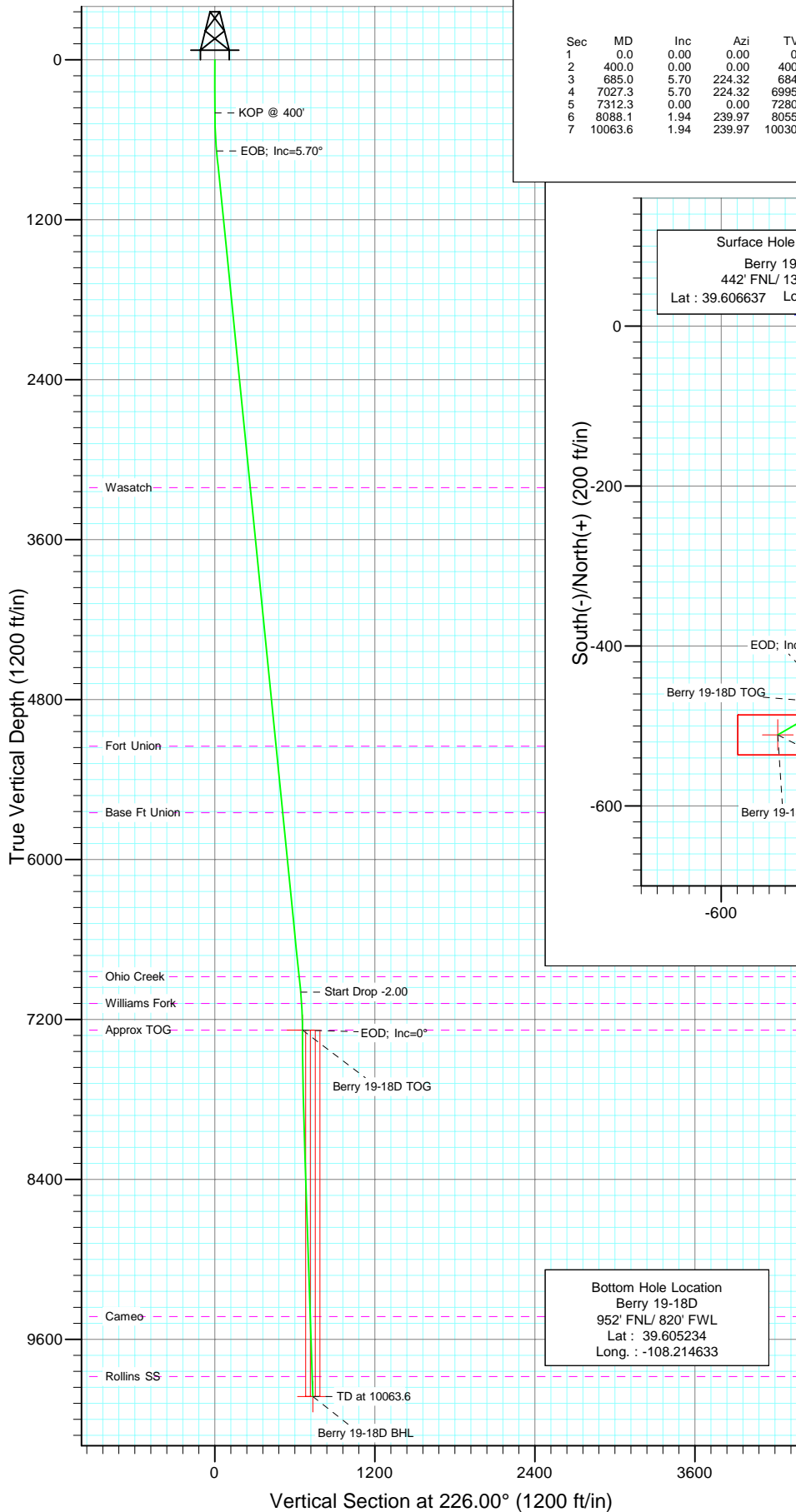
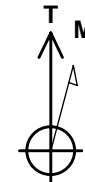
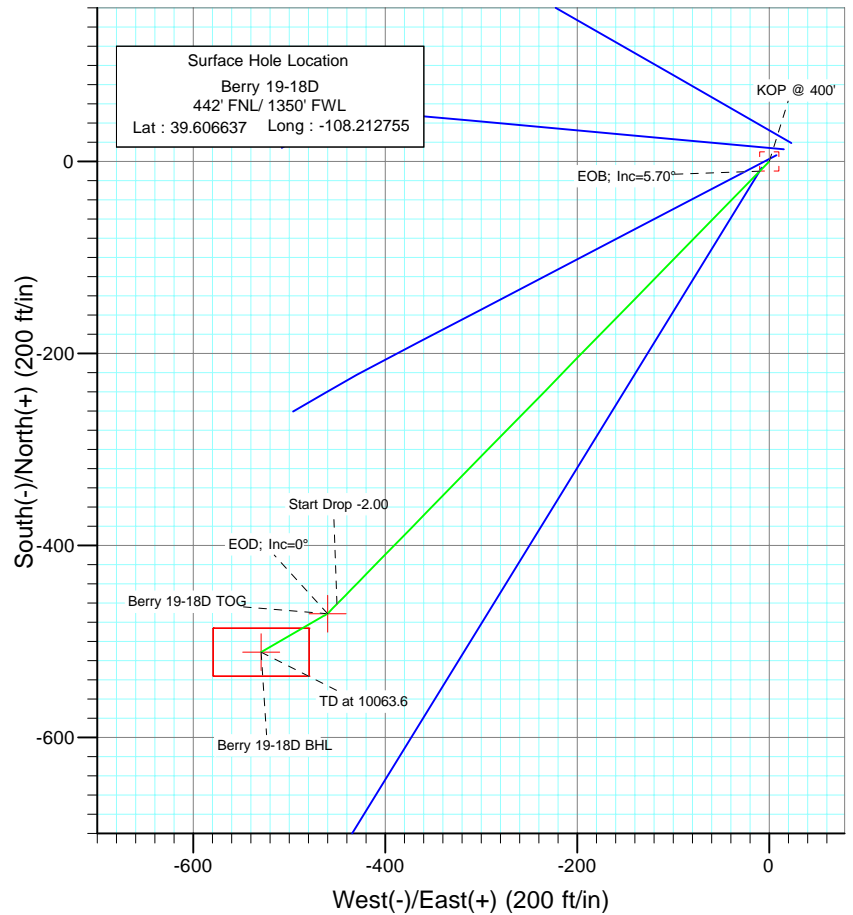




Project: Garfield County
Site: NWNW Sec19 T5S R96W Chevron C19 596
Well: Berry 19-18D
Wellbore: DD
Design: Plan #1



