00	
8,925.6	0.00	0.00	8,786.0	-1,492.4	301.2	1,522.0	2.00	-2.00	EOD; Inc=0° - Approx TOG - LR05D D21 595 T
9,000.0	0.19	240.07	8,860.4	-1,492.5	301.1	1,522.1	0.25	0.25	
9,100.0	0.44	240.07	8,960.4	-1,492.7	300.7	1,522.3	0.25	0.25	
9,200.0	0.69	240.07	9,060.4	-1,493.2	299.8	1,522.6	0.25	0.25	
9,242.8	0.79	240.07	9,103.2	-1,493.5	299.3	1,522.8	0.25	0.25	
9,300.0	0.79	240.07	9,160.4	-1,493.9	298.7	1,523.1	0.00	0.00	
9,400.0	0.79	240.07	9,260.4	-1,494.6	297.5	1,523.5	0.00	0.00	
9,500.0	0.79	240.07	9,360.4	-1,495.3	296.3	1,524.0	0.00	0.00	
9,600.0	0.79	240.07	9,460.4	-1,496.0	295.1	1,524.5	0.00	0.00	
9,700.0	0.79	240.07	9,560.3	-1,496.7	293.9	1,524.9	0.00	0.00	
9,800.0	0.79	240.07	9,660.3	-1,497.3	292.7	1,525.4	0.00	0.00	
9,900.0	0.79	240.07	9,760.3	-1,498.0	291.5	1,525.9	0.00	0.00	
10,000.0	0.79	240.07	9,860.3	-1,498.7	290.3	1,526.4	0.00	0.00	
10,100.0	0.79	240.07	9,960.3	-1,499.4	289.1	1,526.8	0.00	0.00	
10,200.0	0.79	240.07	10,060.3	-1,500.1	287.9	1,527.3	0.00	0.00	
10,300.0	0.79	240.07	10,160.3	-1,500.8	286.7	1,527.8	0.00	0.00	
10,400.0	0.79	240.07	10,260.3	-1,501.5	285.5	1,528.2	0.00	0.00	
10,500.0	0.79	240.07	10,360.3	-1,502.2	284.3	1,528.7	0.00	0.00	
10,600.0	0.79	240.07	10,460.3	-1,502.9	283.1	1,529.2	0.00	0.00	
10,700.0	0.79	240.07	10,560.3	-1,503.6	281.9	1,529.7	0.00	0.00	
10,800.0	0.79	240.07	10,660.2	-1,504.2	280.7	1,530.1	0.00	0.00	
10,900.0	0.79	240.07	10,760.2	-1,504.9	279.5	1,530.6	0.00	0.00	
11,000.0	0.79	240.07	10,860.2	-1,505.6	278.3	1,531.1	0.00	0.00	
11,100.0	0.79	240.07	10,960.2	-1,506.3	277.1	1,531.5	0.00	0.00	
11,200.0	0.79	240.07	11,060.2	-1,507.0	275.9	1,532.0	0.00	0.00	
11,300.0	0.79	240.07	11,160.2	-1,507.7	274.7	1,532.5	0.00	0.00	
11,400.0	0.79	240.07	11,260.2	-1,508.4	273.5	1,533.0	0.00	0.00	
11,475.8	0.79	240.07	11,336.0	-1,508.9	272.6	1,533.3	0.00	0.00	Cameo
11,500.0	0.79	240.07	11,360.2	-1,509.1	272.3	1,533.4	0.00	0.00	
11,600.0	0.79	240.07	11,460.2	-1,509.8	271.1	1,533.9	0.00	0.00	
11,700.0	0.79	240.07	11,560.2	-1,510.5	269.9	1,534.4	0.00	0.00	
11,800.0	0.79	240.07	11,660.1	-1,511.2	268.7	1,534.8	0.00	0.00	
11,825.9	0.79	240.07	11,686.0	-1,511.3	268.4	1,535.0	0.00	0.00	Rollins Ss
11,900.0	0.79	240.07	11,760.1	-1,511.8	267.5	1,535.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well LR05D D21 595
Company: Berry Petroleum Company (NAD 83)	TVD Reference: KBE @ 8278.0ft (Original Well Elev)
Project: Garfield County	MD Reference: KBE @ 8278.0ft (Original Well Elev)
Site: D21 595 Pad	North Reference: True
Well: LR05D D21 595	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: Plan #2	

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
11,975.9	0.79	240.07	11,836.0	-1,512.4	266.6	1,535.7	0.00	0.00	LR05D D21 595 BHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LR05D D21 595 BHL - hit/miss target - Shape	0.00	0.00	11,836.0	-1,512.4	266.6	1,653,591.33	2,276,870.86	39.599846	-108.066610
- plan hits target center - Rectangle (sides W50.0 H100.0 D0.0)									
LR05D D21 595 TGT - plan hits target center - Point	0.00	0.00	8,786.0	-1,492.4	301.2	1,653,610.31	2,276,906.10	39.599901	-108.066487

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,945.0	3,886.0	Wasatch		0.00		
5,471.6	5,386.0	Fort Union		0.00		
8,321.3	8,186.0	Ohio Creek		0.00		
8,625.0	8,486.0	Willaims Fork		0.00		
8,925.6	8,786.0	Approx TOG		0.00		
11,475.8	11,336.0	Cameo		0.00		
11,825.9	11,686.0	Rollins Ss		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
735.6	732.5	-48.9	9.9	EOB; Inc=10.71°
8,390.0	8,253.5	-1,443.5	291.4	Start Drop -2.00
8,925.6	8,786.0	-1,492.4	301.2	EOD; Inc=0°
11,975.9	11,836.0	-1,512.4	266.6	TD at 11975.9

Berry Petroleum Company

(NAD 83)

Garfield County

D21 595 Pad

LR05D D21 595

DD

Plan #2

Anticollision Report

03 December, 2010

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,399.5ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	12/3/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,975.9	Plan #2 (DD)	MWD	Geolink MWD

Summary	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Site Name						
Offset Well - Wellbore - Design						
D21 595 Pad						
LR03C D21 595 - DD - Plan #2	200.0	200.0	134.8	134.2	208.797	CC, ES
LR03C D21 595 - DD - Plan #2	6,900.0	6,737.5	1,389.9	1,350.6	35.344	SF
LR04A D21 595 - DD - Plan #2	423.0	421.9	42.5	41.0	29.108	CC, ES
LR04A D21 595 - DD - Plan #2	600.0	594.3	52.6	50.4	23.949	SF
LR04B D21 595 - DD - Plan #2	373.7	373.5	13.2	12.0	10.402	CC, ES
LR04B D21 595 - DD - Plan #2	400.0	399.7	13.5	12.1	9.841	SF
LR04C D21 595 (Existing) - DD - DD	273.8	270.2	30.6	29.7	33.644	CC
LR04C D21 595 (Existing) - DD - DD	300.0	296.4	30.7	29.7	30.568	ES
LR04C D21 595 (Existing) - DD - DD	600.0	596.1	41.4	39.3	19.532	SF
LR04D D21 595 - DD - Plan #2	200.0	200.0	90.0	89.3	139.336	CC, ES
LR04D D21 595 - DD - Plan #2	1,000.0	983.6	145.6	141.5	35.687	SF
LR05A D21 595 - DD - Plan #2	519.6	516.9	57.3	55.4	30.806	CC
LR05A D21 595 - DD - Plan #2	600.0	596.4	57.5	55.3	25.714	ES
LR05A D21 595 - DD - Plan #2	1,400.0	1,393.9	82.0	75.3	12.233	SF
LR05B D21 595 (Existing) - DD - DD	0.0	0.0	48.1			
LR05B D21 595 (Existing) - DD - DD	100.0	95.6	48.3	48.0	157.656	ES
LR05B D21 595 (Existing) - DD - DD	3,000.0	3,000.5	230.8	220.3	21.996	SF
LR05BDR D21-595 - DD - Plan #2	520.6	521.5	14.9	13.0	7.724	CC, ES
LR05BDR D21-595 - DD - Plan #2	600.0	600.8	15.5	13.2	6.786	SF
LR05C D21 595 - DD - Plan #1	200.0	200.0	30.0	29.3	46.445	CC
LR05C D21 595 - DD - Plan #1	300.0	299.4	30.2	29.2	30.205	ES
LR05C D21 595 - DD - Plan #1	11,975.9	11,939.8	293.7	240.6	5.533	SF
LR05C D21 595 - DD - Plan #2	200.0	200.0	30.0	29.3	46.445	CC
LR05C D21 595 - DD - Plan #2	300.0	299.4	30.2	29.2	30.205	ES
LR05C D21 595 - DD - Plan #2	11,975.9	11,939.8	293.7	240.6	5.533	SF
LR06B D21 595 - DD - Plan #2	629.9	623.9	110.2	107.9	47.265	CC, ES
LR06B D21 595 - DD - Plan #2	11,975.9	11,996.3	1,398.0	1,334.6	22.078	SF
LR06C D21 595 - DD - Plan #2	662.5	660.5	64.9	62.4	25.844	CC, ES
LR06C D21 595 - DD - Plan #2	2,600.0	2,580.3	285.8	270.2	18.318	SF
LR06D D21 595 - DD - Plan #2	308.3	306.3	104.8	103.8	101.956	CC, ES
LR06D D21 595 - DD - Plan #2	7,500.0	7,349.6	1,380.9	1,329.4	26.832	SF

