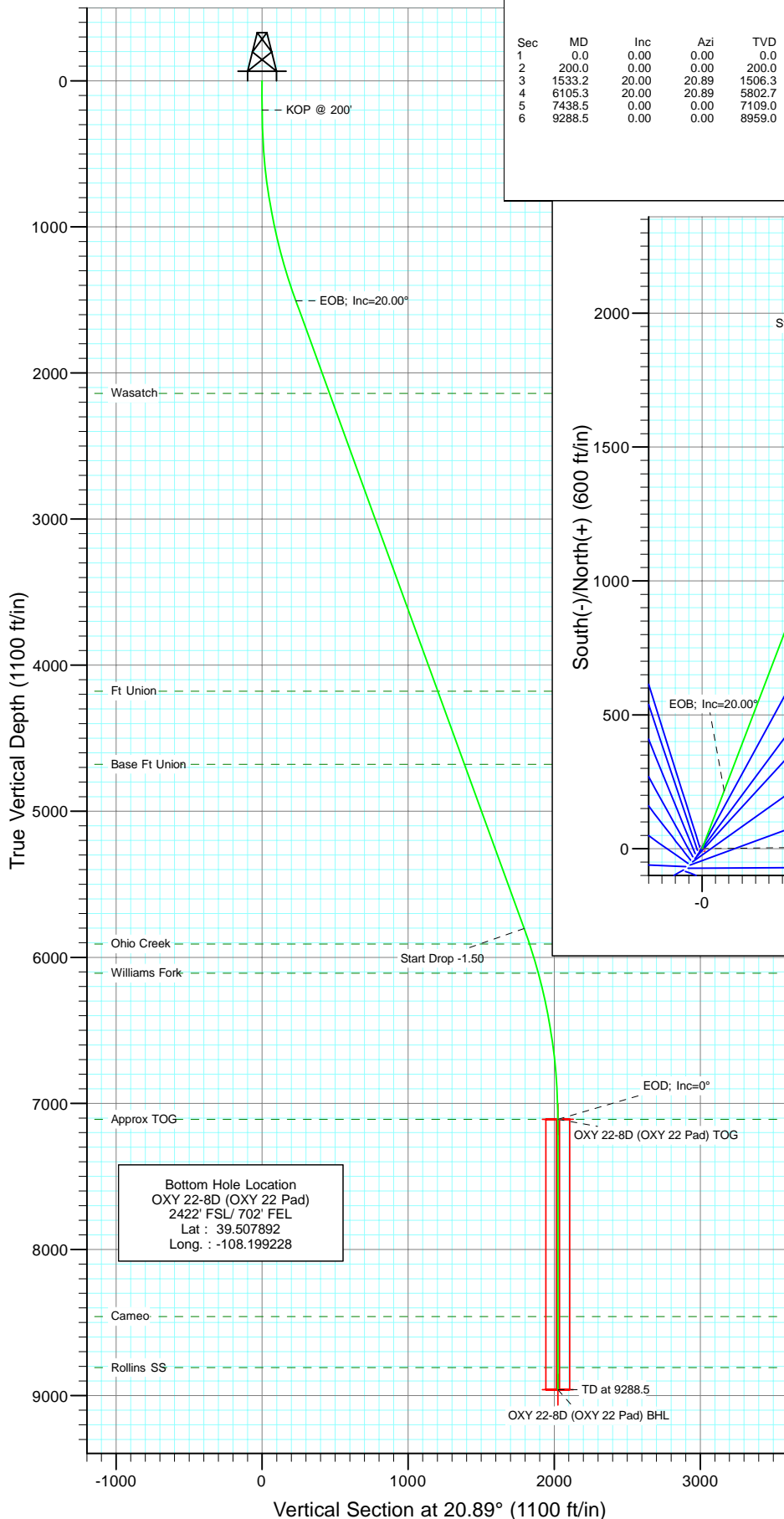




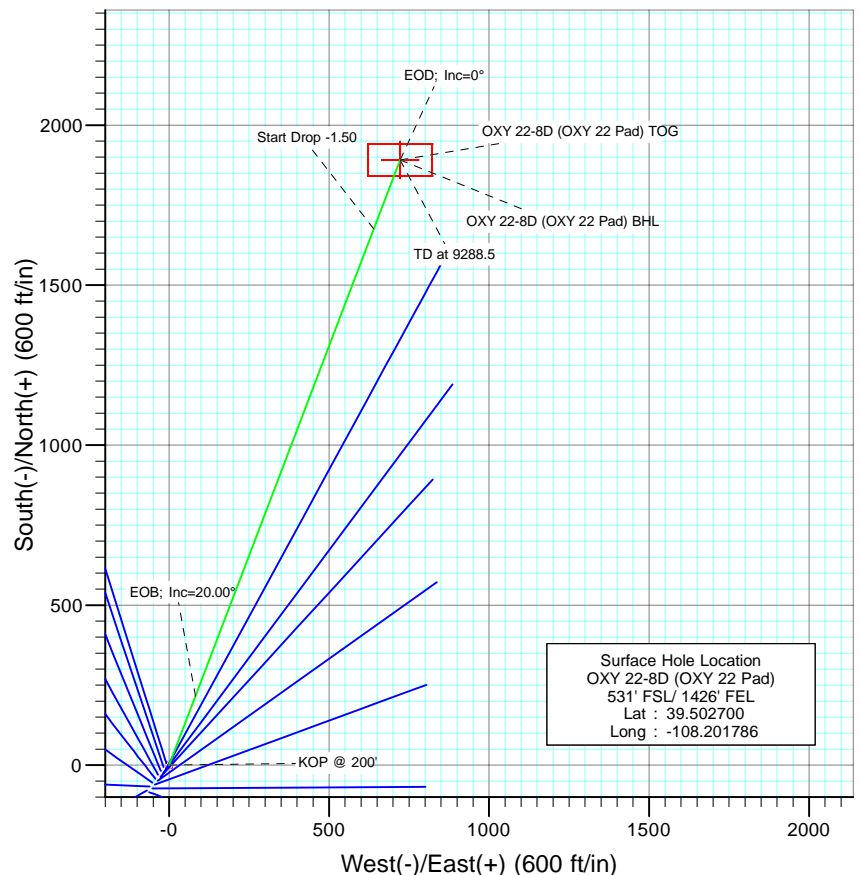
Berry Petroleum Company

Project: Garfield County  
Site: SWSE S22-T6S-R97W  
Well: OXY 22-8D (OXY 22 Pad)  
Wellbore: 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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1533.2	20.00	20.89	1506.3	215.2	82.1	1.50	20.89	230.3	
4	6105.3	20.00	20.89	5802.7	1676.0	639.6	0.00	0.00	1793.9	
5	7438.5	0.00	0.00	7109.0	1891.2	721.7	1.50	180.00	2024.2	OXY 22-8D (OXY 22 Pad) TOG
6	9288.5	0.00	0.00	8959.0	1891.2	721.7	0.00	0.00	2024.2	OXY 22-8D (OXY 22 Pad) BHL



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2139.0	2206.5	Wasatch
4179.0	4377.4	Ft Union
4679.0	4909.5	Base Ft Union
5909.0	6217.8	Ohio Creek
6109.0	6426.7	Williams Fork
7109.0	7438.5	Approx TOG
8459.0	8788.5	Cameo
8809.0	9138.5	Rollins SS



Azimuths to True North  
Magnetic North: 10.64°

Magnetic Field  
Strength: 52406.1snT  
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 22-8D (OXY 22 Pad) BHL	20.89	Slot	0.0	0.0	0.0

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-8D (OXY 22 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,619,326.20 ft	Latitude:	39.502700
	+E/-W	0.0 ft	Easting:	2,237,744.15 ft	Longitude:	-108.201786
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 (nT)</b>
	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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	20.89	

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,533.2	20.00	20.89	1,506.3	215.2	82.1	1.50	1.50	0.00	20.89	
6,105.3	20.00	20.89	5,802.7	1,676.0	639.6	0.00	0.00	0.00	0.00	
7,438.5	0.00	0.00	7,109.0	1,891.2	721.7	1.50	-1.50	0.00	180.00	OXY 22-8D (OXY 22
9,288.5	0.00	0.00	8,959.0	1,891.2	721.7	0.00	0.00	0.00	0.00	OXY 22-8D (OXY 22

