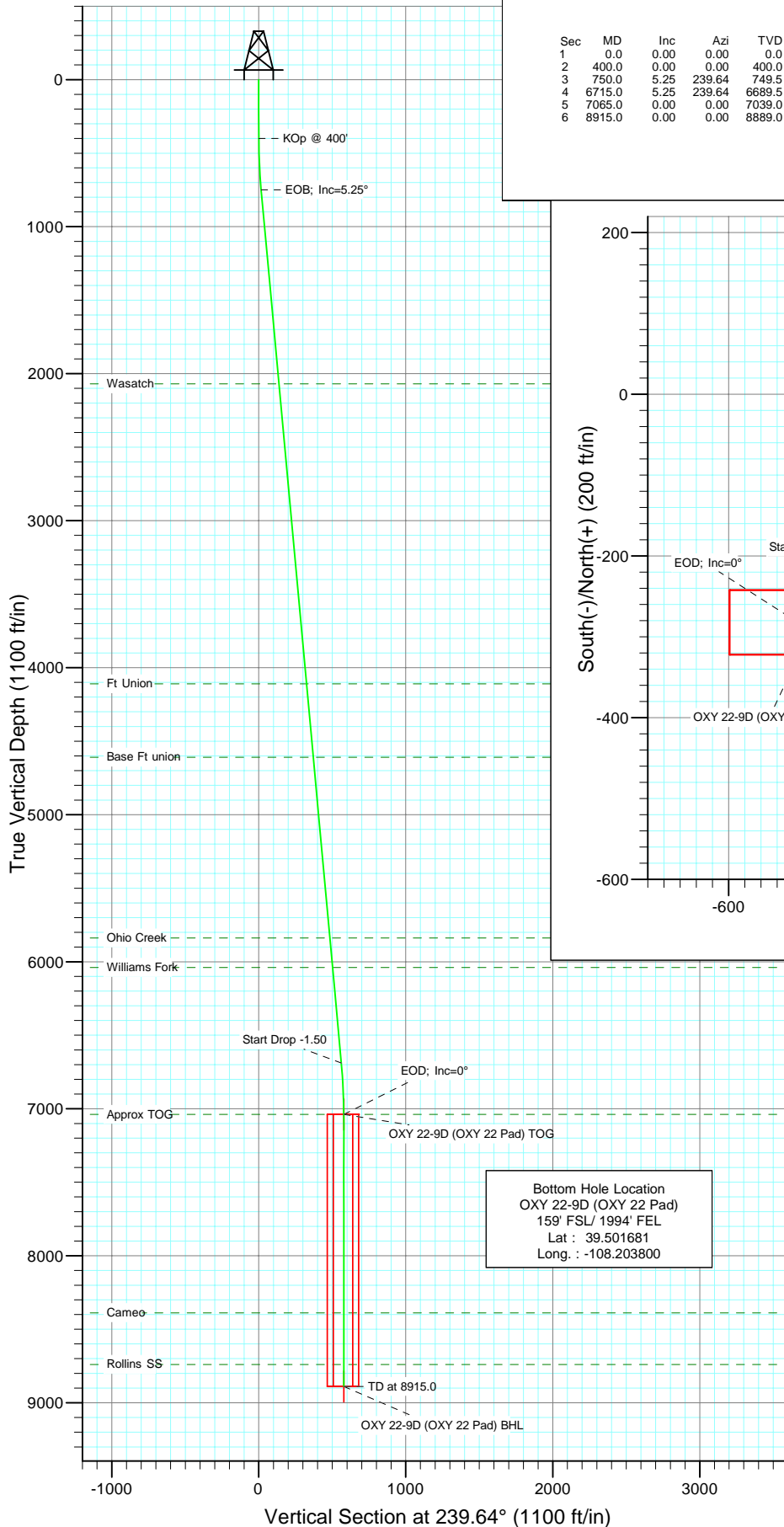


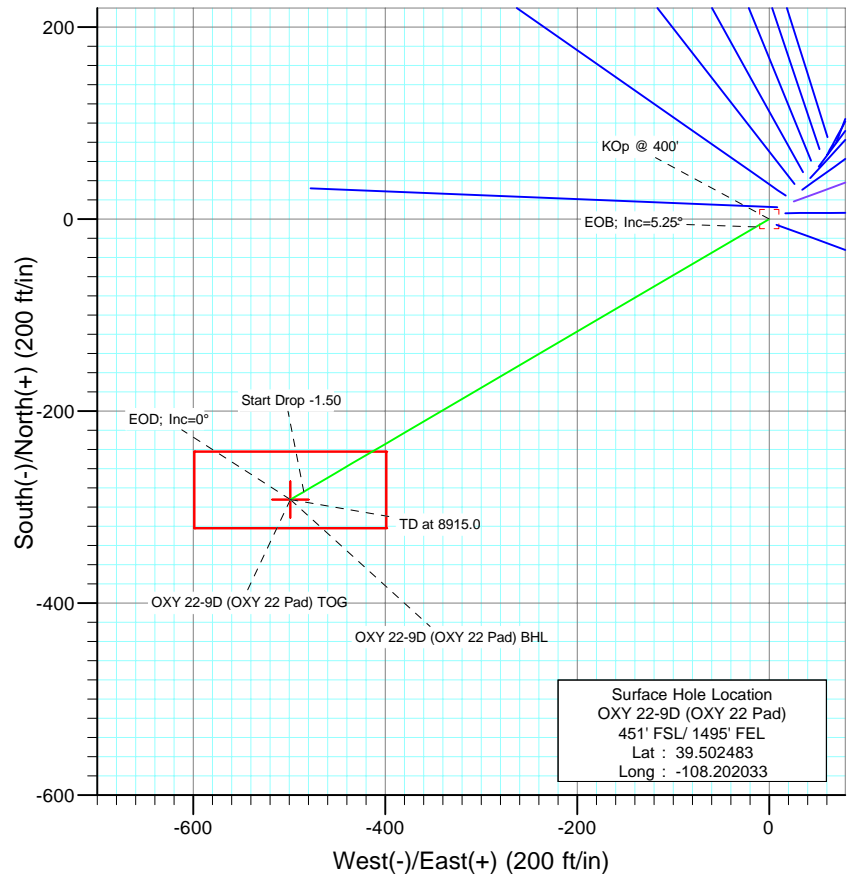
Berry Petroleum Company

Project: Garfield County  
Site: SWSE S22-T6S-R97W  
Well: OXY 22-9D (OXY 22 Pad)  
Vellbore: DD  
Design: Plan #1



#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	750.0	5.25	239.64	749.5	-8.1	-13.8	1.50	239.64	16.0	
4	6715.0	5.25	239.64	6689.5	-284.0	-484.8	0.00	0.00	561.9	
5	7065.0	0.00	0.00	7039.0	-292.1	-498.6	1.50	180.00	577.9	OXY 22-9D (OXY 22 Pad) TOG
6	8915.0	0.00	0.00	8889.0	-292.1	-498.6	0.00	0.00	577.9	OXY 22-9D (OXY 22 Pad) BHL



Surface Hole Location  
OXY 22-9D (OXY 22 Pad)  
451' FSL/ 1495' FEL  
Lat : 39.502483  
Long : -108.202033

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2069.0	2075.0	Wasatch
4109.0	4123.6	Ft Union
4609.0	4625.7	Base Ft union
5839.0	5860.9	Ohio Creek
6039.0	6061.8	Williams Fork
7039.0	7065.0	Approx TOG
8389.0	8415.0	Cameo
8739.0	8765.0	Rollins SS



Azimuths to True North  
Magnetic North: 10.64°

Magnetic Field  
Strength: 52405.9snT  
Dip Angle: 65.76°  
Date: 9/29/2009  
Model: IGRF200510

#### DESIGN DETAILS: Plan #1

95XXX; BH  
KBE @ 8506.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
OXY 22-9D (OXY 22 Pad) BH	239.64	Slot	0.0	0.0	0.0

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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

