

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-0910B
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4854.3usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4854.3usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S21-T10N-R58W			
Site Position:		Northing:	1,549,494.62 usft	Latitude:	40.830272
From:	Lat/Long	Easting:	3,452,846.68 usft	Longitude:	-103.863561
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.06 °

Well	Razor #21B-0910B					
Well Position	+N/-S	0.0 usft	Northing:	1,549,441.95 usft	Latitude:	40.830200
	+E/-W	0.0 usft	Easting:	3,451,413.05 usft	Longitude:	-103.868744
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,837.3 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/20/2013	8.14	67.47	53,243

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	359.39

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	4.00	354.60	899.8	6.9	-0.7	2.00	2.00	0.00	354.60	
5,537.9	4.00	354.60	5,526.4	329.0	-31.1	0.00	0.00	0.00	0.00	
6,319.7	90.00	354.60	6,011.0	846.3	-80.0	11.00	11.00	0.00	0.00	
6,499.7	90.00	360.00	6,011.0	1,026.1	-88.5	3.00	0.00	3.00	90.00	
13,751.2	90.00	360.00	6,011.0	8,277.5	-88.5	0.00	0.00	0.00	0.00	21B-0910B BHL P2

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Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 328' FNL, 2,128' FEL
100.0	0.00	0.00	100.0	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	KOP @ 700'
800.0	2.00	354.60	800.0	1.7	-0.2	1.7	2.00	2.00	
900.0	4.00	354.60	899.8	6.9	-0.7	7.0	2.00	2.00	EOB @ 4° INC
1,000.0	4.00	354.60	999.6	13.9	-1.3	13.9	0.00	0.00	
1,100.0	4.00	354.60	1,099.4	20.8	-2.0	20.9	0.00	0.00	
1,200.0	4.00	354.60	1,199.1	27.8	-2.6	27.8	0.00	0.00	
1,300.0	4.00	354.60	1,298.9	34.7	-3.3	34.8	0.00	0.00	
1,400.0	4.00	354.60	1,398.6	41.7	-3.9	41.7	0.00	0.00	
1,500.0	4.00	354.60	1,498.4	48.6	-4.6	48.7	0.00	0.00	
1,600.0	4.00	354.60	1,598.1	55.6	-5.3	55.6	0.00	0.00	
1,620.9	4.00	354.60	1,619.0	57.0	-5.4	57.1	0.00	0.00	Pierre
1,700.0	4.00	354.60	1,697.9	62.5	-5.9	62.6	0.00	0.00	Surface Casing
1,800.0	4.00	354.60	1,797.6	69.4	-6.6	69.5	0.00	0.00	
1,900.0	4.00	354.60	1,897.4	76.4	-7.2	76.5	0.00	0.00	
2,000.0	4.00	354.60	1,997.2	83.3	-7.9	83.4	0.00	0.00	
2,100.0	4.00	354.60	2,096.9	90.3	-8.5	90.4	0.00	0.00	
2,200.0	4.00	354.60	2,196.7	97.2	-9.2	97.3	0.00	0.00	
2,300.0	4.00	354.60	2,296.4	104.2	-9.8	104.3	0.00	0.00	
2,400.0	4.00	354.60	2,396.2	111.1	-10.5	111.2	0.00	0.00	
2,500.0	4.00	354.60	2,495.9	118.1	-11.2	118.2	0.00	0.00	
2,600.0	4.00	354.60	2,595.7	125.0	-11.8	125.1	0.00	0.00	
2,700.0	4.00	354.60	2,695.5	132.0	-12.5	132.1	0.00	0.00	
2,800.0	4.00	354.60	2,795.2	138.9	-13.1	139.0	0.00	0.00	
2,900.0	4.00	354.60	2,895.0	145.8	-13.8	146.0	0.00	0.00	
3,000.0	4.00	354.60	2,994.7	152.8	-14.4	152.9	0.00	0.00	
3,100.0	4.00	354.60	3,094.5	159.7	-15.1	159.9	0.00	0.00	
3,200.0	4.00	354.60	3,194.2	166.7	-15.8	166.8	0.00	0.00	
3,300.0	4.00	354.60	3,294.0	173.6	-16.4	173.8	0.00	0.00	
3,400.0	4.00	354.60	3,393.7	180.6	-17.1	180.7	0.00	0.00	
3,500.0	4.00	354.60	3,493.5	187.5	-17.7	187.7	0.00	0.00	
3,600.0	4.00	354.60	3,593.3	194.5	-18.4	194.6	0.00	0.00	
3,700.0	4.00	354.60	3,693.0	201.4	-19.0	201.6	0.00	0.00	
3,800.0	4.00	354.60	3,792.8	208.3	-19.7	208.5	0.00	0.00	
3,900.0	4.00	354.60	3,892.5	215.3	-20.4	215.5	0.00	0.00	
4,000.0	4.00	354.60	3,992.3	222.2	-21.0	222.4	0.00	0.00	
4,100.0	4.00	354.60	4,092.0	229.2	-21.7	229.4	0.00	0.00	
4,200.0	4.00	354.60	4,191.8	236.1	-22.3	236.3	0.00	0.00	
4,300.0	4.00	354.60	4,291.6	243.1	-23.0	243.3	0.00	0.00	
4,400.0	4.00	354.60	4,391.3	250.0	-23.6	250.3	0.00	0.00	
4,500.0	4.00	354.60	4,491.1	257.0	-24.3	257.2	0.00	0.00	
4,600.0	4.00	354.60	4,590.8	263.9	-24.9	264.2	0.00	0.00	
4,700.0	4.00	354.60	4,690.6	270.8	-25.6	271.1	0.00	0.00	
4,800.0	4.00	354.60	4,790.3	277.8	-26.3	278.1	0.00	0.00	
4,900.0	4.00	354.60	4,890.1	284.7	-26.9	285.0	0.00	0.00	

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Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.0	4.00	354.60	4,989.9	291.7	-27.6	292.0	0.00	0.00	
5,100.0	4.00	354.60	5,089.6	298.6	-28.2	298.9	0.00	0.00	
5,200.0	4.00	354.60	5,189.4	305.6	-28.9	305.9	0.00	0.00	
5,300.0	4.00	354.60	5,289.1	312.5	-29.5	312.8	0.00	0.00	
5,400.0	4.00	354.60	5,388.9	319.5	-30.2	319.8	0.00	0.00	
5,500.0	4.00	354.60	5,488.6	326.4	-30.9	326.7	0.00	0.00	
5,537.9	4.00	354.60	5,526.4	329.0	-31.1	329.3	0.00	0.00	Start 11° Build
5,550.0	5.33	354.60	5,538.5	330.0	-31.2	330.3	11.00	11.00	
5,600.0	10.83	354.60	5,588.0	337.0	-31.9	337.3	11.00	11.00	
5,650.0	16.33	354.60	5,636.6	348.7	-33.0	349.0	11.00	11.00	
5,700.0	21.83	354.60	5,683.8	365.0	-34.5	365.3	11.00	11.00	
5,750.0	27.33	354.60	5,729.3	385.7	-36.5	386.0	11.00	11.00	
5,800.0	32.83	354.60	5,772.5	410.6	-38.8	411.0	11.00	11.00	
5,850.0	38.33	354.60	5,813.2	439.6	-41.5	440.0	11.00	11.00	
5,900.0	43.83	354.60	5,850.8	472.3	-44.6	472.7	11.00	11.00	
5,950.0	49.33	354.60	5,885.2	508.4	-48.1	508.9	11.00	11.00	
5,954.3	49.81	354.60	5,888.0	511.7	-48.4	512.2	11.00	11.00	Niobrara
6,000.0	54.83	354.60	5,915.9	547.6	-51.8	548.2	11.00	11.00	
6,050.0	60.33	354.60	5,942.7	589.7	-55.7	590.2	11.00	11.00	
6,100.0	65.83	354.60	5,965.3	634.0	-59.9	634.6	11.00	11.00	
6,150.0	71.33	354.60	5,983.6	680.3	-64.3	681.0	11.00	11.00	
6,200.0	76.83	354.60	5,997.3	728.2	-68.8	728.9	11.00	11.00	
6,250.0	82.33	354.60	6,006.3	777.1	-73.5	777.9	11.00	11.00	
6,300.0	87.83	354.60	6,010.6	826.7	-78.1	827.5	11.00	11.00	
6,319.7	90.00	354.60	6,011.0	846.3	-80.0	847.1	11.00	11.00	LP @ 6,011' TVD, 90° INC - 7" - 520' FSL, 2,20
6,400.0	90.00	357.01	6,011.0	926.4	-85.9	927.3	3.00	0.00	
6,499.7	90.00	360.00	6,011.0	1,026.1	-88.5	1,026.9	3.00	0.00	EOT @ 360° AZ
6,600.0	90.00	360.00	6,011.0	1,126.3	-88.5	1,127.2	0.00	0.00	
6,700.0	90.00	360.00	6,011.0	1,226.3	-88.5	1,227.2	0.00	0.00	
6,800.0	90.00	360.00	6,011.0	1,326.3	-88.5	1,327.2	0.00	0.00	
6,900.0	90.00	360.00	6,011.0	1,426.3	-88.5	1,427.2	0.00	0.00	
7,000.0	90.00	360.00	6,011.0	1,526.3	-88.5	1,527.2	0.00	0.00	
7,100.0	90.00	360.00	6,011.0	1,626.3	-88.5	1,627.2	0.00	0.00	
7,200.0	90.00	360.00	6,011.0	1,726.3	-88.5	1,727.2	0.00	0.00	
7,300.0	90.00	360.00	6,011.0	1,826.3	-88.5	1,827.2	0.00	0.00	
7,400.0	90.00	360.00	6,011.0	1,926.3	-88.5	1,927.2	0.00	0.00	
7,500.0	90.00	360.00	6,011.0	2,026.3	-88.5	2,027.2	0.00	0.00	
7,600.0	90.00	360.00	6,011.0	2,126.3	-88.5	2,127.2	0.00	0.00	
7,700.0	90.00	360.00	6,011.0	2,226.3	-88.5	2,227.2	0.00	0.00	
7,800.0	90.00	360.00	6,011.0	2,326.3	-88.5	2,327.2	0.00	0.00	
7,900.0	90.00	360.00	6,011.0	2,426.3	-88.5	2,427.2	0.00	0.00	
8,000.0	90.00	360.00	6,011.0	2,526.3	-88.5	2,527.1	0.00	0.00	
8,100.0	90.00	360.00	6,011.0	2,626.3	-88.5	2,627.1	0.00	0.00	
8,200.0	90.00	360.00	6,011.0	2,726.3	-88.5	2,727.1	0.00	0.00	
8,300.0	90.00	360.00	6,011.0	2,826.3	-88.5	2,827.1	0.00	0.00	
8,400.0	90.00	360.00	6,011.0	2,926.3	-88.5	2,927.1	0.00	0.00	
8,500.0	90.00	360.00	6,011.0	3,026.3	-88.5	3,027.1	0.00	0.00	
8,600.0	90.00	360.00	6,011.0	3,126.3	-88.5	3,127.1	0.00	0.00	
8,700.0	90.00	360.00	6,011.0	3,226.3	-88.5	3,227.1	0.00	0.00	
8,800.0	90.00	360.00	6,011.0	3,326.3	-88.5	3,327.1	0.00	0.00	
8,900.0	90.00	360.00	6,011.0	3,426.3	-88.5	3,427.1	0.00	0.00	
9,000.0	90.00	360.00	6,011.0	3,526.3	-88.5	3,527.1	0.00	0.00	

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Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,100.0	90.00	360.00	6,011.0	3,626.3	-88.5	3,627.1	0.00	0.00	
9,200.0	90.00	360.00	6,011.0	3,726.3	-88.5	3,727.1	0.00	0.00	
9,300.0	90.00	360.00	6,011.0	3,826.3	-88.5	3,827.1	0.00	0.00	
9,400.0	90.00	360.00	6,011.0	3,926.3	-88.5	3,927.1	0.00	0.00	
9,500.0	90.00	360.00	6,011.0	4,026.3	-88.5	4,027.1	0.00	0.00	
9,600.0	90.00	360.00	6,011.0	4,126.3	-88.5	4,127.1	0.00	0.00	
9,700.0	90.00	360.00	6,011.0	4,226.3	-88.5	4,227.1	0.00	0.00	
9,800.0	90.00	360.00	6,011.0	4,326.3	-88.5	4,327.0	0.00	0.00	
9,900.0	90.00	360.00	6,011.0	4,426.3	-88.5	4,427.0	0.00	0.00	
10,000.0	90.00	360.00	6,011.0	4,526.3	-88.5	4,527.0	0.00	0.00	
10,100.0	90.00	360.00	6,011.0	4,626.3	-88.5	4,627.0	0.00	0.00	
10,200.0	90.00	360.00	6,011.0	4,726.3	-88.5	4,727.0	0.00	0.00	
10,300.0	90.00	360.00	6,011.0	4,826.3	-88.5	4,827.0	0.00	0.00	
10,400.0	90.00	360.00	6,011.0	4,926.3	-88.5	4,927.0	0.00	0.00	
10,500.0	90.00	360.00	6,011.0	5,026.3	-88.5	5,027.0	0.00	0.00	
10,600.0	90.00	360.00	6,011.0	5,126.3	-88.5	5,127.0	0.00	0.00	
10,700.0	90.00	360.00	6,011.0	5,226.3	-88.5	5,227.0	0.00	0.00	
10,800.0	90.00	360.00	6,011.0	5,326.3	-88.5	5,327.0	0.00	0.00	
10,900.0	90.00	360.00	6,011.0	5,426.3	-88.5	5,427.0	0.00	0.00	
11,000.0	90.00	360.00	6,011.0	5,526.3	-88.5	5,527.0	0.00	0.00	
11,100.0	90.00	360.00	6,011.0	5,626.3	-88.5	5,627.0	0.00	0.00	
11,200.0	90.00	360.00	6,011.0	5,726.3	-88.5	5,727.0	0.00	0.00	
11,300.0	90.00	360.00	6,011.0	5,826.3	-88.5	5,827.0	0.00	0.00	
11,327.7	90.00	360.00	6,011.0	5,854.0	-88.5	5,854.7	0.00	0.00	IN - 1,550' Radius
11,400.0	90.00	360.00	6,011.0	5,926.3	-88.5	5,927.0	0.00	0.00	
11,500.0	90.00	360.00	6,011.0	6,026.3	-88.5	6,026.9	0.00	0.00	
11,600.0	90.00	360.00	6,011.0	6,126.3	-88.5	6,126.9	0.00	0.00	
11,700.0	90.00	360.00	6,011.0	6,226.3	-88.5	6,226.9	0.00	0.00	
11,800.0	90.00	360.00	6,011.0	6,326.3	-88.5	6,326.9	0.00	0.00	
11,900.0	90.00	360.00	6,011.0	6,426.3	-88.5	6,426.9	0.00	0.00	
12,000.0	90.00	360.00	6,011.0	6,526.3	-88.5	6,526.9	0.00	0.00	
12,100.0	90.00	360.00	6,011.0	6,626.3	-88.5	6,626.9	0.00	0.00	
12,200.0	90.00	360.00	6,011.0	6,726.3	-88.5	6,726.9	0.00	0.00	
12,300.0	90.00	360.00	6,011.0	6,826.3	-88.5	6,826.9	0.00	0.00	
12,400.0	90.00	360.00	6,011.0	6,926.3	-88.5	6,926.9	0.00	0.00	
12,500.0	90.00	360.00	6,011.0	7,026.3	-88.5	7,026.9	0.00	0.00	
12,600.0	90.00	360.00	6,011.0	7,126.3	-88.5	7,126.9	0.00	0.00	
12,700.0	90.00	360.00	6,011.0	7,226.3	-88.5	7,226.9	0.00	0.00	
12,800.0	90.00	360.00	6,011.0	7,326.3	-88.5	7,326.9	0.00	0.00	
12,852.7	90.00	360.00	6,011.0	7,379.0	-88.5	7,379.6	0.00	0.00	OUT - 1,550' Radius
12,900.0	90.00	360.00	6,011.0	7,426.3	-88.5	7,426.9	0.00	0.00	
13,000.0	90.00	360.00	6,011.0	7,526.3	-88.5	7,526.9	0.00	0.00	
13,100.0	90.00	360.00	6,011.0	7,626.3	-88.5	7,626.9	0.00	0.00	
13,200.0	90.00	360.00	6,011.0	7,726.3	-88.5	7,726.9	0.00	0.00	
13,300.0	90.00	360.00	6,011.0	7,826.3	-88.5	7,826.8	0.00	0.00	
13,400.0	90.00	360.00	6,011.0	7,926.3	-88.5	7,926.8	0.00	0.00	
13,500.0	90.00	360.00	6,011.0	8,026.3	-88.5	8,026.8	0.00	0.00	
13,600.0	90.00	360.00	6,011.0	8,126.3	-88.5	8,126.8	0.00	0.00	
13,700.0	90.00	360.00	6,011.0	8,226.3	-88.5	8,226.8	0.00	0.00	
13,751.2	90.00	360.00	6,011.0	8,277.5	-88.5	8,278.0	0.00	0.00	BHL - 2,558' FSL, 2,145' FEL - TD @ 13,751.2'

