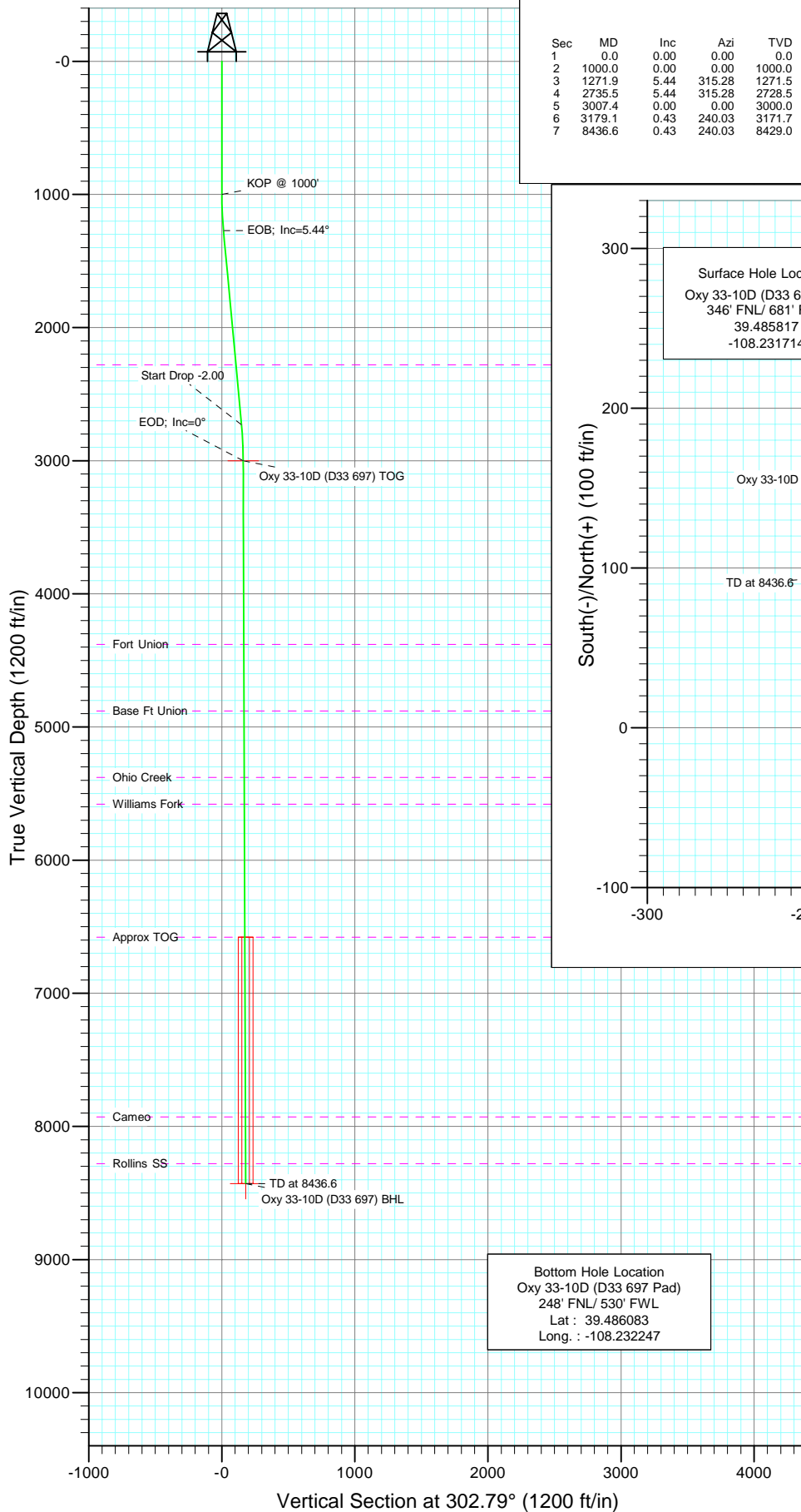
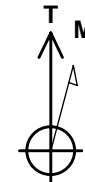
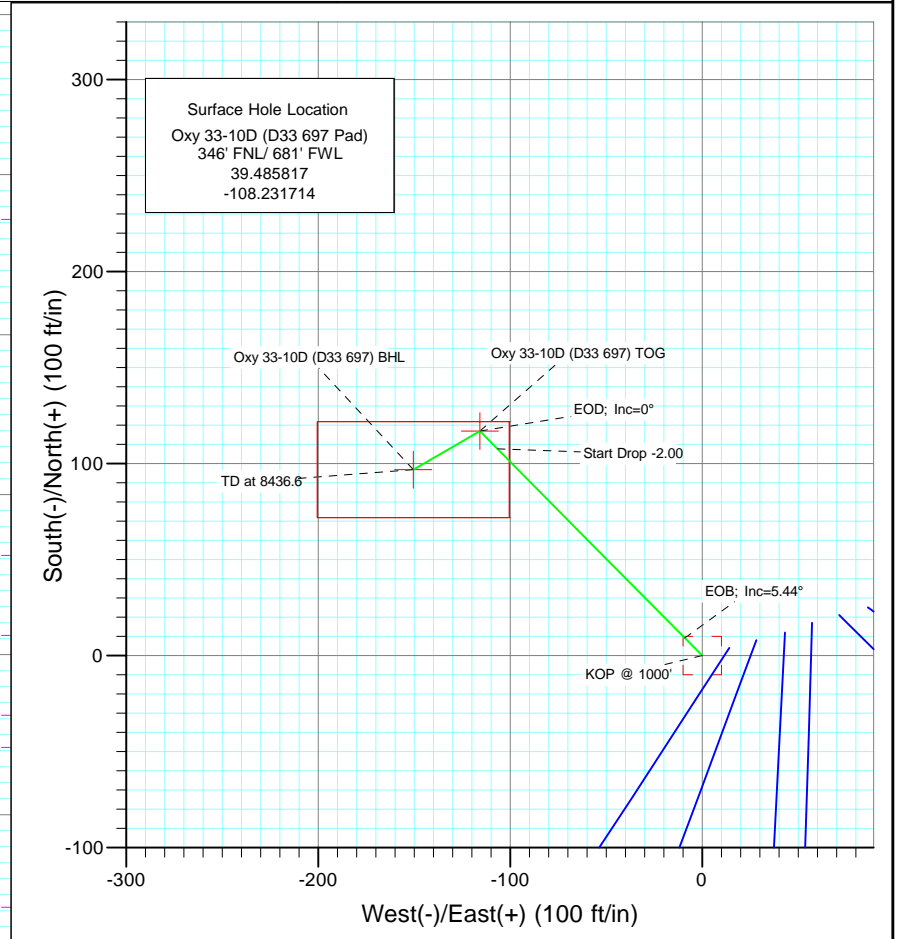