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
210.0	0.15	20.89	210.0	0.0	0.0	0.0	1.50	1.50	
240.0	0.60	20.89	240.0	0.2	0.1	0.2	1.50	1.50	
270.0	1.05	20.89	270.0	0.6	0.2	0.6	1.50	1.50	
300.0	1.50	20.89	300.0	1.2	0.5	1.3	1.50	1.50	
330.0	1.95	20.89	330.0	2.1	0.8	2.2	1.50	1.50	
360.0	2.40	20.89	360.0	3.1	1.2	3.4	1.50	1.50	
390.0	2.85	20.89	389.9	4.4	1.7	4.7	1.50	1.50	
420.0	3.30	20.89	419.9	5.9	2.3	6.3	1.50	1.50	
450.0	3.75	20.89	449.8	7.6	2.9	8.2	1.50	1.50	
480.0	4.20	20.89	479.7	9.6	3.7	10.3	1.50	1.50	
510.0	4.65	20.89	509.7	11.7	4.5	12.6	1.50	1.50	
540.0	5.10	20.89	539.6	14.1	5.4	15.1	1.50	1.50	
570.0	5.55	20.89	569.4	16.7	6.4	17.9	1.50	1.50	
600.0	6.00	20.89	599.3	19.5	7.5	20.9	1.50	1.50	
630.0	6.45	20.89	629.1	22.6	8.6	24.2	1.50	1.50	
660.0	6.90	20.89	658.9	25.8	9.9	27.7	1.50	1.50	
690.0	7.35	20.89	688.7	29.3	11.2	31.4	1.50	1.50	
720.0	7.80	20.89	718.4	33.0	12.6	35.3	1.50	1.50	
750.0	8.25	20.89	748.1	36.9	14.1	39.5	1.50	1.50	
780.0	8.70	20.89	777.8	41.1	15.7	44.0	1.50	1.50	
810.0	9.15	20.89	807.4	45.4	17.3	48.6	1.50	1.50	
840.0	9.60	20.89	837.0	50.0	19.1	53.5	1.50	1.50	
870.0	10.05	20.89	866.6	54.8	20.9	58.6	1.50	1.50	
900.0	10.50	20.89	896.1	59.8	22.8	64.0	1.50	1.50	
930.0	10.95	20.89	925.6	65.0	24.8	69.5	1.50	1.50	
960.0	11.40	20.89	955.0	70.4	26.9	75.4	1.50	1.50	
990.0	11.85	20.89	984.4	76.1	29.0	81.4	1.50	1.50	
1,020.0	12.30	20.89	1,013.7	81.9	31.3	87.7	1.50	1.50	
1,050.0	12.75	20.89	1,043.0	88.0	33.6	94.2	1.50	1.50	
1,080.0	13.20	20.89	1,072.2	94.3	36.0	100.9	1.50	1.50	
1,110.0	13.65	20.89	1,101.4	100.8	38.5	107.9	1.50	1.50	
1,140.0	14.10	20.89	1,130.5	107.5	41.0	115.1	1.50	1.50	
1,170.0	14.55	20.89	1,159.6	114.5	43.7	122.5	1.50	1.50	
1,200.0	15.00	20.89	1,188.6	121.6	46.4	130.2	1.50	1.50	
1,230.0	15.45	20.89	1,217.6	129.0	49.2	138.0	1.50	1.50	
1,260.0	15.90	20.89	1,246.4	136.5	52.1	146.1	1.50	1.50	
1,290.0	16.35	20.89	1,275.3	144.3	55.1	154.5	1.50	1.50	
1,320.0	16.80	20.89	1,304.0	152.3	58.1	163.0	1.50	1.50	
1,350.0	17.25	20.89	1,332.7	160.5	61.3	171.8	1.50	1.50	
1,380.0	17.70	20.89	1,361.3	168.9	64.5	180.8	1.50	1.50	
1,410.0	18.15	20.89	1,389.9	177.6	67.8	190.1	1.50	1.50	
1,440.0	18.60	20.89	1,418.3	186.4	71.1	199.5	1.50	1.50	
1,470.0	19.05	20.89	1,446.7	195.4	74.6	209.2	1.50	1.50	
1,500.0	19.50	20.89	1,475.0	204.7	78.1	219.1	1.50	1.50	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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	19.95	20.89	1,503.3	214.2	81.7	229.2	1.50	1.50	
1,533.2	20.00	20.89	1,506.3	215.2	82.1	230.3	1.50	1.50	EOB; Inc=20.00°
1,560.0	20.00	20.89	1,531.5	223.7	85.4	239.5	0.00	0.00	
1,590.0	20.00	20.89	1,559.7	233.3	89.0	249.7	0.00	0.00	
1,620.0	20.00	20.89	1,587.9	242.9	92.7	260.0	0.00	0.00	
1,650.0	20.00	20.89	1,616.1	252.5	96.4	270.3	0.00	0.00	
1,680.0	20.00	20.89	1,644.2	262.1	100.0	280.5	0.00	0.00	
1,710.0	20.00	20.89	1,672.4	271.7	103.7	290.8	0.00	0.00	
1,740.0	20.00	20.89	1,700.6	281.2	107.3	301.0	0.00	0.00	
1,770.0	20.00	20.89	1,728.8	290.8	111.0	311.3	0.00	0.00	
1,800.0	20.00	20.89	1,757.0	300.4	114.7	321.6	0.00	0.00	
1,830.0	20.00	20.89	1,785.2	310.0	118.3	331.8	0.00	0.00	
1,860.0	20.00	20.89	1,813.4	319.6	122.0	342.1	0.00	0.00	
1,890.0	20.00	20.89	1,841.6	329.2	125.6	352.3	0.00	0.00	
1,920.0	20.00	20.89	1,869.8	338.8	129.3	362.6	0.00	0.00	
1,950.0	20.00	20.89	1,898.0	348.3	132.9	372.9	0.00	0.00	
1,980.0	20.00	20.89	1,926.2	357.9	136.6	383.1	0.00	0.00	
2,010.0	20.00	20.89	1,954.3	367.5	140.3	393.4	0.00	0.00	
2,040.0	20.00	20.89	1,982.5	377.1	143.9	403.6	0.00	0.00	
2,070.0	20.00	20.89	2,010.7	386.7	147.6	413.9	0.00	0.00	
2,100.0	20.00	20.89	2,038.9	396.3	151.2	424.1	0.00	0.00	
2,130.0	20.00	20.89	2,067.1	405.9	154.9	434.4	0.00	0.00	
2,160.0	20.00	20.89	2,095.3	415.4	158.6	444.7	0.00	0.00	
2,190.0	20.00	20.89	2,123.5	425.0	162.2	454.9	0.00	0.00	
2,206.5	20.00	20.89	2,139.0	430.3	164.2	460.6	0.00	0.00	Wasatch
2,220.0	20.00	20.89	2,151.7	434.6	165.9	465.2	0.00	0.00	
2,250.0	20.00	20.89	2,179.9	444.2	169.5	475.4	0.00	0.00	
2,280.0	20.00	20.89	2,208.1	453.8	173.2	485.7	0.00	0.00	
2,310.0	20.00	20.89	2,236.3	463.4	176.8	496.0	0.00	0.00	
2,340.0	20.00	20.89	2,264.4	473.0	180.5	506.2	0.00	0.00	
2,370.0	20.00	20.89	2,292.6	482.5	184.2	516.5	0.00	0.00	
2,400.0	20.00	20.89	2,320.8	492.1	187.8	526.7	0.00	0.00	
2,430.0	20.00	20.89	2,349.0	501.7	191.5	537.0	0.00	0.00	
2,460.0	20.00	20.89	2,377.2	511.3	195.1	547.3	0.00	0.00	
2,490.0	20.00	20.89	2,405.4	520.9	198.8	557.5	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 22-8D (OXY 22 Pa	0.00	0.00	7,109.0	1,891.2	721.7	1,621,195.06	2,238,521.81	39.507892	-108.199228
- plan misses target center by 4927.0ft at 2490.0ft MD (2405.4 TVD, 520.9 N, 198.8 E)									
- Point									
OXY 22-8D (OXY 22 Pa	0.00	0.00	8,959.0	1,891.2	721.7	1,621,195.06	2,238,521.81	39.507892	-108.199228
- plan misses target center by 6715.7ft at 2490.0ft MD (2405.4 TVD, 520.9 N, 198.8 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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	20.00	20.89	2,414.8	524.1	200.0	560.9	0.00	0.00	
2,600.0	20.00	20.89	2,508.8	556.0	212.2	595.1	0.00	0.00	
2,700.0	20.00	20.89	2,602.7	588.0	224.4	629.3	0.00	0.00	
2,800.0	20.00	20.89	2,696.7	619.9	236.6	663.5	0.00	0.00	
2,900.0	20.00	20.89	2,790.7	651.9	248.8	697.7	0.00	0.00	
3,000.0	20.00	20.89	2,884.7	683.8	261.0	731.9	0.00	0.00	
3,100.0	20.00	20.89	2,978.6	715.8	273.2	766.1	0.00	0.00	
3,200.0	20.00	20.89	3,072.6	747.7	285.4	800.3	0.00	0.00	
3,300.0	20.00	20.89	3,166.6	779.7	297.6	834.5	0.00	0.00	
3,400.0	20.00	20.89	3,260.5	811.6	309.8	868.7	0.00	0.00	
3,500.0	20.00	20.89	3,354.5	843.6	321.9	902.9	0.00	0.00	
3,600.0	20.00	20.89	3,448.5	875.5	334.1	937.1	0.00	0.00	
3,700.0	20.00	20.89	3,542.4	907.5	346.3	971.3	0.00	0.00	
3,800.0	20.00	20.89	3,636.4	939.4	358.5	1,005.5	0.00	0.00	
3,900.0	20.00	20.89	3,730.4	971.4	370.7	1,039.7	0.00	0.00	
4,000.0	20.00	20.89	3,824.4	1,003.3	382.9	1,073.9	0.00	0.00	
4,100.0	20.00	20.89	3,918.3	1,035.3	395.1	1,108.1	0.00	0.00	
4,200.0	20.00	20.89	4,012.3	1,067.2	407.3	1,142.3	0.00	0.00	
4,300.0	20.00	20.89	4,106.3	1,099.2	419.5	1,176.5	0.00	0.00	
4,377.4	20.00	20.89	4,179.0	1,123.9	428.9	1,203.0	0.00	0.00	Ft Union
4,400.0	20.00	20.89	4,200.2	1,131.1	431.7	1,210.7	0.00	0.00	
4,500.0	20.00	20.89	4,294.2	1,163.1	443.9	1,244.9	0.00	0.00	
4,600.0	20.00	20.89	4,388.2	1,195.0	456.1	1,279.1	0.00	0.00	
4,700.0	20.00	20.89	4,482.2	1,227.0	468.3	1,313.3	0.00	0.00	
4,800.0	20.00	20.89	4,576.1	1,258.9	480.5	1,347.5	0.00	0.00	
4,900.0	20.00	20.89	4,670.1	1,290.9	492.7	1,381.7	0.00	0.00	
4,909.5	20.00	20.89	4,679.0	1,293.9	493.8	1,384.9	0.00	0.00	Base Ft Union
5,000.0	20.00	20.89	4,764.1	1,322.8	504.9	1,415.9	0.00	0.00	
5,100.0	20.00	20.89	4,858.0	1,354.8	517.0	1,450.1	0.00	0.00	
5,200.0	20.00	20.89	4,952.0	1,386.7	529.2	1,484.3	0.00	0.00	
5,300.0	20.00	20.89	5,046.0	1,418.7	541.4	1,518.5	0.00	0.00	
5,400.0	20.00	20.89	5,139.9	1,450.6	553.6	1,552.7	0.00	0.00	
5,500.0	20.00	20.89	5,233.9	1,482.6	565.8	1,586.9	0.00	0.00	