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-0910B
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4854.3usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4854.3usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
21B-0910B BHL P2	0.00	1.05	6,011.0	8,277.5	-88.5	1,557,716.44	3,451,172.27	40.852919	-103.869064
- plan hits target center									
- Point									
21B-0910B TGT P2	0.00	1.05	6,011.0	7,777.6	-85.5	1,557,216.70	3,451,184.51	40.851547	-103.869053
- plan misses target center by 3.0usft at 13251.3usft MD (6011.0 TVD, 7777.6 N, -88.5 E)									
- Point									
21B-0910B TGT	0.00	1.05	5,878.5	7,777.6	-85.5	1,557,216.70	3,451,184.51	40.851547	-103.869053
- plan misses target center by 132.5usft at 13251.3usft MD (6011.0 TVD, 7777.6 N, -88.5 E)									
- Point									
21B-0910B BHL	0.00	1.05	5,878.5	8,277.5	-88.5	1,557,716.44	3,451,172.27	40.852919	-103.869064
- plan misses target center by 132.5usft at 13751.2usft MD (6011.0 TVD, 8277.5 N, -88.5 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(")	(")	
6,319.7	6,011.0	7" - 520' FSL, 2,200' FEL	0	0	
1,700.0	1,697.9	Surface Casing	0	0	

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
1,620.9	1,619.0	Pierre			
5,954.3	5,888.0	Niobrara			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
0.5	0.5	0.0	0.0	SH - 328' FNL, 2,128' FEL	
700.0	700.0	0.0	0.0	KOP @ 700'	
900.0	899.8	6.9	-0.7	EOB @ 4° INC	
5,537.9	5,526.4	329.0	-31.1	Start 11° Build	
6,319.7	6,011.0	846.3	-80.0	LP @ 6,011' TVD, 90° INC	
6,499.7	6,011.0	1,026.1	-88.5	EOT @ 360° AZ	
11,327.7	6,011.0	5,854.0	-88.5	IN - 1,550' Radius	
12,852.7	6,011.0	7,379.0	-88.5	OUT - 1,550' Radius	
13,751.2	6,011.0	8,277.5	-88.5	BHL - 2,558' FSL, 2,145' FEL	
13,751.2	6,011.0	8,277.5	-88.5	TD @ 13,751.2' MD	

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21B-0910B

HZ

Plan #2

Anticollision Report

02 April, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users 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 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	4/2/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,751.2	Plan #2 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S10-T10N-R58W						
FREGEAU 2 (EXISTING) - CREST WELL - NO SURVEY	12,086.5	6,106.7	1,351.2	1,217.6	10.115	CC
FREGEAU 2 (EXISTING) - CREST WELL - NO SURVEY	12,100.0	6,106.7	1,351.3	1,217.5	10.096	ES
FREGEAU 2 (EXISTING) - CREST WELL - NO SURVEY	12,300.0	6,106.7	1,368.0	1,230.3	9.937	SF
S21-T10N-R58W						
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL	12,089.4	6,106.7	1,350.1	1,209.7	9.617	CC
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL	12,100.0	6,106.7	1,350.2	1,209.6	9.604	ES
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL	12,300.0	6,106.7	1,366.5	1,222.0	9.462	SF
Razor #21A-0913A - HZ - Plan #2	13,751.2	13,663.2	995.4	679.6	3.153	CC, ES, SF
Razor #21A-0914B - HZ - Plan #2	6,210.9	6,305.2	1,316.2	1,276.6	33.199	CC
Razor #21A-0914B - HZ - Plan #2	13,751.2	13,722.9	1,319.6	1,002.9	4.166	ES, SF
Razor #21B-0909A - HZ - Plan #2	500.0	500.0	34.6	32.6	17.430	CC, ES
Razor #21B-0909A - HZ - Plan #2	13,751.2	13,705.5	343.2	36.7	1.120	Level 2, SF
Razor #21B-0911A - HZ - Plan #2	700.0	700.0	32.1	29.2	11.132	CC
Razor #21B-0911A - HZ - Plan #2	800.0	800.0	32.3	29.0	9.697	ES
Razor #21B-0911A - HZ - Plan #2	13,751.2	13,694.0	342.6	36.5	1.119	Level 2, SF
Razor #21B-0912B - HZ - Plan #2	700.0	700.0	65.3	62.4	22.648	CC
Razor #21B-0912B - HZ - Plan #2	800.0	800.0	65.5	62.2	19.656	ES
Razor #21B-0912B - HZ - Plan #2	13,751.2	13,870.6	660.1	345.2	2.096	SF
Razor #21B-2809A - HZ - Plan #1	700.0	699.5	114.3	111.4	39.644	CC
Razor #21B-2809A - HZ - Plan #1	800.0	799.5	114.5	111.1	34.355	ES
Razor #21B-2809A - HZ - Plan #1	1,900.0	1,893.2	150.2	142.0	18.290	SF
Razor #21B-2810B - HZ - Plan #1	700.0	699.5	165.5	162.6	57.402	CC, ES
Razor #21B-2810B - HZ - Plan #1	5,400.0	5,349.1	738.3	714.3	30.815	SF
Razor #21B-2811A - HZ - Plan #1	500.0	499.5	180.4	178.5	90.942	CC, ES
Razor #21B-2811A - HZ - Plan #1	4,700.0	4,657.9	613.9	593.0	29.265	SF
Razor #21B-2812B - HZ - Plan #1	700.0	699.5	226.4	223.6	78.540	CC, ES
Razor #21B-2812B - HZ - Plan #1	5,400.0	5,345.3	768.4	744.4	32.058	SF
Razor #21C-0906B - HZ - Plan #2	6,298.0	6,209.0	1,340.5	1,301.0	33.958	CC
Razor #21C-0906B - HZ - Plan #2	13,751.2	13,789.7	1,344.0	1,026.3	4.231	ES, SF
Razor #21C-0907A - HZ - Plan #2	13,751.2	13,722.7	1,019.1	702.3	3.218	CC, ES, SF
Razor #21C-0908B - HZ - Plan #2	13,751.2	13,908.0	684.7	366.6	2.153	CC, ES, SF