Project: Garfield County
Site: Oxy D33 697 Pad
Well: Oxy 33-10D (D33 697 Pad)
Wellbore: DD
Design: Plan #1



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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1271.9	5.44	315.28	1271.5	9.2	-9.1	2.00	315.28	12.6	
4	2735.5	5.44	315.28	2728.5	107.7	-106.7	0.00	0.00	148.0	
5	3007.4	0.00	0.00	3000.0	116.9	-115.7	2.00	180.00	160.6	Oxy 33-10D (D33 697) TOG
6	3179.1	0.43	240.03	3171.7	116.6	-116.3	0.25	240.03	160.9	
7	8436.6	0.43	240.03	8429.0	96.9	-150.4	0.00	0.00	178.9	Oxy 33-10D (D33 697) BHL



Azimuths to True North
Magnetic North: 10.62°

Magnetic Field
Strength: 52371.5nT
Dip Angle: 65.74°
Date: 12/31/2009
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2279.0	2284.0	Wasatch
4379.0	4386.4	Fort Union
4879.0	4886.5	Base Ft Union
5379.0	5386.5	Ohio Creek
5579.0	5586.5	Williams Fork
6579.0	6586.5	Approx TOG
7929.0	7936.5	Cameo
8279.0	8286.6	Rollins SS

DESIGN DETAILS: Plan #1

105XXX; BH
KBE @ 8091.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Oxy 33-10D (D33 697) BHL	302.79	Slot	0.0	0.0	0.0

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	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		Oxy D33 697 Pad			
Site Position:		Northing:	1,613,451.00 ft	Latitude:	39.485875
From:	Lat/Long	Easting:	2,229,190.14 ft	Longitude:	-108.231461
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.72 °

Well	Oxy 33-10D (D33 697 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,613,432.02 ft	Latitude:	39.485817
	+E/-W	0.0 ft	Easting:	2,229,118.13 ft	Longitude:	-108.231714
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,076.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	10.62	65.74	52,372

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	302.79	

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,271.9	5.44	315.28	1,271.5	9.2	-9.1	2.00	2.00	0.00	315.28	
2,735.5	5.44	315.28	2,728.5	107.7	-106.7	0.00	0.00	0.00	0.00	
3,007.4	0.00	0.00	3,000.0	116.9	-115.7	2.00	-2.00	0.00	180.00	Oxy 33-10D (D33 697)
3,179.1	0.43	240.03	3,171.7	116.6	-116.3	0.25	0.25	-69.86	240.03	
8,436.6	0.43	240.03	8,429.0	96.9	-150.4	0.00	0.00	0.00	0.00	Oxy 33-10D (D33 697)

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	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	
510.0	0.00	0.00	510.0	0.0	0.0	0.0	0.00	0.00	
540.0	0.00	0.00	540.0	0.0	0.0	0.0	0.00	0.00	
570.0	0.00	0.00	570.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
630.0	0.00	0.00	630.0	0.0	0.0	0.0	0.00	0.00	
660.0	0.00	0.00	660.0	0.0	0.0	0.0	0.00	0.00	
690.0	0.00	0.00	690.0	0.0	0.0	0.0	0.00	0.00	
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	
780.0	0.00	0.00	780.0	0.0	0.0	0.0	0.00	0.00	
810.0	0.00	0.00	810.0	0.0	0.0	0.0	0.00	0.00	
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	
870.0	0.00	0.00	870.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
930.0	0.00	0.00	930.0	0.0	0.0	0.0	0.00	0.00	
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	
990.0	0.00	0.00	990.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1000'
1,020.0	0.40	315.28	1,020.0	0.0	0.0	0.1	2.00	2.00	
1,050.0	1.00	315.28	1,050.0	0.3	-0.3	0.4	2.00	2.00	
1,080.0	1.60	315.28	1,080.0	0.8	-0.8	1.1	2.00	2.00	
1,110.0	2.20	315.28	1,110.0	1.5	-1.5	2.1	2.00	2.00	
1,140.0	2.80	315.28	1,139.9	2.4	-2.4	3.3	2.00	2.00	
1,170.0	3.40	315.28	1,169.9	3.6	-3.5	4.9	2.00	2.00	
1,200.0	4.00	315.28	1,199.8	5.0	-4.9	6.8	2.00	2.00	
1,230.0	4.60	315.28	1,229.8	6.6	-6.5	9.0	2.00	2.00	
1,260.0	5.20	315.28	1,259.6	8.4	-8.3	11.5	2.00	2.00	
1,271.9	5.44	315.28	1,271.5	9.2	-9.1	12.6	2.00	2.00	EOB; Inc=5.44°
1,290.0	5.44	315.28	1,289.5	10.4	-10.3	14.3	0.00	0.00	
1,320.0	5.44	315.28	1,319.4	12.4	-12.3	17.0	0.00	0.00	
1,350.0	5.44	315.28	1,349.2	14.4	-14.3	19.8	0.00	0.00	
1,380.0	5.44	315.28	1,379.1	16.4	-16.3	22.6	0.00	0.00	
1,410.0	5.44	315.28	1,409.0	18.5	-18.3	25.4	0.00	0.00	
1,440.0	5.44	315.28	1,438.8	20.5	-20.3	28.1	0.00	0.00	
1,470.0	5.44	315.28	1,468.7	22.5	-22.3	30.9	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	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	5.44	315.28	1,498.6	24.5	-24.3	33.7	0.00	0.00	
1,530.0	5.44	315.28	1,528.4	26.5	-26.3	36.5	0.00	0.00	
1,560.0	5.44	315.28	1,558.3	28.6	-28.3	39.2	0.00	0.00	
1,590.0	5.44	315.28	1,588.2	30.6	-30.3	42.0	0.00	0.00	
1,620.0	5.44	315.28	1,618.0	32.6	-32.3	44.8	0.00	0.00	
1,650.0	5.44	315.28	1,647.9	34.6	-34.3	47.6	0.00	0.00	
1,680.0	5.44	315.28	1,677.8	36.6	-36.3	50.4	0.00	0.00	
1,710.0	5.44	315.28	1,707.6	38.7	-38.3	53.1	0.00	0.00	
1,740.0	5.44	315.28	1,737.5	40.7	-40.3	55.9	0.00	0.00	
1,770.0	5.44	315.28	1,767.3	42.7	-42.3	58.7	0.00	0.00	
1,800.0	5.44	315.28	1,797.2	44.7	-44.3	61.5	0.00	0.00	
1,830.0	5.44	315.28	1,827.1	46.8	-46.3	64.2	0.00	0.00	
1,860.0	5.44	315.28	1,856.9	48.8	-48.3	67.0	0.00	0.00	
1,890.0	5.44	315.28	1,886.8	50.8	-50.3	69.8	0.00	0.00	
1,920.0	5.44	315.28	1,916.7	52.8	-52.3	72.6	0.00	0.00	
1,950.0	5.44	315.28	1,946.5	54.8	-54.3	75.3	0.00	0.00	
1,980.0	5.44	315.28	1,976.4	56.9	-56.3	78.1	0.00	0.00	
2,010.0	5.44	315.28	2,006.3	58.9	-58.3	80.9	0.00	0.00	
2,040.0	5.44	315.28	2,036.1	60.9	-60.3	83.7	0.00	0.00	
2,070.0	5.44	315.28	2,066.0	62.9	-62.3	86.4	0.00	0.00	
2,100.0	5.44	315.28	2,095.9	64.9	-64.3	89.2	0.00	0.00	
2,130.0	5.44	315.28	2,125.7	67.0	-66.3	92.0	0.00	0.00	
2,160.0	5.44	315.28	2,155.6	69.0	-68.3	94.8	0.00	0.00	
2,190.0	5.44	315.28	2,185.5	71.0	-70.3	97.5	0.00	0.00	
2,220.0	5.44	315.28	2,215.3	73.0	-72.3	100.3	0.00	0.00	
2,250.0	5.44	315.28	2,245.2	75.0	-74.3	103.1	0.00	0.00	
2,280.0	5.44	315.28	2,275.1	77.1	-76.3	105.9	0.00	0.00	
2,284.0	5.44	315.28	2,279.0	77.3	-76.6	106.2	0.00	0.00	Wasatch
2,310.0	5.44	315.28	2,304.9	79.1	-78.3	108.6	0.00	0.00	
2,340.0	5.44	315.28	2,334.8	81.1	-80.3	111.4	0.00	0.00	
2,370.0	5.44	315.28	2,364.6	83.1	-82.3	114.2	0.00	0.00	
2,400.0	5.44	315.28	2,394.5	85.1	-84.3	117.0	0.00	0.00	
2,430.0	5.44	315.28	2,424.4	87.2	-86.3	119.8	0.00	0.00	
2,460.0	5.44	315.28	2,454.2	89.2	-88.3	122.5	0.00	0.00	
2,490.0	5.44	315.28	2,484.1	91.2	-90.3	125.3	0.00	0.00	