Site		SWSE S22-T6S-R97W			
Site Position:		Northing:	1,619,243.22 ft	Latitude:	39.502467
From:	Lat/Long	Easting:	2,237,679.58 ft	Longitude:	-108.202006
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.70 °

Well	OXY 22-9D (OXY 22 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,619,249.27 ft	Latitude:	39.502483
	+E/-W	0.0 ft	Easting:	2,237,672.13 ft	Longitude:	-108.202033
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,491.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF200510	9/29/2009	10.64	65.76	52,406

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	239.64

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
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	
750.0	5.25	239.64	749.5	-8.1	-13.8	1.50	1.50	0.00	239.64	
6,715.0	5.25	239.64	6,689.5	-284.0	-484.8	0.00	0.00	0.00	0.00	
7,065.0	0.00	0.00	7,039.0	-292.1	-498.6	1.50	-1.50	0.00	180.00	OXY 22-9D (OXY 22
8,915.0	0.00	0.00	8,889.0	-292.1	-498.6	0.00	0.00	0.00	0.00	OXY 22-9D (OXY 22

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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	0.30	239.64	420.0	0.0	0.0	0.1	1.50	1.50	
450.0	0.75	239.64	450.0	-0.2	-0.3	0.3	1.50	1.50	
480.0	1.20	239.64	480.0	-0.4	-0.7	0.8	1.50	1.50	
510.0	1.65	239.64	510.0	-0.8	-1.4	1.6	1.50	1.50	
540.0	2.10	239.64	540.0	-1.3	-2.2	2.6	1.50	1.50	
570.0	2.55	239.64	569.9	-1.9	-3.3	3.8	1.50	1.50	
600.0	3.00	239.64	599.9	-2.6	-4.5	5.2	1.50	1.50	
630.0	3.45	239.64	629.9	-3.5	-6.0	6.9	1.50	1.50	
660.0	3.90	239.64	659.8	-4.5	-7.6	8.8	1.50	1.50	
690.0	4.35	239.64	689.7	-5.6	-9.5	11.0	1.50	1.50	
720.0	4.80	239.64	719.6	-6.8	-11.6	13.4	1.50	1.50	
750.0	5.25	239.64	749.5	-8.1	-13.8	16.0	1.50	1.50	EOB; Inc=5.25°
780.0	5.25	239.64	779.4	-9.5	-16.2	18.8	0.00	0.00	
810.0	5.25	239.64	809.3	-10.9	-18.6	21.5	0.00	0.00	
840.0	5.25	239.64	839.1	-12.3	-20.9	24.3	0.00	0.00	
870.0	5.25	239.64	869.0	-13.7	-23.3	27.0	0.00	0.00	
900.0	5.25	239.64	898.9	-15.0	-25.7	29.7	0.00	0.00	
930.0	5.25	239.64	928.8	-16.4	-28.0	32.5	0.00	0.00	
960.0	5.25	239.64	958.6	-17.8	-30.4	35.2	0.00	0.00	
990.0	5.25	239.64	988.5	-19.2	-32.8	38.0	0.00	0.00	
1,020.0	5.25	239.64	1,018.4	-20.6	-35.1	40.7	0.00	0.00	
1,050.0	5.25	239.64	1,048.3	-22.0	-37.5	43.5	0.00	0.00	
1,080.0	5.25	239.64	1,078.1	-23.4	-39.9	46.2	0.00	0.00	
1,110.0	5.25	239.64	1,108.0	-24.8	-42.2	49.0	0.00	0.00	
1,140.0	5.25	239.64	1,137.9	-26.1	-44.6	51.7	0.00	0.00	
1,170.0	5.25	239.64	1,167.7	-27.5	-47.0	54.5	0.00	0.00	
1,200.0	5.25	239.64	1,197.6	-28.9	-49.4	57.2	0.00	0.00	
1,230.0	5.25	239.64	1,227.5	-30.3	-51.7	59.9	0.00	0.00	
1,260.0	5.25	239.64	1,257.4	-31.7	-54.1	62.7	0.00	0.00	
1,290.0	5.25	239.64	1,287.2	-33.1	-56.5	65.4	0.00	0.00	
1,320.0	5.25	239.64	1,317.1	-34.5	-58.8	68.2	0.00	0.00	
1,350.0	5.25	239.64	1,347.0	-35.9	-61.2	70.9	0.00	0.00	
1,380.0	5.25	239.64	1,376.9	-37.2	-63.6	73.7	0.00	0.00	
1,410.0	5.25	239.64	1,406.7	-38.6	-65.9	76.4	0.00	0.00	
1,440.0	5.25	239.64	1,436.6	-40.0	-68.3	79.2	0.00	0.00	
1,470.0	5.25	239.64	1,466.5	-41.4	-70.7	81.9	0.00	0.00	
1,500.0	5.25	239.64	1,496.4	-42.8	-73.0	84.7	0.00	0.00	

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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
1,530.0	5.25	239.64	1,526.2	-44.2	-75.4	87.4	0.00	0.00	
1,560.0	5.25	239.64	1,556.1	-45.6	-77.8	90.1	0.00	0.00	
1,590.0	5.25	239.64	1,586.0	-47.0	-80.1	92.9	0.00	0.00	
1,620.0	5.25	239.64	1,615.9	-48.3	-82.5	95.6	0.00	0.00	
1,650.0	5.25	239.64	1,645.7	-49.7	-84.9	98.4	0.00	0.00	
1,680.0	5.25	239.64	1,675.6	-51.1	-87.3	101.1	0.00	0.00	
1,710.0	5.25	239.64	1,705.5	-52.5	-89.6	103.9	0.00	0.00	
1,740.0	5.25	239.64	1,735.4	-53.9	-92.0	106.6	0.00	0.00	
1,770.0	5.25	239.64	1,765.2	-55.3	-94.4	109.4	0.00	0.00	
1,800.0	5.25	239.64	1,795.1	-56.7	-96.7	112.1	0.00	0.00	
1,830.0	5.25	239.64	1,825.0	-58.1	-99.1	114.8	0.00	0.00	
1,860.0	5.25	239.64	1,854.9	-59.4	-101.5	117.6	0.00	0.00	
1,890.0	5.25	239.64	1,884.7	-60.8	-103.8	120.3	0.00	0.00	
1,920.0	5.25	239.64	1,914.6	-62.2	-106.2	123.1	0.00	0.00	
1,950.0	5.25	239.64	1,944.5	-63.6	-108.6	125.8	0.00	0.00	
1,980.0	5.25	239.64	1,974.4	-65.0	-110.9	128.6	0.00	0.00	
2,010.0	5.25	239.64	2,004.2	-66.4	-113.3	131.3	0.00	0.00	
2,040.0	5.25	239.64	2,034.1	-67.8	-115.7	134.1	0.00	0.00	
2,070.0	5.25	239.64	2,064.0	-69.2	-118.0	136.8	0.00	0.00	
2,075.0	5.25	239.64	2,069.0	-69.4	-118.4	137.3	0.00	0.00	Wasatch
2,100.0	5.25	239.64	2,093.8	-70.5	-120.4	139.6	0.00	0.00	
2,130.0	5.25	239.64	2,123.7	-71.9	-122.8	142.3	0.00	0.00	
2,160.0	5.25	239.64	2,153.6	-73.3	-125.2	145.0	0.00	0.00	
2,190.0	5.25	239.64	2,183.5	-74.7	-127.5	147.8	0.00	0.00	
2,220.0	5.25	239.64	2,213.3	-76.1	-129.9	150.5	0.00	0.00	
2,250.0	5.25	239.64	2,243.2	-77.5	-132.3	153.3	0.00	0.00	
2,280.0	5.25	239.64	2,273.1	-78.9	-134.6	156.0	0.00	0.00	
2,310.0	5.25	239.64	2,303.0	-80.3	-137.0	158.8	0.00	0.00	
2,340.0	5.25	239.64	2,332.8	-81.6	-139.4	161.5	0.00	0.00	
2,370.0	5.25	239.64	2,362.7	-83.0	-141.7	164.3	0.00	0.00	
2,400.0	5.25	239.64	2,392.6	-84.4	-144.1	167.0	0.00	0.00	
2,430.0	5.25	239.64	2,422.5	-85.8	-146.5	169.8	0.00	0.00	
2,460.0	5.25	239.64	2,452.3	-87.2	-148.8	172.5	0.00	0.00	
2,490.0	5.25	239.64	2,482.2	-88.6	-151.2	175.2	0.00	0.00	