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - FREGEAU 2 (EXISTING) - CREST WELL - NO SURVEYS												Offset Site Error: 0.0 usft	
Survey Program: 6860-ISCWSA MWD												Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,400.0	6,011.0	6,106.7	6,106.7	113.6	6.9	90.00	6,612.9	1,262.7	1,515.6	1,395.1	120.48	12.580	
11,500.0	6,011.0	6,106.7	6,106.7	115.5	6.9	90.00	6,612.9	1,262.7	1,473.0	1,350.6	122.39	12.036	
11,600.0	6,011.0	6,106.7	6,106.7	117.5	6.9	90.00	6,612.9	1,262.7	1,436.1	1,311.8	124.29	11.554	
11,700.0	6,011.0	6,106.7	6,106.7	119.4	6.9	90.00	6,612.9	1,262.7	1,405.4	1,279.2	126.20	11.136	
11,800.0	6,011.0	6,106.7	6,106.7	121.3	6.9	90.00	6,612.9	1,262.7	1,381.3	1,253.2	128.11	10.782	
11,900.0	6,011.0	6,106.7	6,106.7	123.2	6.9	90.00	6,612.9	1,262.7	1,364.0	1,234.0	130.02	10.491	
12,000.0	6,011.0	6,106.7	6,106.7	125.1	6.9	90.00	6,612.9	1,262.7	1,354.0	1,222.1	131.93	10.263	
12,086.5	6,011.0	6,106.7	6,106.7	126.7	6.9	90.00	6,612.9	1,262.7	1,351.2	1,217.6	133.58	10.115 CC	
12,100.0	6,011.0	6,106.7	6,106.7	127.0	6.9	90.00	6,612.9	1,262.7	1,351.3	1,217.5	133.84	10.096 ES	
12,200.0	6,011.0	6,106.7	6,106.7	128.9	6.9	90.00	6,612.9	1,262.7	1,356.0	1,220.2	135.75	9.989	
12,300.0	6,011.0	6,106.7	6,106.7	130.8	6.9	90.00	6,612.9	1,262.7	1,368.0	1,230.3	137.66	9.937 SF	
12,400.0	6,011.0	6,106.7	6,106.7	132.7	6.9	90.00	6,612.9	1,262.7	1,387.1	1,247.5	139.57	9.938	
12,500.0	6,011.0	6,106.7	6,106.7	134.6	6.9	90.00	6,612.9	1,262.7	1,413.1	1,271.6	141.49	9.987	
12,600.0	6,011.0	6,106.7	6,106.7	136.6	6.9	90.00	6,612.9	1,262.7	1,445.5	1,302.1	143.40	10.080	
12,700.0	6,011.0	6,106.7	6,106.7	138.5	6.9	90.00	6,612.9	1,262.7	1,484.0	1,338.7	145.31	10.213	
12,800.0	6,011.0	6,106.7	6,106.7	140.4	6.9	90.00	6,612.9	1,262.7	1,528.0	1,380.8	147.22	10.379	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
11,400.0	6,011.0	6,106.7	6,106.7	113.6	13.6	90.00	6,615.7	1,261.6	1,515.9	1,388.7	127.23	11.915		
11,500.0	6,011.0	6,106.7	6,106.7	115.5	13.6	90.00	6,615.7	1,261.6	1,473.2	1,344.0	129.14	11.408		
11,600.0	6,011.0	6,106.7	6,106.7	117.5	13.6	90.00	6,615.7	1,261.6	1,436.1	1,305.0	131.04	10.959		
11,700.0	6,011.0	6,106.7	6,106.7	119.4	13.6	90.00	6,615.7	1,261.6	1,405.2	1,272.2	132.95	10.569		
11,800.0	6,011.0	6,106.7	6,106.7	121.3	13.6	90.00	6,615.7	1,261.6	1,380.8	1,245.9	134.86	10.239		
11,900.0	6,011.0	6,106.7	6,106.7	123.2	13.6	90.00	6,615.7	1,261.6	1,363.3	1,226.6	136.77	9.968		
12,000.0	6,011.0	6,106.7	6,106.7	125.1	13.6	90.00	6,615.7	1,261.6	1,353.1	1,214.4	138.68	9.757		
12,089.4	6,011.0	6,106.7	6,106.7	126.8	13.6	90.00	6,615.7	1,261.6	1,350.1	1,209.7	140.39	9.617 CC		
12,100.0	6,011.0	6,106.7	6,106.7	127.0	13.6	90.00	6,615.7	1,261.6	1,350.2	1,209.6	140.59	9.604 ES		
12,200.0	6,011.0	6,106.7	6,106.7	128.9	13.6	90.00	6,615.7	1,261.6	1,354.6	1,212.1	142.50	9.506		
12,300.0	6,011.0	6,106.7	6,106.7	130.8	13.6	90.00	6,615.7	1,261.6	1,366.5	1,222.0	144.41	9.462 SF		
12,400.0	6,011.0	6,106.7	6,106.7	132.7	13.6	90.00	6,615.7	1,261.6	1,385.4	1,239.1	146.32	9.468		
12,500.0	6,011.0	6,106.7	6,106.7	134.6	13.6	90.00	6,615.7	1,261.6	1,411.2	1,263.0	148.23	9.520		
12,600.0	6,011.0	6,106.7	6,106.7	136.6	13.6	90.00	6,615.7	1,261.6	1,443.5	1,293.3	150.15	9.614		
12,700.0	6,011.0	6,106.7	6,106.7	138.5	13.6	90.00	6,615.7	1,261.6	1,481.8	1,329.7	152.06	9.745		
12,800.0	6,011.0	6,106.7	6,106.7	140.4	13.6	90.00	6,615.7	1,261.6	1,525.7	1,371.7	153.97	9.909		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0913A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.83	26.3	1,285.2	1,285.5					
100.0	100.0	94.6	94.6	0.1	0.1	88.83	26.3	1,285.2	1,285.5	1,285.3	0.18	7,081.687		
200.0	200.0	194.6	194.6	0.3	0.3	88.83	26.3	1,285.2	1,285.5	1,284.8	0.62	2,060.196		
300.0	300.0	294.6	294.6	0.5	0.5	88.83	26.3	1,285.2	1,285.5	1,284.4	1.07	1,197.468		
400.0	400.0	394.6	394.6	0.8	0.8	88.83	26.3	1,285.2	1,285.5	1,283.9	1.52	844.024		
500.0	500.0	494.6	494.6	1.0	1.0	88.83	26.3	1,285.2	1,285.5	1,283.5	1.97	651.676		
600.0	600.0	609.6	609.6	1.2	1.2	88.74	28.2	1,284.5	1,284.9	1,282.5	2.46	523.368		
700.0	700.0	721.8	721.6	1.4	1.5	88.47	34.3	1,282.4	1,283.2	1,280.2	2.94	437.032		
800.0	800.0	821.6	821.2	1.7	1.7	93.69	40.9	1,280.2	1,281.2	1,277.8	3.40	377.360		
900.0	899.8	921.6	920.9	1.9	2.0	93.66	47.5	1,277.9	1,279.5	1,275.6	3.86	331.434		
1,000.0	999.6	1,021.6	1,020.6	2.1	2.2	93.67	54.1	1,275.6	1,277.8	1,273.5	4.34	294.760		
1,100.0	1,099.4	1,121.6	1,120.4	2.4	2.5	93.69	60.7	1,273.3	1,276.2	1,271.4	4.82	264.908		
1,200.0	1,199.1	1,221.6	1,220.1	2.6	2.7	93.70	67.2	1,271.1	1,274.6	1,269.3	5.31	240.240		
1,300.0	1,298.9	1,321.5	1,319.9	2.8	3.0	93.71	73.8	1,268.8	1,272.9	1,267.1	5.80	219.569		
1,400.0	1,398.6	1,421.5	1,419.6	3.1	3.2	93.73	80.4	1,266.5	1,271.3	1,265.0	6.29	202.031		
1,500.0	1,498.4	1,521.5	1,519.4	3.3	3.5	93.74	87.0	1,264.2	1,269.7	1,262.9	6.79	186.983		
1,600.0	1,598.1	1,621.5	1,619.1	3.6	3.7	93.75	93.6	1,262.0	1,268.1	1,260.8	7.29	173.944		
1,700.0	1,697.9	1,721.5	1,718.8	3.8	4.0	93.77	100.2	1,259.7	1,266.4	1,258.6	7.79	162.544		
1,800.0	1,797.6	1,821.5	1,818.6	4.1	4.2	93.78	106.8	1,257.4	1,264.8	1,256.5	8.29	152.498		
1,900.0	1,897.4	1,921.5	1,918.3	4.3	4.5	93.79	113.4	1,255.1	1,263.2	1,254.4	8.80	143.582		
2,000.0	1,997.2	2,021.5	2,018.1	4.6	4.7	93.81	120.0	1,252.9	1,261.6	1,252.3	9.30	135.618		
2,100.0	2,096.9	2,121.4	2,117.8	4.8	5.0	93.82	126.6	1,250.6	1,259.9	1,250.1	9.81	128.463		
2,200.0	2,196.7	2,221.4	2,217.6	5.1	5.2	93.84	133.2	1,248.3	1,258.3	1,248.0	10.31	122.002		
2,300.0	2,296.4	2,321.4	2,317.3	5.3	5.5	93.85	139.8	1,246.1	1,256.7	1,245.9	10.82	116.139		
2,400.0	2,396.2	2,421.4	2,417.0	5.6	5.8	93.86	146.4	1,243.8	1,255.1	1,243.7	11.33	110.796		
2,500.0	2,495.9	2,521.4	2,516.8	5.9	6.0	93.88	153.0	1,241.5	1,253.4	1,241.6	11.84	105.906		
2,600.0	2,595.7	2,621.4	2,616.5	6.1	6.3	93.89	159.6	1,239.2	1,251.8	1,239.5	12.34	101.416		
2,700.0	2,695.5	2,721.4	2,716.3	6.4	6.5	93.91	166.2	1,237.0	1,250.2	1,237.3	12.85	97.277		
2,800.0	2,795.2	2,821.3	2,816.0	6.6	6.8	93.92	172.7	1,234.7	1,248.5	1,235.2	13.36	93.452		
2,900.0	2,895.0	2,921.3	2,915.8	6.9	7.0	93.93	179.3	1,232.4	1,246.9	1,233.1	13.87	89.905		
3,000.0	2,994.7	3,021.3	3,015.5	7.1	7.3	93.95	185.9	1,230.1	1,245.3	1,230.9	14.38	86.608		
3,100.0	3,094.5	3,121.3	3,115.2	7.4	7.5	93.96	192.5	1,227.9	1,243.7	1,228.8	14.89	83.535		
3,200.0	3,194.2	3,221.3	3,215.0	7.6	7.8	93.98	199.1	1,225.6	1,242.0	1,226.6	15.40	80.664		
3,300.0	3,294.0	3,321.3	3,314.7	7.9	8.1	93.99	205.7	1,223.3	1,240.4	1,224.5	15.91	77.977		
3,400.0	3,393.7	3,421.3	3,414.5	8.1	8.3	94.01	212.3	1,221.0	1,238.8	1,222.4	16.42	75.455		
3,500.0	3,493.5	3,521.2	3,514.2	8.4	8.6	94.02	218.9	1,218.8	1,237.2	1,220.2	16.93	73.085		
3,600.0	3,593.3	3,621.2	3,614.0	8.7	8.8	94.03	225.5	1,216.5	1,235.5	1,218.1	17.44	70.853		
3,700.0	3,693.0	3,721.2	3,713.7	8.9	9.1	94.05	232.1	1,214.2	1,233.9	1,216.0	17.95	68.747		
3,800.0	3,792.8	3,821.2	3,813.4	9.2	9.3	94.06	238.7	1,212.0	1,232.3	1,213.8	18.46	66.757		
3,900.0	3,892.5	3,921.2	3,913.2	9.4	9.6	94.08	245.3	1,209.7	1,230.7	1,211.7	18.97	64.874		
4,000.0	3,992.3	4,021.2	4,012.9	9.7	9.9	94.09	251.9	1,207.4	1,229.0	1,209.6	19.48	63.089		
4,100.0	4,092.0	4,121.2	4,112.7	9.9	10.1	94.11	258.5	1,205.1	1,227.4	1,207.4	19.99	61.395		
4,200.0	4,191.8	4,221.2	4,212.4	10.2	10.4	94.12	265.1	1,202.9	1,225.8	1,205.3	20.50	59.785		
4,300.0	4,291.6	4,321.1	4,312.2	10.4	10.6	94.14	271.7	1,200.6	1,224.2	1,203.2	21.01	58.253		
4,400.0	4,391.3	4,421.1	4,411.9	10.7	10.9	94.15	278.2	1,198.3	1,222.5	1,201.0	21.53	56.794		
4,500.0	4,491.1	4,521.1	4,511.6	11.0	11.1	94.17	284.8	1,196.0	1,220.9	1,198.9	22.04	55.402		
4,600.0	4,590.8	4,621.1	4,611.4	11.2	11.4	94.18	291.4	1,193.8	1,219.3	1,196.7	22.55	54.074		
4,700.0	4,690.6	4,721.1	4,711.1	11.5	11.7	94.20	298.0	1,191.5	1,217.7	1,194.6	23.06	52.804		
4,800.0	4,790.3	4,821.1	4,810.9	11.7	11.9	94.21	304.6	1,189.2	1,216.0	1,192.5	23.57	51.589		
4,900.0	4,890.1	4,921.1	4,910.6	12.0	12.2	94.23	311.2	1,186.9	1,214.4	1,190.3	24.08	50.425		
5,000.0	4,989.9	5,021.0	5,010.4	12.2	12.4	94.24	317.8	1,184.7	1,212.8	1,188.2	24.60	49.310		
5,100.0	5,089.6	5,121.0	5,110.1	12.5	12.7	94.26	324.4	1,182.4	1,211.2	1,186.1	25.11	48.240		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0913A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,221.0	5,209.8	12.7	12.9	94.27	331.0	1,180.1	1,209.6	1,183.9	25.62	47.212		
5,300.0	5,289.1	5,321.0	5,309.6	13.0	13.2	94.29	337.6	1,177.9	1,207.9	1,181.8	26.13	46.225		
5,400.0	5,388.9	5,421.0	5,409.3	13.3	13.4	94.30	344.2	1,175.6	1,206.3	1,179.7	26.64	45.276		
5,500.0	5,488.6	5,716.1	5,683.8	13.5	14.9	90.76	435.9	1,144.0	1,196.8	1,168.4	28.49	42.013		
5,600.0	5,588.0	5,906.6	5,815.1	13.8	16.7	86.27	565.1	1,099.4	1,177.2	1,146.4	30.86	38.142		
5,700.0	5,683.8	6,032.0	5,870.9	14.2	18.3	84.13	671.0	1,062.9	1,155.4	1,122.3	33.12	34.887		
5,800.0	5,772.5	6,127.9	5,894.5	14.8	19.6	82.88	758.6	1,032.7	1,133.8	1,098.5	35.24	32.171		
5,900.0	5,850.8	6,208.5	5,901.0	15.6	20.9	82.08	834.5	1,006.5	1,113.2	1,075.9	37.30	29.845		
6,000.0	5,915.9	6,255.9	5,901.0	16.5	21.6	82.46	879.5	991.6	1,094.9	1,056.0	38.91	28.139		
6,100.0	5,965.3	6,300.0	5,901.0	17.7	22.2	82.96	921.7	978.7	1,079.4	1,038.7	40.63	26.567		
6,200.0	5,997.3	6,369.9	5,901.0	19.0	23.3	83.17	989.1	960.3	1,065.6	1,022.7	42.89	24.846		
6,300.0	6,010.6	6,433.0	5,901.0	20.4	24.2	84.02	1,050.5	945.8	1,053.3	1,008.1	45.21	23.296		
6,400.0	6,011.0	6,500.0	5,901.0	21.8	25.2	84.18	1,116.2	932.7	1,041.3	993.9	47.43	21.953		
6,500.0	6,011.0	6,561.6	5,901.0	23.2	26.2	84.09	1,177.0	922.6	1,027.6	978.2	49.41	20.796		
6,600.0	6,011.0	6,626.3	5,901.0	24.7	27.2	84.04	1,241.1	914.1	1,014.6	962.6	51.94	19.535		
6,700.0	6,011.0	6,700.0	5,901.0	26.3	28.3	84.00	1,314.5	907.2	1,005.0	950.3	54.73	18.362		
6,800.0	6,011.0	6,757.1	5,901.0	28.0	29.2	83.98	1,371.5	903.7	998.7	941.4	57.28	17.435		
6,900.0	6,011.0	6,822.9	5,901.0	29.7	30.3	83.97	1,437.3	901.9	995.9	935.9	60.01	16.596		
6,949.4	6,011.0	6,861.4	5,901.0	30.5	30.9	83.97	1,475.8	901.7	995.7	934.3	61.43	16.208		
