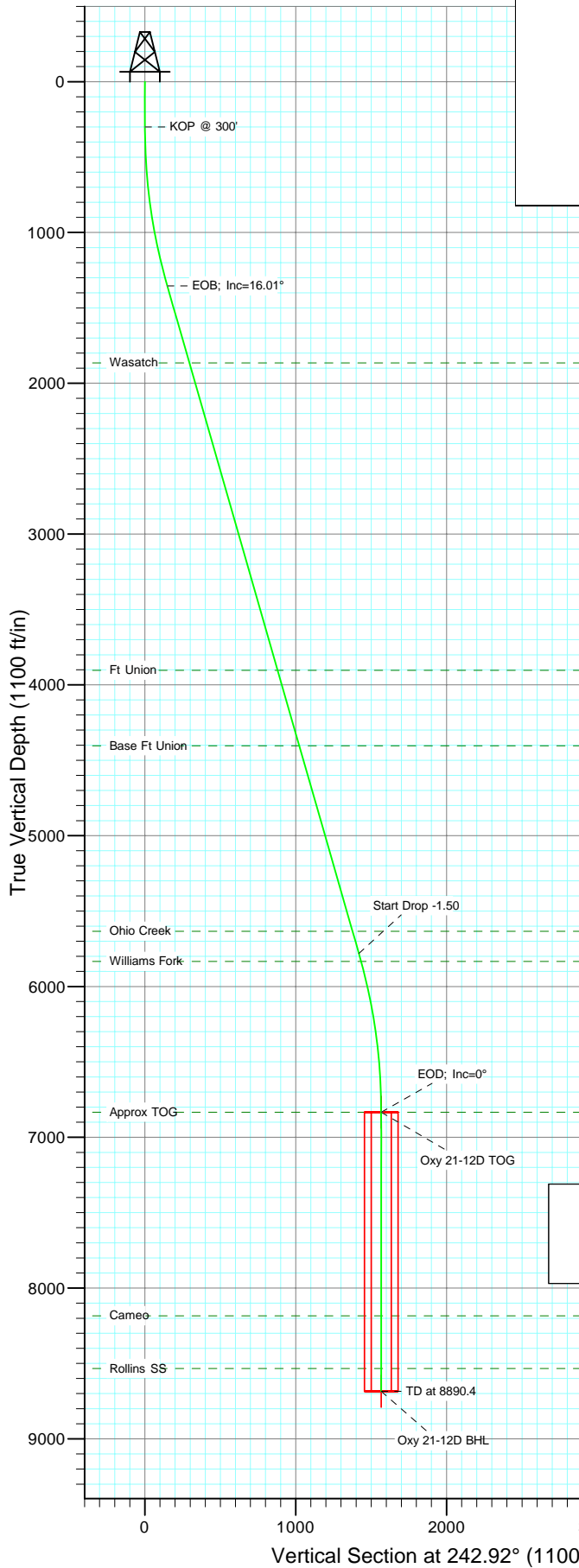


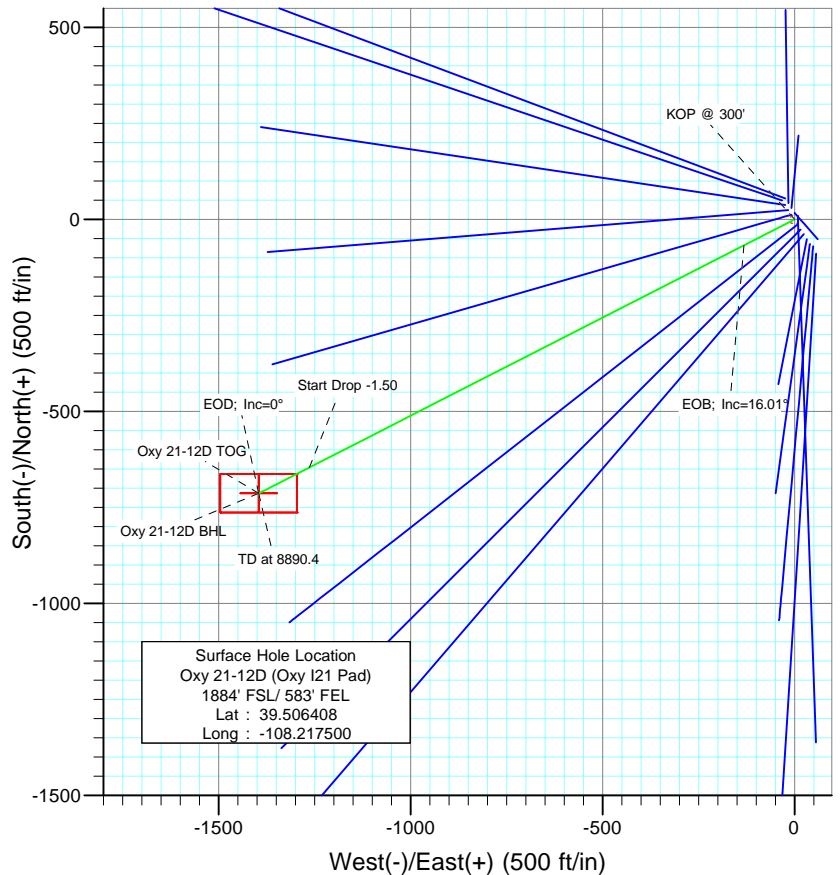


Berry Petroleum Company

Project: Garfield County
Site: NESE S21-T6S-R97W (Oxy I21 pad)
Well: Oxy 21-12D (Oxy I21 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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1367.5	16.01	242.92	1353.6	-67.5	-132.0	1.50	242.92	148.2	
4	5972.9	16.01	242.92	5780.4	-645.7	-1263.1	0.00	0.00	1418.6	
5	7040.4	0.00	0.00	6834.0	-713.1	-1395.0	1.50	180.00	1566.7	Oxy 21-12D TOG
6	8890.4	0.00	0.00	8684.0	-713.1	-1395.0	0.00	0.00	1566.7	Oxy 21-12D BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1864.0	1898.4	Wasatch
3904.0	4020.8	Ft Union
4404.0	4541.0	Base Ft Union
5634.0	5820.6	Ohio Creek
5834.0	6028.6	Williams Fork
6834.0	7040.4	Approx TOG
8184.0	8390.4	Cameo
8534.0	8740.4	Rollins SS



Azimuths to True North
Magnetic North: 10.65°

Magnetic Field
Strength: 52405.2snT
Dip Angle: 65.76°
Date: 10/6/2009
Model: IGRF200510

DESIGN DETAILS: Plan #1

95XXX; BH
KBE @ 8381.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Oxy 21-12D BHL	242.92	Slot	0.0	0.0	0.0

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site		NESE S21-T6S-R97W (Oxy I21 pad)			
Site Position:		Northing:	1,620,717.92 ft	Latitude:	39.506164
From:	Lat/Long	Easting:	2,233,406.18 ft	Longitude:	-108.217300
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	Oxy 21-12D (Oxy I21 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,620,808.44 ft	Latitude:	39.506408
	+E/-W	0.0 ft	Easting:	2,233,352.43 ft	Longitude:	-108.217500
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,366.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/6/2009	10.65	65.76	52,405

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	242.92

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,367.5	16.01	242.92	1,353.6	-67.5	-132.0	1.50	1.50	0.00	242.92	
5,972.9	16.01	242.92	5,780.4	-645.7	-1,263.1	0.00	0.00	0.00	0.00	
7,040.4	0.00	0.00	6,834.0	-713.1	-1,395.0	1.50	-1.50	0.00	180.00	Oxy 21-12D TOG
8,890.4	0.00	0.00	8,684.0	-713.1	-1,395.0	0.00	0.00	0.00	0.00	Oxy 21-12D BHL

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
210.0	0.00	0.00	210.0	0.0	0.0	0.0	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	
270.0	0.00	0.00	270.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
330.0	0.45	242.92	330.0	-0.1	-0.1	0.1	1.50	1.50	
360.0	0.90	242.92	360.0	-0.2	-0.4	0.5	1.50	1.50	
390.0	1.35	242.92	390.0	-0.5	-0.9	1.1	1.50	1.50	
420.0	1.80	242.92	420.0	-0.9	-1.7	1.9	1.50	1.50	
450.0	2.25	242.92	450.0	-1.3	-2.6	2.9	1.50	1.50	
480.0	2.70	242.92	479.9	-1.9	-3.8	4.2	1.50	1.50	
510.0	3.15	242.92	509.9	-2.6	-5.1	5.8	1.50	1.50	
540.0	3.60	242.92	539.8	-3.4	-6.7	7.5	1.50	1.50	
570.0	4.05	242.92	569.8	-4.3	-8.5	9.5	1.50	1.50	
600.0	4.50	242.92	599.7	-5.4	-10.5	11.8	1.50	1.50	
630.0	4.95	242.92	629.6	-6.5	-12.7	14.2	1.50	1.50	
660.0	5.40	242.92	659.5	-7.7	-15.1	17.0	1.50	1.50	
690.0	5.85	242.92	689.3	-9.1	-17.7	19.9	1.50	1.50	
720.0	6.30	242.92	719.2	-10.5	-20.5	23.1	1.50	1.50	
750.0	6.75	242.92	749.0	-12.1	-23.6	26.5	1.50	1.50	
780.0	7.20	242.92	778.7	-13.7	-26.8	30.1	1.50	1.50	
810.0	7.65	242.92	808.5	-15.5	-30.3	34.0	1.50	1.50	
840.0	8.10	242.92	838.2	-17.3	-33.9	38.1	1.50	1.50	
870.0	8.55	242.92	867.9	-19.3	-37.8	42.5	1.50	1.50	
900.0	9.00	242.92	897.5	-21.4	-41.9	47.0	1.50	1.50	
930.0	9.45	242.92	927.1	-23.6	-46.2	51.8	1.50	1.50	
960.0	9.90	242.92	956.7	-25.9	-50.6	56.9	1.50	1.50	
990.0	10.35	242.92	986.3	-28.3	-55.3	62.2	1.50	1.50	
1,020.0	10.80	242.92	1,015.7	-30.8	-60.2	67.7	1.50	1.50	
1,050.0	11.25	242.92	1,045.2	-33.4	-65.4	73.4	1.50	1.50	
1,080.0	11.70	242.92	1,074.6	-36.1	-70.7	79.4	1.50	1.50	
1,110.0	12.15	242.92	1,103.9	-38.9	-76.2	85.6	1.50	1.50	
1,140.0	12.60	242.92	1,133.2	-41.9	-81.9	92.0	1.50	1.50	
1,170.0	13.05	242.92	1,162.5	-44.9	-87.8	98.7	1.50	1.50	
1,200.0	13.50	242.92	1,191.7	-48.0	-94.0	105.5	1.50	1.50	
1,230.0	13.95	242.92	1,220.8	-51.3	-100.3	112.7	1.50	1.50	
1,260.0	14.40	242.92	1,249.9	-54.6	-106.9	120.0	1.50	1.50	
1,290.0	14.85	242.92	1,279.0	-58.1	-113.6	127.6	1.50	1.50	
1,320.0	15.30	242.92	1,307.9	-61.6	-120.5	135.4	1.50	1.50	
1,350.0	15.75	242.92	1,336.8	-65.3	-127.7	143.4	1.50	1.50	
1,367.5	16.01	242.92	1,353.6	-67.5	-132.0	148.2	1.50	1.50	EOB; Inc=16.01°
1,380.0	16.01	242.92	1,365.7	-69.0	-135.0	151.6	0.00	0.00	
1,410.0	16.01	242.92	1,394.5	-72.8	-142.4	159.9	0.00	0.00	
1,440.0	16.01	242.92	1,423.3	-76.6	-149.8	168.2	0.00	0.00	
1,470.0	16.01	242.92	1,452.2	-80.3	-157.1	176.5	0.00	0.00	
1,500.0	16.01	242.92	1,481.0	-84.1	-164.5	184.7	0.00	0.00	

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,530.0	16.01	242.92	1,509.9	-87.9	-171.9	193.0	0.00	0.00	
1,560.0	16.01	242.92	1,538.7	-91.6	-179.2	201.3	0.00	0.00	
1,590.0	16.01	242.92	1,567.5	-95.4	-186.6	209.6	0.00	0.00	
1,620.0	16.01	242.92	1,596.4	-99.2	-194.0	217.8	0.00	0.00	
1,650.0	16.01	242.92	1,625.2	-102.9	-201.3	226.1	0.00	0.00	
1,680.0	16.01	242.92	1,654.0	-106.7	-208.7	234.4	0.00	0.00	
1,710.0	16.01	242.92	1,682.9	-110.5	-216.1	242.7	0.00	0.00	
1,740.0	16.01	242.92	1,711.7	-114.2	-223.4	250.9	0.00	0.00	
1,770.0	16.01	242.92	1,740.5	-118.0	-230.8	259.2	0.00	0.00	
1,800.0	16.01	242.92	1,769.4	-121.8	-238.2	267.5	0.00	0.00	
1,830.0	16.01	242.92	1,798.2	-125.5	-245.6	275.8	0.00	0.00	
1,860.0	16.01	242.92	1,827.1	-129.3	-252.9	284.1	0.00	0.00	
1,890.0	16.01	242.92	1,855.9	-133.1	-260.3	292.3	0.00	0.00	
1,898.4	16.01	242.92	1,864.0	-134.1	-262.4	294.7	0.00	0.00	Wasatch
1,920.0	16.01	242.92	1,884.7	-136.8	-267.7	300.6	0.00	0.00	
1,950.0	16.01	242.92	1,913.6	-140.6	-275.0	308.9	0.00	0.00	
1,980.0	16.01	242.92	1,942.4	-144.4	-282.4	317.2	0.00	0.00	
2,010.0	16.01	242.92	1,971.2	-148.1	-289.8	325.4	0.00	0.00	
2,040.0	16.01	242.92	2,000.1	-151.9	-297.1	333.7	0.00	0.00	
2,070.0	16.01	242.92	2,028.9	-155.7	-304.5	342.0	0.00	0.00	
2,100.0	16.01	242.92	2,057.7	-159.4	-311.9	350.3	0.00	0.00	
2,130.0	16.01	242.92	2,086.6	-163.2	-319.2	358.5	0.00	0.00	
2,160.0	16.01	242.92	2,115.4	-167.0	-326.6	366.8	0.00	0.00	
2,190.0	16.01	242.92	2,144.2	-170.7	-334.0	375.1	0.00	0.00	
2,220.0	16.01	242.92	2,173.1	-174.5	-341.3	383.4	0.00	0.00	
2,250.0	16.01	242.92	2,201.9	-178.3	-348.7	391.6	0.00	0.00	
2,280.0	16.01	242.92	2,230.8	-182.0	-356.1	399.9	0.00	0.00	
2,310.0	16.01	242.92	2,259.6	-185.8	-363.4	408.2	0.00	0.00	
2,340.0	16.01	242.92	2,288.4	-189.6	-370.8	416.5	0.00	0.00	
2,370.0	16.01	242.92	2,317.3	-193.3	-378.2	424.7	0.00	0.00	
2,400.0	16.01	242.92	2,346.1	-197.1	-385.5	433.0	0.00	0.00	
2,430.0	16.01	242.92	2,374.9	-200.9	-392.9	441.3	0.00	0.00	
2,460.0	16.01	242.92	2,403.8	-204.6	-400.3	449.6	0.00	0.00	
2,490.0	16.01	242.92	2,432.6	-208.4	-407.7	457.8	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 21-12D BHL	0.00	0.00	8,684.0	-713.1	-1,395.0	1,620,137.34	2,231,936.69	39.504450	-108.222444
- plan misses target center by 6349.0ft at 2490.0ft MD (2432.6 TVD, -208.4 N, -407.7 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									
Oxy 21-12D TOG	0.00	0.00	6,834.0	-713.1	-1,395.0	1,620,137.34	2,231,936.69	39.504450	-108.222444
- plan misses target center by 4538.9ft at 2490.0ft MD (2432.6 TVD, -208.4 N, -407.7 E)									
- Point									

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	16.01	242.92	2,442.2	-209.6	-410.1	460.6	0.00	0.00	
2,600.0	16.01	242.92	2,538.3	-222.2	-434.7	488.2	0.00	0.00	
2,700.0	16.01	242.92	2,634.5	-234.8	-459.2	515.8	0.00	0.00	
2,800.0	16.01	242.92	2,730.6	-247.3	-483.8	543.3	0.00	0.00	
2,900.0	16.01	242.92	2,826.7	-259.9	-508.4	570.9	0.00	0.00	
3,000.0	16.01	242.92	2,922.8	-272.4	-532.9	598.5	0.00	0.00	
3,100.0	16.01	242.92	3,018.9	-285.0	-557.5	626.1	0.00	0.00	
3,200.0	16.01	242.92	3,115.1	-297.5	-582.0	653.7	0.00	0.00	
3,300.0	16.01	242.92	3,211.2	-310.1	-606.6	681.3	0.00	0.00	
3,400.0	16.01	242.92	3,307.3	-322.6	-631.2	708.8	0.00	0.00	
3,500.0	16.01	242.92	3,403.4	-335.2	-655.7	736.4	0.00	0.00	
3,600.0	16.01	242.92	3,499.5	-347.8	-680.3	764.0	0.00	0.00	
3,700.0	16.01	242.92	3,595.7	-360.3	-704.8	791.6	0.00	0.00	
3,800.0	16.01	242.92	3,691.8	-372.9	-729.4	819.2	0.00	0.00	
3,900.0	16.01	242.92	3,787.9	-385.4	-754.0	846.8	0.00	0.00	
4,000.0	16.01	242.92	3,884.0	-398.0	-778.5	874.4	0.00	0.00	
4,020.8	16.01	242.92	3,904.0	-400.6	-783.6	880.1	0.00	0.00	Ft Union
4,100.0	16.01	242.92	3,980.1	-410.5	-803.1	901.9	0.00	0.00	
4,200.0	16.01	242.92	4,076.3	-423.1	-827.6	929.5	0.00	0.00	
4,300.0	16.01	242.92	4,172.4	-435.6	-852.2	957.1	0.00	0.00	
4,400.0	16.01	242.92	4,268.5	-448.2	-876.8	984.7	0.00	0.00	
4,500.0	16.01	242.92	4,364.6	-460.8	-901.3	1,012.3	0.00	0.00	
4,541.0	16.01	242.92	4,404.0	-465.9	-911.4	1,023.6	0.00	0.00	Base Ft Union
4,600.0	16.01	242.92	4,460.7	-473.3	-925.9	1,039.9	0.00	0.00	
4,700.0	16.01	242.92	4,556.9	-485.9	-950.5	1,067.4	0.00	0.00	
4,800.0	16.01	242.92	4,653.0	-498.4	-975.0	1,095.0	0.00	0.00	
4,900.0	16.01	242.92	4,749.1	-511.0	-999.6	1,122.6	0.00	0.00	
5,000.0	16.01	242.92	4,845.2	-523.5	-1,024.1	1,150.2	0.00	0.00	
5,100.0	16.01	242.92	4,941.3	-536.1	-1,048.7	1,177.8	0.00	0.00	
5,200.0	16.01	242.92	5,037.5	-548.6	-1,073.3	1,205.4	0.00	0.00	
5,300.0	16.01	242.92	5,133.6	-561.2	-1,097.8	1,232.9	0.00	0.00	
5,400.0	16.01	242.92	5,229.7	-573.8	-1,122.4	1,260.5	0.00	0.00	
5,500.0	16.01	242.92	5,325.8	-586.3	-1,146.9	1,288.1	0.00	0.00	
5,600.0	16.01	242.92	5,422.0	-598.9	-1,171.5	1,315.7	0.00	0.00	
5,700.0	16.01	242.92	5,518.1	-611.4	-1,196.1	1,343.3	0.00	0.00	
5,800.0	16.01	242.92	5,614.2	-624.0	-1,220.6	1,370.9	0.00	0.00	
5,820.6	16.01	242.92	5,634.0	-626.6	-1,225.7	1,376.5	0.00	0.00	Ohio Creek
5,900.0	16.01	242.92	5,710.3	-636.5	-1,245.2	1,398.4	0.00	0.00	
5,972.9	16.01	242.92	5,780.4	-645.7	-1,263.1	1,418.6	0.00	0.00	Start Drop -1.50
6,000.0	15.61	242.92	5,806.5	-649.0	-1,269.7	1,425.9	1.50	-1.50	
6,028.6	15.18	242.92	5,834.0	-652.5	-1,276.4	1,433.5	1.50	-1.50	Williams Fork
6,100.0	14.11	242.92	5,903.1	-660.7	-1,292.5	1,451.6	1.50	-1.50	
6,200.0	12.61	242.92	6,000.4	-671.2	-1,313.1	1,474.7	1.50	-1.50	
6,300.0	11.11	242.92	6,098.3	-680.6	-1,331.3	1,495.2	1.50	-1.50	
6,400.0	9.61	242.92	6,196.6	-688.8	-1,347.4	1,513.2	1.50	-1.50	
6,500.0	8.11	242.92	6,295.4	-695.8	-1,361.1	1,528.6	1.50	-1.50	
6,600.0	6.61	242.92	6,394.6	-701.6	-1,372.5	1,541.4	1.50	-1.50	
6,700.0	5.11	242.92	6,494.1	-706.2	-1,381.5	1,551.6	1.50	-1.50	
6,800.0	3.61	242.92	6,593.8	-709.7	-1,388.3	1,559.2	1.50	-1.50	
6,900.0	2.11	242.92	6,693.7	-712.0	-1,392.7	1,564.2	1.50	-1.50	
7,000.0	0.61	242.92	6,793.6	-713.0	-1,394.8	1,566.5	1.50	-1.50	
7,040.4	0.00	0.00	6,834.0	-713.1	-1,395.0	1,566.7	1.50	-1.50	EOD; Inc=0° - Approx TOG - Oxy 21-12D TOG

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,100.0	0.00	0.00	6,893.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,200.0	0.00	0.00	6,993.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,300.0	0.00	0.00	7,093.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,400.0	0.00	0.00	7,193.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,500.0	0.00	0.00	7,293.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,600.0	0.00	0.00	7,393.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,700.0	0.00	0.00	7,493.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,800.0	0.00	0.00	7,593.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
7,900.0	0.00	0.00	7,693.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,000.0	0.00	0.00	7,793.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,100.0	0.00	0.00	7,893.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,200.0	0.00	0.00	7,993.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,300.0	0.00	0.00	8,093.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,390.4	0.00	0.00	8,184.0	-713.1	-1,395.0	1,566.7	0.00	0.00	Cameo
8,400.0	0.00	0.00	8,193.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,500.0	0.00	0.00	8,293.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,600.0	0.00	0.00	8,393.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,700.0	0.00	0.00	8,493.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,740.4	0.00	0.00	8,534.0	-713.1	-1,395.0	1,566.7	0.00	0.00	Rollins SS
8,800.0	0.00	0.00	8,593.6	-713.1	-1,395.0	1,566.7	0.00	0.00	
8,890.4	0.00	0.00	8,684.0	-713.1	-1,395.0	1,566.7	0.00	0.00	TD at 8890.4 - Oxy 21-12D BHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Oxy 21-12D BHL - hit/miss target - Shape - plan hits target center - Rectangle (sides W100.0 H200.0 D0.0)	0.00	0.00	8,684.0	-713.1	-1,395.0	1,620,137.34	2,231,936.69	39.504450	-108.222444
Oxy 21-12D TOG - plan hits target center - Point	0.00	0.00	6,834.0	-713.1	-1,395.0	1,620,137.34	2,231,936.69	39.504450	-108.222444