SECTION DETAILS										Target
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	685.0	5.70	224.32	684.6	-10.1	-9.9	2.00	224.32	14.2	
4	7027.3	5.70	224.32	6995.4	-460.9	-450.0	0.00	0.00	643.8	
5	7312.3	0.00	0.00	7280.0	-471.0	-459.9	2.00	180.00	658.0	Berry 19-18D TOG
6	8088.1	1.94	239.97	8055.7	-477.6	-471.3	0.25	239.97	670.8	
7	10063.6	1.94	239.97	10030.0	-511.0	-529.2	0.00	0.00	735.6	Berry 19-18D BHL



Azimuths to True North
Magnetic North: 10.63°

Magnetic Field
Strength: 52436.1snT
Dip Angle: 65.84°
Date: 12/31/2009
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3210.0	3223.0	Wasatch
5150.0	5172.7	Fort Union
5650.0	5675.1	Base Ft Union
6880.0	6911.3	Ohio Creek
7080.0	7112.1	Williams Fork
7280.0	7312.3	Approx TOG
9430.0	9463.2	Cameo
9880.0	9913.5	Rollins SS

DESIGN DETAILS: Plan #1

95XXX; BH
KBE @ 8553.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Berry 19-18D BHL	226.00	Slot	0.0	0.0	0.0

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-18D
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site		NWNW Sec19 T5S R96W Chevron C19 596			
Site Position:		Northing:	1,657,278.89 ft	Latitude:	39.606690
From:	Lat/Long	Easting:	2,235,804.36 ft	Longitude:	-108.212673
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	Berry 19-18D					
Well Position	+N/-S	0.0 ft	Northing:	1,657,260.28 ft	Latitude:	39.606637
	+E/-W	0.0 ft	Easting:	2,235,780.69 ft	Longitude:	-108.212755
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,538.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	10.63	65.84	52,436

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	226.00

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
685.0	5.70	224.32	684.6	-10.1	-9.9	2.00	2.00	0.00	224.32	
7,027.3	5.70	224.32	6,995.4	-460.9	-450.0	0.00	0.00	0.00	0.00	
7,312.3	0.00	0.00	7,280.0	-471.0	-459.9	2.00	-2.00	0.00	180.00	Berry 19-18D TOG
8,088.1	1.94	239.97	8,055.7	-477.6	-471.3	0.25	0.25	-15.47	239.97	
10,063.6	1.94	239.97	10,030.0	-511.0	-529.2	0.00	0.00	0.00	0.00	Berry 19-18D BHL

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-18D
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
210.0	0.00	0.00	210.0	0.0	0.0	0.0	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	
270.0	0.00	0.00	270.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
330.0	0.00	0.00	330.0	0.0	0.0	0.0	0.00	0.00	
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	
390.0	0.00	0.00	390.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
420.0	0.40	224.32	420.0	0.0	0.0	0.1	2.00	2.00	
450.0	1.00	224.32	450.0	-0.3	-0.3	0.4	2.00	2.00	
480.0	1.60	224.32	480.0	-0.8	-0.8	1.1	2.00	2.00	
510.0	2.20	224.32	510.0	-1.5	-1.5	2.1	2.00	2.00	
540.0	2.80	224.32	539.9	-2.4	-2.4	3.4	2.00	2.00	
570.0	3.40	224.32	569.9	-3.6	-3.5	5.0	2.00	2.00	
600.0	4.00	224.32	599.8	-5.0	-4.9	7.0	2.00	2.00	
630.0	4.60	224.32	629.8	-6.6	-6.4	9.2	2.00	2.00	
660.0	5.20	224.32	659.6	-8.4	-8.2	11.8	2.00	2.00	
685.0	5.70	224.32	684.6	-10.1	-9.9	14.2	2.00	2.00	EOB; Inc=5.70°
690.0	5.70	224.32	689.5	-10.5	-10.2	14.7	0.00	0.00	
720.0	5.70	224.32	719.4	-12.6	-12.3	17.6	0.00	0.00	
750.0	5.70	224.32	749.2	-14.8	-14.4	20.6	0.00	0.00	
780.0	5.70	224.32	779.1	-16.9	-16.5	23.6	0.00	0.00	
810.0	5.70	224.32	808.9	-19.0	-18.6	26.6	0.00	0.00	
840.0	5.70	224.32	838.8	-21.2	-20.7	29.5	0.00	0.00	
870.0	5.70	224.32	868.6	-23.3	-22.7	32.5	0.00	0.00	
900.0	5.70	224.32	898.5	-25.4	-24.8	35.5	0.00	0.00	
930.0	5.70	224.32	928.3	-27.5	-26.9	38.5	0.00	0.00	
960.0	5.70	224.32	958.2	-29.7	-29.0	41.5	0.00	0.00	
990.0	5.70	224.32	988.0	-31.8	-31.1	44.4	0.00	0.00	