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
OXY 22-9D (OXY 22 Pa	0.00	0.00	8,889.0	-292.1	-498.6	1,618,972.11	2,237,165.06	39.501681	-108.203800
- plan misses target center by 6419.4ft at 2490.0ft MD (2482.2 TVD, -88.6 N, -151.2 E)									
- Polygon									
Point 1			8,889.0	50.0	100.0	1,619,019.12	2,237,266.50		
Point 2			8,889.0	50.0	-100.0	1,619,025.06	2,237,066.59		
Point 3			8,889.0	-30.0	-100.0	1,618,945.10	2,237,064.21		
Point 4			8,889.0	-30.0	100.0	1,618,939.15	2,237,264.12		
OXY 22-9D (OXY 22 Pa	0.00	0.00	7,039.0	-292.1	-498.6	1,618,972.11	2,237,165.06	39.501681	-108.203800
- plan misses target center by 4574.5ft at 2490.0ft MD (2482.2 TVD, -88.6 N, -151.2 E)									
- Point									

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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	5.25	239.64	2,492.2	-89.0	-152.0	176.2	0.00	0.00	
2,600.0	5.25	239.64	2,591.7	-93.7	-159.9	185.3	0.00	0.00	
2,700.0	5.25	239.64	2,691.3	-98.3	-167.8	194.5	0.00	0.00	
2,800.0	5.25	239.64	2,790.9	-102.9	-175.7	203.6	0.00	0.00	
2,900.0	5.25	239.64	2,890.5	-107.5	-183.6	212.8	0.00	0.00	
3,000.0	5.25	239.64	2,990.1	-112.2	-191.5	221.9	0.00	0.00	
3,100.0	5.25	239.64	3,089.7	-116.8	-199.4	231.1	0.00	0.00	
3,200.0	5.25	239.64	3,189.2	-121.4	-207.3	240.2	0.00	0.00	
3,300.0	5.25	239.64	3,288.8	-126.1	-215.2	249.4	0.00	0.00	
3,400.0	5.25	239.64	3,388.4	-130.7	-223.1	258.5	0.00	0.00	
3,500.0	5.25	239.64	3,488.0	-135.3	-230.9	267.7	0.00	0.00	
3,600.0	5.25	239.64	3,587.6	-139.9	-238.8	276.8	0.00	0.00	
3,700.0	5.25	239.64	3,687.1	-144.6	-246.7	286.0	0.00	0.00	
3,800.0	5.25	239.64	3,786.7	-149.2	-254.6	295.1	0.00	0.00	
3,900.0	5.25	239.64	3,886.3	-153.8	-262.5	304.3	0.00	0.00	
4,000.0	5.25	239.64	3,985.9	-158.4	-270.4	313.4	0.00	0.00	
4,100.0	5.25	239.64	4,085.5	-163.1	-278.3	322.6	0.00	0.00	
4,123.6	5.25	239.64	4,109.0	-164.1	-280.2	324.7	0.00	0.00	Ft Union
4,200.0	5.25	239.64	4,185.0	-167.7	-286.2	331.7	0.00	0.00	
4,300.0	5.25	239.64	4,284.6	-172.3	-294.1	340.9	0.00	0.00	
4,400.0	5.25	239.64	4,384.2	-176.9	-302.0	350.0	0.00	0.00	
4,500.0	5.25	239.64	4,483.8	-181.6	-309.9	359.2	0.00	0.00	
4,600.0	5.25	239.64	4,583.4	-186.2	-317.8	368.3	0.00	0.00	
4,625.7	5.25	239.64	4,609.0	-187.4	-319.8	370.7	0.00	0.00	Base Ft union
4,700.0	5.25	239.64	4,682.9	-190.8	-325.7	377.5	0.00	0.00	
4,800.0	5.25	239.64	4,782.5	-195.4	-333.6	386.6	0.00	0.00	
4,900.0	5.25	239.64	4,882.1	-200.1	-341.5	395.8	0.00	0.00	
5,000.0	5.25	239.64	4,981.7	-204.7	-349.4	404.9	0.00	0.00	
5,100.0	5.25	239.64	5,081.3	-209.3	-357.3	414.1	0.00	0.00	
5,200.0	5.25	239.64	5,180.8	-213.9	-365.2	423.2	0.00	0.00	
5,300.0	5.25	239.64	5,280.4	-218.6	-373.1	432.4	0.00	0.00	
5,400.0	5.25	239.64	5,380.0	-223.2	-381.0	441.5	0.00	0.00	
5,500.0	5.25	239.64	5,479.6	-227.8	-388.9	450.7	0.00	0.00	
5,600.0	5.25	239.64	5,579.2	-232.4	-396.7	459.8	0.00	0.00	
5,700.0	5.25	239.64	5,678.7	-237.1	-404.6	469.0	0.00	0.00	
5,800.0	5.25	239.64	5,778.3	-241.7	-412.5	478.1	0.00	0.00	
5,860.9	5.25	239.64	5,839.0	-244.5	-417.4	483.7	0.00	0.00	Ohio Creek
5,900.0	5.25	239.64	5,877.9	-246.3	-420.4	487.3	0.00	0.00	
6,000.0	5.25	239.64	5,977.5	-250.9	-428.3	496.4	0.00	0.00	
6,061.8	5.25	239.64	6,039.0	-253.8	-433.2	502.1	0.00	0.00	Williams Fork
6,100.0	5.25	239.64	6,077.1	-255.6	-436.2	505.6	0.00	0.00	
6,200.0	5.25	239.64	6,176.6	-260.2	-444.1	514.7	0.00	0.00	
6,300.0	5.25	239.64	6,276.2	-264.8	-452.0	523.9	0.00	0.00	
6,400.0	5.25	239.64	6,375.8	-269.4	-459.9	533.0	0.00	0.00	
6,500.0	5.25	239.64	6,475.4	-274.1	-467.8	542.2	0.00	0.00	
6,600.0	5.25	239.64	6,575.0	-278.7	-475.7	551.3	0.00	0.00	
6,700.0	5.25	239.64	6,674.5	-283.3	-483.6	560.5	0.00	0.00	
6,715.0	5.25	239.64	6,689.5	-284.0	-484.8	561.9	0.00	0.00	Start Drop -1.50
6,800.0	3.98	239.64	6,774.2	-287.5	-490.7	568.7	1.50	-1.50	
6,900.0	2.48	239.64	6,874.0	-290.3	-495.5	574.3	1.50	-1.50	
7,000.0	0.98	239.64	6,974.0	-291.8	-498.1	577.3	1.50	-1.50	
7,065.0	0.00	0.00	7,039.0	-292.1	-498.6	577.9	1.50	-1.50	EOD; Inc=0° - Approx TOG - OXY 22-9D (OXY