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,898.4	1,864.0	Wasatch		0.00	
4,020.8	3,904.0	Ft Union		0.00	
4,541.0	4,404.0	Base Ft Union		0.00	
5,820.6	5,634.0	Ohio Creek		0.00	
6,028.6	5,834.0	Williams Fork		0.00	
7,040.4	6,834.0	Approx TOG		0.00	
8,390.4	8,184.0	Cameo		0.00	
8,740.4	8,534.0	Rollins SS		0.00	

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
1,367.5	1,353.6	-67.5	-132.0	EOB; Inc=16.01°
5,972.9	5,780.4	-645.7	-1,263.1	Start Drop -1.50
7,040.4	6,834.0	-713.1	-1,395.0	EOD; Inc=0°
8,890.4	8,684.0	-713.1	-1,395.0	TD at 8890.4

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,111.9ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	10/7/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,890.4	Plan #1 (DD)	MWD	Geolink MWD	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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						
NESE S21-T6S-R97W (Oxy I21 pad)						
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	30.6	30.0	47.412	CC
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	300.0	299.8	31.0	30.0	31.099	ES
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	8,890.4	8,972.6	666.5	605.8	10.971	SF
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	15.3	14.3	15.388	CC
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	15.6	14.2	11.552	ES
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	8,890.4	8,918.2	345.2	282.5	5.502	SF
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	14.7	13.7	14.766	CC
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	400.0	399.9	14.9	13.6	11.091	ES
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	1,500.0	1,498.1	49.3	40.8	5.754	SF
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	29.4	28.4	29.536	CC, ES
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	8,890.4	8,837.1	628.7	571.1	10.910	SF
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	44.7	43.7	44.912	CC, ES
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	8,890.4	8,841.7	954.0	895.7	16.388	SF
Oxy 21-16D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	59.8	58.8	60.093	CC, ES
Oxy 21-16D (Oxy I21 Pad) - DD - Plan #1	5,800.0	5,677.7	1,106.8	1,060.4	23.820	SF
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	200.0	200.0	59.1	58.4	91.463	CC, ES
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	1,600.0	1,555.0	238.1	228.8	25.678	SF
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	105.3	104.3	105.820	CC, ES
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	4,500.0	4,332.8	1,105.7	1,071.1	31.999	SF
Oxy 21-2D (Oxy I21 Pad) - DD - Plan #1	324.1	324.2	9.1	8.0	8.406	CC, ES
Oxy 21-2D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	10.1	8.8	7.447	SF
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	84.8	83.8	85.265	CC
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	85.0	83.7	63.188	ES
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	1,300.0	1,281.1	180.5	174.8	31.897	SF
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	75.3	74.3	75.680	CC
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	75.4	74.1	56.054	ES
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	1,000.0	992.5	109.0	105.2	28.838	SF
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	60.6	59.6	60.914	CC
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	60.7	59.4	45.137	ES
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	900.0	895.8	82.8	79.5	25.125	SF
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #1	421.1	721.5	14.8	13.3	10.299	CC, ES
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #1	500.0	800.2	16.6	14.9	9.585	SF
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	30.5	29.5	30.702	CC
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	30.8	29.5	22.927	ES
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1	600.0	598.8	36.2	34.2	17.548	SF
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	45.5	44.5	45.687	CC
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #1	400.0	400.0	45.6	44.3	33.911	ES
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #1	700.0	696.4	57.3	54.9	23.422	SF
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	45.3	44.6	70.139	CC, ES
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	1,600.0	1,582.8	141.6	131.9	14.522	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	148.93	-26.2	15.8	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	148.93	-26.2	15.8	30.6	30.3	0.30	103.192		
200.0	200.0	200.0	200.0	0.3	0.3	148.93	-26.2	15.8	30.6	30.0	0.65	47.412 CC		
300.0	300.0	299.8	299.8	0.5	0.5	151.27	-27.1	14.9	31.0	30.0	1.00	31.099 ES		
400.0	400.0	399.5	399.4	0.7	0.7	-87.27	-29.9	12.1	32.2	30.8	1.36	23.723		
500.0	499.9	499.1	498.8	0.9	0.9	-83.61	-34.5	7.5	34.4	32.6	1.74	19.770		
600.0	599.7	598.6	597.9	1.1	1.1	-80.78	-40.9	1.1	37.4	35.3	2.15	17.391		
700.0	699.3	698.1	696.7	1.3	1.4	-78.78	-49.1	-7.1	41.3	38.7	2.61	15.837		
800.0	798.6	797.4	795.0	1.5	1.7	-77.50	-59.2	-17.2	46.0	42.9	3.12	14.749		
900.0	897.5	896.6	892.8	1.8	2.0	-76.79	-71.0	-29.0	51.4	47.8	3.69	13.937		
1,000.0	996.1	995.7	989.9	2.1	2.4	-76.52	-84.6	-42.6	57.6	53.3	4.33	13.297		
1,100.0	1,094.2	1,094.6	1,086.5	2.5	2.8	-76.57	-99.9	-58.0	64.5	59.5	5.05	12.771		
1,200.0	1,191.7	1,193.4	1,182.3	2.9	3.2	-76.83	-117.0	-75.1	72.1	66.3	5.85	12.325		
1,300.0	1,288.6	1,292.1	1,277.3	3.4	3.7	-77.25	-135.8	-93.9	80.5	73.7	6.74	11.939		
1,400.0	1,384.9	1,390.6	1,371.4	3.9	4.3	-77.71	-156.3	-114.4	89.5	81.8	7.70	11.624		
1,500.0	1,481.0	1,488.9	1,464.6	4.4	4.8	-77.22	-178.4	-136.6	99.8	91.1	8.68	11.496		
1,600.0	1,577.1	1,587.7	1,557.5	4.9	5.4	-75.88	-202.1	-160.3	111.1	101.4	9.63	11.532		
1,700.0	1,673.3	1,687.0	1,650.9	5.4	6.1	-74.69	-226.0	-184.2	122.5	111.9	10.58	11.577		
1,800.0	1,769.4	1,786.3	1,744.2	5.9	6.7	-73.71	-249.9	-208.2	134.0	122.5	11.53	11.619		
1,900.0	1,865.5	1,885.6	1,837.6	6.4	7.3	-72.89	-273.9	-232.1	145.6	133.1	12.49	11.657		
2,000.0	1,961.6	1,984.9	1,931.0	6.9	7.9	-72.19	-297.8	-256.1	157.1	143.7	13.44	11.693		
2,100.0	2,057.7	2,084.2	2,024.3	7.4	8.5	-71.58	-321.7	-280.0	168.7	154.3	14.39	11.725		
2,200.0	2,153.9	2,183.5	2,117.7	8.0	9.2	-71.05	-345.6	-304.0	180.3	165.0	15.34	11.755		
2,300.0	2,250.0	2,282.9	2,211.1	8.5	9.8	-70.59	-369.5	-327.9	191.9	175.6	16.29	11.782		
2,400.0	2,346.1	2,382.2	2,304.4	9.0	10.4	-70.17	-393.4	-351.9	203.5	186.3	17.24	11.807		
2,500.0	2,442.2	2,481.5	2,397.8	9.5	11.0	-69.81	-417.4	-375.8	215.2	197.0	18.19	11.830		
2,600.0	2,538.3	2,580.8	2,491.2	10.0	11.7	-69.48	-441.3	-399.8	226.8	207.7	19.14	11.852		
2,700.0	2,634.5	2,680.1	2,584.5	10.6	12.3	-69.18	-465.2	-423.7	238.4	218.4	20.09	11.872		
2,800.0	2,730.6	2,779.4	2,677.9	11.1	12.9	-68.91	-489.1	-447.6	250.1	229.1	21.03	11.890		
2,900.0	2,826.7	2,878.7	2,771.3	11.6	13.6	-68.66	-513.0	-471.6	261.8	239.8	21.98	11.907		
3,000.0	2,922.8	2,978.0	2,864.6	12.1	14.2	-68.44	-537.0	-495.5	273.4	250.5	22.93	11.923		
3,100.0	3,018.9	3,077.4	2,958.0	12.6	14.8	-68.23	-560.9	-519.5	285.1	261.2	23.88	11.938		
3,200.0	3,115.1	3,176.7	3,051.4	13.2	15.4	-68.04	-584.8	-543.4	296.7	271.9	24.83	11.952		
3,300.0	3,211.2	3,276.0	3,144.7	13.7	16.1	-67.87	-608.7	-567.4	308.4	282.6	25.78	11.966		
3,400.0	3,307.3	3,375.3	3,238.1	14.2	16.7	-67.70	-632.6	-591.3	320.1	293.4	26.72	11.978		
3,500.0	3,403.4	3,474.6	3,331.5	14.7	17.3	-67.55	-656.5	-615.3	331.8	304.1	27.67	11.990		
3,600.0	3,499.5	3,573.9	3,424.8	15.3	18.0	-67.41	-680.5	-639.2	343.4	314.8	28.62	12.001		
3,700.0	3,595.7	3,673.2	3,518.2	15.8	18.6	-67.28	-704.4	-663.2	355.1	325.6	29.57	12.011		
3,800.0	3,691.8	3,772.5	3,611.6	16.3	19.2	-67.16	-728.3	-687.1	366.8	336.3	30.51	12.021		
3,900.0	3,787.9	3,871.9	3,704.9	16.8	19.8	-67.04	-752.2	-711.1	378.5	347.0	31.46	12.030		
4,000.0	3,884.0	3,971.2	3,798.3	17.4	20.5	-66.93	-776.1	-735.0	390.2	357.8	32.41	12.039		
4,100.0	3,980.1	4,070.5	3,891.7	17.9	21.1	-66.83	-800.1	-759.0	401.9	368.5	33.36	12.047		
4,200.0	4,076.3	4,169.8	3,985.0	18.4	21.7	-66.73	-824.0	-782.9	413.6	379.2	34.30	12.055		
4,300.0	4,172.4	4,269.1	4,078.4	18.9	22.4	-66.64	-847.9	-806.8	425.2	390.0	35.25	12.063		
4,400.0	4,268.5	4,368.4	4,171.8	19.5	23.0	-66.55	-871.8	-830.8	436.9	400.7	36.20	12.070		
4,500.0	4,364.6	4,467.7	4,265.2	20.0	23.6	-66.47	-895.7	-854.7	448.6	411.5	37.15	12.077		
4,600.0	4,460.7	4,567.0	4,358.5	20.5	24.3	-66.39	-919.6	-878.7	460.3	422.2	38.09	12.084		
4,700.0	4,556.9	4,666.4	4,451.9	21.0	24.9	-66.32	-943.6	-902.6	472.0	433.0	39.04	12.090		
4,800.0	4,653.0	4,765.7	4,545.3	21.6	25.5	-66.25	-967.5	-926.6	483.7	443.7	39.99	12.096		
4,900.0	4,749.1	4,865.0	4,638.6	22.1	26.2	-66.18	-991.4	-950.5	495.4	454.5	40.94	12.102		
5,000.0	4,845.2	4,964.3	4,732.0	22.6	26.8	-66.12	-1,015.3	-974.5	507.1	465.2	41.88	12.107		
5,100.0	4,941.3	5,063.6	4,825.4	23.1	27.4	-66.06	-1,039.2	-998.4	518.8	476.0	42.83	12.113		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-10D (Oxy I21 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		
5,200.0	5,037.5	5,162.9	4,918.7	23.7	28.1	-66.00	-1,063.2	-1,022.4	530.5	486.7	43.78	12.118		
5,300.0	5,133.6	5,262.2	5,012.1	24.2	28.7	-65.94	-1,087.1	-1,046.3	542.2	497.4	44.72	12.123		
5,400.0	5,229.7	5,361.5	5,105.5	24.7	29.3	-65.89	-1,111.0	-1,070.3	553.9	508.2	45.67	12.127		
5,500.0	5,325.8	5,460.8	5,198.8	25.2	29.9	-65.84	-1,134.9	-1,094.2	565.6	518.9	46.62	12.132		
5,600.0	5,422.0	5,560.2	5,292.2	25.8	30.6	-65.79	-1,158.8	-1,118.2	577.3	529.7	47.57	12.136		
5,700.0	5,518.1	5,659.5	5,385.6	26.3	31.2	-65.74	-1,182.7	-1,142.1	589.0	540.4	48.51	12.140		
5,800.0	5,614.2	5,758.8	5,478.9	26.8	31.8	-65.69	-1,206.7	-1,166.0	600.7	551.2	49.46	12.145		
5,900.0	5,710.3	5,865.7	5,579.6	27.3	32.5	-65.69	-1,232.0	-1,191.4	612.0	561.5	50.44	12.132		
6,000.0	5,806.5	5,977.1	5,685.6	27.9	33.1	-65.93	-1,256.3	-1,215.8	621.5	570.0	51.51	12.065		
6,100.0	5,903.1	6,088.7	5,792.7	28.3	33.7	-66.28	-1,278.5	-1,238.0	629.9	577.4	52.54	11.989		
6,200.0	6,000.4	6,200.5	5,900.9	28.7	34.2	-66.60	-1,298.5	-1,258.0	637.5	584.0	53.48	11.920		
6,300.0	6,098.3	6,312.5	6,010.0	29.1	34.6	-66.88	-1,316.3	-1,275.8	644.2	589.9	54.33	11.859		
6,400.0	6,196.6	6,424.7	6,120.0	29.5	35.0	-67.13	-1,331.9	-1,291.4	650.1	595.0	55.08	11.803		
6,500.0	6,295.4	6,537.0	6,230.7	29.8	35.4	-67.34	-1,345.1	-1,304.7	655.0	599.3	55.73	11.752		
6,600.0	6,394.6	6,649.4	6,342.0	30.0	35.7	-67.53	-1,356.1	-1,315.7	659.1	602.8	56.30	11.706		
6,700.0	6,494.1	6,761.9	6,453.9	30.2	35.9	-67.68	-1,364.8	-1,324.3	662.2	605.4	56.78	11.664		
6,800.0	6,593.8	6,874.5	6,566.0	30.4	36.1	-67.80	-1,371.1	-1,330.7	664.5	607.3	57.16	11.625		
6,900.0	6,693.7	6,987.1	6,678.5	30.5	36.3	-67.90	-1,375.1	-1,334.7	665.8	608.4	57.46	11.588		
7,000.0	6,793.6	7,099.7	6,791.1	30.6	36.3	-67.96	-1,376.7	-1,336.3	666.3	608.6	57.66	11.555		
7,100.0	6,893.6	7,202.2	6,893.6	30.7	36.4	174.95	-1,376.8	-1,336.4	666.2	608.4	57.82	11.523		
7,200.0	6,993.6	7,302.2	6,993.6	30.7	36.5	174.95	-1,376.8	-1,336.4	666.2	608.3	57.97	11.493		
7,300.0	7,093.6	7,402.2	7,093.6	30.8	36.5	174.95	-1,376.8	-1,336.4	666.2	608.1	58.12	11.463		
7,400.0	7,193.6	7,502.2	7,193.6	30.9	36.6	174.95	-1,376.8	-1,336.4	666.2	608.0	58.28	11.432		
7,500.0	7,293.6	7,602.2	7,293.6	31.0	36.6	174.95	-1,376.8	-1,336.4	666.2	607.8	58.43	11.402		
7,600.0	7,393.6	7,702.2	7,393.6	31.0	36.7	174.95	-1,376.8	-1,336.4	666.2	607.6	58.59	11.371		
7,700.0	7,493.6	7,802.2	7,493.6	31.1	36.8	174.95	-1,376.8	-1,336.4	666.2	607.5	58.75	11.340		
7,800.0	7,593.6	7,902.2	7,593.6	31.2	36.8	174.95	-1,376.8	-1,336.4	666.2	607.3	58.91	11.309		
7,900.0	7,693.6	8,002.2	7,693.6	31.3	36.9	174.95	-1,376.8	-1,336.4	666.2	607.2	59.08	11.278		
8,000.0	7,793.6	8,102.2	7,793.6	31.3	37.0	174.95	-1,376.8	-1,336.4	666.2	607.0	59.24	11.246		
8,100.0	7,893.6	8,202.2	7,893.6	31.4	37.0	174.95	-1,376.8	-1,336.4	666.2	606.8	59.41	11.215		
8,200.0	7,993.6	8,302.2	7,993.6	31.5	37.1	174.95	-1,376.8	-1,336.4	666.2	606.7	59.57	11.183		
8,300.0	8,093.6	8,402.2	8,093.6	31.6	37.2	174.95	-1,376.8	-1,336.4	666.2	606.5	59.74	11.152		
8,400.0	8,193.6	8,502.2	8,193.6	31.7	37.2	174.95	-1,376.8	-1,336.4	666.2	606.3	59.91	11.120		
8,500.0	8,293.6	8,602.2	8,293.6	31.7	37.3	174.95	-1,376.8	-1,336.4	666.2	606.2	60.09	11.088		
8,600.0	8,393.6	8,702.2	8,393.6	31.8	37.4	174.95	-1,376.8	-1,336.4	666.2	606.0	60.26	11.056		
8,700.0	8,493.6	8,802.2	8,493.6	31.9	37.5	174.95	-1,376.8	-1,336.4	666.2	605.8	60.44	11.024		
8,800.0	8,593.6	8,902.2	8,593.6	32.0	37.5	174.95	-1,376.8	-1,336.4	666.2	605.6	60.61	10.992		
8,851.7	8,645.3	8,953.9	8,645.3	32.0	37.6	174.95	-1,376.8	-1,336.4	666.2	605.5	60.70	10.975		
8,890.4	8,684.0	8,972.6	8,684.0	32.1	37.6	174.95	-1,376.8	-1,336.4	666.5	605.8	60.76	10.971 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-11D (Oxy I21 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 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	148.93	-13.1	7.9	15.3					
100.0	100.0	100.0	100.0	0.1	0.1	148.93	-13.1	7.9	15.3	15.0	0.30	51.596		
200.0	200.0	200.0	200.0	0.3	0.3	148.93	-13.1	7.9	15.3	14.7	0.65	23.706		
300.0	300.0	300.0	300.0	0.5	0.5	148.93	-13.1	7.9	15.3	14.3	0.99	15.388 CC		
400.0	400.0	400.0	399.9	0.7	0.7	-94.02	-13.9	6.9	15.6	14.2	1.35	11.552 ES		
500.0	499.9	499.9	499.8	0.9	0.9	-94.08	-16.3	3.8	16.3	14.6	1.71	9.512		
600.0	599.7	599.8	599.5	1.1	1.1	-94.17	-20.4	-1.4	17.6	15.4	2.11	8.309		
700.0	699.3	699.8	699.0	1.3	1.3	-94.28	-26.0	-8.6	19.3	16.8	2.56	7.549		
800.0	798.6	799.7	798.3	1.5	1.5	-94.39	-33.2	-17.8	21.6	18.5	3.06	7.043		
900.0	897.5	899.6	897.1	1.8	1.8	-94.49	-42.1	-29.1	24.3	20.7	3.63	6.690		
1,000.0	996.1	999.4	995.5	2.1	2.1	-94.58	-52.5	-42.4	27.5	23.3	4.28	6.434		
1,100.0	1,094.2	1,099.3	1,093.5	2.5	2.5	-94.65	-64.5	-57.7	31.3	26.3	5.01	6.241		
1,200.0	1,191.7	1,199.1	1,190.8	2.9	2.9	-94.71	-78.0	-75.0	35.5	29.7	5.83	6.091		
1,300.0	1,288.6	1,298.9	1,287.6	3.4	3.4	-94.75	-93.2	-94.4	40.2	33.5	6.73	5.971		
1,400.0	1,384.9	1,398.7	1,383.6	3.9	3.9	-94.63	-109.8	-115.7	45.4	37.7	7.72	5.881		
1,500.0	1,481.0	1,498.4	1,478.9	4.4	4.4	-92.54	-127.9	-138.8	50.9	42.2	8.73	5.826		
1,600.0	1,577.1	1,598.2	1,574.1	4.9	4.9	-90.35	-146.4	-162.3	56.5	46.8	9.75	5.797		
1,700.0	1,673.3	1,698.0	1,669.4	5.4	5.5	-88.56	-164.8	-185.8	62.3	51.5	10.77	5.780		
1,800.0	1,769.4	1,797.9	1,764.6	5.9	6.0	-87.07	-183.2	-209.3	68.0	56.2	11.79	5.771		
1,900.0	1,865.5	1,897.7	1,859.9	6.4	6.6	-85.82	-201.6	-232.8	73.8	61.0	12.80	5.767		
2,000.0	1,961.6	1,997.5	1,955.1	6.9	7.1	-84.75	-220.0	-256.3	79.7	65.9	13.82	5.766		
2,100.0	2,057.7	2,097.3	2,050.4	7.4	7.7	-83.82	-238.4	-279.9	85.5	70.7	14.83	5.768		
2,200.0	2,153.9	2,197.1	2,145.6	8.0	8.2	-83.02	-256.8	-303.4	91.4	75.6	15.84	5.771		
2,300.0	2,250.0	2,297.0	2,240.9	8.5	8.8	-82.31	-275.2	-326.9	97.3	80.5	16.85	5.775		
2,400.0	2,346.1	2,396.8	2,336.1	9.0	9.3	-81.68	-293.6	-350.4	103.2	85.4	17.86	5.779		
2,500.0	2,442.2	2,496.6	2,431.4	9.5	9.9	-81.12	-312.0	-373.9	109.1	90.3	18.87	5.784		
2,600.0	2,538.3	2,596.4	2,526.6	10.0	10.5	-80.62	-330.4	-397.4	115.1	95.2	19.88	5.789		
2,700.0	2,634.5	2,696.2	2,621.9	10.6	11.0	-80.17	-348.9	-420.9	121.0	100.1	20.88	5.794		
2,800.0	2,730.6	2,796.1	2,717.1	11.1	11.6	-79.76	-367.3	-444.5	127.0	105.1	21.89	5.800		
2,900.0	2,826.7	2,895.9	2,812.4	11.6	12.1	-79.39	-385.7	-468.0	132.9	110.0	22.90	5.805		
3,000.0	2,922.8	2,995.7	2,907.6	12.1	12.7	-79.05	-404.1	-491.5	138.9	115.0	23.90	5.810		
3,100.0	3,018.9	3,095.5	3,002.9	12.6	13.3	-78.73	-422.5	-515.0	144.8	119.9	24.91	5.815		
3,200.0	3,115.1	3,195.3	3,098.1	13.2	13.8	-78.45	-440.9	-538.5	150.8	124.9	25.91	5.819		
3,300.0	3,211.2	3,295.1	3,193.3	13.7	14.4	-78.18	-459.3	-562.0	156.8	129.8	26.92	5.824		
3,400.0	3,307.3	3,395.0	3,288.6	14.2	14.9	-77.93	-477.7	-585.5	162.7	134.8	27.92	5.828		
3,500.0	3,403.4	3,494.8	3,383.8	14.7	15.5	-77.70	-496.1	-609.1	168.7	139.8	28.92	5.832		
3,600.0	3,499.5	3,594.6	3,479.1	15.3	16.1	-77.49	-514.5	-632.6	174.7	144.7	29.93	5.836		
3,700.0	3,595.7	3,694.4	3,574.3	15.8	16.6	-77.29	-532.9	-656.1	180.6	149.7	30.93	5.840		
3,800.0	3,691.8	3,794.2	3,669.6	16.3	17.2	-77.10	-551.4	-679.6	186.6	154.7	31.93	5.844		
3,900.0	3,787.9	3,894.1	3,764.8	16.8	17.7	-76.93	-569.8	-703.1	192.6	159.7	32.94	5.848		
4,000.0	3,884.0	3,993.9	3,860.1	17.4	18.3	-76.76	-588.2	-726.6	198.6	164.7	33.94	5.851		
4,100.0	3,980.1	4,093.7	3,955.3	17.9	18.9	-76.61	-606.6	-750.1	204.6	169.6	34.94	5.855		
4,200.0	4,076.3	4,193.5	4,050.6	18.4	19.4	-76.46	-625.0	-773.6	210.6	174.6	35.95	5.858		
4,300.0	4,172.4	4,293.3	4,145.8	18.9	20.0	-76.32	-643.4	-797.2	216.6	179.6	36.95	5.861		
4,400.0	4,268.5	4,393.2	4,241.1	19.5	20.6	-76.19	-661.8	-820.7	222.5	184.6	37.95	5.864		
4,500.0	4,364.6	4,493.0	4,336.3	20.0	21.1	-76.07	-680.2	-844.2	228.5	189.6	38.95	5.867		
4,600.0	4,460.7	4,592.8	4,431.6	20.5	21.7	-75.95	-698.6	-867.7	234.5	194.6	39.96	5.870		
4,700.0	4,556.9	4,692.6	4,526.8	21.0	22.2	-75.84	-717.0	-891.2	240.5	199.6	40.96	5.872		
4,800.0	4,653.0	4,792.4	4,622.1	21.6	22.8	-75.73	-735.4	-914.7	246.5	204.6	41.96	5.875		
4,900.0	4,749.1	4,892.3	4,717.3	22.1	23.4	-75.63	-753.9	-938.2	252.5	209.5	42.96	5.878		
5,000.0	4,845.2	4,992.1	4,812.6	22.6	23.9	-75.54	-772.3	-961.8	258.5	214.5	43.96	5.880		
5,100.0	4,941.3	5,091.9	4,907.8	23.1	24.5	-75.44	-790.7	-985.3	264.5	219.5	44.96	5.882		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-11D (Oxy I21 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		
5,200.0	5,037.5	5,191.7	5,003.0	23.7	25.0	-75.36	-809.1	-1,008.8	270.5	224.5	45.97	5.885		
5,300.0	5,133.6	5,291.5	5,098.3	24.2	25.6	-75.27	-827.5	-1,032.3	276.5	229.5	46.97	5.887		
5,400.0	5,229.7	5,391.4	5,193.5	24.7	26.2	-75.19	-845.9	-1,055.8	282.5	234.5	47.97	5.889		
5,500.0	5,325.8	5,491.2	5,288.8	25.2	26.7	-75.11	-864.3	-1,079.3	288.5	239.5	48.97	5.891		
5,600.0	5,422.0	5,591.0	5,384.0	25.8	27.3	-75.04	-882.7	-1,102.8	294.5	244.5	49.97	5.893		
5,700.0	5,518.1	5,690.8	5,479.3	26.3	27.9	-74.97	-901.1	-1,126.4	300.5	249.5	50.97	5.895		
5,800.0	5,614.2	5,790.6	5,574.5	26.8	28.4	-74.90	-919.5	-1,149.9	306.5	254.5	51.98	5.897		
5,900.0	5,710.3	5,890.4	5,669.8	27.3	29.0	-74.83	-937.9	-1,173.4	312.5	259.5	52.98	5.898		