1,020.0	5.70	224.32	1,017.9	-33.9	-33.1	47.4	0.00	0.00	
1,050.0	5.70	224.32	1,047.7	-36.1	-35.2	50.4	0.00	0.00	
1,080.0	5.70	224.32	1,077.6	-38.2	-37.3	53.4	0.00	0.00	
1,110.0	5.70	224.32	1,107.4	-40.3	-39.4	56.4	0.00	0.00	
1,140.0	5.70	224.32	1,137.3	-42.5	-41.5	59.3	0.00	0.00	
1,170.0	5.70	224.32	1,167.1	-44.6	-43.6	62.3	0.00	0.00	
1,200.0	5.70	224.32	1,197.0	-46.7	-45.6	65.3	0.00	0.00	
1,230.0	5.70	224.32	1,226.8	-48.9	-47.7	68.3	0.00	0.00	
1,260.0	5.70	224.32	1,256.7	-51.0	-49.8	71.2	0.00	0.00	
1,290.0	5.70	224.32	1,286.5	-53.1	-51.9	74.2	0.00	0.00	
1,320.0	5.70	224.32	1,316.4	-55.3	-54.0	77.2	0.00	0.00	
1,350.0	5.70	224.32	1,346.2	-57.4	-56.0	80.2	0.00	0.00	
1,380.0	5.70	224.32	1,376.1	-59.5	-58.1	83.2	0.00	0.00	
1,410.0	5.70	224.32	1,405.9	-61.7	-60.2	86.1	0.00	0.00	
1,440.0	5.70	224.32	1,435.8	-63.8	-62.3	89.1	0.00	0.00	
1,470.0	5.70	224.32	1,465.6	-65.9	-64.4	92.1	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-18D
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	5.70	224.32	1,495.5	-68.1	-66.5	95.1	0.00	0.00	
1,530.0	5.70	224.32	1,525.4	-70.2	-68.5	98.1	0.00	0.00	
1,560.0	5.70	224.32	1,555.2	-72.3	-70.6	101.0	0.00	0.00	
1,590.0	5.70	224.32	1,585.1	-74.5	-72.7	104.0	0.00	0.00	
1,620.0	5.70	224.32	1,614.9	-76.6	-74.8	107.0	0.00	0.00	
1,650.0	5.70	224.32	1,644.8	-78.7	-76.9	110.0	0.00	0.00	
1,680.0	5.70	224.32	1,674.6	-80.8	-78.9	112.9	0.00	0.00	
1,710.0	5.70	224.32	1,704.5	-83.0	-81.0	115.9	0.00	0.00	
1,740.0	5.70	224.32	1,734.3	-85.1	-83.1	118.9	0.00	0.00	
1,770.0	5.70	224.32	1,764.2	-87.2	-85.2	121.9	0.00	0.00	
1,800.0	5.70	224.32	1,794.0	-89.4	-87.3	124.9	0.00	0.00	
1,830.0	5.70	224.32	1,823.9	-91.5	-89.4	127.8	0.00	0.00	
1,860.0	5.70	224.32	1,853.7	-93.6	-91.4	130.8	0.00	0.00	
1,890.0	5.70	224.32	1,883.6	-95.8	-93.5	133.8	0.00	0.00	
1,920.0	5.70	224.32	1,913.4	-97.9	-95.6	136.8	0.00	0.00	
1,950.0	5.70	224.32	1,943.3	-100.0	-97.7	139.8	0.00	0.00	
1,980.0	5.70	224.32	1,973.1	-102.2	-99.8	142.7	0.00	0.00	
2,010.0	5.70	224.32	2,003.0	-104.3	-101.8	145.7	0.00	0.00	
2,040.0	5.70	224.32	2,032.8	-106.4	-103.9	148.7	0.00	0.00	
2,070.0	5.70	224.32	2,062.7	-108.6	-106.0	151.7	0.00	0.00	
2,100.0	5.70	224.32	2,092.5	-110.7	-108.1	154.6	0.00	0.00	
2,130.0	5.70	224.32	2,122.4	-112.8	-110.2	157.6	0.00	0.00	
2,160.0	5.70	224.32	2,152.2	-115.0	-112.2	160.6	0.00	0.00	
2,190.0	5.70	224.32	2,182.1	-117.1	-114.3	163.6	0.00	0.00	
2,220.0	5.70	224.32	2,211.9	-119.2	-116.4	166.6	0.00	0.00	
2,250.0	5.70	224.32	2,241.8	-121.4	-118.5	169.5	0.00	0.00	
2,280.0	5.70	224.32	2,271.6	-123.5	-120.6	172.5	0.00	0.00	
2,310.0	5.70	224.32	2,301.5	-125.6	-122.7	175.5	0.00	0.00	
2,340.0	5.70	224.32	2,331.3	-127.8	-124.7	178.5	0.00	0.00	
2,370.0	5.70	224.32	2,361.2	-129.9	-126.8	181.5	0.00	0.00	
2,400.0	5.70	224.32	2,391.0	-132.0	-128.9	184.4	0.00	0.00	
2,430.0	5.70	224.32	2,420.9	-134.1	-131.0	187.4	0.00	0.00	
2,460.0	5.70	224.32	2,450.8	-136.3	-133.1	190.4	0.00	0.00	
2,490.0	5.70	224.32	2,480.6	-138.4	-135.1	193.4	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
- hit/miss target									
- Shape									
Berry 19-18D TOG	0.00	0.00	7,280.0	-471.0	-459.9	1,656,803.22	2,235,306.93	39.605344	-108.214387
- plan misses target center by 4821.9ft at 2490.0ft MD (2480.6 TVD, -138.4 N, -135.1 E)									
- Point									
Berry 19-18D BHL	0.00	0.00	10,030.0	-511.0	-529.2	1,656,765.27	2,235,236.51	39.605234	-108.214633
- plan misses target center by 7568.8ft at 2490.0ft MD (2480.6 TVD, -138.4 N, -135.1 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									

