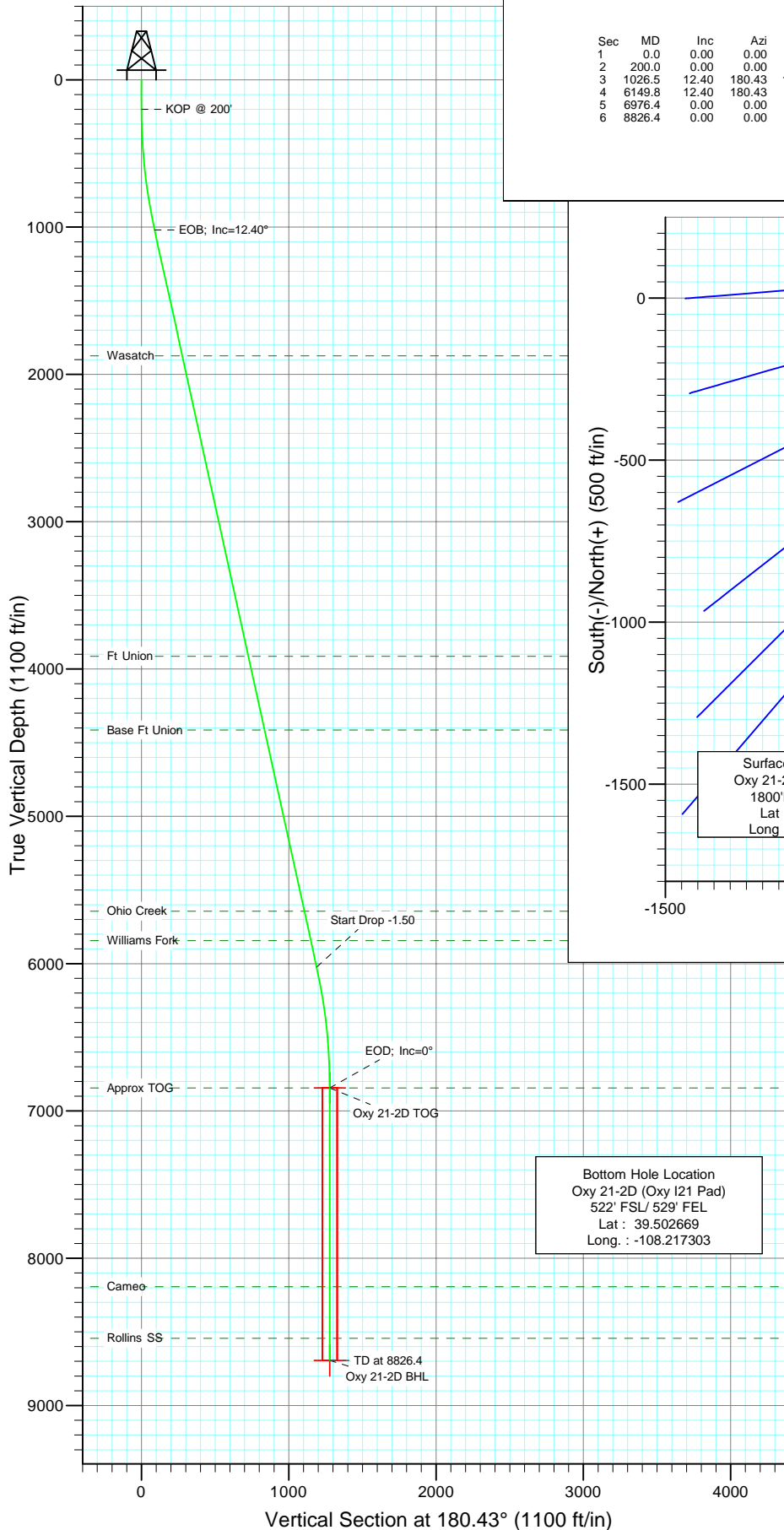




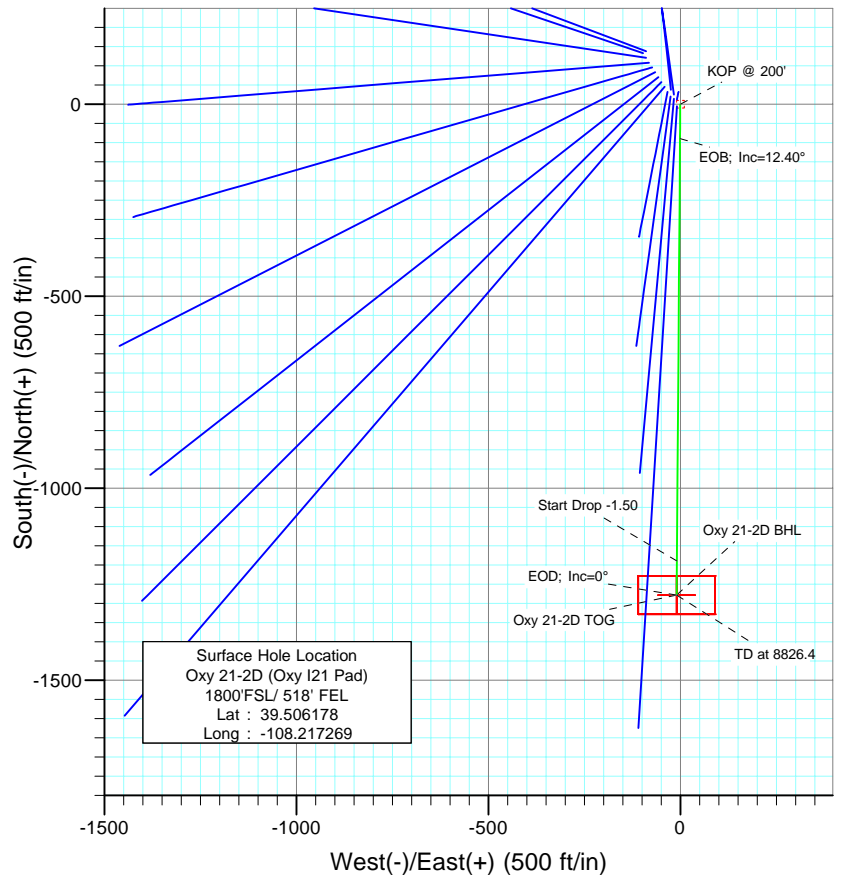
Berry Petroleum Company

Project: Garfield County
Site: NESE S21-T6S-R97W (Oxy I21 pad)
Well: Oxy 21-2D (Oxy I21 Pad)
Wellbore: DD
Design: Plan #2



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1026.5	12.40	180.43	1020.1	-89.1	-0.7	1.50	180.43	89.1	
4	6149.8	12.40	180.43	6023.9	-1189.0	-8.9	0.00	0.00	1189.1	
5	6976.4	0.00	0.00	6844.0	-1278.1	-9.6	1.50	180.00	1278.2	Oxy 21-2D TOG
6	8826.4	0.00	0.00	8694.0	-1278.1	-9.6	0.00	0.00	1278.2	Oxy 21-2D BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1874.0	1900.8	Wasatch
3914.0	3989.5	Ft Union
4414.0	4501.5	Base Ft Union
5644.0	5760.8	Ohio Creek
5844.0	5965.6	Williams Fork
6844.0	6976.4	Approx TOG
8194.0	8326.4	Cameo
8544.0	8676.4	Rollins SS



Azimuths to True North
Magnetic North: 10.65°

Magnetic Field
Strength: 52405.3snT
Dip Angle: 65.76°
Date: 10/5/2009
Model: IGRF200510

DESIGN DETAILS: Plan #2

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

Target	Azimuth	Origin	N/S	E/W	From TVD
Oxy 21-2D BHL	180.43	Slot	0.0	0.0	0.0

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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 21-2D (Oxy I21 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,620,722.75 ft	Latitude:	39.506178
	+E/-W	0.0 ft	Easting:	2,233,415.08 ft	Longitude:	-108.217269
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	10/5/2009	10.65	65.76	52,405

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	180.43

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,026.5	12.40	180.43	1,020.1	-89.1	-0.7	1.50	1.50	0.00	180.43	
6,149.8	12.40	180.43	6,023.9	-1,189.0	-8.9	0.00	0.00	0.00	0.00	
6,976.4	0.00	0.00	6,844.0	-1,278.1	-9.6	1.50	-1.50	0.00	180.00	Oxy 21-2D TOG
8,826.4	0.00	0.00	8,694.0	-1,278.1	-9.6	0.00	0.00	0.00	0.00	Oxy 21-2D BHL