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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
7,100.0	0.00	0.00	7,074.0	-292.1	-498.6	577.9	0.00	0.00	
7,200.0	0.00	0.00	7,174.0	-292.1	-498.6	577.9	0.00	0.00	
7,300.0	0.00	0.00	7,274.0	-292.1	-498.6	577.9	0.00	0.00	
7,400.0	0.00	0.00	7,374.0	-292.1	-498.6	577.9	0.00	0.00	
7,500.0	0.00	0.00	7,474.0	-292.1	-498.6	577.9	0.00	0.00	
7,600.0	0.00	0.00	7,574.0	-292.1	-498.6	577.9	0.00	0.00	
7,700.0	0.00	0.00	7,674.0	-292.1	-498.6	577.9	0.00	0.00	
7,800.0	0.00	0.00	7,774.0	-292.1	-498.6	577.9	0.00	0.00	
7,900.0	0.00	0.00	7,874.0	-292.1	-498.6	577.9	0.00	0.00	
8,000.0	0.00	0.00	7,974.0	-292.1	-498.6	577.9	0.00	0.00	
8,100.0	0.00	0.00	8,074.0	-292.1	-498.6	577.9	0.00	0.00	
8,200.0	0.00	0.00	8,174.0	-292.1	-498.6	577.9	0.00	0.00	
8,300.0	0.00	0.00	8,274.0	-292.1	-498.6	577.9	0.00	0.00	
8,400.0	0.00	0.00	8,374.0	-292.1	-498.6	577.9	0.00	0.00	
8,415.0	0.00	0.00	8,389.0	-292.1	-498.6	577.9	0.00	0.00	Cameo
8,500.0	0.00	0.00	8,474.0	-292.1	-498.6	577.9	0.00	0.00	
8,600.0	0.00	0.00	8,574.0	-292.1	-498.6	577.9	0.00	0.00	
8,700.0	0.00	0.00	8,674.0	-292.1	-498.6	577.9	0.00	0.00	
8,765.0	0.00	0.00	8,739.0	-292.1	-498.6	577.9	0.00	0.00	Rollins SS
8,800.0	0.00	0.00	8,774.0	-292.1	-498.6	577.9	0.00	0.00	
8,900.0	0.00	0.00	8,874.0	-292.1	-498.6	577.9	0.00	0.00	
8,915.0	0.00	0.00	8,889.0	-292.1	-498.6	577.9	0.00	0.00	TD at 8915.0 - OXY 22-9D (OXY 22 Pad) BHL

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
OXY 22-9D (OXY 22 Pa - plan hits target center - Polygon	0.00	0.00	8,889.0	-292.1	-498.6	1,618,972.11	2,237,165.06	39.501681	-108.203800
Point 1			8,889.0	50.0	100.0	1,619,019.12	2,237,266.50		
Point 2			8,889.0	50.0	-100.0	1,619,025.06	2,237,066.59		
Point 3			8,889.0	-30.0	-100.0	1,618,945.10	2,237,064.21		
Point 4			8,889.0	-30.0	100.0	1,618,939.15	2,237,264.12		
OXY 22-9D (OXY 22 Pa - plan hits target center - Point	0.00	0.00	7,039.0	-292.1	-498.6	1,618,972.11	2,237,165.06	39.501681	-108.203800

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,075.0	2,069.0	Wasatch		0.00		
4,123.6	4,109.0	Ft Union		0.00		
4,625.7	4,609.0	Base Ft union		0.00		
5,860.9	5,839.0	Ohio Creek		0.00		
6,061.8	6,039.0	Williams Fork		0.00		
7,065.0	7,039.0	Approx TOG		0.00		
8,415.0	8,389.0	Cameo		0.00		
8,765.0	8,739.0	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'	
750.0	749.5	-8.1	-13.8	EOB; Inc=5.25°	
6,715.0	6,689.5	-284.0	-484.8	Start Drop -1.50	
7,065.0	7,039.0	-292.1	-498.6	EOD; Inc=0°	
8,915.0	8,889.0	-292.1	-498.6	TD at 8915.0	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