Directional Plus

Planning Report

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Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	5.70	224.32	2,490.6	-139.1	-135.8	194.4	0.00	0.00	
2,600.0	5.70	224.32	2,590.1	-146.2	-142.8	204.3	0.00	0.00	
2,700.0	5.70	224.32	2,689.6	-153.3	-149.7	214.2	0.00	0.00	
2,800.0	5.70	224.32	2,789.1	-160.4	-156.7	224.1	0.00	0.00	
2,900.0	5.70	224.32	2,888.6	-167.5	-163.6	234.1	0.00	0.00	
3,000.0	5.70	224.32	2,988.1	-174.7	-170.5	244.0	0.00	0.00	
3,100.0	5.70	224.32	3,087.6	-181.8	-177.5	253.9	0.00	0.00	
3,200.0	5.70	224.32	3,187.1	-188.9	-184.4	263.9	0.00	0.00	
3,223.0	5.70	224.32	3,210.0	-190.5	-186.0	266.1	0.00	0.00	Wasatch
3,300.0	5.70	224.32	3,286.6	-196.0	-191.4	273.8	0.00	0.00	
3,400.0	5.70	224.32	3,386.1	-203.1	-198.3	283.7	0.00	0.00	
3,500.0	5.70	224.32	3,485.6	-210.2	-205.2	293.6	0.00	0.00	
3,600.0	5.70	224.32	3,585.1	-217.3	-212.2	303.6	0.00	0.00	
3,700.0	5.70	224.32	3,684.6	-224.4	-219.1	313.5	0.00	0.00	
3,800.0	5.70	224.32	3,784.1	-231.5	-226.1	323.4	0.00	0.00	
3,900.0	5.70	224.32	3,883.6	-238.6	-233.0	333.4	0.00	0.00	
4,000.0	5.70	224.32	3,983.1	-245.7	-239.9	343.3	0.00	0.00	
4,100.0	5.70	224.32	4,082.6	-252.8	-246.9	353.2	0.00	0.00	
4,200.0	5.70	224.32	4,182.1	-259.9	-253.8	363.1	0.00	0.00	
4,300.0	5.70	224.32	4,281.7	-267.0	-260.7	373.1	0.00	0.00	
4,400.0	5.70	224.32	4,381.2	-274.1	-267.7	383.0	0.00	0.00	
4,500.0	5.70	224.32	4,480.7	-281.3	-274.6	392.9	0.00	0.00	
4,600.0	5.70	224.32	4,580.2	-288.4	-281.6	402.9	0.00	0.00	
4,700.0	5.70	224.32	4,679.7	-295.5	-288.5	412.8	0.00	0.00	
4,800.0	5.70	224.32	4,779.2	-302.6	-295.4	422.7	0.00	0.00	
4,900.0	5.70	224.32	4,878.7	-309.7	-302.4	432.6	0.00	0.00	
5,000.0	5.70	224.32	4,978.2	-316.8	-309.3	442.6	0.00	0.00	
5,100.0	5.70	224.32	5,077.7	-323.9	-316.3	452.5	0.00	0.00	
5,172.7	5.70	224.32	5,150.0	-329.1	-321.3	459.7	0.00	0.00	Fort Union
5,200.0	5.70	224.32	5,177.2	-331.0	-323.2	462.4	0.00	0.00	
5,300.0	5.70	224.32	5,276.7	-338.1	-330.1	472.4	0.00	0.00	
5,400.0	5.70	224.32	5,376.2	-345.2	-337.1	482.3	0.00	0.00	
5,500.0	5.70	224.32	5,475.7	-352.3	-344.0	492.2	0.00	0.00	
5,600.0	5.70	224.32	5,575.2	-359.4	-351.0	502.1	0.00	0.00	
5,675.1	5.70	224.32	5,650.0	-364.8	-356.2	509.6	0.00	0.00	Base Ft Union
5,700.0	5.70	224.32	5,674.7	-366.5	-357.9	512.1	0.00	0.00	
5,800.0	5.70	224.32	5,774.2	-373.6	-364.8	522.0	0.00	0.00	
5,900.0	5.70	224.32	5,873.7	-380.8	-371.8	531.9	0.00	0.00	
6,000.0	5.70	224.32	5,973.2	-387.9	-378.7	541.9	0.00	0.00	
6,100.0	5.70	224.32	6,072.8	-395.0	-385.7	551.8	0.00	0.00	
6,200.0	5.70	224.32	6,172.3	-402.1	-392.6	561.7	0.00	0.00	
6,300.0	5.70	224.32	6,271.8	-409.2	-399.5	571.6	0.00	0.00	
6,400.0	5.70	224.32	6,371.3	-416.3	-406.5	581.6	0.00	0.00	
6,500.0	5.70	224.32	6,470.8	-423.4	-413.4	591.5	0.00	0.00	
6,600.0	5.70	224.32	6,570.3	-430.5	-420.4	601.4	0.00	0.00	
6,700.0	5.70	224.32	6,669.8	-437.6	-427.3	611.4	0.00	0.00	
6,800.0	5.70	224.32	6,769.3	-444.7	-434.2	621.3	0.00	0.00	
6,900.0	5.70	224.32	6,868.8	-451.8	-441.2	631.2	0.00	0.00	
6,911.3	5.70	224.32	6,880.0	-452.6	-442.0	632.3	0.00	0.00	Ohio Creek
7,000.0	5.70	224.32	6,968.3	-458.9	-448.1	641.1	0.00	0.00	
7,027.3	5.70	224.32	6,995.4	-460.9	-450.0	643.8	0.00	0.00	Start Drop -2.00
7,100.0	4.25	224.32	7,067.9	-465.4	-454.4	650.1	2.00	-2.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-18D
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,112.1	4.00	224.32	7,080.0	-466.0	-455.0	651.0	2.00	-2.00	Williams Fork
7,200.0	2.25	224.32	7,167.7	-469.4	-458.4	655.8	2.00	-2.00	
7,300.0	0.25	224.32	7,267.7	-471.0	-459.9	658.0	2.00	-2.00	
7,312.3	0.00	0.00	7,280.0	-471.0	-459.9	658.0	2.00	-2.00	EOD; Inc=0° - Approx TOG - Berry 19-18D TOC
7,400.0	0.22	239.97	7,367.7	-471.1	-460.0	658.2	0.25	0.25	
7,500.0	0.47	239.97	7,467.7	-471.4	-460.6	658.8	0.25	0.25	
7,600.0	0.72	239.97	7,567.7	-471.9	-461.5	659.8	0.25	0.25	
7,700.0	0.97	239.97	7,667.7	-472.6	-462.7	661.2	0.25	0.25	
7,800.0	1.22	239.97	7,767.7	-473.6	-464.4	663.0	0.25	0.25	
7,900.0	1.47	239.97	7,867.6	-474.8	-466.4	665.3	0.25	0.25	
8,000.0	1.72	239.97	7,967.6	-476.2	-468.8	668.0	0.25	0.25	
8,088.1	1.94	239.97	8,055.7	-477.6	-471.3	670.8	0.25	0.25	
8,100.0	1.94	239.97	8,067.5	-477.8	-471.6	671.1	0.00	0.00	
8,200.0	1.94	239.97	8,167.5	-479.5	-474.5	674.4	0.00	0.00	
8,300.0	1.94	239.97	8,267.4	-481.2	-477.5	677.7	0.00	0.00	
8,400.0	1.94	239.97	8,367.4	-482.9	-480.4	681.0	0.00	0.00	
8,500.0	1.94	239.97	8,467.3	-484.5	-483.3	684.3	0.00	0.00	
8,600.0	1.94	239.97	8,567.3	-486.2	-486.3	687.6	0.00	0.00	
8,700.0	1.94	239.97	8,667.2	-487.9	-489.2	690.8	0.00	0.00	
8,800.0	1.94	239.97	8,767.1	-489.6	-492.1	694.1	0.00	0.00	
8,900.0	1.94	239.97	8,867.1	-491.3	-495.1	697.4	0.00	0.00	
9,000.0	1.94	239.97	8,967.0	-493.0	-498.0	700.7	0.00	0.00	
9,100.0	1.94	239.97	9,067.0	-494.7	-500.9	704.0	0.00	0.00	
9,200.0	1.94	239.97	9,166.9	-496.4	-503.8	707.3	0.00	0.00	
9,300.0	1.94	239.97	9,266.9	-498.1	-506.8	710.6	0.00	0.00	
9,400.0	1.94	239.97	9,366.8	-499.8	-509.7	713.8	0.00	0.00	
9,463.2	1.94	239.97	9,430.0	-500.9	-511.6	715.9	0.00	0.00	Cameo
9,500.0	1.94	239.97	9,466.7	-501.5	-512.6	717.1	0.00	0.00	
9,600.0	1.94	239.97	9,566.7	-503.2	-515.6	720.4	0.00	0.00	
9,700.0	1.94	239.97	9,666.6	-504.9	-518.5	723.7	0.00	0.00	
9,800.0	1.94	239.97	9,766.6	-506.6	-521.4	727.0	0.00	0.00	
9,900.0	1.94	239.97	9,866.5	-508.3	-524.4	730.3	0.00	0.00	
9,913.5	1.94	239.97	9,880.0	-508.5	-524.8	730.7	0.00	0.00	Rollins SS
10,000.0	1.94	239.97	9,966.5	-510.0	-527.3	733.5	0.00	0.00	
10,063.6	1.94	239.97	10,030.0	-511.0	-529.2	735.6	0.00	0.00	Berry 19-18D BHL

