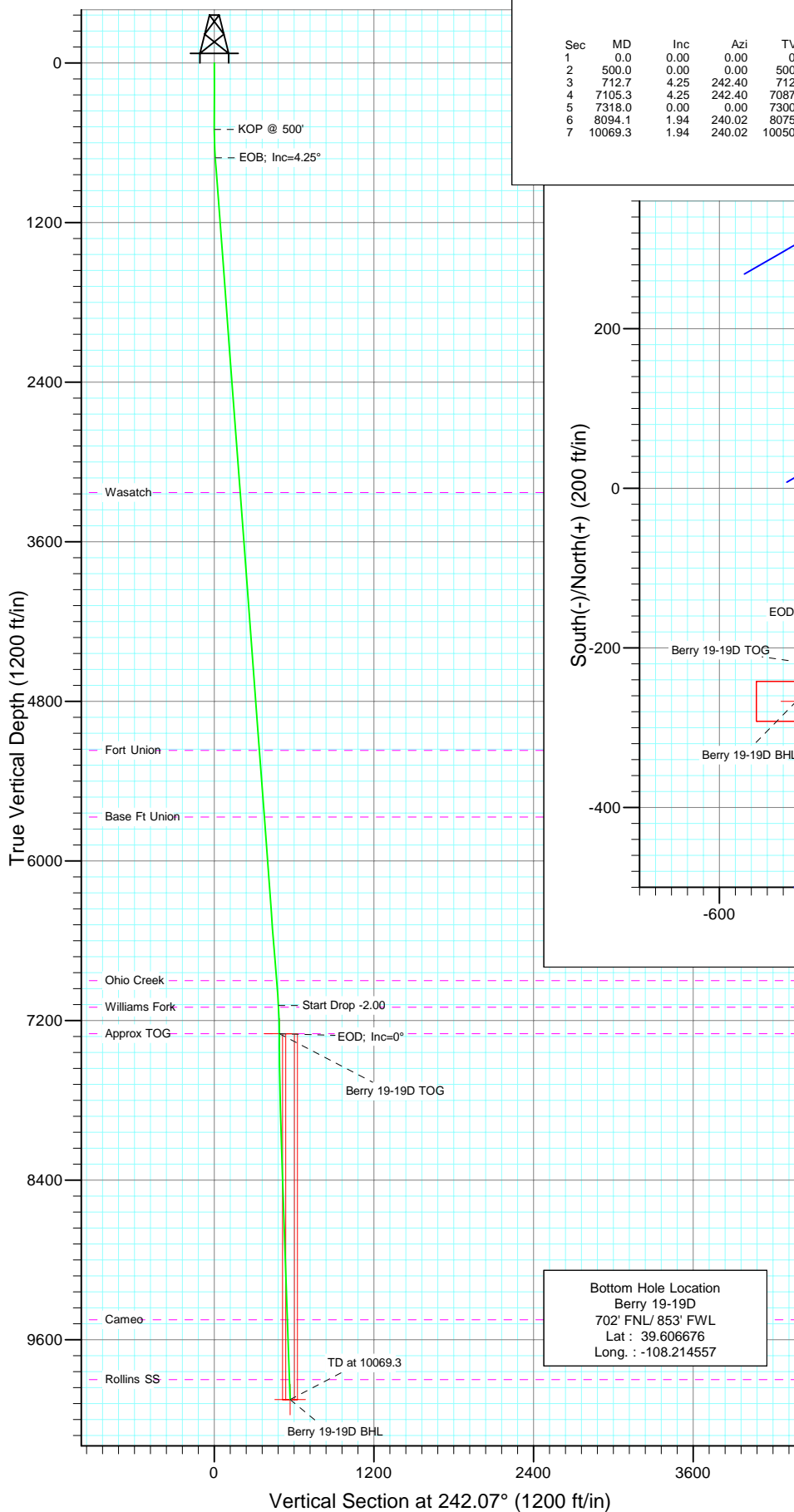
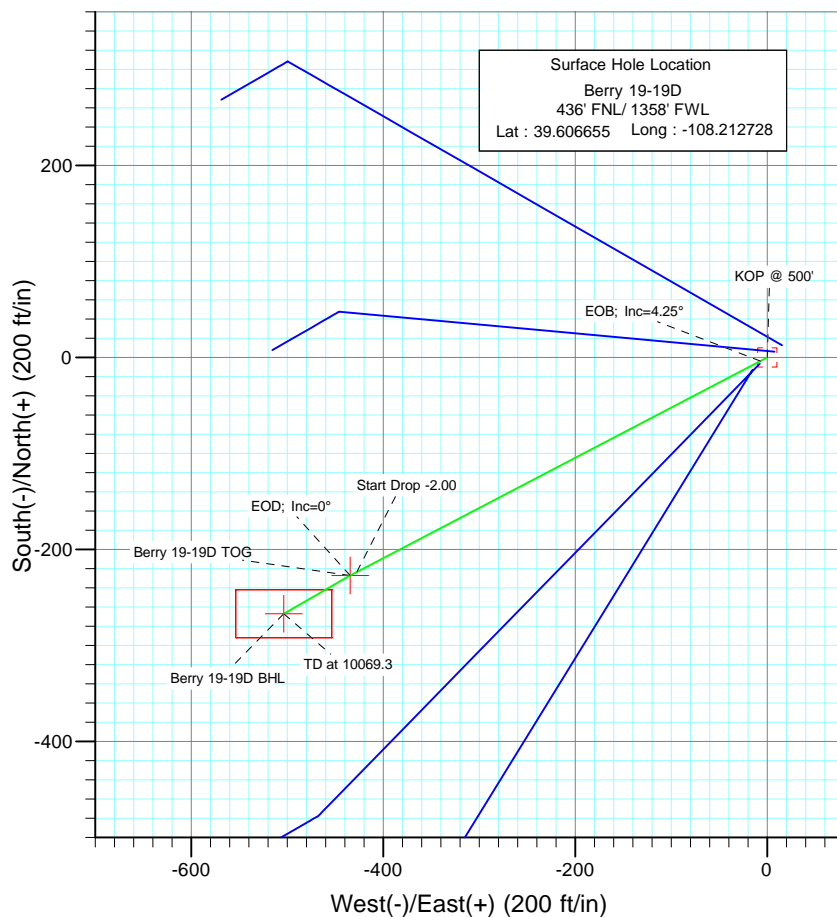




Project: Garfield County
Site: NWNW Sec19 T5S R96W Chevron C19 596
Well: Berry 19-19D
Wellbore: DD
Design: Plan #1



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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	712.7	4.25	242.40	712.5	-3.7	-7.0	2.00	242.40	7.9	
4	7105.3	4.25	242.40	7087.5	-223.3	-427.2	0.00	0.00	482.1	
5	7318.0	0.00	0.00	7300.0	-227.0	-434.2	2.00	180.00	489.9	Berry 19-19D TOG
6	8094.1	1.94	240.02	8075.9	-233.6	-445.6	0.25	240.02	503.1	
7	10069.3	1.94	240.02	10050.0	-267.0	-503.5	0.00	0.00	569.9	Berry 19-19D BHL