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
210.0	0.15	180.43	210.0	0.0	0.0	0.0	1.50	1.50	
240.0	0.60	180.43	240.0	-0.2	0.0	0.2	1.50	1.50	
270.0	1.05	180.43	270.0	-0.6	0.0	0.6	1.50	1.50	
300.0	1.50	180.43	300.0	-1.3	0.0	1.3	1.50	1.50	
330.0	1.95	180.43	330.0	-2.2	0.0	2.2	1.50	1.50	
360.0	2.40	180.43	360.0	-3.4	0.0	3.4	1.50	1.50	
390.0	2.85	180.43	389.9	-4.7	0.0	4.7	1.50	1.50	
420.0	3.30	180.43	419.9	-6.3	0.0	6.3	1.50	1.50	
450.0	3.75	180.43	449.8	-8.2	-0.1	8.2	1.50	1.50	
480.0	4.20	180.43	479.7	-10.3	-0.1	10.3	1.50	1.50	
510.0	4.65	180.43	509.7	-12.6	-0.1	12.6	1.50	1.50	
540.0	5.10	180.43	539.6	-15.1	-0.1	15.1	1.50	1.50	
570.0	5.55	180.43	569.4	-17.9	-0.1	17.9	1.50	1.50	
600.0	6.00	180.43	599.3	-20.9	-0.2	20.9	1.50	1.50	
630.0	6.45	180.43	629.1	-24.2	-0.2	24.2	1.50	1.50	
660.0	6.90	180.43	658.9	-27.7	-0.2	27.7	1.50	1.50	
690.0	7.35	180.43	688.7	-31.4	-0.2	31.4	1.50	1.50	
720.0	7.80	180.43	718.4	-35.3	-0.3	35.3	1.50	1.50	
750.0	8.25	180.43	748.1	-39.5	-0.3	39.5	1.50	1.50	
780.0	8.70	180.43	777.8	-43.9	-0.3	44.0	1.50	1.50	
810.0	9.15	180.43	807.4	-48.6	-0.4	48.6	1.50	1.50	
840.0	9.60	180.43	837.0	-53.5	-0.4	53.5	1.50	1.50	
870.0	10.05	180.43	866.6	-58.6	-0.4	58.6	1.50	1.50	
900.0	10.50	180.43	896.1	-64.0	-0.5	64.0	1.50	1.50	
930.0	10.95	180.43	925.6	-69.5	-0.5	69.5	1.50	1.50	
960.0	11.40	180.43	955.0	-75.4	-0.6	75.4	1.50	1.50	
990.0	11.85	180.43	984.4	-81.4	-0.6	81.4	1.50	1.50	
1,020.0	12.30	180.43	1,013.7	-87.7	-0.7	87.7	1.50	1.50	
1,026.5	12.40	180.43	1,020.1	-89.1	-0.7	89.1	1.50	1.50	EOB; Inc=12.40°
1,050.0	12.40	180.43	1,043.0	-94.1	-0.7	94.1	0.00	0.00	
1,080.0	12.40	180.43	1,072.3	-100.6	-0.8	100.6	0.00	0.00	
1,110.0	12.40	180.43	1,101.6	-107.0	-0.8	107.0	0.00	0.00	
1,140.0	12.40	180.43	1,130.9	-113.4	-0.9	113.4	0.00	0.00	
1,170.0	12.40	180.43	1,160.2	-119.9	-0.9	119.9	0.00	0.00	
1,200.0	12.40	180.43	1,189.5	-126.3	-0.9	126.3	0.00	0.00	
1,230.0	12.40	180.43	1,218.8	-132.8	-1.0	132.8	0.00	0.00	
1,260.0	12.40	180.43	1,248.1	-139.2	-1.0	139.2	0.00	0.00	
1,290.0	12.40	180.43	1,277.4	-145.6	-1.1	145.6	0.00	0.00	
1,320.0	12.40	180.43	1,306.7	-152.1	-1.1	152.1	0.00	0.00	
1,350.0	12.40	180.43	1,336.0	-158.5	-1.2	158.5	0.00	0.00	
1,380.0	12.40	180.43	1,365.3	-165.0	-1.2	165.0	0.00	0.00	
1,410.0	12.40	180.43	1,394.6	-171.4	-1.3	171.4	0.00	0.00	
1,440.0	12.40	180.43	1,423.9	-177.8	-1.3	177.9	0.00	0.00	
1,470.0	12.40	180.43	1,453.2	-184.3	-1.4	184.3	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	12.40	180.43	1,482.5	-190.7	-1.4	190.7	0.00	0.00	
1,530.0	12.40	180.43	1,511.8	-197.2	-1.5	197.2	0.00	0.00	
1,560.0	12.40	180.43	1,541.1	-203.6	-1.5	203.6	0.00	0.00	
1,590.0	12.40	180.43	1,570.4	-210.1	-1.6	210.1	0.00	0.00	
1,620.0	12.40	180.43	1,599.7	-216.5	-1.6	216.5	0.00	0.00	
1,650.0	12.40	180.43	1,629.0	-222.9	-1.7	222.9	0.00	0.00	
1,680.0	12.40	180.43	1,658.3	-229.4	-1.7	229.4	0.00	0.00	
1,710.0	12.40	180.43	1,687.6	-235.8	-1.8	235.8	0.00	0.00	
1,740.0	12.40	180.43	1,716.9	-242.3	-1.8	242.3	0.00	0.00	
1,770.0	12.40	180.43	1,746.2	-248.7	-1.9	248.7	0.00	0.00	
1,800.0	12.40	180.43	1,775.5	-255.1	-1.9	255.1	0.00	0.00	
1,830.0	12.40	180.43	1,804.8	-261.6	-2.0	261.6	0.00	0.00	
1,860.0	12.40	180.43	1,834.1	-268.0	-2.0	268.0	0.00	0.00	
1,890.0	12.40	180.43	1,863.4	-274.5	-2.1	274.5	0.00	0.00	
1,900.8	12.40	180.43	1,874.0	-276.8	-2.1	276.8	0.00	0.00	Wasatch
1,920.0	12.40	180.43	1,892.7	-280.9	-2.1	280.9	0.00	0.00	
1,950.0	12.40	180.43	1,922.0	-287.3	-2.2	287.3	0.00	0.00	
1,980.0	12.40	180.43	1,951.3	-293.8	-2.2	293.8	0.00	0.00	
2,010.0	12.40	180.43	1,980.6	-300.2	-2.3	300.2	0.00	0.00	
2,040.0	12.40	180.43	2,009.9	-306.7	-2.3	306.7	0.00	0.00	
2,070.0	12.40	180.43	2,039.2	-313.1	-2.4	313.1	0.00	0.00	
2,100.0	12.40	180.43	2,068.5	-319.5	-2.4	319.6	0.00	0.00	
2,130.0	12.40	180.43	2,097.8	-326.0	-2.4	326.0	0.00	0.00	
2,160.0	12.40	180.43	2,127.1	-332.4	-2.5	332.4	0.00	0.00	
2,190.0	12.40	180.43	2,156.4	-338.9	-2.5	338.9	0.00	0.00	
2,220.0	12.40	180.43	2,185.7	-345.3	-2.6	345.3	0.00	0.00	
2,250.0	12.40	180.43	2,215.0	-351.8	-2.6	351.8	0.00	0.00	
2,280.0	12.40	180.43	2,244.3	-358.2	-2.7	358.2	0.00	0.00	
2,310.0	12.40	180.43	2,273.6	-364.6	-2.7	364.6	0.00	0.00	
2,340.0	12.40	180.43	2,302.9	-371.1	-2.8	371.1	0.00	0.00	
2,370.0	12.40	180.43	2,332.2	-377.5	-2.8	377.5	0.00	0.00	
2,400.0	12.40	180.43	2,361.5	-384.0	-2.9	384.0	0.00	0.00	
2,430.0	12.40	180.43	2,390.8	-390.4	-2.9	390.4	0.00	0.00	
2,460.0	12.40	180.43	2,420.1	-396.8	-3.0	396.8	0.00	0.00	
2,490.0	12.40	180.43	2,449.4	-403.3	-3.0	403.3	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 21-2D BHL	0.00	0.00	8,694.0	-1,278.1	-9.6	1,619,445.49	2,233,367.26	39.502669	-108.217303
- plan misses target center by 6305.6ft at 2490.0ft MD (2449.4 TVD, -403.3 N, -3.0 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									
Oxy 21-2D TOG	0.00	0.00	6,844.0	-1,278.1	-9.6	1,619,445.49	2,233,367.26	39.502669	-108.217303
- plan misses target center by 4480.8ft at 2490.0ft MD (2449.4 TVD, -403.3 N, -3.0 E)									
- Point									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	12.40	180.43	2,459.2	-405.4	-3.0	405.4	0.00	0.00	
2,600.0	12.40	180.43	2,556.9	-426.9	-3.2	426.9	0.00	0.00	
2,700.0	12.40	180.43	2,654.5	-448.4	-3.4	448.4	0.00	0.00	
2,800.0	12.40	180.43	2,752.2	-469.8	-3.5	469.8	0.00	0.00	
2,900.0	12.40	180.43	2,849.9	-491.3	-3.7	491.3	0.00	0.00	
3,000.0	12.40	180.43	2,947.5	-512.8	-3.8	512.8	0.00	0.00	
3,100.0	12.40	180.43	3,045.2	-534.2	-4.0	534.3	0.00	0.00	
3,200.0	12.40	180.43	3,142.9	-555.7	-4.2	555.7	0.00	0.00	
3,300.0	12.40	180.43	3,240.5	-577.2	-4.3	577.2	0.00	0.00	
3,400.0	12.40	180.43	3,338.2	-598.7	-4.5	598.7	0.00	0.00	
3,500.0	12.40	180.43	3,435.9	-620.1	-4.7	620.1	0.00	0.00	
3,600.0	12.40	180.43	3,533.5	-641.6	-4.8	641.6	0.00	0.00	
3,700.0	12.40	180.43	3,631.2	-663.1	-5.0	663.1	0.00	0.00	
3,800.0	12.40	180.43	3,728.9	-684.5	-5.1	684.6	0.00	0.00	
3,900.0	12.40	180.43	3,826.6	-706.0	-5.3	706.0	0.00	0.00	
3,989.5	12.40	180.43	3,914.0	-725.2	-5.4	725.2	0.00	0.00	Ft Union
4,000.0	12.40	180.43	3,924.2	-727.5	-5.5	727.5	0.00	0.00	
4,100.0	12.40	180.43	4,021.9	-748.9	-5.6	749.0	0.00	0.00	
4,200.0	12.40	180.43	4,119.6	-770.4	-5.8	770.4	0.00	0.00	
4,300.0	12.40	180.43	4,217.2	-791.9	-5.9	791.9	0.00	0.00	
4,400.0	12.40	180.43	4,314.9	-813.4	-6.1	813.4	0.00	0.00	
4,500.0	12.40	180.43	4,412.6	-834.8	-6.3	834.8	0.00	0.00	
4,501.5	12.40	180.43	4,414.0	-835.1	-6.3	835.2	0.00	0.00	Base Ft Union
4,600.0	12.40	180.43	4,510.2	-856.3	-6.4	856.3	0.00	0.00	
4,700.0	12.40	180.43	4,607.9	-877.8	-6.6	877.8	0.00	0.00	
4,800.0	12.40	180.43	4,705.6	-899.2	-6.7	899.3	0.00	0.00	
4,900.0	12.40	180.43	4,803.2	-920.7	-6.9	920.7	0.00	0.00	
5,000.0	12.40	180.43	4,900.9	-942.2	-7.1	942.2	0.00	0.00	
5,100.0	12.40	180.43	4,998.6	-963.6	-7.2	963.7	0.00	0.00	
5,200.0	12.40	180.43	5,096.2	-985.1	-7.4	985.1	0.00	0.00	
5,300.0	12.40	180.43	5,193.9	-1,006.6	-7.6	1,006.6	0.00	0.00	
5,400.0	12.40	180.43	5,291.6	-1,028.1	-7.7	1,028.1	0.00	0.00	
5,500.0	12.40	180.43	5,389.2	-1,049.5	-7.9	1,049.6	0.00	0.00	
5,600.0	12.40	180.43	5,486.9	-1,071.0	-8.0	1,071.0	0.00	0.00	
5,700.0	12.40	180.43	5,584.6	-1,092.5	-8.2	1,092.5	0.00	0.00	
5,760.8	12.40	180.43	5,644.0	-1,105.5	-8.3	1,105.6	0.00	0.00	Ohio Creek
5,800.0	12.40	180.43	5,682.2	-1,113.9	-8.4	1,114.0	0.00	0.00	
5,900.0	12.40	180.43	5,779.9	-1,135.4	-8.5	1,135.4	0.00	0.00	
5,965.6	12.40	180.43	5,844.0	-1,149.5	-8.6	1,149.5	0.00	0.00	Williams Fork
6,000.0	12.40	180.43	5,877.6	-1,156.9	-8.7	1,156.9	0.00	0.00	
6,100.0	12.40	180.43	5,975.2	-1,178.3	-8.8	1,178.4	0.00	0.00	
6,149.8	12.40	180.43	6,023.9	-1,189.0	-8.9	1,189.1	0.00	0.00	Start Drop -1.50
6,200.0	11.65	180.43	6,073.0	-1,199.5	-9.0	1,199.5	1.50	-1.50	
6,300.0	10.15	180.43	6,171.2	-1,218.4	-9.1	1,218.4	1.50	-1.50	
6,400.0	8.65	180.43	6,269.8	-1,234.7	-9.3	1,234.8	1.50	-1.50	
6,500.0	7.15	180.43	6,368.9	-1,248.5	-9.4	1,248.5	1.50	-1.50	
6,600.0	5.65	180.43	6,468.3	-1,259.6	-9.5	1,259.6	1.50	-1.50	
6,700.0	4.15	180.43	6,567.9	-1,268.1	-9.5	1,268.2	1.50	-1.50	
6,800.0	2.65	180.43	6,667.7	-1,274.0	-9.6	1,274.1	1.50	-1.50	
6,900.0	1.15	180.43	6,767.7	-1,277.4	-9.6	1,277.4	1.50	-1.50	
6,976.4	0.00	0.00	6,844.0	-1,278.1	-9.6	1,278.2	1.50	-1.50	EOD; Inc=0° - Approx TOG - Oxy 21-2D TOG
7,000.0	0.00	0.00	6,867.6	-1,278.1	-9.6	1,278.2	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	6,967.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,200.0	0.00	0.00	7,067.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,300.0	0.00	0.00	7,167.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,400.0	0.00	0.00	7,267.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,500.0	0.00	0.00	7,367.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,600.0	0.00	0.00	7,467.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,700.0	0.00	0.00	7,567.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,800.0	0.00	0.00	7,667.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
7,900.0	0.00	0.00	7,767.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,000.0	0.00	0.00	7,867.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,100.0	0.00	0.00	7,967.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,200.0	0.00	0.00	8,067.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,300.0	0.00	0.00	8,167.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,326.4	0.00	0.00	8,194.0	-1,278.1	-9.6	1,278.2	0.00	0.00	Cameo
8,400.0	0.00	0.00	8,267.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,500.0	0.00	0.00	8,367.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,600.0	0.00	0.00	8,467.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,676.4	0.00	0.00	8,544.0	-1,278.1	-9.6	1,278.2	0.00	0.00	Rollins SS
8,700.0	0.00	0.00	8,567.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,800.0	0.00	0.00	8,667.6	-1,278.1	-9.6	1,278.2	0.00	0.00	
8,826.4	0.00	0.00	8,694.0	-1,278.1	-9.6	1,278.2	0.00	0.00	TD at 8826.4 - Oxy 21-2D BHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Oxy 21-2D BHL	0.00	0.00	8,694.0	-1,278.1	-9.6	1,619,445.49	2,233,367.26	39.502669	-108.217303
- hit/miss target									
- Shape									
- plan hits target center									
- Rectangle (sides W100.0 H200.0 D0.0)									
Oxy 21-2D TOG	0.00	0.00	6,844.0	-1,278.1	-9.6	1,619,445.49	2,233,367.26	39.502669	-108.217303
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,900.8	1,874.0	Wasatch		0.00		
3,989.5	3,914.0	Ft Union		0.00		
4,501.5	4,414.0	Base Ft Union		0.00		
5,760.8	5,644.0	Ohio Creek		0.00		
5,965.6	5,844.0	Williams Fork		0.00		
6,976.4	6,844.0	Approx TOG		0.00		
8,326.4	8,194.0	Cameo		0.00		
8,676.4	8,544.0	Rollins SS		0.00		