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										
Oxy 33-10D (D33 697) E	0.00	0.00	8,429.0	96.9	-150.4	1,613,533.39	2,228,970.68		39.486083	-108.232247
- plan misses target center by 5945.2ft at 2490.0ft MD (2484.1 TVD, 91.2 N, -90.3 E)										
- Rectangle (sides W50.0 H100.0 D0.0)										
Oxy 33-10D (D33 697) T	0.00	0.00	3,000.0	116.9	-115.7	1,613,552.35	2,229,005.95		39.486138	-108.232124
- plan misses target center by 517.2ft at 2490.0ft MD (2484.1 TVD, 91.2 N, -90.3 E)										
- Point										

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	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	5.44	315.28	2,494.1	91.9	-91.0	126.2	0.00	0.00	
2,600.0	5.44	315.28	2,593.6	98.6	-97.6	135.5	0.00	0.00	
2,700.0	5.44	315.28	2,693.2	105.3	-104.3	144.7	0.00	0.00	
2,735.5	5.44	315.28	2,728.5	107.7	-106.7	148.0	0.00	0.00	Start Drop -2.00
2,800.0	4.15	315.28	2,792.8	111.6	-110.5	153.3	2.00	-2.00	
2,900.0	2.15	315.28	2,892.6	115.5	-114.3	158.6	2.00	-2.00	
3,000.0	0.15	315.28	2,992.6	116.9	-115.7	160.6	2.00	-2.00	
3,007.4	0.00	0.00	3,000.0	116.9	-115.8	160.6	2.00	-2.00	EOD; Inc=0° - Oxy 33-10D (D33 697) TOG
3,100.0	0.23	240.03	3,092.6	116.8	-115.9	160.7	0.25	0.25	
3,179.1	0.43	240.03	3,171.7	116.6	-116.3	160.9	0.25	0.25	
3,200.0	0.43	240.03	3,192.6	116.5	-116.4	161.0	0.00	0.00	
3,300.0	0.43	240.03	3,292.6	116.1	-117.1	161.3	0.00	0.00	
3,400.0	0.43	240.03	3,392.6	115.8	-117.7	161.7	0.00	0.00	
3,500.0	0.43	240.03	3,492.6	115.4	-118.4	162.0	0.00	0.00	
3,600.0	0.43	240.03	3,592.6	115.0	-119.0	162.4	0.00	0.00	
3,700.0	0.43	240.03	3,692.6	114.6	-119.7	162.7	0.00	0.00	
3,800.0	0.43	240.03	3,792.6	114.3	-120.3	163.0	0.00	0.00	
3,900.0	0.43	240.03	3,892.6	113.9	-121.0	163.4	0.00	0.00	
4,000.0	0.43	240.03	3,992.6	113.5	-121.6	163.7	0.00	0.00	
4,100.0	0.43	240.03	4,092.6	113.1	-122.3	164.1	0.00	0.00	
4,200.0	0.43	240.03	4,192.6	112.8	-122.9	164.4	0.00	0.00	
4,300.0	0.43	240.03	4,292.6	112.4	-123.6	164.8	0.00	0.00	
4,386.4	0.43	240.03	4,379.0	112.1	-124.1	165.0	0.00	0.00	Fort Union
4,400.0	0.43	240.03	4,392.6	112.0	-124.2	165.1	0.00	0.00	
4,500.0	0.43	240.03	4,492.6	111.6	-124.9	165.4	0.00	0.00	
4,600.0	0.43	240.03	4,592.6	111.3	-125.5	165.8	0.00	0.00	
4,700.0	0.43	240.03	4,692.6	110.9	-126.2	166.1	0.00	0.00	
4,800.0	0.43	240.03	4,792.5	110.5	-126.8	166.5	0.00	0.00	
4,886.5	0.43	240.03	4,879.0	110.2	-127.4	166.8	0.00	0.00	Base Ft Union
4,900.0	0.43	240.03	4,892.5	110.1	-127.5	166.8	0.00	0.00	
5,000.0	0.43	240.03	4,992.5	109.8	-128.1	167.2	0.00	0.00	
5,100.0	0.43	240.03	5,092.5	109.4	-128.8	167.5	0.00	0.00	
5,200.0	0.43	240.03	5,192.5	109.0	-129.4	167.8	0.00	0.00	
5,300.0	0.43	240.03	5,292.5	108.6	-130.1	168.2	0.00	0.00	
5,386.5	0.43	240.03	5,379.0	108.3	-130.6	168.5	0.00	0.00	Ohio Creek
5,400.0	0.43	240.03	5,392.5	108.3	-130.7	168.5	0.00	0.00	
5,500.0	0.43	240.03	5,492.5	107.9	-131.4	168.9	0.00	0.00	
5,586.5	0.43	240.03	5,579.0	107.6	-131.9	169.2	0.00	0.00	Williams Fork
5,600.0	0.43	240.03	5,592.5	107.5	-132.0	169.2	0.00	0.00	
5,700.0	0.43	240.03	5,692.5	107.1	-132.7	169.6	0.00	0.00	