Azimuths to True North
Magnetic North: 10.63°

Magnetic Field
Strength: 52436.2snT
Dip Angle: 65.84°
Date: 12/31/2009
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3230.0	3237.1	Wasatch
5170.0	5182.5	Fort Union
5670.0	5683.9	Base Ft Union
6900.0	6917.3	Ohio Creek
7100.0	7117.8	Williams Fork
7300.0	7318.0	Approx TOG
9450.0	9468.9	Cameo
9900.0	9919.2	Rollins SS

DESIGN DETAILS: Plan #1

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

Target	Azimuth	Origin	N/S	E/W	From TVD
Berry 19-19D BHL	242.07	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 19-19D
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 19-19D	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 19-19D					
Well Position	+N/-S	0.0 ft	Northing:	1,657,266.60 ft	Latitude:	39.606655
	+E/-W	0.0 ft	Easting:	2,235,788.49 ft	Longitude:	-108.212728
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	242.07

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
712.7	4.25	242.40	712.5	-3.7	-7.0	2.00	2.00	0.00	242.40	
7,105.3	4.25	242.40	7,087.5	-223.3	-427.2	0.00	0.00	0.00	0.00	
7,318.0	0.00	0.00	7,300.0	-227.0	-434.2	2.00	-2.00	0.00	180.00	Berry 19-19D TOG
8,094.1	1.94	240.02	8,075.9	-233.6	-445.6	0.25	0.25	-15.46	240.02	
10,069.3	1.94	240.02	10,050.0	-267.0	-503.5	0.00	0.00	0.00	0.00	Berry 19-19D BHL