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

Survey Tool Program		Date	10/1/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,915.0	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						
SWSE S22-T6S-R97W						
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	400.0	400.0	15.0	13.7	11.162	CC, ES
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	700.0	700.5	20.0	17.6	8.239	SF
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	335.2	335.2	29.9	28.7	26.712	CC
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	400.0	400.0	29.9	28.5	22.233	ES
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	600.0	599.5	35.9	33.8	17.271	SF
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	45.1	44.1	45.292	CC, ES
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	700.0	697.1	63.5	61.0	25.831	SF
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	60.2	59.2	60.532	CC, ES
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	700.0	695.6	81.0	78.6	33.140	SF
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	74.9	73.9	75.309	CC, ES
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	800.0	791.1	112.4	109.6	39.765	SF
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	89.8	89.1	139.036	CC, ES
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	900.0	881.0	158.2	154.9	48.221	SF
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	104.8	104.1	162.260	CC, ES
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	1,000.0	973.0	195.3	191.6	52.786	SF
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	400.0	400.0	9.6	8.3	7.139	CC, ES
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	500.0	499.7	11.4	9.8	6.760	SF
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	400.0	400.0	18.0	16.7	13.413	CC, ES
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	500.0	499.5	20.5	18.8	12.140	SF
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	31.5	30.5	31.644	CC, ES
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	500.0	498.2	37.8	36.1	22.381	SF
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	46.1	45.1	46.296	CC, ES
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	600.0	595.4	62.8	60.7	30.883	SF
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	60.5	59.8	93.629	CC, ES
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	600.0	591.8	86.0	84.0	42.464	SF
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	75.2	74.5	116.397	CC, ES
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	600.0	590.4	100.5	98.5	49.638	SF
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	90.2	89.6	139.696	CC, ES
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	700.0	684.6	132.4	130.0	55.864	SF
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	105.4	104.7	163.185	CC, ES
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	750.0	730.5	156.6	154.1	61.398	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-10D (OXY 22 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)		Between Centres (ft)	Between Ellipses (ft)				Offset +N/-S (ft)	Offset +E/-W (ft)	
0.0	0.0	0.0	0.0	0.0	0.0	34.35	12.4	8.5	15.0					
100.0	100.0	100.0	100.0	0.1	0.1	34.35	12.4	8.5	15.0	14.7	0.30	50.558		
200.0	200.0	200.0	200.0	0.3	0.3	34.35	12.4	8.5	15.0	14.4	0.65	23.229		
300.0	300.0	300.0	300.0	0.5	0.5	34.35	12.4	8.5	15.0	14.0	0.99	15.079		
400.0	400.0	400.0	400.0	0.7	0.7	34.35	12.4	8.5	15.0	13.7	1.34	11.162 CC, ES		
500.0	500.0	500.2	500.2	0.8	0.8	152.67	12.4	7.2	15.5	13.8	1.69	9.148		
600.0	599.9	600.4	600.3	1.0	1.0	147.26	12.6	3.2	17.1	15.0	2.05	8.331		
700.0	699.7	700.5	700.2	1.2	1.2	140.30	12.9	-3.3	20.0	17.6	2.43	8.239 SF		
750.0	749.5	750.4	750.0	1.3	1.3	137.90	13.0	-7.1	22.2	19.5	2.63	8.435		
800.0	799.3	800.4	799.8	1.4	1.4	136.46	13.2	-10.9	24.6	21.7	2.83	8.691		
900.0	898.9	900.2	899.3	1.7	1.6	134.30	13.5	-18.6	29.4	26.2	3.23	9.094		
1,000.0	998.5	1,000.1	998.9	1.9	1.8	132.75	13.8	-26.2	34.3	30.6	3.65	9.397		
1,100.0	1,098.0	1,100.0	1,098.5	2.1	2.1	131.59	14.1	-33.8	39.1	35.1	4.06	9.630		
1,200.0	1,197.6	1,199.9	1,198.1	2.3	2.3	130.68	14.4	-41.4	44.0	39.6	4.49	9.814		
1,300.0	1,297.2	1,299.7	1,297.7	2.6	2.5	129.96	14.7	-49.0	49.0	44.0	4.91	9.963		
1,400.0	1,396.8	1,399.6	1,397.3	2.8	2.7	129.37	15.0	-56.6	53.9	48.5	5.34	10.085		
1,500.0	1,496.4	1,499.5	1,496.9	3.0	2.9	128.87	15.3	-64.3	58.8	53.0	5.77	10.186		
1,600.0	1,595.9	1,599.4	1,596.4	3.3	3.1	128.46	15.6	-71.9	63.7	57.5	6.20	10.272		
1,700.0	1,695.5	1,699.3	1,696.0	3.5	3.3	128.10	15.9	-79.5	68.6	62.0	6.63	10.346		
1,800.0	1,795.1	1,799.1	1,795.6	3.7	3.6	127.79	16.3	-87.1	73.6	66.5	7.07	10.409		
1,900.0	1,894.7	1,899.0	1,895.2	4.0	3.8	127.52	16.6	-94.7	78.5	71.0	7.50	10.464		
2,000.0	1,994.3	1,998.9	1,994.8	4.2	4.0	127.28	16.9	-102.3	83.4	75.5	7.93	10.513		
2,100.0	2,093.8	2,098.8	2,094.4	4.4	4.2	127.07	17.2	-110.0	88.3	80.0	8.37	10.556		
2,200.0	2,193.4	2,198.6	2,194.0	4.7	4.4	126.88	17.5	-117.6	93.3	84.5	8.80	10.595		
2,300.0	2,293.0	2,298.5	2,293.5	4.9	4.7	126.71	17.8	-125.2	98.2	89.0	9.24	10.629		
2,400.0	2,392.6	2,398.4	2,393.1	5.1	4.9	126.56	18.1	-132.8	103.1	93.5	9.68	10.661		
2,500.0	2,492.2	2,498.3	2,492.7	5.4	5.1	126.42	18.4	-140.4	108.1	98.0	10.11	10.689		
2,600.0	2,591.7	2,598.2	2,592.3	5.6	5.3	126.29	18.7	-148.0	113.0	102.5	10.55	10.715		
2,700.0	2,691.3	2,698.0	2,691.9	5.8	5.5	126.17	19.0	-155.7	118.0	107.0	10.98	10.738		
2,800.0	2,790.9	2,797.9	2,791.5	6.1	5.7	126.06	19.3	-163.3	122.9	111.5	11.42	10.760		
2,900.0	2,890.5	2,897.8	2,891.1	6.3	6.0	125.97	19.6	-170.9	127.8	116.0	11.86	10.779		
3,000.0	2,990.1	2,997.7	2,990.7	6.5	6.2	125.87	20.0	-178.5	132.8	120.5	12.30	10.798		
3,100.0	3,089.7	3,097.5	3,090.2	6.8	6.4	125.79	20.3	-186.1	137.7	125.0	12.73	10.815		
3,200.0	3,189.2	3,197.4	3,189.8	7.0	6.6	125.71	20.6	-193.7	142.6	129.5	13.17	10.831		
3,300.0	3,288.8	3,297.3	3,289.4	7.3	6.8	125.63	20.9	-201.4	147.6	134.0	13.61	10.845		
3,400.0	3,388.4	3,397.2	3,389.0	7.5	7.1	125.57	21.2	-209.0	152.5	138.5	14.05	10.859		
3,500.0	3,488.0	3,497.1	3,488.6	7.7	7.3	125.50	21.5	-216.6	157.5	143.0	14.48	10.872		
3,600.0	3,587.6	3,596.9	3,588.2	8.0	7.5	125.44	21.8	-224.2	162.4	147.5	14.92	10.884		