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (Oxy I21 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,026.5	1,020.1	-89.1	-0.7	EOB; Inc=12.40°
6,149.8	6,023.9	-1,189.0	-8.9	Start Drop -1.50
6,976.4	6,844.0	-1,278.1	-9.6	EOD; Inc=0°
8,826.4	8,694.0	-1,278.1	-9.6	TD at 8826.4

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/2/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,826.4	Plan #2 (DD)	MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
NESE S21-T6S-R97W (Oxy I21 pad)						
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	75.8	75.2	117.425	CC, ES
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	1,300.0	1,289.2	185.0	178.1	26.863	SF
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	91.0	90.3	140.858	CC, ES
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	1,200.0	1,191.3	191.8	186.2	34.549	SF
Oxy 21-12D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	106.1	105.5	164.368	CC, ES
Oxy 21-12D (Oxy I21 Pad) - DD - Plan #1	1,000.0	990.0	183.7	179.6	44.776	SF
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	120.8	120.1	187.029	CC, ES
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	900.0	887.5	188.0	184.6	54.167	SF
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	135.5	134.8	209.781	CC, ES
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	800.0	786.1	189.8	186.9	64.761	SF
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	150.7	150.1	233.373	CC, ES
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	700.0	686.0	191.2	188.7	77.556	SF
Oxy 21-16D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	164.8	164.2	255.194	CC, ES
Oxy 21-16D (Oxy I21 Pad) - DD - Plan #1	600.0	588.2	191.4	189.4	93.016	SF
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	200.0	200.0	165.1	164.4	255.617	CC, ES
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	600.0	583.7	198.3	196.2	95.571	SF
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	424.3	424.1	8.8	7.4	6.083	CC
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	500.0	499.8	9.1	7.4	5.213	ES
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	1,500.0	1,501.5	18.9	10.2	2.166	SF
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	21.9	21.2	33.889	CC, ES
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	3,600.0	3,603.3	197.6	183.6	14.118	SF
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	32.1	31.5	49.745	CC, ES
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	600.0	599.3	48.0	45.9	23.225	SF
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	46.3	45.6	71.648	CC, ES
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	900.0	902.1	91.8	88.6	29.034	SF
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #2	200.0	500.0	14.9	14.2	23.020	CC, ES
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #2	400.0	699.9	19.3	18.0	14.360	SF
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #2	200.0	200.0	30.1	29.5	46.682	CC, ES
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #2	500.0	499.7	40.5	38.8	23.823	SF
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #2	200.0	200.0	44.8	44.2	69.427	CC, ES
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #2	500.0	495.1	66.0	64.3	39.011	SF
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	61.2	60.6	94.789	CC, ES
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	1,500.0	1,485.4	194.8	186.0	22.188	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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						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	-40.63	57.6	-49.4	75.8					
100.0	100.0	100.0	100.0	0.1	0.1	-40.63	57.6	-49.4	75.8	75.5	0.30	255.573		
200.0	200.0	200.0	200.0	0.3	0.3	-40.63	57.6	-49.4	75.8	75.2	0.65	117.425	CC, ES	
300.0	300.0	300.1	300.1	0.5	0.5	138.60	56.6	-50.3	76.7	75.7	1.00	76.874		
400.0	399.9	400.2	400.1	0.7	0.7	137.61	53.8	-53.1	79.4	78.0	1.36	58.215		
500.0	499.7	500.2	499.9	0.9	0.9	136.11	49.2	-57.7	83.9	82.2	1.76	47.779		
600.0	599.3	600.0	599.2	1.1	1.1	134.26	42.8	-64.2	90.3	88.1	2.19	41.278		
700.0	698.6	699.5	698.1	1.4	1.4	132.23	34.5	-72.5	98.6	96.0	2.67	36.940		
800.0	797.5	798.8	796.3	1.7	1.7	130.16	24.5	-82.5	108.9	105.7	3.21	33.903		
900.0	896.1	897.7	893.8	2.0	2.0	128.17	12.6	-94.3	121.2	117.3	3.82	31.706		
1,000.0	994.2	996.2	990.5	2.4	2.4	126.29	-0.9	-107.9	135.4	130.9	4.50	30.075		
1,100.0	1,091.9	1,094.3	1,086.2	2.8	2.8	124.51	-16.1	-123.1	151.2	146.0	5.24	28.836		
1,200.0	1,189.5	1,192.0	1,180.9	3.2	3.2	122.28	-33.0	-140.0	167.7	161.7	6.04	27.758		
1,300.0	1,287.2	1,289.2	1,274.5	3.6	3.7	119.71	-51.5	-158.5	185.0	178.1	6.89	26.863	SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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							
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	-39.03	70.7	-57.3	91.0					
100.0	100.0	100.0	100.0	0.1	0.1	-39.03	70.7	-57.3	91.0	90.7	0.30	306.572		
200.0	200.0	200.0	200.0	0.3	0.3	-39.03	70.7	-57.3	91.0	90.3	0.65	140.858 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	141.05	70.7	-57.3	92.0	91.0	1.00	92.390		
400.0	399.9	399.9	399.9	0.7	0.7	141.72	69.9	-58.3	95.0	93.7	1.35	70.401		
500.0	499.7	499.8	499.7	0.9	0.9	141.75	67.4	-61.4	100.2	98.4	1.72	58.275		
600.0	599.3	599.6	599.2	1.1	1.1	141.22	63.4	-66.5	107.3	105.2	2.11	50.788		
700.0	698.6	699.1	698.4	1.4	1.3	140.26	57.8	-73.7	116.5	114.0	2.54	45.796		
800.0	797.5	798.3	796.9	1.7	1.5	139.01	50.7	-82.8	127.8	124.8	3.02	42.268		
900.0	896.1	897.2	894.8	2.0	1.8	137.59	41.9	-94.0	141.3	137.7	3.56	39.659		
1,000.0	994.2	995.7	991.8	2.4	2.1	136.09	31.7	-107.0	156.8	152.7	4.16	37.663		
1,100.0	1,091.9	1,093.7	1,088.0	2.8	2.5	134.55	20.0	-122.0	174.0	169.2	4.83	36.056		
1,200.0	1,189.5	1,191.3	1,183.2	3.2	2.9	132.61	6.8	-138.8	191.8	186.2	5.55	34.549 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-12D (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					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-37.88	83.8	-65.2	106.1					
100.0	100.0	100.0	100.0	0.1	0.1	-37.88	83.8	-65.2	106.1	105.8	0.30	357.742		
200.0	200.0	200.0	200.0	0.3	0.3	-37.88	83.8	-65.2	106.1	105.5	0.65	164.368 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	142.11	83.8	-65.2	107.2	106.2	1.00	107.661		
400.0	399.9	399.4	399.4	0.7	0.7	142.66	83.2	-66.3	110.5	109.2	1.35	81.928		
500.0	499.7	498.8	498.7	0.9	0.9	142.67	81.4	-69.8	116.4	114.7	1.72	67.826		
600.0	599.3	597.9	597.6	1.1	1.1	142.21	78.5	-75.5	124.8	122.7	2.11	59.217		
700.0	698.6	696.6	695.9	1.4	1.3	141.38	74.4	-83.5	135.7	133.1	2.53	53.573		
800.0	797.5	795.0	793.6	1.7	1.5	140.30	69.2	-93.7	149.1	146.1	3.00	49.672		
900.0	896.1	892.8	890.4	2.0	1.8	139.08	62.9	-106.1	165.1	161.6	3.52	46.864		
1,000.0	994.2	990.0	986.2	2.4	2.1	137.80	55.5	-120.5	183.7	179.6	4.10	44.776 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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	-37.23	96.2	-73.1	120.8					
100.0	100.0	100.0	100.0	0.1	0.1	-37.23	96.2	-73.1	120.8	120.5	0.30	407.062		
200.0	200.0	200.0	200.0	0.3	0.3	-37.23	96.2	-73.1	120.8	120.1	0.65	187.029 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	142.70	96.2	-73.1	121.8	120.8	1.00	122.372		
400.0	399.9	398.8	398.8	0.7	0.7	143.20	95.8	-74.3	125.4	124.1	1.35	93.063		
500.0	499.7	497.4	497.3	0.9	0.9	143.26	94.7	-78.0	132.0	130.3	1.71	77.096		
600.0	599.3	595.8	595.5	1.1	1.0	142.94	93.0	-84.1	141.5	139.4	2.10	67.463		
700.0	698.6	693.6	692.9	1.4	1.3	142.33	90.5	-92.6	154.1	151.6	2.51	61.262		
800.0	797.5	790.9	789.6	1.7	1.5	141.51	87.4	-103.3	169.6	166.6	2.97	57.083		
900.0	896.1	887.5	885.2	2.0	1.8	140.57	83.7	-116.4	188.0	184.6	3.47	54.167 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1														
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-37.01	108.2	-81.5	135.5					