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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	
420.0	0.00	0.00	420.0	0.0	0.0	0.0	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
510.0	0.20	242.40	510.0	0.0	0.0	0.0	2.00	2.00	
540.0	0.80	242.40	540.0	-0.1	-0.2	0.3	2.00	2.00	
570.0	1.40	242.40	570.0	-0.4	-0.8	0.9	2.00	2.00	
600.0	2.00	242.40	600.0	-0.8	-1.5	1.7	2.00	2.00	
630.0	2.60	242.40	630.0	-1.4	-2.6	2.9	2.00	2.00	
660.0	3.20	242.40	659.9	-2.1	-4.0	4.5	2.00	2.00	
690.0	3.80	242.40	689.9	-2.9	-5.6	6.3	2.00	2.00	
712.7	4.25	242.40	712.5	-3.7	-7.0	7.9	2.00	2.00	EOB; Inc=4.25°
720.0	4.25	242.40	719.8	-3.9	-7.5	8.4	0.00	0.00	
750.0	4.25	242.40	749.7	-4.9	-9.4	10.7	0.00	0.00	
780.0	4.25	242.40	779.6	-6.0	-11.4	12.9	0.00	0.00	
810.0	4.25	242.40	809.5	-7.0	-13.4	15.1	0.00	0.00	
840.0	4.25	242.40	839.5	-8.0	-15.4	17.3	0.00	0.00	
870.0	4.25	242.40	869.4	-9.1	-17.3	19.6	0.00	0.00	
900.0	4.25	242.40	899.3	-10.1	-19.3	21.8	0.00	0.00	
930.0	4.25	242.40	929.2	-11.1	-21.3	24.0	0.00	0.00	
960.0	4.25	242.40	959.1	-12.2	-23.3	26.2	0.00	0.00	
990.0	4.25	242.40	989.0	-13.2	-25.2	28.5	0.00	0.00	
1,020.0	4.25	242.40	1,019.0	-14.2	-27.2	30.7	0.00	0.00	
1,050.0	4.25	242.40	1,048.9	-15.2	-29.2	32.9	0.00	0.00	
1,080.0	4.25	242.40	1,078.8	-16.3	-31.1	35.1	0.00	0.00	
1,110.0	4.25	242.40	1,108.7	-17.3	-33.1	37.4	0.00	0.00	
1,140.0	4.25	242.40	1,138.6	-18.3	-35.1	39.6	0.00	0.00	
1,170.0	4.25	242.40	1,168.5	-19.4	-37.1	41.8	0.00	0.00	
1,200.0	4.25	242.40	1,198.5	-20.4	-39.0	44.0	0.00	0.00	
1,230.0	4.25	242.40	1,228.4	-21.4	-41.0	46.3	0.00	0.00	
1,260.0	4.25	242.40	1,258.3	-22.5	-43.0	48.5	0.00	0.00	
1,290.0	4.25	242.40	1,288.2	-23.5	-44.9	50.7	0.00	0.00	
1,320.0	4.25	242.40	1,318.1	-24.5	-46.9	52.9	0.00	0.00	
1,350.0	4.25	242.40	1,348.0	-25.6	-48.9	55.2	0.00	0.00	
1,380.0	4.25	242.40	1,378.0	-26.6	-50.9	57.4	0.00	0.00	
1,410.0	4.25	242.40	1,407.9	-27.6	-52.8	59.6	0.00	0.00	
1,440.0	4.25	242.40	1,437.8	-28.7	-54.8	61.8	0.00	0.00	
1,470.0	4.25	242.40	1,467.7	-29.7	-56.8	64.1	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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	4.25	242.40	1,497.6	-30.7	-58.7	66.3	0.00	0.00	
1,530.0	4.25	242.40	1,527.6	-31.7	-60.7	68.5	0.00	0.00	
1,560.0	4.25	242.40	1,557.5	-32.8	-62.7	70.7	0.00	0.00	
1,590.0	4.25	242.40	1,587.4	-33.8	-64.7	73.0	0.00	0.00	
1,620.0	4.25	242.40	1,617.3	-34.8	-66.6	75.2	0.00	0.00	
1,650.0	4.25	242.40	1,647.2	-35.9	-68.6	77.4	0.00	0.00	
1,680.0	4.25	242.40	1,677.1	-36.9	-70.6	79.6	0.00	0.00	
1,710.0	4.25	242.40	1,707.1	-37.9	-72.6	81.9	0.00	0.00	
1,740.0	4.25	242.40	1,737.0	-39.0	-74.5	84.1	0.00	0.00	
1,770.0	4.25	242.40	1,766.9	-40.0	-76.5	86.3	0.00	0.00	
1,800.0	4.25	242.40	1,796.8	-41.0	-78.5	88.5	0.00	0.00	
1,830.0	4.25	242.40	1,826.7	-42.1	-80.4	90.8	0.00	0.00	
1,860.0	4.25	242.40	1,856.6	-43.1	-82.4	93.0	0.00	0.00	
1,890.0	4.25	242.40	1,886.6	-44.1	-84.4	95.2	0.00	0.00	
1,920.0	4.25	242.40	1,916.5	-45.1	-86.4	97.4	0.00	0.00	
1,950.0	4.25	242.40	1,946.4	-46.2	-88.3	99.7	0.00	0.00	
1,980.0	4.25	242.40	1,976.3	-47.2	-90.3	101.9	0.00	0.00	
2,010.0	4.25	242.40	2,006.2	-48.2	-92.3	104.1	0.00	0.00	
2,040.0	4.25	242.40	2,036.1	-49.3	-94.2	106.3	0.00	0.00	
2,070.0	4.25	242.40	2,066.1	-50.3	-96.2	108.6	0.00	0.00	
2,100.0	4.25	242.40	2,096.0	-51.3	-98.2	110.8	0.00	0.00	
2,130.0	4.25	242.40	2,125.9	-52.4	-100.2	113.0	0.00	0.00	
2,160.0	4.25	242.40	2,155.8	-53.4	-102.1	115.2	0.00	0.00	
2,190.0	4.25	242.40	2,185.7	-54.4	-104.1	117.5	0.00	0.00	
2,220.0	4.25	242.40	2,215.7	-55.5	-106.1	119.7	0.00	0.00	
2,250.0	4.25	242.40	2,245.6	-56.5	-108.0	121.9	0.00	0.00	
2,280.0	4.25	242.40	2,275.5	-57.5	-110.0	124.1	0.00	0.00	
2,310.0	4.25	242.40	2,305.4	-58.5	-112.0	126.4	0.00	0.00	
2,340.0	4.25	242.40	2,335.3	-59.6	-114.0	128.6	0.00	0.00	
2,370.0	4.25	242.40	2,365.2	-60.6	-115.9	130.8	0.00	0.00	
2,400.0	4.25	242.40	2,395.2	-61.6	-117.9	133.0	0.00	0.00	