3,700.0	3,687.1	3,696.8	3,687.8	8.2	7.7	125.38	22.1	-231.8	167.3	152.0	15.36	10.895		
3,800.0	3,786.7	3,796.7	3,787.3	8.4	7.9	125.33	22.4	-239.4	172.3	156.5	15.80	10.906		
3,900.0	3,886.3	3,896.6	3,886.9	8.7	8.2	125.28	22.7	-247.1	177.2	161.0	16.23	10.916		
4,000.0	3,985.9	3,996.4	3,986.5	8.9	8.4	125.23	23.0	-254.7	182.1	165.5	16.67	10.925		
4,100.0	4,085.5	4,096.3	4,086.1	9.1	8.6	125.18	23.3	-262.3	187.1	170.0	17.11	10.934		
4,200.0	4,185.0	4,196.2	4,185.7	9.4	8.8	125.14	23.7	-269.9	192.0	174.5	17.55	10.943		
4,300.0	4,284.6	4,296.1	4,285.3	9.6	9.0	125.10	24.0	-277.5	197.0	179.0	17.99	10.951		
4,400.0	4,384.2	4,396.0	4,384.9	9.9	9.3	125.06	24.3	-285.1	201.9	183.5	18.43	10.958		
4,500.0	4,483.8	4,495.8	4,484.5	10.1	9.5	125.02	24.6	-292.7	206.8	188.0	18.86	10.965		
4,600.0	4,583.4	4,595.7	4,584.0	10.3	9.7	124.99	24.9	-300.4	211.8	192.5	19.30	10.972		
4,700.0	4,682.9	4,695.6	4,683.6	10.6	9.9	124.95	25.2	-308.0	216.7	197.0	19.74	10.979		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-11D (OXY 22 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	35.20	24.4	17.2	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	35.20	24.4	17.2	29.9	29.6	0.30	100.651		
200.0	200.0	200.0	200.0	0.3	0.3	35.20	24.4	17.2	29.9	29.2	0.65	46.245		
300.0	300.0	300.0	300.0	0.5	0.5	35.20	24.4	17.2	29.9	28.9	0.99	30.019		
335.2	335.2	335.2	335.2	0.6	0.6	34.88	24.5	17.1	29.9	28.7	1.12	26.712 CC		
400.0	400.0	400.0	400.0	0.7	0.7	32.69	25.2	16.1	29.9	28.5	1.34	22.233 ES		
500.0	500.0	499.8	499.8	0.8	0.9	146.96	27.4	12.9	31.4	29.7	1.70	18.421		
600.0	599.9	599.5	599.2	1.0	1.1	140.01	31.1	7.6	35.9	33.8	2.08	17.271 SF		
700.0	699.7	699.0	698.3	1.2	1.3	134.40	36.1	0.5	43.4	40.9	2.47	17.574		
750.0	749.5	748.8	747.9	1.3	1.4	132.99	38.6	-3.2	47.9	45.3	2.67	17.963		
800.0	799.3	798.5	797.5	1.4	1.5	132.13	41.2	-6.8	52.8	49.9	2.87	18.364		
900.0	898.9	898.1	896.6	1.7	1.7	130.81	46.2	-14.1	62.4	59.1	3.29	18.989		
1,000.0	998.5	997.6	995.7	1.9	1.9	129.85	51.3	-21.4	72.1	68.4	3.71	19.453		
1,100.0	1,098.0	1,097.1	1,094.8	2.1	2.2	129.11	56.4	-28.6	81.8	77.6	4.13	19.808		
1,200.0	1,197.6	1,196.6	1,194.0	2.3	2.4	128.53	61.5	-35.9	91.5	86.9	4.55	20.087		
1,300.0	1,297.2	1,296.2	1,293.1	2.6	2.6	128.06	66.6	-43.2	101.2	96.2	4.98	20.312		
1,400.0	1,396.8	1,395.7	1,392.2	2.8	2.8	127.67	71.7	-50.5	110.9	105.5	5.41	20.496		
1,500.0	1,496.4	1,495.2	1,491.4	3.0	3.1	127.35	76.8	-57.8	120.6	114.8	5.84	20.650		
1,600.0	1,595.9	1,594.7	1,590.5	3.3	3.3	127.07	81.8	-65.1	130.3	124.1	6.27	20.779		
1,700.0	1,695.5	1,694.3	1,689.6	3.5	3.5	126.83	86.9	-72.4	140.1	133.4	6.70	20.890		
1,800.0	1,795.1	1,793.8	1,788.7	3.7	3.8	126.63	92.0	-79.6	149.8	142.7	7.14	20.986		
1,900.0	1,894.7	1,893.3	1,887.9	4.0	4.0	126.44	97.1	-86.9	159.5	151.9	7.57	21.070		
2,000.0	1,994.3	1,992.8	1,987.0	4.2	4.2	126.28	102.2	-94.2	169.2	161.2	8.00	21.143		
2,100.0	2,093.8	2,092.4	2,086.1	4.4	4.5	126.14	107.3	-101.5	179.0	170.5	8.44	21.209		
2,200.0	2,193.4	2,191.9	2,185.2	4.7	4.7	126.01	112.3	-108.8	188.7	179.8	8.87	21.267		
2,300.0	2,293.0	2,291.4	2,284.4	4.9	4.9	125.90	117.4	-116.1	198.4	189.1	9.31	21.319		
2,400.0	2,392.6	2,390.9	2,383.5	5.1	5.2	125.79	122.5	-123.3	208.2	198.4	9.74	21.366		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-12D (OXY 22 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	36.06	36.4	26.5	45.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.06	36.4	26.5	45.1	44.8	0.30	151.862		
200.0	200.0	200.0	200.0	0.3	0.3	36.06	36.4	26.5	45.1	44.4	0.65	69.774		
300.0	300.0	300.0	300.0	0.5	0.5	36.06	36.4	26.5	45.1	44.1	0.99	45.292	CC, ES	
400.0	400.0	399.7	399.6	0.7	0.7	34.49	37.4	25.7	45.4	44.1	1.34	33.822		
500.0	500.0	499.2	499.1	0.8	0.9	151.06	40.5	23.3	47.9	46.2	1.70	28.166		
600.0	599.9	598.4	598.1	1.0	1.1	146.60	45.6	19.4	53.9	51.8	2.07	26.035		
700.0	699.7	697.1	696.4	1.2	1.3	142.40	52.7	13.9	63.5	61.0	2.46	25.831	SF	
750.0	749.5	746.3	745.3	1.3	1.4	140.56	57.0	10.5	69.6	67.0	2.66	26.176		
800.0	799.3	795.4	794.0	1.4	1.5	138.85	61.7	6.8	76.4	73.5	2.87	26.664		
900.0	898.9	894.4	892.2	1.7	1.8	136.03	71.5	-0.8	90.3	87.0	3.28	27.492		
1,000.0	998.5	993.3	990.4	1.9	2.0	133.96	81.3	-8.4	104.3	100.6	3.71	28.137		
1,100.0	1,098.0	1,092.2	1,088.5	2.1	2.3	132.38	91.1	-16.0	118.5	114.4	4.14	28.649		
1,200.0	1,197.6	1,191.2	1,186.7	2.3	2.6	131.15	100.8	-23.6	132.7	128.2	4.57	29.065		
1,300.0	1,297.2	1,290.1	1,284.9	2.6	2.8	130.15	110.6	-31.2	147.0	142.0	5.00	29.408		
1,400.0	1,396.8	1,389.1	1,383.0	2.8	3.1	129.33	120.4	-38.8	161.3	155.9	5.43	29.695		
1,500.0	1,496.4	1,488.0	1,481.2	3.0	3.4	128.64	130.2	-46.4	175.6	169.8	5.87	29.939		
1,600.0	1,595.9	1,587.0	1,579.4	3.3	3.6	128.05	139.9	-54.0	190.0	183.7	6.30	30.149		
1,700.0	1,695.5	1,685.9	1,677.5	3.5	3.9	127.55	149.7	-61.7	204.4	197.6	6.74	30.331		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-13D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	35.85	48.8	35.3	60.2				
100.0	100.0	100.0	100.0	0.1	0.1	35.85	48.8	35.3	60.2	59.9	0.30	202.959	
200.0	200.0	200.0	200.0	0.3	0.3	35.85	48.8	35.3	60.2	59.6	0.65	93.251	
300.0	300.0	300.0	300.0	0.5	0.5	35.85	48.8	35.3	60.2	59.2	0.99	60.532 CC, ES	
400.0	400.0	399.3	399.3	0.7	0.7	34.75	49.9	34.6	60.8	59.4	1.34	45.269	
500.0	500.0	498.5	498.4	0.8	0.9	152.47	53.3	32.8	63.8	62.1	1.70	37.539	
600.0	599.9	597.3	597.0	1.0	1.1	149.31	58.9	29.7	70.5	68.4	2.06	34.152	
700.0	699.7	695.6	694.9	1.2	1.3	146.18	66.7	25.4	81.0	78.6	2.44	33.140 SF	
750.0	749.5	744.5	743.5	1.3	1.4	144.75	71.4	22.7	87.7	85.1	2.64	33.179	
800.0	799.3	793.2	791.8	1.4	1.5	143.39	76.6	19.9	95.1	92.3	2.85	33.423	
900.0	898.9	890.0	887.7	1.7	1.8	140.48	88.6	13.2	111.2	108.0	3.27	34.067	
1,000.0	998.5	986.5	982.9	1.9	2.1	137.51	102.6	5.5	129.3	125.6	3.70	34.972	
1,100.0	1,098.0	1,084.6	1,079.4	2.1	2.4	135.00	117.6	-2.8	148.2	144.1	4.13	35.846	
1,200.0	1,197.6	1,182.6	1,175.9	2.3	2.7	133.06	132.5	-11.1	167.3	162.8	4.57	36.590	
1,300.0	1,297.2	1,280.6	1,272.4	2.6	3.1	131.52	147.5	-19.4	186.6	181.6	5.01	37.229	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		SWSE S22-T6S-R97W - OXY 22-14D (OXY 22 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 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	35.72	60.8	43.7	74.9					