100.0	100.0	100.0	100.0	0.1	0.1	-37.01	108.2	-81.5	135.5	135.2	0.30	456.582		
200.0	200.0	200.0	200.0	0.3	0.3	-37.01	108.2	-81.5	135.5	134.8	0.65	209.781	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	142.89	108.2	-81.5	136.5	135.5	1.00	137.136		
400.0	399.9	398.0	398.0	0.7	0.7	143.37	108.1	-82.8	140.3	139.0	1.35	104.265		
500.0	499.7	495.8	495.8	0.9	0.8	143.54	107.8	-86.5	147.6	145.9	1.71	86.454		
600.0	599.3	593.2	593.0	1.1	1.0	143.44	107.3	-92.8	158.3	156.2	2.09	75.838		
700.0	698.6	690.1	689.4	1.4	1.3	143.11	106.6	-101.4	172.4	169.9	2.49	69.141		
800.0	797.5	786.1	784.8	1.7	1.5	142.61	105.7	-112.3	189.8	186.9	2.93	64.761	SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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							
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	-36.41	121.3	-89.4	150.7				
100.0	100.0	100.0	100.0	0.1	0.1	-36.41	121.3	-89.4	150.7	150.4	0.30	507.929	
200.0	200.0	200.0	200.0	0.3	0.3	-36.41	121.3	-89.4	150.7	150.1	0.65	233.373 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	143.45	121.3	-89.4	151.8	150.8	1.00	152.452	
400.0	399.9	397.2	397.2	0.7	0.7	143.93	121.5	-90.7	155.8	154.5	1.34	115.936	
500.0	499.7	494.0	494.0	0.9	0.8	144.24	122.0	-94.3	163.7	162.0	1.70	96.255	
600.0	599.3	590.4	590.1	1.1	1.0	144.38	122.9	-100.4	175.5	173.5	2.07	84.681	
700.0	698.6	686.0	685.4	1.4	1.2	144.37	124.2	-108.7	191.2	188.7	2.46	77.556 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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	-32.87	138.4	-89.4	164.8				
100.0	100.0	100.0	100.0	0.1	0.1	-32.87	138.4	-89.4	164.8	164.5	0.30	555.422	
200.0	200.0	200.0	200.0	0.3	0.3	-32.87	138.4	-89.4	164.8	164.2	0.65	255.194 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	146.94	138.4	-89.4	165.9	164.9	1.00	166.676	
400.0	399.9	396.5	396.5	0.7	0.7	147.35	138.8	-90.6	170.2	168.9	1.34	126.855	
500.0	499.7	492.6	492.6	0.9	0.8	147.67	140.1	-94.0	178.7	177.0	1.69	105.467	
600.0	599.3	588.2	587.9	1.1	1.0	147.87	142.2	-99.6	191.4	189.4	2.06	93.016 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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	-36.14	133.3	-97.3	165.1				
100.0	100.0	100.0	100.0	0.1	0.1	-36.14	133.3	-97.3	165.1	164.8	0.30	556.343	
200.0	200.0	200.0	200.0	0.3	0.3	-36.14	133.3	-97.3	165.1	164.4	0.65	255.617 CC, ES	
300.0	300.0	296.5	296.5	0.5	0.5	143.43	133.7	-98.5	167.2	166.2	0.99	168.826	
400.0	399.9	392.8	392.8	0.7	0.7	143.43	134.9	-102.0	173.4	172.1	1.34	129.405	
500.0	499.7	488.6	488.4	0.9	0.9	143.41	136.8	-107.7	183.8	182.1	1.70	108.105	
600.0	599.3	583.7	583.1	1.1	1.1	143.39	139.5	-115.6	198.3	196.2	2.07	95.571 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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		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	-120.22	-5.1	-8.7	10.1					
100.0	100.0	100.0	100.0	0.1	0.1	-120.22	-5.1	-8.7	10.1	9.8	0.30	34.117		
200.0	200.0	200.0	200.0	0.3	0.3	-120.22	-5.1	-8.7	10.1	9.5	0.65	15.675		
300.0	300.0	300.0	300.0	0.5	0.5	66.15	-5.1	-8.7	9.5	8.5	1.00	9.555		
400.0	399.9	399.9	399.9	0.7	0.7	82.02	-6.4	-8.8	8.9	7.5	1.36	6.525		
424.3	424.1	424.1	424.1	0.7	0.7	86.15	-7.1	-8.9	8.8	7.4	1.45	6.083 CC		
500.0	499.7	499.8	499.7	0.9	0.9	98.82	-10.3	-9.1	9.1	7.4	1.75	5.213 ES		
600.0	599.3	599.9	599.5	1.1	1.1	113.29	-16.8	-9.5	10.2	8.0	2.16	4.722		
700.0	698.6	699.9	699.2	1.4	1.3	124.06	-26.0	-10.0	11.9	9.3	2.58	4.610		
800.0	797.5	800.1	798.7	1.7	1.5	131.53	-37.7	-10.8	14.0	11.0	3.01	4.650		
900.0	896.1	900.3	897.9	2.0	1.8	136.60	-52.1	-11.7	16.4	12.9	3.46	4.738		
1,000.0	994.2	1,000.6	996.7	2.4	2.1	140.02	-69.0	-12.7	19.0	15.1	3.93	4.826		
1,100.0	1,091.9	1,101.0	1,095.1	2.8	2.5	141.15	-88.6	-13.9	21.1	16.7	4.46	4.745		
1,200.0	1,189.5	1,201.4	1,193.0	3.2	2.9	137.61	-110.8	-15.3	21.5	16.3	5.15	4.169		
1,300.0	1,287.2	1,301.7	1,290.2	3.6	3.4	128.55	-135.4	-16.8	20.2	14.1	6.14	3.292		
1,400.0	1,384.9	1,401.7	1,386.5	4.0	3.9	111.32	-162.6	-18.5	18.6	11.0	7.53	2.466		
1,440.4	1,424.3	1,442.0	1,425.1	4.1	4.1	101.89	-174.1	-19.2	18.3	10.2	8.10	2.263		
1,500.0	1,482.5	1,501.5	1,482.1	4.4	4.4	88.06	-191.1	-20.3	18.9	10.2	8.71	2.166 SF		
1,600.0	1,580.2	1,601.2	1,577.6	4.8	4.9	68.50	-219.7	-22.1	22.0	12.8	9.13	2.406		
1,700.0	1,677.9	1,700.9	1,673.1	5.2	5.4	54.90	-248.3	-23.8	26.9	17.7	9.17	2.934		
1,800.0	1,775.5	1,800.6	1,768.6	5.6	5.9	45.85	-276.8	-25.6	32.9	23.7	9.17	3.583		
1,900.0	1,873.2	1,900.3	1,864.1	6.0	6.4	39.67	-305.4	-27.4	39.4	30.1	9.24	4.262		
2,000.0	1,970.9	2,000.0	1,959.6	6.4	6.9	35.29	-334.0	-29.2	46.2	36.9	9.38	4.928		
2,100.0	2,068.5	2,099.7	2,055.2	6.8	7.4	32.05	-362.5	-30.9	53.3	43.7	9.58	5.564		
2,200.0	2,166.2	2,199.4	2,150.7	7.2	8.0	29.57	-391.1	-32.7	60.5	50.6	9.81	6.162		
2,300.0	2,263.9	2,299.2	2,246.2	7.6	8.5	27.62	-419.6	-34.5	67.7	57.7	10.08	6.720		
2,400.0	2,361.5	2,398.9	2,341.7	8.0	9.0	26.05	-448.2	-36.2	75.1	64.7	10.37	7.240		
2,500.0	2,459.2	2,498.6	2,437.2	8.5	9.5	24.76	-476.8	-38.0	82.4	71.8	10.67	7.724		
2,600.0	2,556.9	2,598.3	2,532.7	8.9	10.1	23.68	-505.3	-39.8	89.8	78.9	10.99	8.175		
2,700.0	2,654.5	2,698.0	2,628.3	9.3	10.6	22.77	-533.9	-41.6	97.3	86.0	11.32	8.595		
2,800.0	2,752.2	2,797.7	2,723.8	9.7	11.1	21.99	-562.5	-43.3	104.7	93.1	11.66	8.987		
2,900.0	2,849.9	2,897.4	2,819.3	10.1	11.6	21.31	-591.0	-45.1	112.2	100.2	12.00	9.353		
3,000.0	2,947.5	2,997.1	2,914.8	10.5	12.2	20.71	-619.6	-46.9	119.7	107.4	12.35	9.696		
3,100.0	3,045.2	3,096.8	3,010.3	10.9	12.7	20.19	-648.1	-48.6	127.2	114.5	12.70	10.018		
3,200.0	3,142.9	3,196.6	3,105.8	11.3	13.2	19.72	-676.7	-50.4	134.7	121.7	13.05	10.320		
3,300.0	3,240.5	3,296.3	3,201.4	11.8	13.7	19.31	-705.3	-52.2	142.2	128.8	13.41	10.605		
3,400.0	3,338.2	3,396.0	3,296.9	12.2	14.3	18.93	-733.8	-54.0	149.8	136.0	13.77	10.873		
3,500.0	3,435.9	3,495.7	3,392.4	12.6	14.8	18.59	-762.4	-55.7	157.3	143.2	14.14	11.126		
3,600.0	3,533.5	3,595.4	3,487.9	13.0	15.3	18.28	-791.0	-57.5	164.8	150.3	14.50	11.365		
3,700.0	3,631.2	3,695.1	3,583.4	13.4	15.9	18.00	-819.5	-59.3	172.4	157.5	14.87	11.592		
3,800.0	3,728.9	3,794.8	3,678.9	13.8	16.4	17.75	-848.1	-61.1	179.9	164.7	15.24	11.807		
3,900.0	3,826.6	3,894.5	3,774.5	14.2	16.9	17.51	-876.7	-62.8	187.5	171.9	15.61	12.010		
4,000.0	3,924.2	3,994.3	3,870.0	14.6	17.4	17.29	-905.2	-64.6	195.0	179.0	15.98	12.204		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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		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	-49.53	14.2	-16.6	21.9					
100.0	100.0	100.0	100.0	0.1	0.1	-49.53	14.2	-16.6	21.9	21.6	0.30	73.758		
200.0	200.0	200.0	200.0	0.3	0.3	-49.53	14.2	-16.6	21.9	21.2	0.65	33.889 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	132.56	14.2	-16.6	22.7	21.8	1.00	22.843		
400.0	399.9	399.9	399.9	0.7	0.7	139.02	14.2	-16.6	25.6	24.2	1.35	18.951		
500.0	499.7	499.7	499.7	0.9	0.8	146.98	14.2	-16.6	30.8	29.1	1.70	18.083		
600.0	599.3	600.1	600.1	1.1	1.0	153.35	12.9	-16.8	37.7	35.6	2.06	18.308		
700.0	698.6	700.8	700.7	1.4	1.2	157.46	9.0	-17.1	45.0	42.6	2.42	18.621		
800.0	797.5	801.6	801.3	1.7	1.4	160.18	2.4	-17.7	52.5	49.7	2.77	18.919		
900.0	896.1	902.7	901.9	2.0	1.6	162.01	-6.9	-18.6	60.1	57.0	3.14	19.171		
1,000.0	994.2	1,003.9	1,002.5	2.4	1.9	163.24	-18.9	-19.7	67.9	64.4	3.50	19.368		
1,100.0	1,091.9	1,105.5	1,102.9	2.8	2.1	163.92	-33.5	-21.0	75.0	71.1	3.88	19.305		
1,200.0	1,189.5	1,206.1	1,202.2	3.2	2.4	163.95	-50.2	-22.5	80.1	75.8	4.28	18.734		
1,300.0	1,287.2	1,306.0	1,300.6	3.6	2.7	163.91	-67.0	-24.0	85.0	80.3	4.67	18.199		
1,400.0	1,384.9	1,405.9	1,399.1	4.0	3.1	163.88	-83.9	-25.6	89.9	84.8	5.07	17.740		
1,500.0	1,482.5	1,505.8	1,497.5	4.4	3.4	163.85	-100.7	-27.1	94.8	89.3	5.47	17.341		