5,600.0	20.00	20.89	5,327.9	1,514.5	578.0	1,621.1	0.00	0.00	
5,700.0	20.00	20.89	5,421.9	1,546.5	590.2	1,655.3	0.00	0.00	
5,800.0	20.00	20.89	5,515.8	1,578.4	602.4	1,689.5	0.00	0.00	
5,900.0	20.00	20.89	5,609.8	1,610.4	614.6	1,723.7	0.00	0.00	
6,000.0	20.00	20.89	5,703.8	1,642.3	626.8	1,757.9	0.00	0.00	
6,100.0	20.00	20.89	5,797.7	1,674.3	639.0	1,792.1	0.00	0.00	
6,105.3	20.00	20.89	5,802.7	1,676.0	639.6	1,793.9	0.00	0.00	Start Drop -1.50
6,200.0	18.58	20.89	5,892.1	1,705.2	650.8	1,825.2	1.50	-1.50	
6,217.8	18.31	20.89	5,909.0	1,710.5	652.8	1,830.8	1.50	-1.50	Ohio Creek
6,300.0	17.08	20.89	5,987.3	1,733.8	661.7	1,855.8	1.50	-1.50	
6,400.0	15.58	20.89	6,083.3	1,760.1	671.7	1,883.9	1.50	-1.50	
6,426.7	15.18	20.89	6,109.0	1,766.7	674.2	1,891.0	1.50	-1.50	Williams Fork
6,500.0	14.08	20.89	6,179.9	1,784.0	680.8	1,909.5	1.50	-1.50	
6,600.0	12.58	20.89	6,277.2	1,805.5	689.1	1,932.5	1.50	-1.50	
6,700.0	11.08	20.89	6,375.1	1,824.7	696.4	1,953.0	1.50	-1.50	
6,800.0	9.58	20.89	6,473.5	1,841.4	702.8	1,971.0	1.50	-1.50	
6,900.0	8.08	20.89	6,572.3	1,855.8	708.2	1,986.3	1.50	-1.50	
7,000.0	6.58	20.89	6,671.5	1,867.7	712.8	1,999.1	1.50	-1.50	
7,100.0	5.08	20.89	6,771.0	1,877.2	716.4	2,009.2	1.50	-1.50	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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
7,200.0	3.58	20.89	6,870.7	1,884.2	719.1	2,016.8	1.50	-1.50	
7,300.0	2.08	20.89	6,970.5	1,888.8	720.9	2,021.7	1.50	-1.50	
7,400.0	0.58	20.89	7,070.5	1,891.0	721.7	2,024.0	1.50	-1.50	
7,438.5	0.00	0.00	7,109.0	1,891.2	721.7	2,024.2	1.50	-1.50	EOD; Inc=0° - Approx TOG - OXY 22-8D (OXY
7,500.0	0.00	0.00	7,170.5	1,891.2	721.7	2,024.2	0.00	0.00	
7,600.0	0.00	0.00	7,270.5	1,891.2	721.7	2,024.2	0.00	0.00	
7,700.0	0.00	0.00	7,370.5	1,891.2	721.7	2,024.2	0.00	0.00	
7,800.0	0.00	0.00	7,470.5	1,891.2	721.7	2,024.2	0.00	0.00	
7,900.0	0.00	0.00	7,570.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,000.0	0.00	0.00	7,670.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,100.0	0.00	0.00	7,770.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,200.0	0.00	0.00	7,870.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,300.0	0.00	0.00	7,970.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,400.0	0.00	0.00	8,070.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,500.0	0.00	0.00	8,170.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,600.0	0.00	0.00	8,270.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,700.0	0.00	0.00	8,370.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,788.5	0.00	0.00	8,459.0	1,891.2	721.7	2,024.2	0.00	0.00	Cameo
8,800.0	0.00	0.00	8,470.5	1,891.2	721.7	2,024.2	0.00	0.00	
8,900.0	0.00	0.00	8,570.5	1,891.2	721.7	2,024.2	0.00	0.00	
9,000.0	0.00	0.00	8,670.5	1,891.2	721.7	2,024.2	0.00	0.00	
9,100.0	0.00	0.00	8,770.5	1,891.2	721.7	2,024.2	0.00	0.00	
9,138.5	0.00	0.00	8,809.0	1,891.2	721.7	2,024.2	0.00	0.00	Rollins SS
9,200.0	0.00	0.00	8,870.5	1,891.2	721.7	2,024.2	0.00	0.00	
9,288.5	0.00	0.00	8,959.0	1,891.2	721.7	2,024.2	0.00	0.00	TD at 9288.5 - OXY 22-8D (OXY 22 Pad) 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 22-8D (OXY 22 Pa	0.00	0.00	7,109.0	1,891.2	721.7	1,621,195.06	2,238,521.81	39.507892	-108.199228
- plan hits target center									
- Point									
OXY 22-8D (OXY 22 Pa	0.00	0.00	8,959.0	1,891.2	721.7	1,621,195.06	2,238,521.81	39.507892	-108.199228
- plan hits target center									
- Rectangle (sides W100.0 H200.0 D0.0)									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 (°)	
2,206.5	2,139.0	Wasatch		0.00		
4,377.4	4,179.0	Ft Union		0.00		
4,909.5	4,679.0	Base Ft Union		0.00		
6,217.8	5,909.0	Ohio Creek		0.00		
6,426.7	6,109.0	Williams Fork		0.00		
7,438.5	7,109.0	Approx TOG		0.00		
8,788.5	8,459.0	Cameo		0.00		
9,138.5	8,809.0	Rollins SS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP @ 200'	
1,533.2	1,506.3	215.2	82.1	EOB; Inc=20.00°	
6,105.3	5,802.7	1,676.0	639.6	Start Drop -1.50	
7,438.5	7,109.0	1,891.2	721.7	EOD; Inc=0°	
9,288.5	8,959.0	1,891.2	721.7	TD at 9288.5	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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	9,288.5	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	200.0	200.0	90.5	89.9	140.161	CC, ES
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	800.0	791.1	146.5	143.7	52.617	SF
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	75.8	75.1	117.318	CC, ES
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	900.0	894.5	141.1	137.8	42.373	SF
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	60.7	60.0	93.939	CC, ES
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	1,000.0	996.3	131.8	127.8	33.225	SF
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	45.8	45.2	70.947	CC, ES
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	1,000.0	998.0	108.6	104.5	26.309	SF
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	31.7	31.1	49.106	CC, ES
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	900.0	899.6	74.9	71.4	21.012	SF
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	18.3	17.6	28.327	CC, ES
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	600.0	599.5	31.9	29.7	14.449	SF
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	10.7	10.1	16.596	CC, ES
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	500.0	499.1	17.7	15.9	10.030	SF
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	105.2	104.5	162.832	CC, ES
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	1,000.0	994.2	185.1	181.5	50.941	SF
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	90.0	89.3	139.298	CC, ES
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,099.4	173.9	169.8	42.426	SF
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	75.1	74.4	116.272	CC, ES
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,104.3	133.9	129.6	31.463	SF
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	59.9	59.3	92.795	CC, ES
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	1,200.0	1,207.0	113.1	108.3	23.640	SF
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	519.1	522.8	44.9	43.2	25.405	CC
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	600.0	604.6	45.0	43.0	21.902	ES
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,107.5	58.4	53.9	12.928	SF
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	568.9	571.8	30.0	28.0	15.449	CC
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	700.0	703.8	30.3	27.8	12.551	ES
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	1,200.0	1,206.3	43.4	37.9	7.866	SF
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	668.1	669.9	14.7	12.4	6.448	CC
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	800.0	802.3	14.9	12.2	5.395	ES
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	1,400.0	1,404.0	26.0	18.4	3.415	SF
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	105.4	104.7	163.185	CC, ES
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	700.0	688.5	146.9	144.5	61.646	SF