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.43	-42.6	127.9	134.8						
100.0	100.0	100.0	100.0	0.1	0.1	108.43	-42.6	127.9	134.8	134.5	0.30	454.439			
200.0	200.0	200.0	200.0	0.3	0.3	108.43	-42.6	127.9	134.8	134.2	0.65	208.797	CC, ES		
300.0	300.0	295.6	295.6	0.5	0.5	-60.91	-42.8	129.5	135.6	134.6	0.99	136.963			
400.0	399.8	390.9	390.8	0.7	0.7	-63.11	-43.2	134.3	138.1	136.7	1.35	102.405			
500.0	499.5	485.8	485.3	0.9	0.9	-66.56	-43.9	142.1	142.6	140.9	1.73	82.287			
600.0	598.7	580.0	578.9	1.2	1.1	-70.95	-44.9	153.0	149.8	147.7	2.16	69.420			
700.0	697.5	673.5	671.3	1.5	1.4	-75.91	-46.2	166.8	160.4	157.7	2.64	60.809			
800.0	795.8	771.3	767.9	1.8	1.7	-81.37	-47.6	182.7	173.2	170.1	3.17	54.725			
900.0	894.0	869.1	864.3	2.2	2.0	-86.19	-49.1	198.6	187.5	183.8	3.72	50.463			
1,000.0	992.3	966.9	960.8	2.6	2.4	-90.32	-50.5	214.5	202.9	198.6	4.28	47.395			
1,100.0	1,090.5	1,064.7	1,057.3	2.9	2.7	-93.87	-52.0	230.4	219.2	214.3	4.86	45.122			
1,200.0	1,188.8	1,162.5	1,153.8	3.3	3.0	-96.92	-53.4	246.4	236.2	230.7	5.44	43.398			
1,300.0	1,287.1	1,260.3	1,250.3	3.6	3.3	-99.56	-54.9	262.3	253.8	247.7	6.03	42.064			
1,400.0	1,385.3	1,358.2	1,346.8	4.0	3.7	-101.86	-56.3	278.2	271.8	265.2	6.63	41.014			
1,500.0	1,483.6	1,456.0	1,443.3	4.4	4.0	-103.87	-57.8	294.1	290.2	283.0	7.22	40.175			
1,600.0	1,581.8	1,553.8	1,539.8	4.7	4.3	-105.64	-59.2	310.0	308.9	301.1	7.82	39.496			
1,700.0	1,680.1	1,651.6	1,636.3	5.1	4.6	-107.21	-60.7	325.9	327.9	319.5	8.42	38.940			
1,800.0	1,778.3	1,749.4	1,732.8	5.5	5.0	-108.61	-62.1	341.8	347.1	338.1	9.02	38.479			
1,900.0	1,876.6	1,847.2	1,829.3	5.8	5.3	-109.86	-63.6	357.7	366.5	356.8	9.62	38.094			
2,000.0	1,974.9	1,945.0	1,925.8	6.2	5.6	-110.99	-65.0	373.6	386.0	375.8	10.22	37.770			
2,100.0	2,073.1	2,042.8	2,022.3	6.6	5.9	-112.01	-66.5	389.5	405.6	394.8	10.82	37.494			
2,200.0	2,171.4	2,140.6	2,118.7	6.9	6.3	-112.93	-67.9	405.5	425.4	414.0	11.42	37.258			
2,300.0	2,269.6	2,238.4	2,215.2	7.3	6.6	-113.78	-69.4	421.4	445.2	433.2	12.02	37.055			
2,400.0	2,367.9	2,336.2	2,311.7	7.7	6.9	-114.55	-70.8	437.3	465.2	452.6	12.61	36.878			
2,500.0	2,466.1	2,434.0	2,408.2	8.0	7.3	-115.25	-72.3	453.2	485.2	472.0	13.21	36.725			
2,600.0	2,564.4	2,531.8	2,504.7	8.4	7.6	-115.91	-73.7	469.1	505.3	491.5	13.81	36.590			
2,700.0	2,662.7	2,629.6	2,601.2	8.8	7.9	-116.51	-75.2	485.0	525.4	511.0	14.41	36.471			
2,800.0	2,760.9	2,727.4	2,697.7	9.1	8.2	-117.06	-76.6	500.9	545.6	530.6	15.00	36.366			
2,900.0	2,859.2	2,825.3	2,794.2	9.5	8.6	-117.58	-78.1	516.8	565.9	550.3	15.60	36.273			
3,000.0	2,957.4	2,923.1	2,890.7	9.9	8.9	-118.06	-79.5	532.7	586.2	570.0	16.20	36.190			
3,100.0	3,055.7	3,020.9	2,987.2	10.2	9.2	-118.51	-81.0	548.6	606.5	589.7	16.79	36.116			
3,200.0	3,153.9	3,118.7	3,083.7	10.6	9.6	-118.93	-82.4	564.6	626.8	609.4	17.39	36.049			
3,300.0	3,252.2	3,216.5	3,180.2	11.0	9.9	-119.33	-83.9	580.5	647.2	629.2	17.98	35.989			
3,400.0	3,350.5	3,314.3	3,276.7	11.3	10.2	-119.70	-85.3	596.4	667.6	649.0	18.58	35.935			
3,500.0	3,448.7	3,412.1	3,373.2	11.7	10.6	-120.05	-86.8	612.3	688.1	668.9	19.17	35.886			
3,600.0	3,547.0	3,509.9	3,469.6	12.1	10.9	-120.38	-88.2	628.2	708.5	688.8	19.77	35.841			
3,700.0	3,645.2	3,607.7	3,566.1	12.4	11.2	-120.69	-89.7	644.1	729.0	708.6	20.36	35.801			
3,800.0	3,743.5	3,705.5	3,662.6	12.8	11.5	-120.98	-91.1	660.0	749.5	728.5	20.96	35.764			
3,900.0	3,841.7	3,803.3	3,759.1	13.2	11.9	-121.26	-92.6	675.9	770.0	748.5	21.55	35.730			
4,000.0	3,940.0	3,901.1	3,855.6	13.5	12.2	-121.52	-94.0	691.8	790.6	768.4	22.15	35.699			
4,100.0	4,038.3	3,998.9	3,952.1	13.9	12.5	-121.77	-95.5	707.7	811.1	788.4	22.74	35.670			
4,200.0	4,136.5	4,096.7	4,048.6	14.3	12.9	-122.01	-96.9	723.7	831.7	808.3	23.33	35.644			
4,300.0	4,234.8	4,194.5	4,145.1	14.6	13.2	-122.23	-98.4	739.6	852.2	828.3	23.93	35.620			
4,400.0	4,333.0	4,292.3	4,241.6	15.0	13.5	-122.45	-99.8	755.5	872.8	848.3	24.52	35.598			
4,500.0	4,431.3	4,390.2	4,338.1	15.4	13.9	-122.65	-101.3	771.4	893.4	868.3	25.11	35.577			
4,600.0	4,529.6	4,488.0	4,434.6	15.8	14.2	-122.85	-102.7	787.3	914.0	888.3	25.71	35.558			
4,700.0	4,627.8	4,585.8	4,531.1	16.1	14.5	-123.04	-104.2	803.2	934.7	908.4	26.30	35.540			
4,800.0	4,726.1	4,683.6	4,627.6	16.5	14.8	-123.21	-105.6	819.1	955.3	928.4	26.89	35.524			
4,900.0	4,824.3	4,781.4	4,724.1	16.9	15.2	-123.39	-107.1	835.0	975.9	948.4	27.48	35.508			
5,000.0	4,922.6	4,879.2	4,820.5	17.2	15.5	-123.55	-108.5	850.9	996.6	968.5	28.08	35.494			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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)					
5,100.0	5,020.8	4,977.0	4,917.0	17.6	15.8	-123.71	-110.0	866.8	1,017.2	988.6	28.67	35.481			
5,200.0	5,119.1	5,074.8	5,013.5	18.0	16.2	-123.86	-111.4	882.8	1,037.9	1,008.6	29.26	35.469			
5,300.0	5,217.4	5,172.6	5,110.0	18.3	16.5	-124.01	-112.9	898.7	1,058.6	1,028.7	29.85	35.457			
5,400.0	5,315.6	5,270.4	5,206.5	18.7	16.8	-124.15	-114.3	914.6	1,079.2	1,048.8	30.45	35.446			
5,500.0	5,413.9	5,368.2	5,303.0	19.1	17.2	-124.28	-115.8	930.5	1,099.9	1,068.9	31.04	35.436			
5,600.0	5,512.1	5,466.0	5,399.5	19.4	17.5	-124.41	-117.2	946.4	1,120.6	1,089.0	31.63	35.427			
5,700.0	5,610.4	5,563.8	5,496.0	19.8	17.8	-124.54	-118.7	962.3	1,141.3	1,109.1	32.22	35.418			
5,800.0	5,708.6	5,661.6	5,592.5	20.2	18.1	-124.66	-120.1	978.2	1,162.0	1,129.2	32.82	35.409			
5,900.0	5,806.9	5,759.4	5,689.0	20.5	18.5	-124.77	-121.6	994.1	1,182.7	1,149.3	33.41	35.401			
6,000.0	5,905.2	5,857.2	5,785.5	20.9	18.8	-124.89	-123.0	1,010.0	1,203.4	1,169.4	34.00	35.394			
6,100.0	6,003.4	5,955.1	5,882.0	21.3	19.1	-125.00	-124.5	1,025.9	1,224.1	1,189.5	34.59	35.387			
6,200.0	6,101.7	6,052.9	5,978.5	21.6	19.5	-125.10	-125.9	1,041.9	1,244.8	1,209.6	35.18	35.381			
6,300.0	6,199.9	6,150.7	6,074.9	22.0	19.8	-125.20	-127.4	1,057.8	1,265.5	1,229.7	35.78	35.374			
6,400.0	6,298.2	6,248.5	6,171.4	22.4	20.1	-125.30	-128.8	1,073.7	1,286.2	1,249.9	36.37	35.368			
6,500.0	6,396.4	6,346.3	6,267.9	22.8	20.5	-125.40	-130.3	1,089.6	1,307.0	1,270.0	36.96	35.363			
6,600.0	6,494.7	6,444.1	6,364.4	23.1	20.8	-125.49	-131.7	1,105.5	1,327.7	1,290.1	37.55	35.358			
6,700.0	6,593.0	6,541.9	6,460.9	23.5	21.1	-125.58	-133.2	1,121.4	1,348.4	1,310.3	38.14	35.353			
6,800.0	6,691.2	6,639.7	6,557.4	23.9	21.4	-125.66	-134.6	1,137.3	1,369.2	1,330.4	38.73	35.348			
6,900.0	6,789.5	6,737.5	6,653.9	24.2	21.8	-125.75	-136.1	1,153.2	1,389.9	1,350.6	39.32	35.344 SF			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	108.46	-14.2	42.5	44.9						
100.0	100.0	100.0	100.0	0.1	0.1	108.46	-14.2	42.5	44.9	44.6	0.30	151.179			
200.0	200.0	200.0	200.0	0.3	0.3	108.46	-14.2	42.5	44.9	44.2	0.65	69.461			
300.0	300.0	300.0	300.0	0.5	0.5	-62.11	-14.2	42.5	44.0	43.0	1.00	44.117			
400.0	399.8	399.2	399.2	0.7	0.7	-70.51	-12.8	43.5	42.6	41.2	1.37	31.179			
423.0	422.8	421.9	421.9	0.7	0.7	-73.69	-12.1	44.1	42.5	41.0	1.46	29.108	CC, ES		
500.0	499.5	497.5	497.3	0.9	0.9	-87.09	-8.7	46.5	44.0	42.2	1.77	24.796			
600.0	598.7	594.3	593.8	1.2	1.1	-106.69	-1.9	51.4	52.6	50.4	2.20	23.949	SF		
700.0	697.5	690.0	688.9	1.5	1.3	-122.45	7.1	57.9	70.6	68.0	2.60	27.179			
800.0	795.8	786.0	784.1	1.8	1.5	-132.93	16.8	64.8	94.3	91.3	2.97	31.718			
900.0	894.0	882.0	879.3	2.2	1.8	-139.30	26.4	71.7	120.0	116.7	3.35	35.873			
1,000.0	992.3	977.9	974.5	2.6	2.1	-143.41	36.0	78.6	146.7	143.0	3.72	39.407			
1,100.0	1,090.5	1,073.9	1,069.8	2.9	2.3	-146.25	45.6	85.6	173.8	169.7	4.10	42.379			
1,200.0	1,188.8	1,169.8	1,165.0	3.3	2.6	-148.33	55.2	92.5	201.2	196.7	4.48	44.887			
1,300.0	1,287.1	1,265.8	1,260.2	3.6	2.8	-149.91	64.8	99.4	228.8	224.0	4.87	47.021			
1,400.0	1,385.3	1,361.7	1,355.4	4.0	3.1	-151.15	74.5	106.3	256.6	251.3	5.25	48.852			
1,500.0	1,483.6	1,457.7	1,450.6	4.4	3.4	-152.15	84.1	113.2	284.4	278.8	5.64	50.438			
1,600.0	1,581.8	1,553.6	1,545.8	4.7	3.6	-152.97	93.7	120.1	312.3	306.3	6.03	51.823			
1,700.0	1,680.1	1,649.5	1,641.0	5.1	3.9	-153.65	103.3	127.0	340.2	333.8	6.41	53.042			
1,800.0	1,778.3	1,745.5	1,736.2	5.5	4.1	-154.24	112.9	134.0	368.2	361.4	6.80	54.122			
1,900.0	1,876.6	1,841.4	1,831.5	5.8	4.4	-154.73	122.5	140.9	396.2	389.0	7.19	55.086			
2,000.0	1,974.9	1,937.4	1,926.7	6.2	4.7	-155.17	132.2	147.8	424.2	416.6	7.58	55.951			
2,100.0	2,073.1	2,033.3	2,021.9	6.6	4.9	-155.55	141.8	154.7	452.3	444.3	7.97	56.731			
2,200.0	2,171.4	2,129.3	2,117.1	6.9	5.2	-155.88	151.4	161.6	480.3	472.0	8.36	57.438			
2,300.0	2,269.6	2,225.2	2,212.3	7.3	5.5	-156.18	161.0	168.5	508.4	499.7	8.75	58.082			
2,400.0	2,367.9	2,321.2	2,307.5	7.7	5.7	-156.45	170.6	175.4	536.5	527.4	9.14	58.670			
2,500.0	2,466.1	2,417.1	2,402.7	8.0	6.0	-156.69	180.2	182.3	564.6	555.1	9.54	59.211			
2,600.0	2,564.4	2,513.0	2,497.9	8.4	6.3	-156.91	189.9	189.3	592.7	582.8	9.93	59.708			
2,700.0	2,662.7	2,609.0	2,593.1	8.8	6.5	-157.11	199.5	196.2	620.8	610.5	10.32	60.167			
2,800.0	2,760.9	2,704.9	2,688.4	9.1	6.8	-157.29	209.1	203.1	649.0	638.2	10.71	60.593			
2,900.0	2,859.2	2,800.9	2,783.6	9.5	7.1	-157.45	218.7	210.0	677.1	666.0	11.10	60.988			
3,000.0	2,957.4	2,896.8	2,878.8	9.9	7.3	-157.61	228.3	216.9	705.2	693.7	11.49	61.357			
3,100.0	3,055.7	2,992.8	2,974.0	10.2	7.6	-157.75	237.9	223.8	733.3	721.5	11.89	61.701			
3,200.0	3,153.9	3,088.7	3,069.2	10.6	7.9	-157.88	247.5	230.7	761.5	749.2	12.28	62.023			
3,300.0	3,252.2	3,184.7	3,164.4	11.0	8.1	-158.00	257.2	237.7	789.6	777.0	12.67	62.324			
3,400.0	3,350.5	3,280.6	3,259.6	11.3	8.4	-158.11	266.8	244.6	817.8	804.7	13.06	62.608			
3,500.0	3,448.7	3,376.6	3,354.8	11.7	8.7	-158.22	276.4	251.5	845.9	832.5	13.45	62.875			
3,600.0	3,547.0	3,472.5	3,450.0	12.1	8.9	-158.32	286.0	258.4	874.1	860.2	13.85	63.127			
3,700.0	3,645.2	3,568.4	3,545.3	12.4	9.2	-158.41	295.6	265.3	902.2	888.0	14.24	63.365			
3,800.0	3,743.5	3,664.4	3,640.5	12.8	9.5	-158.50	305.2	272.2	930.4	915.8	14.63	63.590			
3,900.0	3,841.7	3,760.3	3,735.7	13.2	9.7	-158.58	314.9	279.1	958.5	943.5	15.02	63.803			
4,000.0	3,940.0	3,856.3	3,830.9	13.5	10.0	-158.66	324.5	286.1	986.7	971.3	15.42	64.005			
4,100.0	4,038.3	3,952.2	3,926.1	13.9	10.3	-158.73	334.1	293.0	1,014.9	999.1	15.81	64.197			
4,200.0	4,136.5	4,048.2	4,021.3	14.3	10.5	-158.80	343.7	299.9	1,043.0	1,026.8	16.20	64.380			
4,300.0	4,234.8	4,144.1	4,116.5	14.6	10.8	-158.86	353.3	306.8	1,071.2	1,054.6	16.59	64.554			
4,400.0	4,333.0	4,240.1	4,211.7	15.0	11.0	-158.92	362.9	313.7	1,099.4	1,082.4	16.99	64.720			
4,500.0	4,431.3	4,336.0	4,306.9	15.4	11.3	-158.98	372.6	320.6	1,127.5	1,110.1	17.38	64.879			
4,600.0	4,529.6	4,432.0	4,402.2	15.8	11.6	-159.04	382.2	327.5	1,155.7	1,137.9	17.77	65.030			
4,700.0	4,627.8	4,527.9	4,497.4	16.1	11.8	-159.09	391.8	334.4	1,183.9	1,165.7	18.16	65.175			
4,800.0	4,726.1	4,623.8	4,592.6	16.5	12.1	-159.14	401.4	341.4	1,212.0	1,193.5	18.56	65.314			
4,900.0	4,824.3	4,719.8	4,687.8	16.9	12.4	-159.19	411.0	348.3	1,240.2	1,221.2	18.95	65.447			
5,000.0	4,922.6	4,815.7	4,783.0	17.2	12.6	-159.24	420.6	355.2	1,268.4	1,249.0	19.34	65.574			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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			
5,100.0	5,020.8	4,911.7	4,878.2	17.6	12.9	-159.28	430.3	362.1	1,296.5	1,276.8	19.74	65.697			
5,200.0	5,119.1	5,007.6	4,973.4	18.0	13.2	-159.33	439.9	369.0	1,324.7	1,304.6	20.13	65.814			
5,300.0	5,217.4	5,103.6	5,068.6	18.3	13.4	-159.37	449.5	375.9	1,352.9	1,332.4	20.52	65.927			
5,400.0	5,315.6	5,238.5	5,202.7	18.7	13.8	-159.45	461.8	384.8	1,380.3	1,359.3	20.98	65.804			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.58	-4.7	14.1	14.9						
100.0	100.0	100.0	100.0	0.1	0.1	108.58	-4.7	14.1	14.9	14.6	0.30	50.093			
200.0	200.0	200.0	200.0	0.3	0.3	108.58	-4.7	14.1	14.9	14.2	0.65	23.016			
300.0	300.0	300.0	300.0	0.5	0.5	-66.19	-4.7	14.1	14.1	13.1	1.00	14.102			
373.7	373.6	373.5	373.5	0.6	0.6	-84.48	-3.8	14.2	13.2	12.0	1.27	10.402 CC, ES			
400.0	399.8	399.7	399.6	0.7	0.7	-95.01	-3.0	14.3	13.5	12.1	1.37	9.841 SF			
500.0	499.5	498.3	498.1	0.9	0.9	-134.00	2.1	15.0	21.1	19.4	1.73	12.207			
600.0	598.7	595.2	594.7	1.2	1.1	-152.43	10.3	16.0	39.3	37.2	2.06	19.041			
700.0	697.5	689.8	688.6	1.5	1.3	-160.03	21.5	17.4	65.4	63.0	2.39	27.315			
800.0	795.8	781.7	779.4	1.8	1.6	-163.69	35.3	19.2	97.6	94.9	2.73	35.822			
900.0	894.0	875.6	872.0	2.2	1.9	-165.59	51.0	21.1	131.8	128.8	3.07	43.003			
1,000.0	992.3	969.5	964.5	2.6	2.2	-166.72	66.6	23.1	166.1	162.7	3.41	48.745			
1,100.0	1,090.5	1,063.4	1,057.1	2.9	2.5	-167.45	82.3	25.1	200.4	196.7	3.75	53.435			
1,200.0	1,188.8	1,157.3	1,149.7	3.3	2.8	-167.98	97.9	27.1	234.7	230.6	4.09	57.334			
1,300.0	1,287.1	1,251.2	1,242.2	3.6	3.1	-168.36	113.6	29.1	269.1	264.6	4.44	60.626			
1,400.0	1,385.3	1,345.1	1,334.8	4.0	3.4	-168.67	129.2	31.1	303.4	298.6	4.78	63.440			
1,500.0	1,483.6	1,439.0	1,427.4	4.4	3.7	-168.91	144.8	33.0	337.8	332.7	5.13	65.874			
1,600.0	1,581.8	1,532.9	1,520.0	4.7	4.0	-169.10	160.5	35.0	372.1	366.7	5.47	68.000			
1,700.0	1,680.1	1,626.8	1,612.5	5.1	4.4	-169.26	176.1	37.0	406.5	400.7	5.82	69.871			
1,800.0	1,778.3	1,720.7	1,705.1	5.5	4.7	-169.40	191.8	39.0	440.9	434.7	6.16	71.532			
1,900.0	1,876.6	1,814.6	1,797.7	5.8	5.0	-169.52	207.4	41.0	475.2	468.7	6.51	73.015			
2,000.0	1,974.9	1,908.5	1,890.2	6.2	5.3	-169.62	223.1	42.9	509.6	502.8	6.85	74.348			
2,100.0	2,073.1	2,002.4	1,982.8	6.6	5.6	-169.71	238.7	44.9	544.0	536.8	7.20	75.553			
2,200.0	2,171.4	2,096.3	2,075.4	6.9	5.9	-169.79	254.4	46.9	578.3	570.8	7.55	76.646			
2,300.0	2,269.6	2,190.2	2,168.0	7.3	6.3	-169.86	270.0	48.9	612.7	604.8	7.89	77.643			
2,400.0	2,367.9	2,284.1	2,260.5	7.7	6.6	-169.92	285.6	50.9	647.1	638.9	8.24	78.556			
2,500.0	2,466.1	2,378.0	2,353.1	8.0	6.9	-169.97	301.3	52.8	681.5	672.9	8.58	79.395			
2,600.0	2,564.4	2,471.9	2,445.7	8.4	7.2	-170.02	316.9	54.8	715.8	706.9	8.93	80.169			
2,700.0	2,662.7	2,565.8	2,538.2	8.8	7.5	-170.07	332.6	56.8	750.2	740.9	9.28	80.885			
2,800.0	2,760.9	2,659.8	2,630.8	9.1	7.9	-170.11	348.2	58.8	784.6	775.0	9.62	81.549			
2,900.0	2,859.2	2,753.7	2,723.4	9.5	8.2	-170.15	363.9	60.8	819.0	809.0	9.97	82.166			
3,000.0	2,957.4	2,847.6	2,816.0	9.9	8.5	-170.18	379.5	62.8	853.3	843.0	10.31	82.742			
3,100.0	3,055.7	2,941.5	2,908.5	10.2	8.8	-170.22	395.1	64.7	887.7	877.1	10.66	83.281			
3,200.0	3,153.9	3,035.4	3,001.1	10.6	9.1	-170.25	410.8	66.7	922.1	911.1	11.01	83.785			
3,300.0	3,252.2	3,129.3	3,093.7	11.0	9.4	-170.27	426.4	68.7	956.5	945.1	11.35	84.259			
3,400.0	3,350.5	3,223.2	3,186.2	11.3	9.8	-170.30	442.1	70.7	990.8	979.1	11.70	84.705			
3,500.0	3,448.7	3,317.1	3,278.8	11.7	10.1	-170.33	457.7	72.7	1,025.2	1,013.2	12.04	85.124			
3,600.0	3,547.0	3,411.0	3,371.4	12.1	10.4	-170.35	473.4	74.6	1,059.6	1,047.2	12.39	85.521			
3,700.0	3,645.2	3,504.9	3,464.0	12.4	10.7	-170.37	489.0	76.6	1,094.0	1,081.2	12.74	85.895			
3,800.0	3,743.5	3,598.8	3,556.5	12.8	11.0	-170.39	504.7	78.6	1,128.3	1,115.3	13.08	86.250			
3,900.0	3,841.7	3,692.7	3,649.1	13.2	11.4	-170.41	520.3	80.6	1,162.7	1,149.3	13.43	86.586			
4,000.0	3,940.0	3,786.6	3,741.7	13.5	11.7	-170.43	535.9	82.6	1,197.1	1,183.3	13.77	86.906			
4,100.0	4,038.3	3,880.5	3,834.2	13.9	12.0	-170.44	551.6	84.6	1,231.5	1,217.4	14.12	87.209			
4,200.0	4,136.5	3,974.4	3,926.8	14.3	12.3	-170.46	567.2	86.5	1,265.9	1,251.4	14.47	87.498			
4,300.0	4,234.8	4,068.3	4,019.4	14.6	12.6	-170.47	582.9	88.5	1,300.2	1,285.4	14.81	87.774			
4,400.0	4,333.0	4,162.2	4,112.0	15.0	13.0	-170.49	598.5	90.5	1,334.6	1,319.4	15.16	88.037			
4,500.0	4,431.3	4,256.1	4,204.5	15.4	13.3	-170.50	614.2	92.5	1,369.0	1,353.5	15.51	88.288			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 140-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-72.10	9.8	-30.4	32.2						
100.0	100.0	96.2	96.2	0.1	0.2	-72.73	9.4	-30.3	31.7	31.4	0.30	104.504			
200.0	200.0	196.3	196.3	0.3	0.3	-74.75	8.2	-29.9	31.0	30.3	0.65	47.826			
273.8	273.8	270.2	270.1	0.5	0.5	115.95	6.8	-29.5	30.6	29.7	0.91	33.644	CC		