7,000.0	6,011.0	6,912.0	5,901.0	31.4	31.7	83.97	1,526.4	901.7	995.7	932.6	63.18	15.761		
7,100.0	6,011.0	7,012.0	5,901.0	33.1	33.4	83.97	1,626.4	901.7	995.7	929.1	66.59	14.952		
7,200.0	6,011.0	7,112.0	5,901.0	34.9	35.0	83.97	1,726.4	901.7	995.7	925.7	70.06	14.213		
7,300.0	6,011.0	7,212.0	5,901.0	36.7	36.8	83.97	1,826.4	901.7	995.7	922.2	73.55	13.537		
7,400.0	6,011.0	7,312.0	5,901.0	38.5	38.5	83.97	1,926.4	901.7	995.7	918.6	77.08	12.917		
7,500.0	6,011.0	7,412.0	5,901.0	40.3	40.2	83.97	2,026.4	901.7	995.7	915.1	80.64	12.347		
7,600.0	6,011.0	7,512.0	5,901.0	42.1	42.0	83.97	2,126.4	901.7	995.7	911.5	84.22	11.822		
7,700.0	6,011.0	7,612.0	5,901.0	43.9	43.7	83.97	2,226.4	901.7	995.7	907.9	87.82	11.337		
7,800.0	6,011.0	7,712.0	5,901.0	45.7	45.5	83.97	2,326.4	901.7	995.7	904.3	91.44	10.889		
7,900.0	6,011.0	7,812.0	5,901.0	47.6	47.3	83.97	2,426.4	901.7	995.7	900.6	95.08	10.472		
8,000.0	6,011.0	7,912.0	5,901.0	49.4	49.1	83.97	2,526.4	901.7	995.7	897.0	98.73	10.085		
8,100.0	6,011.0	8,012.0	5,901.0	51.3	50.9	83.97	2,626.4	901.7	995.7	893.3	102.39	9.724		
8,200.0	6,011.0	8,112.0	5,901.0	53.1	52.8	83.97	2,726.4	901.7	995.7	889.6	106.07	9.387		
8,300.0	6,011.0	8,212.0	5,901.0	55.0	54.6	83.97	2,826.4	901.7	995.7	885.9	109.76	9.072		
8,400.0	6,011.0	8,312.0	5,901.0	56.8	56.4	83.97	2,926.4	901.7	995.7	882.2	113.45	8.776		
8,500.0	6,011.0	8,412.0	5,901.0	58.7	58.3	83.97	3,026.4	901.7	995.7	878.5	117.15	8.499		
8,600.0	6,011.0	8,512.0	5,901.0	60.6	60.1	83.97	3,126.4	901.6	995.7	874.8	120.86	8.238		
8,700.0	6,011.0	8,612.0	5,901.0	62.5	62.0	83.97	3,226.4	901.6	995.6	871.1	124.58	7.992		
8,800.0	6,011.0	8,712.0	5,901.0	64.3	63.8	83.97	3,326.4	901.6	995.6	867.3	128.31	7.760		
8,900.0	6,011.0	8,812.0	5,901.0	66.2	65.7	83.97	3,426.4	901.6	995.6	863.6	132.04	7.541		
9,000.0	6,011.0	8,912.0	5,901.0	68.1	67.5	83.97	3,526.4	901.6	995.6	859.9	135.77	7.333		
9,100.0	6,011.0	9,012.0	5,901.0	70.0	69.4	83.97	3,626.4	901.6	995.6	856.1	139.51	7.136		
9,200.0	6,011.0	9,112.0	5,901.0	71.9	71.3	83.97	3,726.4	901.6	995.6	852.4	143.26	6.950		
9,300.0	6,011.0	9,212.0	5,901.0	73.7	73.1	83.97	3,826.4	901.6	995.6	848.6	147.01	6.773		
9,400.0	6,011.0	9,312.0	5,901.0	75.6	75.0	83.97	3,926.4	901.6	995.6	844.8	150.76	6.604		
9,500.0	6,011.0	9,412.0	5,901.0	77.5	76.9	83.97	4,026.4	901.6	995.6	841.1	154.52	6.443		
9,600.0	6,011.0	9,512.0	5,901.0	79.4	78.8	83.97	4,126.4	901.6	995.6	837.3	158.28	6.290		
9,700.0	6,011.0	9,612.0	5,901.0	81.3	80.6	83.97	4,226.4	901.6	995.6	833.6	162.04	6.144		
9,800.0	6,011.0	9,712.0	5,901.0	83.2	82.5	83.97	4,326.4	901.6	995.6	829.8	165.80	6.005		
9,900.0	6,011.0	9,812.0	5,901.0	85.1	84.4	83.97	4,426.4	901.6	995.6	826.0	169.57	5.871		
10,000.0	6,011.0	9,912.0	5,901.0	87.0	86.3	83.97	4,526.4	901.6	995.6	822.2	173.34	5.743		
10,100.0	6,011.0	10,012.0	5,901.0	88.9	88.2	83.97	4,626.4	901.6	995.6	818.5	177.12	5.621		
10,200.0	6,011.0	10,112.0	5,901.0	90.8	90.1	83.97	4,726.4	901.5	995.6	814.7	180.89	5.504		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0913A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	6,011.0	10,212.0	5,901.0	92.7	91.9	83.97	4,826.4	901.5	995.6	810.9	184.67	5.391	
10,400.0	6,011.0	10,312.0	5,901.0	94.6	93.8	83.97	4,926.4	901.5	995.5	807.1	188.45	5.283	
10,500.0	6,011.0	10,412.0	5,901.0	96.5	95.7	83.97	5,026.4	901.5	995.5	803.3	192.23	5.179	
10,600.0	6,011.0	10,512.0	5,901.0	98.4	97.6	83.97	5,126.4	901.5	995.5	799.5	196.01	5.079	
10,700.0	6,011.0	10,612.0	5,901.0	100.3	99.5	83.97	5,226.4	901.5	995.5	795.7	199.80	4.983	
10,800.0	6,011.0	10,712.0	5,901.0	102.2	101.4	83.97	5,326.4	901.5	995.5	791.9	203.58	4.890	
10,900.0	6,011.0	10,812.0	5,901.0	104.1	103.3	83.97	5,426.4	901.5	995.5	788.2	207.37	4.801	
11,000.0	6,011.0	10,912.0	5,901.0	106.0	105.2	83.97	5,526.4	901.5	995.5	784.4	211.16	4.715	
11,100.0	6,011.0	11,012.0	5,901.0	107.9	107.1	83.97	5,626.4	901.5	995.5	780.6	214.95	4.631	
11,200.0	6,011.0	11,112.0	5,901.0	109.8	109.0	83.97	5,726.4	901.5	995.5	776.8	218.74	4.551	
11,300.0	6,011.0	11,212.0	5,901.0	111.7	110.9	83.97	5,826.4	901.5	995.5	773.0	222.53	4.474	
11,400.0	6,011.0	11,312.0	5,901.0	113.6	112.8	83.97	5,926.4	901.5	995.5	769.2	226.32	4.399	
11,500.0	6,011.0	11,412.0	5,901.0	115.5	114.7	83.97	6,026.4	901.5	995.5	765.4	230.12	4.326	
11,600.0	6,011.0	11,512.0	5,901.0	117.5	116.6	83.97	6,126.4	901.5	995.5	761.6	233.91	4.256	
11,700.0	6,011.0	11,612.0	5,901.0	119.4	118.5	83.97	6,226.4	901.5	995.5	757.8	237.71	4.188	
11,800.0	6,011.0	11,712.0	5,901.0	121.3	120.4	83.97	6,326.4	901.4	995.5	754.0	241.51	4.122	
11,900.0	6,011.0	11,812.0	5,901.0	123.2	122.3	83.97	6,426.4	901.4	995.5	750.2	245.31	4.058	
12,000.0	6,011.0	11,912.0	5,901.0	125.1	124.2	83.97	6,526.4	901.4	995.5	746.4	249.10	3.996	
12,100.0	6,011.0	12,012.0	5,901.0	127.0	126.1	83.97	6,626.4	901.4	995.5	742.6	252.90	3.936	
12,200.0	6,011.0	12,112.0	5,901.0	128.9	128.0	83.97	6,726.4	901.4	995.4	738.7	256.70	3.878	
12,300.0	6,011.0	12,212.0	5,901.0	130.8	129.9	83.97	6,826.4	901.4	995.4	734.9	260.51	3.821	
12,400.0	6,011.0	12,312.0	5,901.0	132.7	131.8	83.97	6,926.4	901.4	995.4	731.1	264.31	3.766	
12,500.0	6,011.0	12,412.0	5,901.0	134.6	133.7	83.97	7,026.4	901.4	995.4	727.3	268.11	3.713	
12,600.0	6,011.0	12,512.0	5,901.0	136.6	135.6	83.97	7,126.4	901.4	995.4	723.5	271.91	3.661	
12,700.0	6,011.0	12,612.0	5,901.0	138.5	137.6	83.97	7,226.4	901.4	995.4	719.7	275.72	3.610	
12,800.0	6,011.0	12,712.0	5,901.0	140.4	139.5	83.97	7,326.4	901.4	995.4	715.9	279.52	3.561	
12,900.0	6,011.0	12,812.0	5,901.0	142.3	141.4	83.97	7,426.4	901.4	995.4	712.1	283.33	3.513	
13,000.0	6,011.0	12,912.0	5,901.0	144.2	143.3	83.97	7,526.4	901.4	995.4	708.3	287.13	3.467	
13,100.0	6,011.0	13,012.0	5,901.0	146.1	145.2	83.97	7,626.4	901.4	995.4	704.5	290.94	3.421	
13,200.0	6,011.0	13,112.0	5,901.0	148.0	147.1	83.97	7,726.4	901.4	995.4	700.6	294.74	3.377	
13,300.0	6,011.0	13,212.0	5,901.0	149.9	149.0	83.97	7,826.4	901.4	995.4	696.8	298.55	3.334	
13,400.0	6,011.0	13,312.0	5,901.0	151.9	150.9	83.97	7,926.4	901.3	995.4	693.0	302.36	3.292	
13,500.0	6,011.0	13,412.0	5,901.0	153.8	152.8	83.97	8,026.4	901.3	995.4	689.2	306.17	3.251	
13,600.0	6,011.0	13,512.0	5,901.0	155.7	154.7	83.97	8,126.4	901.3	995.4	685.4	309.97	3.211	
13,700.0	6,011.0	13,612.0	5,901.0	157.6	156.6	83.97	8,226.4	901.3	995.4	681.6	313.78	3.172	
13,751.2	6,011.0	13,663.2	5,901.0	158.6	157.6	83.97	8,277.5	901.3	995.4	679.6	315.73	3.153 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0914B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.86	26.3	1,318.1	1,318.4					
100.0	100.0	94.6	94.6	0.1	0.1	88.86	26.3	1,318.1	1,318.4	1,318.2	0.18	7,263.078		
200.0	200.0	194.6	194.6	0.3	0.3	88.86	26.3	1,318.1	1,318.4	1,317.8	0.62	2,112.966		
300.0	300.0	294.6	294.6	0.5	0.5	88.86	26.3	1,318.1	1,318.4	1,317.3	1.07	1,228.140		
400.0	400.0	394.6	394.6	0.8	0.8	88.86	26.3	1,318.1	1,318.4	1,316.9	1.52	865.643		
500.0	500.0	494.6	494.6	1.0	1.0	88.86	26.3	1,318.1	1,318.4	1,316.4	1.97	668.368		
600.0	600.0	594.6	594.6	1.2	1.2	88.86	26.3	1,318.1	1,318.4	1,316.0	2.42	544.320		
700.0	700.0	694.6	694.6	1.4	1.4	88.86	26.3	1,318.1	1,318.4	1,315.5	2.87	459.111		
800.0	800.0	797.9	797.9	1.7	1.7	94.26	27.9	1,318.0	1,318.4	1,315.1	3.33	396.331		
900.0	899.8	901.3	901.1	1.9	1.9	94.26	33.3	1,317.5	1,318.4	1,314.6	3.78	348.388		
1,000.0	999.6	1,001.3	1,000.9	2.1	2.1	94.26	40.3	1,316.8	1,318.4	1,314.2	4.25	310.440		
1,100.0	1,099.4	1,101.3	1,100.6	2.4	2.4	94.26	47.2	1,316.2	1,318.4	1,313.7	4.72	279.333		
1,200.0	1,199.1	1,201.3	1,200.4	2.6	2.6	94.26	54.1	1,315.5	1,318.4	1,313.2	5.20	253.527		
1,300.0	1,298.9	1,301.3	1,300.1	2.8	2.8	94.26	61.1	1,314.9	1,318.5	1,312.8	5.69	231.857		
1,400.0	1,398.6	1,401.3	1,399.9	3.1	3.1	94.26	68.0	1,314.2	1,318.5	1,312.3	6.18	213.451		
1,500.0	1,498.4	1,501.3	1,499.7	3.3	3.3	94.26	75.0	1,313.6	1,318.5	1,311.8	6.67	197.655		
1,600.0	1,598.1	1,601.3	1,599.4	3.6	3.6	94.26	81.9	1,313.0	1,318.5	1,311.3	7.17	183.967		
1,700.0	1,697.9	1,701.3	1,699.2	3.8	3.8	94.26	88.9	1,312.3	1,318.5	1,310.8	7.67	172.005		
1,800.0	1,797.6	1,801.3	1,798.9	4.1	4.1	94.26	95.8	1,311.7	1,318.5	1,310.3	8.17	161.469		
1,900.0	1,897.4	1,901.3	1,898.7	4.3	4.3	94.26	102.8	1,311.0	1,318.5	1,309.9	8.67	152.124		
2,000.0	1,997.2	2,001.3	1,998.4	4.6	4.6	94.26	109.7	1,310.4	1,318.5	1,309.4	9.17	143.782		
2,100.0	2,096.9	2,101.3	2,098.2	4.8	4.8	94.26	116.7	1,309.7	1,318.6	1,308.9	9.67	136.294		
2,200.0	2,196.7	2,201.3	2,198.0	5.1	5.1	94.26	123.6	1,309.1	1,318.6	1,308.4	10.18	129.537		
2,300.0	2,296.4	2,301.3	2,297.7	5.3	5.3	94.26	130.6	1,308.4	1,318.6	1,307.9	10.68	123.409		
2,400.0	2,396.2	2,401.3	2,397.5	5.6	5.6	94.26	137.5	1,307.8	1,318.6	1,307.4	11.19	117.828		
2,500.0	2,495.9	2,501.3	2,497.2	5.9	5.9	94.26	144.4	1,307.2	1,318.6	1,306.9	11.70	112.725		
2,600.0	2,595.7	2,601.3	2,597.0	6.1	6.1	94.26	151.4	1,306.5	1,318.6	1,306.4	12.20	108.041		
2,700.0	2,695.5	2,701.3	2,696.7	6.4	6.4	94.26	158.3	1,305.9	1,318.6	1,305.9	12.71	103.727		
2,800.0	2,795.2	2,801.3	2,796.5	6.6	6.6	94.26	165.3	1,305.2	1,318.6	1,305.4	13.22	99.742		
2,900.0	2,895.0	2,901.3	2,896.2	6.9	6.9	94.26	172.2	1,304.6	1,318.6	1,304.9	13.73	96.050		
3,000.0	2,994.7	3,001.3	2,996.0	7.1	7.1	94.26	179.2	1,303.9	1,318.7	1,304.4	14.24	92.619		
3,100.0	3,094.5	3,101.3	3,095.8	7.4	7.4	94.26	186.1	1,303.3	1,318.7	1,303.9	14.75	89.423		
3,200.0	3,194.2	3,201.3	3,195.5	7.6	7.6	94.26	193.1	1,302.6	1,318.7	1,303.4	15.26	86.439		
3,300.0	3,294.0	3,301.3	3,295.3	7.9	7.9	94.26	200.0	1,302.0	1,318.7	1,302.9	15.77	83.647		
3,400.0	3,393.7	3,401.3	3,395.0	8.1	8.1	94.26	207.0	1,301.4	1,318.7	1,302.4	16.27	81.028		
3,500.0	3,493.5	3,501.3	3,494.8	8.4	8.4	94.26	213.9	1,300.7	1,318.7	1,301.9	16.78	78.568		
3,600.0	3,593.3	3,601.3	3,594.5	8.7	8.7	94.26	220.8	1,300.1	1,318.7	1,301.4	17.29	76.252		
3,700.0	3,693.0	3,701.3	3,694.3	8.9	8.9	94.26	227.8	1,299.4	1,318.7	1,300.9	17.80	74.068		
3,800.0	3,792.8	3,801.3	3,794.1	9.2	9.2	94.26	234.7	1,298.8	1,318.8	1,300.4	18.31	72.005		