2,430.0	4.25	242.40	2,425.1	-62.7	-119.9	135.3	0.00	0.00	
2,460.0	4.25	242.40	2,455.0	-63.7	-121.9	137.5	0.00	0.00	
2,490.0	4.25	242.40	2,484.9	-64.7	-123.8	139.7	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 19-19D BHL	0.00	0.00	10,050.0	-267.0	-503.5	1,657,014.77	2,235,277.23	39.605922	-108.214515
- plan misses target center by 7577.3ft at 2490.0ft MD (2484.9 TVD, -64.7 N, -123.8 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									
Berry 19-19D TOG	0.00	0.00	7,300.0	-227.0	-434.2	1,657,052.67	2,235,347.70	39.606032	-108.214269
- plan misses target center by 4827.8ft at 2490.0ft MD (2484.9 TVD, -64.7 N, -123.8 E)									
- Point									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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	4.25	242.40	2,494.9	-65.1	-124.5	140.5	0.00	0.00	
2,600.0	4.25	242.40	2,594.6	-68.5	-131.1	147.9	0.00	0.00	
2,700.0	4.25	242.40	2,694.3	-72.0	-137.6	155.3	0.00	0.00	
2,800.0	4.25	242.40	2,794.1	-75.4	-144.2	162.7	0.00	0.00	
2,900.0	4.25	242.40	2,893.8	-78.8	-150.8	170.1	0.00	0.00	
3,000.0	4.25	242.40	2,993.5	-82.3	-157.3	177.6	0.00	0.00	
3,100.0	4.25	242.40	3,093.2	-85.7	-163.9	185.0	0.00	0.00	
3,200.0	4.25	242.40	3,193.0	-89.1	-170.5	192.4	0.00	0.00	
3,237.1	4.25	242.40	3,230.0	-90.4	-172.9	195.1	0.00	0.00	Wasatch
3,300.0	4.25	242.40	3,292.7	-92.6	-177.1	199.8	0.00	0.00	
3,400.0	4.25	242.40	3,392.4	-96.0	-183.6	207.2	0.00	0.00	
3,500.0	4.25	242.40	3,492.1	-99.4	-190.2	214.6	0.00	0.00	
3,600.0	4.25	242.40	3,591.9	-102.9	-196.8	222.1	0.00	0.00	
3,700.0	4.25	242.40	3,691.6	-106.3	-203.4	229.5	0.00	0.00	
3,800.0	4.25	242.40	3,791.3	-109.8	-209.9	236.9	0.00	0.00	
3,900.0	4.25	242.40	3,891.0	-113.2	-216.5	244.3	0.00	0.00	
4,000.0	4.25	242.40	3,990.7	-116.6	-223.1	251.7	0.00	0.00	
4,100.0	4.25	242.40	4,090.5	-120.1	-229.7	259.1	0.00	0.00	
4,200.0	4.25	242.40	4,190.2	-123.5	-236.2	266.6	0.00	0.00	
4,300.0	4.25	242.40	4,289.9	-126.9	-242.8	274.0	0.00	0.00	
4,400.0	4.25	242.40	4,389.6	-130.4	-249.4	281.4	0.00	0.00	
4,500.0	4.25	242.40	4,489.4	-133.8	-255.9	288.8	0.00	0.00	
4,600.0	4.25	242.40	4,589.1	-137.2	-262.5	296.2	0.00	0.00	
4,700.0	4.25	242.40	4,688.8	-140.7	-269.1	303.6	0.00	0.00	
4,800.0	4.25	242.40	4,788.5	-144.1	-275.7	311.1	0.00	0.00	
4,900.0	4.25	242.40	4,888.3	-147.6	-282.2	318.5	0.00	0.00	
5,000.0	4.25	242.40	4,988.0	-151.0	-288.8	325.9	0.00	0.00	
5,100.0	4.25	242.40	5,087.7	-154.4	-295.4	333.3	0.00	0.00	
5,182.5	4.25	242.40	5,170.0	-157.3	-300.8	339.4	0.00	0.00	Fort Union
5,200.0	4.25	242.40	5,187.4	-157.9	-302.0	340.7	0.00	0.00	
5,300.0	4.25	242.40	5,287.2	-161.3	-308.5	348.2	0.00	0.00	
5,400.0	4.25	242.40	5,386.9	-164.7	-315.1	355.6	0.00	0.00	
5,500.0	4.25	242.40	5,486.6	-168.2	-321.7	363.0	0.00	0.00	
5,600.0	4.25	242.40	5,586.3	-171.6	-328.3	370.4	0.00	0.00	
5,683.9	4.25	242.40	5,670.0	-174.5	-333.8	376.6	0.00	0.00	Base Ft Union
5,700.0	4.25	242.40	5,686.1	-175.0	-334.8	377.8	0.00	0.00	
5,800.0	4.25	242.40	5,785.8	-178.5	-341.4	385.2	0.00	0.00	
5,900.0	4.25	242.40	5,885.5	-181.9	-348.0	392.7	0.00	0.00	
6,000.0	4.25	242.40	5,985.2	-185.4	-354.5	400.1	0.00	0.00	
6,100.0	4.25	242.40	6,085.0	-188.8	-361.1	407.5	0.00	0.00	
6,200.0	4.25	242.40	6,184.7	-192.2	-367.7	414.9	0.00	0.00	
6,300.0	4.25	242.40	6,284.4	-195.7	-374.3	422.3	0.00	0.00	
6,400.0	4.25	242.40	6,384.1	-199.1	-380.8	429.7	0.00	0.00	
6,500.0	4.25	242.40	6,483.9	-202.5	-387.4	437.2	0.00	0.00	
6,600.0	4.25	242.40	6,583.6	-206.0	-394.0	444.6	0.00	0.00	
6,700.0	4.25	242.40	6,683.3	-209.4	-400.6	452.0	0.00	0.00	
6,800.0	4.25	242.40	6,783.0	-212.9	-407.1	459.4	0.00	0.00	
6,900.0	4.25	242.40	6,882.8	-216.3	-413.7	466.8	0.00	0.00	
6,917.3	4.25	242.40	6,900.0	-216.9	-414.8	468.1	0.00	0.00	Ohio Creek
7,000.0	4.25	242.40	6,982.5	-219.7	-420.3	474.2	0.00	0.00	
7,100.0	4.25	242.40	7,082.2	-223.2	-426.9	481.7	0.00	0.00	
7,105.3	4.25	242.40	7,087.5	-223.3	-427.2	482.1	0.00	0.00	Start Drop -2.00