6,000.0	5,806.5	5,993.4	5,768.3	27.9	29.5	-74.93	-956.4	-1,196.9	318.1	264.1	54.01	5.890		
6,100.0	5,903.1	6,097.0	5,868.2	28.3	30.0	-75.17	-973.3	-1,218.5	323.1	268.1	54.98	5.876		
6,200.0	6,000.4	6,200.7	5,968.9	28.7	30.5	-75.39	-988.5	-1,238.0	327.6	271.7	55.87	5.863		
6,300.0	6,098.3	6,304.4	6,070.2	29.1	30.9	-75.58	-1,002.0	-1,255.3	331.5	274.9	56.66	5.851		
6,400.0	6,196.6	6,408.2	6,172.2	29.5	31.2	-75.75	-1,013.9	-1,270.4	335.0	277.6	57.37	5.840		
6,500.0	6,295.4	6,512.0	6,274.7	29.8	31.6	-75.89	-1,024.1	-1,283.4	338.0	280.0	57.98	5.829		
6,600.0	6,394.6	6,615.9	6,377.7	30.0	31.8	-76.01	-1,032.5	-1,294.1	340.4	281.9	58.51	5.819		
6,700.0	6,494.1	6,719.7	6,481.0	30.2	32.0	-76.11	-1,039.2	-1,302.7	342.4	283.5	58.95	5.808		
6,800.0	6,593.8	6,823.6	6,584.6	30.4	32.2	-76.19	-1,044.1	-1,309.0	343.8	284.5	59.30	5.798		
6,900.0	6,693.7	6,927.6	6,688.4	30.5	32.3	-76.25	-1,047.4	-1,313.2	344.8	285.2	59.57	5.788		
7,000.0	6,793.6	7,031.5	6,792.3	30.6	32.4	-76.29	-1,048.9	-1,315.1	345.2	285.4	59.76	5.776		
7,100.0	6,893.6	7,132.9	6,893.6	30.7	32.5	166.63	-1,049.0	-1,315.2	345.2	285.3	59.90	5.763		
7,200.0	6,993.6	7,232.9	6,993.6	30.7	32.6	166.63	-1,049.0	-1,315.2	345.2	285.1	60.05	5.749		
7,300.0	7,093.6	7,332.9	7,093.6	30.8	32.6	166.63	-1,049.0	-1,315.2	345.2	285.0	60.20	5.735		
7,400.0	7,193.6	7,432.9	7,193.6	30.9	32.7	166.63	-1,049.0	-1,315.2	345.2	284.8	60.34	5.720		
7,500.0	7,293.6	7,532.9	7,293.6	31.0	32.8	166.63	-1,049.0	-1,315.2	345.2	284.7	60.49	5.706		
7,600.0	7,393.6	7,632.9	7,393.6	31.0	32.8	166.63	-1,049.0	-1,315.2	345.2	284.5	60.65	5.692		
7,700.0	7,493.6	7,732.9	7,493.6	31.1	32.9	166.63	-1,049.0	-1,315.2	345.2	284.4	60.80	5.678		
7,800.0	7,593.6	7,832.9	7,593.6	31.2	33.0	166.63	-1,049.0	-1,315.2	345.2	284.2	60.96	5.663		
7,900.0	7,693.6	7,932.9	7,693.6	31.3	33.1	166.63	-1,049.0	-1,315.2	345.2	284.1	61.11	5.649		
8,000.0	7,793.6	8,032.9	7,793.6	31.3	33.1	166.63	-1,049.0	-1,315.2	345.2	283.9	61.27	5.634		
8,100.0	7,893.6	8,132.9	7,893.6	31.4	33.2	166.63	-1,049.0	-1,315.2	345.2	283.8	61.43	5.619		
8,200.0	7,993.6	8,232.9	7,993.6	31.5	33.3	166.63	-1,049.0	-1,315.2	345.2	283.6	61.59	5.605		
8,300.0	8,093.6	8,332.9	8,093.6	31.6	33.4	166.63	-1,049.0	-1,315.2	345.2	283.4	61.75	5.590		
8,400.0	8,193.6	8,432.9	8,193.6	31.7	33.4	166.63	-1,049.0	-1,315.2	345.2	283.3	61.92	5.575		
8,500.0	8,293.6	8,532.9	8,293.6	31.7	33.5	166.63	-1,049.0	-1,315.2	345.2	283.1	62.09	5.560		
8,600.0	8,393.6	8,632.9	8,393.6	31.8	33.6	166.63	-1,049.0	-1,315.2	345.2	282.9	62.25	5.545		
8,700.0	8,493.6	8,732.9	8,493.6	31.9	33.7	166.63	-1,049.0	-1,315.2	345.2	282.8	62.42	5.530		
8,800.0	8,593.6	8,832.9	8,593.6	32.0	33.7	166.63	-1,049.0	-1,315.2	345.2	282.6	62.59	5.515		
8,858.5	8,652.1	8,891.3	8,652.1	32.0	33.8	166.63	-1,049.0	-1,315.2	345.2	282.5	62.69	5.506		
8,890.4	8,684.0	8,918.2	8,679.0	32.1	33.8	166.63	-1,049.0	-1,315.2	345.2	282.5	62.74	5.502 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-13D (Oxy I21 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		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-32.54	12.4	-7.9	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	-32.54	12.4	-7.9	14.7	14.4	0.30	49.509		
200.0	200.0	200.0	200.0	0.3	0.3	-32.54	12.4	-7.9	14.7	14.0	0.65	22.747		
300.0	300.0	300.0	300.0	0.5	0.5	-32.54	12.4	-7.9	14.7	13.7	0.99	14.766 CC		
400.0	400.0	399.9	399.9	0.7	0.7	84.72	12.0	-9.2	14.9	13.6	1.35	11.091 ES		
500.0	499.9	499.8	499.7	0.9	0.9	85.24	10.9	-12.9	15.7	14.0	1.71	9.146		
600.0	599.7	599.7	599.3	1.1	1.1	86.00	9.1	-19.2	16.9	14.8	2.11	8.008		
700.0	699.3	699.5	698.8	1.3	1.3	86.90	6.6	-28.0	18.6	16.1	2.55	7.296		
800.0	798.6	799.4	798.0	1.5	1.5	87.82	3.4	-39.2	20.9	17.8	3.06	6.828		
900.0	897.5	899.2	896.8	1.8	1.8	88.71	-0.6	-53.0	23.6	20.0	3.63	6.505		
1,000.0	996.1	999.0	995.1	2.1	2.1	89.52	-5.3	-69.2	26.8	22.5	4.27	6.272		
1,100.0	1,094.2	1,098.8	1,093.0	2.5	2.5	90.24	-10.7	-87.9	30.5	25.5	5.00	6.099		
1,200.0	1,191.7	1,198.6	1,190.3	2.9	2.9	90.86	-16.8	-109.0	34.7	28.9	5.82	5.965		
1,300.0	1,288.6	1,298.4	1,287.2	3.4	3.4	92.04	-23.4	-132.1	39.4	32.6	6.71	5.862		
1,400.0	1,384.9	1,398.2	1,384.0	3.9	3.8	95.91	-30.2	-155.5	44.2	36.6	7.65	5.781		
1,500.0	1,481.0	1,498.1	1,480.8	4.4	4.2	99.72	-36.9	-178.8	49.3	40.8	8.57	5.754 SF		
1,600.0	1,577.1	1,597.9	1,577.7	4.9	4.7	102.81	-43.6	-202.2	54.6	45.1	9.49	5.759		
1,700.0	1,673.3	1,697.7	1,674.5	5.4	5.2	105.35	-50.4	-225.6	60.1	49.7	10.39	5.781		
1,800.0	1,769.4	1,797.5	1,771.3	5.9	5.6	107.46	-57.1	-248.9	65.6	54.3	11.28	5.814		
1,900.0	1,865.5	1,897.3	1,868.1	6.4	6.1	109.24	-63.8	-272.3	71.2	59.0	12.16	5.851		
2,000.0	1,961.6	1,997.2	1,964.9	6.9	6.5	110.76	-70.6	-295.6	76.8	63.8	13.04	5.891		
2,100.0	2,057.7	2,097.0	2,061.7	7.4	7.0	112.08	-77.3	-319.0	82.5	68.6	13.92	5.931		
2,200.0	2,153.9	2,196.8	2,158.6	8.0	7.5	113.22	-84.0	-342.3	88.3	73.5	14.79	5.971		
2,300.0	2,250.0	2,296.6	2,255.4	8.5	7.9	114.22	-90.7	-365.7	94.1	78.4	15.65	6.010		
2,400.0	2,346.1	2,396.4	2,352.2	9.0	8.4	115.11	-97.5	-389.0	99.9	83.3	16.51	6.047		
2,500.0	2,442.2	2,496.3	2,449.0	9.5	8.9	115.89	-104.2	-412.4	105.7	88.3	17.37	6.082		
2,600.0	2,538.3	2,596.1	2,545.8	10.0	9.3	116.60	-110.9	-435.7	111.5	93.3	18.23	6.116		
2,700.0	2,634.5	2,695.9	2,642.6	10.6	9.8	117.24	-117.7	-459.1	117.4	98.3	19.09	6.148		
2,800.0	2,730.6	2,795.7	2,739.5	11.1	10.3	117.81	-124.4	-482.4	123.2	103.3	19.94	6.179		
2,900.0	2,826.7	2,895.5	2,836.3	11.6	10.7	118.34	-131.1	-505.8	129.1	108.3	20.80	6.208		
3,000.0	2,922.8	2,995.4	2,933.1	12.1	11.2	118.81	-137.9	-529.1	135.0	113.4	21.65	6.235		
3,100.0	3,018.9	3,095.2	3,029.9	12.6	11.7	119.25	-144.6	-552.5	140.9	118.4	22.50	6.261		
3,200.0	3,115.1	3,195.0	3,126.7	13.2	12.1	119.65	-151.3	-575.8	146.8	123.4	23.35	6.286		
3,300.0	3,211.2	3,294.8	3,223.5	13.7	12.6	120.02	-158.1	-599.2	152.7	128.5	24.21	6.309		
3,400.0	3,307.3	3,394.7	3,320.4	14.2	13.1	120.37	-164.8	-622.5	158.6	133.6	25.06	6.331		
3,500.0	3,403.4	3,494.5	3,417.2	14.7	13.5	120.69	-171.5	-645.9	164.5	138.6	25.90	6.352		
3,600.0	3,499.5	3,594.3	3,514.0	15.3	14.0	120.98	-178.3	-669.2	170.5	143.7	26.75	6.372		
3,700.0	3,595.7	3,694.1	3,610.8	15.8	14.5	121.26	-185.0	-692.6	176.4	148.8	27.60	6.391		
3,800.0	3,691.8	3,793.9	3,707.6	16.3	14.9	121.52	-191.7	-715.9	182.3	153.9	28.45	6.409		
3,900.0	3,787.9	3,893.8	3,804.4	16.8	15.4	121.76	-198.5	-739.3	188.3	159.0	29.30	6.427		
4,000.0	3,884.0	3,993.6	3,901.3	17.4	15.9	121.99	-205.2	-762.6	194.2	164.1	30.14	6.443		
4,100.0	3,980.1	4,093.4	3,998.1	17.9	16.3	122.20	-211.9	-786.0	200.2	169.2	30.99	6.459		
4,200.0	4,076.3	4,193.2	4,094.9	18.4	16.8	122.40	-218.6	-809.3	206.1	174.3	31.84	6.474		
4,300.0	4,172.4	4,293.0	4,191.7	18.9	17.3	122.59	-225.4	-832.7	212.1	179.4	32.68	6.488		
4,400.0	4,268.5	4,392.9	4,288.5	19.5	17.7	122.77	-232.1	-856.0	218.0	184.5	33.53	6.502		
4,500.0	4,364.6	4,492.7	4,385.3	20.0	18.2	122.95	-238.8	-879.4	224.0	189.6	34.38	6.515		
4,600.0	4,460.7	4,592.5	4,482.2	20.5	18.7	123.11	-245.6	-902.7	229.9	194.7	35.22	6.528		
4,700.0	4,556.9	4,692.3	4,579.0	21.0	19.1	123.26	-252.3	-926.1	235.9	199.8	36.07	6.540		
4,800.0	4,653.0	4,792.1	4,675.8	21.6	19.6	123.41	-259.0	-949.4	241.8	204.9	36.91	6.552		
4,900.0	4,749.1	4,892.0	4,772.6	22.1	20.1	123.55	-265.8	-972.8	247.8	210.0	37.76	6.563		
5,000.0	4,845.2	4,991.8	4,869.4	22.6	20.5	123.68	-272.5	-996.2	253.7	215.1	38.60	6.574		
5,100.0	4,941.3	5,091.6	4,966.2	23.1	21.0	123.80	-279.2	-1,019.5	259.7	220.3	39.45	6.584		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-13D (Oxy I21 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			
5,200.0	5,037.5	5,191.4	5,063.1	23.7	21.5	123.92	-286.0	-1,042.9	265.7	225.4	40.29	6.594			
5,300.0	5,133.6	5,291.2	5,159.9	24.2	21.9	124.04	-292.7	-1,066.2	271.6	230.5	41.14	6.603			
5,400.0	5,229.7	5,391.1	5,256.7	24.7	22.4	124.15	-299.4	-1,089.6	277.6	235.6	41.98	6.613			
5,500.0	5,325.8	5,490.9	5,353.5	25.2	22.9	124.26	-306.2	-1,112.9	283.6	240.7	42.82	6.622			
5,600.0	5,422.0	5,590.7	5,450.3	25.8	23.4	124.36	-312.9	-1,136.3	289.5	245.9	43.67	6.630			
5,700.0	5,518.1	5,690.5	5,547.2	26.3	23.8	124.45	-319.6	-1,159.6	295.5	251.0	44.51	6.639			
5,800.0	5,614.2	5,790.3	5,644.0	26.8	24.3	124.55	-326.3	-1,183.0	301.5	256.1	45.36	6.647			
5,900.0	5,710.3	5,890.2	5,740.8	27.3	24.8	124.64	-333.1	-1,206.3	307.4	261.2	46.20	6.654			
6,000.0	5,806.5	5,990.0	5,837.6	27.9	25.2	124.73	-339.8	-1,229.7	313.4	266.3	47.05	6.661			
6,100.0	5,903.1	6,089.3	5,934.0	28.3	25.7	124.58	-346.5	-1,252.9	318.2	270.3	47.95	6.636			
6,200.0	6,000.4	6,186.0	6,028.1	28.7	26.1	124.32	-352.6	-1,274.0	322.2	273.4	48.81	6.602			
6,300.0	6,098.3	6,282.7	6,122.7	29.1	26.5	124.08	-358.0	-1,292.8	325.8	276.2	49.58	6.571			
6,400.0	6,196.6	6,379.3	6,217.9	29.5	26.8	123.88	-362.8	-1,309.3	328.9	278.6	50.27	6.542			
6,500.0	6,295.4	6,476.0	6,313.5	29.8	27.1	123.69	-366.9	-1,323.5	331.5	280.7	50.88	6.516			
6,600.0	6,394.6	6,572.8	6,409.4	30.0	27.3	123.53	-370.3	-1,335.4	333.7	282.3	51.41	6.491			
6,700.0	6,494.1	6,669.5	6,505.6	30.2	27.5	123.40	-373.0	-1,344.9	335.4	283.6	51.86	6.468			
6,800.0	6,593.8	6,766.2	6,602.1	30.4	27.7	123.28	-375.1	-1,352.1	336.7	284.4	52.22	6.446			
6,900.0	6,693.7	6,863.0	6,698.7	30.5	27.8	123.18	-376.5	-1,356.9	337.4	284.9	52.51	6.425			
7,000.0	6,793.6	6,959.8	6,795.4	30.6	27.9	123.10	-377.2	-1,359.4	337.7	285.0	52.72	6.405			
7,100.0	6,893.6	7,058.0	6,893.6	30.7	28.0	6.00	-377.3	-1,359.7	337.7	284.8	52.89	6.384			
7,200.0	6,993.6	7,158.0	6,993.6	30.7	28.1	6.00	-377.3	-1,359.7	337.7	284.6	53.06	6.364			
7,300.0	7,093.6	7,258.0	7,093.6	30.8	28.1	6.00	-377.3	-1,359.7	337.7	284.5	53.22	6.344			
7,400.0	7,193.6	7,358.0	7,193.6	30.9	28.2	6.00	-377.3	-1,359.7	337.7	284.3	53.39	6.325			
7,500.0	7,293.6	7,458.0	7,293.6	31.0	28.3	6.00	-377.3	-1,359.7	337.7	284.1	53.56	6.305			
7,600.0	7,393.6	7,558.0	7,393.6	31.0	28.4	6.00	-377.3	-1,359.7	337.7	283.9	53.73	6.285			
7,700.0	7,493.6	7,658.0	7,493.6	31.1	28.5	6.00	-377.3	-1,359.7	337.7	283.8	53.90	6.265			
7,800.0	7,593.6	7,758.0	7,593.6	31.2	28.6	6.00	-377.3	-1,359.7	337.7	283.6	54.08	6.244			
7,900.0	7,693.6	7,858.0	7,693.6	31.3	28.6	6.00	-377.3	-1,359.7	337.7	283.4	54.25	6.224			
8,000.0	7,793.6	7,958.0	7,793.6	31.3	28.7	6.00	-377.3	-1,359.7	337.7	283.2	54.43	6.204			
8,100.0	7,893.6	8,058.0	7,893.6	31.4	28.8	6.00	-377.3	-1,359.7	337.7	283.1	54.61	6.184			
8,200.0	7,993.6	8,158.0	7,993.6	31.5	28.9	6.00	-377.3	-1,359.7	337.7	282.9	54.79	6.163			
8,300.0	8,093.6	8,258.0	8,093.6	31.6	29.0	6.00	-377.3	-1,359.7	337.7	282.7	54.97	6.143			
8,400.0	8,193.6	8,358.0	8,193.6	31.7	29.1	6.00	-377.3	-1,359.7	337.7	282.5	55.16	6.122			
8,500.0	8,293.6	8,458.0	8,293.6	31.7	29.1	6.00	-377.3	-1,359.7	337.7	282.3	55.34	6.102			
8,600.0	8,393.6	8,558.0	8,393.6	31.8	29.2	6.00	-377.3	-1,359.7	337.7	282.1	55.53	6.081			
8,700.0	8,493.6	8,658.0	8,493.6	31.9	29.3	6.00	-377.3	-1,359.7	337.7	282.0	55.72	6.060			
8,800.0	8,593.6	8,758.0	8,593.6	32.0	29.4	6.00	-377.3	-1,359.7	337.7	281.8	55.91	6.040			
8,900.4	8,684.0	8,848.4	8,684.0	32.1	29.5	6.00	-377.3	-1,359.7	337.7	281.6	56.08	6.021			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-14D (Oxy I21 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	-33.85	24.4	-16.4	29.4					
100.0	100.0	100.0	100.0	0.1	0.1	-33.85	24.4	-16.4	29.4	29.1	0.30	99.032		
200.0	200.0	200.0	200.0	0.3	0.3	-33.85	24.4	-16.4	29.4	28.7	0.65	45.501		
300.0	300.0	300.0	300.0	0.5	0.5	-33.85	24.4	-16.4	29.4	28.4	0.99	29.536 CC, ES		
400.0	400.0	399.6	399.6	0.7	0.7	83.53	24.3	-17.7	29.9	28.5	1.35	22.190		
500.0	499.9	499.2	499.1	0.9	0.9	84.38	24.0	-21.5	31.3	29.6	1.71	18.304		
600.0	599.7	598.8	598.5	1.1	1.1	85.63	23.5	-28.0	33.8	31.7	2.10	16.038		
700.0	699.3	698.3	697.6	1.3	1.3	87.10	22.7	-37.0	37.2	34.6	2.54	14.632		
800.0	798.6	797.8	796.4	1.5	1.5	88.63	21.8	-48.7	41.6	38.6	3.03	13.716		
900.0	897.5	897.2	894.8	1.8	1.8	90.09	20.7	-62.8	47.1	43.5	3.60	13.093		
1,000.0	996.1	996.5	992.7	2.1	2.1	91.42	19.3	-79.5	53.5	49.3	4.23	12.652		
1,100.0	1,094.2	1,095.7	1,090.0	2.5	2.5	92.59	17.8	-98.7	61.0	56.1	4.95	12.328		
1,200.0	1,191.7	1,194.8	1,186.6	2.9	2.9	93.59	16.0	-120.4	69.5	63.7	5.75	12.080		
1,300.0	1,288.6	1,294.3	1,283.4	3.4	3.3	95.20	14.2	-143.6	78.6	72.0	6.62	11.881		
1,400.0	1,384.9	1,393.8	1,380.1	3.9	3.8	98.09	12.3	-166.8	88.2	80.6	7.53	11.706		
1,500.0	1,481.0	1,493.2	1,476.7	4.4	4.2	100.84	10.4	-190.0	98.0	89.5	8.45	11.599		
1,600.0	1,577.1	1,592.6	1,573.4	4.9	4.6	103.07	8.5	-213.2	108.0	98.6	9.36	11.533		
1,700.0	1,673.3	1,692.0	1,670.0	5.4	5.1	104.93	6.7	-236.4	118.1	107.9	10.28	11.495		
1,800.0	1,769.4	1,791.4	1,766.7	5.9	5.5	106.49	4.8	-259.6	128.4	117.2	11.19	11.475		
1,900.0	1,865.5	1,890.8	1,863.3	6.4	6.0	107.82	2.9	-282.9	138.7	126.6	12.10	11.467		
2,000.0	1,961.6	1,990.3	1,960.0	6.9	6.4	108.97	1.1	-306.1	149.1	136.1	13.01	11.467		
2,100.0	2,057.7	2,089.7	2,056.6	7.4	6.8	109.97	-0.8	-329.3	159.6	145.7	13.91	11.472		
2,200.0	2,153.9	2,189.1	2,153.3	8.0	7.3	110.84	-2.7	-352.5	170.1	155.3	14.81	11.481		
2,300.0	2,250.0	2,288.5	2,249.9	8.5	7.7	111.61	-4.5	-375.7	180.6	164.9	15.71	11.492		
2,400.0	2,346.1	2,387.9	2,346.6	9.0	8.2	112.30	-6.4	-398.9	191.2	174.5	16.62	11.504		
2,500.0	2,442.2	2,487.3	2,443.2	9.5	8.6	112.91	-8.3	-422.1	201.7	184.2	17.51	11.518		
2,600.0	2,538.3	2,586.8	2,539.9	10.0	9.1	113.47	-10.1	-445.3	212.3	193.9	18.41	11.531		
2,700.0	2,634.5	2,686.2	2,636.5	10.6	9.5	113.97	-12.0	-468.5	222.9	203.6	19.31	11.545		
2,800.0	2,730.6	2,785.6	2,733.2	11.1	10.0	114.42	-13.9	-491.8	233.6	213.4	20.21	11.559		
2,900.0	2,826.7	2,885.0	2,829.8	11.6	10.4	114.84	-15.8	-515.0	244.2	223.1	21.10	11.573		
3,000.0	2,922.8	2,984.4	2,926.5	12.1	10.9	115.22	-17.6	-538.2	254.9	232.9	22.00	11.586		
3,100.0	3,018.9	3,083.8	3,023.1	12.6	11.3	115.57	-19.5	-561.4	265.5	242.7	22.89	11.599		
3,200.0	3,115.1	3,183.3	3,119.8	13.2	11.8	115.89	-21.4	-584.6	276.2	252.4	23.79	11.612		
3,300.0	3,211.2	3,282.7	3,216.4	13.7	12.2	116.19	-23.2	-607.8	286.9	262.2	24.68	11.625		
3,400.0	3,307.3	3,382.1	3,313.1	14.2	12.7	116.47	-25.1	-631.0	297.6	272.0	25.57	11.636		
3,500.0	3,403.4	3,481.5	3,409.7	14.7	13.1	116.73	-27.0	-654.2	308.3	281.8	26.47	11.648		
3,600.0	3,499.5	3,580.9	3,506.4	15.3	13.6	116.97	-28.8	-677.4	319.0	291.6	27.36	11.659		
3,700.0	3,595.7	3,680.3	3,603.0	15.8	14.0	117.20	-30.7	-700.7	329.7	301.5	28.25	11.670		
3,800.0	3,691.8	3,779.8	3,699.7	16.3	14.5	117.41	-32.6	-723.9	340.4	311.3	29.15	11.680		
3,900.0	3,787.9	3,879.2	3,796.3	16.8	14.9	117.61	-34.5	-747.1	351.1	321.1	30.04	11.690		
4,000.0	3,884.0	3,978.6	3,893.0	17.4	15.4	117.79	-36.3	-770.3	361.9	330.9	30.93	11.700		
4,100.0	3,980.1	4,078.0	3,989.7	17.9	15.8	117.97	-38.2	-793.5	372.6	340.8	31.82	11.709		
4,200.0	4,076.3	4,177.4	4,086.3	18.4	16.3	118.14	-40.1	-816.7	383.3	350.6	32.71	11.718		
4,300.0	4,172.4	4,276.9	4,183.0	18.9	16.7	118.29	-41.9	-839.9	394.0	360.4	33.60	11.726		
4,400.0	4,268.5	4,376.3	4,279.6	19.5	17.2	118.44	-43.8	-863.1	404.8	370.3	34.49	11.735		
4,500.0	4,364.6	4,475.7	4,376.3	20.0	17.6	118.58	-45.7	-886.3	415.5	380.1	35.39	11.743		
4,600.0	4,460.7	4,575.1	4,472.9	20.5	18.1	118.72	-47.5	-909.5	426.3	390.0	36.28	11.750		
4,700.0	4,556.9	4,674.5	4,569.6	21.0	18.5	118.84	-49.4	-932.8	437.0	399.8	37.17	11.758		
4,800.0	4,653.0	4,773.9	4,666.2	21.6	19.0	118.96	-51.3	-956.0	447.7	409.7	38.06	11.765		
4,900.0	4,749.1	4,873.4	4,762.9	22.1	19.4	119.08	-53.1	-979.2	458.5	419.5	38.95	11.772		
5,000.0	4,845.2	4,972.8	4,859.5	22.6	19.9	119.19	-55.0	-1,002.4	469.2	429.4	39.84	11.779		
5,100.0	4,941.3	5,072.2	4,956.2	23.1	20.3	119.30	-56.9	-1,025.6	480.0	439.3	40.73	11.785		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-14D (Oxy I21 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)			
5,200.0	5,037.5	5,171.6	5,052.8	23.7	20.8	119.40	-58.8	-1,048.8	490.7	449.1	41.62	11.791	
5,300.0	5,133.6	5,271.0	5,149.5	24.2	21.2	119.49	-60.6	-1,072.0	501.5	459.0	42.51	11.797	
5,400.0	5,229.7	5,370.4	5,246.1	24.7	21.7	119.59	-62.5	-1,095.2	512.2	468.8	43.40	11.803	
5,500.0	5,325.8	5,469.9	5,342.8	25.2	22.1	119.67	-64.4	-1,118.4	523.0	478.7	44.29	11.809	
5,600.0	5,422.0	5,569.3	5,439.4	25.8	22.6	119.76	-66.2	-1,141.7	533.8	488.6	45.18	11.814	
5,700.0	5,518.1	5,668.7	5,536.1	26.3	23.0	119.84	-68.1	-1,164.9	544.5	498.4	46.07	11.820	
5,800.0	5,614.2	5,768.1	5,632.7	26.8	23.5	119.92	-70.0	-1,188.1	555.3	508.3	46.96	11.825	
5,900.0	5,710.3	5,867.5	5,729.4	27.3	24.0	119.99	-71.8	-1,211.3	566.0	518.2	47.85	11.830	
6,000.0	5,806.5	5,966.9	5,826.0	27.9	24.4	120.10	-73.7	-1,234.5	576.7	528.0	48.74	11.834	
6,100.0	5,903.1	6,066.5	5,922.8	28.3	24.9	120.12	-75.6	-1,257.7	586.5	536.9	49.62	11.820	
6,200.0	6,000.4	6,164.7	6,018.4	28.7	25.3	119.97	-77.4	-1,280.2	595.0	544.5	50.48	11.787	
6,300.0	6,098.3	6,262.3	6,113.9	29.1	25.7	119.82	-79.0	-1,300.3	602.6	551.3	51.26	11.756	
6,400.0	6,196.6	6,360.0	6,210.0	29.5	26.0	119.68	-80.4	-1,317.9	609.2	557.2	51.95	11.726	
6,500.0	6,295.4	6,457.8	6,306.6	29.8	26.3	119.56	-81.7	-1,333.1	614.8	562.3	52.56	11.698	
6,600.0	6,394.6	6,555.7	6,403.7	30.0	26.5	119.46	-82.7	-1,345.9	619.5	566.5	53.09	11.671	
6,700.0	6,494.1	6,653.7	6,501.1	30.2	26.8	119.36	-83.5	-1,356.1	623.3	569.8	53.53	11.644	
6,800.0	6,593.8	6,751.7	6,598.8	30.4	26.9	119.28	-84.1	-1,363.9	626.1	572.2	53.89	11.617	
6,900.0	6,693.7	6,849.8	6,696.7	30.5	27.1	119.22	-84.6	-1,369.2	627.8	573.7	54.17	11.589	
7,000.0	6,793.6	6,947.9	6,794.8	30.6	27.2	119.16	-84.8	-1,372.0	628.7	574.3	54.38	11.562	
7,100.0	6,893.6	7,046.8	6,893.6	30.7	27.2	2.06	-84.8	-1,372.4	628.7	574.2	54.54	11.529	
7,200.0	6,993.6	7,146.8	6,993.6	30.7	27.3	2.06	-84.8	-1,372.4	628.7	574.0	54.69	11.495	
7,300.0	7,093.6	7,246.8	7,093.6	30.8	27.4	2.06	-84.8	-1,372.4	628.7	573.9	54.86	11.461	
7,400.0	7,193.6	7,346.8	7,193.6	30.9	27.5	2.06	-84.8	-1,372.4	628.7	573.7	55.02	11.428	
7,500.0	7,293.6	7,446.8	7,293.6	31.0	27.6	2.06	-84.8	-1,372.4	628.7	573.5	55.18	11.394	
7,600.0	7,393.6	7,546.8	7,393.6	31.0	27.6	2.06	-84.8	-1,372.4	628.7	573.4	55.35	11.360	
7,700.0	7,493.6	7,646.8	7,493.6	31.1	27.7	2.06	-84.8	-1,372.4	628.7	573.2	55.51	11.325	