3,900.0	3,892.5	3,901.3	3,893.8	9.4	9.4	94.26	241.7	1,298.1	1,318.8	1,299.9	18.83	70.053		
4,000.0	3,992.3	4,001.3	3,993.6	9.7	9.7	94.26	248.6	1,297.5	1,318.8	1,299.4	19.34	68.204		
4,100.0	4,092.0	4,101.3	4,093.3	9.9	9.9	94.26	255.6	1,296.8	1,318.8	1,298.9	19.85	66.450		
4,200.0	4,191.8	4,201.3	4,193.1	10.2	10.2	94.26	262.5	1,296.2	1,318.8	1,298.4	20.36	64.784		
4,300.0	4,291.6	4,301.3	4,292.8	10.4	10.4	94.26	269.5	1,295.6	1,318.8	1,297.9	20.87	63.199		
4,400.0	4,391.3	4,401.3	4,392.6	10.7	10.7	94.26	276.4	1,294.9	1,318.8	1,297.4	21.38	61.689		
4,500.0	4,491.1	4,501.3	4,492.4	11.0	11.0	94.26	283.4	1,294.3	1,318.8	1,296.9	21.89	60.249		
4,600.0	4,590.8	4,601.3	4,592.1	11.2	11.2	94.26	290.3	1,293.6	1,318.8	1,296.4	22.40	58.875		
4,700.0	4,690.6	4,701.3	4,691.9	11.5	11.5	94.26	297.2	1,293.0	1,318.9	1,295.9	22.91	57.563		
4,800.0	4,790.3	4,801.3	4,791.6	11.7	11.7	94.26	304.2	1,292.3	1,318.9	1,295.4	23.42	56.307		
4,900.0	4,890.1	4,901.3	4,891.4	12.0	12.0	94.26	311.1	1,291.7	1,318.9	1,294.9	23.93	55.105		
5,000.0	4,989.9	5,001.3	4,991.1	12.2	12.2	94.26	318.1	1,291.0	1,318.9	1,294.4	24.45	53.953		
5,100.0	5,089.6	5,101.3	5,090.9	12.5	12.5	94.26	325.0	1,290.4	1,318.9	1,293.9	24.96	52.848		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0914B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,201.3	5,190.6	12.7	12.7	94.26	332.0	1,289.7	1,318.9	1,293.4	25.47	51.787		
5,300.0	5,289.1	5,301.3	5,290.4	13.0	13.0	94.26	338.9	1,289.1	1,318.9	1,292.9	25.98	50.768		
5,400.0	5,388.9	5,401.3	5,390.2	13.3	13.3	94.26	345.9	1,288.5	1,318.9	1,292.4	26.49	49.788		
5,500.0	5,488.6	5,501.3	5,489.9	13.5	13.5	94.26	352.8	1,287.8	1,319.0	1,291.9	27.00	48.845		
5,600.0	5,588.0	5,615.9	5,603.5	13.8	13.9	94.20	366.8	1,286.5	1,318.9	1,291.2	27.63	47.727		
5,700.0	5,683.8	5,737.2	5,717.6	14.2	14.4	93.95	407.0	1,282.8	1,318.5	1,289.9	28.64	46.039		
5,800.0	5,772.5	5,856.1	5,817.4	14.8	15.2	93.52	470.8	1,276.9	1,318.0	1,288.0	30.04	43.869		
5,900.0	5,850.8	5,971.6	5,898.1	15.6	16.3	92.95	552.7	1,269.3	1,317.4	1,285.5	31.87	41.334		
6,000.0	5,915.9	6,083.2	5,957.1	16.5	17.5	92.28	646.8	1,260.5	1,316.9	1,282.8	34.10	38.622		
6,100.0	5,965.3	6,190.6	5,993.6	17.7	18.9	91.52	747.3	1,251.2	1,316.4	1,279.8	36.65	35.916		
6,200.0	5,997.3	6,294.1	6,008.4	19.0	20.3	90.73	849.1	1,241.8	1,316.3	1,276.8	39.45	33.368		
6,210.9	5,999.7	6,305.2	6,008.8	19.1	20.5	90.64	860.1	1,240.7	1,316.2	1,276.6	39.65	33.199 CC		
6,300.0	6,010.6	6,362.8	6,009.0	20.4	21.3	90.22	917.5	1,235.9	1,317.2	1,275.4	41.81	31.506		
6,400.0	6,011.0	6,421.9	6,009.0	21.8	22.2	90.15	976.5	1,232.8	1,319.6	1,275.6	43.97	30.009		
6,500.0	6,011.0	6,494.4	6,009.0	23.2	23.2	90.15	1,049.0	1,231.4	1,320.1	1,273.8	46.25	28.545		
6,543.2	6,011.0	6,515.0	6,009.0	23.9	23.5	90.15	1,069.6	1,231.4	1,319.9	1,272.7	47.22	27.951		
6,600.0	6,011.0	6,571.8	6,009.0	24.7	24.4	90.15	1,126.4	1,231.4	1,319.9	1,270.9	48.98	26.947		
6,700.0	6,011.0	6,671.8	6,009.0	26.3	26.0	90.15	1,226.4	1,231.4	1,319.9	1,267.6	52.22	25.273		
6,800.0	6,011.0	6,771.8	6,009.0	28.0	27.6	90.15	1,326.4	1,231.4	1,319.9	1,264.3	55.54	23.762		
6,900.0	6,011.0	6,871.8	6,009.0	29.7	29.3	90.15	1,426.4	1,231.4	1,319.9	1,260.9	58.93	22.397		
7,000.0	6,011.0	6,971.8	6,009.0	31.4	31.0	90.15	1,526.4	1,231.4	1,319.9	1,257.5	62.37	21.163		
7,100.0	6,011.0	7,071.8	6,009.0	33.1	32.8	90.15	1,626.4	1,231.4	1,319.9	1,254.0	65.85	20.044		
7,200.0	6,011.0	7,171.8	6,009.0	34.9	34.5	90.15	1,726.4	1,231.4	1,319.9	1,250.5	69.37	19.027		
7,300.0	6,011.0	7,271.8	6,009.0	36.7	36.3	90.15	1,826.4	1,231.4	1,319.8	1,246.9	72.92	18.100		
7,400.0	6,011.0	7,371.8	6,009.0	38.5	38.1	90.15	1,926.4	1,231.4	1,319.8	1,243.3	76.50	17.252		
7,500.0	6,011.0	7,471.8	6,009.0	40.3	39.9	90.15	2,026.4	1,231.4	1,319.8	1,239.7	80.11	16.476		
7,600.0	6,011.0	7,571.8	6,009.0	42.1	41.7	90.15	2,126.4	1,231.3	1,319.8	1,236.1	83.73	15.762		
7,700.0	6,011.0	7,671.8	6,009.0	43.9	43.5	90.15	2,226.4	1,231.3	1,319.8	1,232.5	87.38	15.105		
7,800.0	6,011.0	7,771.8	6,009.0	45.7	45.4	90.15	2,326.4	1,231.3	1,319.8	1,228.8	91.04	14.497		
7,900.0	6,011.0	7,871.8	6,009.0	47.6	47.2	90.15	2,426.4	1,231.3	1,319.8	1,225.1	94.72	13.935		
8,000.0	6,011.0	7,971.8	6,009.0	49.4	49.0	90.15	2,526.4	1,231.3	1,319.8	1,221.4	98.40	13.412		
8,100.0	6,011.0	8,071.8	6,009.0	51.3	50.9	90.15	2,626.4	1,231.3	1,319.8	1,217.7	102.10	12.926		
8,200.0	6,011.0	8,171.8	6,009.0	53.1	52.7	90.15	2,726.4	1,231.3	1,319.8	1,214.0	105.81	12.473		
8,300.0	6,011.0	8,271.8	6,009.0	55.0	54.6	90.15	2,826.4	1,231.3	1,319.8	1,210.3	109.53	12.050		
8,400.0	6,011.0	8,371.8	6,009.0	56.8	56.5	90.15	2,926.4	1,231.3	1,319.8	1,206.6	113.26	11.653		
8,500.0	6,011.0	8,471.8	6,009.0	58.7	58.3	90.15	3,026.4	1,231.3	1,319.8	1,202.8	116.99	11.281		
8,600.0	6,011.0	8,571.8	6,009.0	60.6	60.2	90.15	3,126.4	1,231.3	1,319.8	1,199.1	120.74	10.931		
8,700.0	6,011.0	8,671.8	6,009.0	62.5	62.1	90.15	3,226.4	1,231.3	1,319.8	1,195.3	124.48	10.602		
8,800.0	6,011.0	8,771.8	6,009.0	64.3	63.9	90.15	3,326.4	1,231.3	1,319.8	1,191.6	128.24	10.292		
8,900.0	6,011.0	8,871.8	6,009.0	66.2	65.8	90.15	3,426.4	1,231.3	1,319.8	1,187.8	132.00	9.999		
9,000.0	6,011.0	8,971.8	6,009.0	68.1	67.7	90.15	3,526.4	1,231.3	1,319.8	1,184.0	135.76	9.722		
9,100.0	6,011.0	9,071.8	6,009.0	70.0	69.6	90.15	3,626.4	1,231.3	1,319.8	1,180.3	139.53	9.459		
9,200.0	6,011.0	9,171.8	6,009.0	71.9	71.5	90.15	3,726.4	1,231.3	1,319.8	1,176.5	143.30	9.210		
9,300.0	6,011.0	9,271.8	6,009.0	73.7	73.4	90.15	3,826.4	1,231.3	1,319.8	1,172.7	147.07	8.974		
9,400.0	6,011.0	9,371.8	6,009.0	75.6	75.3	90.15	3,926.4	1,231.3	1,319.8	1,168.9	150.85	8.749		
9,500.0	6,011.0	9,471.8	6,009.0	77.5	77.1	90.15	4,026.4	1,231.3	1,319.8	1,165.1	154.63	8.535		
9,600.0	6,011.0	9,571.8	6,009.0	79.4	79.0	90.15	4,126.4	1,231.3	1,319.8	1,161.4	158.42	8.331		
9,700.0	6,011.0	9,671.8	6,009.0	81.3	80.9	90.15	4,226.4	1,231.3	1,319.8	1,157.6	162.20	8.136		
9,800.0	6,011.0	9,771.8	6,009.0	83.2	82.8	90.15	4,326.4	1,231.3	1,319.8	1,153.8	165.99	7.951		
9,900.0	6,011.0	9,871.8	6,009.0	85.1	84.7	90.15	4,426.4	1,231.3	1,319.8	1,150.0	169.79	7.773		
10,000.0	6,011.0	9,971.8	6,009.0	87.0	86.6	90.15	4,526.4	1,231.2	1,319.8	1,146.2	173.58	7.603		
10,100.0	6,011.0	10,071.8	6,009.0	88.9	88.5	90.15	4,626.4	1,231.2	1,319.8	1,142.4	177.38	7.440		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-0914B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,200.0	6,011.0	10,171.8	6,009.0	90.8	90.4	90.15	4,726.4	1,231.2	1,319.7	1,138.6	181.18	7.284		
10,300.0	6,011.0	10,271.8	6,009.0	92.7	92.3	90.15	4,826.4	1,231.2	1,319.7	1,134.8	184.98	7.135		
10,400.0	6,011.0	10,371.8	6,009.0	94.6	94.2	90.15	4,926.4	1,231.2	1,319.7	1,131.0	188.78	6.991		
10,500.0	6,011.0	10,471.8	6,009.0	96.5	96.1	90.15	5,026.4	1,231.2	1,319.7	1,127.2	192.58	6.853		
10,600.0	6,011.0	10,571.8	6,009.0	98.4	98.0	90.15	5,126.4	1,231.2	1,319.7	1,123.3	196.39	6.720		
10,700.0	6,011.0	10,671.8	6,009.0	100.3	99.9	90.15	5,226.4	1,231.2	1,319.7	1,119.5	200.19	6.592		
10,800.0	6,011.0	10,771.8	6,009.0	102.2	101.8	90.15	5,326.4	1,231.2	1,319.7	1,115.7	204.00	6.469		
10,900.0	6,011.0	10,871.8	6,009.0	104.1	103.7	90.15	5,426.4	1,231.2	1,319.7	1,111.9	207.81	6.351		
11,000.0	6,011.0	10,971.8	6,009.0	106.0	105.6	90.15	5,526.4	1,231.2	1,319.7	1,108.1	211.62	6.236		
11,100.0	6,011.0	11,071.8	6,009.0	107.9	107.5	90.15	5,626.4	1,231.2	1,319.7	1,104.3	215.43	6.126		
11,200.0	6,011.0	11,171.8	6,009.0	109.8	109.4	90.15	5,726.4	1,231.2	1,319.7	1,100.5	219.25	6.019		
11,300.0	6,011.0	11,271.8	6,009.0	111.7	111.4	90.15	5,826.4	1,231.2	1,319.7	1,096.6	223.06	5.916		
11,400.0	6,011.0	11,371.8	6,009.0	113.6	113.3	90.15	5,926.4	1,231.2	1,319.7	1,092.8	226.87	5.817		
11,500.0	6,011.0	11,471.8	6,009.0	115.5	115.2	90.15	6,026.4	1,231.2	1,319.7	1,089.0	230.69	5.721		
11,600.0	6,011.0	11,571.8	6,009.0	117.5	117.1	90.15	6,126.4	1,231.2	1,319.7	1,085.2	234.51	5.628		
11,700.0	6,011.0	11,671.8	6,009.0	119.4	119.0	90.15	6,226.4	1,231.2	1,319.7	1,081.4	238.32	5.537		
11,800.0	6,011.0	11,771.8	6,009.0	121.3	120.9	90.15	6,326.4	1,231.2	1,319.7	1,077.5	242.14	5.450		
11,900.0	6,011.0	11,871.8	6,009.0	123.2	122.8	90.15	6,426.4	1,231.2	1,319.7	1,073.7	245.96	5.365		
12,000.0	6,011.0	11,971.8	6,009.0	125.1	124.7	90.15	6,526.4	1,231.2	1,319.7	1,069.9	249.78	5.283		
12,100.0	6,011.0	12,071.8	6,009.0	127.0	126.6	90.15	6,626.4	1,231.2	1,319.7	1,066.1	253.60	5.204		
12,200.0	6,011.0	12,171.8	6,009.0	128.9	128.5	90.15	6,726.4	1,231.2	1,319.7	1,062.3	257.42	5.127		
12,300.0	6,011.0	12,271.8	6,009.0	130.8	130.4	90.15	6,826.4	1,231.2	1,319.7	1,058.4	261.24	5.052		
12,400.0	6,011.0	12,371.8	6,009.0	132.7	132.4	90.15	6,926.4	1,231.1	1,319.7	1,054.6	265.07	4.979		
12,500.0	6,011.0	12,471.8	6,009.0	134.6	134.3	90.15	7,026.4	1,231.1	1,319.7	1,050.8	268.89	4.908		
12,600.0	6,011.0	12,571.8	6,009.0	136.6	136.2	90.15	7,126.4	1,231.1	1,319.7	1,047.0	272.71	4.839		
12,700.0	6,011.0	12,671.8	6,009.0	138.5	138.1	90.15	7,226.4	1,231.1	1,319.7	1,043.1	276.54	4.772		
12,800.0	6,011.0	12,771.8	6,009.0	140.4	140.0	90.15	7,326.4	1,231.1	1,319.7	1,039.3	280.36	4.707		
12,900.0	6,011.0	12,871.8	6,009.0	142.3	141.9	90.15	7,426.4	1,231.1	1,319.7	1,035.5	284.19	4.644		
13,000.0	6,011.0	12,971.8	6,009.0	144.2	143.8	90.15	7,526.4	1,231.1	1,319.6	1,031.6	288.01	4.582		
13,100.0	6,011.0	13,071.8	6,009.0	146.1	145.7	90.15	7,626.4	1,231.1	1,319.6	1,027.8	291.84	4.522		
13,200.0	6,011.0	13,171.8	6,009.0	148.0	147.7	90.15	7,726.4	1,231.1	1,319.6	1,024.0	295.66	4.463		
13,300.0	6,011.0	13,271.8	6,009.0	149.9	149.6	90.15	7,826.4	1,231.1	1,319.6	1,020.1	299.49	4.406		
13,400.0	6,011.0	13,371.8	6,009.0	151.9	151.5	90.15	7,926.4	1,231.1	1,319.6	1,016.3	303.32	4.351		
13,500.0	6,011.0	13,471.8	6,009.0	153.8	153.4	90.15	8,026.4	1,231.1	1,319.6	1,012.5	307.14	4.296		
13,600.0	6,011.0	13,571.8	6,009.0	155.7	155.3	90.15	8,126.4	1,231.1	1,319.6	1,008.7	310.97	4.244		
13,700.0	6,011.0	13,671.8	6,009.0	157.6	157.2	90.15	8,226.4	1,231.1	1,319.6	1,004.8	314.80	4.192		