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning				
(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	-137.43	-66.7	-61.2	90.5								
100.0	100.0	100.0	100.0	0.1	0.1	-137.43	-66.7	-61.2	90.5	90.2	0.30	305.055					
200.0	200.0	200.0	200.0	0.3	0.3	-137.43	-66.7	-61.2	90.5	89.9	0.65	140.161	CC, ES				
300.0	300.0	300.0	300.0	0.5	0.5	-158.61	-66.7	-61.2	91.7	90.7	0.99	92.198					
400.0	399.9	399.9	399.9	0.7	0.7	-159.45	-66.7	-61.2	95.4	94.1	1.34	70.947					
500.0	499.7	498.1	498.1	0.9	0.8	-160.14	-66.6	-62.5	102.3	100.6	1.69	60.442					
600.0	599.3	595.8	595.7	1.1	1.0	-160.13	-66.5	-66.2	113.3	111.3	2.05	55.365					
700.0	698.6	692.7	692.4	1.4	1.2	-159.60	-66.2	-72.4	128.3	125.9	2.41	53.243					
800.0	797.5	791.1	790.5	1.7	1.4	-159.14	-65.9	-79.9	146.5	143.7	2.78	52.617	SF				
900.0	896.1	888.9	888.0	2.0	1.6	-159.07	-65.6	-87.4	167.1	163.9	3.16	52.808					
1,000.0	994.2	986.2	985.1	2.4	1.8	-159.27	-65.3	-94.8	190.1	186.5	3.55	53.569					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-11D (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			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	-136.15	-54.6	-52.5	75.8					
100.0	100.0	100.0	100.0	0.1	0.1	-136.15	-54.6	-52.5	75.8	75.5	0.30	255.340		
200.0	200.0	200.0	200.0	0.3	0.3	-136.15	-54.6	-52.5	75.8	75.1	0.65	117.318 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-157.41	-54.6	-52.5	77.0	76.0	0.99	77.358		
400.0	399.9	399.6	399.6	0.7	0.7	-157.55	-53.9	-53.5	80.8	79.4	1.35	60.023		
500.0	499.7	499.0	499.0	0.9	0.9	-156.61	-51.7	-56.7	87.4	85.7	1.71	51.219		
600.0	599.3	598.1	597.8	1.1	1.1	-154.91	-48.0	-62.0	96.9	94.8	2.09	46.439		
700.0	698.6	697.1	696.4	1.4	1.3	-152.98	-43.1	-69.1	109.3	106.8	2.49	43.920		
800.0	797.5	796.0	794.9	1.7	1.5	-151.87	-38.0	-76.3	124.0	121.1	2.90	42.724		
900.0	896.1	894.5	893.0	2.0	1.7	-151.47	-33.0	-83.5	141.1	137.8	3.33	42.373 SF		
1,000.0	994.2	992.6	990.7	2.4	1.9	-151.58	-28.0	-90.7	160.5	156.7	3.77	42.600		
1,100.0	1,091.7	1,090.2	1,088.0	2.8	2.1	-152.01	-23.0	-97.8	182.1	177.9	4.21	43.251		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 (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	-134.63	-42.6	-43.2	60.7					
100.0	100.0	100.0	100.0	0.1	0.1	-134.63	-42.6	-43.2	60.7	60.4	0.30	204.455		
200.0	200.0	200.0	200.0	0.3	0.3	-134.63	-42.6	-43.2	60.7	60.0	0.65	93.939	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-156.01	-42.6	-43.2	61.9	60.9	0.99	62.168		
400.0	399.9	400.1	400.1	0.7	0.7	-156.25	-41.6	-44.0	65.3	63.9	1.35	48.458		
500.0	499.7	500.2	500.1	0.9	0.9	-155.19	-38.5	-46.4	70.8	69.1	1.71	41.386		
600.0	599.3	600.1	599.8	1.1	1.1	-153.19	-33.3	-50.4	78.4	76.3	2.09	37.427		
700.0	698.6	699.6	698.9	1.4	1.3	-150.64	-26.1	-56.0	88.2	85.7	2.51	35.116		
800.0	797.5	798.8	797.4	1.7	1.5	-147.89	-17.0	-63.1	100.5	97.5	2.97	33.783		
900.0	896.1	897.7	895.5	2.0	1.8	-146.02	-7.2	-70.7	115.0	111.6	3.46	33.238		
1,000.0	994.2	996.3	993.3	2.4	2.0	-145.18	2.5	-78.3	131.8	127.8	3.97	33.225	SF	
1,100.0	1,091.7	1,094.5	1,090.7	2.8	2.3	-145.06	12.2	-85.9	150.7	146.2	4.49	33.584		
1,200.0	1,188.6	1,192.2	1,187.7	3.2	2.6	-145.42	21.9	-93.4	171.7	166.7	5.02	34.225		
1,300.0	1,284.9	1,289.5	1,284.2	3.7	2.8	-146.09	31.5	-100.9	194.8	189.3	5.55	35.091		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-131.29	-30.2	-34.4	45.8				
100.0	100.0	100.0	100.0	0.1	0.1	-131.29	-30.2	-34.4	45.8	45.5	0.30	154.414	
200.0	200.0	200.0	200.0	0.3	0.3	-131.29	-30.2	-34.4	45.8	45.2	0.65	70.947 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-152.92	-30.2	-34.4	47.0	46.0	1.00	47.209	
400.0	399.9	400.2	400.2	0.7	0.7	-153.48	-29.1	-35.1	50.2	48.8	1.35	37.231	
500.0	499.7	500.4	500.3	0.9	0.9	-152.50	-25.6	-37.0	55.1	53.4	1.71	32.199	
600.0	599.3	600.5	600.2	1.1	1.1	-150.44	-19.9	-40.2	61.8	59.7	2.10	29.467	
700.0	698.6	700.3	699.6	1.4	1.3	-147.76	-11.9	-44.6	70.5	67.9	2.52	27.933	
800.0	797.5	799.9	798.5	1.7	1.5	-144.84	-1.7	-50.3	81.1	78.1	3.00	27.058	
900.0	896.1	899.2	896.7	2.0	1.8	-141.95	10.8	-57.2	93.8	90.2	3.53	26.551	
1,000.0	994.2	998.0	994.2	2.4	2.1	-139.28	25.3	-65.2	108.6	104.5	4.13	26.309 SF	
1,100.0	1,091.7	1,096.5	1,091.2	2.8	2.4	-137.70	40.4	-73.5	125.5	120.8	4.76	26.394	
1,200.0	1,188.6	1,194.7	1,187.9	3.2	2.8	-137.16	55.4	-81.9	144.4	139.0	5.40	26.720	
1,300.0	1,284.9	1,292.6	1,284.2	3.7	3.1	-137.31	70.3	-90.1	165.1	159.0	6.06	27.226	
1,400.0	1,380.4	1,389.9	1,380.1	4.3	3.4	-137.91	85.2	-98.4	187.7	181.0	6.73	27.880	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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							
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	-125.05	-18.2	-26.0	31.7				
100.0	100.0	100.0	100.0	0.1	0.1	-125.05	-18.2	-26.0	31.7	31.4	0.30	106.878	
200.0	200.0	200.0	200.0	0.3	0.3	-125.05	-18.2	-26.0	31.7	31.1	0.65	49.106 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-147.21	-18.2	-26.0	32.8	31.8	1.00	32.959	
400.0	399.9	400.2	400.2	0.7	0.7	-148.56	-17.0	-26.5	35.8	34.4	1.35	26.539	
500.0	499.7	500.3	500.2	0.9	0.9	-147.99	-13.3	-27.9	40.3	38.6	1.71	23.522	
600.0	599.3	600.4	600.1	1.1	1.1	-146.11	-7.3	-30.4	46.4	44.3	2.10	22.057	
700.0	698.6	700.4	699.6	1.4	1.3	-143.53	1.2	-33.9	54.2	51.6	2.53	21.373	
800.0	797.5	800.1	798.7	1.7	1.5	-140.71	12.1	-38.3	63.7	60.6	3.02	21.091	
900.0	896.1	899.6	897.2	2.0	1.8	-137.91	25.3	-43.7	74.9	71.4	3.57	21.012 SF	
1,000.0	994.2	998.8	995.0	2.4	2.1	-135.31	40.8	-50.1	88.0	83.9	4.19	21.032	
1,100.0	1,091.7	1,097.7	1,091.9	2.8	2.5	-132.94	58.6	-57.3	103.0	98.1	4.88	21.097	
1,200.0	1,188.6	1,196.2	1,188.1	3.2	2.9	-130.88	78.6	-65.5	119.9	114.2	5.65	21.224	
1,300.0	1,284.9	1,294.5	1,283.8	3.7	3.3	-129.86	99.0	-73.8	138.5	132.0	6.44	21.500	
1,400.0	1,380.4	1,392.4	1,379.2	4.3	3.7	-129.75	119.4	-82.1	158.7	151.5	7.25	21.895	
1,500.0	1,475.0	1,489.9	1,474.2	4.9	4.1	-130.24	139.7	-90.4	180.6	172.6	8.07	22.385	
1,533.2	1,506.3	1,522.2	1,505.7	5.1	4.2	-130.50	146.4	-93.1	188.3	179.9	8.34	22.575	
1,600.0	1,569.1	1,587.1	1,569.0	5.5	4.5	-131.18	159.9	-98.7	203.9	195.0	8.89	22.940	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-15D (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				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-109.79	-6.2	-17.2	18.3					
100.0	100.0	100.0	100.0	0.1	0.1	-109.79	-6.2	-17.2	18.3	18.0	0.30	61.652		
200.0	200.0	200.0	200.0	0.3	0.3	-109.79	-6.2	-17.2	18.3	17.6	0.65	28.327 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-129.72	-5.0	-17.6	19.1	18.1	1.00	19.157		
400.0	399.9	400.0	399.9	0.7	0.7	-127.29	-1.2	-18.9	21.6	20.3	1.37	15.834		
500.0	499.7	499.8	499.5	0.9	0.9	-124.29	5.0	-21.0	25.9	24.1	1.76	14.664		
600.0	599.3	599.5	598.8	1.1	1.1	-121.43	13.6	-23.9	31.9	29.7	2.21	14.449 SF		
700.0	698.6	699.1	697.7	1.4	1.4	-119.02	24.7	-27.6	39.7	37.0	2.70	14.675		
800.0	797.5	798.4	795.9	1.7	1.7	-117.09	38.1	-32.1	49.2	46.0	3.26	15.090		
900.0	896.1	897.4	893.6	2.0	2.0	-115.57	54.0	-37.4	60.6	56.7	3.89	15.566		
1,000.0	994.2	996.1	990.4	2.4	2.4	-114.37	72.2	-43.5	73.6	69.0	4.59	16.042		
1,100.0	1,091.7	1,094.5	1,086.4	2.8	2.8	-113.41	92.6	-50.4	88.4	83.0	5.36	16.489		
1,200.0	1,188.6	1,192.5	1,181.4	3.2	3.2	-112.62	115.4	-58.0	104.9	98.7	6.21	16.896		
1,300.0	1,284.9	1,290.1	1,275.4	3.7	3.7	-111.97	140.3	-66.4	123.0	115.9	7.12	17.276		
1,400.0	1,380.4	1,388.2	1,369.6	4.3	4.2	-112.02	166.1	-75.1	142.4	134.3	8.08	17.622		
1,500.0	1,475.0	1,486.1	1,463.6	4.9	4.7	-112.86	191.9	-83.7	162.8	153.7	9.07	17.939		
1,533.2	1,506.3	1,518.5	1,494.8	5.1	4.8	-113.26	200.5	-86.6	169.8	160.4	9.41	18.050		
1,600.0	1,569.1	1,583.7	1,557.4	5.5	5.2	-114.22	217.7	-92.4	184.0	173.9	10.08	18.259		