7,800.0	7,593.6	7,746.8	7,593.6	31.2	27.8	2.06	-84.8	-1,372.4	628.7	573.0	55.68	11.291	
7,900.0	7,693.6	7,846.8	7,693.6	31.3	27.9	2.06	-84.8	-1,372.4	628.7	572.9	55.85	11.257	
8,000.0	7,793.6	7,946.8	7,793.6	31.3	28.0	2.06	-84.8	-1,372.4	628.7	572.7	56.03	11.222	
8,100.0	7,893.6	8,046.8	7,893.6	31.4	28.1	2.06	-84.8	-1,372.4	628.7	572.5	56.20	11.187	
8,200.0	7,993.6	8,146.8	7,993.6	31.5	28.2	2.06	-84.8	-1,372.4	628.7	572.3	56.38	11.152	
8,300.0	8,093.6	8,246.8	8,093.6	31.6	28.2	2.06	-84.8	-1,372.4	628.7	572.2	56.55	11.118	
8,400.0	8,193.6	8,346.8	8,193.6	31.7	28.3	2.06	-84.8	-1,372.4	628.7	572.0	56.73	11.083	
8,500.0	8,293.6	8,446.8	8,293.6	31.7	28.4	2.06	-84.8	-1,372.4	628.7	571.8	56.91	11.047	
8,600.0	8,393.6	8,546.8	8,393.6	31.8	28.5	2.06	-84.8	-1,372.4	628.7	571.6	57.09	11.012	
8,700.0	8,493.6	8,646.8	8,493.6	31.9	28.6	2.06	-84.8	-1,372.4	628.7	571.4	57.28	10.977	
8,800.0	8,593.6	8,746.8	8,593.6	32.0	28.7	2.06	-84.8	-1,372.4	628.7	571.3	57.46	10.942	
8,890.4	8,684.0	8,837.1	8,684.0	32.1	28.8	2.06	-84.8	-1,372.4	628.7	571.1	57.63	10.910 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-15D (Oxy I21 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 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	-32.89	37.5	-24.3	44.7					
100.0	100.0	100.0	100.0	0.1	0.1	-32.89	37.5	-24.3	44.7	44.4	0.30	150.588		
200.0	200.0	200.0	200.0	0.3	0.3	-32.89	37.5	-24.3	44.7	44.0	0.65	69.189		
300.0	300.0	300.0	300.0	0.5	0.5	-32.89	37.5	-24.3	44.7	43.7	0.99	44.912 CC, ES		
400.0	400.0	399.2	399.2	0.7	0.7	84.58	37.7	-25.5	45.4	44.1	1.34	33.761		
500.0	499.9	498.4	498.3	0.9	0.9	85.70	38.3	-29.4	47.6	45.9	1.71	27.875		
600.0	599.7	597.5	597.2	1.1	1.1	87.35	39.2	-35.7	51.3	49.2	2.10	24.469		
700.0	699.3	696.5	695.8	1.3	1.3	89.29	40.5	-44.6	56.5	54.0	2.52	22.388		
800.0	798.6	795.4	794.0	1.5	1.5	91.30	42.2	-56.0	63.3	60.3	3.00	21.064		
900.0	897.5	894.1	891.7	1.8	1.8	93.22	44.3	-69.9	71.7	68.1	3.55	20.193		
1,000.0	996.1	992.5	988.7	2.1	2.1	94.96	46.7	-86.2	81.6	77.5	4.16	19.600		
1,100.0	1,094.2	1,090.7	1,085.1	2.5	2.5	96.47	49.5	-104.9	93.2	88.3	4.86	19.184		
1,200.0	1,191.7	1,188.7	1,180.7	2.9	2.9	97.77	52.7	-126.1	106.3	100.6	5.63	18.883		
1,300.0	1,288.6	1,287.2	1,276.4	3.4	3.3	99.14	56.1	-149.1	120.7	114.2	6.47	18.661		
1,400.0	1,384.9	1,385.9	1,372.3	3.9	3.7	101.24	59.6	-172.4	135.6	128.3	7.35	18.446		
1,500.0	1,481.0	1,484.6	1,468.2	4.4	4.2	103.27	63.0	-195.6	150.9	142.7	8.25	18.285		
1,600.0	1,577.1	1,583.3	1,564.1	4.9	4.6	104.92	66.5	-218.8	166.3	157.2	9.16	18.163		
1,700.0	1,673.3	1,682.0	1,659.9	5.4	5.0	106.29	69.9	-242.0	181.9	171.8	10.07	18.069		
1,800.0	1,769.4	1,780.7	1,755.8	5.9	5.5	107.45	73.4	-265.2	197.5	186.5	10.97	17.996		
1,900.0	1,865.5	1,879.4	1,851.7	6.4	5.9	108.43	76.9	-288.5	213.2	201.3	11.88	17.937		
2,000.0	1,961.6	1,978.1	1,947.5	6.9	6.4	109.28	80.3	-311.7	228.9	216.1	12.80	17.891		
2,100.0	2,057.7	2,076.8	2,043.4	7.4	6.8	110.02	83.8	-334.9	244.7	231.0	13.71	17.853		
2,200.0	2,153.9	2,175.5	2,139.3	8.0	7.3	110.67	87.2	-358.1	260.5	245.9	14.62	17.823		
2,300.0	2,250.0	2,274.2	2,235.1	8.5	7.7	111.25	90.7	-381.3	276.4	260.8	15.53	17.797		
2,400.0	2,346.1	2,373.0	2,331.0	9.0	8.2	111.76	94.1	-404.6	292.2	275.8	16.44	17.776		
2,500.0	2,442.2	2,471.7	2,426.9	9.5	8.6	112.23	97.6	-427.8	308.1	290.8	17.35	17.758		
2,600.0	2,538.3	2,570.4	2,522.7	10.0	9.1	112.64	101.1	-451.0	324.0	305.8	18.26	17.744		
2,700.0	2,634.5	2,669.1	2,618.6	10.6	9.5	113.02	104.5	-474.2	340.0	320.8	19.17	17.731		
2,800.0	2,730.6	2,767.8	2,714.5	11.1	10.0	113.36	108.0	-497.4	355.9	335.8	20.08	17.720		
2,900.0	2,826.7	2,866.5	2,810.3	11.6	10.4	113.68	111.4	-520.7	371.9	350.9	21.00	17.711		
3,000.0	2,922.8	2,965.2	2,906.2	12.1	10.9	113.96	114.9	-543.9	387.8	365.9	21.91	17.703		
3,100.0	3,018.9	3,063.9	3,002.1	12.6	11.3	114.23	118.3	-567.1	403.8	381.0	22.82	17.696		
3,200.0	3,115.1	3,162.6	3,097.9	13.2	11.8	114.47	121.8	-590.3	419.8	396.0	23.73	17.690		
3,300.0	3,211.2	3,261.3	3,193.8	13.7	12.2	114.70	125.3	-613.5	435.7	411.1	24.64	17.685		
3,400.0	3,307.3	3,360.0	3,289.7	14.2	12.7	114.91	128.7	-636.7	451.7	426.2	25.55	17.680		
3,500.0	3,403.4	3,458.7	3,385.5	14.7	13.2	115.11	132.2	-660.0	467.7	441.3	26.46	17.676		
3,600.0	3,499.5	3,557.4	3,481.4	15.3	13.6	115.29	135.6	-683.2	483.7	456.4	27.37	17.673		
3,700.0	3,595.7	3,656.1	3,577.3	15.8	14.1	115.46	139.1	-706.4	499.7	471.5	28.28	17.670		
3,800.0	3,691.8	3,754.8	3,673.1	16.3	14.5	115.62	142.5	-729.6	515.7	486.6	29.19	17.667		
3,900.0	3,787.9	3,853.5	3,769.0	16.8	15.0	115.78	146.0	-752.8	531.8	501.7	30.10	17.665		
4,000.0	3,884.0	3,952.2	3,864.9	17.4	15.4	115.92	149.5	-776.1	547.8	516.8	31.01	17.663		
4,100.0	3,980.1	4,050.9	3,960.7	17.9	15.9	116.05	152.9	-799.3	563.8	531.9	31.92	17.661		
4,200.0	4,076.3	4,149.6	4,056.6	18.4	16.3	116.18	156.4	-822.5	579.8	547.0	32.83	17.659		
4,300.0	4,172.4	4,248.3	4,152.5	18.9	16.8	116.30	159.8	-845.7	595.8	562.1	33.74	17.658		
4,400.0	4,268.5	4,347.0	4,248.4	19.5	17.2	116.41	163.3	-868.9	611.9	577.2	34.65	17.656		
4,500.0	4,364.6	4,445.7	4,344.2	20.0	17.7	116.52	166.7	-892.2	627.9	592.3	35.56	17.655		
4,600.0	4,460.7	4,544.4	4,440.1	20.5	18.1	116.62	170.2	-915.4	643.9	607.5	36.47	17.654		
4,700.0	4,556.9	4,643.1	4,536.0	21.0	18.6	116.72	173.7	-938.6	660.0	622.6	37.38	17.653		
4,800.0	4,653.0	4,741.8	4,631.8	21.6	19.1	116.82	177.1	-961.8	676.0	637.7	38.29	17.653		
4,900.0	4,749.1	4,840.5	4,727.7	22.1	19.5	116.90	180.6	-985.0	692.0	652.8	39.20	17.652		
5,000.0	4,845.2	4,939.2	4,823.6	22.6	20.0	116.99	184.0	-1,008.3	708.1	668.0	40.11	17.651		
5,100.0	4,941.3	5,037.9	4,919.4	23.1	20.4	117.07	187.5	-1,031.5	724.1	683.1	41.02	17.651		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-15D (Oxy I21 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)			
5,200.0	5,037.5	5,136.6	5,015.3	23.7	20.9	117.15	190.9	-1,054.7	740.2	698.2	41.93	17.650	
5,300.0	5,133.6	5,235.3	5,111.2	24.2	21.3	117.22	194.4	-1,077.9	756.2	713.3	42.84	17.650	
5,400.0	5,229.7	5,334.0	5,207.0	24.7	21.8	117.29	197.9	-1,101.1	772.2	728.5	43.75	17.649	
5,500.0	5,325.8	5,432.7	5,302.9	25.2	22.2	117.36	201.3	-1,124.4	788.3	743.6	44.66	17.649	
5,600.0	5,422.0	5,531.4	5,398.8	25.8	22.7	117.43	204.8	-1,147.6	804.3	758.8	45.57	17.649	
5,700.0	5,518.1	5,630.1	5,494.6	26.3	23.1	117.49	208.2	-1,170.8	820.4	773.9	46.48	17.649	
5,800.0	5,614.2	5,728.8	5,590.5	26.8	23.6	117.55	211.7	-1,194.0	836.4	789.0	47.39	17.648	
5,900.0	5,710.3	5,827.5	5,686.4	27.3	24.0	117.61	215.1	-1,217.2	852.5	804.2	48.30	17.648	
6,000.0	5,806.5	5,926.2	5,782.2	27.9	24.5	117.72	218.6	-1,240.5	868.5	819.3	49.21	17.647	
6,100.0	5,903.1	6,025.0	5,878.3	28.3	25.0	117.86	222.1	-1,263.7	883.6	833.5	50.11	17.634	
6,200.0	6,000.4	6,124.7	5,975.1	28.7	25.4	117.84	225.5	-1,287.1	897.5	846.5	50.97	17.607	
6,300.0	6,098.3	6,226.9	6,074.8	29.1	25.8	117.77	228.8	-1,309.1	910.0	858.2	51.77	17.576	
6,400.0	6,196.6	6,329.3	6,175.3	29.5	26.2	117.71	231.7	-1,328.6	920.9	868.4	52.49	17.545	
6,500.0	6,295.4	6,432.1	6,276.7	29.8	26.5	117.65	234.2	-1,345.5	930.3	877.2	53.12	17.515	
6,600.0	6,394.6	6,535.1	6,378.7	30.0	26.8	117.60	236.3	-1,359.6	938.2	884.5	53.66	17.483	
6,700.0	6,494.1	6,638.4	6,481.3	30.2	27.0	117.55	238.1	-1,371.1	944.4	890.3	54.12	17.451	
6,800.0	6,593.8	6,741.8	6,584.3	30.4	27.2	117.51	239.4	-1,379.8	949.1	894.6	54.49	17.418	
6,900.0	6,693.7	6,845.3	6,687.7	30.5	27.4	117.46	240.2	-1,385.8	952.3	897.5	54.78	17.383	
7,000.0	6,793.6	6,948.9	6,791.3	30.6	27.5	117.42	240.7	-1,389.0	953.8	898.8	54.99	17.345	
7,100.0	6,893.6	7,051.3	6,893.6	30.7	27.6	0.33	240.8	-1,389.6	954.0	898.8	55.15	17.297	
7,200.0	6,993.6	7,151.3	6,993.6	30.7	27.6	0.33	240.8	-1,389.6	954.0	898.7	55.31	17.248	
7,300.0	7,093.6	7,251.3	7,093.6	30.8	27.7	0.33	240.8	-1,389.6	954.0	898.5	55.47	17.199	
7,400.0	7,193.6	7,351.3	7,193.6	30.9	27.8	0.33	240.8	-1,389.6	954.0	898.3	55.63	17.149	
7,500.0	7,293.6	7,451.3	7,293.6	31.0	27.9	0.33	240.8	-1,389.6	954.0	898.2	55.79	17.100	
7,600.0	7,393.6	7,551.3	7,393.6	31.0	28.0	0.33	240.8	-1,389.6	954.0	898.0	55.95	17.050	
7,700.0	7,493.6	7,651.3	7,493.6	31.1	28.1	0.33	240.8	-1,389.6	954.0	897.8	56.12	16.999	
7,800.0	7,593.6	7,751.3	7,593.6	31.2	28.1	0.33	240.8	-1,389.6	954.0	897.7	56.29	16.949	
7,900.0	7,693.6	7,851.3	7,693.6	31.3	28.2	0.33	240.8	-1,389.6	954.0	897.5	56.45	16.898	
8,000.0	7,793.6	7,951.3	7,793.6	31.3	28.3	0.33	240.8	-1,389.6	954.0	897.3	56.62	16.847	
8,100.0	7,893.6	8,051.3	7,893.6	31.4	28.4	0.33	240.8	-1,389.6	954.0	897.2	56.80	16.796	
8,200.0	7,993.6	8,151.3	7,993.6	31.5	28.5	0.33	240.8	-1,389.6	954.0	897.0	56.97	16.745	
8,300.0	8,093.6	8,251.3	8,093.6	31.6	28.6	0.33	240.8	-1,389.6	954.0	896.8	57.15	16.694	
8,400.0	8,193.6	8,351.3	8,193.6	31.7	28.7	0.33	240.8	-1,389.6	954.0	896.6	57.32	16.642	
8,500.0	8,293.6	8,451.3	8,293.6	31.7	28.7	0.33	240.8	-1,389.6	954.0	896.5	57.50	16.590	
8,600.0	8,393.6	8,551.3	8,393.6	31.8	28.8	0.33	240.8	-1,389.6	954.0	896.3	57.68	16.539	
8,700.0	8,493.6	8,651.3	8,493.6	31.9	28.9	0.33	240.8	-1,389.6	954.0	896.1	57.86	16.487	
8,800.0	8,593.6	8,751.3	8,593.6	32.0	29.0	0.33	240.8	-1,389.6	954.0	895.9	58.05	16.435	
8,890.4	8,684.0	8,841.7	8,684.0	32.1	29.1	0.33	240.8	-1,389.6	954.0	895.7	58.21	16.388 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-16D (Oxy I21 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 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	-23.95	54.6	-24.3	59.8					
100.0	100.0	100.0	100.0	0.1	0.1	-23.95	54.6	-24.3	59.8	59.5	0.30	201.487		
200.0	200.0	200.0	200.0	0.3	0.3	-23.95	54.6	-24.3	59.8	59.1	0.65	92.575		
300.0	300.0	300.0	300.0	0.5	0.5	-23.95	54.6	-24.3	59.8	58.8	0.99	60.093 CC, ES		
400.0	400.0	398.9	398.9	0.7	0.7	93.47	55.1	-25.5	60.8	59.4	1.34	45.200		
500.0	499.9	497.7	497.7	0.9	0.9	94.44	56.4	-29.1	63.7	62.0	1.71	37.354		
600.0	599.7	596.5	596.2	1.1	1.1	95.86	58.7	-35.0	68.7	66.6	2.09	32.837		
700.0	699.3	695.0	694.3	1.3	1.3	97.52	61.8	-43.4	75.7	73.2	2.51	30.102		
800.0	798.6	793.2	791.9	1.5	1.5	99.23	65.8	-54.0	84.7	81.7	2.98	28.390		
900.0	897.5	891.2	888.8	1.8	1.8	100.87	70.7	-67.0	95.9	92.4	3.51	27.292		
1,000.0	996.1	988.7	985.0	2.1	2.1	102.34	76.4	-82.2	109.1	105.0	4.11	26.570		
1,100.0	1,094.2	1,085.9	1,080.3	2.5	2.5	103.62	83.0	-99.7	124.4	119.6	4.77	26.083		
1,200.0	1,191.7	1,182.5	1,174.7	2.9	2.9	104.71	90.3	-119.3	141.7	136.2	5.50	25.748		
1,300.0	1,288.6	1,279.3	1,268.7	3.4	3.3	105.66	98.5	-141.0	161.0	154.7	6.30	25.537		
1,400.0	1,384.9	1,377.1	1,363.5	3.9	3.7	107.07	106.9	-163.4	181.3	174.1	7.15	25.339		
1,500.0	1,481.0	1,474.9	1,458.2	4.4	4.1	108.51	115.4	-185.8	201.9	193.9	8.02	25.170		
1,600.0	1,577.1	1,572.6	1,553.0	4.9	4.6	109.69	123.8	-208.3	222.6	213.7	8.89	25.024		
1,700.0	1,673.3	1,670.3	1,647.8	5.4	5.0	110.66	132.2	-230.7	243.4	233.6	9.77	24.898		
1,800.0	1,769.4	1,768.1	1,742.5	5.9	5.5	111.49	140.6	-253.1	264.2	253.5	10.66	24.789		
1,900.0	1,865.5	1,865.8	1,837.3	6.4	5.9	112.19	149.1	-275.5	285.1	273.5	11.54	24.695		
2,000.0	1,961.6	1,963.6	1,932.1	6.9	6.4	112.80	157.5	-297.9	306.0	293.5	12.43	24.613		
2,100.0	2,057.7	2,061.3	2,026.8	7.4	6.8	113.33	165.9	-320.3	326.9	313.6	13.32	24.541		
2,200.0	2,153.9	2,159.0	2,121.6	8.0	7.3	113.79	174.3	-342.7	347.9	333.7	14.21	24.478		
2,300.0	2,250.0	2,256.8	2,216.3	8.5	7.8	114.20	182.8	-365.2	368.9	353.8	15.10	24.422		
2,400.0	2,346.1	2,354.5	2,311.1	9.0	8.2	114.57	191.2	-387.6	389.9	373.9	16.00	24.371		
2,500.0	2,442.2	2,452.3	2,405.9	9.5	8.7	114.90	199.6	-410.0	410.9	394.0	16.89	24.327		
2,600.0	2,538.3	2,550.0	2,500.6	10.0	9.1	115.20	208.0	-432.4	431.9	414.1	17.78	24.286		
2,700.0	2,634.5	2,647.8	2,595.4	10.6	9.6	115.47	216.5	-454.8	452.9	434.2	18.68	24.250		
2,800.0	2,730.6	2,745.5	2,690.2	11.1	10.0	115.72	224.9	-477.2	474.0	454.4	19.57	24.216		
2,900.0	2,826.7	2,843.2	2,784.9	11.6	10.5	115.94	233.3	-499.6	495.0	474.5	20.47	24.186		
3,000.0	2,922.8	2,941.0	2,879.7	12.1	11.0	116.15	241.7	-522.1	516.1	494.7	21.36	24.158		
3,100.0	3,018.9	3,038.7	2,974.4	12.6	11.4	116.34	250.2	-544.5	537.1	514.9	22.26	24.133		
3,200.0	3,115.1	3,136.5	3,069.2	13.2	11.9	116.52	258.6	-566.9	558.2	535.1	23.15	24.109		
3,300.0	3,211.2	3,234.2	3,164.0	13.7	12.3	116.68	267.0	-589.3	579.3	555.2	24.05	24.087		
3,400.0	3,307.3	3,331.9	3,258.7	14.2	12.8	116.83	275.4	-611.7	600.4	575.4	24.94	24.067		
3,500.0	3,403.4	3,429.7	3,353.5	14.7	13.3	116.98	283.8	-634.1	621.4	595.6	25.84	24.048		
3,600.0	3,499.5	3,527.4	3,448.3	15.3	13.7	117.11	292.3	-656.5	642.5	615.8	26.74	24.031		
3,700.0	3,595.7	3,625.2	3,543.0	15.8	14.2	117.23	300.7	-679.0	663.6	636.0	27.63	24.015		
3,800.0	3,691.8	3,722.9	3,637.8	16.3	14.6	117.35	309.1	-701.4	684.7	656.2	28.53	23.999		
3,900.0	3,787.9	3,820.6	3,732.6	16.8	15.1	117.46	317.5	-723.8	705.8	676.4	29.43	23.985		
4,000.0	3,884.0	3,918.4	3,827.3	17.4	15.6	117.56	326.0	-746.2	726.9	696.6	30.32	23.972		
4,100.0	3,980.1	4,016.1	3,922.1	17.9	16.0	117.66	334.4	-768.6	748.0	716.8	31.22	23.959		
4,200.0	4,076.3	4,113.9	4,016.8	18.4	16.5	117.75	342.8	-791.0	769.1	737.0	32.12	23.947		
4,300.0	4,172.4	4,211.6	4,111.6	18.9	16.9	117.84	351.2	-813.4	790.2	757.2	33.01	23.936		
4,400.0	4,268.5	4,309.4	4,206.4	19.5	17.4	117.92	359.7	-835.9	811.3	777.4	33.91	23.925		
4,500.0	4,364.6	4,407.1	4,301.1	20.0	17.9	118.00	368.1	-858.3	832.4	797.6	34.81	23.915		
4,600.0	4,460.7	4,504.8	4,395.9	20.5	18.3	118.07	376.5	-880.7	853.5	817.8	35.70	23.906		
4,700.0	4,556.9	4,602.6	4,490.7	21.0	18.8	118.14	384.9	-903.1	874.6	838.0	36.60	23.896		
4,800.0	4,653.0	4,700.3	4,585.4	21.6	19.2	118.21	393.4	-925.5	895.7	858.2	37.50	23.888		
4,900.0	4,749.1	4,798.1	4,680.2	22.1	19.7	118.28	401.8	-947.9	916.8	878.4	38.39	23.880		
5,000.0	4,845.2	4,895.8	4,774.9	22.6	20.2	118.34	410.2	-970.3	937.9	898.6	39.29	23.872		
5,100.0	4,941.3	4,993.5	4,869.7	23.1	20.6	118.40	418.6	-992.8	959.0	918.9	40.19	23.864		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-16D (Oxy I21 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		
5,200.0	5,037.5	5,091.3	4,964.5	23.7	21.1	118.45	427.1	-1,015.2	980.2	939.1	41.08	23.857		
5,300.0	5,133.6	5,189.0	5,059.2	24.2	21.5	118.51	435.5	-1,037.6	1,001.3	959.3	41.98	23.850		
5,400.0	5,229.7	5,286.8	5,154.0	24.7	22.0	118.56	443.9	-1,060.0	1,022.4	979.5	42.88	23.844		
5,500.0	5,325.8	5,384.5	5,248.8	25.2	22.5	118.61	452.3	-1,082.4	1,043.5	999.7	43.78	23.837		
5,600.0	5,422.0	5,482.3	5,343.5	25.8	22.9	118.66	460.8	-1,104.8	1,064.6	1,019.9	44.67	23.831		
5,700.0	5,518.1	5,580.0	5,438.3	26.3	23.4	118.70	469.2	-1,127.2	1,085.7	1,040.2	45.57	23.826		
5,800.0	5,614.2	5,677.7	5,533.0	26.8	23.9	118.75	477.6	-1,149.7	1,106.8	1,060.4	46.47	23.820 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-17D (Oxy I21 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	-33.00	49.5	-32.2	59.1						
100.0	100.0	100.0	100.0	0.1	0.1	-33.00	49.5	-32.2	59.1	58.8	0.30	199.066			
200.0	200.0	200.0	200.0	0.3	0.3	-33.00	49.5	-32.2	59.1	58.4	0.65	91.463	CC, ES		
300.0	300.0	298.8	298.8	0.5	0.5	-33.75	49.9	-33.4	60.1	59.1	0.99	60.502			
400.0	400.0	397.5	397.4	0.7	0.7	82.33	51.2	-37.0	63.0	61.7	1.35	46.821			
500.0	499.9	496.0	495.7	0.9	0.9	82.29	53.2	-43.0	67.7	66.0	1.71	39.529			
600.0	599.7	594.3	593.6	1.1	1.1	83.04	56.1	-51.4	74.1	72.0	2.10	35.204			
700.0	699.3	692.4	691.0	1.3	1.4	84.33	59.7	-62.2	82.2	79.7	2.53	32.444			
800.0	798.6	790.2	787.8	1.5	1.6	85.92	64.1	-75.3	92.1	89.1	3.01	30.571			
900.0	897.5	887.5	883.8	1.8	2.0	87.65	69.3	-90.6	103.9	100.3	3.55	29.230			
1,000.0	996.1	984.5	979.0	2.1	2.3	89.38	75.3	-108.2	117.5	113.4	4.16	28.224			
1,100.0	1,094.2	1,081.0	1,073.2	2.5	2.7	91.01	82.0	-128.0	133.1	128.2	4.85	27.444			
1,200.0	1,191.7	1,176.9	1,166.3	2.9	3.2	92.52	89.4	-149.9	150.5	144.9	5.61	26.824			
1,300.0	1,288.6	1,272.3	1,258.3	3.4	3.6	93.88	97.5	-173.8	169.8	163.4	6.45	26.323			
1,400.0	1,384.9	1,367.1	1,349.0	3.9	4.2	95.15	106.3	-199.7	191.0	183.6	7.36	25.947			
1,500.0	1,481.0	1,461.4	1,438.6	4.4	4.7	95.98	115.7	-227.6	213.8	205.5	8.31	25.741			
1,600.0	1,577.1	1,555.0	1,526.7	4.9	5.3	96.20	125.8	-257.4	238.1	228.8	9.27	25.678	SF		
1,700.0	1,673.3	1,647.9	1,613.4	5.4	5.9	95.97	136.5	-289.0	263.8	253.6	10.26	25.724			
1,800.0	1,769.4	1,739.9	1,698.6	5.9	6.6	95.43	147.7	-322.2	291.0	279.8	11.25	25.862			
1,900.0	1,865.5	1,831.1	1,782.0	6.4	7.3	94.66	159.5	-357.1	319.7	307.4	12.26	26.080			
2,000.0	1,961.6	1,921.3	1,863.6	6.9	8.0	93.73	171.8	-393.3	349.9	336.6	13.27	26.371			
2,100.0	2,057.7	2,010.3	1,943.3	7.4	8.8	92.70	184.5	-431.0	381.6	367.3	14.27	26.731			
2,200.0	2,153.9	2,100.0	2,022.6	8.0	9.6	91.59	198.0	-470.6	414.8	399.5	15.29	27.135			
2,300.0	2,250.0	2,184.9	2,096.8	8.5	10.4	90.48	211.2	-509.8	449.7	433.4	16.28	27.625			
2,400.0	2,346.1	2,270.3	2,170.4	9.0	11.3	89.35	225.1	-550.7	486.2	468.9	17.27	28.154			
2,500.0	2,442.2	2,354.3	2,241.9	9.5	12.1	88.22	239.2	-592.5	524.3	506.0	18.24	28.742			
2,600.0	2,538.3	2,444.2	2,317.7	10.0	13.1	87.07	254.7	-638.3	563.6	544.3	19.23	29.303			
2,700.0	2,634.5	2,535.5	2,394.7	10.6	14.0	86.05	270.5	-684.8	603.0	582.8	20.22	29.818			
2,800.0	2,730.6	2,626.9	2,471.7	11.1	15.0	85.15	286.2	-731.4	642.6	621.4	21.21	30.299			
2,900.0	2,826.7	2,718.3	2,548.7	11.6	16.0	84.35	302.0	-778.0	682.4	660.2	22.19	30.748			
3,000.0	2,922.8	2,809.7	2,625.8	12.1	16.9	83.65	317.8	-824.5	722.2	699.0	23.17	31.168			
3,100.0	3,018.9	2,901.0	2,702.8	12.6	17.9	83.01	333.5	-871.1	762.1	738.0	24.15	31.561			
3,200.0	3,115.1	2,992.4	2,779.8	13.2	18.8	82.44	349.3	-917.7	802.1	777.0	25.12	31.929			
3,300.0	3,211.2	3,083.8	2,856.8	13.7	19.8	81.92	365.0	-964.2	842.2	816.1	26.09	32.275			
3,400.0	3,307.3	3,175.2	2,933.9	14.2	20.8	81.45	380.8	-1,010.8	882.3	855.2	27.06	32.599			
3,500.0	3,403.4	3,266.5	3,010.9	14.7	21.8	81.02	396.6	-1,057.3	922.4	894.4	28.03	32.904			
3,600.0	3,499.5	3,357.9	3,087.9	15.3	22.7	80.63	412.3	-1,103.9	962.6	933.6	29.00	33.192			
3,700.0	3,595.7	3,449.3	3,164.9	15.8	23.7	80.26	428.1	-1,150.5	1,002.8	972.9	29.97	33.463			
3,800.0	3,691.8	3,540.7	3,242.0	16.3	24.7	79.93	443.9	-1,197.0	1,043.1	1,012.2	30.93	33.720			
3,900.0	3,787.9	3,632.0	3,319.0	16.8	25.6	79.62	459.6	-1,243.6	1,083.4	1,051.5	31.90	33.962			