13,751.2	6,011.0	13,722.9	6,009.0	158.6	158.2	90.15	8,277.6	1,231.1	1,319.6	1,002.9	316.76	4.166 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-34.6	34.6					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-34.6	34.6	34.4	0.19	185.429		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-34.6	34.6	34.0	0.64	54.384		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-34.6	34.6	33.5	1.09	31.865		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-34.6	34.6	33.1	1.54	22.534		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-34.6	34.6	32.6	1.98	17.430 CC, ES		
600.0	600.0	599.6	599.5	1.2	1.2	-87.34	1.6	-35.2	35.2	32.8	2.43	14.473		
700.0	700.0	698.9	698.7	1.4	1.4	-79.96	6.5	-36.8	37.4	34.6	2.88	12.991		
800.0	800.0	798.7	798.3	1.7	1.7	-68.26	13.1	-39.1	40.6	37.3	3.34	12.177		
900.0	899.8	898.7	898.1	1.9	1.9	-67.11	19.7	-41.4	42.7	38.9	3.79	11.265		
1,000.0	999.6	998.7	997.8	2.1	2.2	-68.18	26.3	-43.7	44.2	39.9	4.26	10.368		
1,100.0	1,099.4	1,098.7	1,097.6	2.4	2.4	-69.17	32.9	-45.9	45.6	40.9	4.74	9.636		
1,200.0	1,199.1	1,198.7	1,197.3	2.6	2.7	-70.11	39.5	-48.2	47.1	41.9	5.22	9.030		
1,300.0	1,298.9	1,298.7	1,297.0	2.8	2.9	-70.99	46.1	-50.5	48.6	42.9	5.70	8.521		
1,400.0	1,398.6	1,398.6	1,396.8	3.1	3.2	-71.81	52.7	-52.8	50.1	43.9	6.19	8.089		
1,500.0	1,498.4	1,498.6	1,496.5	3.3	3.4	-72.59	59.3	-55.0	51.6	44.9	6.68	7.719		
1,600.0	1,598.1	1,598.6	1,596.3	3.6	3.7	-73.32	65.9	-57.3	53.1	45.9	7.18	7.398		
1,700.0	1,697.9	1,698.6	1,696.0	3.8	3.9	-74.01	72.4	-59.6	54.6	47.0	7.68	7.117		
1,800.0	1,797.6	1,798.6	1,795.7	4.1	4.2	-74.67	79.0	-61.9	56.2	48.0	8.17	6.870		
1,900.0	1,897.4	1,898.6	1,895.5	4.3	4.4	-75.29	85.6	-64.1	57.7	49.0	8.67	6.651		
2,000.0	1,997.2	1,998.6	1,995.2	4.6	4.7	-75.88	92.2	-66.4	59.2	50.1	9.18	6.456		
2,100.0	2,096.9	2,098.5	2,095.0	4.8	4.9	-76.43	98.8	-68.7	60.8	51.1	9.68	6.281		
2,200.0	2,196.7	2,198.5	2,194.7	5.1	5.2	-76.96	105.4	-71.0	62.3	52.2	10.18	6.123		
2,300.0	2,296.4	2,298.5	2,294.5	5.3	5.4	-77.47	112.0	-73.2	63.9	53.2	10.69	5.980		
2,400.0	2,396.2	2,398.5	2,394.2	5.6	5.7	-77.95	118.6	-75.5	65.5	54.3	11.19	5.850		
2,500.0	2,495.9	2,498.5	2,493.9	5.9	6.0	-78.41	125.2	-77.8	67.0	55.3	11.70	5.731		
2,600.0	2,595.7	2,598.5	2,593.7	6.1	6.2	-78.84	131.8	-80.1	68.6	56.4	12.21	5.622		
2,700.0	2,695.5	2,698.5	2,693.4	6.4	6.5	-79.26	138.4	-82.3	70.2	57.5	12.71	5.522		
2,800.0	2,795.2	2,798.5	2,793.2	6.6	6.7	-79.66	145.0	-84.6	71.8	58.6	13.22	5.429		
2,900.0	2,895.0	2,898.4	2,892.9	6.9	7.0	-80.04	151.6	-86.9	73.4	59.6	13.73	5.344		
3,000.0	2,994.7	2,998.4	2,992.7	7.1	7.2	-80.40	158.2	-89.2	75.0	60.7	14.24	5.265		
3,100.0	3,094.5	3,098.4	3,092.4	7.4	7.5	-80.75	164.7	-91.4	76.5	61.8	14.75	5.191		
3,200.0	3,194.2	3,198.4	3,192.1	7.6	7.7	-81.09	171.3	-93.7	78.1	62.9	15.26	5.122		
3,300.0	3,294.0	3,298.4	3,291.9	7.9	8.0	-81.41	177.9	-96.0	79.7	64.0	15.76	5.058		
3,400.0	3,393.7	3,398.4	3,391.6	8.1	8.3	-81.72	184.5	-98.3	81.3	65.1	16.27	4.997		
3,500.0	3,493.5	3,498.4	3,491.4	8.4	8.5	-82.02	191.1	-100.6	82.9	66.1	16.78	4.941		
3,600.0	3,593.3	3,598.3	3,591.1	8.7	8.8	-82.31	197.7	-102.8	84.5	67.2	17.29	4.888		
3,700.0	3,693.0	3,698.3	3,690.9	8.9	9.0	-82.58	204.3	-105.1	86.1	68.3	17.80	4.838		
3,800.0	3,792.8	3,798.3	3,790.6	9.2	9.3	-82.85	210.9	-107.4	87.7	69.4	18.32	4.791		
3,900.0	3,892.5	3,898.3	3,890.3	9.4	9.5	-83.10	217.5	-109.7	89.4	70.5	18.83	4.746		
4,000.0	3,992.3	3,998.3	3,990.1	9.7	9.8	-83.35	224.1	-111.9	91.0	71.6	19.34	4.704		
4,100.0	4,092.0	4,098.3	4,089.8	9.9	10.1	-83.59	230.7	-114.2	92.6	72.7	19.85	4.664		
4,200.0	4,191.8	4,198.3	4,189.6	10.2	10.3	-83.82	237.3	-116.5	94.2	73.8	20.36	4.626		
4,300.0	4,291.6	4,298.2	4,289.3	10.4	10.6	-84.04	243.9	-118.8	95.8	74.9	20.87	4.590		
4,400.0	4,391.3	4,398.2	4,389.1	10.7	10.8	-84.26	250.5	-121.0	97.4	76.0	21.38	4.556		
4,500.0	4,491.1	4,498.2	4,488.8	11.0	11.1	-84.47	257.1	-123.3	99.0	77.1	21.89	4.524		
4,600.0	4,590.8	4,598.2	4,588.5	11.2	11.3	-84.67	263.6	-125.6	100.7	78.3	22.40	4.493		
4,700.0	4,690.6	4,698.2	4,688.3	11.5	11.6	-84.86	270.2	-127.9	102.3	79.4	22.92	4.463		
4,800.0	4,790.3	4,798.2	4,788.0	11.7	11.8	-85.05	276.8	-130.1	103.9	80.5	23.43	4.435		
4,900.0	4,890.1	4,898.2	4,887.8	12.0	12.1	-85.24	283.4	-132.4	105.5	81.6	23.94	4.408		
5,000.0	4,989.9	4,998.1	4,987.5	12.2	12.4	-85.41	290.0	-134.7	107.1	82.7	24.45	4.382		
5,100.0	5,089.6	5,098.1	5,087.3	12.5	12.6	-85.59	296.6	-137.0	108.8	83.8	24.96	4.357		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,198.1	5,187.0	12.7	12.9	-85.75	303.2	-139.2	110.4	84.9	25.48	4.333		
5,300.0	5,289.1	5,298.1	5,286.7	13.0	13.1	-85.92	309.8	-141.5	112.0	86.0	25.99	4.311		
5,400.0	5,388.9	5,398.1	5,386.5	13.3	13.4	-86.07	316.4	-143.8	113.7	87.2	26.50	4.289		
5,500.0	5,488.6	5,494.7	5,482.6	13.5	13.7	-85.11	325.0	-146.7	116.1	89.0	27.00	4.298		
5,600.0	5,588.0	5,585.8	5,570.7	13.8	14.0	-78.87	346.4	-154.2	123.9	96.4	27.50	4.503		
5,700.0	5,683.8	5,674.4	5,651.4	14.2	14.5	-73.52	380.9	-166.1	136.4	108.3	28.14	4.849		
5,800.0	5,772.5	5,760.9	5,723.0	14.8	15.2	-69.92	426.6	-181.8	152.1	123.3	28.88	5.268		
5,900.0	5,850.8	5,845.6	5,784.5	15.6	15.9	-67.77	481.5	-200.8	169.9	140.1	29.79	5.702		
6,000.0	5,915.9	5,928.8	5,835.0	16.5	16.8	-66.70	544.0	-222.3	188.8	157.8	31.01	6.089		
6,100.0	5,965.3	6,011.1	5,873.9	17.7	17.8	-66.41	612.4	-245.9	208.4	175.7	32.64	6.385		
6,200.0	5,997.3	6,092.9	5,900.8	19.0	18.9	-66.69	685.3	-271.1	228.1	193.4	34.76	6.564		
6,300.0	6,010.6	6,174.6	5,915.4	20.4	20.1	-67.38	761.2	-297.3	247.8	210.4	37.35	6.634		
6,400.0	6,011.0	6,267.2	5,918.0	21.8	21.5	-69.22	848.8	-327.1	269.9	229.5	40.34	6.690		
6,500.0	6,011.0	6,379.6	5,918.0	23.2	23.2	-70.99	956.7	-358.3	293.8	250.4	43.39	6.770		
6,600.0	6,011.0	6,494.6	5,918.0	24.7	24.9	-72.52	1,068.9	-383.7	314.8	268.0	46.80	6.726		
6,700.0	6,011.0	6,612.4	5,918.0	26.3	26.7	-73.51	1,185.1	-402.6	330.2	279.8	50.33	6.560		
6,800.0	6,011.0	6,732.1	5,918.0	28.0	28.6	-74.08	1,304.2	-414.4	339.7	285.8	53.90	6.302		
6,900.0	6,011.0	6,852.8	5,918.0	29.7	30.5	-74.28	1,424.8	-418.8	343.2	285.7	57.48	5.971		
7,000.0	6,011.0	6,954.3	5,918.0	31.4	32.2	-74.28	1,526.3	-418.8	343.2	282.4	60.78	5.647		
7,100.0	6,011.0	7,054.3	5,918.0	33.1	33.8	-74.28	1,626.3	-418.8	343.2	279.1	64.11	5.353		
7,200.0	6,011.0	7,154.3	5,918.0	34.9	35.5	-74.28	1,726.3	-418.8	343.2	275.7	67.48	5.086		
7,300.0	6,011.0	7,254.3	5,918.0	36.7	37.2	-74.28	1,826.3	-418.8	343.2	272.3	70.89	4.841		
7,400.0	6,011.0	7,354.3	5,918.0	38.5	38.9	-74.28	1,926.3	-418.8	343.2	268.9	74.33	4.617		
7,500.0	6,011.0	7,454.3	5,918.0	40.3	40.7	-74.28	2,026.3	-418.8	343.2	265.4	77.79	4.412		
7,600.0	6,011.0	7,554.3	5,918.0	42.1	42.5	-74.28	2,126.3	-418.8	343.2	261.9	81.27	4.223		
7,700.0	6,011.0	7,654.3	5,918.0	43.9	44.2	-74.28	2,226.3	-418.8	343.2	258.4	84.78	4.048		
7,800.0	6,011.0	7,754.3	5,918.0	45.7	46.0	-74.28	2,326.3	-418.8	343.2	254.9	88.30	3.887		
7,900.0	6,011.0	7,854.3	5,918.0	47.6	47.8	-74.28	2,426.3	-418.8	343.2	251.4	91.84	3.737		
8,000.0	6,011.0	7,954.3	5,918.0	49.4	49.6	-74.28	2,526.3	-418.8	343.2	247.8	95.39	3.598		
8,100.0	6,011.0	8,054.3	5,918.0	51.3	51.4	-74.28	2,626.3	-418.8	343.2	244.2	98.96	3.468		
8,200.0	6,011.0	8,154.3	5,918.0	53.1	53.3	-74.28	2,726.3	-418.8	343.2	240.7	102.53	3.347		
8,300.0	6,011.0	8,254.3	5,918.0	55.0	55.1	-74.28	2,826.3	-418.8	343.2	237.1	106.12	3.234		
8,400.0	6,011.0	8,354.3	5,918.0	56.8	56.9	-74.28	2,926.3	-418.8	343.2	233.5	109.71	3.128		
8,500.0	6,011.0	8,454.3	5,918.0	58.7	58.8	-74.28	3,026.3	-418.8	343.2	229.9	113.32	3.029		
8,600.0	6,011.0	8,554.3	5,918.0	60.6	60.6	-74.28	3,126.3	-418.8	343.2	226.3	116.93	2.935		
8,700.0	6,011.0	8,654.3	5,918.0	62.5	62.5	-74.28	3,226.3	-418.8	343.2	222.6	120.54	2.847		
8,800.0	6,011.0	8,754.3	5,918.0	64.3	64.3	-74.28	3,326.3	-418.8	343.2	219.0	124.16	2.764		
8,900.0	6,011.0	8,854.3	5,918.0	66.2	66.2	-74.28	3,426.3	-418.8	343.2	215.4	127.79	2.685		
9,000.0	6,011.0	8,954.3	5,918.0	68.1	68.0	-74.28	3,526.3	-418.8	343.2	211.8	131.43	2.611		
9,100.0	6,011.0	9,054.3	5,918.0	70.0	69.9	-74.28	3,626.3	-418.8	343.2	208.1	135.06	2.541		
9,200.0	6,011.0	9,154.3	5,918.0	71.9	71.8	-74.28	3,726.3	-418.8	343.2	204.5	138.71	2.474		
9,300.0	6,011.0	9,254.3	5,918.0	73.7	73.6	-74.28	3,826.3	-418.8	343.2	200.8	142.35	2.411		
9,400.0	6,011.0	9,354.3	5,918.0	75.6	75.5	-74.28	3,926.3	-418.8	343.2	197.2	146.00	2.351		
9,500.0	6,011.0	9,454.3	5,918.0	77.5	77.4	-74.28	4,026.3	-418.8	343.2	193.5	149.66	2.293		
9,600.0	6,011.0	9,554.3	5,918.0	79.4	79.3	-74.28	4,126.3	-418.8	343.2	189.9	153.31	2.238		
9,700.0	6,011.0	9,654.3	5,918.0	81.3	81.1	-74.28	4,226.3	-418.8	343.2	186.2	156.97	2.186		
9,800.0	6,011.0	9,754.3	5,918.0	83.2	83.0	-74.28	4,326.3	-418.8	343.2	182.5	160.63	2.136		
9,900.0	6,011.0	9,854.3	5,918.0	85.1	84.9	-74.28	4,426.3	-418.8	343.2	178.9	164.30	2.089		
10,000.0	6,011.0	9,954.3	5,918.0	87.0	86.8	-74.28	4,526.3	-418.8	343.2	175.2	167.97	2.043		
10,100.0	6,011.0	10,054.3	5,918.0	88.9	88.7	-74.28	4,626.3	-418.8	343.2	171.5	171.64	1.999		
10,200.0	6,011.0	10,154.3	5,918.0	90.8	90.6	-74.28	4,726.3	-418.8	343.2	167.9	175.31	1.958		
10,300.0	6,011.0	10,254.3	5,918.0	92.7	92.4	-74.28	4,826.3	-418.8	343.2	164.2	178.98	1.917		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,400.0	6,011.0	10,354.3	5,918.0	94.6	94.3	-74.28	4,926.3	-418.8	343.2	160.5	182.66	1.879	
10,500.0	6,011.0	10,454.3	5,918.0	96.5	96.2	-74.28	5,026.3	-418.8	343.2	156.8	186.33	1.842	
10,600.0	6,011.0	10,554.3	5,918.0	98.4	98.1	-74.28	5,126.3	-418.8	343.2	153.2	190.01	1.806	
10,700.0	6,011.0	10,654.3	5,918.0	100.3	100.0	-74.28	5,226.3	-418.8	343.2	149.5	193.69	1.772	
10,800.0	6,011.0	10,754.3	5,918.0	102.2	101.9	-74.28	5,326.3	-418.8	343.2	145.8	197.37	1.739	
10,900.0	6,011.0	10,854.3	5,918.0	104.1	103.8	-74.28	5,426.3	-418.8	343.2	142.1	201.06	1.707	
11,000.0	6,011.0	10,954.3	5,918.0	106.0	105.7	-74.28	5,526.3	-418.8	343.2	138.4	204.74	1.676	
11,100.0	6,011.0	11,054.3	5,918.0	107.9	107.6	-74.28	5,626.3	-418.8	343.2	134.7	208.43	1.646	
11,200.0	6,011.0	11,154.3	5,918.0	109.8	109.5	-74.28	5,726.3	-418.8	343.2	131.1	212.11	1.618	