1,700.0	1,663.0	1,681.3	1,651.2	6.1	5.7	-115.42	243.4	-101.0	205.4	194.3	11.08	18.529		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-16D (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	-54.71	6.2	-8.7	10.7					
100.0	100.0	100.0	100.0	0.1	0.1	-54.71	6.2	-8.7	10.7	10.4	0.30	36.121		
200.0	200.0	200.0	200.0	0.3	0.3	-54.71	6.2	-8.7	10.7	10.1	0.65	16.596 CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	-77.97	7.4	-9.1	11.4	10.4	1.00	11.472		
400.0	399.9	399.5	399.4	0.7	0.7	-83.54	11.2	-10.3	13.7	12.3	1.36	10.050		
500.0	499.7	499.1	498.8	0.9	0.9	-89.54	17.4	-12.3	17.7	15.9	1.76	10.030 SF		
600.0	599.3	598.6	597.9	1.1	1.1	-94.44	26.0	-15.0	23.4	21.2	2.20	10.615		
700.0	698.6	698.0	696.6	1.4	1.4	-98.00	37.1	-18.5	30.9	28.2	2.70	11.433		
800.0	797.5	797.1	794.7	1.7	1.7	-100.51	50.6	-22.7	40.1	36.9	3.26	12.300		
900.0	896.1	896.0	892.1	2.0	2.0	-102.26	66.5	-27.7	51.1	47.2	3.89	13.130		
1,000.0	994.2	994.5	988.8	2.4	2.4	-103.50	84.7	-33.4	63.8	59.2	4.59	13.885		
1,100.0	1,091.7	1,092.8	1,084.6	2.8	2.8	-104.38	105.3	-39.9	78.1	72.8	5.37	14.554		
1,200.0	1,188.6	1,190.6	1,179.5	3.2	3.2	-105.00	128.0	-47.1	94.1	87.9	6.22	15.140		
1,300.0	1,284.9	1,288.1	1,273.4	3.7	3.7	-105.45	153.0	-54.9	111.7	104.6	7.14	15.650		
1,400.0	1,380.4	1,385.1	1,366.2	4.3	4.2	-105.75	180.2	-63.4	131.0	122.8	8.14	16.095		
1,500.0	1,475.0	1,481.6	1,457.7	4.9	4.8	-105.95	209.4	-72.6	151.8	142.6	9.21	16.483		
1,533.2	1,506.3	1,513.6	1,487.8	5.1	5.0	-106.00	219.5	-75.8	159.1	149.5	9.57	16.616		
1,600.0	1,569.1	1,578.7	1,549.1	5.5	5.3	-106.27	240.5	-82.4	173.9	163.5	10.32	16.848		
1,700.0	1,663.0	1,676.2	1,640.9	6.1	5.9	-106.60	272.0	-92.3	196.0	184.6	11.44	17.130		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-1D (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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-143.82	-84.9	-62.1	105.2				
100.0	100.0	100.0	100.0	0.1	0.1	-143.82	-84.9	-62.1	105.2	104.9	0.30	354.400	
200.0	200.0	200.0	200.0	0.3	0.3	-143.82	-84.9	-62.1	105.2	104.5	0.65	162.832 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-164.89	-84.9	-62.1	106.4	105.4	0.99	106.975	
400.0	399.9	399.9	399.9	0.7	0.7	-165.40	-84.9	-62.1	110.2	108.9	1.34	82.019	
500.0	499.7	500.4	500.4	0.9	0.8	-166.83	-85.3	-60.8	116.2	114.5	1.69	68.579	
600.0	599.3	600.6	600.5	1.1	1.0	-169.54	-86.7	-57.1	124.3	122.3	2.05	60.637	
700.0	698.6	700.3	700.0	1.4	1.2	-173.16	-88.9	-51.0	134.9	132.5	2.42	55.836	
800.0	797.5	799.2	798.5	1.7	1.4	-177.30	-92.0	-42.5	148.3	145.5	2.80	53.016	
900.0	896.1	897.2	895.8	2.0	1.7	178.38	-95.9	-31.7	165.0	161.8	3.20	51.506	
1,000.0	994.2	994.2	991.8	2.4	1.9	174.18	-100.6	-18.8	185.1	181.5	3.63	50.941 SF	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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										
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	-144.08	-72.9	-52.8	90.0								
100.0	100.0	100.0	100.0	0.1	0.1	-144.08	-72.9	-52.8	90.0	89.7	0.30	303.177					
200.0	200.0	200.0	200.0	0.3	0.3	-144.08	-72.9	-52.8	90.0	89.3	0.65	139.298	CC, ES				
300.0	300.0	300.0	300.0	0.5	0.5	-165.18	-72.9	-52.8	91.2	90.2	0.99	91.699					
400.0	399.9	399.9	399.9	0.7	0.7	-165.77	-72.9	-52.8	95.0	93.7	1.34	70.717					
500.0	499.7	501.2	501.2	0.9	0.8	-167.30	-72.8	-51.4	100.6	98.9	1.70	59.346					
600.0	599.3	602.3	602.2	1.1	1.0	-170.15	-72.8	-47.4	107.5	105.4	2.05	52.400					
700.0	698.6	703.1	702.8	1.4	1.2	-173.97	-72.8	-40.7	115.9	113.5	2.42	47.992					
800.0	797.5	803.5	802.7	1.7	1.5	-178.41	-72.7	-31.5	126.4	123.6	2.80	45.175					
900.0	896.1	903.3	901.8	2.0	1.7	176.86	-72.7	-19.7	139.2	136.0	3.21	43.392					
1,000.0	994.2	1,001.7	999.3	2.4	2.0	172.44	-72.6	-6.2	154.9	151.3	3.64	42.518					
1,100.0	1,091.7	1,099.4	1,096.0	2.8	2.2	168.96	-72.5	7.2	173.9	169.8	4.10	42.426	SF				
1,200.0	1,188.6	1,196.6	1,192.3	3.2	2.5	166.31	-72.4	20.6	195.8	191.2	4.57	42.847					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-3D (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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-144.11	-60.8	-44.0	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	-144.11	-60.8	-44.0	75.1	74.8	0.30	253.062	
200.0	200.0	200.0	200.0	0.3	0.3	-144.11	-60.8	-44.0	75.1	74.4	0.65	116.272 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-165.25	-60.8	-44.0	76.4	75.4	0.99	76.752	
400.0	399.9	401.6	401.6	0.7	0.7	-166.52	-60.4	-42.8	79.1	77.7	1.35	58.688	
500.0	499.7	503.2	503.1	0.9	0.9	-169.23	-59.0	-38.9	82.3	80.6	1.70	48.322	
600.0	599.3	604.7	604.4	1.1	1.1	-173.15	-56.6	-32.6	86.2	84.2	2.06	41.767	
700.0	698.6	706.0	705.2	1.4	1.3	-178.00	-53.4	-23.8	91.3	88.9	2.44	37.402	
800.0	797.5	807.0	805.5	1.7	1.6	176.54	-49.2	-12.5	98.0	95.1	2.85	34.399	
900.0	896.1	906.8	904.3	2.0	1.8	171.06	-44.4	0.7	106.8	103.5	3.29	32.449	
1,000.0	994.2	1,005.7	1,002.2	2.4	2.1	166.64	-39.5	14.0	118.8	115.0	3.76	31.590	
1,100.0	1,091.7	1,104.3	1,099.8	2.8	2.4	163.34	-34.6	27.3	133.9	129.6	4.25	31.463 SF	
1,200.0	1,188.6	1,202.5	1,197.0	3.2	2.7	161.00	-29.8	40.5	151.7	146.9	4.77	31.831	
1,300.0	1,284.9	1,300.3	1,293.8	3.7	3.0	159.43	-24.9	53.7	172.1	166.8	5.29	32.546	
1,400.0	1,380.4	1,397.6	1,390.1	4.3	3.3	158.44	-20.1	66.8	195.0	189.2	5.82	33.519	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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												<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	-143.94	-48.4	-35.3	59.9				
100.0	100.0	100.0	100.0	0.1	0.1	-143.94	-48.4	-35.3	59.9	59.6	0.30	201.965	
200.0	200.0	200.0	200.0	0.3	0.3	-143.94	-48.4	-35.3	59.9	59.3	0.65	92.795 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-165.15	-48.4	-35.3	61.2	60.2	0.99	61.510	
400.0	399.9	401.5	401.5	0.7	0.7	-166.45	-47.7	-34.2	63.7	62.4	1.35	47.334	
500.0	499.7	503.0	502.9	0.9	0.9	-168.98	-45.3	-30.9	66.4	64.7	1.70	39.084	
600.0	599.3	604.6	604.2	1.1	1.1	-172.59	-41.4	-25.4	69.4	67.4	2.06	33.779	
700.0	698.6	706.0	705.2	1.4	1.3	-177.07	-35.9	-17.7	73.0	70.6	2.42	30.171	
800.0	797.5	807.4	805.9	1.7	1.6	177.79	-28.9	-7.9	77.4	74.6	2.80	27.608	
900.0	896.1	908.6	906.0	2.0	1.8	172.25	-20.4	4.2	82.9	79.7	3.23	25.691	
1,000.0	994.2	1,008.8	1,004.8	2.4	2.2	166.77	-10.6	17.9	90.0	86.3	3.71	24.285	
1,100.0	1,091.7	1,108.0	1,102.6	2.8	2.5	162.45	-0.7	31.8	100.1	95.9	4.23	23.666	
1,200.0	1,188.6	1,207.0	1,200.1	3.2	2.8	159.38	9.1	45.7	113.1	108.3	4.78	23.640 SF	
1,300.0	1,284.9	1,305.7	1,297.3	3.7	3.1	157.36	19.0	59.5	128.7	123.3	5.35	24.039	
1,400.0	1,380.4	1,404.1	1,394.2	4.3	3.5	156.16	28.7	73.2	146.7	140.8	5.93	24.753	
1,500.0	1,475.0	1,501.9	1,490.6	4.9	3.8	155.56	38.5	87.0	167.2	160.7	6.50	25.711	
1,533.2	1,506.3	1,534.3	1,522.5	5.1	3.9	155.47	41.7	91.5	174.5	167.8	6.69	26.078	
1,600.0	1,569.1	1,599.4	1,586.6	5.5	4.1	155.42	48.2	100.6	189.4	182.3	7.08	26.762	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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													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	-143.65	-36.4	-26.8	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	-143.65	-36.4	-26.8	45.2	44.9	0.30	152.424		
200.0	200.0	200.0	200.0	0.3	0.3	-143.65	-36.4	-26.8	45.2	44.6	0.65	70.033		
300.0	300.0	301.2	301.2	0.5	0.5	-165.17	-35.4	-25.9	45.2	44.2	1.00	45.311		
400.0	399.9	402.4	402.3	0.7	0.7	-167.06	-32.5	-23.2	45.0	43.7	1.35	33.406		
500.0	499.7	503.5	503.2	0.9	0.9	-170.23	-27.5	-18.7	44.9	43.2	1.70	26.427		
519.1	518.7	522.8	522.4	0.9	0.9	-170.98	-26.4	-17.6	44.9	43.2	1.77	25.405 CC		
600.0	599.3	604.6	603.8	1.1	1.1	-174.67	-20.6	-12.3	45.0	43.0	2.06	21.902 ES		
700.0	698.6	705.6	704.2	1.4	1.4	179.70	-11.8	-4.2	45.5	43.1	2.42	18.791		
800.0	797.5	806.6	804.0	1.7	1.7	173.08	-1.0	5.7	46.7	43.9	2.82	16.542		
900.0	896.1	907.5	903.4	2.0	2.0	165.81	11.8	17.3	48.9	45.6	3.30	14.824		
1,000.0	994.2	1,007.9	1,001.9	2.4	2.4	158.43	26.3	30.6	52.3	48.4	3.87	13.505		