300.0	300.0	296.4	296.4	0.5	0.5	116.28	6.2	-29.3	30.7	29.7	1.00	30.568	ES		
400.0	399.8	396.4	396.3	0.7	0.7	121.09	3.8	-28.4	31.7	30.3	1.37	23.119			
500.0	499.5	496.2	496.2	0.9	0.9	130.60	1.9	-27.7	35.3	33.5	1.74	20.229			
600.0	598.7	596.1	596.0	1.2	1.0	140.12	-1.4	-26.7	41.4	39.3	2.12	19.532	SF		
700.0	697.5	696.1	695.8	1.5	1.2	148.35	-5.9	-25.6	50.3	47.8	2.48	20.261			
800.0	795.8	796.2	795.7	1.8	1.4	155.30	-11.5	-23.5	60.9	58.1	2.83	21.551			
900.0	894.0	896.3	895.6	2.2	1.7	160.91	-17.8	-20.0	71.0	67.9	3.16	22.479			
1,000.0	992.3	996.1	995.1	2.6	1.9	166.09	-24.4	-14.8	80.7	77.3	3.48	23.175			
1,100.0	1,090.5	1,096.0	1,094.5	2.9	2.1	171.09	-30.9	-8.0	90.4	86.6	3.81	23.718			
1,200.0	1,188.8	1,194.4	1,192.5	3.3	2.3	175.24	-37.3	-0.9	100.5	96.3	4.15	24.200			
1,300.0	1,287.1	1,292.6	1,290.4	3.6	2.5	177.59	-43.1	3.9	112.1	107.6	4.50	24.907			
1,400.0	1,385.3	1,391.0	1,388.6	4.0	2.7	178.99	-48.5	7.6	124.6	119.8	4.85	25.677			
1,500.0	1,483.6	1,493.2	1,490.5	4.4	2.9	179.81	-55.1	10.7	136.3	131.1	5.21	26.175			
1,600.0	1,581.8	1,590.9	1,587.9	4.7	3.2	-179.53	-62.2	13.8	147.2	141.6	5.56	26.460			
1,700.0	1,680.1	1,687.6	1,684.4	5.1	3.4	-178.55	-67.3	17.7	160.0	154.1	5.92	27.027			
1,800.0	1,778.3	1,785.4	1,782.0	5.5	3.5	-177.65	-71.3	21.6	173.9	167.6	6.28	27.684			
1,900.0	1,876.6	1,883.2	1,879.6	5.8	3.7	-177.18	-74.9	24.5	188.4	181.8	6.63	28.412			
2,000.0	1,974.9	1,983.4	1,979.7	6.2	3.9	-176.93	-78.6	26.8	203.1	196.1	6.99	29.052			
2,100.0	2,073.1	2,083.4	2,079.6	6.6	4.1	-176.51	-82.8	30.1	217.0	209.7	7.35	29.519			
2,200.0	2,171.4	2,182.5	2,178.6	6.9	4.3	-176.10	-87.3	33.5	230.7	223.0	7.71	29.906			
2,300.0	2,269.6	2,280.5	2,276.4	7.3	4.5	-175.71	-91.4	36.9	244.7	236.6	8.08	30.301			
2,400.0	2,367.9	2,379.1	2,374.9	7.7	4.7	-175.39	-95.3	40.2	259.0	250.5	8.44	30.690			
2,500.0	2,466.1	2,477.9	2,473.5	8.0	4.9	-175.07	-99.1	43.7	273.3	264.5	8.80	31.053			
2,600.0	2,564.4	2,574.6	2,570.1	8.4	5.1	-174.88	-102.5	46.6	288.1	278.9	9.16	31.462			
2,700.0	2,662.7	2,673.8	2,669.3	8.8	5.3	-174.70	-105.4	49.5	303.3	293.8	9.52	31.877			
2,800.0	2,760.9	2,769.9	2,765.3	9.1	5.4	-174.58	-108.1	52.1	318.8	308.9	9.87	32.307			
2,900.0	2,859.2	2,867.1	2,862.4	9.5	5.6	-174.48	-110.3	54.7	334.9	324.7	10.22	32.762			
3,000.0	2,957.4	2,965.0	2,960.3	9.9	5.8	-174.41	-111.9	57.1	351.5	340.9	10.57	33.235			
3,100.0	3,055.7	3,062.5	3,057.8	10.2	6.0	-174.39	-113.7	59.1	368.0	357.1	10.93	33.684			
3,200.0	3,153.9	3,162.1	3,157.4	10.6	6.1	-174.37	-115.2	61.2	384.8	373.5	11.28	34.116			
3,300.0	3,252.2	3,261.5	3,256.7	11.0	6.3	-174.44	-117.1	62.8	401.3	389.6	11.62	34.518			
3,400.0	3,350.5	3,360.2	3,355.4	11.3	6.5	-174.59	-119.1	63.7	417.7	405.7	11.97	34.906			
3,500.0	3,448.7	3,458.4	3,453.5	11.7	6.7	-174.71	-121.1	64.7	434.1	421.8	12.31	35.272			
3,600.0	3,547.0	3,557.6	3,552.7	12.1	6.8	-174.79	-122.9	66.0	450.7	438.0	12.65	35.615			
3,700.0	3,645.2	3,663.0	3,658.1	12.4	7.0	-175.03	-126.1	66.2	466.2	453.2	13.00	35.866			
3,800.0	3,743.5	3,761.1	3,756.1	12.8	7.2	-175.33	-129.7	65.7	481.2	467.8	13.33	36.106			
3,900.0	3,841.7	3,858.2	3,853.1	13.2	7.4	-175.63	-133.0	64.9	496.5	482.8	13.65	36.362			
4,000.0	3,940.0	3,955.3	3,950.2	13.5	7.5	-175.91	-136.0	64.2	512.1	498.1	13.98	36.621			
4,100.0	4,038.3	4,051.0	4,045.8	13.9	7.7	-176.16	-138.5	63.6	528.2	513.9	14.31	36.907			
4,200.0	4,136.5	4,147.8	4,142.7	14.3	7.9	-176.41	-140.5	62.7	544.8	530.2	14.64	37.208			
4,300.0	4,234.8	4,245.2	4,240.0	14.6	8.0	-176.61	-142.4	62.1	561.6	546.6	14.98	37.498			
4,400.0	4,333.0	4,341.4	4,336.2	15.0	8.2	-176.79	-143.8	61.6	578.8	563.4	15.31	37.800			
4,500.0	4,431.3	4,438.4	4,433.2	15.4	8.3	-176.95	-145.0	61.2	596.2	580.6	15.65	38.108			
4,600.0	4,529.6	4,535.8	4,530.6	15.8	8.5	-177.12	-146.0	60.5	613.9	597.9	15.98	38.412			
4,700.0	4,627.8	4,629.2	4,624.0	16.1	8.7	-177.27	-146.5	59.7	632.0	615.7	16.31	38.747			
4,800.0	4,726.1	4,725.3	4,720.1	16.5	8.8	-177.41	-146.4	59.0	650.8	634.1	16.65	39.095			
4,900.0	4,824.3	4,823.0	4,817.8	16.9	9.0	-177.54	-146.2	58.3	669.7	652.7	16.98	39.431			
5,000.0	4,922.6	4,921.6	4,916.4	17.2	9.1	-177.66	-145.9	57.6	688.6	671.3	17.32	39.749			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 140-MWD													Offset Well Error:		0.0 ft
Reference: D21 595 Pad - LR04C D21 595 (Existing) - DD - DD															
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		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 (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	5,020.8	5,019.5	5,014.2	17.6	9.3	-177.79	-145.7	56.8	707.5	689.9	17.66	40.058			
5,200.0	5,119.1	5,116.0	5,110.8	18.0	9.4	-177.92	-145.4	55.8	726.6	708.6	18.00	40.367			
5,300.0	5,217.4	5,213.4	5,208.1	18.3	9.6	-178.05	-144.9	54.6	745.8	727.5	18.34	40.674			
5,400.0	5,315.6	5,313.2	5,308.0	18.7	9.7	-178.19	-144.5	53.4	765.0	746.4	18.68	40.960			
5,500.0	5,413.9	5,418.1	5,412.8	19.1	9.9	-178.36	-144.7	51.7	783.7	764.6	19.03	41.190			
5,600.0	5,512.1	5,514.8	5,509.5	19.4	10.1	-178.55	-145.5	49.7	801.8	782.5	19.36	41.415			
5,700.0	5,610.4	5,624.7	5,619.3	19.8	10.3	-178.77	-146.5	47.2	819.9	800.2	19.72	41.584			
5,800.0	5,708.6	5,725.6	5,720.3	20.2	10.4	-178.98	-148.9	45.1	836.6	816.6	20.06	41.706			
5,900.0	5,806.9	5,818.6	5,813.2	20.5	10.6	-179.16	-150.7	43.1	853.7	833.3	20.39	41.866			
6,000.0	5,905.2	5,916.6	5,911.1	20.9	10.8	-179.32	-152.2	41.1	871.1	850.4	20.73	42.022			
6,100.0	6,003.4	6,015.6	6,010.1	21.3	10.9	-179.46	-153.7	39.4	888.6	867.5	21.07	42.166			
6,200.0	6,101.7	6,111.8	6,106.3	21.6	11.1	-179.56	-155.0	38.2	906.1	884.7	21.41	42.316			
6,300.0	6,199.9	6,208.2	6,202.7	22.0	11.3	-179.64	-156.0	37.3	923.9	902.1	21.75	42.471			
6,400.0	6,298.2	6,303.3	6,297.8	22.4	11.4	-179.70	-156.7	36.6	941.9	919.8	22.09	42.637			
6,500.0	6,396.4	6,400.0	6,394.4	22.8	11.6	-179.76	-157.1	35.8	960.2	937.8	22.43	42.805			
6,600.0	6,494.7	6,497.7	6,492.2	23.1	11.7	-179.84	-157.6	34.5	978.6	955.8	22.77	42.971			
6,700.0	6,593.0	6,595.3	6,589.7	23.5	11.9	-179.95	-158.0	32.8	997.1	974.0	23.12	43.135			
6,800.0	6,691.2	6,690.8	6,685.2	23.9	12.1	179.94	-158.3	31.0	1,015.7	992.3	23.45	43.308			
6,900.0	6,789.5	6,792.3	6,786.7	24.2	12.2	179.84	-158.7	29.1	1,034.3	1,010.5	23.80	43.455			
7,000.0	6,887.7	6,891.3	6,885.7	24.6	12.4	179.73	-159.2	27.1	1,052.8	1,028.6	24.15	43.598			
7,100.0	6,986.0	6,991.7	6,986.1	25.0	12.6	179.62	-160.0	25.1	1,071.1	1,046.6	24.50	43.725			
7,200.0	7,084.2	7,089.2	7,083.6	25.3	12.7	179.50	-160.8	23.0	1,089.3	1,064.5	24.84	43.856			
7,300.0	7,182.5	7,186.2	7,180.6	25.7	12.9	179.38	-161.5	20.5	1,107.6	1,082.5	25.18	43.987			
7,400.0	7,280.8	7,283.0	7,277.3	26.1	13.1	179.25	-162.2	17.9	1,126.1	1,100.6	25.52	44.122			
7,500.0	7,379.0	7,382.5	7,376.7	26.4	13.2	179.12	-162.9	15.2	1,144.6	1,118.7	25.87	44.243			
7,600.0	7,477.3	7,481.7	7,475.9	26.8	13.4	178.99	-163.6	12.5	1,163.1	1,136.8	26.22	44.359			
7,700.0	7,575.5	7,583.0	7,577.1	27.2	13.6	178.86	-164.6	9.7	1,181.3	1,154.7	26.57	44.458			
7,800.0	7,673.8	7,684.7	7,678.8	27.5	13.8	178.74	-165.9	6.9	1,199.3	1,172.4	26.92	44.543			
7,900.0	7,772.1	7,784.7	7,778.8	27.9	13.9	178.62	-167.3	4.4	1,217.0	1,189.7	27.27	44.621			
8,000.0	7,870.3	7,882.7	7,876.7	28.3	14.1	178.51	-168.8	1.9	1,234.7	1,207.1	27.62	44.702			
8,100.0	7,968.6	7,978.3	7,972.3	28.6	14.3	178.40	-170.1	-0.8	1,252.6	1,224.6	27.97	44.790			
8,200.0	8,066.8	8,075.2	8,069.1	29.0	14.4	178.27	-171.3	-3.9	1,270.7	1,242.3	28.31	44.879			
8,300.0	8,165.1	8,180.3	8,174.1	29.4	14.6	178.11	-173.0	-7.8	1,288.6	1,259.9	28.68	44.937			
8,400.0	8,263.3	8,278.1	8,271.8	29.8	14.8	177.97	-174.9	-11.2	1,306.0	1,277.0	29.03	44.985			
8,500.0	8,362.0	8,364.0	8,357.8	30.1	14.9	177.88	-176.1	-13.9	1,322.0	1,292.6	29.40	44.958			
8,600.0	8,461.1	8,470.2	8,463.9	30.3	15.1	177.80	-176.4	-16.3	1,335.3	1,305.5	29.79	44.827			
8,700.0	8,560.6	8,586.6	8,580.2	30.5	15.3	177.87	-177.7	-14.9	1,343.5	1,313.4	30.16	44.547			
8,800.0	8,660.4	8,687.5	8,681.1	30.7	15.5	177.96	-179.1	-12.8	1,347.8	1,317.3	30.48	44.219			
8,900.0	8,760.4	8,782.6	8,776.2	30.8	15.7	178.03	-180.3	-10.9	1,348.8	1,318.0	30.77	43.838			
9,000.0	8,860.4	8,883.4	8,877.0	30.9	15.8	106.63	-181.3	-8.7	1,347.5	1,316.4	31.10	43.327			
9,100.0	8,960.4	8,984.7	8,978.2	31.0	16.0	106.74	-182.4	-6.5	1,346.0	1,314.6	31.45	42.798			
9,200.0	9,060.4	9,088.3	9,081.8	31.1	16.2	106.88	-183.7	-4.0	1,344.6	1,312.8	31.81	42.272			
9,300.0	9,160.4	9,189.1	9,182.5	31.2	16.4	107.01	-185.2	-1.8	1,343.0	1,310.9	32.16	41.765			
9,400.0	9,260.4	9,287.4	9,280.8	31.3	16.6	107.09	-186.8	-0.9	1,341.6	1,309.1	32.50	41.276			
9,500.0	9,360.4	9,389.7	9,383.2	31.4	16.7	107.13	-188.9	-0.8	1,340.0	1,307.1	32.86	40.782			
9,600.0	9,460.4	9,482.8	9,476.2	31.5	16.9	107.17	-190.5	-0.7	1,338.7	1,305.5	33.20	40.327			
9,700.0	9,560.3	9,579.0	9,572.4	31.6	17.1	107.18	-191.9	-1.4	1,337.8	1,304.3	33.54	39.888			
9,800.0	9,660.3	9,682.8	9,676.2	31.7	17.3	107.17	-193.8	-2.8	1,336.8	1,302.9	33.90	39.436			
9,900.0	9,760.3	9,778.9	9,772.3	31.8	17.4	107.15	-195.4	-4.1	1,335.9	1,301.6	34.24	39.012			
10,000.0	9,860.3	9,875.0	9,868.3	31.9	17.6	107.15	-196.7	-5.2	1,335.2	1,300.6	34.59	38.605			
10,100.0	9,960.3	9,971.1	9,964.4	32.0	17.8	107.15	-197.6	-6.3	1,334.9	1,299.9	34.93	38.214			
10,167.9	10,028.2	10,036.4	10,029.7	32.0	17.9	107.16	-198.1	-6.9	1,334.8	1,299.6	35.16	37.958			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 140-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
10,200.0	10,060.3	10,067.2	10,060.5	32.1	17.9	107.16	-198.3	-7.2	1,334.8	1,299.5	35.28	37.840			
10,300.0	10,160.3	10,171.6	10,164.9	32.2	18.1	107.18	-198.9	-8.0	1,334.8	1,299.2	35.63	37.459			
10,400.0	10,260.3	10,270.1	10,263.4	32.3	18.3	107.20	-199.7	-8.7	1,334.6	1,298.6	35.98	37.091			
10,500.0	10,360.3	10,374.6	10,367.9	32.4	18.5	107.21	-200.7	-9.6	1,334.3	1,298.0	36.34	36.717			
10,600.0	10,460.3	10,474.9	10,468.2	32.5	18.6	107.22	-201.8	-10.6	1,333.8	1,297.2	36.69	36.352			
10,700.0	10,560.3	10,575.1	10,568.4	32.6	18.8	107.21	-203.0	-11.8	1,333.3	1,296.3	37.04	35.993			
10,800.0	10,660.2	10,671.8	10,665.1	32.7	19.0	107.18	-204.2	-13.5	1,333.0	1,295.6	37.39	35.650			
10,900.0	10,760.2	10,770.7	10,763.9	32.8	19.1	107.13	-205.4	-15.8	1,332.7	1,295.0	37.74	35.311			
10,939.4	10,799.7	10,807.9	10,801.1	32.8	19.2	107.11	-205.8	-16.8	1,332.7	1,294.8	37.88	35.184			
11,000.0	10,860.2	10,865.3	10,858.5	32.9	19.3	107.07	-206.3	-18.3	1,332.8	1,294.7	38.09	34.993			
11,100.0	10,960.2	10,963.4	10,956.5	33.0	19.5	107.01	-207.0	-20.9	1,333.1	1,294.6	38.44	34.681			
11,200.0	11,060.2	11,057.9	11,051.0	33.1	19.6	106.95	-207.4	-23.5	1,333.7	1,294.9	38.78	34.388			
11,300.0	11,160.2	11,159.1	11,152.2	33.2	19.8	106.86	-207.8	-26.9	1,334.4	1,295.3	39.14	34.092			
11,400.0	11,260.2	11,259.5	11,252.5	33.3	20.0	106.76	-208.4	-30.6	1,335.1	1,295.6	39.50	33.801			
11,500.0	11,360.2	11,357.1	11,350.0	33.5	20.2	106.65	-208.9	-34.4	1,335.9	1,296.0	39.85	33.521			
11,600.0	11,460.2	11,456.6	11,449.5	33.6	20.3	106.53	-209.4	-38.5	1,336.7	1,296.5	40.21	33.244			
11,700.0	11,560.2	11,554.9	11,547.6	33.7	20.5	106.39	-209.9	-43.2	1,337.7	1,297.1	40.57	32.974			
11,800.0	11,660.1	11,651.4	11,644.0	33.8	20.7	106.24	-210.3	-47.9	1,338.8	1,297.9	40.92	32.716			
11,900.0	11,760.1	11,742.5	11,735.0	33.9	20.8	106.13	-210.1	-51.9	1,340.5	1,299.2	41.27	32.483			
11,975.9	11,836.0	11,818.3	11,810.7	34.0	21.0	106.05	-209.6	-54.9	1,342.0	1,300.4	41.54	32.306			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.41	-28.4	85.4	90.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-28.4	85.4	90.0	89.7	0.30	303.260			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-28.4	85.4	90.0	89.3	0.65	139.336	CC, ES		
300.0	300.0	297.4	297.3	0.5	0.5	-62.08	-27.4	87.2	90.6	89.6	1.00	90.941			
400.0	399.8	394.9	394.7	0.7	0.7	-67.54	-24.4	92.4	92.9	91.5	1.37	67.865			
500.0	499.5	494.0	493.5	0.9	0.9	-75.11	-20.7	98.8	96.0	94.2	1.77	54.165			
600.0	598.7	592.7	592.0	1.2	1.1	-83.97	-17.1	105.1	100.3	98.1	2.21	45.333			
700.0	697.5	690.8	689.8	1.5	1.3	-93.66	-13.5	111.3	107.0	104.4	2.69	39.787			
800.0	795.8	788.4	787.2	1.8	1.5	-103.31	-9.9	117.6	117.2	114.0	3.17	36.958			
900.0	894.0	886.0	884.5	2.2	1.7	-111.42	-6.4	123.8	130.3	126.7	3.63	35.860			
1,000.0	992.3	983.6	981.7	2.6	1.9	-117.99	-2.8	130.0	145.6	141.5	4.08	35.687	SF		
1,100.0	1,090.5	1,081.1	1,079.0	2.9	2.2	-123.28	0.8	136.2	162.4	157.9	4.51	36.001			
1,200.0	1,188.8	1,178.7	1,176.3	3.3	2.4	-127.56	4.4	142.5	180.3	175.4	4.93	36.559			
1,300.0	1,287.1	1,276.2	1,273.6	3.6	2.6	-131.07	8.0	148.7	199.1	193.7	5.35	37.231			
1,400.0	1,385.3	1,373.8	1,370.9	4.0	2.8	-133.97	11.5	154.9	218.4	212.6	5.76	37.944			
1,500.0	1,483.6	1,471.4	1,468.2	4.4	3.0	-136.40	15.1	161.1	238.2	232.0	6.16	38.658			
1,600.0	1,581.8	1,568.9	1,565.5	4.7	3.2	-138.46	18.7	167.4	258.3	251.8	6.56	39.352			
1,700.0	1,680.1	1,666.5	1,662.8	5.1	3.4	-140.22	22.3	173.6	278.8	271.8	6.97	40.015			
1,800.0	1,778.3	1,764.0	1,760.1	5.5	3.6	-141.73	25.8	179.8	299.4	292.0	7.37	40.642			
1,900.0	1,876.6	1,861.6	1,857.4	5.8	3.8	-143.06	29.4	186.1	320.2	312.4	7.77	41.232			
2,000.0	1,974.9	1,959.1	1,954.7	6.2	4.1	-144.22	33.0	192.3	341.2	333.0	8.16	41.786			
2,100.0	2,073.1	2,056.7	2,052.0	6.6	4.3	-145.25	36.6	198.5	362.3	353.7	8.56	42.304			
2,200.0	2,171.4	2,154.3	2,149.3	6.9	4.5	-146.16	40.1	204.7	383.4	374.5	8.96	42.789			
2,300.0	2,269.6	2,251.8	2,246.6	7.3	4.7	-146.98	43.7	211.0	404.7	395.3	9.36	43.243			
2,400.0	2,367.9	2,349.4	2,343.8	7.7	4.9	-147.72	47.3	217.2	426.0	416.3	9.76	43.668			
2,500.0	2,466.1	2,446.9	2,441.1	8.0	5.1	-148.39	50.9	223.4	447.4	437.3	10.15	44.067			
2,600.0	2,564.4	2,544.5	2,538.4	8.4	5.3	-148.99	54.5	229.7	468.9	458.3	10.55	44.441			
2,700.0	2,662.7	2,642.0	2,635.7	8.8	5.5	-149.55	58.0	235.9	490.4	479.4	10.95	44.792			
2,800.0	2,760.9	2,739.6	2,733.0	9.1	5.7	-150.06	61.6	242.1	511.9	500.6	11.34	45.123			
2,900.0	2,859.2	2,837.2	2,830.3	9.5	6.0	-150.52	65.2	248.3	533.5	521.7	11.74	45.434			
3,000.0	2,957.4	2,934.7	2,927.6	9.9	6.2	-150.95	68.8	254.6	555.1	542.9	12.14	45.728			
3,100.0	3,055.7	3,032.3	3,024.9	10.2	6.4	-151.35	72.3	260.8	576.7	564.2	12.54	46.005			
3,200.0	3,153.9	3,129.8	3,122.2	10.6	6.6	-151.72	75.9	267.0	598.3	585.4	12.93	46.267			
3,300.0	3,252.2	3,227.4	3,219.5	11.0	6.8	-152.06	79.5	273.3	620.0	606.7	13.33	46.515			
3,400.0	3,350.5	3,325.0	3,316.8	11.3	7.0	-152.38	83.1	279.5	641.7	628.0	13.73	46.751			
3,500.0	3,448.7	3,422.5	3,414.1	11.7	7.2	-152.68	86.6	285.7	663.4	649.3	14.12	46.974			
3,600.0	3,547.0	3,520.1	3,511.4	12.1	7.4	-152.96	90.2	291.9	685.2	670.6	14.52	47.186			
3,700.0	3,645.2	3,617.6	3,608.7	12.4	7.6	-153.22	93.8	298.2	706.9	692.0	14.92	47.388			
3,800.0	3,743.5	3,715.2	3,705.9	12.8	7.9	-153.47	97.4	304.4	728.6	713.3	15.31	47.580			
3,900.0	3,841.7	3,812.7	3,803.2	13.2	8.1	-153.71	100.9	310.6	750.4	734.7	15.71	47.763			
4,000.0	3,940.0	3,910.3	3,900.5	13.5	8.3	-153.93	104.5	316.8	772.2	756.1	16.11	47.938			
4,100.0	4,038.3	4,007.9	3,997.8	13.9	8.5	-154.13	108.1	323.1	794.0	777.5	16.51	48.105			
4,200.0	4,136.5	4,105.4	4,095.1	14.3	8.7	-154.33	111.7	329.3	815.8	798.9	16.90	48.265			
4,300.0	4,234.8	4,203.0	4,192.4	14.6	8.9	-154.52	115.3	335.5	837.6	820.3	17.30	48.418			
4,400.0	4,333.0	4,300.5	4,289.7	15.0	9.1	-154.69	118.8	341.8	859.4	841.7	17.70	48.564			
4,500.0	4,431.3	4,398.1	4,387.0	15.4	9.3	-154.86	122.4	348.0	881.2	863.1	18.09	48.704			
4,600.0	4,529.6	4,495.6	4,484.3	15.8	9.5	-155.02	126.0	354.2	903.1	884.6	18.49	48.839			
4,700.0	4,627.8	4,593.2	4,581.6	16.1	9.8	-155.17	129.6	360.4	924.9	906.0	18.89	48.968			
4,800.0	4,726.1	4,690.8	4,678.9	16.5	10.0	-155.32	133.1	366.7	946.7	927.5	19.28	49.093			
4,900.0	4,824.3	4,788.3	4,776.2	16.9	10.2	-155.46	136.7	372.9	968.6	948.9	19.68	49.212			
5,000.0	4,922.6	4,885.9	4,873.5	17.2	10.4	-155.59	140.3	379.1	990.4	970.4	20.08	49.327			
5,100.0	5,020.8	4,983.4	4,970.8	17.6	10.6	-155.72	143.9	385.4	1,012.3	991.8	20.48	49.438			