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Berry 19-18D TOG	0.00	0.00	7,280.0	-471.0	-459.9	1,656,803.22	2,235,306.93	39.605344	-108.214387
- plan hits target center									
- Point									
Berry 19-18D BHL	0.00	0.00	10,030.0	-511.0	-529.2	1,656,765.27	2,235,236.51	39.605234	-108.214633
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-18D
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site:	NWNW Sec19 T5S R96W Chevron C19 596	North Reference:	True
Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,223.0	3,210.0	Wasatch		0.00		
5,172.7	5,150.0	Fort Union		0.00		
5,675.1	5,650.0	Base Ft Union		0.00		
6,911.3	6,880.0	Ohio Creek		0.00		
7,112.1	7,080.0	Williams Fork		0.00		
7,312.3	7,280.0	Approx TOG		0.00		
9,463.2	9,430.0	Cameo		0.00		
9,913.5	9,880.0	Rollins SS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP @ 400'	
685.0	684.6	-10.1	-9.9	EOB; Inc=5.70°	
7,027.3	6,995.4	-460.9	-450.0	Start Drop -2.00	
7,312.3	7,280.0	-471.0	-459.9	EOD; Inc=0°	
10,063.6	10,030.0	-511.0	-529.2	TD at 10063.6	

Berry Petroleum Company (NAD 83)

Garfield County

NWNW Sec19 T5S R96W Chevron C19 596

Berry 19-18D

DD

Plan #1

Anticollision Report

04 January, 2010

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/4/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,063.6	Plan #1 (DD)	MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
NWNW Sec19 T5S R96W Chevron C19 596						
Berry 19-17D - DD - Plan #1	300.0	300.0	10.0	9.0	10.095	CC, ES
Berry 19-17D - DD - Plan #1	5,600.0	5,594.7	196.5	173.3	8.470	SF
Berry 19-19D - DD - Plan #1	400.0	400.0	10.0	8.7	7.473	CC, ES
Berry 19-19D - DD - Plan #1	500.0	500.0	11.8	10.1	6.963	SF
Berry 19-20D - DD - Plan #1	400.0	400.0	19.9	18.5	14.770	CC, ES
Berry 19-20D - DD - Plan #1	500.0	500.0	21.6	19.9	12.756	SF
Berry 19-21D - DD - Plan #1	417.0	417.4	28.4	27.0	19.787	CC, ES
Berry 19-21D - DD - Plan #1	600.0	599.7	36.9	34.8	17.227	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NWNW Sec19 T5S R96W Chevron C19 596 - Berry 19-17D - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		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	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-130.76	-6.6	-7.6	10.0					
100.0	100.0	100.0	100.0	0.1	0.1	-130.76	-6.6	-7.6	10.0	9.7	0.30	33.848		
200.0	200.0	200.0	200.0	0.3	0.3	-130.76	-6.6	-7.6	10.0	9.4	0.65	15.552		
300.0	300.0	300.0	300.0	0.5	0.5	-130.76	-6.6	-7.6	10.0	9.0	0.99	10.095 CC, ES		
400.0	400.0	399.6	399.6	0.7	0.7	-133.33	-8.0	-8.5	11.7	10.4	1.34	8.715		
500.0	500.0	499.1	499.0	0.8	0.9	-2.51	-12.4	-11.2	15.1	13.4	1.69	8.901		
600.0	599.8	598.5	597.9	1.0	1.1	-7.97	-19.8	-15.7	18.5	16.4	2.04	9.055		
700.0	699.5	698.0	696.7	1.2	1.3	-13.67	-29.9	-21.9	21.8	19.5	2.39	9.150		
800.0	799.0	797.9	795.8	1.5	1.6	-18.59	-40.6	-28.5	24.9	22.1	2.75	9.059		
900.0	898.5	897.8	895.0	1.7	1.8	-22.41	-51.3	-35.1	28.1	25.0	3.12	9.005		
1,000.0	998.0	997.8	994.1	1.9	2.1	-25.45	-62.0	-41.7	31.4	27.9	3.50	8.967		
1,100.0	1,097.5	1,097.7	1,093.3	2.2	2.4	-27.90	-72.7	-48.3	34.7	30.8	3.89	8.934		
1,200.0	1,197.0	1,197.6	1,192.4	2.4	2.7	-29.92	-83.4	-54.9	38.1	33.8	4.28	8.904		
1,300.0	1,296.5	1,297.6	1,291.5	2.6	2.9	-31.60	-94.1	-61.5	41.6	36.9	4.68	8.876		
1,400.0	1,396.0	1,397.5	1,390.7	2.9	3.2	-33.03	-104.8	-68.1	45.0	40.0	5.09	8.849		
1,500.0	1,495.5	1,497.4	1,489.8	3.1	3.5	-34.25	-115.6	-74.7	48.5	43.0	5.50	8.825		
1,600.0	1,595.0	1,597.4	1,589.0	3.4	3.8	-35.31	-126.3	-81.3	52.1	46.2	5.92	8.801		
1,700.0	1,694.5	1,697.3	1,688.1	3.6	4.0	-36.23	-137.0	-87.9	55.6	49.3	6.33	8.779		