1,600.0	1,580.2	1,605.7	1,596.0	4.8	3.7	163.82	-117.5	-28.6	99.7	93.8	5.87	16.992		
1,700.0	1,677.9	1,705.5	1,694.4	5.2	4.0	163.80	-134.4	-30.2	104.6	98.3	6.27	16.685		
1,800.0	1,775.5	1,805.4	1,792.8	5.6	4.4	163.78	-151.2	-31.7	109.5	102.8	6.67	16.411		
1,900.0	1,873.2	1,905.3	1,891.3	6.0	4.7	163.76	-168.0	-33.2	114.4	107.3	7.08	16.167		
2,000.0	1,970.9	2,005.2	1,989.7	6.4	5.0	163.74	-184.9	-34.8	119.3	111.8	7.48	15.948		
2,100.0	2,068.5	2,105.1	2,088.2	6.8	5.4	163.72	-201.7	-36.3	124.2	116.3	7.88	15.750		
2,200.0	2,166.2	2,204.9	2,186.6	7.2	5.7	163.71	-218.5	-37.8	129.1	120.8	8.29	15.570		
2,300.0	2,263.9	2,304.8	2,285.0	7.6	6.0	163.69	-235.4	-39.3	134.0	125.3	8.70	15.406		
2,400.0	2,361.5	2,404.7	2,383.5	8.0	6.4	163.68	-252.2	-40.9	138.9	129.8	9.10	15.256		
2,500.0	2,459.2	2,504.6	2,481.9	8.5	6.7	163.67	-269.0	-42.4	143.8	134.3	9.51	15.119		
2,600.0	2,556.9	2,604.5	2,580.4	8.9	7.0	163.65	-285.9	-43.9	148.7	138.7	9.92	14.992		
2,700.0	2,654.5	2,704.3	2,678.8	9.3	7.4	163.64	-302.7	-45.5	153.6	143.2	10.32	14.875		
2,800.0	2,752.2	2,804.2	2,777.2	9.7	7.7	163.63	-319.5	-47.0	158.5	147.7	10.73	14.766		
2,900.0	2,849.9	2,904.1	2,875.7	10.1	8.1	163.62	-336.4	-48.5	163.3	152.2	11.14	14.665		
3,000.0	2,947.5	3,004.0	2,974.1	10.5	8.4	163.61	-353.2	-50.1	168.2	156.7	11.55	14.571		
3,100.0	3,045.2	3,103.9	3,072.6	10.9	8.7	163.61	-370.0	-51.6	173.1	161.2	11.96	14.483		
3,200.0	3,142.9	3,203.7	3,171.0	11.3	9.1	163.60	-386.9	-53.1	178.0	165.7	12.36	14.400		
3,300.0	3,240.5	3,303.6	3,269.4	11.8	9.4	163.59	-403.7	-54.6	182.9	170.2	12.77	14.323		
3,400.0	3,338.2	3,403.5	3,367.9	12.2	9.8	163.58	-420.5	-56.2	187.8	174.6	13.18	14.250		
3,500.0	3,435.9	3,503.4	3,466.3	12.6	10.1	163.58	-437.4	-57.7	192.7	179.1	13.59	14.182		
3,600.0	3,533.5	3,603.3	3,564.7	13.0	10.4	163.57	-454.2	-59.2	197.6	183.6	14.00	14.118 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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				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	-51.42	20.0	-25.1	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	-51.42	20.0	-25.1	32.1	31.8	0.30	108.269		
200.0	200.0	200.0	200.0	0.3	0.3	-51.42	20.0	-25.1	32.1	31.5	0.65	49.745 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	129.93	20.0	-25.1	32.9	32.0	1.00	33.082		
400.0	399.9	399.9	399.9	0.7	0.7	134.75	20.0	-25.1	35.6	34.2	1.35	26.363		
500.0	499.7	499.7	499.7	0.9	0.8	141.29	20.0	-25.1	40.5	38.8	1.71	23.695		
600.0	599.3	599.3	599.3	1.1	1.0	148.08	20.0	-25.1	48.0	45.9	2.07	23.225 SF		
700.0	698.6	699.8	699.8	1.4	1.2	153.48	18.7	-25.3	57.2	54.8	2.42	23.619		
800.0	797.5	800.7	800.6	1.7	1.4	157.08	14.8	-25.8	67.0	64.2	2.78	24.077		
900.0	896.1	901.8	901.5	2.0	1.6	159.52	8.2	-26.7	77.0	73.9	3.14	24.502		
1,000.0	994.2	1,003.2	1,002.4	2.4	1.8	161.18	-1.0	-28.0	87.3	83.8	3.51	24.861		
1,100.0	1,091.9	1,103.1	1,101.8	2.8	2.0	162.36	-12.0	-29.5	97.7	93.8	3.88	25.161		
1,200.0	1,189.5	1,202.6	1,200.6	3.2	2.2	163.32	-23.0	-31.0	108.1	103.9	4.25	25.418		
1,300.0	1,287.2	1,302.0	1,299.4	3.6	2.5	164.11	-34.1	-32.6	118.6	114.0	4.63	25.646		
1,400.0	1,384.9	1,401.4	1,398.2	4.0	2.7	164.77	-45.1	-34.1	129.1	124.1	5.00	25.849		
1,500.0	1,482.5	1,500.9	1,497.0	4.4	3.0	165.33	-56.1	-35.6	139.7	134.3	5.37	26.030		
1,600.0	1,580.2	1,600.3	1,595.8	4.8	3.2	165.81	-67.1	-37.1	150.2	144.5	5.73	26.194		
1,700.0	1,677.9	1,699.7	1,694.6	5.2	3.5	166.23	-78.1	-38.6	160.7	154.6	6.10	26.343		
1,800.0	1,775.5	1,799.2	1,793.4	5.6	3.7	166.60	-89.1	-40.1	171.3	164.8	6.47	26.478		
1,900.0	1,873.2	1,898.6	1,892.3	6.0	4.0	166.92	-100.1	-41.7	181.9	175.0	6.84	26.601		
2,000.0	1,970.9	1,998.1	1,991.1	6.4	4.2	167.21	-111.2	-43.2	192.4	185.2	7.20	26.714		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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		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	-45.52	32.4	-33.0	46.3					
100.0	100.0	100.0	100.0	0.1	0.1	-45.52	32.4	-33.0	46.3	46.0	0.30	155.939		
200.0	200.0	200.0	200.0	0.3	0.3	-45.52	32.4	-33.0	46.3	45.6	0.65	71.648 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	135.18	32.4	-33.0	47.2	46.2	1.00	47.389		
400.0	399.9	399.9	399.9	0.7	0.7	138.32	32.4	-33.0	50.0	48.7	1.35	37.091		
500.0	499.7	499.7	499.7	0.9	0.8	142.80	32.4	-33.0	55.1	53.4	1.71	32.287		
600.0	599.3	599.3	599.3	1.1	1.0	147.80	32.4	-33.0	62.6	60.6	2.07	30.330		
700.0	698.6	700.1	700.0	1.4	1.2	152.08	31.1	-33.3	71.9	69.4	2.43	29.615		
800.0	797.5	801.1	801.0	1.7	1.4	155.06	27.2	-34.0	81.6	78.8	2.79	29.241		
900.0	896.1	902.1	901.8	2.0	1.6	157.12	20.7	-35.3	91.8	88.6	3.16	29.034 SF		
1,000.0	994.2	1,001.4	1,000.8	2.4	1.8	158.97	13.4	-36.8	103.6	100.1	3.53	29.386		
1,100.0	1,091.9	1,100.4	1,099.5	2.8	2.0	160.79	6.1	-38.2	117.4	113.5	3.89	30.161		
1,200.0	1,189.5	1,199.3	1,198.2	3.2	2.2	162.25	-1.1	-39.6	131.3	127.0	4.26	30.852		
1,300.0	1,287.2	1,298.3	1,296.9	3.6	2.4	163.44	-8.4	-41.1	145.3	140.7	4.62	31.462		
1,400.0	1,384.9	1,397.3	1,395.6	4.0	2.6	164.41	-15.7	-42.5	159.4	154.4	4.98	32.003		
1,500.0	1,482.5	1,496.3	1,494.3	4.4	2.8	165.23	-23.0	-44.0	173.4	168.1	5.34	32.485		
1,600.0	1,580.2	1,595.2	1,593.0	4.8	3.0	165.92	-30.3	-45.4	187.6	181.9	5.70	32.917		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-6D (Oxy I21 Pad) - DD - Plan #2													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	300.0	300.0	0.0	0.0	-36.04	12.0	-8.7	14.9					
100.0	100.0	400.0	400.0	0.1	0.1	-36.04	12.0	-8.7	14.9	14.6	0.30	50.102		
200.0	200.0	500.0	500.0	0.3	0.3	-36.04	12.0	-8.7	14.9	14.2	0.65	23.020 CC, ES		
300.0	300.0	600.0	600.0	0.5	0.5	146.32	12.0	-8.7	15.9	14.9	1.00	16.012		
400.0	399.9	699.9	699.9	0.7	0.7	152.76	12.0	-8.7	19.3	18.0	1.35	14.360 SF		
500.0	499.7	799.7	799.7	0.9	0.8	159.52	12.0	-8.7	25.3	23.6	1.70	14.934		
600.0	599.3	898.7	898.7	1.1	1.0	165.66	13.1	-8.5	35.1	33.0	2.04	17.190		
700.0	698.6	997.8	997.8	1.4	1.2	169.97	14.9	-8.2	48.2	45.8	2.38	20.218		
800.0	797.5	1,096.5	1,096.5	1.7	1.4	172.72	16.6	-7.9	64.0	61.3	2.72	23.506		
900.0	896.1	1,194.7	1,194.7	2.0	1.5	174.55	18.3	-7.5	82.5	79.5	3.06	26.957		
1,000.0	994.2	1,292.5	1,292.4	2.4	1.7	175.82	19.9	-7.2	103.6	100.2	3.40	30.519		
1,100.0	1,091.9	1,389.8	1,389.7	2.8	1.9	176.72	21.6	-6.9	126.6	122.9	3.74	33.902		
1,200.0	1,189.5	1,487.1	1,487.0	3.2	2.1	177.35	23.3	-6.6	149.7	145.7	4.08	36.724		
1,300.0	1,287.2	1,584.3	1,584.2	3.6	2.2	177.81	25.0	-6.2	172.9	168.4	4.42	39.111		
1,400.0	1,384.9	1,681.6	1,681.5	4.0	2.4	178.16	26.6	-5.9	196.0	191.2	4.76	41.157		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-7D (Oxy I21 Pad) - DD - Plan #2													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	-33.52	25.1	-16.6	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	-33.52	25.1	-16.6	30.1	29.8	0.30	101.603		
200.0	200.0	200.0	200.0	0.3	0.3	-33.52	25.1	-16.6	30.1	29.5	0.65	46.682 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	147.38	25.1	-16.6	31.2	30.2	1.00	31.388		
400.0	399.9	399.9	399.9	0.7	0.7	150.86	25.1	-16.6	34.6	33.3	1.35	25.709		
500.0	499.7	499.7	499.7	0.9	0.8	155.34	25.1	-16.6	40.5	38.8	1.70	23.823 SF		
600.0	599.3	599.3	599.3	1.1	1.0	159.77	25.1	-16.6	48.9	46.9	2.05	23.884		
700.0	698.6	698.6	698.6	1.4	1.2	163.60	25.1	-16.6	60.1	57.7	2.40	25.085		
800.0	797.5	795.7	795.7	1.7	1.4	166.71	26.3	-16.8	75.2	72.5	2.74	27.485		
900.0	896.1	891.4	891.3	2.0	1.5	169.13	29.9	-17.3	95.5	92.4	3.07	31.091		
1,000.0	994.2	985.4	985.1	2.4	1.7	170.89	35.7	-18.1	120.8	117.4	3.40	35.534		
1,100.0	1,091.9	1,077.6	1,077.0	2.8	1.9	172.15	43.6	-19.2	150.3	146.6	3.73	40.313		
1,200.0	1,189.5	1,168.4	1,167.2	3.2	2.1	172.99	53.5	-20.6	182.3	178.2	4.06	44.912		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	Offset TVD Reference:	Offset Datum