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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
7,117.8	4.00	242.40	7,100.0	-223.8	-428.0	483.0	2.00	-2.00	Williams Fork
7,200.0	2.36	242.40	7,182.0	-225.9	-432.0	487.5	2.00	-2.00	
7,300.0	0.36	242.40	7,282.0	-227.0	-434.1	489.9	2.00	-2.00	
7,318.0	0.00	0.00	7,300.0	-227.0	-434.2	489.9	2.00	-2.00	EOD; Inc=0° - Approx TOG - Berry 19-19D TOC
7,400.0	0.20	240.02	7,382.0	-227.1	-434.3	490.1	0.25	0.25	
7,500.0	0.45	240.02	7,482.0	-227.4	-434.8	490.7	0.25	0.25	
7,600.0	0.70	240.02	7,582.0	-227.9	-435.7	491.7	0.25	0.25	
7,700.0	0.95	240.02	7,682.0	-228.6	-437.0	493.1	0.25	0.25	
7,800.0	1.20	240.02	7,782.0	-229.5	-438.6	495.0	0.25	0.25	
7,900.0	1.45	240.02	7,881.9	-230.7	-440.6	497.3	0.25	0.25	
8,000.0	1.70	240.02	7,981.9	-232.1	-443.0	500.1	0.25	0.25	
8,094.1	1.94	240.02	8,075.9	-233.6	-445.6	503.1	0.25	0.25	
8,100.0	1.94	240.02	8,081.8	-233.7	-445.8	503.3	0.00	0.00	
8,200.0	1.94	240.02	8,181.8	-235.4	-448.7	506.7	0.00	0.00	
8,300.0	1.94	240.02	8,281.7	-237.0	-451.6	510.0	0.00	0.00	
8,400.0	1.94	240.02	8,381.7	-238.7	-454.6	513.4	0.00	0.00	
8,500.0	1.94	240.02	8,481.6	-240.4	-457.5	516.8	0.00	0.00	
8,600.0	1.94	240.02	8,581.6	-242.1	-460.4	520.2	0.00	0.00	
8,700.0	1.94	240.02	8,681.5	-243.8	-463.3	523.6	0.00	0.00	
8,800.0	1.94	240.02	8,781.4	-245.5	-466.3	527.0	0.00	0.00	
8,900.0	1.94	240.02	8,881.4	-247.2	-469.2	530.3	0.00	0.00	
9,000.0	1.94	240.02	8,981.3	-248.9	-472.1	533.7	0.00	0.00	
9,100.0	1.94	240.02	9,081.3	-250.6	-475.1	537.1	0.00	0.00	
9,200.0	1.94	240.02	9,181.2	-252.3	-478.0	540.5	0.00	0.00	
9,300.0	1.94	240.02	9,281.2	-254.0	-480.9	543.9	0.00	0.00	
9,400.0	1.94	240.02	9,381.1	-255.7	-483.9	547.3	0.00	0.00	
9,468.9	1.94	240.02	9,450.0	-256.8	-485.9	549.6	0.00	0.00	Cameo
9,500.0	1.94	240.02	9,481.0	-257.4	-486.8	550.6	0.00	0.00	
9,600.0	1.94	240.02	9,581.0	-259.0	-489.7	554.0	0.00	0.00	
9,700.0	1.94	240.02	9,680.9	-260.7	-492.7	557.4	0.00	0.00	
9,800.0	1.94	240.02	9,780.9	-262.4	-495.6	560.8	0.00	0.00	
9,900.0	1.94	240.02	9,880.8	-264.1	-498.5	564.2	0.00	0.00	
9,919.2	1.94	240.02	9,900.0	-264.4	-499.1	564.8	0.00	0.00	Rollins SS
10,000.0	1.94	240.02	9,980.8	-265.8	-501.5	567.6	0.00	0.00	
10,069.3	1.94	240.02	10,050.0	-267.0	-503.5	569.9	0.00	0.00	Berry 19-19D 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 19-19D BHL	0.00	0.00	10,050.0	-267.0	-503.5	1,657,014.77	2,235,277.23	39.605922	-108.214515
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									
Berry 19-19D TOG	0.00	0.00	7,300.0	-227.0	-434.2	1,657,052.67	2,235,347.70	39.606032	-108.214269
- plan hits target center									
- Point									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,237.1	3,230.0	Wasatch		0.00		
5,182.5	5,170.0	Fort Union		0.00		
5,683.9	5,670.0	Base Ft Union		0.00		
6,917.3	6,900.0	Ohio Creek		0.00		
7,117.8	7,100.0	Williams Fork		0.00		
7,318.0	7,300.0	Approx TOG		0.00		
9,468.9	9,450.0	Cameo		0.00		
9,919.2	9,900.0	Rollins SS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
500.0	500.0	0.0	0.0	KOP @ 500'	
712.7	712.5	-3.7	-7.0	EOB; Inc=4.25°	
7,105.3	7,087.5	-223.3	-427.2	Start Drop -2.00	
7,318.0	7,300.0	-227.0	-434.2	EOD; Inc=0°	
10,069.3	10,050.0	-267.0	-503.5	TD at 10069.3	

Berry Petroleum Company (NAD 83)

Garfield County

NWNW Sec19 T5S R96W Chevron C19 596

Berry 19-19D

DD

Plan #1

Anticollision Report

04 January, 2010

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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	10,069.3	Plan #1 (DD)	MWD	Geolink MWD	