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

Cathedral Energy Services

Anticollision Report

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Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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)					
5,200.0	5,119.1	5,081.0	5,068.1	18.0	10.8	-155.84	147.4	391.6	1,034.2	1,013.3	20.87	49.544			
5,300.0	5,217.4	5,178.5	5,165.3	18.3	11.0	-155.96	151.0	397.8	1,056.0	1,034.8	21.27	49.647			
5,400.0	5,315.6	5,276.1	5,262.6	18.7	11.2	-156.07	154.6	404.0	1,077.9	1,056.2	21.67	49.747			
5,500.0	5,413.9	5,405.5	5,391.8	19.1	11.5	-156.30	158.3	410.4	1,098.8	1,076.7	22.09	49.745			
5,600.0	5,512.1	5,527.5	5,513.8	19.4	11.7	-156.73	158.8	411.3	1,116.3	1,093.9	22.44	49.742			
5,700.0	5,610.4	5,628.8	5,615.1	19.8	11.8	-157.13	158.5	410.9	1,133.2	1,110.4	22.76	49.779			
5,800.0	5,708.6	5,727.1	5,713.3	20.2	11.9	-157.51	158.2	410.3	1,150.0	1,126.9	23.08	49.821			
5,900.0	5,806.9	5,825.3	5,811.6	20.5	12.1	-157.89	157.9	409.8	1,166.8	1,143.4	23.40	49.865			
6,000.0	5,905.2	5,923.6	5,909.9	20.9	12.2	-158.25	157.6	409.3	1,183.7	1,160.0	23.72	49.911			
6,100.0	6,003.4	6,021.9	6,008.2	21.3	12.3	-158.60	157.3	408.7	1,200.6	1,176.6	24.03	49.957			
6,200.0	6,101.7	6,120.2	6,106.5	21.6	12.5	-158.94	157.0	408.2	1,217.6	1,193.2	24.35	50.004			
6,300.0	6,199.9	6,218.5	6,204.8	22.0	12.6	-159.27	156.7	407.7	1,234.6	1,209.9	24.67	50.052			
6,400.0	6,298.2	6,316.8	6,303.1	22.4	12.8	-159.59	156.4	407.1	1,251.6	1,226.7	24.98	50.100			
6,500.0	6,396.4	6,415.1	6,401.4	22.8	12.9	-159.91	156.1	406.6	1,268.7	1,243.4	25.30	50.148			
6,600.0	6,494.7	6,513.4	6,499.7	23.1	13.1	-160.21	155.8	406.1	1,285.9	1,260.2	25.62	50.197			
6,700.0	6,593.0	6,611.7	6,598.0	23.5	13.2	-160.51	155.4	405.5	1,303.0	1,277.1	25.93	50.246			
6,800.0	6,691.2	6,710.0	6,696.3	23.9	13.3	-160.80	155.1	405.0	1,320.2	1,294.0	26.25	50.295			
6,900.0	6,789.5	6,808.3	6,794.5	24.2	13.5	-161.08	154.8	404.5	1,337.4	1,310.9	26.57	50.343			
7,000.0	6,887.7	6,906.6	6,892.8	24.6	13.6	-161.36	154.5	403.9	1,354.7	1,327.8	26.88	50.392			
7,100.0	6,986.0	7,004.9	6,991.1	25.0	13.8	-161.63	154.2	403.4	1,372.0	1,344.8	27.20	50.440			
7,200.0	7,084.2	7,103.2	7,089.4	25.3	13.9	-161.89	153.9	402.9	1,389.3	1,361.8	27.52	50.487			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	108.41	-18.9	56.9	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-18.9	56.9	60.0	59.7	0.30	202.173			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-18.9	56.9	60.0	59.3	0.65	92.890			
300.0	300.0	300.0	300.0	0.5	0.5	-61.66	-18.9	56.9	59.1	58.1	1.00	59.280			
400.0	399.8	398.7	398.7	0.7	0.7	-64.89	-20.5	57.6	57.8	56.5	1.36	42.421			
500.0	499.5	497.5	497.4	0.9	0.9	-68.56	-25.2	59.5	57.3	55.5	1.77	32.398			
519.6	518.9	516.9	516.7	1.0	0.9	-69.33	-26.5	60.0	57.3	55.4	1.86	30.806 CC			
600.0	598.7	596.4	595.9	1.2	1.1	-72.57	-33.1	62.7	57.5	55.3	2.24	25.714 ES			
700.0	697.5	696.0	694.9	1.5	1.3	-77.56	-43.5	66.9	58.3	55.5	2.78	20.947			
800.0	795.8	795.7	794.0	1.8	1.6	-84.91	-53.9	71.1	59.3	55.9	3.39	17.511			
900.0	894.0	895.4	893.0	2.2	1.8	-92.11	-64.4	75.3	61.2	57.2	4.00	15.313			
1,000.0	992.3	995.1	992.1	2.6	2.1	-98.79	-74.8	79.6	64.0	59.4	4.59	13.934			
1,100.0	1,090.5	1,094.8	1,091.1	2.9	2.3	-104.84	-85.3	83.8	67.6	62.4	5.17	13.089			
1,200.0	1,188.8	1,194.5	1,190.2	3.3	2.6	-110.22	-95.7	88.1	71.9	66.2	5.71	12.596			
1,300.0	1,287.1	1,294.2	1,289.2	3.6	2.8	-114.96	-106.2	92.3	76.7	70.5	6.22	12.337			
1,400.0	1,385.3	1,393.9	1,388.3	4.0	3.1	-119.11	-116.6	96.6	82.0	75.3	6.71	12.233 SF			
1,500.0	1,483.6	1,493.6	1,487.3	4.4	3.3	-122.75	-127.1	100.8	87.7	80.6	7.17	12.233			
1,600.0	1,581.8	1,593.3	1,586.4	4.7	3.6	-125.93	-137.5	105.0	93.7	86.1	7.62	12.302			
1,700.0	1,680.1	1,693.0	1,685.4	5.1	3.9	-128.73	-148.0	109.3	100.0	91.9	8.05	12.417			
1,800.0	1,778.3	1,792.7	1,784.5	5.5	4.1	-131.19	-158.4	113.5	106.4	98.0	8.47	12.560			
1,900.0	1,876.6	1,892.4	1,883.5	5.8	4.4	-133.36	-168.9	117.8	113.1	104.2	8.89	12.722			
2,000.0	1,974.9	1,992.1	1,982.6	6.2	4.6	-135.29	-179.3	122.0	119.9	110.6	9.30	12.894			
2,100.0	2,073.1	2,091.8	2,081.6	6.6	4.9	-137.02	-189.8	126.2	126.7	117.1	9.70	13.071			
2,200.0	2,171.4	2,191.5	2,180.7	6.9	5.2	-138.56	-200.2	130.5	133.8	123.7	10.10	13.249			
2,300.0	2,269.6	2,291.1	2,279.8	7.3	5.4	-139.96	-210.7	134.7	140.8	130.3	10.49	13.425			
2,400.0	2,367.9	2,390.8	2,378.8	7.7	5.7	-141.21	-221.1	139.0	148.0	137.1	10.88	13.599			
2,500.0	2,466.1	2,490.5	2,477.9	8.0	6.0	-142.35	-231.6	143.2	155.2	144.0	11.27	13.769			
2,600.0	2,564.4	2,590.2	2,576.9	8.4	6.2	-143.39	-242.0	147.5	162.5	150.8	11.66	13.933			
2,700.0	2,662.7	2,689.9	2,676.0	8.8	6.5	-144.34	-252.5	151.7	169.8	157.8	12.05	14.092			
2,800.0	2,760.9	2,789.6	2,775.0	9.1	6.7	-145.21	-262.9	155.9	177.2	164.8	12.44	14.246			
2,900.0	2,859.2	2,889.3	2,874.1	9.5	7.0	-146.01	-273.4	160.2	184.6	171.8	12.83	14.394			
3,000.0	2,957.4	2,989.0	2,973.1	9.9	7.3	-146.75	-283.8	164.4	192.1	178.9	13.21	14.536			
3,100.0	3,055.7	3,088.7	3,072.2	10.2	7.5	-147.44	-294.3	168.7	199.5	185.9	13.60	14.673			
3,200.0	3,153.9	3,188.4	3,171.2	10.6	7.8	-148.07	-304.7	172.9	207.1	193.1	13.99	14.804			
3,300.0	3,252.2	3,288.1	3,270.3	11.0	8.1	-148.66	-315.2	177.1	214.6	200.2	14.37	14.930			
3,400.0	3,350.5	3,387.8	3,369.3	11.3	8.3	-149.21	-325.6	181.4	222.1	207.4	14.76	15.052			
3,500.0	3,448.7	3,487.5	3,468.4	11.7	8.6	-149.73	-336.1	185.6	229.7	214.5	15.14	15.168			
3,600.0	3,547.0	3,587.2	3,567.4	12.1	8.8	-150.21	-346.5	189.9	237.3	221.7	15.53	15.279			
3,700.0	3,645.2	3,686.8	3,666.5	12.4	9.1	-150.66	-357.0	194.1	244.9	228.9	15.91	15.387			
3,800.0	3,743.5	3,786.5	3,765.5	12.8	9.4	-151.08	-367.4	198.3	252.5	236.2	16.30	15.489			
3,900.0	3,841.7	3,886.2	3,864.6	13.2	9.6	-151.48	-377.9	202.6	260.1	243.4	16.69	15.588			
4,000.0	3,940.0	3,985.9	3,963.7	13.5	9.9	-151.86	-388.3	206.8	267.7	250.7	17.07	15.684			
4,100.0	4,038.3	4,085.6	4,062.7	13.9	10.2	-152.21	-398.8	211.1	275.4	257.9	17.46	15.775			
4,200.0	4,136.5	4,185.3	4,161.8	14.3	10.4	-152.55	-409.2	215.3	283.0	265.2	17.84	15.863			
4,300.0	4,234.8	4,285.0	4,260.8	14.6	10.7	-152.87	-419.7	219.6	290.7	272.5	18.23	15.948			
4,400.0	4,333.0	4,384.7	4,359.9	15.0	10.9	-153.17	-430.1	223.8	298.4	279.8	18.61	16.029			
4,500.0	4,431.3	4,484.4	4,458.9	15.4	11.2	-153.46	-440.6	228.0	306.1	287.1	19.00	16.108			
4,600.0	4,529.6	4,584.1	4,558.0	15.8	11.5	-153.73	-451.0	232.3	313.8	294.4	19.39	16.184			
4,700.0	4,627.8	4,683.8	4,657.0	16.1	11.7	-153.99	-461.5	236.5	321.4	301.7	19.77	16.257			
4,800.0	4,726.1	4,783.5	4,756.1	16.5	12.0	-154.24	-471.9	240.8	329.2	309.0	20.16	16.328			
4,900.0	4,824.3	4,883.2	4,855.1	16.9	12.3	-154.48	-482.4	245.0	336.9	316.3	20.55	16.396			
5,000.0	4,922.6	4,982.9	4,954.2	17.2	12.5	-154.70	-492.8	249.2	344.6	323.6	20.93	16.461			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-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)					
5,100.0	5,020.8	5,082.5	5,053.2	17.6	12.8	-154.92	-503.3	253.5	352.3	331.0	21.32	16.525			
5,200.0	5,119.1	5,182.2	5,152.3	18.0	13.0	-155.12	-513.7	257.7	360.0	338.3	21.71	16.587			
5,300.0	5,217.4	5,281.9	5,251.3	18.3	13.3	-155.32	-524.2	262.0	367.7	345.7	22.09	16.646			
5,400.0	5,315.6	5,381.6	5,350.4	18.7	13.6	-155.51	-534.6	266.2	375.5	353.0	22.48	16.704			
5,500.0	5,413.9	5,481.3	5,449.4	19.1	13.8	-155.70	-545.1	270.4	383.2	360.3	22.87	16.759			
5,600.0	5,512.1	5,581.0	5,548.5	19.4	14.1	-155.87	-555.5	274.7	391.0	367.7	23.25	16.813			
5,700.0	5,610.4	5,680.7	5,647.6	19.8	14.4	-156.04	-566.0	278.9	398.7	375.1	23.64	16.866			
5,800.0	5,708.6	5,780.4	5,746.6	20.2	14.6	-156.20	-576.4	283.2	406.4	382.4	24.03	16.916			
5,900.0	5,806.9	5,880.1	5,845.7	20.5	14.9	-156.36	-586.9	287.4	414.2	389.8	24.41	16.966			
6,000.0	5,905.2	5,979.8	5,944.7	20.9	15.1	-156.51	-597.3	291.7	421.9	397.1	24.80	17.013			
6,100.0	6,003.4	6,079.5	6,043.8	21.3	15.4	-156.65	-607.8	295.9	429.7	404.5	25.19	17.060			
6,200.0	6,101.7	6,179.2	6,142.8	21.6	15.7	-156.79	-618.2	300.1	437.5	411.9	25.58	17.105			
6,300.0	6,199.9	6,278.9	6,241.9	22.0	15.9	-156.92	-628.7	304.4	445.2	419.3	25.96	17.148			
6,400.0	6,298.2	6,378.6	6,340.9	22.4	16.2	-157.05	-639.1	308.6	453.0	426.6	26.35	17.191			
6,500.0	6,396.4	6,478.3	6,440.0	22.8	16.5	-157.18	-649.6	312.9	460.8	434.0	26.74	17.232			
6,600.0	6,494.7	6,577.9	6,539.0	23.1	16.7	-157.30	-660.0	317.1	468.5	441.4	27.13	17.272			
6,700.0	6,593.0	6,677.6	6,638.1	23.5	17.0	-157.42	-670.5	321.3	476.3	448.8	27.51	17.311			
6,800.0	6,691.2	6,777.3	6,737.1	23.9	17.2	-157.53	-680.9	325.6	484.1	456.2	27.90	17.349			
6,900.0	6,789.5	6,877.0	6,836.2	24.2	17.5	-157.64	-691.4	329.8	491.8	463.5	28.29	17.386			
7,000.0	6,887.7	6,976.7	6,935.2	24.6	17.8	-157.75	-701.8	334.1	499.6	470.9	28.68	17.422			
7,100.0	6,986.0	7,076.4	7,034.3	25.0	18.0	-157.85	-712.3	338.3	507.4	478.3	29.06	17.458			
7,200.0	7,084.2	7,176.1	7,133.4	25.3	18.3	-157.95	-722.7	342.6	515.2	485.7	29.45	17.492			
7,300.0	7,182.5	7,275.8	7,232.4	25.7	18.6	-158.05	-733.2	346.8	522.9	493.1	29.84	17.525			
7,400.0	7,280.8	7,375.5	7,331.5	26.1	18.8	-158.15	-743.6	351.0	530.7	500.5	30.23	17.558			
7,500.0	7,379.0	7,475.2	7,430.5	26.4	19.1	-158.24	-754.1	355.3	538.5	507.9	30.62	17.589			
7,600.0	7,477.3	7,574.9	7,529.6	26.8	19.3	-158.33	-764.5	359.5	546.3	515.3	31.00	17.620			
7,700.0	7,575.5	7,674.6	7,628.6	27.2	19.6	-158.41	-775.0	363.8	554.1	522.7	31.39	17.650			
7,800.0	7,673.8	7,774.3	7,727.7	27.5	19.9	-158.50	-785.4	368.0	561.9	530.1	31.78	17.680			
7,900.0	7,772.1	7,874.0	7,826.7	27.9	20.1	-158.58	-795.9	372.2	569.7	537.5	32.17	17.709			
8,000.0	7,870.3	7,973.6	7,925.8	28.3	20.4	-158.66	-806.3	376.5	577.4	544.9	32.56	17.737			
8,100.0	7,968.6	8,073.3	8,024.8	28.6	20.7	-158.74	-816.8	380.7	585.2	552.3	32.94	17.764			
8,200.0	8,066.8	8,173.0	8,123.9	29.0	20.9	-158.81	-827.2	385.0	593.0	559.7	33.33	17.791			
8,300.0	8,165.1	8,272.7	8,222.9	29.4	21.2	-158.89	-837.7	389.2	600.8	567.1	33.72	17.817			
8,400.0	8,263.3	8,372.4	8,322.0	29.8	21.4	-158.96	-848.1	393.4	608.6	574.5	34.11	17.842			
8,500.0	8,362.0	8,472.2	8,421.2	30.1	21.7	-159.00	-858.6	397.7	614.4	579.9	34.52	17.800			
8,600.0	8,461.1	8,563.8	8,512.2	30.3	21.9	-158.94	-867.8	401.5	617.4	582.5	34.91	17.685			
8,700.0	8,560.6	8,648.3	8,596.4	30.5	22.1	-158.88	-874.3	404.1	619.3	584.1	35.24	17.574			
8,800.0	8,660.4	8,732.8	8,680.7	30.7	22.2	-158.85	-878.5	405.8	620.5	585.0	35.52	17.468			
8,900.0	8,760.4	8,817.2	8,765.2	30.8	22.4	-158.83	-880.3	406.5	621.0	585.2	35.76	17.366			
8,994.0	8,854.4	8,907.6	8,855.5	30.9	22.5	138.63	-880.5	406.5	621.3	585.3	36.02	17.249			
9,000.0	8,860.4	8,913.7	8,861.6	30.9	22.5	129.69	-880.5	406.5	621.0	584.9	36.04	17.231			
9,100.0	8,960.4	9,015.4	8,963.4	31.0	22.6	129.70	-880.8	406.0	621.0	584.6	36.34	17.088			
9,200.0	9,060.4	9,117.2	9,065.1	31.1	22.7	129.70	-881.3	405.1	621.0	584.3	36.64	16.950			
9,300.0	9,160.4	9,218.0	9,165.9	31.2	22.9	129.70	-881.9	404.0	621.0	584.0	36.93	16.817			
9,400.0	9,260.4	9,318.0	9,265.9	31.3	23.0	129.70	-882.6	402.8	621.0	583.8	37.21	16.687			
9,500.0	9,360.4	9,418.0	9,365.9	31.4	23.1	129.70	-883.3	401.6	621.0	583.5	37.50	16.558			
9,600.0	9,460.4	9,518.0	9,465.8	31.5	23.2	129.70	-884.0	400.4	621.0	583.2	37.79	16.432			
9,700.0	9,560.3	9,618.0	9,565.8	31.6	23.4	129.70	-884.7	399.2	621.0	582.9	38.08	16.306			
9,800.0	9,660.3	9,718.0	9,665.8	31.7	23.5	129.70	-885.4	398.0	621.0	582.6	38.37	16.182			
9,900.0	9,760.3	9,818.0	9,765.8	31.8	23.6	129.70	-886.1	396.8	621.0	582.3	38.67	16.060			
10,000.0	9,860.3	9,918.0	9,865.8	31.9	23.7	129.70	-886.8	395.6	621.0	582.0	38.96	15.938			
10,100.0	9,960.3	10,018.0	9,965.8	32.0	23.9	129.70	-887.5	394.4	621.0	581.7	39.26	15.819			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
10,200.0	10,060.3	10,118.0	10,065.8	32.1	24.0	129.70	-888.2	393.2	621.0	581.4	39.55	15.701			
10,300.0	10,160.3	10,218.0	10,165.8	32.2	24.1	129.70	-888.8	392.0	621.0	581.1	39.85	15.584			
10,400.0	10,260.3	10,318.0	10,265.8	32.3	24.3	129.70	-889.5	390.8	621.0	580.8	40.14	15.468			
10,500.0	10,360.3	10,418.0	10,365.8	32.4	24.4	129.70	-890.2	389.6	621.0	580.5	40.44	15.354			
10,600.0	10,460.3	10,518.0	10,465.7	32.5	24.5	129.70	-890.9	388.4	621.0	580.2	40.74	15.242			
10,700.0	10,560.3	10,618.0	10,565.7	32.6	24.7	129.70	-891.6	387.2	621.0	579.9	41.04	15.130			
10,800.0	10,660.2	10,718.0	10,665.7	32.7	24.8	129.70	-892.3	386.0	621.0	579.6	41.34	15.020			
10,900.0	10,760.2	10,818.0	10,765.7	32.8	24.9	129.70	-893.0	384.8	621.0	579.3	41.64	14.911			
11,000.0	10,860.2	10,918.0	10,865.7	32.9	25.1	129.70	-893.7	383.6	621.0	579.0	41.95	14.804			
11,100.0	10,960.2	11,018.0	10,965.7	33.0	25.2	129.70	-894.4	382.4	621.0	578.7	42.25	14.698			
11,200.0	11,060.2	11,118.0	11,065.7	33.1	25.3	129.70	-895.1	381.2	621.0	578.4	42.55	14.593			
11,300.0	11,160.2	11,218.0	11,165.7	33.2	25.5	129.70	-895.8	380.0	621.0	578.1	42.86	14.489			
11,400.0	11,260.2	11,318.0	11,265.7	33.3	25.6	129.70	-896.4	378.8	621.0	577.8	43.16	14.387			
11,500.0	11,360.2	11,418.0	11,365.7	33.5	25.8	129.70	-897.1	377.6	621.0	577.5	43.47	14.286			
11,600.0	11,460.2	11,518.0	11,465.7	33.6	25.9	129.70	-897.8	376.4	621.0	577.2	43.78	14.185			
11,700.0	11,560.2	11,618.0	11,565.6	33.7	26.0	129.70	-898.5	375.2	621.0	576.9	44.08	14.087			
11,800.0	11,660.1	11,718.0	11,665.6	33.8	26.2	129.70	-899.2	374.0	621.0	576.6	44.39	13.989			
11,900.0	11,760.1	11,818.0	11,765.6	33.9	26.3	129.70	-899.9	372.8	621.0	576.3	44.70	13.892			
11,975.9	11,836.0	11,893.8	11,841.5	34.0	26.4	129.70	-900.4	371.9	621.0	576.0	44.93	13.820			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 202-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-59.87	24.0	-41.4	48.1						
100.0	100.0	95.6	95.6	0.1	0.2	-59.89	24.2	-41.8	48.3	48.0	0.31	157.656 ES			
200.0	200.0	195.2	195.2	0.3	0.3	-59.95	24.8	-42.9	49.5	48.9	0.65	76.758			
300.0	300.0	295.0	295.0	0.5	0.5	132.76	25.6	-44.5	52.5	51.5	0.99	52.789			
400.0	399.8	394.6	394.5	0.7	0.7	135.61	26.0	-46.8	58.3	57.0	1.35	43.081			
500.0	499.5	494.9	494.9	0.9	0.9	138.97	25.3	-49.4	66.4	64.7	1.73	38.480			
600.0	598.7	596.7	596.5	1.2	1.0	142.76	22.5	-50.8	75.2	73.1	2.11	35.604			
700.0	697.5	698.2	697.9	1.5	1.2	146.22	16.7	-50.9	84.2	81.7	2.51	33.537			
800.0	795.8	799.6	798.9	1.8	1.4	149.47	8.6	-49.9	93.3	90.4	2.91	32.094			