1,100.0	1,091.7	1,107.5	1,099.5	2.8	2.8	152.84	41.1	44.1	58.4	53.9	4.52	12.928 SF		
1,200.0	1,188.6	1,207.1	1,197.0	3.2	3.2	149.47	55.9	57.7	67.2	62.0	5.19	12.960		
1,300.0	1,284.9	1,306.4	1,294.3	3.7	3.5	147.90	70.6	71.2	78.4	72.5	5.85	13.407		
1,400.0	1,380.4	1,405.5	1,391.4	4.3	3.9	147.57	85.4	84.7	91.8	85.3	6.48	14.154		
1,500.0	1,475.0	1,504.3	1,488.1	4.9	4.3	148.05	100.0	98.1	107.4	100.3	7.09	15.137		
1,533.2	1,506.3	1,537.0	1,520.2	5.1	4.4	148.32	104.9	102.6	113.0	105.7	7.29	15.511		
1,600.0	1,569.1	1,602.8	1,584.6	5.5	4.7	148.95	114.7	111.5	124.7	117.0	7.68	16.237		
1,700.0	1,663.0	1,701.2	1,681.0	6.1	5.1	149.69	129.3	124.9	142.1	133.8	8.27	17.190		
1,800.0	1,757.0	1,799.7	1,777.5	6.7	5.5	150.27	143.9	138.3	159.6	150.7	8.86	18.012		
1,900.0	1,851.0	1,898.1	1,873.9	7.3	5.8	150.74	158.6	151.7	177.1	167.6	9.46	18.726		
2,000.0	1,944.9	1,996.6	1,970.3	7.9	6.2	151.12	173.2	165.1	194.6	184.5	10.05	19.354		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-6D (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	-143.52	-24.4	-18.1	30.4						
100.0	100.0	100.0	100.0	0.1	0.1	-143.52	-24.4	-18.1	30.4	30.1	0.30	102.363			
200.0	200.0	200.0	200.0	0.3	0.3	-143.52	-24.4	-18.1	30.4	29.7	0.65	47.032			
300.0	300.0	300.8	300.8	0.5	0.5	-165.08	-23.4	-17.3	30.3	29.3	1.00	30.430			
400.0	399.9	401.6	401.5	0.7	0.7	-167.13	-20.2	-14.9	30.2	28.8	1.35	22.402			
500.0	499.7	502.4	502.1	0.9	0.9	-170.58	-14.8	-10.9	30.0	28.3	1.70	17.685			
568.9	568.3	571.8	571.2	1.0	1.1	-173.77	-9.9	-7.3	30.0	28.0	1.94	15.449 CC			
600.0	599.3	603.1	602.4	1.1	1.1	-175.43	-7.4	-5.4	30.0	27.9	2.05	14.633			
700.0	698.6	703.8	702.4	1.4	1.4	178.39	2.2	1.7	30.3	27.8	2.41	12.551 ES			
800.0	797.5	804.5	802.0	1.7	1.7	171.09	13.9	10.4	31.0	28.2	2.81	11.062			
900.0	896.1	905.1	901.1	2.0	2.0	163.10	27.6	20.7	32.6	29.3	3.28	9.931			
1,000.0	994.2	1,005.7	999.7	2.4	2.4	154.93	43.5	32.5	35.0	31.2	3.88	9.028			
1,100.0	1,091.7	1,106.2	1,097.7	2.8	2.8	147.13	61.4	45.8	38.6	33.9	4.64	8.314			
1,200.0	1,188.6	1,206.3	1,194.8	3.2	3.3	140.50	81.0	60.4	43.4	37.9	5.52	7.866 SF			
1,300.0	1,284.9	1,306.0	1,291.4	3.7	3.7	137.07	100.7	75.1	50.4	44.0	6.38	7.899			
1,400.0	1,380.4	1,405.6	1,387.9	4.3	4.2	136.24	120.4	89.7	59.4	52.2	7.19	8.263			
1,500.0	1,475.0	1,505.0	1,484.2	4.9	4.6	137.08	140.1	104.4	70.3	62.4	7.94	8.863			
1,533.2	1,506.3	1,537.9	1,516.2	5.1	4.8	137.60	146.6	109.2	74.4	66.2	8.16	9.110			
1,600.0	1,569.1	1,604.2	1,580.4	5.5	5.1	138.69	159.7	119.0	82.8	74.1	8.62	9.601			
1,700.0	1,663.0	1,703.4	1,676.5	6.1	5.5	139.97	179.3	133.6	95.4	86.1	9.31	10.244			
1,800.0	1,757.0	1,802.5	1,772.6	6.7	6.0	140.94	199.0	148.2	108.0	98.0	10.00	10.796			
1,900.0	1,851.0	1,901.7	1,868.7	7.3	6.4	141.72	218.6	162.8	120.6	109.9	10.70	11.275			
2,000.0	1,944.9	2,000.9	1,964.9	7.9	6.9	142.34	238.2	177.4	133.3	121.9	11.40	11.693			
2,100.0	2,038.9	2,100.1	2,061.0	8.5	7.4	142.86	257.8	192.0	146.0	133.9	12.10	12.062			
2,200.0	2,132.9	2,199.3	2,157.1	9.2	7.8	143.29	277.4	206.6	158.7	145.9	12.81	12.389			
2,300.0	2,226.9	2,298.5	2,253.2	9.8	8.3	143.66	297.1	221.2	171.4	157.9	13.52	12.681			
2,400.0	2,320.8	2,397.7	2,349.4	10.4	8.8	143.98	316.7	235.8	184.1	169.9	14.22	12.943			
2,500.0	2,414.8	2,496.8	2,445.5	11.0	9.2	144.26	336.3	250.4	196.8	181.9	14.93	13.179			
2,600.0	2,508.8	2,596.0	2,541.6	11.7	9.7	144.51	355.9	265.0	209.5	193.9	15.64	13.394			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-7D (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	-142.24	-12.0	-9.3	15.2							
100.0	100.0	100.0	100.0	0.1	0.1	-142.24	-12.0	-9.3	15.2	14.9	0.30	51.246				
200.0	200.0	200.0	200.0	0.3	0.3	-142.24	-12.0	-9.3	15.2	14.6	0.65	23.545				
300.0	300.0	300.4	300.4	0.5	0.5	-163.77	-10.9	-8.7	15.2	14.2	1.00	15.228				
400.0	399.9	400.8	400.7	0.7	0.7	-165.73	-7.4	-6.8	15.0	13.7	1.35	11.178				
500.0	499.7	501.2	500.9	0.9	0.9	-169.05	-1.6	-3.6	14.9	13.2	1.70	8.779				
600.0	599.3	601.6	600.8	1.1	1.1	-173.79	6.5	0.8	14.7	12.7	2.04	7.217				
668.1	666.9	669.9	668.7	1.3	1.3	-177.84	13.3	4.5	14.7	12.4	2.28	6.448 CC				
700.0	698.6	701.9	700.5	1.4	1.4	-179.95	16.9	6.4	14.7	12.3	2.39	6.151				
800.0	797.5	802.3	799.8	1.7	1.7	172.60	29.6	13.4	14.9	12.2	2.76	5.395 ES				
900.0	896.1	902.6	898.7	2.0	2.0	164.23	44.6	21.5	15.5	12.3	3.20	4.825				
1,000.0	994.2	1,003.0	997.1	2.4	2.4	155.48	61.8	30.9	16.5	12.7	3.77	4.363				
1,100.0	1,091.7	1,103.3	1,094.9	2.8	2.8	146.98	81.3	41.5	18.0	13.5	4.51	3.986				
1,200.0	1,188.6	1,203.6	1,192.1	3.2	3.3	139.20	103.1	53.4	20.1	14.6	5.42	3.700				
1,300.0	1,284.9	1,303.9	1,288.6	3.7	3.8	132.41	127.1	66.4	22.7	16.2	6.49	3.502				
1,400.0	1,380.4	1,404.0	1,384.2	4.3	4.3	127.23	153.0	80.6	26.0	18.4	7.62	3.415 SF				
1,500.0	1,475.0	1,503.9	1,479.6	4.9	4.8	126.69	179.2	94.8	30.8	22.2	8.59	3.590				
1,533.2	1,506.3	1,537.0	1,511.2	5.1	5.0	127.35	187.8	99.5	32.8	23.9	8.86	3.699				
1,600.0	1,569.1	1,603.7	1,574.8	5.5	5.4	128.86	205.3	109.0	36.9	27.5	9.39	3.928				
1,700.0	1,663.0	1,703.5	1,670.1	6.1	5.9	130.58	231.4	123.3	43.1	32.9	10.18	4.228				
1,800.0	1,757.0	1,803.3	1,765.4	6.7	6.5	131.87	257.6	137.5	49.3	38.3	10.99	4.484				
1,900.0	1,851.0	1,903.1	1,860.6	7.3	7.0	132.87	283.7	151.7	55.5	43.7	11.80	4.704				
2,000.0	1,944.9	2,002.9	1,955.9	7.9	7.5	133.66	309.8	166.0	61.7	49.1	12.61	4.896				
2,100.0	2,038.9	2,102.7	2,051.1	8.5	8.1	134.31	336.0	180.2	68.0	54.6	13.43	5.064				
2,200.0	2,132.9	2,202.5	2,146.4	9.2	8.6	134.85	362.1	194.4	74.3	60.0	14.25	5.212				
2,300.0	2,226.9	2,302.3	2,241.7	9.8	9.2	135.31	388.3	208.7	80.5	65.4	15.07	5.343				
2,400.0	2,320.8	2,402.1	2,336.9	10.4	9.7	135.70	414.4	222.9	86.8	70.9	15.89	5.461				
2,500.0	2,414.8	2,501.9	2,432.2	11.0	10.3	136.04	440.5	237.1	93.1	76.3	16.72	5.566				
2,600.0	2,508.8	2,601.7	2,527.4	11.7	10.8	136.34	466.7	251.4	99.3	81.8	17.55	5.662				
2,700.0	2,602.7	2,701.5	2,622.7	12.3	11.4	136.60	492.8	265.6	105.6	87.2	18.37	5.748				
2,800.0	2,696.7	2,801.3	2,718.0	12.9	11.9	136.83	518.9	279.8	111.9	92.7	19.20	5.827				
2,900.0	2,790.7	2,901.1	2,813.2	13.5	12.5	137.04	545.1	294.1	118.2	98.1	20.03	5.899				
3,000.0	2,884.7	3,000.9	2,908.5	14.1	13.0	137.22	571.2	308.3	124.5	103.6	20.86	5.966				
3,100.0	2,978.6	3,100.7	3,003.7	14.8	13.6	137.39	597.3	322.5	130.7	109.1	21.69	6.027				
3,200.0	3,072.6	3,200.5	3,099.0	15.4	14.1	137.54	623.5	336.8	137.0	114.5	22.53	6.083				
3,300.0	3,166.6	3,300.3	3,194.3	16.0	14.7	137.68	649.6	351.0	143.3	120.0	23.36	6.136				
3,400.0	3,260.5	3,400.1	3,289.5	16.6	15.2	137.81	675.8	365.2	149.6	125.4	24.19	6.185				
3,500.0	3,354.5	3,499.9	3,384.8	17.3	15.8	137.93	701.9	379.5	155.9	130.9	25.02	6.230				
3,600.0	3,448.5	3,599.7	3,480.1	17.9	16.3	138.03	728.0	393.7	162.2	136.3	25.86	6.272				
3,700.0	3,542.4	3,699.5	3,575.3	18.5	16.9	138.13	754.2	407.9	168.5	141.8	26.69	6.312				
3,800.0	3,636.4	3,799.3	3,670.6	19.1	17.4	138.23	780.3	422.2	174.8	147.2	27.52	6.349				
3,900.0	3,730.4	3,899.1	3,765.8	19.8	18.0	138.31	806.4	436.4	181.0	152.7	28.36	6.384				
4,000.0	3,824.4	3,998.9	3,861.1	20.4	18.5	138.39	832.6	450.6	187.3	158.1	29.19	6.417				
4,100.0	3,918.3	4,098.7	3,956.4	21.0	19.1	138.47	858.7	464.9	193.6	163.6	30.03	6.448				
4,200.0	4,012.3	4,198.5	4,051.6	21.6	19.6	138.54	884.8	479.1	199.9	169.1	30.86	6.478				
4,300.0	4,106.3	4,298.3	4,146.9	22.3	20.2	138.61	911.0	493.3	206.2	174.5	31.70	6.506				
4,400.0	4,200.2	4,398.1	4,242.1	22.9	20.8	138.67	937.1	507.6	212.5	180.0	32.53	6.532				
4,500.0	4,294.2	4,497.9	4,337.4	23.5	21.3	138.73	963.3	521.8	218.8	185.4	33.37	6.557				
4,600.0	4,388.2	4,597.7	4,432.7	24.1	21.9	138.78	989.4	536.0	225.1	190.9	34.20	6.581				
4,700.0	4,482.2	4,697.5	4,527.9	24.8	22.4	138.83	1,015.5	550.3	231.4	196.3	35.04	6.604				