Summary							
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning	
	Measured	Measured	Between	Between			
	Depth (ft)	Depth (ft)	Centres (ft)	Ellipses (ft)			
NWNW Sec19 T5S R96W Chevron C19 596							
Berry 19-17D - DD - Plan #1	300.0	300.0	20.1	19.1	20.190	CC, ES	
Berry 19-17D - DD - Plan #1	500.0	498.4	26.8	25.1	15.736	SF	
Berry 19-18D - DD - Plan #1	400.0	400.0	10.0	8.7	7.473	CC, ES	
Berry 19-18D - DD - Plan #1	500.0	499.6	11.8	10.1	6.952	SF	
Berry 19-20D - DD - Plan #1	500.0	500.0	9.8	8.1	5.794	CC, ES	
Berry 19-20D - DD - Plan #1	600.0	600.0	11.5	9.5	5.646	SF	
Berry 19-21D - DD - Plan #1	401.4	401.5	18.8	17.4	13.864	CC, ES	
Berry 19-21D - DD - Plan #1	500.0	499.8	20.5	18.8	12.085	SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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		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	-130.76	-13.1	-15.2	20.1					
100.0	100.0	100.0	100.0	0.1	0.1	-130.76	-13.1	-15.2	20.1	19.8	0.30	67.697		
200.0	200.0	200.0	200.0	0.3	0.3	-130.76	-13.1	-15.2	20.1	19.4	0.65	31.104		
300.0	300.0	300.0	300.0	0.5	0.5	-130.76	-13.1	-15.2	20.1	19.1	0.99	20.190 CC, ES		
400.0	400.0	399.3	399.3	0.7	0.7	-132.13	-14.6	-16.1	21.7	20.4	1.34	16.177		
500.0	500.0	498.4	498.2	0.8	0.9	-135.22	-19.0	-18.8	26.8	25.1	1.70	15.736 SF		
600.0	600.0	597.1	596.5	1.0	1.1	-21.80	-26.2	-23.3	33.6	31.6	2.04	16.488		
700.0	699.8	696.0	694.7	1.2	1.3	-27.05	-36.2	-29.4	40.7	38.3	2.39	17.039		
800.0	799.6	795.7	793.7	1.4	1.6	-32.15	-46.9	-36.0	46.9	44.1	2.74	17.086		
900.0	899.3	895.4	892.6	1.6	1.8	-36.05	-57.6	-42.6	53.3	50.2	3.11	17.164		
1,000.0	999.0	995.2	991.6	1.8	2.1	-39.11	-68.3	-49.2	60.0	56.5	3.48	17.243		
1,100.0	1,098.7	1,094.9	1,090.5	2.0	2.4	-41.55	-79.0	-55.7	66.7	62.9	3.86	17.311		
1,200.0	1,198.5	1,194.6	1,189.4	2.2	2.7	-43.53	-89.7	-62.3	73.6	69.4	4.24	17.368		
1,300.0	1,298.2	1,294.4	1,288.4	2.4	2.9	-45.18	-100.4	-68.9	80.6	75.9	4.63	17.412		
1,400.0	1,397.9	1,394.1	1,387.3	2.7	3.2	-46.56	-111.0	-75.5	87.6	82.6	5.02	17.447		
1,500.0	1,497.6	1,493.8	1,486.3	2.9	3.5	-47.74	-121.7	-82.0	94.6	89.2	5.42	17.475		
1,600.0	1,597.4	1,593.6	1,585.2	3.1	3.8	-48.75	-132.4	-88.6	101.7	95.9	5.81	17.496		
1,700.0	1,697.1	1,693.3	1,684.1	3.3	4.0	-49.63	-143.1	-95.2	108.8	102.6	6.21	17.513		
1,800.0	1,796.8	1,793.0	1,783.1	3.5	4.3	-50.41	-153.8	-101.8	116.0	109.4	6.62	17.526		
1,900.0	1,896.5	1,892.8	1,882.0	3.7	4.6	-51.09	-164.5	-108.4	123.1	116.1	7.02	17.537		
2,000.0	1,996.3	1,992.5	1,981.0	3.9	4.9	-51.70	-175.2	-114.9	130.3	122.9	7.43	17.545		
2,100.0	2,096.0	2,092.2	2,079.9	4.2	5.1	-52.25	-185.9	-121.5	137.5	129.7	7.83	17.552		
2,200.0	2,195.7	2,192.0	2,178.8	4.4	5.4	-52.74	-196.6	-128.1	144.7	136.4	8.24	17.557		
2,300.0	2,295.4	2,291.7	2,277.8	4.6	5.7	-53.18	-207.3	-134.7	151.9	143.2	8.65	17.561		
2,400.0	2,395.2	2,391.4	2,376.7	4.8	6.0	-53.58	-217.9	-141.2	159.1	150.1	9.06	17.564		
2,500.0	2,494.9	2,491.2	2,475.7	5.0	6.3	-53.95	-228.6	-147.8	166.3	156.9	9.47	17.566		
2,600.0	2,594.6	2,590.9	2,574.6	5.2	6.5	-54.29	-239.3	-154.4	173.6	163.7	9.88	17.568		
2,700.0	2,694.3	2,690.6	2,673.5	5.4	6.8	-54.60	-250.0	-161.0	180.8	170.5	10.29	17.570		
2,800.0	2,794.1	2,790.4	2,772.5	5.7	7.1	-54.89	-260.7	-167.6	188.0	177.3	10.70	17.571		
2,900.0	2,893.8	2,890.1	2,871.4	5.9	7.4	-55.16	-271.4	-174.1	195.3	184.2	11.11	17.571		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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 19-18D - DD - Plan #1													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)				
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		
400.0	400.0	400.0	400.0	0.7	0.7	-130.76	-6.6	-7.6	10.0	8.7	1.34	7.473 CC, ES		
500.0	500.0	499.6	499.6	0.8	0.8	-131.48	-7.8	-8.8	11.8	10.1	1.69	6.952 SF		
600.0	600.0	599.1	598.9	1.0	1.0	-16.85	-11.5	-12.4	15.3	13.3	2.04	7.500		
700.0	699.8	698.5	698.0	1.2	1.2	-21.93	-17.6	-18.4	19.0	16.6	2.39	7.961		
800.0	799.6	798.4	797.4	1.4	1.5	-27.33	-24.8	-25.4	22.2	19.4	2.75	8.077		
900.0	899.3	898.4	896.8	1.6	1.7	-31.40	-31.9	-32.3	25.5	22.4	3.11	8.186		
1,000.0	999.0	998.3	996.3	1.8	1.9	-34.52	-39.0	-39.2	28.9	25.4	3.48	8.284		
1,100.0	1,098.7	1,098.2	1,095.7	2.0	2.2	-36.98	-46.1	-46.2	32.3	28.4	3.86	8.368		
1,200.0	1,198.5	1,198.1	1,195.1	2.2	2.4	-38.96	-53.2	-53.1	35.8	31.6	4.24	8.437		
1,300.0	1,298.2	1,298.1	1,294.6	2.4	2.6	-40.59	-60.3	-60.0	39.3	34.7	4.63	8.496		
1,400.0	1,397.9	1,398.0	1,394.0	2.7	2.9	-41.94	-67.4	-67.0	42.9	37.9	5.02	8.545		
1,500.0	1,497.6	1,497.9	1,493.5	2.9	3.1	-43.09	-74.5	-73.9	46.5	41.1	5.42	8.586		
1,600.0	1,597.4	1,597.9	1,592.9	3.1	3.4	-44.08	-81.6	-80.8	50.1	44.3	5.81	8.621		
1,700.0	1,697.1	1,697.8	1,692.3	3.3	3.6	-44.93	-88.7	-87.8	53.7	47.5	6.21	8.651		
1,800.0	1,796.8	1,797.7	1,791.8	3.5	3.8	-45.68	-95.8	-94.7	57.3	50.7	6.61	8.677		
1,900.0	1,896.5	1,897.7	1,891.2	3.7	4.1	-46.33	-102.9	-101.7	61.0	54.0	7.01	8.700		
2,000.0	1,996.3	1,997.6	1,990.6	3.9	4.3	-46.91	-110.0	-108.6	64.6	57.2	7.41	8.720		
2,100.0	2,096.0	2,097.5	2,090.1	4.2	4.6	-47.43	-117.1	-115.5	68.2	60.4	7.81	8.737		
2,200.0	2,195.7	2,197.5	2,189.5	4.4	4.8	-47.90	-124.2	-122.5	71.9	63.7	8.21	8.753		
2,300.0	2,295.4	2,297.4	2,289.0	4.6	5.1	-48.32	-131.3	-129.4	75.6	66.9	8.62	8.767		
2,400.0	2,395.2	2,397.3	2,388.4	4.8	5.3	-48.71	-138.4	-136.3	79.2	70.2	9.02	8.779		
2,500.0	2,494.9	2,497.3	2,487.8	5.0	5.6	-49.06	-145.5	-143.3	82.9	73.4	9.43	8.791		
2,600.0	2,594.6	2,597.2	2,587.3	5.2	5.8	-49.38	-152.6	-150.2	86.5	76.7	9.83	8.801		
2,700.0	2,694.3	2,697.1	2,686.7	5.4	6.0	-49.67	-159.7	-157.1	90.2	80.0	10.24	8.810		
2,800.0	2,794.1	2,797.1	2,786.1	5.7	6.3	-49.94	-166.8	-164.1	93.9	83.2	10.64	8.819		
2,900.0	2,893.8	2,897.0	2,885.6	5.9	6.5	-50.19	-173.9	-171.0	97.5	86.5	11.05	8.826		
3,000.0	2,993.5	2,996.9	2,985.0	6.1	6.8	-50.42	-181.0	-177.9	101.2	89.8	11.46	8.833		
3,100.0	3,093.2	3,096.9	3,084.5	6.3	7.0	-50.64	-188.1	-184.9	104.9	93.0	11.86	8.840		
3,200.0	3,193.0	3,196.8	3,183.9	6.5	7.3	-50.84	-195.2	-191.8	108.6	96.3	12.27	8.846		
3,300.0	3,292.7	3,296.7	3,283.3	6.7	7.5	-51.03	-202.3	-198.7	112.2	99.6	12.68	8.852		
3,400.0	3,392.4	3,396.6	3,382.8	7.0	7.8	-51.21	-209.4	-205.7	115.9	102.8	13.09	8.857		
3,500.0	3,492.1	3,496.6	3,482.2	7.2	8.0	-51.37	-216.5	-212.6	119.6	106.1	13.50	8.862		
3,600.0	3,591.9	3,596.5	3,581.6	7.4	8.3	-51.53	-223.6	-219.5	123.3	109.4	13.90	8.866		
3,700.0	3,691.6	3,696.4	3,681.1	7.6	8.5	-51.67	-230.7	-226.5	127.0	112.6	14.31	8.871		
3,800.0	3,791.3	3,796.4	3,780.5	7.8	8.7	-51.81	-237.8	-233.4	130.6	115.9	14.72	8.875		
3,900.0	3,891.0	3,896.3	3,880.0	8.0	9.0	-51.94	-244.9	-240.3	134.3	119.2	15.13	8.878		
4,000.0	3,990.7	3,996.2	3,979.4	8.3	9.2	-52.07	-252.0	-247.3	138.0	122.5	15.54	8.882		
4,100.0	4,090.5	4,096.2	4,078.8	8.5	9.5	-52.18	-259.1	-254.2	141.7	125.7	15.95	8.885		
4,200.0	4,190.2	4,196.1	4,178.3	8.7	9.7	-52.29	-266.2	-261.1	145.4	129.0	16.35	8.888		
4,300.0	4,289.9	4,296.0	4,277.7	8.9	10.0	-52.40	-273.3	-268.1	149.0	132.3	16.76	8.891		
4,400.0	4,389.6	4,396.0	4,377.1	9.1	10.2	-52.50	-280.4	-275.0	152.7	135.6	17.17	8.894		
4,500.0	4,489.4	4,495.9	4,476.6	9.3	10.5	-52.60	-287.5	-282.0	156.4	138.8	17.58	8.897		
4,600.0	4,589.1	4,595.8	4,576.0	9.6	10.7	-52.69	-294.6	-288.9	160.1	142.1	17.99	8.899		
4,700.0	4,688.8	4,695.8	4,675.5	9.8	11.0	-52.78	-301.7	-295.8	163.8	145.4	18.40	8.902		
4,800.0	4,788.5	4,795.7	4,774.9	10.0	11.2	-52.86	-308.8	-302.8	167.5	148.7	18.81	8.904		
4,900.0	4,888.3	4,895.6	4,874.3	10.2	11.4	-52.94	-315.9	-309.7	171.2	151.9	19.22	8.906		
5,000.0	4,988.0	4,995.6	4,973.8	10.4	11.7	-53.02	-323.0	-316.6	174.9	155.2	19.63	8.908		
5,100.0	5,087.7	5,095.5	5,073.2	10.7	11.9	-53.09	-330.1	-323.6	178.5	158.5	20.04	8.910		