5,800.0	0.43	240.03	5,792.5	106.8	-133.3	169.9	0.00	0.00	
5,900.0	0.43	240.03	5,892.5	106.4	-134.0	170.2	0.00	0.00	
6,000.0	0.43	240.03	5,992.5	106.0	-134.6	170.6	0.00	0.00	
6,100.0	0.43	240.03	6,092.5	105.6	-135.3	170.9	0.00	0.00	
6,200.0	0.43	240.03	6,192.5	105.3	-135.9	171.3	0.00	0.00	
6,300.0	0.43	240.03	6,292.5	104.9	-136.6	171.6	0.00	0.00	
6,400.0	0.43	240.03	6,392.5	104.5	-137.2	172.0	0.00	0.00	
6,500.0	0.43	240.03	6,492.5	104.1	-137.9	172.3	0.00	0.00	
6,586.5	0.43	240.03	6,579.0	103.8	-138.4	172.6	0.00	0.00	Approx TOG
6,600.0	0.43	240.03	6,592.5	103.8	-138.5	172.6	0.00	0.00	
6,700.0	0.43	240.03	6,692.5	103.4	-139.2	173.0	0.00	0.00	
6,800.0	0.43	240.03	6,792.5	103.0	-139.8	173.3	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	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
6,900.0	0.43	240.03	6,892.5	102.6	-140.5	173.7	0.00	0.00	
7,000.0	0.43	240.03	6,992.5	102.3	-141.1	174.0	0.00	0.00	
7,100.0	0.43	240.03	7,092.5	101.9	-141.8	174.4	0.00	0.00	
7,200.0	0.43	240.03	7,192.5	101.5	-142.4	174.7	0.00	0.00	
7,300.0	0.43	240.03	7,292.5	101.2	-143.1	175.0	0.00	0.00	
7,400.0	0.43	240.03	7,392.5	100.8	-143.7	175.4	0.00	0.00	
7,500.0	0.43	240.03	7,492.5	100.4	-144.4	175.7	0.00	0.00	
7,600.0	0.43	240.03	7,592.5	100.0	-145.0	176.1	0.00	0.00	
7,700.0	0.43	240.03	7,692.5	99.7	-145.7	176.4	0.00	0.00	
7,800.0	0.43	240.03	7,792.5	99.3	-146.3	176.8	0.00	0.00	
7,900.0	0.43	240.03	7,892.5	98.9	-147.0	177.1	0.00	0.00	
7,936.5	0.43	240.03	7,929.0	98.8	-147.2	177.2	0.00	0.00	Cameo
8,000.0	0.43	240.03	7,992.5	98.5	-147.6	177.4	0.00	0.00	
8,100.0	0.43	240.03	8,092.5	98.2	-148.2	177.8	0.00	0.00	
8,200.0	0.43	240.03	8,192.5	97.8	-148.9	178.1	0.00	0.00	
8,286.6	0.43	240.03	8,279.0	97.5	-149.5	178.4	0.00	0.00	Rollins SS
8,300.0	0.43	240.03	8,292.4	97.4	-149.5	178.5	0.00	0.00	
8,400.0	0.43	240.03	8,392.4	97.0	-150.2	178.8	0.00	0.00	
8,436.6	0.43	240.03	8,429.0	96.9	-150.4	178.9	0.00	0.00	Oxy 33-10D (D33 697) BHL

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									
Oxy 33-10D (D33 697) E	0.00	0.00	8,429.0	96.9	-150.4	1,613,533.39	2,228,970.68	39.486083	-108.232247
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									
Oxy 33-10D (D33 697) T	0.00	0.00	3,000.0	116.9	-115.7	1,613,552.35	2,229,005.95	39.486138	-108.232124
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,284.0	2,279.0	Wasatch		0.00		
4,386.4	4,379.0	Fort Union		0.00		
4,886.5	4,879.0	Base Ft Union		0.00		
5,386.5	5,379.0	Ohio Creek		0.00		
5,586.5	5,579.0	Williams Fork		0.00		
6,586.5	6,579.0	Approx TOG		0.00		
7,936.5	7,929.0	Cameo		0.00		
8,286.6	8,279.0	Rollins SS		0.00		

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site:	Oxy D33 697 Pad	North Reference:	True
Well:	Oxy 33-10D (D33 697 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP @ 1000'
1,271.9	1,271.5	9.2	-9.1	EOB; Inc=5.44°
2,735.5	2,728.5	107.7	-106.7	Start Drop -2.00
3,007.4	3,000.0	116.9	-115.8	EOD; Inc=0°
8,436.6	8,429.0	96.9	-150.4	TD at 8436.6

Berry Petroleum Company (NAD 83)

Garfield County

Oxy D33 697 Pad

Oxy 33-10D (D33 697 Pad)