Offset Design NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-8D (Oxy I21 Pad) - DD - Plan #2													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	-33.20	37.5	-24.5	44.8					
100.0	100.0	100.0	100.0	0.1	0.1	-33.20	37.5	-24.5	44.8	44.5	0.30	151.107		
200.0	200.0	200.0	200.0	0.3	0.3	-33.20	37.5	-24.5	44.8	44.2	0.65	69.427 CC, ES		
300.0	300.0	298.9	298.9	0.5	0.5	147.94	38.8	-24.7	47.1	46.1	0.99	47.393		
400.0	399.9	397.4	397.3	0.7	0.7	151.82	42.6	-25.1	54.1	52.7	1.34	40.235		
500.0	499.7	495.1	494.8	0.9	0.9	156.41	48.8	-25.8	66.0	64.3	1.69	39.011 SF		
600.0	599.3	591.6	591.0	1.1	1.1	160.56	57.5	-26.7	83.2	81.1	2.04	40.835		
700.0	698.6	688.6	687.4	1.4	1.3	163.87	67.8	-27.8	104.8	102.4	2.38	44.079		
800.0	797.5	785.5	783.6	1.7	1.6	166.32	78.2	-29.0	129.2	126.5	2.72	47.589		
900.0	896.1	881.6	879.2	2.0	1.8	168.17	88.6	-30.1	156.3	153.3	3.05	51.254		
1,000.0	994.2	977.0	974.1	2.4	2.0	169.60	98.9	-31.2	186.0	182.6	3.38	55.027		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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							
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	-41.94	45.5	-40.9	61.2					
100.0	100.0	100.0	100.0	0.1	0.1	-41.94	45.5	-40.9	61.2	60.9	0.30	206.304		
200.0	200.0	200.0	200.0	0.3	0.3	-41.94	45.5	-40.9	61.2	60.6	0.65	94.789	CC, ES	
300.0	300.0	300.2	300.2	0.5	0.5	137.23	44.5	-41.8	62.0	61.0	1.00	62.127		
400.0	399.9	400.3	400.3	0.7	0.7	136.10	41.5	-44.3	64.4	63.1	1.36	47.215		
500.0	499.7	500.4	500.1	0.9	0.9	134.40	36.6	-48.6	68.5	66.7	1.76	38.961		
600.0	599.3	600.3	599.6	1.1	1.1	132.33	29.6	-54.6	74.3	72.1	2.19	33.882		
700.0	698.6	700.0	698.6	1.4	1.4	130.09	20.7	-62.2	81.8	79.1	2.68	30.537		
800.0	797.5	799.5	797.0	1.7	1.7	127.86	9.9	-71.5	91.1	87.9	3.23	28.228		
900.0	896.1	898.7	894.8	2.0	2.0	125.73	-2.8	-82.4	102.2	98.4	3.85	26.578		
1,000.0	994.2	997.5	991.8	2.4	2.4	123.77	-17.4	-95.0	115.2	110.6	4.54	25.372		
1,100.0	1,091.9	1,096.1	1,087.9	2.8	2.8	121.89	-33.9	-109.1	129.5	124.2	5.29	24.465		
1,200.0	1,189.5	1,194.2	1,183.0	3.2	3.2	119.45	-52.1	-124.7	144.5	138.4	6.11	23.657		
1,300.0	1,287.2	1,291.9	1,277.1	3.6	3.7	116.59	-72.1	-141.9	160.2	153.2	6.97	22.991		
1,400.0	1,384.9	1,389.0	1,369.9	4.0	4.2	113.47	-93.8	-160.5	176.8	169.0	7.86	22.497		
1,500.0	1,482.5	1,485.4	1,461.3	4.4	4.8	110.21	-117.0	-180.5	194.8	186.0	8.78	22.188	SF	