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-1D (Oxy I21 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	147.58	-88.9	56.4	105.3					
100.0	100.0	100.0	100.0	0.1	0.1	147.58	-88.9	56.4	105.3	105.0	0.30	354.808		
200.0	200.0	200.0	200.0	0.3	0.3	147.58	-88.9	56.4	105.3	104.6	0.65	163.020		
300.0	300.0	300.0	300.0	0.5	0.5	147.58	-88.9	56.4	105.3	104.3	0.99	105.820 CC, ES		
400.0	400.0	397.8	397.8	0.7	0.7	-95.61	-90.1	56.4	106.4	105.1	1.34	79.301		
500.0	499.9	495.5	495.4	0.9	0.8	-96.40	-93.9	56.1	109.9	108.2	1.70	64.667		
600.0	599.7	593.0	592.7	1.1	1.0	-97.59	-100.1	55.7	115.8	113.7	2.08	55.704		
700.0	699.3	690.3	689.6	1.3	1.3	-99.06	-108.8	55.2	124.1	121.6	2.49	49.840		
800.0	798.6	787.1	785.8	1.5	1.5	-100.67	-119.8	54.5	134.8	131.9	2.94	45.825		
900.0	897.5	883.5	881.3	1.8	1.8	-102.30	-133.3	53.7	148.0	144.6	3.44	42.978		
1,000.0	996.1	979.4	975.8	2.1	2.1	-103.86	-149.0	52.7	163.7	159.7	4.00	40.903		
1,100.0	1,094.2	1,074.6	1,069.3	2.5	2.4	-105.29	-167.0	51.6	182.0	177.3	4.62	39.358		
1,200.0	1,191.7	1,169.1	1,161.6	2.9	2.8	-106.56	-187.1	50.3	202.7	197.4	5.31	38.187		
1,300.0	1,288.6	1,262.8	1,252.7	3.4	3.2	-107.67	-209.3	49.0	225.8	219.8	6.06	37.289		
1,400.0	1,384.9	1,355.7	1,342.3	3.9	3.6	-108.71	-233.6	47.5	251.4	244.5	6.86	36.633		
1,500.0	1,481.0	1,449.5	1,432.3	4.4	4.1	-109.54	-260.0	45.8	278.5	270.8	7.70	36.176		
1,600.0	1,577.1	1,545.6	1,524.4	4.9	4.6	-110.18	-287.6	44.1	305.9	297.4	8.56	35.752		
1,700.0	1,673.3	1,641.7	1,616.4	5.4	5.1	-110.71	-315.1	42.4	333.4	324.0	9.43	35.374		
1,800.0	1,769.4	1,737.9	1,708.5	5.9	5.6	-111.16	-342.6	40.7	360.9	350.6	10.30	35.039		
1,900.0	1,865.5	1,834.0	1,800.6	6.4	6.1	-111.55	-370.2	39.0	388.4	377.2	11.18	34.742		
2,000.0	1,961.6	1,930.1	1,892.6	6.9	6.6	-111.88	-397.7	37.3	416.0	403.9	12.06	34.478		
2,100.0	2,057.7	2,026.2	1,984.7	7.4	7.1	-112.17	-425.2	35.6	443.5	430.5	12.95	34.242		
2,200.0	2,153.9	2,122.3	2,076.8	8.0	7.6	-112.43	-452.8	33.9	471.0	457.2	13.84	34.031		
2,300.0	2,250.0	2,218.4	2,168.8	8.5	8.1	-112.66	-480.3	32.1	498.6	483.9	14.73	33.841		
2,400.0	2,346.1	2,314.5	2,260.9	9.0	8.6	-112.87	-507.8	30.4	526.2	510.5	15.63	33.670		
2,500.0	2,442.2	2,410.6	2,353.0	9.5	9.1	-113.06	-535.3	28.7	553.7	537.2	16.52	33.514		
2,600.0	2,538.3	2,506.7	2,445.0	10.0	9.6	-113.23	-562.9	27.0	581.3	563.9	17.42	33.373		
2,700.0	2,634.5	2,602.8	2,537.1	10.6	10.1	-113.38	-590.4	25.3	608.9	590.6	18.32	33.243		
2,800.0	2,730.6	2,698.9	2,629.2	11.1	10.6	-113.52	-617.9	23.6	636.5	617.3	19.21	33.125		
2,900.0	2,826.7	2,795.1	2,721.2	11.6	11.1	-113.65	-645.5	21.9	664.1	644.0	20.11	33.016		
3,000.0	2,922.8	2,891.2	2,813.3	12.1	11.6	-113.76	-673.0	20.2	691.7	670.6	21.01	32.915		
3,100.0	3,018.9	2,987.3	2,905.4	12.6	12.1	-113.87	-700.5	18.5	719.2	697.3	21.91	32.822		
3,200.0	3,115.1	3,083.4	2,997.4	13.2	12.6	-113.97	-728.1	16.8	746.8	724.0	22.81	32.735		
3,300.0	3,211.2	3,179.5	3,089.5	13.7	13.1	-114.07	-755.6	15.1	774.4	750.7	23.72	32.655		
3,400.0	3,307.3	3,275.6	3,181.6	14.2	13.6	-114.16	-783.1	13.4	802.0	777.4	24.62	32.580		
3,500.0	3,403.4	3,371.7	3,273.6	14.7	14.1	-114.24	-810.7	11.6	829.6	804.1	25.52	32.510		
3,600.0	3,499.5	3,467.8	3,365.7	15.3	14.7	-114.31	-838.2	9.9	857.2	830.8	26.42	32.444		
3,700.0	3,595.7	3,563.9	3,457.8	15.8	15.2	-114.38	-865.7	8.2	884.8	857.5	27.32	32.382		
3,800.0	3,691.8	3,660.0	3,549.8	16.3	15.7	-114.45	-893.3	6.5	912.4	884.2	28.23	32.325		
3,900.0	3,787.9	3,756.2	3,641.9	16.8	16.2	-114.52	-920.8	4.8	940.0	910.9	29.13	32.270		
4,000.0	3,884.0	3,852.3	3,734.0	17.4	16.7	-114.57	-948.3	3.1	967.6	937.6	30.03	32.219		
4,100.0	3,980.1	3,948.4	3,826.0	17.9	17.2	-114.63	-975.9	1.4	995.3	964.3	30.94	32.170		
4,200.0	4,076.3	4,044.5	3,918.1	18.4	17.7	-114.68	-1,003.4	-0.3	1,022.9	991.0	31.84	32.124		
4,300.0	4,172.4	4,140.6	4,010.2	18.9	18.2	-114.73	-1,030.9	-2.0	1,050.5	1,017.7	32.75	32.080		
4,400.0	4,268.5	4,236.7	4,102.2	19.5	18.7	-114.78	-1,058.4	-3.7	1,078.1	1,044.4	33.65	32.039		
4,500.0	4,364.6	4,332.8	4,194.3	20.0	19.2	-114.83	-1,086.0	-5.4	1,105.7	1,071.1	34.55	31.999 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-2D (Oxy I21 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	65.39	4.0	8.7	9.6					
100.0	100.0	100.0	100.0	0.1	0.1	65.39	4.0	8.7	9.6	9.3	0.30	32.426		
200.0	200.0	200.0	200.0	0.3	0.3	65.39	4.0	8.7	9.6	9.0	0.65	14.898		
300.0	300.0	300.1	300.1	0.5	0.5	72.95	2.7	8.8	9.2	8.2	1.00	9.242		
324.1	324.1	324.2	324.2	0.5	0.5	-165.76	2.0	8.8	9.1	8.0	1.08	8.406 CC, ES		
400.0	400.0	400.0	399.9	0.7	0.7	-149.33	-1.2	8.9	10.1	8.8	1.36	7.447 SF		
500.0	499.9	499.8	499.5	0.9	0.9	-131.61	-7.7	9.1	14.8	13.1	1.73	8.545		
600.0	599.7	599.1	598.4	1.1	1.1	-122.76	-16.8	9.5	23.0	20.9	2.14	10.790		
700.0	699.3	698.1	696.7	1.3	1.4	-118.86	-28.4	9.9	34.3	31.7	2.57	13.333		
800.0	798.6	796.4	794.0	1.5	1.7	-117.14	-42.4	10.3	48.3	45.3	3.05	15.841		
900.0	897.5	894.1	890.3	1.8	2.0	-116.38	-58.9	10.9	65.1	61.5	3.58	18.176		
1,000.0	996.1	991.1	985.4	2.1	2.3	-116.06	-77.6	11.5	84.6	80.4	4.17	20.286		
1,100.0	1,094.2	1,087.1	1,079.2	2.5	2.7	-115.93	-98.5	12.3	106.7	101.9	4.81	22.165		
1,200.0	1,191.7	1,184.1	1,173.5	2.9	3.1	-116.31	-120.9	13.0	130.7	125.2	5.51	23.740		
1,300.0	1,288.6	1,280.8	1,267.6	3.4	3.5	-117.33	-143.3	13.8	155.9	149.7	6.24	24.977		
1,400.0	1,384.9	1,377.1	1,361.3	3.9	4.0	-118.78	-165.5	14.6	182.4	175.4	7.01	26.005		
1,500.0	1,481.0	1,473.3	1,454.9	4.4	4.4	-120.19	-187.8	15.3	209.2	201.4	7.79	26.839		
1,600.0	1,577.1	1,569.6	1,548.5	4.9	4.8	-121.29	-210.0	16.1	236.1	227.5	8.58	27.522		
1,700.0	1,673.3	1,665.8	1,642.1	5.4	5.2	-122.16	-232.3	16.8	263.1	253.7	9.37	28.089		
1,800.0	1,769.4	1,762.0	1,735.8	5.9	5.6	-122.86	-254.5	17.6	290.1	280.0	10.16	28.568		
1,900.0	1,865.5	1,858.2	1,829.4	6.4	6.0	-123.45	-276.7	18.4	317.2	306.3	10.95	28.977		
2,000.0	1,961.6	1,954.5	1,923.0	6.9	6.5	-123.95	-299.0	19.1	344.3	332.6	11.74	29.330		
2,100.0	2,057.7	2,050.7	2,016.6	7.4	6.9	-124.37	-321.2	19.9	371.4	358.9	12.53	29.637		
2,200.0	2,153.9	2,146.9	2,110.2	8.0	7.3	-124.73	-343.5	20.7	398.5	385.2	13.33	29.908		
2,300.0	2,250.0	2,243.1	2,203.8	8.5	7.7	-125.05	-365.7	21.4	425.7	411.6	14.12	30.148		
2,400.0	2,346.1	2,339.3	2,297.4	9.0	8.1	-125.33	-388.0	22.2	452.8	437.9	14.91	30.361		
2,500.0	2,442.2	2,435.6	2,391.0	9.5	8.6	-125.58	-410.2	23.0	480.0	464.3	15.71	30.553		
2,600.0	2,538.3	2,531.8	2,484.6	10.0	9.0	-125.80	-432.4	23.7	507.2	490.6	16.51	30.726		
2,700.0	2,634.5	2,628.0	2,578.3	10.6	9.4	-126.00	-454.7	24.5	534.3	517.0	17.30	30.883		
2,800.0	2,730.6	2,724.2	2,671.9	11.1	9.8	-126.18	-476.9	25.2	561.5	543.4	18.10	31.026		
2,900.0	2,826.7	2,820.4	2,765.5	11.6	10.2	-126.35	-499.2	26.0	588.7	569.8	18.89	31.156		
3,000.0	2,922.8	2,916.7	2,859.1	12.1	10.7	-126.49	-521.4	26.8	615.9	596.2	19.69	31.276		
3,100.0	3,018.9	3,012.9	2,952.7	12.6	11.1	-126.63	-543.7	27.5	643.1	622.6	20.49	31.386		
3,200.0	3,115.1	3,109.1	3,046.3	13.2	11.5	-126.76	-565.9	28.3	670.3	649.0	21.29	31.488		
3,300.0	3,211.2	3,205.3	3,139.9	13.7	11.9	-126.87	-588.2	29.1	697.5	675.4	22.08	31.583		
3,400.0	3,307.3	3,301.6	3,233.5	14.2	12.3	-126.98	-610.4	29.8	724.7	701.8	22.88	31.670		
3,500.0	3,403.4	3,397.8	3,327.2	14.7	12.8	-127.08	-632.6	30.6	751.9	728.2	23.68	31.752		
3,600.0	3,499.5	3,494.0	3,420.8	15.3	13.2	-127.17	-654.9	31.3	779.1	754.6	24.48	31.828		
3,700.0	3,595.7	3,590.2	3,514.4	15.8	13.6	-127.26	-677.1	32.1	806.3	781.0	25.27	31.900		
3,800.0	3,691.8	3,686.4	3,608.0	16.3	14.0	-127.34	-699.4	32.9	833.5	807.4	26.07	31.967		
3,900.0	3,787.9	3,782.7	3,701.6	16.8	14.5	-127.41	-721.6	33.6	860.7	833.8	26.87	32.030		
4,000.0	3,884.0	3,878.9	3,795.2	17.4	14.9	-127.48	-743.9	34.4	887.9	860.2	27.67	32.089		
4,100.0	3,980.1	3,975.1	3,888.8	17.9	15.3	-127.55	-766.1	35.2	915.1	886.6	28.47	32.145		
4,200.0	4,076.3	4,071.3	3,982.4	18.4	15.7	-127.61	-788.3	35.9	942.3	913.1	29.27	32.198		
4,300.0	4,172.4	4,167.5	4,076.1	18.9	16.1	-127.67	-810.6	36.7	969.5	939.5	30.06	32.248		
4,400.0	4,268.5	4,263.8	4,169.7	19.5	16.6	-127.73	-832.8	37.4	996.7	965.9	30.86	32.295		
4,500.0	4,364.6	4,360.0	4,263.3	20.0	17.0	-127.78	-855.1	38.2	1,024.0	992.3	31.66	32.340		
4,600.0	4,460.7	4,456.2	4,356.9	20.5	17.4	-127.83	-877.3	39.0	1,051.2	1,018.7	32.46	32.383		
4,700.0	4,556.9	4,552.4	4,450.5	21.0	17.8	-127.88	-899.6	39.7	1,078.4	1,045.1	33.26	32.424		
4,800.0	4,653.0	4,648.6	4,544.1	21.6	18.3	-127.92	-921.8	40.5	1,105.6	1,071.6	34.06	32.463		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	145.10	-69.6	48.5	84.8					
100.0	100.0	100.0	100.0	0.1	0.1	145.10	-69.6	48.5	84.8	84.5	0.30	285.889		
200.0	200.0	200.0	200.0	0.3	0.3	145.10	-69.6	48.5	84.8	84.2	0.65	131.355		
300.0	300.0	300.0	300.0	0.5	0.5	145.10	-69.6	48.5	84.8	83.8	0.99	85.265 CC		
400.0	400.0	400.0	400.0	0.7	0.7	-98.69	-69.6	48.5	85.0	83.7	1.35	63.188 ES		
500.0	499.9	499.9	499.9	0.9	0.8	-101.28	-69.6	48.5	85.7	84.0	1.70	50.309		
600.0	599.7	598.2	598.2	1.1	1.0	-104.78	-70.8	48.4	88.1	86.0	2.07	42.487		
700.0	699.3	696.3	696.2	1.3	1.2	-108.36	-74.6	48.1	93.2	90.8	2.46	37.825		
800.0	798.6	794.3	794.0	1.5	1.4	-111.70	-80.9	47.5	101.2	98.3	2.89	35.059		
900.0	897.5	892.1	891.4	1.8	1.6	-114.61	-89.6	46.7	112.0	108.6	3.35	33.459		
1,000.0	996.1	989.4	988.1	2.1	1.8	-117.02	-100.8	45.7	125.4	121.6	3.85	32.575		
1,100.0	1,094.2	1,086.4	1,084.1	2.5	2.1	-118.91	-114.3	44.5	141.5	137.1	4.41	32.122		
1,200.0	1,191.7	1,183.4	1,179.8	2.9	2.4	-120.40	-130.1	43.0	160.2	155.1	5.01	31.951		
1,300.0	1,288.6	1,281.1	1,276.1	3.4	2.7	-122.10	-146.6	41.5	180.5	174.8	5.66	31.897 SF		
1,400.0	1,384.9	1,378.5	1,372.1	3.9	3.0	-124.06	-163.0	40.0	202.3	196.0	6.32	31.998		
1,500.0	1,481.0	1,475.7	1,467.9	4.4	3.3	-125.92	-179.4	38.5	224.7	217.7	6.99	32.137		
1,600.0	1,577.1	1,572.9	1,563.7	4.9	3.6	-127.45	-195.8	37.1	247.3	239.6	7.66	32.265		
1,700.0	1,673.3	1,670.2	1,659.5	5.4	3.9	-128.72	-212.2	35.6	270.0	261.6	8.34	32.383		
1,800.0	1,769.4	1,767.4	1,755.3	5.9	4.2	-129.79	-228.6	34.1	292.8	283.8	9.01	32.491		
1,900.0	1,865.5	1,864.6	1,851.2	6.4	4.6	-130.71	-245.0	32.6	315.7	306.0	9.69	32.590		
2,000.0	1,961.6	1,961.8	1,947.0	6.9	4.9	-131.50	-261.3	31.1	338.7	328.3	10.36	32.682		
2,100.0	2,057.7	2,059.1	2,042.8	7.4	5.2	-132.19	-277.7	29.6	361.7	350.6	11.04	32.767		
2,200.0	2,153.9	2,156.3	2,138.6	8.0	5.5	-132.80	-294.1	28.1	384.8	373.0	11.71	32.846		
2,300.0	2,250.0	2,253.5	2,234.5	8.5	5.9	-133.34	-310.5	26.6	407.9	395.5	12.39	32.918		
2,400.0	2,346.1	2,350.7	2,330.3	9.0	6.2	-133.83	-326.9	25.1	431.0	417.9	13.07	32.986		
2,500.0	2,442.2	2,448.0	2,426.1	9.5	6.5	-134.26	-343.3	23.6	454.2	440.4	13.74	33.048		
2,600.0	2,538.3	2,545.2	2,521.9	10.0	6.8	-134.65	-359.7	22.2	477.3	462.9	14.42	33.107		
2,700.0	2,634.5	2,642.4	2,617.8	10.6	7.2	-135.01	-376.0	20.7	500.5	485.4	15.09	33.161		
2,800.0	2,730.6	2,739.6	2,713.6	11.1	7.5	-135.33	-392.4	19.2	523.8	508.0	15.77	33.212		
2,900.0	2,826.7	2,836.9	2,809.4	11.6	7.8	-135.63	-408.8	17.7	547.0	530.5	16.45	33.260		
3,000.0	2,922.8	2,934.1	2,905.2	12.1	8.2	-135.90	-425.2	16.2	570.2	553.1	17.12	33.304		
3,100.0	3,018.9	3,031.3	3,001.1	12.6	8.5	-136.15	-441.6	14.7	593.5	575.7	17.80	33.346		
3,200.0	3,115.1	3,128.6	3,096.9	13.2	8.8	-136.38	-458.0	13.2	616.8	598.3	18.47	33.386		
3,300.0	3,211.2	3,225.8	3,192.7	13.7	9.2	-136.60	-474.4	11.7	640.0	620.9	19.15	33.423		
3,400.0	3,307.3	3,323.0	3,288.5	14.2	9.5	-136.80	-490.7	10.2	663.3	643.5	19.82	33.459		
3,500.0	3,403.4	3,420.2	3,384.4	14.7	9.8	-136.98	-507.1	8.7	686.6	666.1	20.50	33.492		
3,600.0	3,499.5	3,517.5	3,480.2	15.3	10.1	-137.16	-523.5	7.3	709.9	688.7	21.18	33.524		
3,700.0	3,595.7	3,614.7	3,576.0	15.8	10.5	-137.32	-539.9	5.8	733.2	711.4	21.85	33.553		
3,800.0	3,691.8	3,711.9	3,671.8	16.3	10.8	-137.47	-556.3	4.3	756.5	734.0	22.53	33.582		
3,900.0	3,787.9	3,809.1	3,767.7	16.8	11.1	-137.62	-572.7	2.8	779.8	756.6	23.20	33.609		
4,000.0	3,884.0	3,906.4	3,863.5	17.4	11.5	-137.75	-589.1	1.3	803.1	779.3	23.88	33.635		
4,100.0	3,980.1	4,003.6	3,959.3	17.9	11.8	-137.88	-605.4	-0.2	826.5	801.9	24.55	33.659		
4,200.0	4,076.3	4,100.8	4,055.1	18.4	12.1	-138.00	-621.8	-1.7	849.8	824.6	25.23	33.682		
4,300.0	4,172.4	4,198.0	4,151.0	18.9	12.5	-138.12	-638.2	-3.2	873.1	847.2	25.91	33.705		
4,400.0	4,268.5	4,295.3	4,246.8	19.5	12.8	-138.23	-654.6	-4.7	896.5	869.9	26.58	33.726		
4,500.0	4,364.6	4,392.5	4,342.6	20.0	13.1	-138.33	-671.0	-6.2	919.8	892.5	27.26	33.746		
4,600.0	4,460.7	4,489.7	4,438.4	20.5	13.5	-138.43	-687.4	-7.6	943.1	915.2	27.93	33.766		
4,700.0	4,556.9	4,587.0	4,534.2	21.0	13.8	-138.52	-703.8	-9.1	966.5	937.9	28.61	33.785		
4,800.0	4,653.0	4,684.2	4,630.1	21.6	14.1	-138.61	-720.1	-10.6	989.8	960.5	29.28	33.803		
4,900.0	4,749.1	4,781.4	4,725.9	22.1	14.5	-138.69	-736.5	-12.1	1,013.2	983.2	29.96	33.820		
5,000.0	4,845.2	4,878.6	4,821.7	22.6	14.8	-138.77	-752.9	-13.6	1,036.5	1,005.9	30.63	33.836		
5,100.0	4,941.3	4,975.9	4,917.5	23.1	15.1	-138.85	-769.3	-15.1	1,059.8	1,028.5	31.31	33.852		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-3D (Oxy I21 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		
5,200.0	5,037.5	5,073.1	5,013.4	23.7	15.5	-138.93	-785.7	-16.6	1,083.2	1,051.2	31.98	33.868		
5,300.0	5,133.6	5,170.3	5,109.2	24.2	15.8	-139.00	-802.1	-18.1	1,106.5	1,073.9	32.66	33.882		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	147.85	-63.7	40.1	75.3					
100.0	100.0	100.0	100.0	0.1	0.1	147.85	-63.7	40.1	75.3	75.0	0.30	253.749		
200.0	200.0	200.0	200.0	0.3	0.3	147.85	-63.7	40.1	75.3	74.6	0.65	116.587		
300.0	300.0	300.0	300.0	0.5	0.5	147.85	-63.7	40.1	75.3	74.3	0.99	75.680 CC		
400.0	400.0	400.0	400.0	0.7	0.7	-96.06	-63.7	40.1	75.4	74.1	1.35	56.054 ES		
500.0	499.9	499.9	499.9	0.9	0.8	-99.00	-63.7	40.1	75.9	74.2	1.70	44.572		
600.0	599.7	599.7	599.7	1.1	1.0	-103.77	-63.7	40.1	77.2	75.2	2.08	37.208		
700.0	699.3	698.1	698.1	1.3	1.2	-109.28	-65.0	39.9	80.6	78.2	2.46	32.739		
800.0	798.6	796.4	796.3	1.5	1.4	-114.37	-68.7	39.4	87.2	84.3	2.87	30.338		
900.0	897.5	894.6	894.3	1.8	1.6	-118.67	-75.0	38.5	96.7	93.4	3.31	29.209		
1,000.0	996.1	992.5	991.8	2.1	1.8	-122.06	-83.7	37.3	109.0	105.2	3.78	28.838 SF		
1,100.0	1,094.2	1,090.9	1,089.6	2.5	2.0	-124.83	-94.4	35.8	123.9	119.6	4.28	28.909		
1,200.0	1,191.7	1,189.2	1,187.3	2.9	2.2	-127.75	-105.3	34.3	140.6	135.8	4.81	29.233		
1,300.0	1,288.6	1,287.1	1,284.6	3.4	2.4	-130.70	-116.2	32.8	159.3	154.0	5.35	29.804		
1,400.0	1,384.9	1,384.5	1,381.3	3.9	2.7	-133.63	-127.0	31.4	180.1	174.2	5.88	30.620		
1,500.0	1,481.0	1,481.8	1,478.0	4.4	2.9	-136.20	-137.7	29.9	201.7	195.3	6.41	31.454		
1,600.0	1,577.1	1,579.0	1,574.7	4.9	3.2	-138.27	-148.5	28.4	223.6	216.6	6.94	32.224		
1,700.0	1,673.3	1,676.3	1,671.4	5.4	3.4	-139.97	-159.3	26.9	245.7	238.2	7.46	32.930		
1,800.0	1,769.4	1,773.6	1,768.0	5.9	3.6	-141.39	-170.1	25.4	268.0	260.0	7.98	33.574		
1,900.0	1,865.5	1,870.9	1,864.7	6.4	3.9	-142.59	-180.8	23.9	290.4	281.9	8.50	34.163		
2,000.0	1,961.6	1,968.2	1,961.4	6.9	4.1	-143.62	-191.6	22.5	313.0	304.0	9.02	34.701		
2,100.0	2,057.7	2,065.5	2,058.1	7.4	4.4	-144.51	-202.4	21.0	335.6	326.1	9.54	35.194		
2,200.0	2,153.9	2,162.7	2,154.7	8.0	4.6	-145.29	-213.2	19.5	358.3	348.2	10.05	35.646		
2,300.0	2,250.0	2,260.0	2,251.4	8.5	4.9	-145.98	-224.0	18.0	381.0	370.5	10.57	36.062		
2,400.0	2,346.1	2,357.3	2,348.1	9.0	5.1	-146.58	-234.7	16.5	403.8	392.7	11.08	36.446		
2,500.0	2,442.2	2,454.6	2,444.8	9.5	5.4	-147.13	-245.5	15.0	426.7	415.1	11.59	36.800		
2,600.0	2,538.3	2,551.9	2,541.4	10.0	5.6	-147.62	-256.3	13.5	449.5	437.4	12.11	37.129		
2,700.0	2,634.5	2,649.2	2,638.1	10.6	5.9	-148.06	-267.1	12.1	472.4	459.8	12.62	37.435		
2,800.0	2,730.6	2,746.4	2,734.8	11.1	6.1	-148.46	-277.8	10.6	495.3	482.2	13.13	37.719		
2,900.0	2,826.7	2,843.7	2,831.4	11.6	6.4	-148.82	-288.6	9.1	518.3	504.6	13.64	37.984		
3,000.0	2,922.8	2,941.0	2,928.1	12.1	6.6	-149.16	-299.4	7.6	541.2	527.1	14.16	38.232		
3,100.0	3,018.9	3,038.3	3,024.8	12.6	6.9	-149.47	-310.2	6.1	564.2	549.5	14.67	38.465		
3,200.0	3,115.1	3,135.6	3,121.5	13.2	7.1	-149.75	-321.0	4.6	587.2	572.0	15.18	38.683		
3,300.0	3,211.2	3,232.9	3,218.1	13.7	7.4	-150.01	-331.7	3.2	610.2	594.5	15.69	38.889		
3,400.0	3,307.3	3,330.1	3,314.8	14.2	7.7	-150.25	-342.5	1.7	633.2	617.0	16.20	39.082		
3,500.0	3,403.4	3,427.4	3,411.5	14.7	7.9	-150.48	-353.3	0.2	656.2	639.5	16.71	39.264		
3,600.0	3,499.5	3,524.7	3,508.2	15.3	8.2	-150.69	-364.1	-1.3	679.2	662.0	17.22	39.437		
3,700.0	3,595.7	3,622.0	3,604.8	15.8	8.4	-150.89	-374.8	-2.8	702.3	684.5	17.73	39.600		
3,800.0	3,691.8	3,719.3	3,701.5	16.3	8.7	-151.07	-385.6	-4.3	725.3	707.1	18.24	39.755		
3,900.0	3,787.9	3,816.6	3,798.2	16.8	8.9	-151.24	-396.4	-5.7	748.4	729.6	18.76	39.901		
4,000.0	3,884.0	3,913.8	3,894.8	17.4	9.2	-151.41	-407.2	-7.2	771.4	752.2	19.27	40.041		
4,100.0	3,980.1	4,011.1	3,991.5	17.9	9.4	-151.56	-417.9	-8.7	794.5	774.7	19.78	40.173		
4,200.0	4,076.3	4,108.4	4,088.2	18.4	9.7	-151.70	-428.7	-10.2	817.6	797.3	20.29	40.300		
4,300.0	4,172.4	4,205.7	4,184.9	18.9	9.9	-151.84	-439.5	-11.7	840.6	819.8	20.80	40.420		
4,400.0	4,268.5	4,303.0	4,281.5	19.5	10.2	-151.97	-450.3	-13.2	863.7	842.4	21.31	40.535		
4,500.0	4,364.6	4,400.3	4,378.2	20.0	10.4	-152.09	-461.1	-14.7	886.8	865.0	21.82	40.645		
4,600.0	4,460.7	4,497.5	4,474.9	20.5	10.7	-152.21	-471.8	-16.1	909.9	887.5	22.33	40.751		
4,700.0	4,556.9	4,594.8	4,571.6	21.0	10.9	-152.32	-482.6	-17.6	932.9	910.1	22.84	40.851		
4,800.0	4,653.0	4,692.1	4,668.2	21.6	11.2	-152.42	-493.4	-19.1	956.0	932.7	23.35	40.948		
4,900.0	4,749.1	4,789.4	4,764.9	22.1	11.5	-152.52	-504.2	-20.6	979.1	955.3	23.86	41.040		
5,000.0	4,845.2	4,886.7	4,861.6	22.6	11.7	-152.62	-514.9	-22.1	1,002.2	977.9	24.37	41.129		
5,100.0	4,941.3	4,984.0	4,958.2	23.1	12.0	-152.71	-525.7	-23.6	1,025.3	1,000.4	24.88	41.215		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-4D (Oxy I21 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	
5,200.0	5,037.5	5,081.2	5,054.9	23.7	12.2	-152.80	-536.5	-25.0	1,048.4	1,023.0	25.39	41.297	
5,300.0	5,133.6	5,178.5	5,151.6	24.2	12.5	-152.88	-547.3	-26.5	1,071.5	1,045.6	25.90	41.376	
5,400.0	5,229.7	5,275.8	5,248.3	24.7	12.7	-152.96	-558.1	-28.0	1,094.6	1,068.2	26.41	41.452	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-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	147.94	-51.4	32.2	60.6					
100.0	100.0	100.0	100.0	0.1	0.1	147.94	-51.4	32.2	60.6	60.3	0.30	204.241		
200.0	200.0	200.0	200.0	0.3	0.3	147.94	-51.4	32.2	60.6	60.0	0.65	93.841		
300.0	300.0	300.0	300.0	0.5	0.5	147.94	-51.4	32.2	60.6	59.6	0.99	60.914 CC		
400.0	400.0	400.0	400.0	0.7	0.7	-96.21	-51.4	32.2	60.7	59.4	1.35	45.137 ES		
500.0	499.9	499.9	499.9	0.9	0.8	-99.85	-51.4	32.2	61.3	59.6	1.70	35.971		
600.0	599.7	599.7	599.7	1.1	1.0	-105.72	-51.4	32.2	62.7	60.7	2.07	30.233		
700.0	699.3	698.4	698.4	1.3	1.2	-112.31	-52.6	31.9	66.4	64.0	2.46	26.992		
800.0	798.6	797.2	797.1	1.5	1.4	-118.05	-56.3	31.2	73.2	70.3	2.87	25.533		
900.0	897.5	895.8	895.5	1.8	1.6	-122.59	-62.6	30.0	82.8	79.5	3.30	25.125 SF		
1,000.0	996.1	994.9	994.3	2.1	1.8	-126.80	-69.9	28.5	94.7	91.0	3.74	25.290		
1,100.0	1,094.2	1,093.6	1,092.8	2.5	2.0	-131.07	-77.1	27.1	108.7	104.5	4.20	25.879		
1,200.0	1,191.7	1,191.9	1,190.8	2.9	2.2	-135.16	-84.4	25.6	125.0	120.4	4.66	26.849		
1,300.0	1,288.6	1,289.7	1,288.3	3.4	2.4	-138.93	-91.6	24.2	143.8	138.7	5.11	28.153		
1,400.0	1,384.9	1,386.9	1,385.3	3.9	2.6	-142.37	-98.7	22.8	165.0	159.5	5.55	29.739		
1,500.0	1,481.0	1,484.1	1,482.1	4.4	2.8	-145.24	-105.9	21.4	187.2	181.2	5.98	31.289		
1,600.0	1,577.1	1,581.2	1,579.0	4.9	3.0	-147.50	-113.0	20.0	209.7	203.3	6.41	32.710		
1,700.0	1,673.3	1,678.3	1,675.8	5.4	3.2	-149.33	-120.2	18.6	232.5	225.6	6.84	34.006		
1,800.0	1,769.4	1,775.5	1,772.7	5.9	3.4	-150.82	-127.3	17.2	255.4	248.2	7.26	35.187		
1,900.0	1,865.5	1,872.6	1,869.5	6.4	3.6	-152.07	-134.5	15.8	278.5	270.9	7.68	36.264		
2,000.0	1,961.6	1,969.7	1,966.4	6.9	3.8	-153.13	-141.6	14.3	301.7	293.6	8.10	37.247		
2,100.0	2,057.7	2,066.9	2,063.3	7.4	4.0	-154.04	-148.8	12.9	325.0	316.5	8.52	38.148		
2,200.0	2,153.9	2,164.0	2,160.1	8.0	4.2	-154.83	-155.9	11.5	348.4	339.4	8.94	38.975		
2,300.0	2,250.0	2,261.1	2,257.0	8.5	4.4	-155.52	-163.1	10.1	371.8	362.4	9.36	39.736		
2,400.0	2,346.1	2,358.2	2,353.8	9.0	4.6	-156.12	-170.2	8.7	395.2	385.5	9.77	40.438		
2,500.0	2,442.2	2,455.4	2,450.7	9.5	4.8	-156.66	-177.4	7.3	418.7	408.5	10.19	41.088		
2,600.0	2,538.3	2,552.5	2,547.5	10.0	5.1	-157.14	-184.5	5.9	442.3	431.7	10.61	41.690		
2,700.0	2,634.5	2,649.6	2,644.4	10.6	5.3	-157.58	-191.6	4.5	465.8	454.8	11.02	42.250		
2,800.0	2,730.6	2,746.8	2,741.3	11.1	5.5	-157.97	-198.8	3.1	489.4	477.9	11.44	42.773		
2,900.0	2,826.7	2,843.9	2,838.1	11.6	5.7	-158.32	-205.9	1.6	513.0	501.1	11.86	43.260		
3,000.0	2,922.8	2,941.0	2,935.0	12.1	5.9	-158.65	-213.1	0.2	536.6	524.3	12.27	43.716		
3,100.0	3,018.9	3,038.2	3,031.8	12.6	6.1	-158.94	-220.2	-1.2	560.2	547.5	12.69	44.144		
3,200.0	3,115.1	3,135.3	3,128.7	13.2	6.3	-159.22	-227.4	-2.6	583.8	570.7	13.11	44.546		
3,300.0	3,211.2	3,232.4	3,225.5	13.7	6.5	-159.47	-234.5	-4.0	607.5	594.0	13.52	44.925		
3,400.0	3,307.3	3,329.5	3,322.4	14.2	6.7	-159.70	-241.7	-5.4	631.1	617.2	13.94	45.282		
3,500.0	3,403.4	3,426.7	3,419.3	14.7	6.9	-159.92	-248.8	-6.8	654.8	640.5	14.35	45.618		
3,600.0	3,499.5	3,523.8	3,516.1	15.3	7.2	-160.12	-256.0	-8.2	678.5	663.7	14.77	45.937		
3,700.0	3,595.7	3,620.9	3,613.0	15.8	7.4	-160.31	-263.1	-9.6	702.2	687.0	15.19	46.239		
3,800.0	3,691.8	3,718.1	3,709.8	16.3	7.6	-160.48	-270.3	-11.1	725.9	710.3	15.60	46.525		
3,900.0	3,787.9	3,815.2	3,806.7	16.8	7.8	-160.64	-277.4	-12.5	749.6	733.5	16.02	46.797		
4,000.0	3,884.0	3,912.3	3,903.5	17.4	8.0	-160.80	-284.6	-13.9	773.3	756.8	16.43	47.055		
4,100.0	3,980.1	4,009.5	4,000.4	17.9	8.2	-160.94	-291.7	-15.3	797.0	780.1	16.85	47.302		
4,200.0	4,076.3	4,106.6	4,097.2	18.4	8.4	-161.08	-298.9	-16.7	820.7	803.4	17.26	47.536		
4,300.0	4,172.4	4,203.7	4,194.1	18.9	8.6	-161.21	-306.0	-18.1	844.4	826.7	17.68	47.760		
4,400.0	4,268.5	4,300.9	4,291.0	19.5	8.8	-161.33	-313.2	-19.5	868.1	850.0	18.10	47.974		
4,500.0	4,364.6	4,398.0	4,387.8	20.0	9.1	-161.45	-320.3	-20.9	891.8	873.3	18.51	48.178		
4,600.0	4,460.7	4,495.1	4,484.7	20.5	9.3	-161.56	-327.5	-22.3	915.6	896.6	18.93	48.374		
4,700.0	4,556.9	4,592.2	4,581.5	21.0	9.5	-161.66	-334.6	-23.7	939.3	919.9	19.34	48.561		
4,800.0	4,653.0	4,689.4	4,678.4	21.6	9.7	-161.76	-341.8	-25.2	963.0	943.3	19.76	48.741		
4,900.0	4,749.1	4,786.5	4,775.2	22.1	9.9	-161.85	-348.9	-26.6	986.8	966.6	20.17	48.913		
5,000.0	4,845.2	4,883.6	4,872.1	22.6	10.1	-161.94	-356.1	-28.0	1,010.5	989.9	20.59	49.079		
5,100.0	4,941.3	4,980.8	4,969.0	23.1	10.3	-162.03	-363.2	-29.4	1,034.2	1,013.2	21.00	49.238		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-5D (Oxy I21 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 +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)			
5,200.0	5,037.5	5,077.9	5,065.8	23.7	10.5	-162.11	-370.3	-30.8	1,058.0	1,036.5	21.42	49.391	
5,300.0	5,133.6	5,175.0	5,162.7	24.2	10.7	-162.19	-377.5	-32.2	1,081.7	1,059.9	21.84	49.539	
5,400.0	5,229.7	5,272.2	5,259.5	24.7	11.0	-162.26	-384.6	-33.6	1,105.5	1,083.2	22.25	49.681	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-6D (Oxy I21 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	300.0	300.0	0.0	0.0	0.00	17.5	0.0	17.5						
100.0	100.0	400.0	400.0	0.1	0.1	0.00	17.5	0.0	17.5	17.2	0.30	58.926			
200.0	200.0	500.0	500.0	0.3	0.3	0.00	17.5	0.0	17.5	16.8	0.65	27.074			
300.0	300.0	600.3	600.3	0.5	0.5	3.02	16.5	0.9	16.5	15.5	1.00	16.592			
400.0	400.0	700.5	700.4	0.7	0.7	135.26	13.5	3.5	14.9	13.5	1.36	10.969			
421.1	421.0	721.5	721.4	0.7	0.7	140.80	12.7	4.2	14.8	13.3	1.44	10.299	CC, ES		
500.0	499.9	800.2	799.9	0.9	0.9	165.24	8.7	7.7	16.6	14.9	1.73	9.585	SF		
600.0	599.7	899.6	899.1	1.1	1.1	-173.70	3.3	12.4	24.5	22.4	2.10	11.664			
700.0	699.3	998.8	998.0	1.3	1.3	-164.70	-2.0	17.1	36.5	34.1	2.47	14.805			
800.0	798.6	1,097.6	1,096.6	1.5	1.5	-161.14	-7.3	21.7	51.4	48.6	2.84	18.115			
900.0	897.5	1,196.1	1,194.8	1.8	1.7	-159.92	-12.6	26.4	68.9	65.7	3.22	21.406			
1,000.0	996.1	1,294.1	1,292.5	2.1	1.9	-159.74	-17.9	31.0	88.8	85.2	3.60	24.653			
1,100.0	1,094.2	1,391.6	1,389.8	2.5	2.1	-160.06	-23.1	35.6	111.0	107.0	3.98	27.866			
1,200.0	1,191.7	1,488.5	1,486.4	2.9	2.3	-160.61	-28.3	40.2	135.7	131.3	4.37	31.058			
1,300.0	1,288.6	1,584.7	1,582.4	3.4	2.5	-161.25	-33.5	44.7	162.8	158.0	4.75	34.243			
1,400.0	1,384.9	1,680.3	1,677.7	3.9	2.7	-161.94	-38.7	49.2	192.2	187.0	5.14	37.372			
1,500.0	1,481.0	1,775.7	1,772.9	4.4	2.9	-162.58	-43.8	53.7	222.1	216.5	5.54	40.088			
1,600.0	1,577.1	1,874.2	1,871.2	4.9	3.1	-163.31	-48.2	57.6	251.5	245.5	5.92	42.447			
1,700.0	1,673.3	1,973.5	1,970.4	5.4	3.3	-164.37	-50.7	59.8	279.7	273.4	6.28	44.517			
1,800.0	1,769.4	2,072.4	2,069.4	5.9	3.5	-165.66	-51.3	60.4	306.8	300.1	6.62	46.360			
1,900.0	1,865.5	2,168.5	2,165.5	6.4	3.6	-166.83	-51.3	60.4	333.6	326.7	6.94	48.057			
2,000.0	1,961.6	2,264.7	2,261.6	6.9	3.8	-167.83	-51.3	60.4	360.6	353.3	7.27	49.621			
2,100.0	2,057.7	2,360.8	2,357.7	7.4	3.9	-168.69	-51.3	60.4	387.6	380.0	7.59	51.062			
2,200.0	2,153.9	2,456.9	2,453.9	8.0	4.1	-169.43	-51.3	60.4	414.7	406.8	7.92	52.393			
2,300.0	2,250.0	2,553.0	2,550.0	8.5	4.2	-170.09	-51.3	60.4	441.9	433.7	8.24	53.622			
2,400.0	2,346.1	2,649.1	2,646.1	9.0	4.4	-170.67	-51.3	60.4	469.1	460.6	8.57	54.760			
2,500.0	2,442.2	2,745.3	2,742.2	9.5	4.5	-171.18	-51.3	60.4	496.4	487.5	8.89	55.815			
2,600.0	2,538.3	2,841.4	2,838.3	10.0	4.7	-171.64	-51.3	60.4	523.7	514.5	9.22	56.796			
2,700.0	2,634.5	2,937.5	2,934.5	10.6	4.9	-172.06	-51.3	60.4	551.0	541.5	9.55	57.709			
2,800.0	2,730.6	3,033.6	3,030.6	11.1	5.0	-172.44	-51.3	60.4	578.4	568.5	9.88	58.561			
2,900.0	2,826.7	3,129.7	3,126.7	11.6	5.2	-172.78	-51.3	60.4	605.8	595.6	10.21	59.356			
3,000.0	2,922.8	3,225.9	3,222.8	12.1	5.3	-173.10	-51.3	60.4	633.1	622.6	10.53	60.101			
3,100.0	3,018.9	3,322.0	3,318.9	12.6	5.5	-173.38	-51.3	60.4	660.6	649.7	10.86	60.800			
3,200.0	3,115.1	3,418.1	3,415.1	13.2	5.6	-173.65	-51.3	60.4	688.0	676.8	11.19	61.456			
3,300.0	3,211.2	3,514.2	3,511.2	13.7	5.8	-173.89	-51.3	60.4	715.4	703.9	11.53	62.073			
3,400.0	3,307.3	3,610.4	3,607.3	14.2	6.0	-174.12	-51.3	60.4	742.9	731.0	11.86	62.654			
3,500.0	3,403.4	3,706.5	3,703.4	14.7	6.1	-174.33	-51.3	60.4	770.3	758.1	12.19	63.202			
3,600.0	3,499.5	3,802.6	3,799.5	15.3	6.3	-174.52	-51.3	60.4	797.8	785.3	12.52	63.721			
3,700.0	3,595.7	3,898.7	3,895.7	15.8	6.5	-174.71	-51.3	60.4	825.2	812.4	12.85	64.211			
3,800.0	3,691.8	3,994.8	3,991.8	16.3	6.6	-174.88	-51.3	60.4	852.7	839.5	13.18	64.676			
3,900.0	3,787.9	4,091.0	4,087.9	16.8	6.8	-175.04	-51.3	60.4	880.2	866.7	13.52	65.116			
4,000.0	3,884.0	4,187.1	4,184.0	17.4	6.9	-175.19	-51.3	60.4	907.7	893.8	13.85	65.535			
4,100.0	3,980.1	4,283.2	4,280.1	17.9	7.1	-175.33	-51.3	60.4	935.2	921.0	14.18	65.933			
4,200.0	4,076.3	4,379.3	4,376.3	18.4	7.3	-175.46	-51.3	60.4	962.7	948.2	14.52	66.312			
4,300.0	4,172.4	4,475.4	4,472.4	18.9	7.4	-175.59	-51.3	60.4	990.2	975.4	14.85	66.673			
4,400.0	4,268.5	4,571.6	4,568.5	19.5	7.6	-175.71	-51.3	60.4	1,017.7	1,002.5	15.19	67.018			
4,500.0	4,364.6	4,667.7	4,664.6	20.0	7.8	-175.82	-51.3	60.4	1,045.2	1,029.7	15.52	67.347			
4,600.0	4,460.7	4,763.8	4,760.7	20.5	7.9	-175.93	-51.3	60.4	1,072.7	1,056.9	15.85	67.661			
4,700.0	4,556.9	4,859.9	4,856.9	21.0	8.1	-176.03	-51.3	60.4	1,100.3	1,084.1	16.19	67.962			