DD

Plan #1

Anticollision Report

09 February, 2010

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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	2/9/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,436.6	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name	Reference	Offset	Distance		Separation Factor	Warning
	Measured	Measured	Between	Between		
	Depth	Depth	Centres	Ellipses		
Offset Well - Wellbore - Design	(ft)	(ft)	(ft)	(ft)		
Oxy D33 697 Pad						
Oxy 33-1D (Oxy D33 Pad) - DD - Plan #1	300.0	300.0	74.5	73.5	74.853	CC, ES
Oxy 33-1D (Oxy D33 Pad) - DD - Plan #1	800.0	789.0	102.2	99.5	37.537	SF
Oxy 33-2D (D33 697 Pad) - DD - Plan #1	300.0	300.0	89.9	89.0	90.415	CC, ES
Oxy 33-2D (D33 697 Pad) - DD - Plan #1	900.0	880.6	136.1	133.0	44.198	SF
Oxy 33-3D (D33 697 Pad) - DD - Plan #1	300.0	300.0	104.6	103.6	105.161	CC, ES
Oxy 33-3D (D33 697 Pad) - DD - Plan #1	900.0	875.6	156.2	153.1	50.434	SF
Oxy 33-4D (D33 697 Pad) - DD - Plan #1	200.0	200.0	119.8	119.2	185.561	CC, ES
Oxy 33-4D (D33 697 Pad) - DD - Plan #1	900.0	866.0	195.5	192.3	61.099	SF
Oxy 33-5D (D33 697 Pad) - DD - Plan #1	200.0	200.0	134.8	134.2	208.753	CC, ES
Oxy 33-5D (D33 697 Pad) - DD - Plan #1	800.0	766.2	193.2	190.3	67.969	SF
Oxy 33-6D (D33 697 Pad) - DD - Plan #1	785.0	785.5	42.5	39.8	15.685	CC
Oxy 33-6D (D33 697 Pad) - DD - Plan #1	800.0	800.4	42.5	39.8	15.393	ES
Oxy 33-6D (D33 697 Pad) - DD - Plan #1	900.0	899.4	44.7	41.6	14.348	SF
Oxy 33-7D (D33 697 Pad) - DD - Plan #1	828.1	828.8	56.7	53.9	19.746	CC, ES
Oxy 33-7D (D33 697 Pad) - DD - Plan #1	1,100.0	1,097.3	70.9	66.9	17.732	SF
Oxy 33-8D (D33 697 Pad) - DD - Plan #1	815.6	816.2	23.7	20.9	8.392	CC, ES
Oxy 33-8D (D33 697 Pad) - DD - Plan #1	900.0	900.2	25.2	22.1	8.103	SF
Oxy 33-9D (D33 697 Pad) - DD - Plan #1	1,096.9	1,097.2	14.4	10.7	3.824	CC
Oxy 33-9D (D33 697 Pad) - DD - Plan #1	1,100.0	1,100.3	14.4	10.7	3.813	ES, SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-1D (Oxy D33 Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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	73.52	21.1	71.4	74.5				
100.0	100.0	100.0	100.0	0.1	0.1	73.52	21.1	71.4	74.5	74.2	0.30	250.978	
200.0	200.0	200.0	200.0	0.3	0.3	73.52	21.1	71.4	74.5	73.8	0.65	115.314	
300.0	300.0	300.0	300.0	0.5	0.5	73.52	21.1	71.4	74.5	73.5	0.99	74.853 CC, ES	
400.0	400.0	398.7	398.7	0.7	0.7	74.65	19.9	72.6	75.3	74.0	1.34	56.125	
500.0	500.0	497.2	497.1	0.8	0.9	77.89	16.4	76.2	78.0	76.3	1.69	46.194	
600.0	600.0	595.2	594.7	1.0	1.1	82.76	10.4	82.2	83.0	81.0	2.03	40.810	
700.0	700.0	692.6	691.3	1.2	1.3	88.58	2.2	90.5	90.9	88.6	2.38	38.237	
800.0	800.0	789.0	786.6	1.4	1.6	94.61	-8.1	101.0	102.2	99.5	2.72	37.537 SF	
900.0	900.0	884.3	880.3	1.5	2.0	100.29	-20.6	113.6	117.2	114.1	3.08	38.067	
1,000.0	1,000.0	978.4	972.0	1.7	2.3	105.30	-35.1	128.3	135.9	132.4	3.45	39.338	
1,100.0	1,100.0	1,070.5	1,061.2	1.9	2.8	154.29	-51.3	144.6	159.8	155.9	3.93	40.692	
1,200.0	1,199.8	1,159.8	1,146.9	2.1	3.2	158.05	-68.9	162.5	190.4	186.2	4.25	44.760	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-2D (D33 697 Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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	73.77	25.1	86.4	89.9				
100.0	100.0	100.0	100.0	0.1	0.1	73.77	25.1	86.4	89.9	89.7	0.30	303.157	
200.0	200.0	200.0	200.0	0.3	0.3	73.77	25.1	86.4	89.9	89.3	0.65	139.288	
300.0	300.0	300.0	300.0	0.5	0.5	73.77	25.1	86.4	89.9	89.0	0.99	90.415 CC, ES	
400.0	400.0	398.1	398.1	0.7	0.7	74.61	24.1	87.7	91.0	89.7	1.34	67.883	
500.0	500.0	495.9	495.8	0.8	0.9	77.00	21.2	91.8	94.3	92.6	1.69	55.919	
600.0	600.0	593.3	592.8	1.0	1.1	80.61	16.3	98.5	100.1	98.1	2.03	49.286	
700.0	700.0	690.0	688.8	1.2	1.3	84.96	9.5	107.8	108.8	106.4	2.37	45.806	
800.0	800.0	785.9	783.6	1.4	1.6	89.57	0.9	119.6	120.7	118.0	2.72	44.347	
900.0	900.0	880.6	876.7	1.5	1.9	94.04	-9.4	133.7	136.1	133.0	3.08	44.198 SF	
1,000.0	1,000.0	974.1	967.9	1.7	2.3	98.11	-21.4	150.1	155.0	151.6	3.46	44.860	
1,100.0	1,100.0	1,065.7	1,056.6	1.9	2.7	146.42	-34.8	168.5	178.9	175.0	3.91	45.799	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-3D (D33 697 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	73.83	29.1	100.5	104.6					
100.0	100.0	100.0	100.0	0.1	0.1	73.83	29.1	100.5	104.6	104.3	0.30	352.598		
200.0	200.0	200.0	200.0	0.3	0.3	73.83	29.1	100.5	104.6	104.0	0.65	162.005		
300.0	300.0	300.0	300.0	0.5	0.5	73.83	29.1	100.5	104.6	103.6	0.99	105.161 CC, ES		
400.0	400.0	397.2	397.2	0.7	0.7	74.39	28.5	102.0	105.9	104.6	1.34	79.113		
500.0	500.0	494.2	494.0	0.8	0.9	76.00	26.6	106.5	110.0	108.3	1.68	65.324		
600.0	600.0	590.7	590.2	1.0	1.1	78.41	23.4	114.0	116.8	114.8	2.03	57.607		