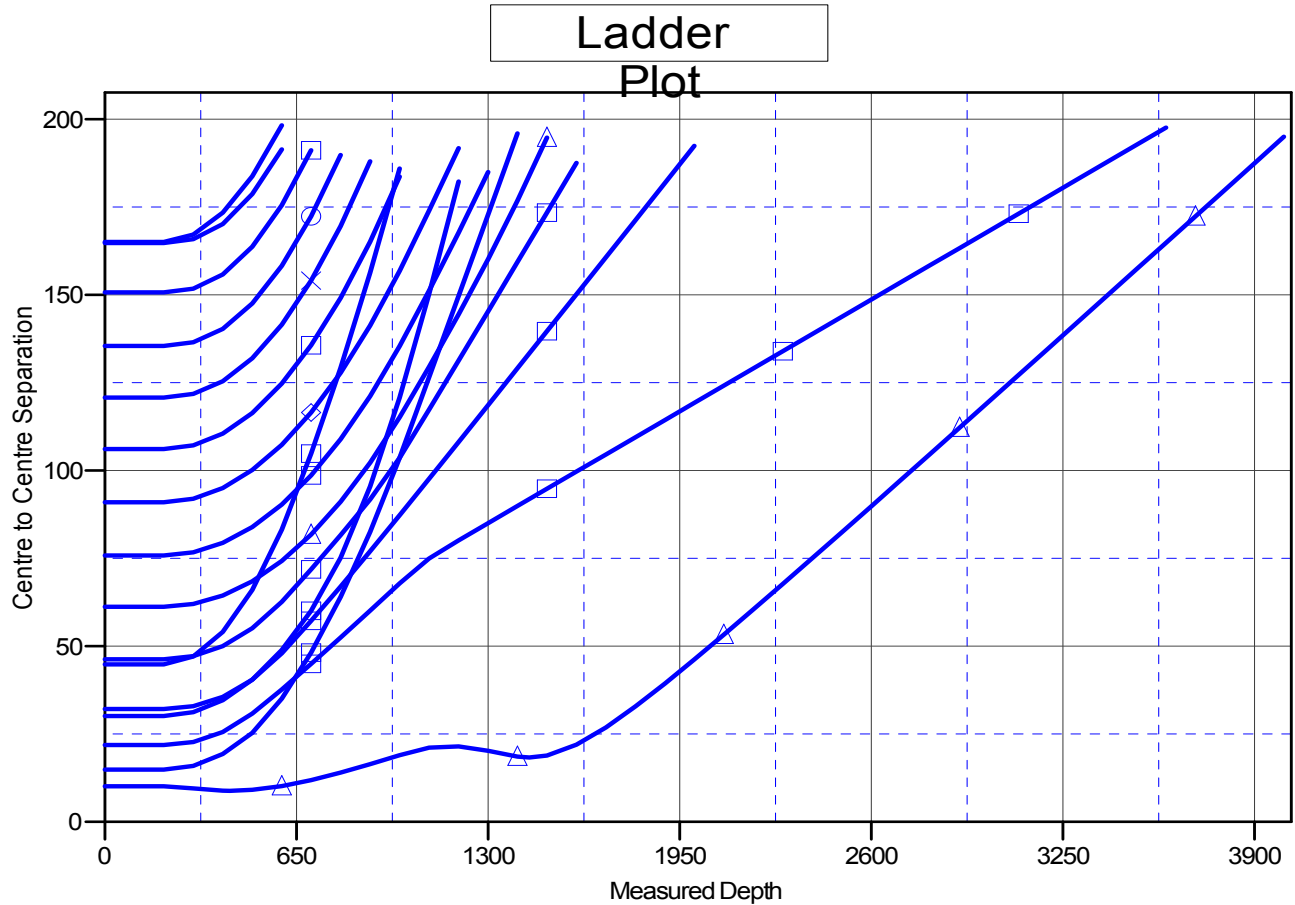
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-2D (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 21-2D (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 #2	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 21-2D (Oxy I21 Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.71°