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 22-8D (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 22-8D (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 22-9D (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	-138.59	-79.0	-69.7	105.4				
100.0	100.0	100.0	100.0	0.1	0.1	-138.59	-79.0	-69.7	105.4	105.1	0.30	355.168	
200.0	200.0	200.0	200.0	0.3	0.3	-138.59	-79.0	-69.7	105.4	104.7	0.65	163.185 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-159.72	-79.0	-69.7	106.6	105.6	0.99	107.155	
400.0	399.9	399.9	399.9	0.7	0.7	-160.41	-79.0	-69.7	110.3	109.0	1.34	82.040	
500.0	499.7	496.9	496.9	0.9	0.8	-161.22	-79.7	-70.8	117.7	116.0	1.69	69.629	
600.0	599.3	593.2	593.1	1.1	1.0	-161.87	-81.5	-73.9	129.9	127.9	2.04	63.798	
700.0	698.6	688.5	688.2	1.4	1.2	-162.33	-84.5	-79.1	146.9	144.5	2.38	61.646 SF	
800.0	797.5	783.8	783.2	1.7	1.4	-162.64	-88.7	-86.2	168.5	165.8	2.73	61.658	
900.0	896.1	880.8	879.7	2.0	1.6	-163.03	-93.2	-93.8	193.1	190.0	3.09	62.504	