100.0	100.0	100.0	100.0	0.1	0.1	35.72	60.8	43.7	74.9	74.6	0.30	252.506		
200.0	200.0	200.0	200.0	0.3	0.3	35.72	60.8	43.7	74.9	74.3	0.65	116.016		
300.0	300.0	300.0	300.0	0.5	0.5	35.72	60.8	43.7	74.9	73.9	0.99	75.309	CC, ES	
400.0	400.0	398.9	398.9	0.7	0.7	34.89	62.0	43.3	75.6	74.3	1.34	56.342		
500.0	500.0	497.7	497.7	0.8	0.9	153.29	65.6	41.8	79.0	77.3	1.70	46.552		
600.0	599.9	596.2	595.9	1.0	1.0	150.92	71.5	39.4	86.2	84.2	2.06	41.894		
700.0	699.7	694.0	693.3	1.2	1.3	148.51	79.6	36.1	97.5	95.0	2.43	40.048		
750.0	749.5	742.6	741.6	1.3	1.4	147.37	84.5	34.1	104.6	102.0	2.63	39.781		
800.0	799.3	791.1	789.7	1.4	1.5	146.29	90.0	31.8	112.4	109.6	2.83	39.765	SF	
900.0	898.9	887.4	885.1	1.7	1.8	143.92	102.6	26.7	129.5	126.2	3.24	39.999		
1,000.0	998.5	982.9	979.3	1.9	2.1	141.46	117.2	20.7	148.5	144.8	3.66	40.570		
1,100.0	1,098.0	1,077.5	1,072.1	2.1	2.4	139.02	133.8	13.9	169.5	165.4	4.09	41.422		
1,200.0	1,197.6	1,171.3	1,163.8	2.3	2.8	136.68	152.4	6.3	192.7	188.2	4.53	42.540		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-15D (OXY 22 Pad) - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	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	35.77	72.8	52.5	89.8					
100.0	100.0	100.0	100.0	0.1	0.1	35.77	72.8	52.5	89.8	89.5	0.30	302.608		
200.0	200.0	200.0	200.0	0.3	0.3	35.77	72.8	52.5	89.8	89.1	0.65	139.036 CC, ES		
300.0	300.0	298.6	298.6	0.5	0.5	35.12	74.1	52.1	90.5	89.6	0.99	91.231		
400.0	400.0	397.1	397.0	0.7	0.7	33.22	77.7	50.9	92.9	91.6	1.34	69.364		
500.0	500.0	495.3	495.0	0.8	0.9	150.97	83.7	48.9	98.2	96.4	1.71	57.438		
600.0	599.9	593.0	592.3	1.0	1.1	148.33	92.0	46.1	107.6	105.5	2.08	51.701		
700.0	699.7	689.9	688.6	1.2	1.4	145.93	102.6	42.5	121.2	118.7	2.47	49.137		
750.0	749.5	738.0	736.3	1.3	1.5	144.86	108.7	40.4	129.5	126.8	2.66	48.595		
800.0	799.3	785.9	783.6	1.4	1.6	143.89	115.4	38.2	138.6	135.7	2.87	48.338		
900.0	898.9	881.0	877.4	1.7	1.9	141.86	130.3	33.2	158.2	154.9	3.28	48.221 SF		
1,000.0	998.5	975.2	969.9	1.9	2.3	139.81	147.2	27.5	179.9	176.2	3.71	48.563		
1,100.0	1,098.0	1,068.4	1,060.9	2.1	2.7	137.81	166.0	21.2	203.8	199.6	4.14	49.266		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-16D (OXY 22 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	35.57	85.2	60.9	104.8					
100.0	100.0	100.0	100.0	0.1	0.1	35.57	85.2	60.9	104.8	104.5	0.30	353.153		
200.0	200.0	200.0	200.0	0.3	0.3	35.57	85.2	60.9	104.8	104.1	0.65	162.260 CC, ES		
300.0	300.0	298.4	298.3	0.5	0.5	35.02	86.4	60.6	105.6	104.6	0.99	106.413		
400.0	400.0	396.6	396.5	0.7	0.7	33.42	90.1	59.4	108.0	106.6	1.34	80.668		
500.0	500.0	494.5	494.2	0.8	0.9	151.56	96.1	57.5	113.3	111.6	1.71	66.364		
600.0	599.9	591.9	591.2	1.0	1.1	149.27	104.4	54.9	122.7	120.7	2.08	59.069		
700.0	699.7	688.6	687.2	1.2	1.3	147.11	115.0	51.6	136.4	133.9	2.46	55.389		
750.0	749.5	736.5	734.8	1.3	1.5	146.12	121.1	49.7	144.7	142.1	2.66	54.401		
800.0	799.3	784.3	782.0	1.4	1.6	145.22	127.8	47.6	153.8	151.0	2.86	53.751		
900.0	898.9	879.1	875.5	1.7	1.9	143.32	142.7	42.9	173.5	170.3	3.28	52.974		
1,000.0	998.5	973.0	967.7	1.9	2.3	141.37	159.6	37.6	195.3	191.6	3.70	52.786 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		SWSE S22-T6S-R97W - OXY 22-1D (OXY 22 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	127.43	-5.8	7.6	9.6						
100.0	100.0	100.0	100.0	0.1	0.1	127.43	-5.8	7.6	9.6	9.3	0.30	32.338			
200.0	200.0	200.0	200.0	0.3	0.3	127.43	-5.8	7.6	9.6	8.9	0.65	14.858			
300.0	300.0	300.0	300.0	0.5	0.5	127.43	-5.8	7.6	9.6	8.6	0.99	9.645			
400.0	400.0	400.0	400.0	0.7	0.7	127.43	-5.8	7.6	9.6	8.3	1.34	7.139 CC, ES			
500.0	500.0	499.7	499.7	0.8	0.8	-120.20	-6.3	8.8	11.4	9.8	1.69	6.760 SF			
600.0	599.9	599.1	599.0	1.0	1.0	-133.22	-7.6	12.5	17.7	15.7	2.04	8.678			
700.0	699.7	697.8	697.5	1.2	1.2	-141.69	-9.8	18.5	29.0	26.6	2.40	12.105			
750.0	749.5	746.8	746.3	1.3	1.3	-144.34	-11.2	22.4	36.5	33.9	2.58	14.175			
800.0	799.3	795.6	794.9	1.4	1.4	-146.13	-12.8	26.8	44.9	42.2	2.75	16.306			
900.0	898.9	892.5	891.1	1.7	1.7	-147.69	-16.7	37.4	63.6	60.5	3.12	20.406			
1,000.0	998.5	988.8	986.5	1.9	1.9	-148.00	-21.3	50.1	84.6	81.1	3.48	24.299			
1,100.0	1,098.0	1,086.4	1,083.0	2.1	2.2	-148.04	-26.3	63.8	106.4	102.5	3.85	27.627			
1,200.0	1,197.6	1,184.0	1,179.5	2.3	2.5	-148.06	-31.3	77.5	128.2	124.0	4.22	30.359			
1,300.0	1,297.2	1,281.6	1,276.0	2.6	2.8	-148.08	-36.3	91.2	150.0	145.4	4.60	32.638			
1,400.0	1,396.8	1,379.2	1,372.5	2.8	3.1	-148.09	-41.3	104.9	171.8	166.8	4.97	34.568			
1,500.0	1,496.4	1,476.8	1,469.0	3.0	3.4	-148.10	-46.2	118.6	193.6	188.3	5.35	36.221			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-2D (OXY 22 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	69.92	6.2	16.9	18.0					
100.0	100.0	100.0	100.0	0.1	0.1	69.92	6.2	16.9	18.0	17.7	0.30	60.753		
200.0	200.0	200.0	200.0	0.3	0.3	69.92	6.2	16.9	18.0	17.4	0.65	27.914		
300.0	300.0	300.0	300.0	0.5	0.5	69.92	6.2	16.9	18.0	17.0	0.99	18.119		
400.0	400.0	400.0	400.0	0.7	0.7	69.92	6.2	16.9	18.0	16.7	1.34	13.413 CC, ES		
500.0	500.0	499.5	499.5	0.8	0.8	-169.13	6.2	18.2	20.5	18.8	1.69	12.140 SF		
600.0	599.9	598.6	598.5	1.0	1.0	-168.01	6.2	22.1	28.1	26.0	2.04	13.771		
700.0	699.7	697.0	696.7	1.2	1.2	-167.06	6.3	28.5	40.6	38.2	2.39	17.030		
750.0	749.5	745.8	745.3	1.3	1.3	-166.69	6.3	32.6	48.8	46.2	2.56	19.058		
800.0	799.3	794.3	793.6	1.4	1.4	-166.35	6.3	37.3	57.8	55.1	2.73	21.152		
900.0	898.9	890.6	889.3	1.7	1.7	-165.53	6.4	48.4	77.7	74.6	3.08	25.209		
1,000.0	998.5	987.5	985.2	1.9	1.9	-164.74	6.4	61.5	99.5	96.1	3.43	28.983		
1,100.0	1,098.0	1,085.0	1,081.9	2.1	2.2	-164.20	6.5	74.9	121.5	117.7	3.79	32.088		
1,200.0	1,197.6	1,182.6	1,178.5	2.3	2.5	-163.83	6.6	88.3	143.5	139.3	4.14	34.660		
1,300.0	1,297.2	1,280.1	1,275.1	2.6	2.7	-163.56	6.7	101.8	165.5	161.0	4.49	36.825		
1,400.0	1,396.8	1,377.7	1,371.7	2.8	3.0	-163.35	6.7	115.2	187.5	182.6	4.85	38.672		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-3D (OXY 22 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	54.65	18.2	25.7	31.5					
100.0	100.0	100.0	100.0	0.1	0.1	54.65	18.2	25.7	31.5	31.2	0.30	106.101		