1,800.0	1,794.0	1,797.2	1,787.2	3.9	4.3	-37.04	-147.7	-94.4	59.2	52.4	6.75	8.759		
1,900.0	1,893.5	1,897.2	1,886.4	4.1	4.6	-37.76	-158.4	-101.0	62.7	55.5	7.18	8.740		
2,000.0	1,993.0	1,997.1	1,985.5	4.3	4.9	-38.40	-169.1	-107.6	66.3	58.7	7.60	8.722		
2,100.0	2,092.5	2,097.0	2,084.7	4.6	5.2	-38.98	-179.8	-114.2	69.9	61.8	8.02	8.706		
2,200.0	2,192.0	2,197.0	2,183.8	4.8	5.4	-39.50	-190.5	-120.8	73.4	65.0	8.45	8.690		
2,300.0	2,291.5	2,296.9	2,282.9	5.1	5.7	-39.97	-201.3	-127.4	77.0	68.1	8.88	8.676		
2,400.0	2,391.0	2,396.8	2,382.1	5.3	6.0	-40.40	-212.0	-134.0	80.6	71.3	9.31	8.663		
2,500.0	2,490.6	2,496.8	2,481.2	5.6	6.3	-40.80	-222.7	-140.6	84.2	74.5	9.74	8.650		
2,600.0	2,590.1	2,596.7	2,580.4	5.8	6.6	-41.16	-233.4	-147.2	87.8	77.6	10.17	8.638		
2,700.0	2,689.6	2,696.6	2,679.5	6.1	6.8	-41.49	-244.1	-153.8	91.4	80.8	10.60	8.628		
2,800.0	2,789.1	2,796.6	2,778.6	6.3	7.1	-41.80	-254.8	-160.4	95.0	84.0	11.03	8.617		
2,900.0	2,888.6	2,896.5	2,877.8	6.5	7.4	-42.08	-265.5	-166.9	98.6	87.2	11.46	8.608		
3,000.0	2,988.1	2,996.4	2,976.9	6.8	7.7	-42.35	-276.2	-173.5	102.2	90.4	11.89	8.598		
3,100.0	3,087.6	3,096.4	3,076.0	7.0	8.0	-42.59	-287.0	-180.1	105.9	93.5	12.32	8.590		
3,200.0	3,187.1	3,196.3	3,175.2	7.3	8.2	-42.82	-297.7	-186.7	109.5	96.7	12.76	8.582		
3,300.0	3,286.6	3,296.2	3,274.3	7.5	8.5	-43.04	-308.4	-193.3	113.1	99.9	13.19	8.574		
3,400.0	3,386.1	3,396.2	3,373.5	7.8	8.8	-43.24	-319.1	-199.9	116.7	103.1	13.62	8.567		
3,500.0	3,485.6	3,496.1	3,472.6	8.0	9.1	-43.43	-329.8	-206.5	120.3	106.3	14.06	8.560		
3,600.0	3,585.1	3,596.0	3,571.7	8.3	9.4	-43.61	-340.5	-213.1	123.9	109.5	14.49	8.553		
3,700.0	3,684.6	3,696.0	3,670.9	8.5	9.6	-43.78	-351.2	-219.7	127.6	112.6	14.92	8.547		
3,800.0	3,784.1	3,795.9	3,770.0	8.8	9.9	-43.94	-361.9	-226.3	131.2	115.8	15.36	8.541		
3,900.0	3,883.6	3,895.8	3,869.2	9.0	10.2	-44.09	-372.6	-232.9	134.8	119.0	15.79	8.536		
4,000.0	3,983.1	3,995.8	3,968.3	9.2	10.5	-44.23	-383.4	-239.4	138.4	122.2	16.23	8.530		
4,100.0	4,082.6	4,095.7	4,067.4	9.5	10.8	-44.37	-394.1	-246.0	142.1	125.4	16.66	8.525		
4,200.0	4,182.1	4,195.6	4,166.6	9.7	11.0	-44.50	-404.8	-252.6	145.7	128.6	17.10	8.520		
4,300.0	4,281.7	4,295.6	4,265.7	10.0	11.3	-44.62	-415.5	-259.2	149.3	131.8	17.53	8.516		
4,400.0	4,381.2	4,395.5	4,364.9	10.2	11.6	-44.74	-426.2	-265.8	152.9	135.0	17.97	8.511		
4,500.0	4,480.7	4,495.4	4,464.0	10.5	11.9	-44.85	-436.9	-272.4	156.6	138.2	18.40	8.507		
4,600.0	4,580.2	4,595.4	4,563.1	10.7	12.2	-44.96	-447.6	-279.0	160.2	141.4	18.84	8.503		
4,700.0	4,679.7	4,695.3	4,662.3	11.0	12.4	-45.06	-458.3	-285.6	163.8	144.6	19.28	8.499		
4,800.0	4,779.2	4,795.2	4,761.4	11.2	12.7	-45.15	-469.1	-292.2	167.5	147.7	19.71	8.495		
4,900.0	4,878.7	4,895.2	4,860.5	11.5	13.0	-45.25	-479.8	-298.8	171.1	150.9	20.15	8.492		
5,000.0	4,978.2	4,995.1	4,959.7	11.7	13.3	-45.34	-490.5	-305.4	174.7	154.1	20.58	8.488		
5,100.0	5,077.7	5,095.0	5,058.8	12.0	13.6	-45.42	-501.2	-311.9	178.4	157.3	21.02	8.485		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												NWNW Sec19 T5S R96W Chevron C19 596 - Berry 19-17D - DD - Plan #1		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
5,200.0	5,177.2	5,195.0	5,158.0	12.2	13.8	-45.51	-511.9	-318.5	182.0	160.5	21.46	8.482					
5,300.0	5,276.7	5,294.9	5,257.1	12.4	14.1	-45.58	-522.6	-325.1	185.6	163.7	21.89	8.478					
5,400.0	5,376.2	5,394.8	5,356.2	12.7	14.4	-45.66	-533.3	-331.7	189.2	166.9	22.33	8.476					
5,500.0	5,475.7	5,494.8	5,455.4	12.9	14.7	-45.73	-544.0	-338.3	192.9	170.1	22.76	8.473					
5,600.0	5,575.2	5,594.7	5,554.5	13.2	15.0	-45.80	-554.8	-344.9	196.5	173.3	23.20	8.470 SF					