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-7D (Oxy I21 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	-14.99	29.5	-7.9	30.5						
100.0	100.0	100.0	100.0	0.1	0.1	-14.99	29.5	-7.9	30.5	30.2	0.30	102.940			
200.0	200.0	200.0	200.0	0.3	0.3	-14.99	29.5	-7.9	30.5	29.9	0.65	47.297			
300.0	300.0	300.0	300.0	0.5	0.5	-14.99	29.5	-7.9	30.5	29.5	0.99	30.702 CC			
400.0	400.0	400.0	400.0	0.7	0.7	104.46	29.5	-7.9	30.8	29.5	1.35	22.927 ES			
500.0	499.9	499.9	499.9	0.9	0.8	111.25	29.5	-7.9	32.1	30.3	1.70	18.828			
600.0	599.7	598.8	598.8	1.1	1.0	121.18	30.8	-7.8	36.2	34.2	2.07	17.548 SF			
700.0	699.3	697.0	696.9	1.3	1.2	130.96	34.6	-7.4	45.5	43.1	2.43	18.729			
800.0	798.6	794.7	794.4	1.5	1.4	138.30	40.8	-6.8	60.1	57.3	2.80	21.461			
900.0	897.5	892.8	892.3	1.8	1.6	143.67	47.8	-6.2	78.1	74.9	3.17	24.624			
1,000.0	996.1	990.5	989.7	2.1	1.8	147.79	54.8	-5.5	98.7	95.1	3.54	27.851			
1,100.0	1,094.2	1,087.5	1,086.5	2.5	2.0	151.03	61.8	-4.8	121.9	118.0	3.92	31.118			
1,200.0	1,191.7	1,184.0	1,182.7	2.9	2.2	153.64	68.7	-4.2	147.6	143.3	4.29	34.414			
1,300.0	1,288.6	1,279.7	1,278.1	3.4	2.4	155.78	75.6	-3.5	175.9	171.2	4.66	37.735			
1,400.0	1,384.9	1,374.7	1,372.9	3.9	2.6	157.62	82.4	-2.8	206.5	201.5	5.03	41.035			
1,500.0	1,481.0	1,469.5	1,467.4	4.4	2.8	159.12	89.3	-2.2	237.9	232.5	5.41	43.953			
1,600.0	1,577.1	1,564.3	1,562.0	4.9	3.0	160.28	96.1	-1.5	269.3	263.5	5.79	46.510			
1,700.0	1,673.3	1,659.1	1,656.5	5.4	3.2	161.20	102.9	-0.9	300.9	294.7	6.17	48.766			
1,800.0	1,769.4	1,753.9	1,751.1	5.9	3.4	161.94	109.7	-0.2	332.5	325.9	6.55	50.769			
1,900.0	1,865.5	1,848.7	1,845.6	6.4	3.6	162.55	116.5	0.4	364.1	357.2	6.93	52.558			
2,000.0	1,961.6	1,943.5	1,940.2	6.9	3.8	163.07	123.3	1.1	395.7	388.4	7.31	54.165			
2,100.0	2,057.7	2,038.3	2,034.7	7.4	4.0	163.51	130.1	1.7	427.4	419.8	7.69	55.617			
2,200.0	2,153.9	2,133.1	2,129.3	8.0	4.2	163.89	136.9	2.4	459.1	451.1	8.06	56.935			
2,300.0	2,250.0	2,227.8	2,223.8	8.5	4.4	164.22	143.8	3.0	490.9	482.4	8.44	58.135			
2,400.0	2,346.1	2,322.6	2,318.4	9.0	4.6	164.50	150.6	3.7	522.6	513.8	8.82	59.233			
2,500.0	2,442.2	2,417.4	2,412.9	9.5	4.8	164.76	157.4	4.3	554.4	545.2	9.20	60.242			
2,600.0	2,538.3	2,512.2	2,507.5	10.0	5.0	164.99	164.2	5.0	586.1	576.5	9.58	61.172			
2,700.0	2,634.5	2,607.0	2,602.0	10.6	5.2	165.19	171.0	5.6	617.9	607.9	9.96	62.031			
2,800.0	2,730.6	2,701.8	2,696.6	11.1	5.4	165.38	177.8	6.3	649.7	639.3	10.34	62.828			
2,900.0	2,826.7	2,796.6	2,791.1	11.6	5.6	165.55	184.6	6.9	681.4	670.7	10.72	63.568			
3,000.0	2,922.8	2,891.4	2,885.7	12.1	5.8	165.70	191.4	7.6	713.2	702.1	11.10	64.258			
3,100.0	3,018.9	2,986.2	2,980.2	12.6	6.0	165.84	198.3	8.2	745.0	733.5	11.48	64.903			
3,200.0	3,115.1	3,081.0	3,074.8	13.2	6.2	165.97	205.1	8.9	776.8	764.9	11.86	65.507			
3,300.0	3,211.2	3,183.9	3,177.4	13.7	6.4	166.12	212.1	9.5	808.4	796.1	12.25	66.008			
3,400.0	3,307.3	3,296.7	3,290.1	14.2	6.6	166.41	217.0	10.0	838.2	825.6	12.63	66.391			
3,500.0	3,403.4	3,410.0	3,403.4	14.7	6.8	166.83	218.6	10.2	866.0	853.1	12.98	66.738			
3,600.0	3,499.5	3,506.2	3,499.5	15.3	6.9	167.24	218.6	10.2	893.0	879.7	13.30	67.135			
3,700.0	3,595.7	3,602.3	3,595.7	15.8	7.1	167.62	218.6	10.2	920.0	906.3	13.63	67.516			
3,800.0	3,691.8	3,698.4	3,691.8	16.3	7.2	167.97	218.6	10.2	947.0	933.0	13.95	67.882			
3,900.0	3,787.9	3,794.5	3,787.9	16.8	7.4	168.31	218.6	10.2	974.0	959.7	14.27	68.233			
4,000.0	3,884.0	3,890.6	3,884.0	17.4	7.5	168.63	218.6	10.2	1,001.1	986.5	14.60	68.570			
4,100.0	3,980.1	3,986.8	3,980.1	17.9	7.7	168.93	218.6	10.2	1,028.2	1,013.2	14.92	68.893			
4,200.0	4,076.3	4,082.9	4,076.3	18.4	7.8	169.22	218.6	10.2	1,055.3	1,040.0	15.25	69.203			
4,300.0	4,172.4	4,179.0	4,172.4	18.9	8.0	169.49	218.6	10.2	1,082.4	1,066.9	15.57	69.501			
4,400.0	4,268.5	4,275.1	4,268.5	19.5	8.1	169.75	218.6	10.2	1,109.6	1,093.7	15.90	69.788			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-8D (Oxy I21 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		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-20.34	42.6	-15.8	45.5					
100.0	100.0	100.0	100.0	0.1	0.1	-20.34	42.6	-15.8	45.5	45.2	0.30	153.186		
200.0	200.0	200.0	200.0	0.3	0.3	-20.34	42.6	-15.8	45.5	44.8	0.65	70.383		
300.0	300.0	300.0	300.0	0.5	0.5	-20.34	42.6	-15.8	45.5	44.5	0.99	45.687 CC		
400.0	400.0	400.0	400.0	0.7	0.7	98.36	42.6	-15.8	45.6	44.3	1.35	33.911 ES		
500.0	499.9	499.9	499.9	0.9	0.8	103.15	42.6	-15.8	46.4	44.7	1.70	27.218		
600.0	599.7	598.4	598.4	1.1	1.0	110.73	43.9	-15.8	49.5	47.5	2.07	23.929		
700.0	699.3	696.4	696.3	1.3	1.2	119.43	47.7	-15.9	57.3	54.9	2.45	23.422 SF		
800.0	798.6	793.6	793.3	1.5	1.4	127.19	53.9	-16.0	70.2	67.4	2.83	24.807		
900.0	897.5	891.2	890.5	1.8	1.6	133.37	62.0	-16.1	87.6	84.4	3.22	27.205		
1,000.0	996.1	988.7	987.8	2.1	1.8	138.36	70.2	-16.2	107.7	104.0	3.61	29.803		
1,100.0	1,094.2	1,085.7	1,084.4	2.5	2.0	142.41	78.4	-16.3	130.4	126.3	4.01	32.517		
1,200.0	1,191.7	1,182.1	1,180.4	2.9	2.2	145.74	86.5	-16.5	155.6	151.2	4.41	35.317		
1,300.0	1,288.6	1,277.8	1,275.8	3.4	2.4	148.51	94.5	-16.6	183.5	178.7	4.81	38.181		
1,400.0	1,384.9	1,372.7	1,370.4	3.9	2.6	150.90	102.5	-16.7	213.7	208.5	5.20	41.074		
1,500.0	1,481.0	1,467.5	1,464.8	4.4	2.8	152.89	110.4	-16.8	244.8	239.2	5.60	43.672		
1,600.0	1,577.1	1,562.2	1,559.2	4.9	3.0	154.43	118.4	-16.9	276.0	270.0	6.01	45.962		
1,700.0	1,673.3	1,657.0	1,653.6	5.4	3.2	155.66	126.4	-17.1	307.4	301.0	6.41	47.991		
1,800.0	1,769.4	1,751.7	1,748.1	5.9	3.5	156.66	134.3	-17.2	338.9	332.1	6.81	49.797		
1,900.0	1,865.5	1,846.5	1,842.5	6.4	3.7	157.49	142.3	-17.3	370.5	363.3	7.21	51.415		
2,000.0	1,961.6	1,941.2	1,936.9	6.9	3.9	158.19	150.3	-17.4	402.2	394.6	7.61	52.870		
2,100.0	2,057.7	2,036.0	2,031.3	7.4	4.1	158.79	158.2	-17.6	433.9	425.8	8.01	54.186		
2,200.0	2,153.9	2,130.8	2,125.7	8.0	4.3	159.30	166.2	-17.7	465.6	457.2	8.41	55.381		
2,300.0	2,250.0	2,225.5	2,220.2	8.5	4.5	159.75	174.2	-17.8	497.3	488.5	8.81	56.471		
2,400.0	2,346.1	2,320.3	2,314.6	9.0	4.7	160.15	182.1	-17.9	529.1	519.9	9.21	57.468		
2,500.0	2,442.2	2,415.0	2,409.0	9.5	5.0	160.50	190.1	-18.0	560.9	551.3	9.61	58.385		
2,600.0	2,538.3	2,509.8	2,503.4	10.0	5.2	160.82	198.1	-18.2	592.7	582.7	10.01	59.229		
2,700.0	2,634.5	2,604.5	2,597.8	10.6	5.4	161.10	206.0	-18.3	624.6	614.2	10.41	60.010		
2,800.0	2,730.6	2,699.3	2,692.3	11.1	5.6	161.36	214.0	-18.4	656.4	645.6	10.81	60.734		
2,900.0	2,826.7	2,794.0	2,786.7	11.6	5.8	161.59	222.0	-18.5	688.3	677.1	11.21	61.407		
3,000.0	2,922.8	2,888.8	2,881.1	12.1	6.0	161.80	229.9	-18.6	720.1	708.5	11.61	62.034		
3,100.0	3,018.9	2,983.6	2,975.5	12.6	6.2	161.99	237.9	-18.8	752.0	740.0	12.01	62.620		
3,200.0	3,115.1	3,078.3	3,069.9	13.2	6.5	162.17	245.9	-18.9	783.9	771.5	12.41	63.168		
3,300.0	3,211.2	3,173.1	3,164.4	13.7	6.7	162.33	253.8	-19.0	815.8	803.0	12.81	63.683		
3,400.0	3,307.3	3,267.8	3,258.8	14.2	6.9	162.48	261.8	-19.1	847.7	834.4	13.21	64.167		
3,500.0	3,403.4	3,362.6	3,353.2	14.7	7.1	162.62	269.8	-19.2	879.6	865.9	13.61	64.622		
3,600.0	3,499.5	3,457.3	3,447.6	15.3	7.3	162.75	277.7	-19.4	911.5	897.4	14.01	65.052		
3,700.0	3,595.7	3,552.1	3,542.0	15.8	7.5	162.88	285.7	-19.5	943.4	928.9	14.41	65.458		
3,800.0	3,691.8	3,646.8	3,636.5	16.3	7.7	162.99	293.7	-19.6	975.3	960.5	14.81	65.842		
3,900.0	3,787.9	3,741.6	3,730.9	16.8	8.0	163.10	301.6	-19.7	1,007.2	992.0	15.21	66.206		
4,000.0	3,884.0	3,836.4	3,825.3	17.4	8.2	163.20	309.6	-19.8	1,039.1	1,023.5	15.61	66.551		
4,100.0	3,980.1	3,931.1	3,919.7	17.9	8.4	163.29	317.6	-20.0	1,071.0	1,055.0	16.01	66.880		
4,200.0	4,076.3	4,025.9	4,014.1	18.4	8.6	163.38	325.5	-20.1	1,102.9	1,086.5	16.41	67.192		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-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	147.61	-38.2	24.3	45.3					
100.0	100.0	100.0	100.0	0.1	0.1	147.61	-38.2	24.3	45.3	0.30	152.655			
200.0	200.0	200.0	200.0	0.3	0.3	147.61	-38.2	24.3	45.3	0.65	70.139 CC, ES			
300.0	300.0	299.6	299.6	0.5	0.5	149.16	-39.2	23.4	45.7	1.00	45.909			
400.0	400.0	399.2	399.1	0.7	0.7	-90.83	-42.2	20.9	47.1	1.36	34.722			
500.0	499.9	498.6	498.3	0.9	0.9	-88.33	-47.1	16.7	49.6	1.74	28.526			
600.0	599.7	598.0	597.3	1.1	1.1	-86.35	-54.0	10.8	53.1	2.15	24.661			
700.0	699.3	697.2	695.8	1.3	1.4	-84.90	-62.8	3.2	57.7	2.61	22.052			
800.0	798.6	796.4	793.9	1.5	1.7	-83.93	-73.5	-6.0	63.2	3.13	20.181			
900.0	897.5	895.3	891.5	1.8	2.0	-83.36	-86.1	-16.8	69.7	3.71	18.772			
1,000.0	996.1	994.1	988.4	2.1	2.4	-83.11	-100.7	-29.3	77.1	4.36	17.670			
1,100.0	1,094.2	1,092.8	1,084.7	2.5	2.8	-83.10	-117.1	-43.4	85.4	5.09	16.782			
1,200.0	1,191.7	1,191.2	1,180.2	2.9	3.2	-83.26	-135.3	-59.0	94.7	5.90	16.050			
1,300.0	1,288.6	1,289.5	1,274.8	3.4	3.7	-83.53	-155.3	-76.3	104.9	6.79	15.435			
1,400.0	1,384.9	1,387.6	1,368.5	3.9	4.2	-83.87	-177.2	-95.0	116.0	7.76	14.939			
1,500.0	1,481.0	1,485.4	1,461.3	4.4	4.8	-83.50	-200.8	-115.3	128.2	8.76	14.641			
1,600.0	1,577.1	1,582.8	1,552.8	4.9	5.4	-82.30	-226.1	-137.0	141.6	9.75	14.522 SF			
1,700.0	1,673.3	1,679.7	1,643.0	5.4	6.1	-80.52	-253.0	-160.1	156.4	10.74	14.562			
1,800.0	1,769.4	1,776.7	1,732.3	5.9	6.8	-78.37	-281.6	-184.6	172.6	11.70	14.752			
1,900.0	1,865.5	1,875.1	1,822.8	6.4	7.5	-76.41	-311.0	-209.9	189.3	12.64	14.972			
2,000.0	1,961.6	1,973.5	1,913.2	6.9	8.2	-74.77	-340.4	-235.1	206.2	13.58	15.186			
2,100.0	2,057.7	2,071.9	2,003.7	7.4	8.9	-73.38	-369.8	-260.4	223.3	14.51	15.389			
2,200.0	2,153.9	2,170.3	2,094.1	8.0	9.6	-72.18	-399.3	-285.6	240.4	15.43	15.582			
2,300.0	2,250.0	2,268.7	2,184.6	8.5	10.3	-71.15	-428.7	-310.9	257.7	16.35	15.763			
2,400.0	2,346.1	2,367.1	2,275.0	9.0	11.0	-70.24	-458.1	-336.2	275.0	17.26	15.932			
2,500.0	2,442.2	2,465.5	2,365.4	9.5	11.7	-69.45	-487.5	-361.4	292.4	18.17	16.090			
2,600.0	2,538.3	2,563.9	2,455.9	10.0	12.4	-68.74	-516.9	-386.7	309.8	19.08	16.238			
2,700.0	2,634.5	2,662.3	2,546.3	10.6	13.1	-68.11	-546.4	-411.9	327.3	19.98	16.376			
2,800.0	2,730.6	2,760.7	2,636.8	11.1	13.9	-67.54	-575.8	-437.2	344.8	20.89	16.505			
2,900.0	2,826.7	2,859.1	2,727.2	11.6	14.6	-67.02	-605.2	-462.4	362.3	21.79	16.626			
3,000.0	2,922.8	2,957.5	2,817.6	12.1	15.3	-66.56	-634.6	-487.7	379.9	22.69	16.740			
3,100.0	3,018.9	3,055.9	2,908.1	12.6	16.0	-66.13	-664.0	-512.9	397.4	23.59	16.846			
3,200.0	3,115.1	3,154.3	2,998.5	13.2	16.7	-65.74	-693.4	-538.2	415.0	24.49	16.946			
3,300.0	3,211.2	3,252.7	3,089.0	13.7	17.4	-65.39	-722.9	-563.4	432.6	25.39	17.040			
3,400.0	3,307.3	3,351.1	3,179.4	14.2	18.2	-65.06	-752.3	-588.7	450.3	26.29	17.129			
3,500.0	3,403.4	3,449.5	3,269.8	14.7	18.9	-64.75	-781.7	-614.0	467.9	27.18	17.213			
3,600.0	3,499.5	3,547.9	3,360.3	15.3	19.6	-64.47	-811.1	-639.2	485.6	28.08	17.293			
3,700.0	3,595.7	3,646.3	3,450.7	15.8	20.3	-64.21	-840.5	-664.5	503.2	28.98	17.368			
3,800.0	3,691.8	3,744.7	3,541.2	16.3	21.0	-63.96	-870.0	-689.7	520.9	29.87	17.439			
3,900.0	3,787.9	3,843.1	3,631.6	16.8	21.7	-63.73	-899.4	-715.0	538.6	30.77	17.506			
4,000.0	3,884.0	3,941.5	3,722.1	17.4	22.5	-63.52	-928.8	-740.2	556.3	31.66	17.570			
4,100.0	3,980.1	4,039.9	3,812.5	17.9	23.2	-63.32	-958.2	-765.5	574.0	32.56	17.631			
4,200.0	4,076.3	4,138.3	3,902.9	18.4	23.9	-63.13	-987.6	-790.7	591.7	33.45	17.689			
4,300.0	4,172.4	4,236.7	3,993.4	18.9	24.6	-62.95	-1,017.1	-816.0	609.4	34.34	17.745			
4,400.0	4,268.5	4,335.1	4,083.8	19.5	25.3	-62.78	-1,046.5	-841.2	627.1	35.24	17.797			
4,500.0	4,364.6	4,433.5	4,174.3	20.0	26.0	-62.62	-1,075.9	-866.5	644.9	36.13	17.848			
4,600.0	4,460.7	4,531.9	4,264.7	20.5	26.8	-62.47	-1,105.3	-891.8	662.6	37.02	17.896			
4,700.0	4,556.9	4,630.3	4,355.1	21.0	27.5	-62.33	-1,134.7	-917.0	680.3	37.92	17.942			
4,800.0	4,653.0	4,728.7	4,445.6	21.6	28.2	-62.20	-1,164.1	-942.3	698.0	38.81	17.986			
4,900.0	4,749.1	4,827.1	4,536.0	22.1	28.9	-62.07	-1,193.6	-967.5	715.8	39.70	18.029			
5,000.0	4,845.2	4,925.5	4,626.5	22.6	29.6	-61.95	-1,223.0	-992.8	733.5	40.59	18.069			
5,100.0	4,941.3	5,023.9	4,716.9	23.1	30.4	-61.83	-1,252.4	-1,018.0	751.3	41.49	18.109			