200.0	200.0	200.0	200.0	0.3	0.3	54.65	18.2	25.7	31.5	30.8	0.65	48.749		
300.0	300.0	300.0	300.0	0.5	0.5	54.65	18.2	25.7	31.5	30.5	0.99	31.644 CC, ES		
400.0	400.0	399.2	399.2	0.7	0.7	55.24	18.7	26.9	32.7	31.4	1.34	24.358		
500.0	500.0	498.2	498.1	0.8	0.9	177.23	20.0	30.5	37.8	36.1	1.69	22.381 SF		
600.0	599.9	596.5	596.2	1.0	1.1	179.16	22.2	36.5	48.1	46.0	2.04	23.617		
700.0	699.7	693.9	693.2	1.2	1.3	-179.22	25.2	44.7	63.4	61.1	2.38	26.690		
750.0	749.5	742.2	741.2	1.3	1.4	-178.57	27.0	49.7	73.0	70.5	2.55	28.678		
800.0	799.3	790.1	788.7	1.4	1.5	-178.02	29.0	55.1	83.6	80.9	2.72	30.757		
900.0	898.9	886.0	883.8	1.7	1.8	-177.14	33.6	67.6	106.3	103.3	3.06	34.755		
1,000.0	998.5	983.3	980.0	1.9	2.0	-176.53	38.4	80.7	129.5	126.1	3.40	38.067		
1,100.0	1,098.0	1,080.6	1,076.3	2.1	2.3	-176.10	43.3	93.8	152.7	149.0	3.75	40.777		
1,200.0	1,197.6	1,177.8	1,172.5	2.3	2.6	-175.79	48.1	106.9	176.0	171.9	4.09	43.032		
1,300.0	1,297.2	1,275.1	1,268.8	2.6	2.9	-175.55	52.9	120.0	199.2	194.8	4.43	44.939		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-4D (OXY 22 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	48.37	30.6	34.4	46.1					
100.0	100.0	100.0	100.0	0.1	0.1	48.37	30.6	34.4	46.1	45.8	0.30	155.227		
200.0	200.0	200.0	200.0	0.3	0.3	48.37	30.6	34.4	46.1	45.4	0.65	71.321		
300.0	300.0	300.0	300.0	0.5	0.5	48.37	30.6	34.4	46.1	45.1	0.99	46.296 CC, ES		
400.0	400.0	398.8	398.8	0.7	0.7	48.54	31.3	35.5	47.3	46.0	1.34	35.250		
500.0	500.0	497.4	497.3	0.8	0.9	169.60	33.6	38.6	52.5	50.8	1.69	31.091		
600.0	599.9	595.4	595.1	1.0	1.0	170.75	37.2	43.7	62.8	60.7	2.03	30.883 SF		
700.0	699.7	692.4	691.7	1.2	1.3	171.95	42.3	50.8	78.2	75.8	2.37	32.935		
750.0	749.5	740.4	739.4	1.3	1.4	172.49	45.3	55.1	87.8	85.2	2.54	34.516		
800.0	799.3	788.1	786.8	1.4	1.5	172.97	48.6	59.8	98.3	95.6	2.71	36.245		
900.0	898.9	882.7	880.5	1.7	1.8	173.70	56.3	70.6	121.2	118.2	3.05	39.734		
1,000.0	998.5	976.8	973.3	1.9	2.1	174.21	65.2	83.1	146.5	143.1	3.39	43.250		
1,100.0	1,098.0	1,073.4	1,068.4	2.1	2.4	174.58	74.9	96.6	172.6	168.8	3.73	46.289		
1,200.0	1,197.6	1,169.9	1,163.5	2.3	2.7	174.86	84.5	110.2	198.7	194.6	4.07	48.827		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-5D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	45.18	42.6	42.9	60.5				
100.0	100.0	100.0	100.0	0.1	0.1	45.18	42.6	42.9	60.5	60.2	0.30	203.780	
200.0	200.0	200.0	200.0	0.3	0.3	45.18	42.6	42.9	60.5	59.8	0.65	93.629 CC, ES	
300.0	300.0	298.4	298.4	0.5	0.5	45.13	43.6	43.7	61.7	60.8	0.99	62.152	
400.0	400.0	396.7	396.6	0.7	0.7	44.97	46.4	46.3	65.6	64.3	1.35	48.683	
500.0	500.0	494.6	494.3	0.8	0.9	165.35	51.0	50.6	73.3	71.6	1.68	43.542	
600.0	599.9	591.8	591.1	1.0	1.1	165.69	57.4	56.4	86.0	84.0	2.03	42.464 SF	
700.0	699.7	687.8	686.5	1.2	1.3	166.19	65.6	63.9	103.8	101.4	2.37	43.865	
750.0	749.5	735.3	733.6	1.3	1.5	166.45	70.2	68.2	114.5	112.0	2.54	45.172	
800.0	799.3	782.4	780.2	1.4	1.6	166.71	75.3	72.8	126.2	123.5	2.71	46.645	
900.0	898.9	875.9	872.3	1.7	1.9	167.06	86.6	83.2	151.3	148.2	3.04	49.691	
1,000.0	998.5	968.1	962.9	1.9	2.3	167.25	99.4	94.9	178.7	175.3	3.38	52.863	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-6D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	43.39	54.6	51.6	75.2				
100.0	100.0	100.0	100.0	0.1	0.1	43.39	54.6	51.6	75.2	74.9	0.30	253.334	
200.0	200.0	200.0	200.0	0.3	0.3	43.39	54.6	51.6	75.2	74.5	0.65	116.397	CC, ES
300.0	300.0	298.1	298.1	0.5	0.5	43.28	55.6	52.4	76.4	75.4	0.99	76.998	
400.0	400.0	396.0	395.9	0.7	0.7	42.97	58.7	54.6	80.3	78.9	1.35	59.654	
500.0	500.0	493.6	493.3	0.8	0.9	163.09	63.7	58.4	87.9	86.2	1.68	52.253	
600.0	599.9	590.4	589.7	1.0	1.1	163.15	70.6	63.5	100.5	98.5	2.02	49.638	SF
700.0	699.7	686.1	684.8	1.2	1.3	163.38	79.4	70.1	118.1	115.7	2.37	49.917	
750.0	749.5	733.5	731.7	1.3	1.5	163.54	84.5	73.8	128.7	126.2	2.54	50.764	
800.0	799.3	780.5	778.2	1.4	1.6	163.72	89.9	77.9	140.3	137.5	2.71	51.824	
900.0	898.9	873.6	870.1	1.7	1.9	163.92	102.1	87.0	165.1	162.0	3.05	54.169	
1,000.0	998.5	965.6	960.5	1.9	2.3	163.98	116.0	97.3	192.3	188.9	3.39	56.752	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-7D (OXY 22 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	42.02	67.0	60.4	90.2					
100.0	100.0	100.0	100.0	0.1	0.1	42.02	67.0	60.4	90.2	89.9	0.30	304.043		
200.0	200.0	200.0	200.0	0.3	0.3	42.02	67.0	60.4	90.2	89.6	0.65	139.696 CC, ES		
300.0	300.0	297.7	297.7	0.5	0.5	41.84	68.1	61.0	91.5	90.5	0.99	92.198		
400.0	400.0	395.3	395.3	0.7	0.7	41.32	71.4	62.8	95.2	93.9	1.34	70.889		
500.0	500.0	492.6	492.3	0.8	0.9	161.10	76.9	65.7	102.7	101.0	1.68	61.052		
600.0	599.9	589.1	588.5	1.0	1.1	160.75	84.4	69.9	115.1	113.0	2.03	56.803		
700.0	699.7	684.6	683.3	1.2	1.3	160.58	94.0	75.1	132.4	130.0	2.37	55.864 SF		
750.0	749.5	731.8	730.1	1.3	1.5	160.55	99.5	78.1	142.8	140.3	2.54	56.202		
800.0	799.3	778.7	776.5	1.4	1.6	160.57	105.5	81.3	154.1	151.4	2.71	56.799		
900.0	898.9	871.7	868.3	1.7	1.9	160.47	118.8	88.6	178.6	175.5	3.06	58.346		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-8D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	41.41	79.0	69.7	105.4				
100.0	100.0	100.0	100.0	0.1	0.1	41.41	79.0	69.7	105.4	105.1	0.30	355.168	
200.0	200.0	200.0	200.0	0.3	0.3	41.41	79.0	69.7	105.4	104.7	0.65	163.185 CC, ES	
300.0	300.0	297.5	297.4	0.5	0.5	41.17	80.2	70.1	106.6	105.6	0.99	107.520	
400.0	400.0	394.8	394.7	0.7	0.7	40.50	83.7	71.5	110.2	108.8	1.34	82.200	
500.0	500.0	491.8	491.5	0.8	0.9	160.02	89.4	73.7	117.4	115.7	1.68	69.781	
600.0	599.9	588.1	587.4	1.0	1.1	159.30	97.4	76.7	129.5	127.5	2.03	63.822	
700.0	699.7	683.4	682.1	1.2	1.3	158.74	107.6	80.6	146.4	144.0	2.38	61.600	
750.0	749.5	730.5	728.8	1.3	1.5	158.52	113.4	82.8	156.6	154.1	2.55	61.398 SF	
800.0	799.3	777.4	775.2	1.4	1.6	158.36	119.7	85.2	167.7	165.0	2.73	61.502	
900.0	898.9	870.3	866.9	1.7	1.9	157.94	133.8	90.6	191.6	188.5	3.08	62.192	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-9D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-9D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 8506.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: OXY 22-9D (OXY 22 Pad)  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.70°