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 19-19D
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 19-19D	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 19-18D - 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						
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	5,187.4	5,195.4	5,172.6	10.9	12.2	-53.16	-337.2	-330.5	182.2	161.8	20.45	8.912	
5,300.0	5,287.2	5,295.3	5,272.1	11.1	12.4	-53.23	-344.3	-337.4	185.9	165.1	20.86	8.914	
5,400.0	5,386.9	5,395.3	5,371.5	11.3	12.7	-53.29	-351.4	-344.4	189.6	168.3	21.27	8.916	
5,500.0	5,486.6	5,495.2	5,471.0	11.5	12.9	-53.36	-358.5	-351.3	193.3	171.6	21.68	8.917	
5,600.0	5,586.3	5,595.1	5,570.4	11.7	13.2	-53.42	-365.6	-358.2	197.0	174.9	22.09	8.919	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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				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	50.86	6.2	7.6	9.8					
100.0	100.0	100.0	100.0	0.1	0.1	50.86	6.2	7.6	9.8	9.5	0.30	33.060		
200.0	200.0	200.0	200.0	0.3	0.3	50.86	6.2	7.6	9.8	9.2	0.65	15.190		
300.0	300.0	300.0	300.0	0.5	0.5	50.86	6.2	7.6	9.8	8.8	0.99	9.860		
400.0	400.0	400.0	400.0	0.7	0.7	50.86	6.2	7.6	9.8	8.5	1.34	7.299		
500.0	500.0	500.0	500.0	0.8	0.8	50.86	6.2	7.6	9.8	8.1	1.69	5.794 CC, ES		
600.0	600.0	600.0	600.0	1.0	1.0	170.19	6.2	7.6	11.5	9.5	2.04	5.646 SF		
700.0	699.8	700.2	700.2	1.2	1.2	169.08	6.4	5.9	15.4	13.0	2.39	6.444		
800.0	799.6	800.6	800.4	1.4	1.4	162.32	6.8	0.6	19.0	16.2	2.75	6.912		
900.0	899.3	900.5	900.1	1.6	1.6	154.07	7.5	-6.3	21.9	18.7	3.12	7.001		
1,000.0	999.0	1,000.4	999.8	1.8	1.8	147.83	8.1	-13.3	25.0	21.5	3.51	7.144		
1,100.0	1,098.7	1,100.3	1,099.4	2.0	2.0	143.04	8.7	-20.2	28.5	24.6	3.90	7.300		
1,200.0	1,198.5	1,200.2	1,199.1	2.2	2.2	139.30	9.4	-27.2	32.1	27.8	4.30	7.451		
1,300.0	1,298.2	1,300.2	1,298.8	2.4	2.4	136.32	10.0	-34.1	35.8	31.0	4.71	7.592		
1,400.0	1,397.9	1,400.1	1,398.4	2.7	2.6	133.91	10.6	-41.1	39.5	34.4	5.12	7.720		
1,500.0	1,497.6	1,500.0	1,498.1	2.9	2.8	131.91	11.3	-48.0	43.3	37.8	5.53	7.837		
1,600.0	1,597.4	1,599.9	1,597.8	3.1	3.0	130.25	11.9	-54.9	47.2	41.3	5.95	7.942		
1,700.0	1,697.1	1,699.8	1,697.5	3.3	3.2	128.83	12.6	-61.9	51.1	44.8	6.36	8.036		
1,800.0	1,796.8	1,799.7	1,797.1	3.5	3.4	127.62	13.2	-68.8	55.1	48.3	6.78	8.122		
1,900.0	1,896.5	1,899.7	1,896.8	3.7	3.6	126.57	13.8	-75.8	59.0	51.8	7.20	8.200		
2,000.0	1,996.3	1,999.6	1,996.5	3.9	3.8	125.65	14.5	-82.7	63.0	55.4	7.62	8.270		
2,100.0	2,096.0	2,099.5	2,096.2	4.2	4.0	124.84	15.1	-89.7	67.0	58.9	8.03	8.335		
2,200.0	2,195.7	2,199.4	2,195.8	4.4	4.3	124.12	15.7	-96.6	71.0	62.5	8.45	8.394		
2,300.0	2,295.4	2,299.3	2,295.5	4.6	4.5	123.48	16.4	-103.6	75.0	66.1	8.87	8.448		
2,400.0	2,395.2	2,399.2	2,395.2	4.8	4.7	122.91	17.0	-110.5	79.0	69.7	9.30	8.498		
2,500.0	2,494.9	2,499.2	2,494.8	5.0	4.9	122.39	17.6	-117.4	83.0	73.3	9.72	8.544		
2,600.0	2,594.6	2,599.1	2,594.5	5.2	5.1	121.91	18.3	-124.4	87.0	76.9	10.14	8.586		
2,700.0	2,694.3	2,699.0	2,694.2	5.4	5.3	121.48	18.9	-131.3	91.1	80.5	10.56	8.626		
2,800.0	2,794.1	2,798.9	2,793.9	5.7	5.5	121.09	19.5	-138.3	95.1	84.1	10.98	8.662		
2,900.0	2,893.8	2,898.8	2,893.5	5.9	5.7	120.73	20.2	-145.2	99.2	87.8	11.40	8.697		
3,000.0	2,993.5	2,998.7	2,993.2	6.1	5.9	120.39	20.8	-152.2	103.2	91.4	11.82	8.729		
3,100.0	3,093.2	3,098.6	3,092.9	6.3	6.2	120.09	21.4	-159.1	107.3	95.0	12.25	8.759		
3,200.0	3,193.0	3,198.6	3,192.6	6.5	6.4	119.80	22.1	-166.1	111.3	98.6	12.67	8.787		
3,300.0	3,292.7	3,298.5	3,292.2	6.7	6.6	119.53	22.7	-173.0	115.4	102.3	13.09	8.813		
3,400.0	3,392.4	3,398.4	3,391.9	7.0	6.8	119.29	23.4	-180.0	119.4	105.9	13.51	8.838		
3,500.0	3,492.1	3,498.3	3,491.6	7.2	7.0	119.05	24.0	-186.9	123.5	109.5	13.93	8.862		
3,600.0	3,591.9	3,598.2	3,591.2	7.4	7.2	118.84	24.6	-193.8	127.5	113.2	14.36	8.884		
3,700.0	3,691.6	3,698.1	3,690.9	7.6	7.4	118.63	25.3	-200.8	131.6	116.8	14.78	8.905		
3,800.0	3,791.3	3,798.1	3,790.6	7.8	7.6	118.44	25.9	-207.7	135.7	120.5	15.20	8.925		
3,900.0	3,891.0	3,898.0	3,890.3	8.0	7.9	118.26	26.5	-214.7	139.7	124.1	15.62	8.944		
4,000.0	3,990.7	3,997.9	3,989.9	8.3	8.1	118.09	27.2	-221.6	143.8	127.8	16.05	8.962		
4,100.0	4,090.5	4,097.8	4,089.6	8.5	8.3	117.93	27.8	-228.6	147.9	131.4	16.47	8.979		
4,200.0	4,190.2	4,197.7	4,189.3	8.7	8.5	117.78	28.4	-235.5	151.9	135.0	16.89	8.995		
4,300.0	4,289.9	4,297.6	4,289.0	8.9	8.7	117.64	29.1	-242.5	156.0	138.7	17.31	9.011		
4,400.0	4,389.6	4,397.6	4,388.6	9.1	8.9	117.50	29.7	-249.4	160.1	142.3	17.74	9.025		
4,500.0	4,489.4	4,497.5	4,488.3	9.3	9.1	117.37	30.3	-256.4	164.2	146.0	18.16	9.040		
4,600.0	4,589.1	4,597.4	4,588.0	9.6	9.3	117.25	31.0	-263.3	168.2	149.6	18.58	9.053		
4,700.0	4,688.8	4,697.3	4,687.6	9.8	9.6	117.13	31.6	-270.2	172.3	153.3	19.01	9.066		
4,800.0	4,788.5	4,797.2	4,787.3	10.0	9.8	117.02	32.2	-277.2	176.4	157.0	19.43	9.078		
4,900.0	4,888.3	4,897.1	4,887.0	10.2	10.0	116.91	32.9	-284.1	180.5	160.6	19.85	9.090		
5,000.0	4,988.0	4,997.1	4,986.7	10.4	10.2	116.81	33.5	-291.1	184.5	164.3	20.27	9.102		
5,100.0	5,087.7	5,097.0	5,086.3	10.7	10.4	116.71	34.2	-298.0	188.6	167.9	20.70	9.113		