# Cathedral Energy Services

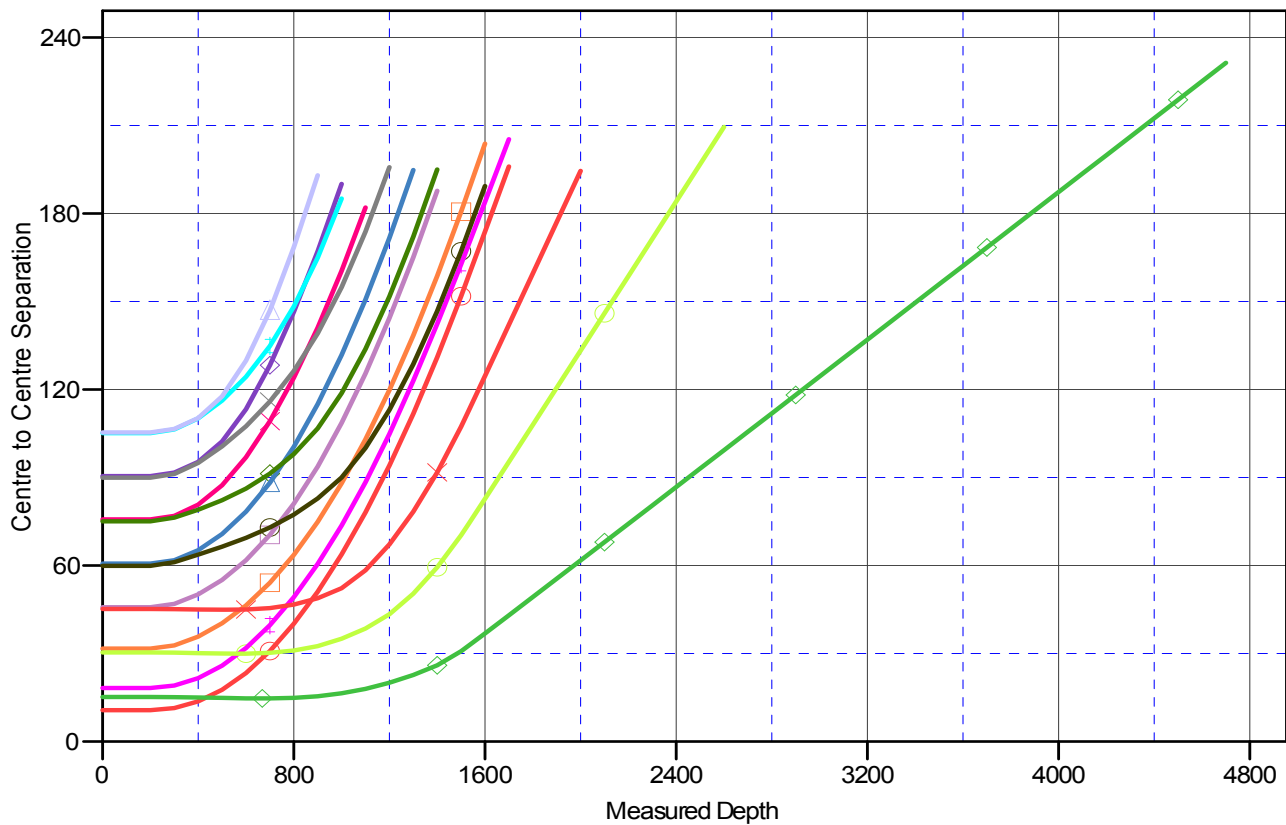
## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-8D (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 22-8D (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 22-8D (OXY 22 Pad)  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.70°

### Ladder Plot



### LEGEND

◆ OXY 22-10D (OXY 22 Pad), DD, Plan #1 V0	◆ OXY 22-15D (OXY 22 Pad), DD, Plan #1 V0	◆ OXY 22-4D (OXY 22 Pad), DD, Plan #1 V0
✕ OXY 22-11D (OXY 22 Pad), DD, Plan #1 V0	○ OXY 22-16D (OXY 22 Pad), DD, Plan #1 V0	✕ OXY 22-5D (OXY 22 Pad), DD, Plan #1 V0
▲ OXY 22-12D (OXY 22 Pad), DD, Plan #1 V0	◆ OXY 22-1D (OXY 22 Pad), DD, Plan #1 V0	○ OXY 22-6D (OXY 22 Pad), DD, Plan #1 V0
◆ OXY 22-13D (OXY 22 Pad), DD, Plan #1 V0	✕ OXY 22-2D (OXY 22 Pad), DD, Plan #1 V0	◆ OXY 22-7D (OXY 22 Pad), DD, Plan #1 V0
◆ OXY 22-14D (OXY 22 Pad), DD, Plan #1 V0	◆ OXY 22-3D (OXY 22 Pad), DD, Plan #1 V0	▲ OXY 22-9D (OXY 22 Pad), DD, Plan #1 V0