900.0	894.0	900.4	899.3	2.2	1.6	152.37	-0.7	-47.6	101.2	97.9	3.29	30.756			
1,000.0	992.3	1,000.5	998.9	2.6	1.8	155.35	-10.0	-44.0	108.4	104.7	3.65	29.713			
1,100.0	1,090.5	1,100.8	1,098.7	2.9	2.1	158.62	-18.7	-39.1	115.7	111.7	3.98	29.026			
1,200.0	1,188.8	1,202.1	1,199.3	3.3	2.3	161.95	-28.3	-32.7	121.8	117.5	4.30	28.314			
1,300.0	1,287.1	1,303.6	1,300.1	3.6	2.6	164.92	-39.0	-25.9	127.3	122.7	4.62	27.545			
1,400.0	1,385.3	1,400.9	1,396.6	4.0	2.8	166.99	-50.0	-20.3	132.7	127.7	4.95	26.827			
1,500.0	1,483.6	1,499.3	1,494.4	4.4	3.0	168.72	-59.8	-15.8	140.0	134.7	5.27	26.539			
1,600.0	1,581.8	1,599.0	1,593.5	4.7	3.3	170.40	-69.3	-11.1	147.7	142.1	5.60	26.366			
1,700.0	1,680.1	1,698.0	1,692.0	5.1	3.5	171.87	-78.4	-6.6	156.0	150.0	5.94	26.277			
1,800.0	1,778.3	1,796.2	1,789.7	5.5	3.8	173.21	-86.9	-2.3	164.9	158.7	6.27	26.312			
1,900.0	1,876.6	1,899.0	1,892.0	5.8	4.0	174.19	-96.7	1.7	173.2	166.5	6.61	26.178			
2,000.0	1,974.9	1,999.6	1,992.0	6.2	4.3	174.93	-107.5	5.5	180.5	173.5	6.96	25.924			
2,100.0	2,073.1	2,103.1	2,094.6	6.6	4.6	175.53	-120.2	9.5	186.1	178.8	7.31	25.448			
2,200.0	2,171.4	2,202.9	2,193.4	6.9	4.9	175.60	-133.6	12.0	191.1	183.5	7.66	24.944			
2,300.0	2,269.6	2,303.0	2,292.6	7.3	5.1	175.62	-147.3	14.5	195.9	187.9	8.01	24.445			
2,400.0	2,367.9	2,402.8	2,391.5	7.7	5.4	175.75	-160.5	17.2	201.0	192.6	8.36	24.030			
2,500.0	2,466.1	2,504.2	2,491.7	8.0	5.7	176.87	-173.7	23.6	205.4	196.7	8.71	23.575			
2,600.0	2,564.4	2,603.2	2,589.7	8.4	6.0	178.20	-186.4	30.9	209.7	200.7	9.06	23.149			
2,700.0	2,662.7	2,701.1	2,686.6	8.8	6.3	179.46	-198.4	38.0	214.9	205.5	9.42	22.815			
2,800.0	2,760.9	2,800.8	2,785.4	9.1	6.6	-179.57	-210.0	44.1	220.9	211.1	9.78	22.580			
2,900.0	2,859.2	2,901.7	2,885.4	9.5	6.9	-179.24	-222.7	48.0	226.4	216.3	10.14	22.333			
3,000.0	2,957.4	3,000.5	2,983.2	9.9	7.2	-178.88	-236.2	52.3	230.8	220.3	10.49	21.996 SF			
3,100.0	3,055.7	3,013.0	2,995.6	10.2	7.2	-178.84	-237.8	52.8	252.2	241.5	10.69	23.589			
3,200.0	3,153.9	3,013.0	2,995.6	10.6	7.2	-178.84	-237.8	52.8	306.3	295.4	10.87	28.178			
3,300.0	3,252.2	3,013.0	2,995.6	11.0	7.2	-178.84	-237.8	52.8	379.4	368.4	11.04	34.355			
3,400.0	3,350.5	3,013.0	2,995.6	11.3	7.2	-178.84	-237.8	52.8	462.7	451.5	11.22	41.244			
3,500.0	3,448.7	3,013.0	2,995.6	11.7	7.2	-178.84	-237.8	52.8	551.6	540.2	11.39	48.410			
3,600.0	3,547.0	3,013.0	2,995.6	12.1	7.2	-178.84	-237.8	52.8	643.8	632.2	11.57	55.641			
3,700.0	3,645.2	3,013.0	2,995.6	12.4	7.2	-178.84	-237.8	52.8	738.0	726.2	11.75	62.830			
3,800.0	3,743.5	3,013.0	2,995.6	12.8	7.2	-178.84	-237.8	52.8	833.5	821.6	11.92	69.921			
3,900.0	3,841.7	3,013.0	2,995.6	13.2	7.2	-178.84	-237.8	52.8	930.0	917.9	12.10	76.884			
4,000.0	3,940.0	3,013.0	2,995.6	13.5	7.2	-178.84	-237.8	52.8	1,027.2	1,014.9	12.27	83.702			
4,100.0	4,038.3	3,013.0	2,995.6	13.9	7.2	-178.84	-237.8	52.8	1,124.9	1,112.4	12.45	90.368			
4,200.0	4,136.5	3,013.0	2,995.6	14.3	7.2	-178.84	-237.8	52.8	1,222.9	1,210.3	12.62	96.879			
4,300.0	4,234.8	3,013.0	2,995.6	14.6	7.2	-178.84	-237.8	52.8	1,321.2	1,308.4	12.80	103.234			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	-71.76	4.7	-14.4	15.1						
100.0	100.0	100.0	100.0	0.1	0.2	-71.76	4.7	-14.4	15.1	14.8	0.32	46.859			
200.0	200.0	200.0	200.0	0.3	0.3	-71.76	4.7	-14.4	15.1	14.5	0.67	22.517			
300.0	300.0	300.3	300.2	0.5	0.5	119.68	3.0	-14.0	15.1	14.1	1.03	14.711			
400.0	399.8	400.5	400.4	0.7	0.7	119.78	-2.1	-12.9	15.0	13.6	1.41	10.688			
500.0	499.5	500.8	500.3	0.9	0.9	119.93	-10.7	-11.0	14.9	13.1	1.83	8.144			
520.6	520.0	521.5	520.8	1.0	1.0	120.00	-12.9	-10.6	14.9	13.0	1.93	7.724 CC, ES			
600.0	598.7	600.8	599.7	1.2	1.2	124.30	-21.4	-8.7	15.5	13.2	2.28	6.786 SF			
700.0	697.5	700.7	699.0	1.5	1.4	136.76	-32.1	-6.4	18.5	15.8	2.67	6.918			
800.0	795.8	800.4	798.1	1.8	1.7	149.15	-42.7	-4.1	24.4	21.4	2.98	8.193			
900.0	894.0	900.1	897.2	2.2	1.9	156.67	-53.4	-1.8	31.2	27.9	3.29	9.497			
1,000.0	992.3	999.8	996.3	2.6	2.2	161.45	-64.1	0.5	38.4	34.8	3.60	10.643			
1,100.0	1,090.5	1,099.5	1,095.4	2.9	2.4	164.70	-74.7	2.8	45.7	41.8	3.93	11.628			
1,200.0	1,188.8	1,199.2	1,194.5	3.3	2.7	167.06	-85.4	5.1	53.1	48.9	4.26	12.471			
1,300.0	1,287.1	1,298.9	1,293.6	3.6	3.0	168.83	-96.1	7.4	60.7	56.1	4.60	13.196			
1,400.0	1,385.3	1,398.6	1,392.7	4.0	3.2	170.21	-106.8	9.7	68.2	63.3	4.93	13.824			
1,500.0	1,483.6	1,498.3	1,491.8	4.4	3.5	171.31	-117.4	12.1	75.8	70.5	5.27	14.372			
1,600.0	1,581.8	1,598.0	1,590.9	4.7	3.7	172.22	-128.1	14.4	83.4	77.8	5.62	14.853			
1,700.0	1,680.1	1,697.7	1,690.0	5.1	4.0	172.97	-138.8	16.7	91.1	85.1	5.96	15.280			
1,800.0	1,778.3	1,797.4	1,789.1	5.5	4.2	173.60	-149.5	19.0	98.7	92.4	6.30	15.659			
1,900.0	1,876.6	1,897.1	1,888.2	5.8	4.5	174.15	-160.1	21.3	106.4	99.7	6.65	16.000			
2,000.0	1,974.9	1,996.9	1,987.3	6.2	4.7	174.62	-170.8	23.6	114.0	107.0	6.99	16.306			
2,100.0	2,073.1	2,096.6	2,086.4	6.6	5.0	175.03	-181.5	25.9	121.7	114.3	7.34	16.583			
2,200.0	2,171.4	2,196.3	2,185.5	6.9	5.3	175.39	-192.1	28.2	129.4	121.7	7.68	16.836			
2,300.0	2,269.6	2,296.0	2,284.6	7.3	5.5	175.72	-202.8	30.5	137.0	129.0	8.03	17.066			
2,400.0	2,367.9	2,395.7	2,383.7	7.7	5.8	176.00	-213.5	32.8	144.7	136.3	8.38	17.277			
2,500.0	2,466.1	2,495.4	2,482.8	8.0	6.0	176.26	-224.2	35.1	152.4	143.7	8.72	17.471			
2,600.0	2,564.4	2,595.1	2,581.9	8.4	6.3	176.50	-234.8	37.5	160.1	151.0	9.07	17.650			
2,700.0	2,662.7	2,694.8	2,681.0	8.8	6.6	176.71	-245.5	39.8	167.8	158.4	9.42	17.816			
2,800.0	2,760.9	2,794.5	2,780.1	9.1	6.8	176.90	-256.2	42.1	175.5	165.7	9.77	17.970			
2,900.0	2,859.2	2,894.2	2,879.2	9.5	7.1	177.08	-266.9	44.4	183.2	173.1	10.11	18.113			
3,000.0	2,957.4	2,993.9	2,978.3	9.9	7.3	177.25	-277.5	46.7	190.9	180.4	10.46	18.247			
3,100.0	3,055.7	3,093.6	3,077.4	10.2	7.6	177.40	-288.2	49.0	198.6	187.8	10.81	18.372			
3,200.0	3,153.9	3,193.3	3,176.5	10.6	7.8	177.54	-298.9	51.3	206.3	195.1	11.16	18.489			
3,300.0	3,252.2	3,293.0	3,275.6	11.0	8.1	177.66	-309.5	53.6	214.0	202.5	11.50	18.599			
3,400.0	3,350.5	3,392.7	3,374.7	11.3	8.4	177.79	-320.2	55.9	221.7	209.8	11.85	18.702			
3,500.0	3,448.7	3,492.4	3,473.8	11.7	8.6	177.90	-330.9	58.2	229.4	217.2	12.20	18.800			
3,600.0	3,547.0	3,592.1	3,572.9	12.1	8.9	178.00	-341.6	60.5	237.1	224.5	12.55	18.892			
3,700.0	3,645.2	3,691.8	3,672.0	12.4	9.1	178.10	-352.2	62.9	244.8	231.9	12.90	18.979			
3,800.0	3,743.5	3,791.5	3,771.1	12.8	9.4	178.19	-362.9	65.2	252.5	239.2	13.25	19.061			
3,900.0	3,841.7	3,891.2	3,870.2	13.2	9.6	178.28	-373.6	67.5	260.2	246.6	13.59	19.139			
4,000.0	3,940.0	3,990.9	3,969.3	13.5	9.9	178.36	-384.3	69.8	267.9	254.0	13.94	19.214			
4,100.0	4,038.3	4,090.6	4,068.4	13.9	10.2	178.44	-394.9	72.1	275.6	261.3	14.29	19.284			
4,200.0	4,136.5	4,190.3	4,167.5	14.3	10.4	178.51	-405.6	74.4	283.3	268.7	14.64	19.351			
4,300.0	4,234.8	4,290.0	4,266.7	14.6	10.7	178.58	-416.3	76.7	291.0	276.0	14.99	19.415			
4,400.0	4,333.0	4,389.7	4,365.8	15.0	10.9	178.65	-427.0	79.0	298.7	283.4	15.34	19.477			
4,500.0	4,431.3	4,489.4	4,464.9	15.4	11.2	178.71	-437.6	81.3	306.4	290.8	15.69	19.535			
4,600.0	4,529.6	4,589.1	4,564.0	15.8	11.5	178.77	-448.3	83.6	314.1	298.1	16.04	19.591			
4,700.0	4,627.8	4,688.8	4,663.1	16.1	11.7	178.83	-459.0	85.9	321.9	305.5	16.38	19.644			
4,800.0	4,726.1	4,788.5	4,762.2	16.5	12.0	178.88	-469.6	88.2	329.6	312.8	16.73	19.695			
4,900.0	4,824.3	4,888.2	4,861.3	16.9	12.2	178.93	-480.3	90.6	337.3	320.2	17.08	19.744			
5,000.0	4,922.6	4,987.9	4,960.4	17.2	12.5	178.98	-491.0	92.9	345.0	327.6	17.43	19.792			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-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		
5,100.0	5,020.8	5,087.6	5,059.5	17.6	12.7	179.03	-501.7	95.2	352.7	334.9	17.78	19.837			
5,200.0	5,119.1	5,183.2	5,154.5	18.0	13.0	179.07	-511.7	97.3	360.6	342.5	18.12	19.900			
5,300.0	5,217.4	5,271.4	5,242.4	18.3	13.2	179.11	-518.9	98.9	371.0	352.5	18.45	20.107			
5,400.0	5,315.6	5,359.0	5,329.9	18.7	13.3	179.15	-523.3	99.9	384.4	365.6	18.78	20.472			
5,500.0	5,413.9	5,445.7	5,416.6	19.1	13.4	179.18	-525.2	100.3	400.8	381.7	19.10	20.983			
5,600.0	5,512.1	5,541.7	5,512.6	19.4	13.5	179.20	-525.3	100.2	419.3	399.9	19.44	21.565			
5,700.0	5,610.4	5,640.4	5,611.2	19.8	13.7	179.17	-525.6	99.7	437.7	417.9	19.79	22.119			
5,800.0	5,708.6	5,738.7	5,709.5	20.2	13.8	179.13	-525.9	99.2	456.1	436.0	20.14	22.653			
5,900.0	5,806.9	5,837.0	5,807.8	20.5	13.9	179.09	-526.2	98.7	474.5	454.0	20.48	23.168			
6,000.0	5,905.2	5,935.3	5,906.1	20.9	14.1	179.05	-526.5	98.1	492.9	472.1	20.83	23.667			
6,100.0	6,003.4	6,033.6	6,004.4	21.3	14.2	179.02	-526.8	97.6	511.3	490.1	21.17	24.150			
6,200.0	6,101.7	6,131.8	6,102.7	21.6	14.3	178.99	-527.1	97.1	529.7	508.2	21.52	24.617			
6,300.0	6,199.9	6,230.1	6,201.0	22.0	14.4	178.96	-527.4	96.5	548.1	526.2	21.86	25.069			
6,400.0	6,298.2	6,328.4	6,299.3	22.4	14.6	178.94	-527.7	96.0	566.5	544.3	22.21	25.507			
6,500.0	6,396.4	6,426.7	6,397.6	22.8	14.7	178.91	-528.1	95.4	584.9	562.3	22.56	25.932			
6,600.0	6,494.7	6,525.0	6,495.8	23.1	14.8	178.89	-528.4	94.9	603.3	580.4	22.90	26.344			
6,700.0	6,593.0	6,623.3	6,594.1	23.5	15.0	178.87	-528.7	94.4	621.7	598.4	23.25	26.743			
6,800.0	6,691.2	6,721.6	6,692.4	23.9	15.1	178.85	-529.0	93.8	640.1	616.5	23.59	27.131			
6,900.0	6,789.5	6,819.9	6,790.7	24.2	15.2	178.83	-529.3	93.3	658.5	634.6	23.94	27.508			
7,000.0	6,887.7	6,918.2	6,889.0	24.6	15.4	178.81	-529.6	92.8	676.9	652.6	24.28	27.874			
7,100.0	6,986.0	7,016.5	6,987.3	25.0	15.5	178.79	-529.9	92.2	695.3	670.7	24.63	28.230			
7,200.0	7,084.2	7,114.8	7,085.6	25.3	15.7	178.77	-530.2	91.7	713.7	688.7	24.98	28.576			
7,300.0	7,182.5	7,213.1	7,183.9	25.7	15.8	178.76	-530.5	91.2	732.1	706.8	25.32	28.912			
7,400.0	7,280.8	7,311.4	7,282.2	26.1	15.9	178.74	-530.8	90.6	750.5	724.8	25.67	29.240			
7,500.0	7,379.0	7,409.7	7,380.5	26.4	16.1	178.73	-531.1	90.1	768.9	742.9	26.01	29.558			
7,600.0	7,477.3	7,507.9	7,478.8	26.8	16.2	178.72	-531.4	89.6	787.3	760.9	26.36	29.869			
7,700.0	7,575.5	7,606.2	7,577.0	27.2	16.4	178.70	-531.8	89.0	805.7	779.0	26.70	30.171			
7,800.0	7,673.8	7,704.5	7,675.3	27.5	16.5	178.69	-532.1	88.5	824.1	797.0	27.05	30.466			
7,900.0	7,772.1	7,802.8	7,773.6	27.9	16.6	178.68	-532.4	88.0	842.5	815.1	27.39	30.753			
8,000.0	7,870.3	7,901.1	7,871.9	28.3	16.8	178.67	-532.7	87.4	860.9	833.1	27.74	31.033			
8,100.0	7,968.6	7,999.4	7,970.2	28.6	16.9	178.66	-533.0	86.9	879.3	851.2	28.09	31.306			
8,200.0	8,066.8	8,097.7	8,068.5	29.0	17.1	178.65	-533.3	86.4	897.7	869.2	28.43	31.573			
8,300.0	8,165.1	8,196.0	8,166.8	29.4	17.2	178.64	-533.6	85.8	916.1	887.3	28.78	31.833			
8,400.0	8,263.3	8,294.3	8,265.1	29.8	17.4	178.63	-533.9	85.3	934.4	905.3	29.13	32.081			
8,500.0	8,362.0	8,392.9	8,363.7	30.1	17.5	178.62	-534.2	84.8	950.8	921.3	29.50	32.226			
8,600.0	8,461.1	8,492.1	8,462.9	30.3	17.6	178.61	-534.5	84.2	963.7	933.8	29.86	32.275			
8,700.0	8,560.6	8,591.7	8,562.4	30.5	17.8	178.60	-534.8	83.7	973.1	942.9	30.19	32.232			
8,800.0	8,660.4	8,691.5	8,662.3	30.7	17.9	178.57	-535.2	83.2	979.0	948.5	30.50	32.101			
8,900.0	8,760.4	8,791.4	8,762.2	30.8	18.1	178.54	-535.5	82.6	981.5	950.7	30.78	31.884			
9,000.0	8,860.4	8,891.4	8,862.2	30.9	18.2	107.03	-535.8	82.1	981.4	950.3	31.12	31.542			
9,070.1	8,930.5	8,961.5	8,932.3	30.9	18.4	107.02	-536.0	81.7	981.4	950.0	31.36	31.291			
9,100.0	8,960.4	8,991.4	8,962.2	31.0	18.4	107.03	-536.1	81.5	981.4	949.9	31.47	31.186			
9,200.0	9,060.4	9,091.4	9,062.2	31.1	18.5	107.05	-536.4	81.0	981.5	949.7	31.82	30.843			
9,300.0	9,160.4	9,191.4	9,162.2	31.2	18.7	107.08	-536.7	80.4	981.7	949.5	32.17	30.512			
9,400.0	9,260.4	9,291.4	9,262.2	31.3	18.9	107.13	-537.0	79.9	981.9	949.4	32.53	30.190			
9,500.0	9,360.4	9,391.4	9,362.2	31.4	19.0	107.17	-537.4	79.4	982.2	949.3	32.88	29.876			
9,600.0	9,460.4	9,491.4	9,462.2	31.5	19.2	107.21	-537.7	78.8	982.4	949.2	33.23	29.567			
9,700.0	9,560.3	9,591.4	9,562.2	31.6	19.3	107.25	-538.0	78.3	982.6	949.0	33.58	29.266			
9,800.0	9,660.3	9,691.4	9,662.2	31.7	19.5	107.30	-538.3	77.7	982.8	948.9	33.93	28.970			
9,900.0	9,760.3	9,791.4	9,762.2	31.8	19.6	107.34	-538.6	77.2	983.1	948.8	34.28	28.681			
10,000.0	9,860.3	9,891.4	9,862.2	31.9	19.8	107.38	-538.9	76.6	983.3	948.7	34.63	28.398			
10,100.0	9,960.3	9,991.4	9,962.2	32.0	19.9	107.42	-539.2	76.1	983.5	948.5	34.98	28.120			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
D21 595 Pad - LR05BDR D21-595 - DD - Plan #2													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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		
10,200.0	10,060.3	10,091.4	10,062.2	32.1	20.1	107.46	-539.6	75.6	983.7	948.4	35.33	27.848		
10,300.0	10,160.3	10,191.4	10,162.2	32.2	20.2	107.51	-539.9	75.0	984.0	948.3	35.68	27.581		
10,400.0	10,260.3	10,291.4	10,262.1	32.3	20.4	107.55	-540.2	74.5	984.2	948.2	36.03	27.319		
10,500.0	10,360.3	10,391.4	10,362.1	32.4	20.5	107.59	-540.5	73.9	984.4	948.0	36.38	27.063		
10,600.0	10,460.3	10,491.4	10,462.1	32.5	20.7	107.63	-540.8	73.4	984.6	947.9	36.73	26.811		
10,700.0	10,560.3	10,591.4	10,562.1	32.6	20.9	107.67	-541.1	72.8	984.9	947.8	37.08	26.564		
10,800.0	10,660.2	10,691.4	10,662.1	32.7	21.0	107.72	-541.4	72.3	985.1	947.7	37.43	26.322		
10,900.0	10,760.2	10,791.4	10,762.1	32.8	21.2	107.76	-541.8	71.8	985.3	947.6	37.78	26.084		
11,000.0	10,860.2	10,891.4	10,862.1	32.9	21.3	107.80	-542.1	71.2	985.6	947.4	38.13	25.851		
11,100.0	10,960.2	10,991.4	10,962.1	33.0	21.5	107.84	-542.4	70.7	985.8	947.3	38.47	25.622		
11,200.0	11,060.2	11,091.4	11,062.1	33.1	21.6	107.88	-542.7	70.1	986.0	947.2	38.82	25.397		
11,300.0	11,160.2	11,191.4	11,162.1	33.2	21.8	107.93	-543.0	69.6	986.3	947.1	39.17	25.176		
11,400.0	11,260.2	11,291.4	11,262.1	33.3	22.0	107.97	-543.3	69.0	986.5	947.0	39.52	24.959		
11,500.0	11,360.2	11,391.4	11,362.1	33.5	22.1	108.01	-543.6	68.5	986.7	946.8	39.87	24.746		
11,600.0	11,460.2	11,491.4	11,462.1	33.6	22.3	108.05	-543.9	68.0	987.0	946.7	40.22	24.536		
11,700.0	11,560.2	11,591.4	11,562.1	33.7	22.4	108.09	-544.3	67.4	987.2	946.6	40.57	24.331		
11,800.0	11,660.1	11,691.4	11,662.1	33.8	22.6	108.13	-544.6	66.9	987.4	946.5	40.92	24.128		
11,900.0	11,760.1	11,791.4	11,762.1	33.9	22.8	108.18	-544.9	66.3	987.7	946.4	41.27	23.930		
11,975.9	11,836.0	11,867.2	11,837.9	34.0	22.9	108.21	-545.1	65.9	987.8	946.3	41.54	23.781		