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-9D (Oxy I21 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		
5,200.0	5,037.5	5,122.4	4,807.4	23.7	31.1	-61.72	-1,281.8	-1,043.3	769.0	726.6	42.38	18.146		
5,300.0	5,133.6	5,220.8	4,897.8	24.2	31.8	-61.61	-1,311.2	-1,068.5	786.8	743.5	43.27	18.182		
5,400.0	5,229.7	5,319.2	4,988.2	24.7	32.5	-61.51	-1,340.7	-1,093.8	804.5	760.4	44.16	18.217		
5,500.0	5,325.8	5,417.6	5,078.7	25.2	33.2	-61.41	-1,370.1	-1,119.0	822.3	777.2	45.06	18.250		
5,600.0	5,422.0	5,516.0	5,169.1	25.8	34.0	-61.32	-1,399.5	-1,144.3	840.0	794.1	45.95	18.282		
5,700.0	5,518.1	5,614.4	5,259.6	26.3	34.7	-61.23	-1,428.9	-1,169.6	857.8	811.0	46.84	18.313		
5,800.0	5,614.2	5,724.6	5,361.1	26.8	35.5	-61.16	-1,461.4	-1,197.5	875.2	827.4	47.78	18.316		
5,900.0	5,710.3	5,844.6	5,473.0	27.3	36.2	-61.23	-1,494.5	-1,225.9	890.4	841.6	48.81	18.241		
6,000.0	5,806.5	5,965.4	5,586.8	27.9	37.0	-61.49	-1,525.1	-1,252.1	903.3	853.4	49.92	18.097		
6,100.0	5,903.1	6,086.7	5,702.4	28.3	37.6	-61.87	-1,553.0	-1,276.1	914.8	863.8	50.99	17.940		
6,200.0	6,000.4	6,208.4	5,819.5	28.7	38.2	-62.22	-1,578.3	-1,297.8	925.0	873.1	51.97	17.799		
6,300.0	6,098.3	6,330.5	5,937.9	29.1	38.7	-62.53	-1,600.7	-1,317.0	934.1	881.2	52.85	17.673		
6,400.0	6,196.6	6,452.9	6,057.5	29.5	39.2	-62.80	-1,620.3	-1,333.9	942.0	888.3	53.64	17.560		
6,500.0	6,295.4	6,575.6	6,178.2	29.8	39.6	-63.04	-1,637.0	-1,348.2	948.6	894.3	54.34	17.458		
6,600.0	6,394.6	6,698.5	6,299.8	30.0	40.0	-63.24	-1,650.8	-1,360.1	954.0	899.1	54.94	17.365		
6,700.0	6,494.1	6,821.6	6,422.0	30.2	40.2	-63.40	-1,661.7	-1,369.4	958.2	902.8	55.44	17.284		
6,800.0	6,593.8	6,944.8	6,544.8	30.4	40.4	-63.53	-1,669.5	-1,376.1	961.1	905.3	55.85	17.211		
6,900.0	6,693.7	7,068.1	6,667.9	30.5	40.6	-63.63	-1,674.4	-1,380.2	962.8	906.7	56.16	17.144		
7,000.0	6,793.6	7,191.4	6,791.2	30.6	40.7	-63.70	-1,676.2	-1,381.8	963.2	906.8	56.38	17.085		
7,100.0	6,893.6	7,293.9	6,893.6	30.7	40.7	179.21	-1,676.2	-1,381.8	963.1	906.6	56.54	17.036		
7,200.0	6,993.6	7,393.9	6,993.6	30.7	40.8	179.21	-1,676.2	-1,381.8	963.1	906.5	56.69	16.989		
7,300.0	7,093.6	7,493.9	7,093.6	30.8	40.8	179.21	-1,676.2	-1,381.8	963.1	906.3	56.85	16.942		
7,400.0	7,193.6	7,593.9	7,193.6	30.9	40.9	179.21	-1,676.2	-1,381.8	963.1	906.1	57.01	16.895		
7,500.0	7,293.6	7,693.9	7,293.6	31.0	40.9	179.21	-1,676.2	-1,381.8	963.1	906.0	57.17	16.847		
7,600.0	7,393.6	7,793.9	7,393.6	31.0	41.0	179.21	-1,676.2	-1,381.8	963.1	905.8	57.33	16.799		
7,700.0	7,493.6	7,893.9	7,493.6	31.1	41.1	179.21	-1,676.2	-1,381.8	963.1	905.6	57.50	16.752		
7,800.0	7,593.6	7,993.9	7,593.6	31.2	41.1	179.21	-1,676.2	-1,381.8	963.1	905.5	57.66	16.703		
7,900.0	7,693.6	8,093.9	7,693.6	31.3	41.2	179.21	-1,676.2	-1,381.8	963.1	905.3	57.83	16.655		
8,000.0	7,793.6	8,193.9	7,793.6	31.3	41.2	179.21	-1,676.2	-1,381.8	963.1	905.1	58.00	16.607		
8,100.0	7,893.6	8,293.9	7,893.6	31.4	41.3	179.21	-1,676.2	-1,381.8	963.1	905.0	58.17	16.558		
8,200.0	7,993.6	8,393.9	7,993.6	31.5	41.4	179.21	-1,676.2	-1,381.8	963.1	904.8	58.34	16.509		
8,300.0	8,093.6	8,493.9	8,093.6	31.6	41.4	179.21	-1,676.2	-1,381.8	963.1	904.6	58.51	16.460		
8,400.0	8,193.6	8,593.9	8,193.6	31.7	41.5	179.21	-1,676.2	-1,381.8	963.1	904.5	58.69	16.411		
8,500.0	8,293.6	8,693.9	8,293.6	31.7	41.5	179.21	-1,676.2	-1,381.8	963.1	904.3	58.87	16.361		
8,600.0	8,393.6	8,793.9	8,393.6	31.8	41.6	179.21	-1,676.2	-1,381.8	963.1	904.1	59.05	16.312		
8,700.0	8,493.6	8,893.9	8,493.6	31.9	41.7	179.21	-1,676.2	-1,381.8	963.1	903.9	59.22	16.262		
8,800.0	8,593.6	8,993.9	8,593.6	32.0	41.7	179.21	-1,676.2	-1,381.8	963.1	903.7	59.41	16.213		
8,845.3	8,638.9	9,039.1	8,638.9	32.0	41.8	179.21	-1,676.2	-1,381.8	963.1	903.7	59.49	16.190		
8,890.4	8,684.0	9,054.2	8,654.0	32.1	41.8	179.21	-1,676.2	-1,381.8	963.6	904.1	59.54	16.183		