11,300.0	6,011.0	11,254.3	5,918.0	111.7	111.4	-74.28	5,826.3	-418.8	343.2	127.4	215.80	1.590	
11,400.0	6,011.0	11,354.3	5,918.0	113.6	113.3	-74.28	5,926.3	-418.8	343.2	123.7	219.49	1.563	
11,500.0	6,011.0	11,454.3	5,918.0	115.5	115.2	-74.28	6,026.3	-418.8	343.2	120.0	223.18	1.538	
11,600.0	6,011.0	11,554.3	5,918.0	117.5	117.1	-74.28	6,126.3	-418.8	343.2	116.3	226.87	1.513	
11,700.0	6,011.0	11,654.3	5,918.0	119.4	119.0	-74.28	6,226.3	-418.8	343.2	112.6	230.56	1.488 Level 3	
11,800.0	6,011.0	11,754.3	5,918.0	121.3	120.9	-74.28	6,326.3	-418.8	343.2	108.9	234.26	1.465 Level 3	
11,900.0	6,011.0	11,854.3	5,918.0	123.2	122.8	-74.28	6,426.3	-418.8	343.2	105.2	237.95	1.442 Level 3	
12,000.0	6,011.0	11,954.3	5,918.0	125.1	124.7	-74.28	6,526.3	-418.8	343.2	101.5	241.65	1.420 Level 3	
12,100.0	6,011.0	12,054.3	5,918.0	127.0	126.6	-74.28	6,626.3	-418.8	343.2	97.8	245.34	1.399 Level 3	
12,200.0	6,011.0	12,154.3	5,918.0	128.9	128.5	-74.28	6,726.3	-418.8	343.2	94.1	249.04	1.378 Level 3	
12,300.0	6,011.0	12,254.3	5,918.0	130.8	130.4	-74.28	6,826.3	-418.8	343.2	90.4	252.73	1.358 Level 3	
12,400.0	6,011.0	12,354.3	5,918.0	132.7	132.3	-74.28	6,926.3	-418.8	343.2	86.7	256.43	1.338 Level 3	
12,500.0	6,011.0	12,454.3	5,918.0	134.6	134.2	-74.28	7,026.3	-418.8	343.2	83.0	260.13	1.319 Level 3	
12,600.0	6,011.0	12,554.3	5,918.0	136.6	136.1	-74.28	7,126.3	-418.8	343.2	79.3	263.83	1.301 Level 3	
12,700.0	6,011.0	12,654.3	5,918.0	138.5	138.1	-74.28	7,226.3	-418.8	343.2	75.6	267.53	1.283 Level 3	
12,800.0	6,011.0	12,754.3	5,918.0	140.4	140.0	-74.28	7,326.3	-418.8	343.2	71.9	271.23	1.265 Level 3	
12,900.0	6,011.0	12,854.3	5,918.0	142.3	141.9	-74.28	7,426.3	-418.8	343.2	68.2	274.93	1.248 Level 2	
13,000.0	6,011.0	12,954.3	5,918.0	144.2	143.8	-74.28	7,526.3	-418.8	343.2	64.5	278.63	1.232 Level 2	
13,100.0	6,011.0	13,054.3	5,918.0	146.1	145.7	-74.28	7,626.3	-418.8	343.2	60.8	282.33	1.215 Level 2	
13,200.0	6,011.0	13,154.3	5,918.0	148.0	147.6	-74.28	7,726.3	-418.8	343.2	57.1	286.03	1.200 Level 2	
13,300.0	6,011.0	13,254.3	5,918.0	149.9	149.5	-74.28	7,826.3	-418.8	343.2	53.4	289.73	1.184 Level 2	
13,400.0	6,011.0	13,354.3	5,918.0	151.9	151.4	-74.28	7,926.3	-418.8	343.2	49.7	293.43	1.169 Level 2	
13,500.0	6,011.0	13,454.3	5,918.0	153.8	153.3	-74.28	8,026.3	-418.8	343.2	46.0	297.14	1.155 Level 2	
13,600.0	6,011.0	13,554.3	5,918.0	155.7	155.2	-74.28	8,126.3	-418.8	343.2	42.3	300.84	1.141 Level 2	
13,700.0	6,011.0	13,654.3	5,918.0	157.6	157.1	-74.28	8,226.3	-418.8	343.2	38.6	304.54	1.127 Level 2	
13,751.2	6,011.0	13,705.5	5,918.0	158.6	158.1	-74.28	8,277.5	-418.8	343.2	36.7	306.44	1.120 Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0911A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.1	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.1	32.1	31.9	0.19	172.078		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.1	32.1	31.5	0.64	50.468		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.1	32.1	31.0	1.09	29.570		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.1	32.1	30.6	1.54	20.911		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.1	32.1	30.1	1.98	16.175		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	32.1	32.1	29.7	2.43	13.188		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	32.1	32.1	29.2	2.88	11.132 CC		
800.0	800.0	800.0	800.0	1.7	1.7	98.48	0.0	32.1	32.3	29.0	3.33	9.697 ES		
900.0	899.8	899.8	899.8	1.9	1.9	107.33	0.0	32.1	33.5	29.7	3.78	8.855		
1,000.0	999.6	999.8	999.8	2.1	2.1	115.21	1.7	32.5	35.9	31.7	4.23	8.479		
1,100.0	1,099.4	1,100.0	1,099.8	2.4	2.3	116.92	6.8	33.5	38.2	33.5	4.69	8.132		
1,200.0	1,199.1	1,199.9	1,199.5	2.6	2.6	115.99	13.7	34.9	40.1	35.0	5.16	7.781		
1,300.0	1,298.9	1,299.9	1,299.3	2.8	2.8	115.14	20.5	36.4	42.1	36.5	5.63	7.479		
1,400.0	1,398.6	1,399.9	1,399.0	3.1	3.0	114.37	27.3	37.8	44.1	38.0	6.11	7.219		
1,500.0	1,498.4	1,499.9	1,498.7	3.3	3.3	113.66	34.1	39.2	46.1	39.5	6.60	6.993		
1,600.0	1,598.1	1,599.9	1,598.5	3.6	3.5	113.02	41.0	40.6	48.1	41.1	7.08	6.795		
1,700.0	1,697.9	1,699.8	1,698.2	3.8	3.8	112.43	47.8	42.0	50.2	42.6	7.58	6.621		
1,800.0	1,797.6	1,799.8	1,797.9	4.1	4.0	111.88	54.6	43.5	52.2	44.1	8.07	6.467		
1,900.0	1,897.4	1,899.8	1,897.7	4.3	4.3	111.37	61.5	44.9	54.2	45.6	8.56	6.329		
2,000.0	1,997.2	1,999.8	1,997.4	4.6	4.5	110.90	68.3	46.3	56.2	47.2	9.06	6.206		
2,100.0	2,096.9	2,099.7	2,097.2	4.8	4.8	110.46	75.1	47.7	58.3	48.7	9.56	6.094		
2,200.0	2,196.7	2,199.7	2,196.9	5.1	5.0	110.06	81.9	49.1	60.3	50.2	10.06	5.994		
2,300.0	2,296.4	2,299.7	2,296.6	5.3	5.3	109.67	88.8	50.6	62.3	51.8	10.56	5.902		
2,400.0	2,396.2	2,399.7	2,396.4	5.6	5.5	109.32	95.6	52.0	64.4	53.3	11.07	5.819		
2,500.0	2,495.9	2,499.7	2,496.1	5.9	5.8	108.98	102.4	53.4	66.4	54.9	11.57	5.743		
2,600.0	2,595.7	2,599.6	2,595.8	6.1	6.0	108.67	109.2	54.8	68.5	56.4	12.07	5.673		
2,700.0	2,695.5	2,699.6	2,695.6	6.4	6.3	108.37	116.1	56.2	70.5	58.0	12.58	5.608		
2,800.0	2,795.2	2,799.6	2,795.3	6.6	6.5	108.09	122.9	57.7	72.6	59.5	13.08	5.548		
2,900.0	2,895.0	2,899.6	2,895.0	6.9	6.8	107.83	129.7	59.1	74.6	61.0	13.59	5.493		
3,000.0	2,994.7	2,999.6	2,994.8	7.1	7.0	107.58	136.6	60.5	76.7	62.6	14.09	5.441		
3,100.0	3,094.5	3,099.5	3,094.5	7.4	7.3	107.34	143.4	61.9	78.7	64.1	14.60	5.393		
3,200.0	3,194.2	3,199.5	3,194.2	7.6	7.5	107.11	150.2	63.3	80.8	65.7	15.11	5.348		
3,300.0	3,294.0	3,299.5	3,294.0	7.9	7.8	106.90	157.0	64.8	82.9	67.2	15.61	5.306		
3,400.0	3,393.7	3,399.5	3,393.7	8.1	8.0	106.70	163.9	66.2	84.9	68.8	16.12	5.267		
3,500.0	3,493.5	3,499.4	3,493.4	8.4	8.3	106.50	170.7	67.6	87.0	70.3	16.63	5.230		
3,600.0	3,593.3	3,599.4	3,593.2	8.7	8.5	106.32	177.5	69.0	89.0	71.9	17.14	5.195		
3,700.0	3,693.0	3,699.4	3,692.9	8.9	8.8	106.14	184.4	70.4	91.1	73.4	17.64	5.163		
3,800.0	3,792.8	3,799.4	3,792.6	9.2	9.0	105.97	191.2	71.9	93.2	75.0	18.15	5.132		
3,900.0	3,892.5	3,899.4	3,892.4	9.4	9.3	105.81	198.0	73.3	95.2	76.6	18.66	5.102		
4,000.0	3,992.3	3,999.3	3,992.1	9.7	9.6	105.65	204.8	74.7	97.3	78.1	19.17	5.075		
4,100.0	4,092.0	4,099.3	4,091.8	9.9	9.8	105.51	211.7	76.1	99.3	79.7	19.68	5.048		
4,200.0	4,191.8	4,199.3	4,191.6	10.2	10.1	105.36	218.5	77.5	101.4	81.2	20.19	5.023		
4,300.0	4,291.6	4,299.3	4,291.3	10.4	10.3	105.23	225.3	79.0	103.5	82.8	20.70	5.000		
4,400.0	4,391.3	4,399.3	4,391.1	10.7	10.6	105.10	232.2	80.4	105.5	84.3	21.21	4.977		
4,500.0	4,491.1	4,499.2	4,490.8	11.0	10.8	104.97	239.0	81.8	107.6	85.9	21.72	4.955		
4,600.0	4,590.8	4,599.2	4,590.5	11.2	11.1	104.85	245.8	83.2	109.7	87.5	22.23	4.935		
4,700.0	4,690.6	4,699.2	4,690.3	11.5	11.3	104.73	252.6	84.7	111.7	89.0	22.74	4.915		
4,800.0	4,790.3	4,799.2	4,790.0	11.7	11.6	104.62	259.5	86.1	113.8	90.6	23.24	4.896		
4,900.0	4,890.1	4,899.1	4,889.7	12.0	11.9	104.51	266.3	87.5	115.9	92.1	23.75	4.878		
5,000.0	4,989.9	4,999.1	4,989.5	12.2	12.1	104.41	273.1	88.9	118.0	93.7	24.26	4.861		
5,100.0	5,089.6	5,099.1	5,089.2	12.5	12.4	104.30	279.9	90.3	120.0	95.2	24.77	4.845		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0911A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,199.1	5,188.9	12.7	12.6	104.21	286.8	91.8	122.1	96.8	25.28	4.829		
5,300.0	5,289.1	5,299.1	5,288.7	13.0	12.9	104.11	293.6	93.2	124.2	98.4	25.79	4.814		
5,400.0	5,388.9	5,399.0	5,388.4	13.3	13.1	104.02	300.4	94.6	126.2	99.9	26.30	4.799		
5,500.0	5,488.6	5,498.1	5,486.9	13.5	13.4	102.69	309.9	96.6	128.5	101.7	26.84	4.787		
5,600.0	5,588.0	5,593.5	5,578.8	13.8	13.8	95.71	334.3	101.6	133.8	106.3	27.52	4.864		
5,700.0	5,683.8	5,685.5	5,661.8	14.2	14.3	88.79	373.0	109.7	146.1	117.7	28.38	5.146		
5,800.0	5,772.5	5,774.5	5,734.3	14.8	14.9	83.22	423.5	120.2	164.0	134.6	29.43	5.574		
5,900.0	5,850.8	5,860.9	5,795.2	15.6	15.7	79.01	483.3	132.6	186.1	155.5	30.63	6.078		
6,000.0	5,915.9	5,945.1	5,844.0	16.5	16.5	75.94	550.3	146.6	211.0	179.0	32.00	6.593		
6,100.0	5,965.3	6,027.5	5,880.6	17.7	17.5	73.73	622.6	161.6	237.4	203.8	33.61	7.064		
6,200.0	5,997.3	6,108.9	5,904.9	19.0	18.5	72.17	698.6	177.4	264.7	229.2	35.51	7.454		
6,300.0	6,010.6	6,189.8	5,916.7	20.4	19.7	71.12	776.8	193.7	291.9	254.2	37.71	7.739		
6,400.0	6,011.0	6,289.4	5,918.0	21.8	21.1	72.54	874.5	212.9	317.2	276.5	40.73	7.788		
6,500.0	6,011.0	6,407.3	5,918.0	23.2	22.7	73.70	991.2	229.5	333.1	289.3	43.88	7.592		
6,600.0	6,011.0	6,527.3	5,918.0	24.7	24.4	74.15	1,110.8	238.9	340.7	293.6	47.12	7.231		
6,700.0	6,011.0	6,642.9	5,918.0	26.3	26.2	74.24	1,226.3	241.1	342.4	292.0	50.41	6.792		
6,800.0	6,011.0	6,742.9	5,918.0	28.0	27.7	74.24	1,326.3	241.1	342.4	288.8	53.58	6.391		
6,900.0	6,011.0	6,842.9	5,918.0	29.7	29.4	74.24	1,426.3	241.1	342.4	285.6	56.83	6.026		
7,000.0	6,011.0	6,942.9	5,918.0	31.4	31.1	74.24	1,526.3	241.1	342.4	282.3	60.13	5.695		
7,100.0	6,011.0	7,042.9	5,918.0	33.1	32.8	74.24	1,626.3	241.1	342.4	279.0	63.47	5.395		
7,200.0	6,011.0	7,142.9	5,918.0	34.9	34.5	74.24	1,726.3	241.1	342.4	275.6	66.86	5.122		
7,300.0	6,011.0	7,242.9	5,918.0	36.7	36.2	74.24	1,826.3	241.1	342.4	272.2	70.28	4.873		
7,400.0	6,011.0	7,342.9	5,918.0	38.5	38.0	74.24	1,926.3	241.1	342.4	268.7	73.73	4.645		
7,500.0	6,011.0	7,442.9	5,918.0	40.3	39.8	74.24	2,026.3	241.1	342.4	265.2	77.20	4.436		
7,600.0	6,011.0	7,542.9	5,918.0	42.1	41.6	74.24	2,126.3	241.1	342.4	261.7	80.70	4.243		
7,700.0	6,011.0	7,642.9	5,918.0	43.9	43.4	74.24	2,226.3	241.1	342.4	258.2	84.21	4.066		
7,800.0	6,011.0	7,742.9	5,918.0	45.7	45.2	74.24	2,326.3	241.1	342.4	254.7	87.75	3.903		
7,900.0	6,011.0	7,842.9	5,918.0	47.6	47.0	74.24	2,426.3	241.1	342.4	251.2	91.29	3.751		
8,000.0	6,011.0	7,942.9	5,918.0	49.4	48.8	74.24	2,526.3	241.1	342.5	247.6	94.85	3.610		
8,100.0	6,011.0	8,042.9	5,918.0	51.3	50.7	74.24	2,626.3	241.1	342.5	244.0	98.43	3.479		
8,200.0	6,011.0	8,142.9	5,918.0	53.1	52.5	74.24	2,726.3	241.1	342.5	240.4	102.01	3.357		
8,300.0	6,011.0	8,242.9	5,918.0	55.0	54.4	74.24	2,826.3	241.1	342.5	236.9	105.60	3.243		
8,400.0	6,011.0	8,342.9	5,918.0	56.8	56.2	74.24	2,926.3	241.1	342.5	233.3	109.20	3.136		
8,500.0	6,011.0	8,442.9	5,918.0	58.7	58.1	74.24	3,026.3	241.1	342.5	229.7	112.81	3.036		
8,600.0	6,011.0	8,542.9	5,918.0	60.6	59.9	74.24	3,126.3	241.1	342.5	226.0	116.43	2.942		