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

Cathedral Energy Services

Anticollision Report

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Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.41	-9.5	28.5	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-9.5	28.5	30.0	29.7	0.30	101.087			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-9.5	28.5	30.0	29.3	0.65	46.445 CC			
300.0	300.0	299.4	299.4	0.5	0.5	-60.42	-11.1	29.0	30.2	29.2	1.00	30.205 ES			
400.0	399.8	398.7	398.6	0.7	0.7	-61.13	-16.0	30.7	30.7	29.3	1.38	22.313			
500.0	499.5	498.1	497.6	0.9	0.9	-62.26	-24.2	33.4	31.6	29.8	1.80	17.563			
600.0	598.7	597.5	596.2	1.2	1.2	-63.73	-35.6	37.3	32.9	30.6	2.29	14.354			
700.0	697.5	697.1	694.7	1.5	1.5	-65.98	-49.9	42.1	34.4	31.5	2.86	12.006			
800.0	795.8	797.1	793.4	1.8	1.8	-71.54	-64.7	47.1	35.2	31.6	3.52	10.001			
900.0	894.0	897.0	892.1	2.2	2.1	-77.14	-79.6	52.1	36.2	32.0	4.21	8.614			
1,000.0	992.3	996.9	990.8	2.6	2.4	-82.38	-94.4	57.1	37.6	32.7	4.91	7.662			
1,100.0	1,090.5	1,096.9	1,089.5	2.9	2.7	-87.20	-109.3	62.1	39.3	33.7	5.62	7.002			
1,200.0	1,188.8	1,196.8	1,188.2	3.3	3.0	-91.60	-124.1	67.1	41.3	34.9	6.31	6.538			
1,300.0	1,287.1	1,296.7	1,286.9	3.6	3.4	-95.59	-139.0	72.1	43.4	36.4	6.99	6.212			
1,400.0	1,385.3	1,396.7	1,385.6	4.0	3.7	-99.18	-153.8	77.1	45.8	38.1	7.65	5.982			
1,500.0	1,483.6	1,496.6	1,484.3	4.4	4.0	-102.41	-168.7	82.1	48.3	40.0	8.29	5.821			
1,600.0	1,581.8	1,596.5	1,583.0	4.7	4.3	-105.31	-183.5	87.1	50.9	42.0	8.92	5.709			
1,700.0	1,680.1	1,696.4	1,681.7	5.1	4.7	-107.92	-198.3	92.1	53.7	44.2	9.53	5.634			
1,800.0	1,778.3	1,796.4	1,780.4	5.5	5.0	-110.27	-213.2	97.2	56.6	46.4	10.13	5.585			
1,900.0	1,876.6	1,896.3	1,879.1	5.8	5.3	-112.38	-228.0	102.2	59.5	48.8	10.71	5.556			
2,000.0	1,974.9	1,996.2	1,977.8	6.2	5.6	-114.30	-242.9	107.2	62.6	51.3	11.29	5.542			
2,100.0	2,073.1	2,096.2	2,076.5	6.6	5.9	-116.04	-257.7	112.2	65.6	53.8	11.85	5.540			
2,200.0	2,171.4	2,196.1	2,175.1	6.9	6.3	-117.62	-272.6	117.2	68.8	56.4	12.41	5.545			
2,300.0	2,269.6	2,296.0	2,273.8	7.3	6.6	-119.06	-287.4	122.2	72.0	59.0	12.95	5.557			
2,400.0	2,367.9	2,396.0	2,372.5	7.7	6.9	-120.38	-302.3	127.2	75.2	61.7	13.50	5.573			
2,500.0	2,466.1	2,495.9	2,471.2	8.0	7.2	-121.59	-317.1	132.2	78.5	64.5	14.03	5.593			
2,600.0	2,564.4	2,595.8	2,569.9	8.4	7.6	-122.70	-332.0	137.2	81.8	67.2	14.57	5.616			
2,700.0	2,662.7	2,695.8	2,668.6	8.8	7.9	-123.72	-346.8	142.2	85.1	70.0	15.10	5.640			
2,800.0	2,760.9	2,795.7	2,767.3	9.1	8.2	-124.67	-361.7	147.2	88.5	72.9	15.62	5.665			
2,900.0	2,859.2	2,895.6	2,866.0	9.5	8.5	-125.55	-376.5	152.2	91.9	75.7	16.14	5.691			
3,000.0	2,957.4	2,995.6	2,964.7	9.9	8.9	-126.36	-391.3	157.2	95.3	78.6	16.66	5.718			
3,100.0	3,055.7	3,095.5	3,063.4	10.2	9.2	-127.12	-406.2	162.2	98.7	81.5	17.18	5.745			
3,200.0	3,153.9	3,195.4	3,162.1	10.6	9.5	-127.83	-421.0	167.2	102.1	84.4	17.69	5.772			
3,300.0	3,252.2	3,295.4	3,260.8	11.0	9.8	-128.49	-435.9	172.2	105.6	87.4	18.21	5.799			
3,400.0	3,350.5	3,395.3	3,359.5	11.3	10.2	-129.11	-450.7	177.2	109.0	90.3	18.72	5.825			
3,500.0	3,448.7	3,495.2	3,458.2	11.7	10.5	-129.69	-465.6	182.2	112.5	93.3	19.23	5.851			
3,600.0	3,547.0	3,595.2	3,556.9	12.1	10.8	-130.24	-480.4	187.3	116.0	96.3	19.74	5.877			
3,700.0	3,645.2	3,695.1	3,655.6	12.4	11.1	-130.75	-495.3	192.3	119.5	99.2	20.24	5.902			
3,800.0	3,743.5	3,795.0	3,754.3	12.8	11.5	-131.24	-510.1	197.3	123.0	102.2	20.75	5.927			
3,900.0	3,841.7	3,895.0	3,853.0	13.2	11.8	-131.70	-525.0	202.3	126.5	105.3	21.26	5.951			
4,000.0	3,940.0	3,994.9	3,951.7	13.5	12.1	-132.13	-539.8	207.3	130.0	108.3	21.76	5.975			
4,100.0	4,038.3	4,094.8	4,050.4	13.9	12.4	-132.54	-554.6	212.3	133.6	111.3	22.27	5.998			
4,200.0	4,136.5	4,194.8	4,149.1	14.3	12.7	-132.93	-569.5	217.3	137.1	114.3	22.77	6.021			
4,300.0	4,234.8	4,294.7	4,247.8	14.6	13.1	-133.30	-584.3	222.3	140.6	117.4	23.27	6.043			
4,400.0	4,333.0	4,394.6	4,346.5	15.0	13.4	-133.65	-599.2	227.3	144.2	120.4	23.78	6.064			
4,500.0	4,431.3	4,494.6	4,445.2	15.4	13.7	-133.99	-614.0	232.3	147.7	123.5	24.28	6.085			
4,600.0	4,529.6	4,594.5	4,543.9	15.8	14.0	-134.31	-628.9	237.3	151.3	126.5	24.78	6.105			
4,700.0	4,627.8	4,694.4	4,642.6	16.1	14.4	-134.61	-643.7	242.3	154.8	129.6	25.28	6.125			
4,800.0	4,726.1	4,794.4	4,741.3	16.5	14.7	-134.90	-658.6	247.3	158.4	132.6	25.78	6.145			
4,900.0	4,824.3	4,894.3	4,840.0	16.9	15.0	-135.18	-673.4	252.3	162.0	135.7	26.28	6.163			
5,000.0	4,922.6	4,994.2	4,938.7	17.2	15.3	-135.45	-688.3	257.3	165.5	138.8	26.78	6.182			
5,100.0	5,020.8	5,094.2	5,037.4	17.6	15.7	-135.70	-703.1	262.3	169.1	141.8	27.28	6.199			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
5,200.0	5,119.1	5,194.1	5,136.1	18.0	16.0	-135.95	-717.9	267.3	172.7	144.9	27.78	6.217			
5,300.0	5,217.4	5,294.0	5,234.8	18.3	16.3	-136.18	-732.8	272.4	176.3	148.0	28.28	6.234			
5,400.0	5,315.6	5,394.0	5,333.5	18.7	16.6	-136.41	-747.6	277.4	179.9	151.1	28.78	6.250			
5,500.0	5,413.9	5,493.9	5,432.2	19.1	17.0	-136.62	-762.5	282.4	183.5	154.2	29.28	6.266			
5,600.0	5,512.1	5,593.8	5,530.9	19.4	17.3	-136.83	-777.3	287.4	187.0	157.3	29.77	6.282			
5,700.0	5,610.4	5,693.8	5,629.6	19.8	17.6	-137.03	-792.2	292.4	190.6	160.4	30.27	6.297			
5,800.0	5,708.6	5,793.7	5,728.3	20.2	17.9	-137.22	-807.0	297.4	194.2	163.5	30.77	6.312			
5,900.0	5,806.9	5,893.6	5,827.0	20.5	18.3	-137.41	-821.9	302.4	197.8	166.6	31.27	6.327			
6,000.0	5,905.2	5,993.6	5,925.7	20.9	18.6	-137.59	-836.7	307.4	201.4	169.7	31.77	6.341			
6,100.0	6,003.4	6,093.5	6,024.4	21.3	18.9	-137.76	-851.6	312.4	205.0	172.8	32.26	6.355			
6,200.0	6,101.7	6,193.4	6,123.1	21.6	19.2	-137.93	-866.4	317.4	208.6	175.9	32.76	6.368			
6,300.0	6,199.9	6,293.4	6,221.8	22.0	19.6	-138.09	-881.3	322.4	212.2	179.0	33.26	6.381			
6,400.0	6,298.2	6,393.3	6,320.4	22.4	19.9	-138.25	-896.1	327.4	215.8	182.1	33.76	6.394			
6,500.0	6,396.4	6,493.2	6,419.1	22.8	20.2	-138.40	-910.9	332.4	219.4	185.2	34.25	6.406			
6,600.0	6,494.7	6,593.2	6,517.8	23.1	20.5	-138.54	-925.8	337.4	223.0	188.3	34.75	6.419			
6,700.0	6,593.0	6,693.1	6,616.5	23.5	20.9	-138.68	-940.6	342.4	226.7	191.4	35.25	6.430			
6,800.0	6,691.2	6,793.0	6,715.2	23.9	21.2	-138.82	-955.5	347.4	230.3	194.5	35.74	6.442			
6,900.0	6,789.5	6,893.0	6,813.9	24.2	21.5	-138.95	-970.3	352.4	233.9	197.6	36.24	6.453			
7,000.0	6,887.7	6,992.9	6,912.6	24.6	21.8	-139.08	-985.2	357.4	237.5	200.8	36.74	6.465			
7,100.0	6,986.0	7,092.8	7,011.3	25.0	22.2	-139.21	-1,000.0	362.5	241.1	203.9	37.23	6.475			
7,200.0	7,084.2	7,192.8	7,110.0	25.3	22.5	-139.33	-1,014.9	367.5	244.7	207.0	37.73	6.486			
7,300.0	7,182.5	7,292.7	7,208.7	25.7	22.8	-139.44	-1,029.7	372.5	248.3	210.1	38.23	6.496			
7,400.0	7,280.8	7,392.6	7,307.4	26.1	23.1	-139.56	-1,044.6	377.5	252.0	213.2	38.72	6.507			
7,500.0	7,379.0	7,492.6	7,406.1	26.4	23.5	-139.67	-1,059.4	382.5	255.6	216.4	39.22	6.517			
7,600.0	7,477.3	7,592.5	7,504.8	26.8	23.8	-139.78	-1,074.2	387.5	259.2	219.5	39.72	6.526			
7,700.0	7,575.5	7,692.4	7,603.5	27.2	24.1	-139.88	-1,089.1	392.5	262.8	222.6	40.21	6.536			
7,800.0	7,673.8	7,792.4	7,702.2	27.5	24.4	-139.98	-1,103.9	397.5	266.4	225.7	40.71	6.545			
7,900.0	7,772.1	7,892.3	7,800.9	27.9	24.8	-140.08	-1,118.8	402.5	270.1	228.9	41.20	6.554			
8,000.0	7,870.3	7,992.2	7,899.6	28.3	25.1	-140.18	-1,133.6	407.5	273.7	232.0	41.70	6.563			
8,100.0	7,968.6	8,092.2	7,998.3	28.6	25.4	-140.27	-1,148.5	412.5	277.3	235.1	42.20	6.572			
8,200.0	8,066.8	8,192.1	8,097.0	29.0	25.7	-140.37	-1,163.3	417.5	280.9	238.2	42.69	6.580			
8,300.0	8,165.1	8,292.0	8,195.7	29.4	26.1	-140.45	-1,178.2	422.5	284.6	241.4	43.19	6.589			
8,400.0	8,263.3	8,392.0	8,294.4	29.8	26.4	-140.54	-1,193.0	427.5	288.2	244.5	43.68	6.596			
8,500.0	8,362.0	8,488.9	8,390.2	30.1	26.7	-140.62	-1,207.1	432.3	290.4	246.2	44.23	6.567			
8,600.0	8,461.1	8,582.4	8,482.9	30.3	26.9	-140.70	-1,221.2	436.0	291.9	247.2	44.70	6.530			
8,700.0	8,560.6	8,675.9	8,576.0	30.5	27.1	-140.78	-1,235.3	438.8	292.9	247.8	45.10	6.496			
8,800.0	8,660.4	8,769.3	8,669.3	30.7	27.3	-140.85	-1,249.4	440.6	293.5	248.1	45.42	6.463			
8,900.0	8,760.4	8,862.8	8,762.7	30.8	27.4	-140.92	-1,263.5	441.4	293.7	248.0	45.66	6.432			
8,968.6	8,829.0	8,929.5	8,829.4	30.8	27.4	-171.13	-1,234.5	441.5	293.9	248.1	45.80	6.416			
9,000.0	8,860.4	8,961.2	8,861.1	30.9	27.5	148.47	-1,234.5	441.4	293.6	247.7	45.89	6.398			
9,100.0	8,960.4	9,062.3	8,962.2	31.0	27.6	148.47	-1,234.8	441.0	293.7	247.5	46.13	6.366			
9,200.0	9,060.4	9,163.4	9,063.3	31.1	27.7	148.48	-1,235.3	440.2	293.7	247.3	46.36	6.335			
9,300.0	9,160.4	9,264.0	9,163.8	31.2	27.8	148.48	-1,235.9	439.0	293.7	247.1	46.59	6.304			
9,400.0	9,260.4	9,364.0	9,263.8	31.3	27.9	148.48	-1,236.6	437.8	293.7	246.9	46.81	6.274			
9,500.0	9,360.4	9,464.0	9,363.8	31.4	28.0	148.48	-1,237.3	436.6	293.7	246.7	47.04	6.244			
9,600.0	9,460.4	9,564.0	9,463.8	31.5	28.1	148.48	-1,238.0	435.4	293.7	246.4	47.27	6.213			
9,700.0	9,560.3	9,664.0	9,563.8	31.6	28.2	148.48	-1,238.7	434.2	293.7	246.2	47.50	6.183			
9,800.0	9,660.3	9,764.0	9,663.8	31.7	28.3	148.48	-1,239.4	433.0	293.7	246.0	47.73	6.153			
9,900.0	9,760.3	9,864.0	9,763.8	31.8	28.4	148.48	-1,240.1	431.8	293.7	245.7	47.96	6.124			
10,000.0	9,860.3	9,964.0	9,863.8	31.9	28.5	148.48	-1,240.8	430.6	293.7	245.5	48.20	6.094			
10,100.0	9,960.3	10,064.0	9,963.8	32.0	28.6	148.48	-1,241.5	429.4	293.7	245.3	48.43	6.064			
10,200.0	10,060.3	10,164.0	10,063.8	32.1	28.8	148.48	-1,242.1	428.2	293.7	245.0	48.67	6.035			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design												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)				
10,300.0	10,160.3	10,264.0	10,163.8	32.2	28.9	148.48	-1,242.8	427.0	293.7	244.8	48.91	6.005		
10,400.0	10,260.3	10,364.0	10,263.7	32.3	29.0	148.48	-1,243.5	425.8	293.7	244.5	49.15	5.976		
10,500.0	10,360.3	10,464.0	10,363.7	32.4	29.1	148.48	-1,244.2	424.6	293.7	244.3	49.39	5.947		
10,600.0	10,460.3	10,564.0	10,463.7	32.5	29.2	148.48	-1,244.9	423.4	293.7	244.1	49.63	5.918		
10,700.0	10,560.3	10,664.0	10,563.7	32.6	29.3	148.48	-1,245.6	422.2	293.7	243.8	49.87	5.889		
10,800.0	10,660.2	10,764.0	10,663.7	32.7	29.4	148.49	-1,246.3	421.0	293.7	243.6	50.12	5.860		
10,900.0	10,760.2	10,864.0	10,763.7	32.8	29.5	148.49	-1,247.0	419.8	293.7	243.3	50.36	5.832		
11,000.0	10,860.2	10,964.0	10,863.7	32.9	29.7	148.49	-1,247.7	418.7	293.7	243.1	50.61	5.803		
11,100.0	10,960.2	11,064.0	10,963.7	33.0	29.8	148.49	-1,248.4	417.5	293.7	242.8	50.86	5.775		
11,200.0	11,060.2	11,164.0	11,063.7	33.1	29.9	148.49	-1,249.1	416.3	293.7	242.6	51.11	5.746		
11,300.0	11,160.2	11,264.0	11,163.7	33.2	30.0	148.49	-1,249.8	415.1	293.7	242.3	51.36	5.718		
11,400.0	11,260.2	11,364.0	11,263.6	33.3	30.1	148.49	-1,250.4	413.9	293.7	242.1	51.61	5.690		
11,500.0	11,360.2	11,464.0	11,363.6	33.5	30.3	148.49	-1,251.1	412.7	293.7	241.8	51.86	5.663		
11,600.0	11,460.2	11,564.0	11,463.6	33.6	30.4	148.49	-1,251.8	411.5	293.7	241.6	52.12	5.635		
11,700.0	11,560.2	11,664.0	11,563.6	33.7	30.5	148.49	-1,252.5	410.3	293.7	241.3	52.37	5.608		
11,800.0	11,660.1	11,764.0	11,663.6	33.8	30.6	148.49	-1,253.2	409.1	293.7	241.1	52.63	5.580		
11,900.0	11,760.1	11,864.0	11,763.6	33.9	30.7	148.49	-1,253.9	407.9	293.7	240.8	52.89	5.553		
11,975.9	11,836.0	11,939.8	11,839.5	34.0	30.8	148.49	-1,254.4	407.0	293.7	240.6	53.08	5.533 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.41	-9.5	28.5	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-9.5	28.5	30.0	29.7	0.30	101.087			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-9.5	28.5	30.0	29.3	0.65	46.445 CC			
300.0	300.0	299.4	299.4	0.5	0.5	-60.42	-11.1	29.0	30.2	29.2	1.00	30.205 ES			
400.0	399.8	398.7	398.6	0.7	0.7	-61.13	-16.0	30.7	30.7	29.3	1.38	22.313			
500.0	499.5	498.1	497.6	0.9	0.9	-62.26	-24.2	33.4	31.6	29.8	1.80	17.563			
600.0	598.7	597.5	596.2	1.2	1.2	-63.73	-35.6	37.3	32.9	30.6	2.29	14.354			
700.0	697.5	697.1	694.7	1.5	1.5	-65.98	-49.9	42.1	34.4	31.5	2.86	12.006			
800.0	795.8	797.1	793.4	1.8	1.8	-71.54	-64.7	47.1	35.2	31.6	3.52	10.001			
900.0	894.0	897.0	892.1	2.2	2.1	-77.14	-79.6	52.1	36.2	32.0	4.21	8.614			
1,000.0	992.3	996.9	990.8	2.6	2.4	-82.38	-94.4	57.1	37.6	32.7	4.91	7.662			
1,100.0	1,090.5	1,096.9	1,089.5	2.9	2.7	-87.20	-109.3	62.1	39.3	33.7	5.62	7.002			
1,200.0	1,188.8	1,196.8	1,188.2	3.3	3.0	-91.60	-124.1	67.1	41.3	34.9	6.31	6.538			
1,300.0	1,287.1	1,296.7	1,286.9	3.6	3.4	-95.59	-139.0	72.1	43.4	36.4	6.99	6.212			
1,400.0	1,385.3	1,396.7	1,385.6	4.0	3.7	-99.18	-153.8	77.1	45.8	38.1	7.65	5.982			
1,500.0	1,483.6	1,496.6	1,484.3	4.4	4.0	-102.41	-168.7	82.1	48.3	40.0	8.29	5.821			
1,600.0	1,581.8	1,596.5	1,583.0	4.7	4.3	-105.31	-183.5	87.1	50.9	42.0	8.92	5.709			
1,700.0	1,680.1	1,696.4	1,681.7	5.1	4.7	-107.92	-198.3	92.1	53.7	44.2	9.53	5.634			
1,800.0	1,778.3	1,796.4	1,780.4	5.5	5.0	-110.27	-213.2	97.2	56.6	46.4	10.13	5.585			
1,900.0	1,876.6	1,896.3	1,879.1	5.8	5.3	-112.38	-228.0	102.2	59.5	48.8	10.71	5.556			
2,000.0	1,974.9	1,996.2	1,977.8	6.2	5.6	-114.30	-242.9	107.2	62.6	51.3	11.29	5.542			
2,100.0	2,073.1	2,096.2	2,076.5	6.6	5.9	-116.04	-257.7	112.2	65.6	53.8	11.85	5.540			
2,200.0	2,171.4	2,196.1	2,175.1	6.9	6.3	-117.62	-272.6	117.2	68.8	56.4	12.41	5.545			
2,300.0	2,269.6	2,296.0	2,273.8	7.3	6.6	-119.06	-287.4	122.2	72.0	59.0	12.95	5.557			
2,400.0	2,367.9	2,396.0	2,372.5	7.7	6.9	-120.38	-302.3	127.2	75.2	61.7	13.50	5.573			
2,500.0	2,466.1	2,495.9	2,471.2	8.0	7.2	-121.59	-317.1	132.2	78.5	64.5	14.03	5.593			
2,600.0	2,564.4	2,595.8	2,569.9	8.4	7.6	-122.70	-332.0	137.2	81.8	67.2	14.57	5.616			
2,700.0	2,662.7	2,695.8	2,668.6	8.8	7.9	-123.72	-346.8	142.2	85.1	70.0	15.10	5.640			
2,800.0	2,760.9	2,795.7	2,767.3	9.1	8.2	-124.67	-361.7	147.2	88.5	72.9	15.62	5.665			
2,900.0	2,859.2	2,895.6	2,866.0	9.5	8.5	-125.55	-376.5	152.2	91.9	75.7	16.14	5.691			
3,000.0	2,957.4	2,995.6	2,964.7	9.9	8.9	-126.36	-391.3	157.2	95.3	78.6	16.66	5.718			
3,100.0	3,055.7	3,095.5	3,063.4	10.2	9.2	-127.12	-406.2	162.2	98.7	81.5	17.18	5.745			
3,200.0	3,153.9	3,195.4	3,162.1	10.6	9.5	-127.83	-421.0	167.2	102.1	84.4	17.69	5.772			
3,300.0	3,252.2	3,295.4	3,260.8	11.0	9.8	-128.49	-435.9	172.2	105.6	87.4	18.21	5.799			
3,400.0	3,350.5	3,395.3	3,359.5	11.3	10.2	-129.11	-450.7	177.2	109.0	90.3	18.72	5.825			
3,500.0	3,448.7	3,495.2	3,458.2	11.7	10.5	-129.69	-465.6	182.2	112.5	93.3	19.23	5.851			
3,600.0	3,547.0	3,595.2	3,556.9	12.1	10.8	-130.24	-480.4	187.3	116.0	96.3	19.74	5.877			
3,700.0	3,645.2	3,695.1	3,655.6	12.4	11.1	-130.75	-495.3	192.3	119.5	99.2	20.24	5.902			
3,800.0	3,743.5	3,795.0	3,754.3	12.8	11.5	-131.24	-510.1	197.3	123.0	102.2	20.75	5.927			
3,900.0	3,841.7	3,895.0	3,853.0	13.2	11.8	-131.70	-525.0	202.3	126.5	105.3	21.26	5.951			
4,000.0	3,940.0	3,994.9	3,951.7	13.5	12.1	-132.13	-539.8	207.3	130.0	108.3	21.76	5.975			
4,100.0	4,038.3	4,094.8	4,050.4	13.9	12.4	-132.54	-554.6	212.3	133.6	111.3	22.27	5.998			
4,200.0	4,136.5	4,194.8	4,149.1	14.3	12.7	-132.93	-569.5	217.3	137.1	114.3	22.77	6.021			
4,300.0	4,234.8	4,294.7	4,247.8	14.6	13.1	-133.30	-584.3	222.3	140.6	117.4	23.27	6.043			
4,400.0	4,333.0	4,394.6	4,346.5	15.0	13.4	-133.65	-599.2	227.3	144.2	120.4	23.78	6.064			
4,500.0	4,431.3	4,494.6	4,445.2	15.4	13.7	-133.99	-614.0	232.3	147.7	123.5	24.28	6.085			
4,600.0	4,529.6	4,594.5	4,543.9	15.8	14.0	-134.31	-628.9	237.3	151.3	126.5	24.78	6.105			
4,700.0	4,627.8	4,694.4	4,642.6	16.1	14.4	-134.61	-643.7	242.3	154.8	129.6	25.28	6.125			
4,800.0	4,726.1	4,794.4	4,741.3	16.5	14.7	-134.90	-658.6	247.3	158.4	132.6	25.78	6.145			
4,900.0	4,824.3	4,894.3	4,840.0	16.9	15.0	-135.18	-673.4	252.3	162.0	135.7	26.28	6.163			
5,000.0	4,922.6	4,994.2	4,938.7	17.2	15.3	-135.45	-688.3	257.3	165.5	138.8	26.78	6.182			
5,100.0	5,020.8	5,094.2	5,037.4	17.6	15.7	-135.70	-703.1	262.3	169.1	141.8	27.28	6.199			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
5,200.0	5,119.1	5,194.1	5,136.1	18.0	16.0	-135.95	-717.9	267.3	172.7	144.9	27.78	6.217			
5,300.0	5,217.4	5,294.0	5,234.8	18.3	16.3	-136.18	-732.8	272.4	176.3	148.0	28.28	6.234			
5,400.0	5,315.6	5,394.0	5,333.5	18.7	16.6	-136.41	-747.6	277.4	179.9	151.1	28.78	6.250			
5,500.0	5,413.9	5,493.9	5,432.2	19.1	17.0	-136.62	-762.5	282.4	183.5	154.2	29.28	6.266			
5,600.0	5,512.1	5,593.8	5,530.9	19.4	17.3	-136.83	-777.3	287.4	187.0	157.3	29.77	6.282			
5,700.0	5,610.4	5,693.8	5,629.6	19.8	17.6	-137.03	-792.2	292.4	190.6	160.4	30.27	6.297			
5,800.0	5,708.6	5,793.7	5,728.3	20.2	17.9	-137.22	-807.0	297.4	194.2	163.5	30.77	6.312			
5,900.0	5,806.9	5,893.6	5,827.0	20.5	18.3	-137.41	-821.9	302.4	197.8	166.6	31.27	6.327			
6,000.0	5,905.2	5,993.6	5,925.7	20.9	18.6	-137.59	-836.7	307.4	201.4	169.7	31.77	6.341			
6,100.0	6,003.4	6,093.5	6,024.4	21.3	18.9	-137.76	-851.6	312.4	205.0	172.8	32.26	6.355			
6,200.0	6,101.7	6,193.4	6,123.1	21.6	19.2	-137.93	-866.4	317.4	208.6	175.9	32.76	6.368			
6,300.0	6,199.9	6,293.4	6,221.8	22.0	19.6	-138.09	-881.3	322.4	212.2	179.0	33.26	6.381			
6,400.0	6,298.2	6,393.3	6,320.4	22.4	19.9	-138.25	-896.1	327.4	215.8	182.1	33.76	6.394			
6,500.0	6,396.4	6,493.2	6,419.1	22.8	20.2	-138.40	-910.9	332.4	219.4	185.2	34.25	6.406			
6,600.0	6,494.7	6,593.2	6,517.8	23.1	20.5	-138.54	-925.8	337.4	223.0	188.3	34.75	6.419			
6,700.0	6,593.0	6,693.1	6,616.5	23.5	20.9	-138.68	-940.6	342.4	226.7	191.4	35.25	6.430			
6,800.0	6,691.2	6,793.0	6,715.2	23.9	21.2	-138.82	-955.5	347.4	230.3	194.5	35.74	6.442			
6,900.0	6,789.5	6,893.0	6,813.9	24.2	21.5	-138.95	-970.3	352.4	233.9	197.6	36.24	6.453			
7,000.0	6,887.7	6,992.9	6,912.6	24.6	21.8	-139.08	-985.2	357.4	237.5	200.8	36.74	6.465			
7,100.0	6,986.0	7,092.8	7,011.3	25.0	22.2	-139.21	-1,000.0	362.5	241.1	203.9	37.23	6.475			
7,200.0	7,084.2	7,192.8	7,110.0	25.3	22.5	-139.33	-1,014.9	367.5	244.7	207.0	37.73	6.486			
7,300.0	7,182.5	7,292.7	7,208.7	25.7	22.8	-139.44	-1,029.7	372.5	248.3	210.1	38.23	6.496			
7,400.0	7,280.8	7,392.6	7,307.4	26.1	23.1	-139.56	-1,044.6	377.5	252.0	213.2	38.72	6.507			
7,500.0	7,379.0	7,492.6	7,406.1	26.4	23.5	-139.67	-1,059.4	382.5	255.6	216.4	39.22	6.517			
7,600.0	7,477.3	7,592.5	7,504.8	26.8	23.8	-139.78	-1,074.2	387.5	259.2	219.5	39.72	6.526			
7,700.0	7,575.5	7,692.4	7,603.5	27.2	24.1	-139.88	-1,089.1	392.5	262.8	222.6	40.21	6.536			
7,800.0	7,673.8	7,792.4	7,702.2	27.5	24.4	-139.98	-1,103.9	397.5	266.4	225.7	40.71	6.545			
7,900.0	7,772.1	7,892.3	7,800.9	27.9	24.8	-140.08	-1,118.8	402.5	270.1	228.9	41.20	6.554			
8,000.0	7,870.3	7,992.2	7,899.6	28.3	25.1	-140.18	-1,133.6	407.5	273.7	232.0	41.70	6.563			
8,100.0	7,968.6	8,092.2	7,998.3	28.6	25.4	-140.27	-1,148.5	412.5	277.3	235.1	42.20	6.572			
8,200.0	8,066.8	8,192.1	8,097.0	29.0	25.7	-140.37	-1,163.3	417.5	280.9	238.2	42.69	6.580			
8,300.0	8,165.1	8,292.0	8,195.7	29.4	26.1	-140.45	-1,178.2	422.5	284.6	241.4	43.19	6.589			
8,400.0	8,263.3	8,392.0	8,294.4	29.8	26.4	-140.54	-1,193.0	427.5	288.2	244.5	43.68	6.596			
8,500.0	8,362.0	8,488.9	8,390.2	30.1	26.7	-140.62	-1,207.1	432.3	291.4	247.6	44.17	6.603			
8,600.0	8,461.1	8,582.4	8,482.9	30.3	26.9	-140.70	-1,221.2	436.0	294.9	250.7	44.66	6.610			
8,700.0	8,560.6	8,675.9	8,576.0	30.5	27.1	-140.78	-1,235.3	439.8	298.4	253.8	45.15	6.617			
8,800.0	8,660.4	8,769.3	8,669.3	30.7	27.3	-140.86	-1,249.4	443.5	301.9	256.9	45.64	6.624			
8,900.0	8,760.4	8,862.8	8,762.7	30.8	27.4	-140.94	-1,263.5	447.3	305.4	260.0	46.13	6.631			
8,968.6	8,829.0	8,929.5	8,829.4	30.8	27.4	-171.13	-1,234.5	441.5	293.9	248.1	45.80	6.416			
9,000.0	8,860.4	8,961.2	8,861.1	30.9	27.5	148.47	-1,234.5	441.4	293.6	247.7	45.89	6.398			
9,100.0	8,960.4	9,062.3	8,962.2	31.0	27.6	148.47	-1,234.8	441.0	293.7	247.5	46.13	6.366			
9,200.0	9,060.4	9,163.4	9,063.3	31.1	27.7	148.48	-1,235.3	440.2	293.7	247.3	46.36	6.335			
9,300.0	9,160.4	9,264.0	9,163.8	31.2	27.8	148.48	-1,235.9	439.0	293.7	247.1	46.59	6.304			
9,400.0	9,260.4	9,364.0	9,263.8	31.3	27.9	148.48	-1,236.6	437.8	293.7	246.9	46.81	6.274			
9,500.0	9,360.4	9,464.0	9,363.8	31.4	28.0	148.48	-1,237.3	436.6	293.7	246.7	47.04	6.244			
9,600.0	9,460.4	9,564.0	9,463.8	31.5	28.1	148.48	-1,238.0	435.4	293.7	246.4	47.27	6.213			
9,700.0	9,560.3	9,664.0	9,563.8	31.6	28.2	148.48	-1,238.7	434.2	293.7	246.2	47.50	6.183			
9,800.0	9,660.3	9,764.0	9,663.8	31.7	28.3	148.48	-1,239.4	433.0	293.7	246.0	47.73	6.153			
9,900.0	9,760.3	9,864.0	9,763.8	31.8	28.4	148.48	-1,240.1	431.8	293.7	245.7	47.96	6.124			
10,000.0	9,860.3	9,964.0	9,863.8	31.9	28.5	148.48	-1,240.8	430.6	293.7	245.5	48.20	6.094			
10,100.0	9,960.3	10,064.0	9,963.8	32.0	28.6	148.48	-1,241.5	429.4	293.7	245.3	48.43	6.064			
10,200.0	10,060.3	10,164.0	10,063.8	32.1	28.8	148.48	-1,242.1	428.2	293.7	245.0	48.67	6.035			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design												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		
10,300.0	10,160.3	10,264.0	10,163.8	32.2	28.9	148.48	-1,242.8	427.0	293.7	244.8	48.91	6.005		
10,400.0	10,260.3	10,364.0	10,263.7	32.3	29.0	148.48	-1,243.5	425.8	293.7	244.5	49.15	5.976		
10,500.0	10,360.3	10,464.0	10,363.7	32.4	29.1	148.48	-1,244.2	424.6	293.7	244.3	49.39	5.947		
10,600.0	10,460.3	10,564.0	10,463.7	32.5	29.2	148.48	-1,244.9	423.4	293.7	244.1	49.63	5.918		
10,700.0	10,560.3	10,664.0	10,563.7	32.6	29.3	148.48	-1,245.6	422.2	293.7	243.8	49.87	5.889		
10,800.0	10,660.2	10,764.0	10,663.7	32.7	29.4	148.49	-1,246.3	421.0	293.7	243.6	50.12	5.860		
10,900.0	10,760.2	10,864.0	10,763.7	32.8	29.5	148.49	-1,247.0	419.8	293.7	243.3	50.36	5.832		
11,000.0	10,860.2	10,964.0	10,863.7	32.9	29.7	148.49	-1,247.7	418.7	293.7	243.1	50.61	5.803		
11,100.0	10,960.2	11,064.0	10,963.7	33.0	29.8	148.49	-1,248.4	417.5	293.7	242.8	50.86	5.775		
11,200.0	11,060.2	11,164.0	11,063.7	33.1	29.9	148.49	-1,249.1	416.3	293.7	242.6	51.11	5.746		
11,300.0	11,160.2	11,264.0	11,163.7	33.2	30.0	148.49	-1,249.8	415.1	293.7	242.3	51.36	5.718		
11,400.0	11,260.2	11,364.0	11,263.6	33.3	30.1	148.49	-1,250.4	413.9	293.7	242.1	51.61	5.690		
11,500.0	11,360.2	11,464.0	11,363.6	33.5	30.3	148.49	-1,251.1	412.7	293.7	241.8	51.86	5.663		
11,600.0	11,460.2	11,564.0	11,463.6	33.6	30.4	148.49	-1,251.8	411.5	293.7	241.6	52.12	5.635		
11,700.0	11,560.2	11,664.0	11,563.6	33.7	30.5	148.49	-1,252.5	410.3	293.7	241.3	52.37	5.608		
11,800.0	11,660.1	11,764.0	11,663.6	33.8	30.6	148.49	-1,253.2	409.1	293.7	241.1	52.63	5.580		
11,900.0	11,760.1	11,864.0	11,763.6	33.9	30.7	148.49	-1,253.9	407.9	293.7	240.8	52.89	5.553		
11,975.9	11,836.0	11,939.8	11,839.5	34.0	30.8	148.49	-1,254.4	407.0	293.7	240.6	53.08	5.533 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.41	-37.9	113.8	120.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-37.9	113.8	120.0	119.7	0.30	404.347			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-37.9	113.8	120.0	119.3	0.65	185.781			
300.0	300.0	300.0	300.0	0.5	0.5	-60.92	-37.9	113.8	119.1	118.1	1.00	119.406			
400.0	399.8	399.8	399.8	0.7	0.7	-63.21	-37.9	113.8	116.7	115.3	1.36	85.604			
500.0	499.5	499.5	499.5	0.9	0.8	-67.22	-37.9	113.8	113.0	111.2	1.76	64.352			
600.0	598.7	595.3	595.3	1.2	1.0	-72.65	-38.6	115.3	110.4	108.2	2.19	50.470			
629.9	628.3	623.9	623.9	1.3	1.1	-74.51	-39.1	116.2	110.2	107.9	2.33	47.265	CC, ES		
700.0	697.5	691.0	690.9	1.5	1.2	-79.16	-40.7	119.5	111.1	108.5	2.68	41.533			
800.0	795.8	786.7	786.2	1.8	1.4	-85.92	-44.3	126.7	116.0	112.8	3.20	36.202			
900.0	894.0	882.4	881.3	2.2	1.6	-91.25	-49.3	136.6	125.0	121.2	3.75	33.308			
1,000.0	992.3	978.0	975.8	2.6	1.9	-94.91	-55.6	149.4	137.3	133.0	4.32	31.758			
1,100.0	1,090.5	1,074.3	1,070.5	2.9	2.2	-97.14	-63.4	165.1	152.3	147.4	4.92	30.959			
1,200.0	1,188.8	1,172.9	1,167.3	3.3	2.5	-98.79	-71.8	181.8	168.1	162.6	5.54	30.340			
1,300.0	1,287.1	1,271.5	1,264.1	3.6	2.9	-100.16	-80.2	198.6	184.0	177.9	6.17	29.806			
1,400.0	1,385.3	1,370.2	1,361.0	4.0	3.2	-101.31	-88.5	215.4	200.0	193.2	6.82	29.343			
1,500.0	1,483.6	1,468.8	1,457.8	4.4	3.6	-102.29	-96.9	232.2	216.1	208.6	7.47	28.941			
1,600.0	1,581.8	1,567.5	1,554.7	4.7	3.9	-103.13	-105.3	248.9	232.2	224.1	8.12	28.590			
1,700.0	1,680.1	1,666.1	1,651.5	5.1	4.3	-103.87	-113.6	265.7	248.4	239.6	8.78	28.284			
1,800.0	1,778.3	1,764.7	1,748.3	5.5	4.6	-104.51	-122.0	282.5	264.6	255.2	9.45	28.014			
1,900.0	1,876.6	1,863.4	1,845.2	5.8	5.0	-105.08	-130.4	299.3	280.8	270.7	10.11	27.774			
2,000.0	1,974.9	1,962.0	1,942.0	6.2	5.4	-105.59	-138.7	316.1	297.1	286.3	10.78	27.562			
2,100.0	2,073.1	2,060.6	2,038.8	6.6	5.7	-106.05	-147.1	332.8	313.4	301.9	11.45	27.371			
2,200.0	2,171.4	2,159.3	2,135.7	6.9	6.1	-106.46	-155.5	349.6	329.7	317.6	12.12	27.200			
2,300.0	2,269.6	2,257.9	2,232.5	7.3	6.5	-106.83	-163.8	366.4	346.0	333.2	12.79	27.045			
2,400.0	2,367.9	2,356.6	2,329.4	7.7	6.8	-107.17	-172.2	383.2	362.3	348.8	13.47	26.905			
2,500.0	2,466.1	2,455.2	2,426.2	8.0	7.2	-107.48	-180.6	399.9	378.6	364.5	14.14	26.777			
2,600.0	2,564.4	2,553.8	2,523.0	8.4	7.6	-107.76	-188.9	416.7	395.0	380.2	14.82	26.660			
2,700.0	2,662.7	2,652.5	2,619.9	8.8	7.9	-108.02	-197.3	433.5	411.3	395.8	15.49	26.553			
2,800.0	2,760.9	2,751.1	2,716.7	9.1	8.3	-108.26	-205.7	450.3	427.7	411.5	16.17	26.454			
2,900.0	2,859.2	2,849.7	2,813.6	9.5	8.7	-108.48	-214.0	467.1	444.1	427.2	16.84	26.363			
3,000.0	2,957.4	2,948.4	2,910.4	9.9	9.1	-108.69	-222.4	483.8	460.4	442.9	17.52	26.279			
3,100.0	3,055.7	3,047.0	3,007.2	10.2	9.4	-108.89	-230.8	500.6	476.8	458.6	18.20	26.201			
3,200.0	3,153.9	3,145.7	3,104.1	10.6	9.8	-109.07	-239.1	517.4	493.2	474.3	18.88	26.128			
3,300.0	3,252.2	3,244.3	3,200.9	11.0	10.2	-109.23	-247.5	534.2	509.6	490.0	19.55	26.060			
3,400.0	3,350.5	3,342.9	3,297.8	11.3	10.5	-109.39	-255.9	550.9	526.0	505.7	20.23	25.996			
3,500.0	3,448.7	3,441.6	3,394.6	11.7	10.9	-109.54	-264.2	567.7	542.4	521.5	20.91	25.937			
3,600.0	3,547.0	3,540.2	3,491.4	12.1	11.3	-109.68	-272.6	584.5	558.8	537.2	21.59	25.881			
3,700.0	3,645.2	3,638.8	3,588.3	12.4	11.7	-109.81	-281.0	601.3	575.2	552.9	22.27	25.828			
3,800.0	3,743.5	3,737.5	3,685.1	12.8	12.0	-109.94	-289.3	618.0	591.6	568.6	22.95	25.779			
3,900.0	3,841.7	3,836.1	3,782.0	13.2	12.4	-110.06	-297.7	634.8	608.0	584.3	23.63	25.732			
4,000.0	3,940.0	3,934.8	3,878.8	13.5	12.8	-110.17	-306.1	651.6	624.4	600.1	24.31	25.688			
4,100.0	4,038.3	4,033.4	3,975.6	13.9	13.1	-110.27	-314.4	668.4	640.8	615.8	24.99	25.646			
4,200.0	4,136.5	4,132.0	4,072.5	14.3	13.5	-110.37	-322.8	685.2	657.2	631.5	25.67	25.606			
4,300.0	4,234.8	4,230.7	4,169.3	14.6	13.9	-110.47	-331.2	701.9	673.6	647.3	26.35	25.569			
4,400.0	4,333.0	4,329.3	4,266.2	15.0	14.3	-110.56	-339.5	718.7	690.0	663.0	27.03	25.533			
4,500.0	4,431.3	4,427.9	4,363.0	15.4	14.6	-110.65	-347.9	735.5	706.5	678.8	27.71	25.499			
4,600.0	4,529.6	4,526.6	4,459.8	15.8	15.0	-110.73	-356.3	752.3	722.9	694.5	28.39	25.466			
4,700.0	4,627.8	4,625.2	4,556.7	16.1	15.4	-110.81	-364.6	769.0	739.3	710.2	29.07	25.435			
4,800.0	4,726.1	4,723.9	4,653.5	16.5	15.8	-110.89	-373.0	785.8	755.7	726.0	29.75	25.406			
4,900.0	4,824.3	4,822.5	4,750.4	16.9	16.1	-110.96	-381.4	802.6	772.1	741.7	30.43	25.378			
5,000.0	4,922.6	4,921.1	4,847.2	17.2	16.5	-111.03	-389.7	819.4	788.6	757.5	31.11	25.350			