700.0	700.0	686.6	685.5	1.2	1.3	81.34	19.0	124.5	126.7	124.4	2.38	53.351		
800.0	800.0	781.6	779.4	1.4	1.6	84.46	13.4	137.7	139.8	137.1	2.73	51.222		
900.0	900.0	875.6	871.7	1.5	1.9	87.53	6.6	153.5	156.2	153.1	3.10	50.434 SF		
1,000.0	1,000.0	968.3	962.3	1.7	2.3	90.39	-1.2	171.9	176.0	172.5	3.48	50.522		
1,100.0	1,100.0	1,065.0	1,056.3	1.9	2.7	137.70	-10.0	192.6	199.0	195.1	3.84	51.794		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-4D (D33 697 Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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	73.94	33.1	115.2	119.8				
100.0	100.0	100.0	100.0	0.1	0.1	73.94	33.1	115.2	119.8	119.5	0.30	403.867	
200.0	200.0	200.0	200.0	0.3	0.3	73.94	33.1	115.2	119.8	119.2	0.65	185.561	CC, ES
300.0	300.0	296.4	296.3	0.5	0.5	74.28	32.9	116.7	121.3	120.3	0.99	122.704	
400.0	400.0	392.5	392.3	0.7	0.7	75.26	32.0	121.5	125.9	124.5	1.33	94.400	
500.0	500.0	488.2	487.7	0.8	0.9	76.73	30.5	129.4	133.5	131.8	1.68	79.388	
600.0	600.0	583.3	582.1	1.0	1.1	78.52	28.5	140.3	144.3	142.3	2.04	70.827	
700.0	700.0	677.5	675.3	1.2	1.4	80.45	25.9	154.2	158.3	155.9	2.41	65.812	
800.0	800.0	770.7	766.9	1.4	1.8	82.38	22.9	170.9	175.5	172.7	2.79	62.888	
900.0	900.0	866.0	860.1	1.5	2.1	84.23	19.3	190.5	195.5	192.3	3.20	61.099	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-5D (D33 697 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	73.52	38.2	129.3	134.8					
100.0	100.0	100.0	100.0	0.1	0.1	73.52	38.2	129.3	134.8	134.5	0.30	454.345		
200.0	200.0	200.0	200.0	0.3	0.3	73.52	38.2	129.3	134.8	134.2	0.65	208.753 CC, ES		
300.0	300.0	295.6	295.6	0.5	0.5	73.67	38.3	130.9	136.4	135.4	0.99	138.072		
400.0	400.0	391.0	390.8	0.7	0.7	74.12	38.6	135.6	141.3	140.0	1.33	105.882		
500.0	500.0	485.9	485.4	0.8	0.9	74.79	39.0	143.5	149.4	147.7	1.69	88.477		
600.0	600.0	580.2	579.1	1.0	1.1	75.62	39.6	154.4	160.8	158.7	2.06	78.226		
700.0	700.0	673.7	671.6	1.2	1.4	76.52	40.3	168.3	175.4	172.9	2.44	71.912		
800.0	800.0	766.2	762.6	1.4	1.8	77.43	41.2	185.0	193.2	190.3	2.84	67.969 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-6D (D33 697 Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			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	74.45	12.0	43.2	44.8					
100.0	100.0	100.0	100.0	0.1	0.1	74.45	12.0	43.2	44.8	44.5	0.30	151.074		
200.0	200.0	200.0	200.0	0.3	0.3	74.45	12.0	43.2	44.8	44.2	0.65	69.412		
300.0	300.0	300.0	300.0	0.5	0.5	74.45	12.0	43.2	44.8	43.8	0.99	45.057		
400.0	400.0	400.0	400.0	0.7	0.7	74.45	12.0	43.2	44.8	43.5	1.34	33.354		
500.0	500.0	500.0	500.0	0.8	0.8	74.45	12.0	43.2	44.8	43.1	1.69	26.477		
600.0	600.0	600.5	600.4	1.0	1.0	76.61	10.3	43.1	44.3	42.3	2.04	21.670		
700.0	700.0	700.7	700.5	1.2	1.2	83.34	5.0	42.8	43.1	40.7	2.40	17.953		
785.0	785.0	785.5	785.0	1.3	1.4	92.93	-2.2	42.5	42.5	39.8	2.71	15.685 CC		
800.0	800.0	800.4	799.8	1.4	1.4	94.98	-3.7	42.4	42.5	39.8	2.76	15.393 ES		
900.0	900.0	899.4	898.1	1.5	1.7	110.65	-15.7	41.8	44.7	41.6	3.11	14.348 SF		
1,000.0	1,000.0	997.4	994.9	1.7	1.9	127.11	-31.0	41.0	51.6	48.2	3.44	15.000		
1,100.0	1,100.0	1,094.1	1,089.8	1.9	2.3	-174.50	-49.3	40.0	66.0	62.1	3.95	16.702		
1,200.0	1,199.8	1,189.6	1,183.0	2.1	2.6	-165.33	-70.2	39.0	88.6	84.4	4.29	20.666		
1,300.0	1,299.5	1,285.4	1,276.4	2.3	3.0	-160.24	-91.7	37.9	116.1	111.5	4.63	25.073		
1,400.0	1,399.0	1,381.0	1,369.5	2.5	3.4	-157.31	-113.2	36.8	144.8	139.9	4.99	29.047		
1,500.0	1,498.6	1,476.5	1,462.6	2.7	3.8	-155.35	-134.6	35.7	173.8	168.5	5.35	32.508		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-7D (D33 697 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	73.36	17.1	57.3	59.8					
100.0	100.0	100.0	100.0	0.1	0.1	73.36	17.1	57.3	59.8	59.5	0.30	201.539		
200.0	200.0	200.0	200.0	0.3	0.3	73.36	17.1	57.3	59.8	59.2	0.65	92.599		
300.0	300.0	300.0	300.0	0.5	0.5	73.36	17.1	57.3	59.8	58.8	0.99	60.108		
400.0	400.0	400.0	400.0	0.7	0.7	73.36	17.1	57.3	59.8	58.5	1.34	44.496		
500.0	500.0	500.0	500.0	0.8	0.8	73.36	17.1	57.3	59.8	58.1	1.69	35.321		
600.0	600.0	600.6	600.6	1.0	1.0	74.99	15.4	57.2	59.3	57.2	2.04	28.987		
700.0	700.0	701.0	700.8	1.2	1.2	79.99	10.1	57.1	58.0	55.6	2.40	24.125		
800.0	800.0	800.9	800.3	1.4	1.4	88.65	1.3	56.8	56.8	54.1	2.77	20.524		
828.1	828.1	828.8	828.1	1.4	1.5	91.74	-1.7	56.7	56.7	53.9	2.87	19.746 CC, ES		
900.0	900.0	900.0	898.7	1.5	1.7	100.78	-10.7	56.4	57.5	54.3	3.13	18.360		
1,000.0	1,000.0	998.7	996.3	1.7	1.9	114.59	-25.6	56.0	61.7	58.2	3.47	17.789		
1,100.0	1,100.0	1,097.3	1,093.7	1.9	2.2	171.20	-40.8	55.5	70.9	66.9	4.00	17.732 SF		
1,200.0	1,199.8	1,195.4	1,190.6	2.1	2.5	-179.87	-55.9	55.1	85.9	81.6	4.35	19.739		
1,300.0	1,299.5	1,293.0	1,287.0	2.3	2.8	-173.85	-70.9	54.6	105.7	101.0	4.70	22.491		