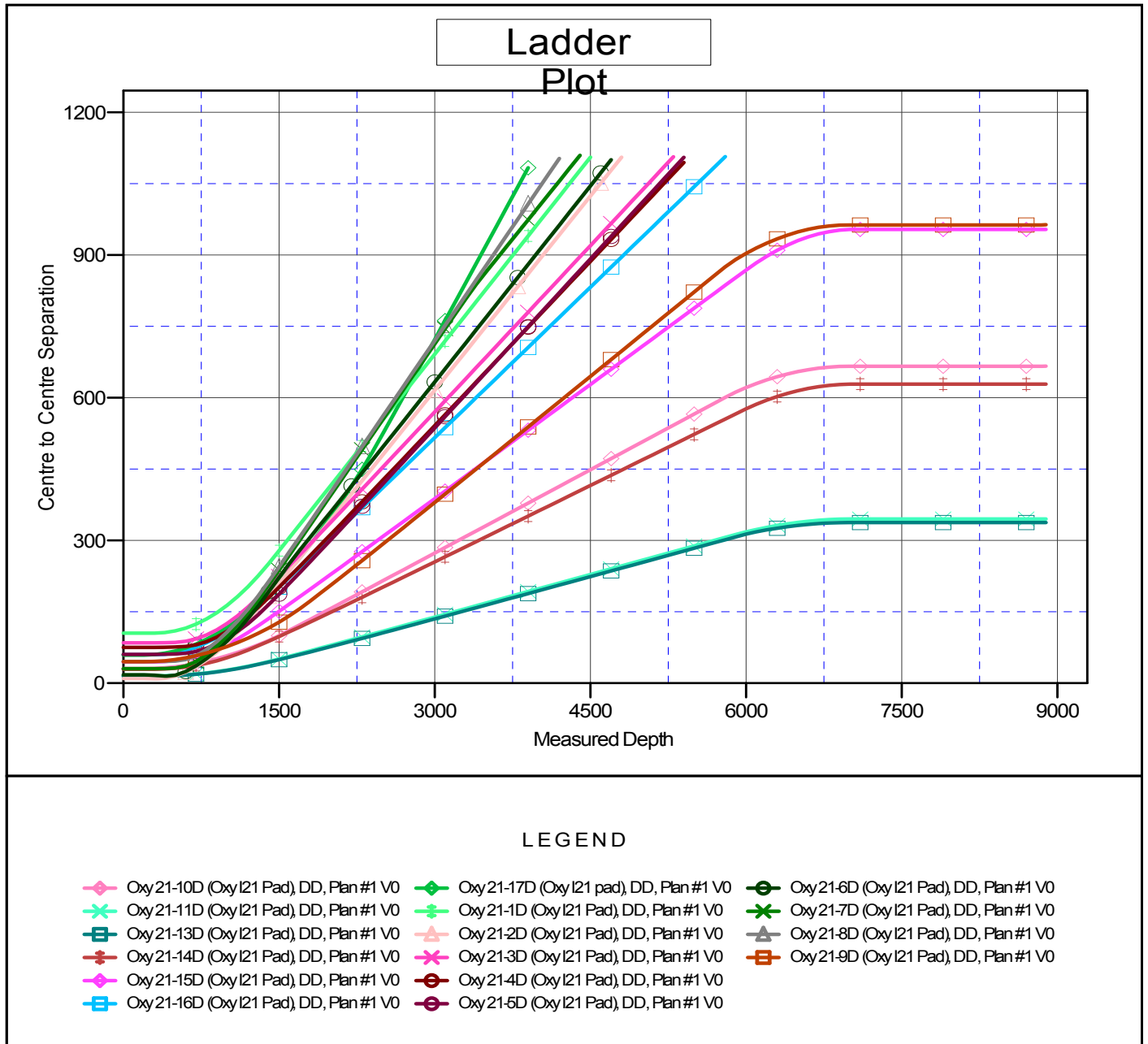
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-12D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-12D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8381.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Oxy 21-12D (Oxy I21 Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.71°



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