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

Cathedral Energy Services

Anticollision Report

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Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-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)					
5,100.0	5,020.8	5,019.8	4,944.0	17.6	16.9	-111.10	-398.1	836.1	805.0	773.2	31.79	25.325			
5,200.0	5,119.1	5,118.4	5,040.9	18.0	17.3	-111.16	-406.5	852.9	821.4	789.0	32.47	25.300			
5,300.0	5,217.4	5,217.0	5,137.7	18.3	17.6	-111.22	-414.8	869.7	837.9	804.7	33.15	25.276			
5,400.0	5,315.6	5,315.7	5,234.5	18.7	18.0	-111.28	-423.2	886.5	854.3	820.5	33.83	25.253			
5,500.0	5,413.9	5,414.3	5,331.4	19.1	18.4	-111.34	-431.6	903.3	870.7	836.2	34.51	25.231			
5,600.0	5,512.1	5,513.0	5,428.2	19.4	18.7	-111.39	-439.9	920.0	887.1	852.0	35.19	25.210			
5,700.0	5,610.4	5,611.6	5,525.1	19.8	19.1	-111.45	-448.3	936.8	903.6	867.7	35.87	25.190			
5,800.0	5,708.6	5,710.2	5,621.9	20.2	19.5	-111.50	-456.7	953.6	920.0	883.5	36.55	25.170			
5,900.0	5,806.9	5,808.9	5,718.7	20.5	19.9	-111.55	-465.0	970.4	936.4	899.2	37.23	25.151			
6,000.0	5,905.2	5,907.5	5,815.6	20.9	20.2	-111.59	-473.4	987.1	952.9	915.0	37.91	25.133			
6,100.0	6,003.4	6,006.1	5,912.4	21.3	20.6	-111.64	-481.8	1,003.9	969.3	930.7	38.59	25.116			
6,200.0	6,101.7	6,104.8	6,009.3	21.6	21.0	-111.68	-490.1	1,020.7	985.7	946.5	39.27	25.099			
6,300.0	6,199.9	6,203.4	6,106.1	22.0	21.4	-111.73	-498.5	1,037.5	1,002.2	962.2	39.96	25.082			
6,400.0	6,298.2	6,302.1	6,202.9	22.4	21.7	-111.77	-506.9	1,054.2	1,018.6	978.0	40.64	25.067			
6,500.0	6,396.4	6,400.7	6,299.8	22.8	22.1	-111.81	-515.2	1,071.0	1,035.1	993.7	41.32	25.051			
6,600.0	6,494.7	6,499.3	6,396.6	23.1	22.5	-111.85	-523.6	1,087.8	1,051.5	1,009.5	42.00	25.036			
6,700.0	6,593.0	6,598.0	6,493.5	23.5	22.9	-111.89	-532.0	1,104.6	1,067.9	1,025.2	42.68	25.022			
6,800.0	6,691.2	6,696.6	6,590.3	23.9	23.2	-111.92	-540.4	1,121.4	1,084.4	1,041.0	43.36	25.008			
6,900.0	6,789.5	6,795.2	6,687.1	24.2	23.6	-111.96	-548.7	1,138.1	1,100.8	1,056.8	44.04	24.995			
7,000.0	6,887.7	6,893.9	6,784.0	24.6	24.0	-111.99	-557.1	1,154.9	1,117.2	1,072.5	44.72	24.982			
7,100.0	6,986.0	6,992.5	6,880.8	25.0	24.3	-112.03	-565.5	1,171.7	1,133.7	1,088.3	45.40	24.969			
7,200.0	7,084.2	7,091.2	6,977.7	25.3	24.7	-112.06	-573.8	1,188.5	1,150.1	1,104.0	46.08	24.957			
7,300.0	7,182.5	7,189.8	7,074.5	25.7	25.1	-112.09	-582.2	1,205.2	1,166.6	1,119.8	46.77	24.945			
7,400.0	7,280.8	7,288.4	7,171.3	26.1	25.5	-112.12	-590.6	1,222.0	1,183.0	1,135.6	47.45	24.933			
7,500.0	7,379.0	7,387.1	7,268.2	26.4	25.8	-112.15	-598.9	1,238.8	1,199.4	1,151.3	48.13	24.922			
7,600.0	7,477.3	7,485.7	7,365.0	26.8	26.2	-112.18	-607.3	1,255.6	1,215.9	1,167.1	48.81	24.911			
7,700.0	7,575.5	7,584.3	7,461.9	27.2	26.6	-112.21	-615.7	1,272.3	1,232.3	1,182.8	49.49	24.900			
7,800.0	7,673.8	7,683.0	7,558.7	27.5	27.0	-112.24	-624.0	1,289.1	1,248.8	1,198.6	50.17	24.890			
7,900.0	7,772.1	7,781.6	7,655.5	27.9	27.3	-112.26	-632.4	1,305.9	1,265.2	1,214.4	50.85	24.880			
8,000.0	7,870.3	7,880.3	7,752.4	28.3	27.7	-112.29	-640.8	1,322.7	1,281.6	1,230.1	51.53	24.870			
8,100.0	7,968.6	7,978.9	7,849.2	28.6	28.1	-112.31	-649.1	1,339.5	1,298.1	1,245.9	52.21	24.860			
8,200.0	8,066.8	8,077.5	7,946.0	29.0	28.5	-112.34	-657.5	1,356.2	1,314.5	1,261.6	52.90	24.851			
8,300.0	8,165.1	8,176.2	8,042.9	29.4	28.8	-112.36	-665.9	1,373.0	1,331.0	1,277.4	53.58	24.842			
8,400.0	8,263.3	8,274.8	8,139.7	29.8	29.2	-112.42	-674.2	1,389.8	1,347.4	1,293.1	54.26	24.831			
8,500.0	8,362.0	8,373.6	8,236.7	30.1	29.6	-112.65	-682.6	1,406.6	1,363.1	1,308.1	54.95	24.806			
8,600.0	8,461.1	8,493.3	8,354.5	30.3	30.0	-112.72	-692.1	1,425.7	1,376.9	1,321.3	55.60	24.762			
8,700.0	8,560.6	8,623.2	8,483.2	30.5	30.3	-112.74	-700.1	1,441.6	1,387.3	1,331.1	56.15	24.705			
8,800.0	8,660.4	8,754.0	8,613.4	30.7	30.6	-112.74	-705.4	1,452.4	1,394.1	1,337.6	56.57	24.644			
8,900.0	8,760.4	8,885.2	8,744.5	30.8	30.8	-112.72	-708.1	1,457.8	1,397.4	1,340.6	56.86	24.576			
9,000.0	8,860.4	9,004.4	8,863.6	30.9	30.9	175.81	-708.5	1,458.4	1,397.8	1,340.7	57.07	24.492			
9,100.0	8,960.4	9,110.8	8,970.1	31.0	31.0	175.81	-708.8	1,458.0	1,397.9	1,340.6	57.27	24.409			
9,200.0	9,060.4	9,217.3	9,076.5	31.1	31.0	175.81	-709.3	1,457.2	1,398.0	1,340.5	57.46	24.327			
9,300.0	9,160.4	9,320.5	9,179.7	31.2	31.1	175.81	-709.9	1,456.0	1,398.0	1,340.3	57.66	24.245			
9,400.0	9,260.4	9,420.5	9,279.7	31.3	31.2	175.81	-710.6	1,454.8	1,398.0	1,340.1	57.85	24.164			
9,500.0	9,360.4	9,520.5	9,379.7	31.4	31.3	175.81	-711.3	1,453.6	1,398.0	1,339.9	58.05	24.082			
9,600.0	9,460.4	9,620.5	9,479.7	31.5	31.4	175.82	-712.0	1,452.4	1,398.0	1,339.7	58.25	24.001			
9,700.0	9,560.3	9,720.5	9,579.6	31.6	31.5	175.82	-712.7	1,451.2	1,398.0	1,339.5	58.45	23.919			
9,800.0	9,660.3	9,820.5	9,679.6	31.7	31.5	175.82	-713.4	1,450.0	1,398.0	1,339.3	58.65	23.838			
9,900.0	9,760.3	9,920.5	9,779.6	31.8	31.6	175.82	-714.1	1,448.8	1,398.0	1,339.1	58.85	23.756			
10,000.0	9,860.3	10,020.5	9,879.6	31.9	31.7	175.82	-714.8	1,447.6	1,398.0	1,338.9	59.05	23.675			
10,100.0	9,960.3	10,120.5	9,979.6	32.0	31.8	175.82	-715.5	1,446.4	1,398.0	1,338.7	59.25	23.593			
10,200.0	10,060.3	10,220.5	10,079.6	32.1	31.9	175.82	-716.2	1,445.2	1,398.0	1,338.5	59.46	23.511			