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 19-19D
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 19-19D	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	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	5,187.4	5,196.9	5,186.0	10.9	10.6	116.61	34.8	-305.0	192.7	171.6	21.12	9.123					
5,300.0	5,287.2	5,296.8	5,285.7	11.1	10.8	116.52	35.4	-311.9	196.8	175.2	21.54	9.134					

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
0.0	0.0	0.0	0.0	0.0	0.0	50.55	12.8	15.5	20.1					
100.0	100.0	100.0	100.0	0.1	0.1	50.55	12.8	15.5	20.1	19.8	0.30	67.641		
200.0	200.0	200.0	200.0	0.3	0.3	50.55	12.8	15.5	20.1	19.4	0.65	31.079		
300.0	300.0	300.2	300.2	0.5	0.5	45.73	13.6	14.0	19.5	18.5	1.00	19.580		
400.0	400.0	400.2	400.0	0.7	0.7	30.16	16.2	9.4	18.8	17.4	1.35	13.913		
401.4	401.4	401.5	401.4	0.7	0.7	29.87	16.3	9.4	18.8	17.4	1.35	13.864 CC, ES		
500.0	500.0	499.8	499.3	0.8	0.9	6.56	20.3	2.3	20.5	18.8	1.69	12.085 SF		
600.0	600.0	599.5	598.6	1.0	1.1	109.54	24.6	-5.1	25.7	23.6	2.11	12.160		
700.0	699.8	699.2	698.0	1.2	1.4	106.17	28.8	-12.5	32.8	30.3	2.49	13.140		
800.0	799.6	798.9	797.3	1.4	1.6	107.04	33.1	-20.0	40.5	37.6	2.89	13.993		
900.0	899.3	898.6	896.6	1.6	1.8	107.68	37.4	-27.4	48.2	44.9	3.30	14.615		
1,000.0	999.0	998.3	996.0	1.8	2.0	108.14	41.6	-34.8	56.0	52.3	3.71	15.086		
1,100.0	1,098.7	1,098.0	1,095.3	2.0	2.3	108.49	45.9	-42.2	63.7	59.6	4.12	15.453		
1,200.0	1,198.5	1,197.7	1,194.6	2.2	2.5	108.76	50.2	-49.7	71.5	66.9	4.54	15.747		
1,300.0	1,298.2	1,297.4	1,294.0	2.4	2.7	108.98	54.5	-57.1	79.2	74.3	4.96	15.988		
1,400.0	1,397.9	1,397.1	1,393.3	2.7	2.9	109.16	58.7	-64.5	87.0	81.6	5.37	16.187		
1,500.0	1,497.6	1,496.8	1,492.6	2.9	3.2	109.31	63.0	-72.0	94.8	89.0	5.79	16.356		
1,600.0	1,597.4	1,596.5	1,592.0	3.1	3.4	109.44	67.3	-79.4	102.5	96.3	6.21	16.500		
1,700.0	1,697.1	1,696.2	1,691.3	3.3	3.6	109.55	71.5	-86.8	110.3	103.6	6.63	16.625		
1,800.0	1,796.8	1,795.9	1,790.6	3.5	3.9	109.65	75.8	-94.2	118.0	111.0	7.05	16.733		
1,900.0	1,896.5	1,895.6	1,889.9	3.7	4.1	109.73	80.1	-101.7	125.8	118.3	7.47	16.829		
2,000.0	1,996.3	1,995.3	1,989.3	3.9	4.3	109.81	84.3	-109.1	133.6	125.7	7.90	16.914		
2,100.0	2,096.0	2,095.0	2,088.6	4.2	4.5	109.87	88.6	-116.5	141.3	133.0	8.32	16.990		
2,200.0	2,195.7	2,194.7	2,187.9	4.4	4.8	109.93	92.9	-124.0	149.1	140.3	8.74	17.058		
2,300.0	2,295.4	2,294.4	2,287.3	4.6	5.0	109.99	97.1	-131.4	156.8	147.7	9.16	17.119		
2,400.0	2,395.2	2,394.1	2,386.6	4.8	5.2	110.03	101.4	-138.8	164.6	155.0	9.58	17.175		
2,500.0	2,494.9	2,493.8	2,485.9	5.0	5.5	110.08	105.7	-146.2	172.3	162.3	10.01	17.225		
2,600.0	2,594.6	2,593.5	2,585.2	5.2	5.7	110.12	109.9	-153.7	180.1	169.7	10.43	17.272		
2,700.0	2,694.3	2,693.2	2,684.6	5.4	5.9	110.15	114.2	-161.1	187.9	177.0	10.85	17.314		
2,800.0	2,794.1	2,792.9	2,783.9	5.7	6.1	110.19	118.5	-168.5	195.6	184.4	11.27	17.354		

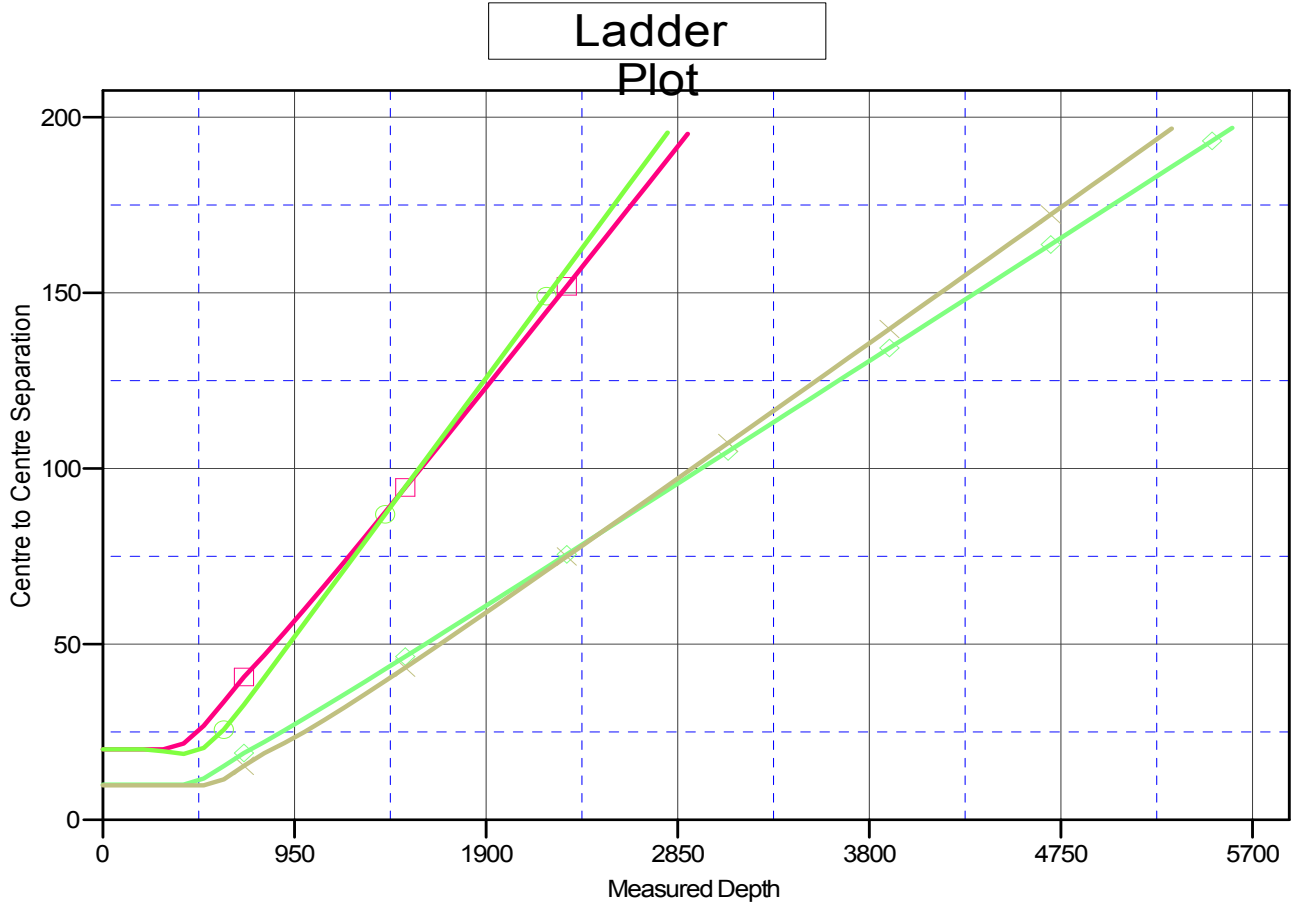
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Berry 19-19D
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 19-19D	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 19-19D
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.71°



LEGEND

- Berry 19-17D, DD, Plan #1 V0
- ◆ Berry 19-18D, DD, Plan #1 V0
- Berry 19-21D, DD, Plan #1 V0
- ✕ Berry 19-20D, DD, Plan #1 V0