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NWNW Sec19 T5S R96W Chevron C19 596 - Berry 19-19D - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft) +E/-W (ft)		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	49.24	6.6	7.6	10.0						
100.0	100.0	100.0	100.0	0.1	0.1	49.24	6.6	7.6	10.0	9.7	0.30	33.848			
200.0	200.0	200.0	200.0	0.3	0.3	49.24	6.6	7.6	10.0	9.4	0.65	15.552			
300.0	300.0	300.0	300.0	0.5	0.5	49.24	6.6	7.6	10.0	9.0	0.99	10.095			
400.0	400.0	400.0	400.0	0.7	0.7	49.24	6.6	7.6	10.0	8.7	1.34	7.473 CC, ES			
500.0	500.0	500.0	500.0	0.8	0.8	-175.80	6.6	7.6	11.8	10.1	1.69	6.963 SF			
600.0	599.8	600.4	600.4	1.0	1.0	-178.81	5.7	6.0	15.3	13.3	2.04	7.512			
700.0	699.5	700.9	700.7	1.2	1.2	176.02	3.3	1.4	19.1	16.7	2.39	7.976			
800.0	799.0	800.9	800.4	1.5	1.4	170.63	-0.1	-5.2	22.2	19.5	2.75	8.089			
900.0	898.5	900.8	900.1	1.7	1.6	166.58	-3.6	-11.8	25.5	22.4	3.11	8.197			
1,000.0	998.0	1,000.7	999.7	1.9	1.8	163.47	-7.0	-18.3	28.9	25.4	3.48	8.294			
1,100.0	1,097.5	1,100.7	1,099.4	2.2	2.0	161.01	-10.4	-24.9	32.4	28.5	3.86	8.376			
1,200.0	1,197.0	1,200.6	1,199.1	2.4	2.2	159.04	-13.9	-31.5	35.9	31.6	4.25	8.445			
1,300.0	1,296.5	1,300.5	1,298.7	2.6	2.4	157.41	-17.3	-38.0	39.4	34.8	4.63	8.503			
1,400.0	1,396.0	1,400.5	1,398.4	2.9	2.7	156.06	-20.7	-44.6	43.0	37.9	5.02	8.551			
1,500.0	1,495.5	1,500.4	1,498.0	3.1	2.9	154.91	-24.2	-51.2	46.5	41.1	5.42	8.592			
1,600.0	1,595.0	1,600.3	1,597.7	3.4	3.1	153.93	-27.6	-57.7	50.1	44.3	5.81	8.627			
1,700.0	1,694.5	1,700.2	1,697.3	3.6	3.3	153.08	-31.0	-64.3	53.8	47.5	6.21	8.656			
1,800.0	1,794.0	1,800.2	1,797.0	3.9	3.5	152.33	-34.5	-70.9	57.4	50.8	6.61	8.682			
1,900.0	1,893.5	1,900.1	1,896.6	4.1	3.7	151.68	-37.9	-77.4	61.0	54.0	7.01	8.704			
2,000.0	1,993.0	2,000.0	1,996.3	4.3	3.9	151.10	-41.3	-84.0	64.6	57.2	7.41	8.724			
2,100.0	2,092.5	2,100.0	2,096.0	4.6	4.2	150.58	-44.8	-90.6	68.3	60.5	7.81	8.741			
2,200.0	2,192.0	2,199.9	2,195.6	4.8	4.4	150.11	-48.2	-97.1	71.9	63.7	8.22	8.757			
2,300.0	2,291.5	2,299.8	2,295.3	5.1	4.6	149.69	-51.6	-103.7	75.6	67.0	8.62	8.770			
2,400.0	2,391.0	2,399.8	2,394.9	5.3	4.8	149.31	-55.1	-110.3	79.3	70.2	9.02	8.783			
2,500.0	2,490.6	2,499.7	2,494.6	5.6	5.0	148.96	-58.5	-116.9	82.9	73.5	9.43	8.794			
2,600.0	2,590.1	2,599.6	2,594.2	5.8	5.2	148.64	-61.9	-123.4	86.6	76.7	9.83	8.804			
2,700.0	2,689.6	2,699.6	2,693.9	6.1	5.4	148.34	-65.4	-130.0	90.2	80.0	10.24	8.813			
2,800.0	2,789.1	2,799.5	2,793.6	6.3	5.7	148.07	-68.8	-136.6	93.9	83.3	10.65	8.821			
2,900.0	2,888.6	2,899.4	2,893.2	6.5	5.9	147.82	-72.2	-143.1	97.6	86.5	11.05	8.829			
3,000.0	2,988.1	2,999.4	2,992.9	6.8	6.1	147.59	-75.7	-149.7	101.3	89.8	11.46	8.836			
3,100.0	3,087.6	3,099.3	3,092.5	7.0	6.3	147.37	-79.1	-156.3	104.9	93.1	11.87	8.842			
3,200.0	3,187.1	3,199.2	3,192.2	7.3	6.5	147.17	-82.6	-162.8	108.6	96.3	12.27	8.848			
3,300.0	3,286.6	3,299.2	3,291.8	7.5	6.7	146.99	-86.0	-169.4	112.3	99.6	12.68	8.854			
3,400.0	3,386.1	3,399.1	3,391.5	7.8	7.0	146.81	-89.4	-176.0	116.0	102.9	13.09	8.859			
3,500.0	3,485.6	3,499.0	3,491.1	8.0	7.2	146.64	-92.9	-182.5	119.6	106.1	13.50	8.864			
3,600.0	3,585.1	3,599.0	3,590.8	8.3	7.4	146.49	-96.3	-189.1	123.3	109.4	13.91	8.868			
3,700.0	3,684.6	3,698.9	3,690.5	8.5	7.6	146.34	-99.7	-195.7	127.0	112.7	14.31	8.872			
3,800.0	3,784.1	3,798.8	3,790.1	8.8	7.8	146.20	-103.2	-202.2	130.7	116.0	14.72	8.876			
3,900.0	3,883.6	3,898.7	3,889.8	9.0	8.0	146.07	-106.6	-208.8	134.4	119.2	15.13	8.880			
4,000.0	3,983.1	3,998.7	3,989.4	9.2	8.3	145.95	-110.0	-215.4	138.0	122.5	15.54	8.884			
4,100.0	4,082.6	4,098.6	4,089.1	9.5	8.5	145.83	-113.5	-222.0	141.7	125.8	15.95	8.887			
4,200.0	4,182.1	4,198.5	4,188.7	9.7	8.7	145.72	-116.9	-228.5	145.4	129.1	16.36	8.890			
4,300.0	4,281.7	4,298.5	4,288.4	10.0	8.9	145.62	-120.3	-235.1	149.1	132.3	16.77	8.893			
4,400.0	4,381.2	4,398.4	4,388.1	10.2	9.1	145.51	-123.8	-241.7	152.8	135.6	17.17	8.896			
4,500.0	4,480.7	4,498.3	4,487.7	10.5	9.3	145.42	-127.2	-248.2	156.5	138.9	17.58	8.898			
4,600.0	4,580.2	4,598.3	4,587.4	10.7	9.6	145.33	-130.6	-254.8	160.1	142.2	17.99	8.901			
4,700.0	4,679.7	4,698.2	4,687.0	11.0	9.8	145.24	-134.1	-261.4	163.8	145.4	18.40	8.903			
4,800.0	4,779.2	4,798.1	4,786.7	11.2	10.0	145.16	-137.5	-267.9	167.5	148.7	18.81	8.905			
4,900.0	4,878.7	4,898.1	4,886.3	11.5	10.2	145.08	-140.9	-274.5	171.2	152.0	19.22	8.908			
5,000.0	4,978.2	4,998.0	4,986.0	11.7	10.4	145.00	-144.4	-281.1	174.9	155.3	19.63	8.910			
5,100.0	5,077.7	5,097.9	5,085.7	12.0	10.6	144.93	-147.8	-287.6	178.6	158.5	20.04	8.912			