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Cathedral Energy Services

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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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
10,300.0	10,160.3	10,320.5	10,179.6	32.2	32.0	175.82	-716.8	1,444.0	1,398.0	1,338.3	59.67	23.430			
10,400.0	10,260.3	10,420.5	10,279.6	32.3	32.1	175.82	-717.5	1,442.8	1,398.0	1,338.1	59.87	23.348			
10,500.0	10,360.3	10,520.5	10,379.6	32.4	32.1	175.82	-718.2	1,441.6	1,398.0	1,337.9	60.08	23.267			
10,600.0	10,460.3	10,620.5	10,479.6	32.5	32.2	175.82	-718.9	1,440.4	1,398.0	1,337.7	60.29	23.186			
10,700.0	10,560.3	10,720.5	10,579.5	32.6	32.3	175.82	-719.6	1,439.2	1,398.0	1,337.5	60.51	23.104			
10,800.0	10,660.2	10,820.5	10,679.5	32.7	32.4	175.82	-720.3	1,438.0	1,398.0	1,337.2	60.72	23.023			
10,900.0	10,760.2	10,920.5	10,779.5	32.8	32.5	175.82	-721.0	1,436.8	1,398.0	1,337.0	60.93	22.942			
11,000.0	10,860.2	11,020.5	10,879.5	32.9	32.6	175.82	-721.7	1,435.6	1,398.0	1,336.8	61.15	22.861			
11,100.0	10,960.2	11,120.5	10,979.5	33.0	32.7	175.82	-722.4	1,434.4	1,398.0	1,336.6	61.37	22.780			
11,200.0	11,060.2	11,220.5	11,079.5	33.1	32.8	175.82	-723.1	1,433.2	1,398.0	1,336.4	61.59	22.700			
11,300.0	11,160.2	11,320.5	11,179.5	33.2	32.9	175.82	-723.8	1,432.0	1,398.0	1,336.2	61.80	22.619			
11,400.0	11,260.2	11,420.5	11,279.5	33.3	33.0	175.82	-724.4	1,430.8	1,398.0	1,335.9	62.03	22.539			
11,500.0	11,360.2	11,520.5	11,379.5	33.5	33.1	175.82	-725.1	1,429.6	1,398.0	1,335.7	62.25	22.458			
11,600.0	11,460.2	11,620.5	11,479.5	33.6	33.2	175.82	-725.8	1,428.4	1,398.0	1,335.5	62.47	22.378			
11,700.0	11,560.2	11,720.5	11,579.5	33.7	33.3	175.82	-726.5	1,427.2	1,398.0	1,335.3	62.69	22.298			
11,800.0	11,660.1	11,820.5	11,679.4	33.8	33.4	175.82	-727.2	1,426.0	1,398.0	1,335.0	62.92	22.218			
11,900.0	11,760.1	11,920.5	11,779.4	33.9	33.5	175.82	-727.9	1,424.8	1,398.0	1,334.8	63.15	22.139			
11,975.9	11,836.0	11,996.3	11,855.3	34.0	33.5	175.82	-728.4	1,423.9	1,398.0	1,334.6	63.32	22.078 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.44	-23.7	71.0	74.8						
100.0	100.0	100.0	100.0	0.1	0.1	108.44	-23.7	71.0	74.8	74.6	0.30	252.266			
200.0	200.0	200.0	200.0	0.3	0.3	108.44	-23.7	71.0	74.8	74.2	0.65	115.906			
300.0	300.0	300.0	300.0	0.5	0.5	-61.33	-23.7	71.0	74.0	73.0	1.00	74.175			
400.0	399.8	399.8	399.8	0.7	0.7	-65.05	-23.7	71.0	71.6	70.3	1.36	52.538			
500.0	499.5	499.5	499.5	0.9	0.8	-71.72	-23.7	71.0	68.4	66.6	1.76	38.870			
600.0	598.7	598.7	598.7	1.2	1.0	-81.86	-23.7	71.0	65.6	63.4	2.20	29.762			
662.5	660.5	660.5	660.5	1.4	1.1	-90.00	-23.7	71.0	64.9	62.4	2.51	25.844	CC, ES		
700.0	697.5	697.5	697.5	1.5	1.2	-95.43	-23.7	71.0	65.2	62.5	2.69	24.229			
800.0	795.8	795.8	795.8	1.8	1.4	-110.45	-23.7	71.0	69.4	66.3	3.15	22.012			
900.0	894.0	894.0	894.0	2.2	1.5	-123.19	-23.7	71.0	78.0	74.4	3.55	21.964			
1,000.0	992.3	992.3	992.3	2.6	1.7	-133.09	-23.7	71.0	89.6	85.7	3.90	22.994			
1,100.0	1,090.5	1,091.3	1,091.3	2.9	1.9	-139.85	-24.6	72.1	103.0	98.7	4.24	24.312			
1,200.0	1,188.8	1,191.2	1,191.1	3.3	2.1	-143.43	-27.9	75.8	116.4	111.8	4.61	25.271			
1,300.0	1,287.1	1,291.7	1,291.2	3.6	2.3	-144.79	-33.5	82.1	129.0	124.0	5.02	25.694			
1,400.0	1,385.3	1,392.5	1,391.3	4.0	2.5	-144.55	-41.5	91.0	140.5	135.0	5.49	25.578			
1,500.0	1,483.6	1,493.4	1,490.9	4.4	2.7	-143.05	-51.9	102.6	151.1	145.0	6.04	24.993			
1,600.0	1,581.8	1,594.1	1,589.9	4.7	3.0	-140.52	-64.5	116.8	160.8	154.1	6.68	24.051			
1,700.0	1,680.1	1,694.5	1,687.7	5.1	3.4	-137.14	-79.4	133.5	170.1	162.7	7.43	22.891			
1,800.0	1,778.3	1,794.2	1,784.0	5.5	3.8	-133.04	-96.4	152.7	179.5	171.2	8.28	21.665			
1,900.0	1,876.6	1,892.9	1,878.6	5.8	4.2	-128.38	-115.5	174.0	189.5	180.3	9.23	20.542			
2,000.0	1,974.9	1,991.1	1,972.2	6.2	4.7	-123.93	-135.1	196.0	200.8	190.6	10.19	19.708			
2,100.0	2,073.1	2,089.3	2,065.9	6.6	5.2	-119.96	-154.7	218.0	213.1	201.9	11.14	19.132			
2,200.0	2,171.4	2,187.5	2,159.6	6.9	5.7	-116.43	-174.3	240.0	226.3	214.2	12.07	18.749			
2,300.0	2,269.6	2,285.7	2,253.2	7.3	6.2	-113.29	-193.9	262.0	240.3	227.3	12.98	18.510			
2,400.0	2,367.9	2,383.9	2,346.9	7.7	6.7	-110.50	-213.5	284.0	255.0	241.1	13.88	18.375			
2,500.0	2,466.1	2,482.1	2,440.6	8.0	7.3	-108.01	-233.1	306.0	270.1	255.4	14.75	18.318			
2,600.0	2,564.4	2,580.3	2,534.2	8.4	7.8	-105.79	-252.7	328.0	285.8	270.2	15.60	18.318	SF		
2,700.0	2,662.7	2,678.5	2,627.9	8.8	8.3	-103.80	-272.3	350.0	301.8	285.3	16.44	18.359			
2,800.0	2,760.9	2,776.7	2,721.6	9.1	8.9	-102.01	-291.9	372.0	318.1	300.8	17.26	18.430			
2,900.0	2,859.2	2,874.9	2,815.2	9.5	9.4	-100.40	-311.5	394.0	334.7	316.6	18.07	18.524			
3,000.0	2,957.4	2,973.0	2,908.9	9.9	9.9	-98.93	-331.1	416.0	351.5	332.7	18.87	18.633			
3,100.0	3,055.7	3,071.2	3,002.6	10.2	10.5	-97.60	-350.7	438.0	368.6	348.9	19.65	18.753			
3,200.0	3,153.9	3,169.4	3,096.2	10.6	11.0	-96.39	-370.3	460.0	385.8	365.3	20.43	18.880			
3,300.0	3,252.2	3,267.6	3,189.9	11.0	11.6	-95.28	-389.9	482.0	403.2	381.9	21.21	19.012			
3,400.0	3,350.5	3,365.8	3,283.6	11.3	12.1	-94.27	-409.5	504.0	420.7	398.7	21.97	19.146			
3,500.0	3,448.7	3,464.0	3,377.2	11.7	12.7	-93.33	-429.1	526.0	438.3	415.6	22.73	19.282			
3,600.0	3,547.0	3,562.2	3,470.9	12.1	13.2	-92.47	-448.7	548.0	456.0	432.5	23.49	19.417			
3,700.0	3,645.2	3,660.4	3,564.6	12.4	13.7	-91.67	-468.3	570.0	473.8	449.6	24.24	19.551			
3,800.0	3,743.5	3,758.6	3,658.2	12.8	14.3	-90.93	-487.9	591.9	491.8	466.8	24.98	19.684			
3,900.0	3,841.7	3,856.8	3,751.9	13.2	14.8	-90.24	-507.5	613.9	509.7	484.0	25.72	19.815			
4,000.0	3,940.0	3,955.0	3,845.6	13.5	15.4	-89.59	-527.1	635.9	527.8	501.3	26.46	19.943			
4,100.0	4,038.3	4,053.1	3,939.2	13.9	15.9	-88.99	-546.7	657.9	545.9	518.7	27.20	20.069			
4,200.0	4,136.5	4,151.3	4,032.9	14.3	16.5	-88.43	-566.3	679.9	564.1	536.1	27.94	20.191			
4,300.0	4,234.8	4,249.5	4,126.6	14.6	17.0	-87.91	-585.9	701.9	582.3	553.6	28.67	20.311			
4,400.0	4,333.0	4,347.7	4,220.2	15.0	17.6	-87.41	-605.5	723.9	600.5	571.1	29.40	20.427			
4,500.0	4,431.3	4,445.9	4,313.9	15.4	18.1	-86.95	-625.1	745.9	618.8	588.7	30.13	20.541			
4,600.0	4,529.6	4,544.1	4,407.6	15.8	18.7	-86.51	-644.7	767.9	637.2	606.3	30.85	20.651			
4,700.0	4,627.8	4,642.3	4,501.2	16.1	19.2	-86.09	-664.3	789.9	655.5	623.9	31.58	20.759			
4,800.0	4,726.1	4,740.5	4,594.9	16.5	19.8	-85.70	-683.9	811.9	673.9	641.6	32.30	20.863			
4,900.0	4,824.3	4,838.7	4,688.6	16.9	20.3	-85.33	-703.5	833.9	692.4	659.3	33.02	20.965			
5,000.0	4,922.6	4,936.9	4,782.2	17.2	20.9	-84.98	-723.1	855.9	710.8	677.1	33.75	21.064			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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)					
5,100.0	5,020.8	5,035.0	4,875.9	17.6	21.4	-84.64	-742.7	877.9	729.3	694.8	34.47	21.160			
5,200.0	5,119.1	5,133.2	4,969.6	18.0	22.0	-84.33	-762.3	899.9	747.8	712.6	35.19	21.253			
5,300.0	5,217.4	5,231.4	5,063.2	18.3	22.5	-84.02	-782.0	921.9	766.3	730.4	35.90	21.344			
5,400.0	5,315.6	5,329.6	5,156.9	18.7	23.1	-83.74	-801.6	943.9	784.9	748.2	36.62	21.432			
5,500.0	5,413.9	5,427.8	5,250.6	19.1	23.6	-83.46	-821.2	965.9	803.4	766.1	37.34	21.517			
5,600.0	5,512.1	5,526.0	5,344.2	19.4	24.2	-83.20	-840.8	987.9	822.0	784.0	38.06	21.601			
5,700.0	5,610.4	5,624.2	5,437.9	19.8	24.7	-82.95	-860.4	1,009.9	840.6	801.8	38.77	21.681			
5,800.0	5,708.6	5,722.4	5,531.6	20.2	25.3	-82.71	-880.0	1,031.9	859.2	819.7	39.49	21.760			
5,900.0	5,806.9	5,820.6	5,625.2	20.5	25.8	-82.48	-899.6	1,053.9	877.8	837.6	40.20	21.837			
6,000.0	5,905.2	5,918.8	5,718.9	20.9	26.4	-82.26	-919.2	1,075.9	896.5	855.6	40.91	21.911			
6,100.0	6,003.4	6,017.0	5,812.5	21.3	26.9	-82.05	-938.8	1,097.9	915.1	873.5	41.63	21.984			
6,200.0	6,101.7	6,115.1	5,906.2	21.6	27.5	-81.85	-958.4	1,119.9	933.8	891.4	42.34	22.054			
6,300.0	6,199.9	6,213.3	5,999.9	22.0	28.1	-81.65	-978.0	1,141.9	952.5	909.4	43.05	22.123			
6,400.0	6,298.2	6,311.5	6,093.5	22.4	28.6	-81.46	-997.6	1,163.9	971.1	927.4	43.77	22.189			
6,500.0	6,396.4	6,409.7	6,187.2	22.8	29.2	-81.28	-1,017.2	1,185.9	989.8	945.4	44.48	22.255			
6,600.0	6,494.7	6,507.9	6,280.9	23.1	29.7	-81.11	-1,036.8	1,207.9	1,008.5	963.3	45.19	22.318			
6,700.0	6,593.0	6,606.1	6,374.5	23.5	30.3	-80.94	-1,056.4	1,229.9	1,027.2	981.3	45.90	22.380			
6,800.0	6,691.2	6,704.3	6,468.2	23.9	30.8	-80.78	-1,076.0	1,251.8	1,046.0	999.4	46.61	22.440			
6,900.0	6,789.5	6,802.5	6,561.9	24.2	31.4	-80.63	-1,095.6	1,273.8	1,064.7	1,017.4	47.32	22.499			
7,000.0	6,887.7	6,900.7	6,655.5	24.6	31.9	-80.47	-1,115.2	1,295.8	1,083.4	1,035.4	48.03	22.556			
7,100.0	6,986.0	6,998.9	6,749.2	25.0	32.5	-80.33	-1,134.8	1,317.8	1,102.2	1,053.4	48.74	22.612			
7,200.0	7,084.2	7,097.1	6,842.9	25.3	33.0	-80.19	-1,154.4	1,339.8	1,120.9	1,071.5	49.45	22.666			
7,300.0	7,182.5	7,195.2	6,936.5	25.7	33.6	-80.05	-1,174.0	1,361.8	1,139.7	1,089.5	50.16	22.719			
7,400.0	7,280.8	7,293.4	7,030.2	26.1	34.1	-79.92	-1,193.6	1,383.8	1,158.4	1,107.6	50.87	22.771			
7,500.0	7,379.0	7,391.6	7,123.9	26.4	34.7	-79.80	-1,213.2	1,405.8	1,177.2	1,125.6	51.58	22.822			
7,600.0	7,477.3	7,489.8	7,217.5	26.8	35.2	-79.67	-1,232.8	1,427.8	1,196.0	1,143.7	52.29	22.871			
7,700.0	7,575.5	7,588.0	7,311.2	27.2	35.8	-79.55	-1,252.4	1,449.8	1,214.7	1,161.7	53.00	22.920			
7,800.0	7,673.8	7,686.2	7,404.9	27.5	36.3	-79.44	-1,272.0	1,471.8	1,233.5	1,179.8	53.71	22.967			
7,900.0	7,772.1	7,784.4	7,498.5	27.9	36.9	-79.33	-1,291.6	1,493.8	1,252.3	1,197.9	54.42	23.013			
8,000.0	7,870.3	7,882.6	7,592.2	28.3	37.4	-79.22	-1,311.2	1,515.8	1,271.1	1,216.0	55.12	23.058			
8,100.0	7,968.6	7,980.8	7,685.9	28.6	38.0	-79.11	-1,330.8	1,537.8	1,289.9	1,234.0	55.83	23.102			
8,200.0	8,066.8	8,079.0	7,779.5	29.0	38.6	-79.01	-1,350.4	1,559.8	1,308.7	1,252.1	56.54	23.145			
8,300.0	8,165.1	8,177.2	7,873.2	29.4	39.1	-78.91	-1,370.0	1,581.8	1,327.5	1,270.2	57.25	23.188			
8,400.0	8,263.3	8,275.3	7,966.9	29.8	39.7	-78.85	-1,389.6	1,603.8	1,346.3	1,288.3	57.97	23.223			
8,500.0	8,362.0	8,406.8	8,092.7	30.1	40.3	-79.01	-1,414.9	1,632.1	1,364.7	1,305.9	58.82	23.201			
8,600.0	8,461.1	8,559.3	8,240.7	30.3	41.0	-79.08	-1,439.5	1,659.7	1,380.3	1,320.7	59.57	23.169			
8,700.0	8,560.6	8,713.7	8,392.2	30.5	41.5	-79.10	-1,459.0	1,681.6	1,392.6	1,332.4	60.18	23.140			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.43	-33.1	99.5	104.8						
100.0	100.0	100.0	100.0	0.1	0.1	108.43	-33.1	99.5	104.8	104.5	0.30	353.353			
200.0	200.0	200.0	200.0	0.3	0.3	108.43	-33.1	99.5	104.8	104.2	0.65	162.351			
300.0	300.0	298.3	298.3	0.5	0.5	-60.16	-34.8	99.8	104.8	103.8	1.00	105.063			
308.3	308.2	306.3	306.3	0.5	0.5	-60.16	-35.1	99.8	104.8	103.8	1.03	101.956 CC, ES			
400.0	399.8	394.8	394.7	0.7	0.7	-60.84	-38.8	101.8	105.5	104.1	1.36	77.405			
500.0	499.5	491.1	490.7	0.9	0.9	-62.84	-44.0	106.7	107.9	106.1	1.76	61.375			
600.0	598.7	587.2	586.2	1.2	1.1	-65.96	-50.6	114.6	112.3	110.1	2.20	51.009			
700.0	697.5	682.9	681.0	1.5	1.4	-69.89	-58.4	125.4	119.0	116.3	2.71	43.864			
800.0	795.8	778.0	774.7	1.8	1.7	-74.10	-67.4	139.0	128.7	125.4	3.29	39.148			
900.0	894.0	872.7	867.4	2.2	2.1	-77.32	-77.6	155.3	141.9	138.0	3.90	36.419			
1,000.0	992.3	966.7	958.7	2.6	2.5	-79.49	-88.9	174.3	158.5	154.0	4.53	34.978			
1,100.0	1,090.5	1,064.7	1,053.6	2.9	2.9	-81.06	-101.4	195.7	176.8	171.6	5.20	34.034			
1,200.0	1,188.8	1,162.9	1,148.6	3.3	3.4	-82.34	-114.0	217.0	195.3	189.4	5.87	33.245			
1,300.0	1,287.1	1,261.1	1,243.6	3.6	3.9	-83.40	-126.5	238.4	213.8	207.2	6.56	32.582			
1,400.0	1,385.3	1,359.3	1,338.6	4.0	4.3	-84.29	-139.0	259.8	232.3	225.1	7.26	32.020			
1,500.0	1,483.6	1,457.5	1,433.7	4.4	4.8	-85.05	-151.6	281.2	251.0	243.0	7.96	31.540			
1,600.0	1,581.8	1,555.7	1,528.7	4.7	5.3	-85.70	-164.1	302.6	269.6	260.9	8.66	31.125			
1,700.0	1,680.1	1,653.9	1,623.7	5.1	5.7	-86.27	-176.6	324.0	288.3	278.9	9.37	30.765			
1,800.0	1,778.3	1,752.1	1,718.7	5.5	6.2	-86.77	-189.2	345.3	307.0	296.9	10.08	30.449			
1,900.0	1,876.6	1,850.3	1,813.8	5.8	6.7	-87.22	-201.7	366.7	325.7	314.9	10.80	30.170			
2,000.0	1,974.9	1,948.5	1,908.8	6.2	7.1	-87.61	-214.2	388.1	344.5	332.9	11.51	29.922			
2,100.0	2,073.1	2,046.7	2,003.8	6.6	7.6	-87.97	-226.8	409.5	363.2	351.0	12.23	29.701			
2,200.0	2,171.4	2,144.9	2,098.8	6.9	8.1	-88.28	-239.3	430.9	382.0	369.0	12.95	29.502			
2,300.0	2,269.6	2,243.1	2,193.9	7.3	8.5	-88.57	-251.8	452.3	400.7	387.1	13.67	29.323			
2,400.0	2,367.9	2,341.3	2,288.9	7.7	9.0	-88.84	-264.3	473.6	419.5	405.1	14.39	29.160			
2,500.0	2,466.1	2,439.5	2,383.9	8.0	9.5	-89.08	-276.9	495.0	438.3	423.2	15.11	29.011			
2,600.0	2,564.4	2,537.7	2,478.9	8.4	10.0	-89.30	-289.4	516.4	457.1	441.3	15.83	28.875			
2,700.0	2,662.7	2,635.9	2,573.9	8.8	10.4	-89.50	-301.9	537.8	475.9	459.4	16.55	28.751			
2,800.0	2,760.9	2,734.1	2,669.0	9.1	10.9	-89.69	-314.5	559.2	494.7	477.5	17.28	28.636			
2,900.0	2,859.2	2,832.3	2,764.0	9.5	11.4	-89.86	-327.0	580.6	513.6	495.6	18.00	28.530			
3,000.0	2,957.4	2,930.5	2,859.0	9.9	11.9	-90.03	-339.5	601.9	532.4	513.7	18.73	28.432			
3,100.0	3,055.7	3,028.7	2,954.0	10.2	12.3	-90.18	-352.1	623.3	551.2	531.8	19.45	28.340			
3,200.0	3,153.9	3,126.9	3,049.1	10.6	12.8	-90.32	-364.6	644.7	570.0	549.9	20.17	28.255			
3,300.0	3,252.2	3,225.1	3,144.1	11.0	13.3	-90.45	-377.1	666.1	588.9	568.0	20.90	28.176			
3,400.0	3,350.5	3,323.3	3,239.1	11.3	13.7	-90.57	-389.7	687.5	607.7	586.1	21.63	28.101			
3,500.0	3,448.7	3,421.5	3,334.1	11.7	14.2	-90.69	-402.2	708.9	626.5	604.2	22.35	28.032			
3,600.0	3,547.0	3,519.7	3,429.2	12.1	14.7	-90.80	-414.7	730.2	645.4	622.3	23.08	27.966			
3,700.0	3,645.2	3,617.9	3,524.2	12.4	15.2	-90.90	-427.2	751.6	664.2	640.4	23.80	27.904			
3,800.0	3,743.5	3,716.1	3,619.2	12.8	15.6	-91.00	-439.8	773.0	683.1	658.5	24.53	27.846			
3,900.0	3,841.7	3,814.3	3,714.2	13.2	16.1	-91.09	-452.3	794.4	701.9	676.6	25.26	27.791			
4,000.0	3,940.0	3,912.5	3,809.2	13.5	16.6	-91.18	-464.8	815.8	720.7	694.8	25.98	27.739			
4,100.0	4,038.3	4,010.7	3,904.3	13.9	17.1	-91.26	-477.4	837.2	739.6	712.9	26.71	27.690			
4,200.0	4,136.5	4,108.9	3,999.3	14.3	17.5	-91.34	-489.9	858.6	758.4	731.0	27.44	27.644			
4,300.0	4,234.8	4,207.2	4,094.3	14.6	18.0	-91.42	-502.4	879.9	777.3	749.1	28.16	27.599			
4,400.0	4,333.0	4,305.4	4,189.3	15.0	18.5	-91.49	-515.0	901.3	796.1	767.3	28.89	27.557			
4,500.0	4,431.3	4,403.6	4,284.4	15.4	19.0	-91.56	-527.5	922.7	815.0	785.4	29.62	27.517			
4,600.0	4,529.6	4,501.8	4,379.4	15.8	19.4	-91.62	-540.0	944.1	833.9	803.5	30.35	27.479			
4,700.0	4,627.8	4,600.0	4,474.4	16.1	19.9	-91.69	-552.6	965.5	852.7	821.6	31.07	27.442			
4,800.0	4,726.1	4,698.2	4,569.4	16.5	20.4	-91.74	-565.1	986.9	871.6	839.8	31.80	27.407			
4,900.0	4,824.3	4,796.4	4,664.5	16.9	20.9	-91.80	-577.6	1,008.2	890.4	857.9	32.53	27.374			
5,000.0	4,922.6	4,894.6	4,759.5	17.2	21.3	-91.86	-590.2	1,029.6	909.3	876.0	33.26	27.342			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR05D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR05D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
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	Warning		
5,100.0	5,020.8	4,992.8	4,854.5	17.6	21.8	-91.91	-602.7	1,051.0	928.1	894.1	33.98	27.311			
5,200.0	5,119.1	5,091.0	4,949.5	18.0	22.3	-91.96	-615.2	1,072.4	947.0	912.3	34.71	27.282			
5,300.0	5,217.4	5,189.2	5,044.5	18.3	22.8	-92.01	-627.7	1,093.8	965.9	930.4	35.44	27.254			
5,400.0	5,315.6	5,287.4	5,139.6	18.7	23.2	-92.05	-640.3	1,115.2	984.7	948.5	36.17	27.226			
5,500.0	5,413.9	5,385.6	5,234.6	19.1	23.7	-92.10	-652.8	1,136.5	1,003.6	966.7	36.90	27.200			
5,600.0	5,512.1	5,483.8	5,329.6	19.4	24.2	-92.14	-665.3	1,157.9	1,022.4	984.8	37.62	27.175			
5,700.0	5,610.4	5,582.0	5,424.6	19.8	24.7	-92.18	-677.9	1,179.3	1,041.3	1,002.9	38.35	27.151			
5,800.0	5,708.6	5,680.2	5,519.7	20.2	25.1	-92.22	-690.4	1,200.7	1,060.2	1,021.1	39.08	27.128			
5,900.0	5,806.9	5,778.4	5,614.7	20.5	25.6	-92.26	-702.9	1,222.1	1,079.0	1,039.2	39.81	27.106			
6,000.0	5,905.2	5,876.6	5,709.7	20.9	26.1	-92.30	-715.5	1,243.5	1,097.9	1,057.3	40.54	27.084			
6,100.0	6,003.4	5,974.8	5,804.7	21.3	26.6	-92.34	-728.0	1,264.8	1,116.7	1,075.5	41.26	27.063			
6,200.0	6,101.7	6,073.0	5,899.8	21.6	27.0	-92.37	-740.5	1,286.2	1,135.6	1,093.6	41.99	27.043			
6,300.0	6,199.9	6,171.2	5,994.8	22.0	27.5	-92.41	-753.1	1,307.6	1,154.5	1,111.8	42.72	27.023			
6,400.0	6,298.2	6,269.4	6,089.8	22.4	28.0	-92.44	-765.6	1,329.0	1,173.3	1,129.9	43.45	27.005			
6,500.0	6,396.4	6,367.6	6,184.8	22.8	28.4	-92.47	-778.1	1,350.4	1,192.2	1,148.0	44.18	26.986			
6,600.0	6,494.7	6,465.8	6,279.8	23.1	28.9	-92.50	-790.7	1,371.8	1,211.1	1,166.2	44.91	26.969			
6,700.0	6,593.0	6,564.0	6,374.9	23.5	29.4	-92.53	-803.2	1,393.1	1,229.9	1,184.3	45.64	26.952			
6,800.0	6,691.2	6,662.2	6,469.9	23.9	29.9	-92.56	-815.7	1,414.5	1,248.8	1,202.4	46.36	26.935			
6,900.0	6,789.5	6,760.4	6,564.9	24.2	30.3	-92.59	-828.2	1,435.9	1,267.7	1,220.6	47.09	26.919			
7,000.0	6,887.7	6,858.6	6,659.9	24.6	30.8	-92.61	-840.8	1,457.3	1,286.5	1,238.7	47.82	26.903			
7,100.0	6,986.0	6,956.8	6,755.0	25.0	31.3	-92.64	-853.3	1,478.7	1,305.4	1,256.9	48.55	26.888			
7,200.0	7,084.2	7,055.0	6,850.0	25.3	31.8	-92.67	-865.8	1,500.1	1,324.3	1,275.0	49.28	26.874			
7,300.0	7,182.5	7,153.2	6,945.0	25.7	32.2	-92.69	-878.4	1,521.4	1,343.1	1,293.1	50.01	26.859			
7,400.0	7,280.8	7,251.4	7,040.0	26.1	32.7	-92.71	-890.9	1,542.8	1,362.0	1,311.3	50.74	26.845			
7,500.0	7,379.0	7,349.6	7,135.1	26.4	33.2	-92.74	-903.4	1,564.2	1,380.9	1,329.4	51.46	26.832 SF			

Cathedral Energy Services

Anticollision Report

Company: Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference: Well LR05D D21 595	TVD Reference: KBE @ 8278.0ft (Original Well Elev)
Project: Garfield County	TVD Reference: KBE @ 8278.0ft (Original Well Elev)	MD Reference: KBE @ 8278.0ft (Original Well Elev)
Reference Site: D21 595 Pad	North Reference: True	Survey Calculation Method: Minimum Curvature
Site Error: 0.0ft	Output errors are at 2.00 sigma	Database: EDM 5000.1 US Multi Users DB
Reference Well: LR05D D21 595	Offset TVD Reference: Offset Datum	
Well Error: 0.0ft		
Reference Wellbore DD		
Reference Design: Plan #2		

Reference Depths are relative to KBE @ 8278.0ft (Original Well Elev) Coordinates are relative to: LR05D D21 595
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Central Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: -1.62°