1,400.0	1,399.0	1,390.3	1,383.2	2.5	3.1	-169.82	-85.9	54.2	127.1	122.0	5.05	25.147		
1,500.0	1,498.6	1,487.7	1,479.4	2.7	3.4	-166.95	-100.9	53.7	148.9	143.5	5.41	27.522		
1,600.0	1,598.1	1,585.0	1,575.6	2.9	3.7	-164.82	-115.8	53.2	171.0	165.2	5.77	29.637		
1,700.0	1,697.7	1,682.4	1,671.8	3.1	4.0	-163.17	-130.8	52.8	193.2	187.1	6.13	31.521		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-8D (D33 697 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			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	74.15	8.0	28.2	29.3					
100.0	100.0	100.0	100.0	0.1	0.1	74.15	8.0	28.2	29.3	29.0	0.30	98.885		
200.0	200.0	200.0	200.0	0.3	0.3	74.15	8.0	28.2	29.3	28.7	0.65	45.433		
300.0	300.0	300.0	300.0	0.5	0.5	74.15	8.0	28.2	29.3	28.3	0.99	29.492		
400.0	400.0	400.0	400.0	0.7	0.7	74.15	8.0	28.2	29.3	28.0	1.34	21.832		
500.0	500.0	500.0	500.0	0.8	0.8	74.15	8.0	28.2	29.3	27.6	1.69	17.330		
600.0	600.0	600.6	600.5	1.0	1.0	77.03	6.4	27.6	28.3	26.3	2.04	13.859		
700.0	700.0	700.9	700.7	1.2	1.2	86.87	1.4	25.8	25.8	23.4	2.40	10.740		
800.0	800.0	800.7	800.2	1.4	1.4	106.53	-6.8	22.8	23.7	21.0	2.77	8.576		
815.6	815.6	816.2	815.6	1.4	1.5	110.31	-8.2	22.2	23.7	20.9	2.82	8.392 CC, ES		
900.0	900.0	900.2	899.1	1.5	1.6	130.01	-16.2	19.3	25.2	22.1	3.11	8.103 SF		
1,000.0	1,000.0	999.7	998.1	1.7	1.9	148.34	-25.6	15.8	30.1	26.7	3.44	8.759		
1,100.0	1,100.0	1,099.1	1,097.0	1.9	2.1	-155.67	-35.0	12.3	38.8	34.9	3.87	10.028		
1,200.0	1,199.8	1,198.2	1,195.6	2.1	2.3	-150.62	-44.4	8.8	51.4	47.2	4.22	12.189		
1,300.0	1,299.5	1,297.0	1,293.9	2.3	2.6	-149.06	-53.7	5.4	67.1	62.5	4.58	14.651		
1,400.0	1,399.0	1,395.6	1,392.0	2.5	2.8	-148.50	-63.1	1.9	83.5	78.5	4.95	16.874		
1,500.0	1,498.6	1,494.2	1,490.1	2.7	3.0	-148.12	-72.4	-1.5	99.9	94.6	5.32	18.777		
1,600.0	1,598.1	1,592.9	1,588.3	2.9	3.3	-147.85	-81.8	-5.0	116.4	110.7	5.70	20.423		
1,700.0	1,697.7	1,691.5	1,686.4	3.1	3.5	-147.65	-91.1	-8.5	132.8	126.8	6.08	21.859		
1,800.0	1,797.2	1,790.1	1,784.5	3.3	3.7	-147.49	-100.4	-11.9	149.3	142.8	6.46	23.121		
1,900.0	1,896.8	1,888.8	1,882.7	3.6	4.0	-147.36	-109.8	-15.4	165.7	158.9	6.84	24.239		
2,000.0	1,996.3	1,987.4	1,980.8	3.8	4.2	-147.26	-119.1	-18.8	182.2	175.0	7.22	25.236		
2,100.0	2,095.9	2,086.1	2,078.9	4.0	4.5	-147.17	-128.5	-22.3	198.6	191.0	7.60	26.129		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 Oxy D33 697 Pad - Oxy 33-9D (D33 697 Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			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)				
0.0	0.0	0.0	0.0	0.0	0.0	74.17	4.0	14.1	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	74.17	4.0	14.1	14.7	14.4	0.30	49.438		
200.0	200.0	200.0	200.0	0.3	0.3	74.17	4.0	14.1	14.7	14.0	0.65	22.715		
300.0	300.0	300.0	300.0	0.5	0.5	74.17	4.0	14.1	14.7	13.7	0.99	14.745		
400.0	400.0	400.0	400.0	0.7	0.7	74.17	4.0	14.1	14.7	13.3	1.34	10.915		
500.0	500.0	500.0	500.0	0.8	0.8	74.17	4.0	14.1	14.7	13.0	1.69	8.664		
600.0	600.0	600.0	600.0	1.0	1.0	74.17	4.0	14.1	14.7	12.6	2.04	7.183		
700.0	700.0	700.0	700.0	1.2	1.2	74.17	4.0	14.1	14.7	12.3	2.39	6.135		
800.0	800.0	800.0	800.0	1.4	1.4	74.17	4.0	14.1	14.7	11.9	2.74	5.353		
900.0	900.0	900.0	900.0	1.5	1.5	74.17	4.0	14.1	14.7	11.6	3.09	4.748		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	74.17	4.0	14.1	14.7	11.2	3.44	4.266		
1,096.9	1,096.9	1,097.2	1,097.2	1.9	1.9	128.94	2.6	13.2	14.4	10.7	3.78	3.824 CC		
1,100.0	1,100.0	1,100.3	1,100.3	1.9	1.9	129.61	2.5	13.2	14.4	10.7	3.79	3.813 ES, SF		
1,200.0	1,199.8	1,200.2	1,200.0	2.1	2.1	158.83	-1.9	10.3	16.7	12.5	4.14	4.027		
1,300.0	1,299.5	1,299.3	1,298.7	2.3	2.3	-174.98	-9.0	5.7	26.0	21.5	4.50	5.792		
1,400.0	1,399.0	1,398.2	1,397.2	2.5	2.5	-163.01	-16.7	0.6	39.1	34.2	4.86	8.039		
1,500.0	1,498.6	1,497.1	1,495.7	2.7	2.7	-157.14	-24.5	-4.4	53.0	47.8	5.24	10.120		
1,600.0	1,598.1	1,596.0	1,594.2	2.9	2.9	-153.72	-32.3	-9.5	67.2	61.6	5.61	11.973		
1,700.0	1,697.7	1,695.0	1,692.7	3.1	3.1	-151.51	-40.1	-14.5	81.6	75.6	5.99	13.610		
1,800.0	1,797.2	1,793.9	1,791.2	3.3	3.3	-149.95	-47.9	-19.6	96.0	89.6	6.38	15.059		
1,900.0	1,896.8	1,892.8	1,889.7	3.6	3.5	-148.81	-55.6	-24.6	110.5	103.8	6.76	16.346		
2,000.0	1,996.3	1,991.7	1,988.1	3.8	3.8	-147.93	-63.4	-29.7	125.1	117.9	7.15	17.494		
2,100.0	2,095.9	2,090.6	2,086.6	4.0	4.0	-147.23	-71.2	-34.7	139.6	132.1	7.54	18.523		
2,200.0	2,195.4	2,189.6	2,185.1	4.2	4.2	-146.67	-79.0	-39.8	154.2	146.3	7.93	19.450		
2,300.0	2,295.0	2,288.5	2,283.6	4.5	4.4	-146.20	-86.8	-44.8	168.8	160.5	8.32	20.289		
2,400.0	2,394.5	2,387.4	2,382.1	4.7	4.7	-145.81	-94.5	-49.9	183.4	174.7	8.71	21.051		
2,500.0	2,494.1	2,486.3	2,480.6	4.9	4.9	-145.47	-102.3	-54.9	198.0	188.9	9.10	21.746		