LEGEND

▲ Oxy 21-9D (Oxy I21 Pad), DD, Plan #1 V0	✕ Oxy 21-13D (Oxy I21 Pad), DD, Plan #1 V0	▣ Oxy 21-6D (Oxy I21 Pad), DD, Plan #2 V0
▣ Oxy 21-5D (Oxy I21 Pad), DD, Plan #1 V0	● Oxy 21-14D (Oxy I21 Pad), DD, Plan #1 V0	▣ Oxy 21-15D (Oxy I21 Pad), DD, Plan #1 V0
▣ Oxy 21-10D (Oxy I21 Pad), DD, Plan #1 V0	▣ Oxy 21-14D (Oxy I21 Pad), DD, Plan #1 V0	▣ Oxy 21-12D (Oxy I21 Pad), DD, Plan #1 V0
▣ Oxy 21-3D (Oxy I21 Pad), DD, Plan #1 V0	✕ Oxy 21-17D (Oxy I21 pad), DD, Plan #1 V0	◆ Oxy 21-11D (Oxy I21 Pad), DD, Plan #1 V0
▲ Oxy 21-1D (Oxy I21 Pad), DD, Plan #1 V0	▣ Oxy 21-7D (Oxy I21 Pad), DD, Plan #2 V0	
▣ Oxy 21-8D (Oxy I21 Pad), DD, Plan #2 V0	▲ Oxy 21-16D (Oxy I21 Pad), DD, Plan #1 V0	