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis					
5,200.0	5,177.2	5,197.9	5,185.3	12.2	10.9	144.86	-151.2	-294.2	182.3	161.8	20.45	8.913				
5,300.0	5,276.7	5,297.8	5,285.0	12.4	11.1	144.79	-154.7	-300.8	186.0	165.1	20.86	8.915				
5,400.0	5,376.2	5,397.7	5,384.6	12.7	11.3	144.72	-158.1	-307.4	189.6	168.4	21.27	8.917				
5,500.0	5,475.7	5,497.7	5,484.3	12.9	11.5	144.66	-161.5	-313.9	193.3	171.7	21.68	8.919				
5,600.0	5,575.2	5,597.6	5,583.9	13.2	11.7	144.60	-165.0	-320.5	197.0	174.9	22.09	8.920				

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NWNW Sec19 T5S R96W Chevron C19 596 - Berry 19-20D - DD - Plan #1													Offset Site Error: 0.0 ft		
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft) +E/-W (ft)		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	50.04	12.7	15.2	19.9						
100.0	100.0	100.0	100.0	0.1	0.1	50.04	12.7	15.2	19.9	19.6	0.30	66.901			
200.0	200.0	200.0	200.0	0.3	0.3	50.04	12.7	15.2	19.9	19.2	0.65	30.739			
300.0	300.0	300.0	300.0	0.5	0.5	50.04	12.7	15.2	19.9	18.9	0.99	19.953			
400.0	400.0	400.0	400.0	0.7	0.7	50.04	12.7	15.2	19.9	18.5	1.34	14.770 CC, ES			
500.0	500.0	500.0	500.0	0.8	0.8	-174.74	12.7	15.2	21.6	19.9	1.69	12.756 SF			
600.0	599.8	599.8	599.8	1.0	1.0	-175.75	12.7	15.2	26.8	24.8	2.04	13.145			
700.0	699.5	700.3	700.2	1.2	1.2	-178.96	12.9	13.5	34.3	31.9	2.39	14.381			
800.0	799.0	800.7	800.6	1.5	1.4	175.14	13.4	8.2	41.1	38.3	2.74	14.970			
900.0	898.5	900.4	900.0	1.7	1.6	169.16	14.0	1.3	47.3	44.2	3.11	15.200			
1,000.0	998.0	1,000.1	999.5	1.9	1.8	164.61	14.7	-5.6	53.9	50.4	3.49	15.445			
1,100.0	1,097.5	1,099.8	1,098.9	2.2	2.0	161.07	15.3	-12.6	60.8	57.0	3.88	15.675			
1,200.0	1,197.0	1,199.5	1,198.4	2.4	2.2	158.26	15.9	-19.5	67.9	63.6	4.28	15.880			
1,300.0	1,296.5	1,299.2	1,297.9	2.6	2.4	155.99	16.6	-26.4	75.1	70.4	4.68	16.061			
1,400.0	1,396.0	1,398.9	1,397.3	2.9	2.6	154.11	17.2	-33.4	82.4	77.3	5.08	16.219			
1,500.0	1,495.5	1,498.6	1,496.8	3.1	2.8	152.54	17.8	-40.3	89.8	84.3	5.49	16.357			
1,600.0	1,595.0	1,598.3	1,596.2	3.4	3.0	151.21	18.5	-47.2	97.2	91.3	5.90	16.479			
1,700.0	1,694.5	1,698.0	1,695.7	3.6	3.2	150.07	19.1	-54.2	104.7	98.4	6.31	16.587			
1,800.0	1,794.0	1,797.7	1,795.1	3.9	3.4	149.08	19.7	-61.1	112.2	105.5	6.73	16.683			
1,900.0	1,893.5	1,897.4	1,894.6	4.1	3.6	148.22	20.4	-68.0	119.7	112.6	7.14	16.769			
2,000.0	1,993.0	1,997.1	1,994.1	4.3	3.8	147.46	21.0	-74.9	127.3	119.8	7.56	16.846			
2,100.0	2,092.5	2,096.8	2,093.5	4.6	4.0	146.78	21.6	-81.9	134.9	126.9	7.98	16.915			
2,200.0	2,192.0	2,196.5	2,193.0	4.8	4.3	146.17	22.3	-88.8	142.5	134.1	8.39	16.978			
2,300.0	2,291.5	2,296.2	2,292.4	5.1	4.5	145.63	22.9	-95.7	150.1	141.3	8.81	17.036			
2,400.0	2,391.0	2,395.9	2,391.9	5.3	4.7	145.14	23.5	-102.7	157.7	148.5	9.23	17.088			
2,500.0	2,490.6	2,495.6	2,491.3	5.6	4.9	144.70	24.2	-109.6	165.4	155.7	9.65	17.137			
2,600.0	2,590.1	2,595.3	2,590.8	5.8	5.1	144.29	24.8	-116.5	173.0	163.0	10.07	17.181			
2,700.0	2,689.6	2,695.0	2,690.3	6.1	5.3	143.92	25.4	-123.5	180.7	170.2	10.49	17.222			
2,800.0	2,789.1	2,794.7	2,789.7	6.3	5.5	143.58	26.1	-130.4	188.4	177.4	10.91	17.260			
2,900.0	2,888.6	2,894.4	2,889.2	6.5	5.7	143.26	26.7	-137.3	196.0	184.7	11.33	17.295			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NWNW Sec19 T5S R96W Chevron C19 596 - Berry 19-21D - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	50.11	19.3	23.1	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	50.11	19.3	23.1	30.1	29.8	0.30	101.484		
200.0	200.0	200.0	200.0	0.3	0.3	50.11	19.3	23.1	30.1	29.5	0.65	46.628		
300.0	300.0	300.3	300.3	0.5	0.5	46.91	20.2	21.6	29.6	28.6	1.00	29.598		
400.0	400.0	400.4	400.2	0.7	0.7	36.76	22.8	17.0	28.5	27.1	1.36	20.921		
417.0	417.0	417.4	417.2	0.7	0.7	169.97	23.4	16.0	28.4	27.0	1.43	19.787 CC, ES		
500.0	500.0	500.1	499.6	0.8	0.9	157.26	26.9	9.9	30.3	28.5	1.75	17.243		
600.0	599.8	599.7	598.8	1.0	1.1	147.09	31.1	2.5	36.9	34.8	2.14	17.227 SF		
700.0	699.5	699.1	697.9	1.2	1.4	142.80	35.4	-4.9	47.0	44.5	2.54	18.525		
800.0	799.0	798.5	796.9	1.5	1.6	140.90	39.7	-12.3	58.3	55.3	2.95	19.783		
900.0	898.5	897.8	895.9	1.7	1.8	139.61	43.9	-19.7	69.6	66.2	3.36	20.716		
1,000.0	998.0	997.2	994.9	1.9	2.0	138.68	48.2	-27.1	80.9	77.1	3.77	21.431		
1,100.0	1,097.5	1,096.5	1,093.8	2.2	2.3	137.99	52.4	-34.5	92.2	88.0	4.19	21.994		
1,200.0	1,197.0	1,195.9	1,192.8	2.4	2.5	137.44	56.7	-41.9	103.5	98.9	4.61	22.448		
1,300.0	1,296.5	1,295.2	1,291.8	2.6	2.7	137.00	60.9	-49.3	114.9	109.9	5.03	22.820		
1,400.0	1,396.0	1,394.6	1,390.8	2.9	2.9	136.64	65.2	-56.7	126.3	120.8	5.46	23.131		
1,500.0	1,495.5	1,493.9	1,489.8	3.1	3.2	136.34	69.4	-64.1	137.6	131.7	5.88	23.395		
1,600.0	1,595.0	1,593.3	1,588.8	3.4	3.4	136.09	73.7	-71.5	149.0	142.7	6.31	23.620		
1,700.0	1,694.5	1,692.6	1,687.7	3.6	3.6	135.87	77.9	-78.9	160.3	153.6	6.73	23.816		
1,800.0	1,794.0	1,792.0	1,786.7	3.9	3.8	135.68	82.2	-86.3	171.7	164.5	7.16	23.987		
1,900.0	1,893.5	1,891.3	1,885.7	4.1	4.1	135.52	86.4	-93.7	183.1	175.5	7.58	24.138		
2,000.0	1,993.0	1,990.7	1,984.7	4.3	4.3	135.37	90.7	-101.1	194.4	186.4	8.01	24.272		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-18D
Project:	Garfield County	TVD Reference:	KBE @ 8553.0ft (Original Well Elev)
Reference Site:	NWNW Sec19 T5S R96W Chevron C19 596	MD Reference:	KBE @ 8553.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Berry 19-18D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8553.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Berry 19-18D
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.71°