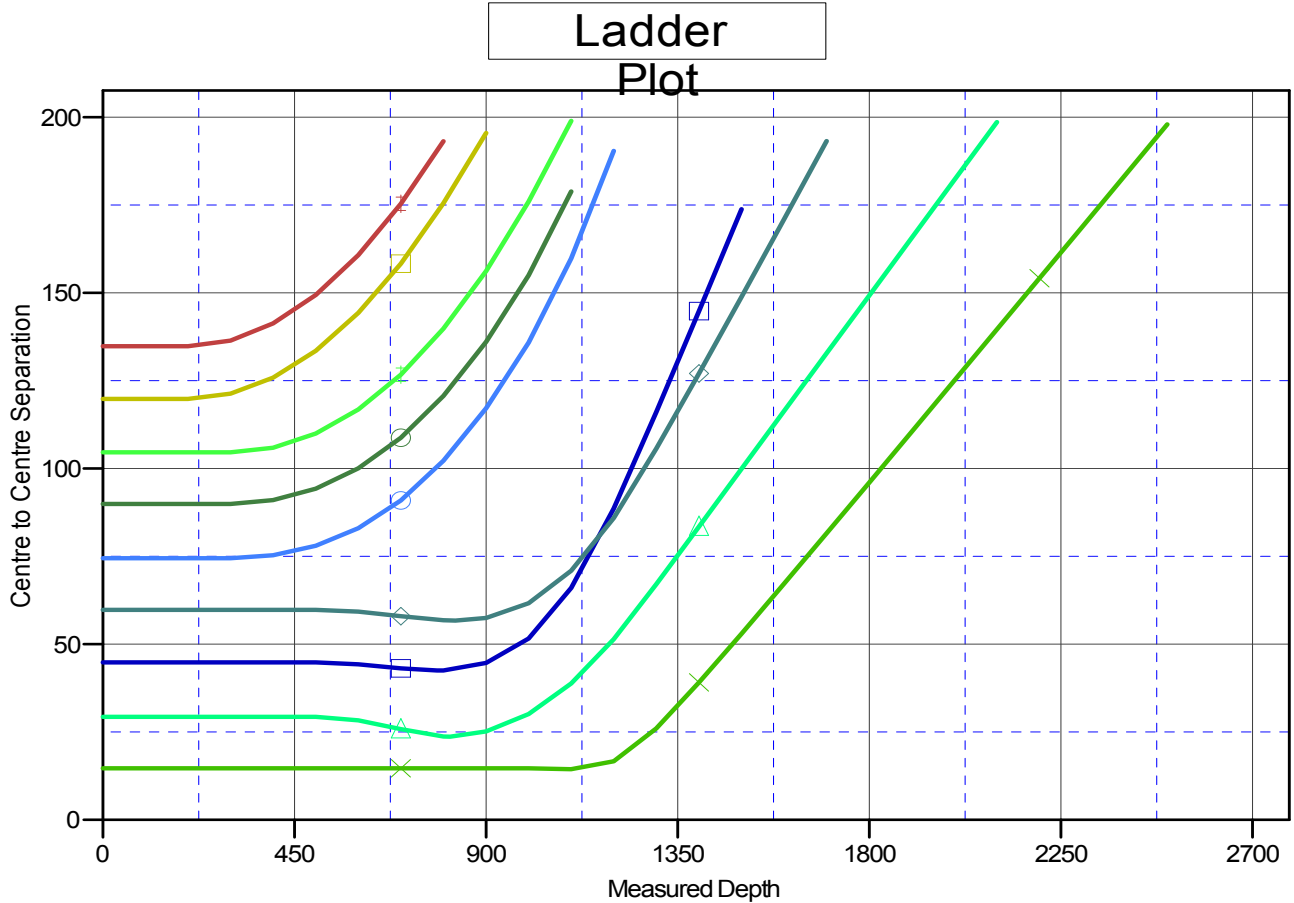
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 33-10D (D33 697 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8091.0ft (Original Well Elev)
Reference Site:	Oxy D33 697 Pad	MD Reference:	KBE @ 8091.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 33-10D (D33 697 Pad)	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 @ 8091.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Oxy 33-10D (D33 697 Pad)
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.72°



LEGEND

- + Oxy 33-3D (D33 697 Pad), DD, Plan #1 V0
- x Oxy 33-9D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-5D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-6D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-7D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-4D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-2D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-8D (D33 697 Pad), DD, Plan #1 V0
- + Oxy 33-1D (Oxy D33 Pad), DD, Plan #1 V0