8,700.0	6,011.0	8,642.9	5,918.0	62.5	61.8	74.25	3,226.3	241.1	342.5	222.4	120.05	2.853		
8,800.0	6,011.0	8,742.9	5,918.0	64.3	63.7	74.25	3,326.3	241.1	342.5	218.8	123.68	2.769		
8,900.0	6,011.0	8,842.9	5,918.0	66.2	65.5	74.25	3,426.3	241.1	342.5	215.2	127.31	2.690		
9,000.0	6,011.0	8,942.9	5,918.0	68.1	67.4	74.25	3,526.3	241.1	342.5	211.5	130.95	2.615		
9,100.0	6,011.0	9,042.9	5,918.0	70.0	69.3	74.25	3,626.3	241.1	342.5	207.9	134.59	2.545		
9,200.0	6,011.0	9,142.9	5,918.0	71.9	71.2	74.25	3,726.3	241.1	342.5	204.3	138.24	2.478		
9,300.0	6,011.0	9,242.9	5,918.0	73.7	73.0	74.25	3,826.3	241.1	342.5	200.6	141.89	2.414		
9,400.0	6,011.0	9,342.9	5,918.0	75.6	74.9	74.25	3,926.3	241.1	342.5	197.0	145.54	2.353		
9,500.0	6,011.0	9,442.9	5,918.0	77.5	76.8	74.25	4,026.3	241.1	342.5	193.3	149.20	2.296		
9,600.0	6,011.0	9,542.9	5,918.0	79.4	78.7	74.25	4,126.3	241.1	342.5	189.6	152.86	2.241		
9,700.0	6,011.0	9,642.9	5,918.0	81.3	80.6	74.25	4,226.3	241.1	342.5	186.0	156.53	2.188		
9,800.0	6,011.0	9,742.9	5,918.0	83.2	82.5	74.25	4,326.3	241.1	342.5	182.3	160.19	2.138		
9,900.0	6,011.0	9,842.9	5,918.0	85.1	84.4	74.25	4,426.3	241.1	342.5	178.7	163.86	2.090		
10,000.0	6,011.0	9,942.9	5,918.0	87.0	86.2	74.25	4,526.3	241.1	342.5	175.0	167.53	2.044		
10,100.0	6,011.0	10,042.9	5,918.0	88.9	88.1	74.25	4,626.3	241.1	342.5	171.3	171.20	2.001		
10,200.0	6,011.0	10,142.9	5,918.0	90.8	90.0	74.25	4,726.3	241.2	342.5	167.6	174.88	1.959		
10,300.0	6,011.0	10,242.9	5,918.0	92.7	91.9	74.25	4,826.3	241.2	342.5	164.0	178.56	1.918		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0911A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,011.0	10,342.9	5,918.0	94.6	93.8	74.25	4,926.3	241.2	342.5	160.3	182.23	1.880		
10,500.0	6,011.0	10,442.9	5,918.0	96.5	95.7	74.25	5,026.3	241.2	342.5	156.6	185.91	1.842		
10,600.0	6,011.0	10,542.9	5,918.0	98.4	97.6	74.25	5,126.3	241.2	342.5	152.9	189.60	1.807		
10,700.0	6,011.0	10,642.9	5,918.0	100.3	99.5	74.25	5,226.3	241.2	342.5	149.3	193.28	1.772		
10,800.0	6,011.0	10,742.9	5,918.0	102.2	101.4	74.25	5,326.3	241.2	342.5	145.6	196.96	1.739		
10,900.0	6,011.0	10,842.9	5,918.0	104.1	103.3	74.25	5,426.3	241.2	342.5	141.9	200.65	1.707		
11,000.0	6,011.0	10,942.9	5,918.0	106.0	105.2	74.25	5,526.3	241.2	342.5	138.2	204.34	1.676		
11,100.0	6,011.0	11,042.9	5,918.0	107.9	107.1	74.25	5,626.3	241.2	342.5	134.5	208.03	1.647		
11,200.0	6,011.0	11,142.9	5,918.0	109.8	109.0	74.25	5,726.3	241.2	342.6	130.8	211.72	1.618		
11,300.0	6,011.0	11,242.9	5,918.0	111.7	110.9	74.25	5,826.3	241.2	342.6	127.1	215.41	1.590		
11,400.0	6,011.0	11,342.9	5,918.0	113.6	112.8	74.25	5,926.3	241.2	342.6	123.5	219.10	1.563		
11,500.0	6,011.0	11,442.9	5,918.0	115.5	114.7	74.25	6,026.3	241.2	342.6	119.8	222.79	1.538		
11,600.0	6,011.0	11,542.9	5,918.0	117.5	116.7	74.25	6,126.3	241.2	342.6	116.1	226.48	1.513		
11,700.0	6,011.0	11,642.9	5,918.0	119.4	118.6	74.25	6,226.3	241.2	342.6	112.4	230.18	1.488	Level 3	
11,800.0	6,011.0	11,742.9	5,918.0	121.3	120.5	74.25	6,326.3	241.2	342.6	108.7	233.87	1.465	Level 3	
11,900.0	6,011.0	11,842.9	5,918.0	123.2	122.4	74.25	6,426.3	241.2	342.6	105.0	237.57	1.442	Level 3	
12,000.0	6,011.0	11,942.9	5,918.0	125.1	124.3	74.25	6,526.3	241.2	342.6	101.3	241.27	1.420	Level 3	
12,100.0	6,011.0	12,042.9	5,918.0	127.0	126.2	74.25	6,626.3	241.2	342.6	97.6	244.96	1.398	Level 3	
12,200.0	6,011.0	12,142.9	5,918.0	128.9	128.1	74.25	6,726.3	241.2	342.6	93.9	248.66	1.378	Level 3	
12,300.0	6,011.0	12,242.9	5,918.0	130.8	130.0	74.25	6,826.3	241.2	342.6	90.2	252.36	1.358	Level 3	
12,400.0	6,011.0	12,342.9	5,918.0	132.7	131.9	74.25	6,926.3	241.2	342.6	86.5	256.06	1.338	Level 3	
12,500.0	6,011.0	12,442.9	5,918.0	134.6	133.8	74.25	7,026.3	241.2	342.6	82.8	259.76	1.319	Level 3	
12,600.0	6,011.0	12,542.9	5,918.0	136.6	135.7	74.25	7,126.3	241.2	342.6	79.1	263.46	1.300	Level 3	
12,700.0	6,011.0	12,642.9	5,918.0	138.5	137.6	74.25	7,226.3	241.2	342.6	75.4	267.16	1.282	Level 3	
12,800.0	6,011.0	12,742.9	5,918.0	140.4	139.6	74.25	7,326.3	241.2	342.6	71.7	270.86	1.265	Level 3	
12,900.0	6,011.0	12,842.9	5,918.0	142.3	141.5	74.25	7,426.3	241.2	342.6	68.0	274.57	1.248	Level 2	
13,000.0	6,011.0	12,942.9	5,918.0	144.2	143.4	74.25	7,526.3	241.2	342.6	64.3	278.27	1.231	Level 2	
13,100.0	6,011.0	13,042.9	5,918.0	146.1	145.3	74.25	7,626.3	241.2	342.6	60.6	281.97	1.215	Level 2	
13,200.0	6,011.0	13,142.9	5,918.0	148.0	147.2	74.25	7,726.3	241.2	342.6	56.9	285.68	1.199	Level 2	
13,300.0	6,011.0	13,242.9	5,918.0	149.9	149.1	74.25	7,826.3	241.2	342.6	53.2	289.38	1.184	Level 2	
13,400.0	6,011.0	13,342.9	5,918.0	151.9	151.0	74.25	7,926.3	241.2	342.6	49.5	293.09	1.169	Level 2	
13,500.0	6,011.0	13,442.9	5,918.0	153.8	152.9	74.25	8,026.3	241.2	342.6	45.8	296.79	1.154	Level 2	
13,600.0	6,011.0	13,542.9	5,918.0	155.7	154.8	74.25	8,126.3	241.2	342.6	42.1	300.50	1.140	Level 2	
13,700.0	6,011.0	13,642.9	5,918.0	157.6	156.8	74.25	8,226.3	241.2	342.6	38.4	304.20	1.126	Level 2	
13,751.2	6,011.0	13,694.0	5,918.0	158.6	157.7	74.25	8,277.5	241.2	342.6	36.5	306.10	1.119	Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	65.3	65.3					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	65.3	65.3	65.1	0.19	350.090		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	65.3	65.3	64.7	0.64	102.677		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	65.3	65.3	64.2	1.09	60.160		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	65.3	65.3	63.8	1.54	42.544		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	65.3	65.3	63.3	1.98	32.908		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	65.3	65.3	62.9	2.43	26.831		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	65.3	65.3	62.4	2.88	22.648 CC		
800.0	800.0	800.0	800.0	1.7	1.7	96.91	0.0	65.3	65.5	62.2	3.33	19.656 ES		
900.0	899.8	899.8	899.8	1.9	1.9	101.38	0.0	65.3	66.3	62.6	3.78	17.541		
1,000.0	999.6	999.6	999.6	2.1	2.1	107.14	0.0	65.3	68.1	63.8	4.24	16.066		
1,100.0	1,099.4	1,099.4	1,099.4	2.4	2.3	112.56	0.0	65.3	70.4	65.7	4.69	15.004		
1,200.0	1,199.1	1,199.0	1,199.0	2.6	2.6	116.24	1.6	66.0	73.5	68.3	5.15	14.261		
1,300.0	1,298.9	1,298.8	1,298.6	2.8	2.8	117.04	6.3	68.1	76.9	71.3	5.61	13.696		
1,400.0	1,398.6	1,398.7	1,398.3	3.1	3.0	116.50	12.6	71.0	80.4	74.3	6.08	13.216		
1,500.0	1,498.4	1,498.7	1,498.0	3.3	3.2	116.01	19.0	73.9	83.9	77.3	6.56	12.793		
1,600.0	1,598.1	1,598.6	1,597.7	3.6	3.5	115.55	25.4	76.7	87.4	80.3	7.03	12.420		
1,700.0	1,697.9	1,698.5	1,697.4	3.8	3.7	115.13	31.7	79.6	90.9	83.4	7.52	12.089		
1,800.0	1,797.6	1,798.5	1,797.1	4.1	4.0	114.74	38.1	82.5	94.4	86.4	8.00	11.793		
1,900.0	1,897.4	1,898.4	1,896.8	4.3	4.2	114.38	44.4	85.3	97.9	89.4	8.49	11.529		
2,000.0	1,997.2	1,998.3	1,996.5	4.6	4.4	114.05	50.8	88.2	101.4	92.4	8.98	11.290		
2,100.0	2,096.9	2,098.3	2,096.2	4.8	4.7	113.73	57.1	91.0	105.0	95.5	9.48	11.075		
2,200.0	2,196.7	2,198.2	2,195.9	5.1	4.9	113.44	63.5	93.9	108.5	98.5	9.97	10.879		
2,300.0	2,296.4	2,298.1	2,295.6	5.3	5.2	113.16	69.9	96.8	112.0	101.5	10.47	10.700		
2,400.0	2,396.2	2,398.1	2,395.2	5.6	5.4	112.91	76.2	99.6	115.5	104.6	10.97	10.537		
2,500.0	2,495.9	2,498.0	2,494.9	5.9	5.7	112.66	82.6	102.5	119.1	107.6	11.46	10.387		
2,600.0	2,595.7	2,598.0	2,594.6	6.1	5.9	112.44	88.9	105.4	122.6	110.7	11.96	10.249		
2,700.0	2,695.5	2,697.9	2,694.3	6.4	6.2	112.22	95.3	108.2	126.2	113.7	12.46	10.122		
2,800.0	2,795.2	2,797.8	2,794.0	6.6	6.4	112.02	101.6	111.1	129.7	116.7	12.96	10.004		
2,900.0	2,895.0	2,897.8	2,893.7	6.9	6.7	111.82	108.0	114.0	133.2	119.8	13.47	9.895		
3,000.0	2,994.7	2,997.7	2,993.4	7.1	6.9	111.64	114.3	116.8	136.8	122.8	13.97	9.793		
3,100.0	3,094.5	3,097.6	3,093.1	7.4	7.2	111.47	120.7	119.7	140.3	125.9	14.47	9.697		
3,200.0	3,194.2	3,197.6	3,192.8	7.6	7.4	111.30	127.1	122.5	143.9	128.9	14.97	9.608		
3,300.0	3,294.0	3,297.5	3,292.5	7.9	7.7	111.14	133.4	125.4	147.4	131.9	15.48	9.525		
3,400.0	3,393.7	3,397.4	3,392.2	8.1	7.9	110.99	139.8	128.3	151.0	135.0	15.98	9.447		
3,500.0	3,493.5	3,497.4	3,491.9	8.4	8.2	110.85	146.1	131.1	154.5	138.0	16.48	9.373		
3,600.0	3,593.3	3,597.3	3,591.6	8.7	8.4	110.71	152.5	134.0	158.1	141.1	16.99	9.304		
3,700.0	3,693.0	3,697.3	3,691.3	8.9	8.7	110.58	158.8	136.9	161.6	144.1	17.49	9.238		
3,800.0	3,792.8	3,797.2	3,790.9	9.2	8.9	110.46	165.2	139.7	165.2	147.2	18.00	9.176		
3,900.0	3,892.5	3,897.1	3,890.6	9.4	9.2	110.34	171.5	142.6	168.7	150.2	18.50	9.118		
4,000.0	3,992.3	3,997.1	3,990.3	9.7	9.5	110.22	177.9	145.4	172.3	153.3	19.01	9.062		
4,100.0	4,092.0	4,097.0	4,090.0	9.9	9.7	110.11	184.3	148.3	175.8	156.3	19.51	9.010		
4,200.0	4,191.8	4,196.9	4,189.7	10.2	10.0	110.01	190.6	151.2	179.4	159.4	20.02	8.960		
4,300.0	4,291.6	4,296.9	4,289.4	10.4	10.2	109.91	197.0	154.0	182.9	162.4	20.53	8.912		
4,400.0	4,391.3	4,396.8	4,389.1	10.7	10.5	109.81	203.3	156.9	186.5	165.5	21.03	8.867		
4,500.0	4,491.1	4,496.7	4,488.8	11.0	10.7	109.71	209.7	159.8	190.0	168.5	21.54	8.823		
4,600.0	4,590.8	4,596.7	4,588.5	11.2	11.0	109.62	216.0	162.6	193.6	171.6	22.05	8.782		
4,700.0	4,690.6	4,696.6	4,688.2	11.5	11.2	109.54	222.4	165.5	197.2	174.6	22.55	8.742		
4,800.0	4,790.3	4,796.6	4,787.9	11.7	11.5	109.45	228.8	168.4	200.7	177.7	23.06	8.705		
4,900.0	4,890.1	4,896.5	4,887.6	12.0	11.7	109.37	235.1	171.2	204.3	180.7	23.56	8.668		
5,000.0	4,989.9	4,996.4	4,987.3	12.2	12.0	109.29	241.5	174.1	207.8	183.8	24.07	8.634		
5,100.0	5,089.6	5,096.4	5,087.0	12.5	12.3	109.22	247.8	176.9	211.4	186.8	24.58	8.600		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,196.3	5,186.6	12.7	12.5	109.14	254.2	179.8	214.9	189.9	25.09	8.568		
5,300.0	5,289.1	5,296.2	5,286.3	13.0	12.8	109.07	260.5	182.7	218.5	192.9	25.59	8.538		
5,400.0	5,388.9	5,396.2	5,386.0	13.3	13.0	109.00	266.9	185.5	222.1	196.0	26.10	8.508		
5,500.0	5,488.6	5,496.1	5,485.7	13.5	13.3	108.94	273.2	188.4	225.6	199.0	26.61	8.480		
5,600.0	5,588.0	5,591.5	5,580.6	13.8	13.5	108.57	281.9	192.3	230.9	203.8	27.12	8.516		
5,700.0	5,683.8	5,682.9	5,668.8	14.2	13.9	107.37	303.5	202.0	244.8	217.1	27.79	8.812		
5,800.0	5,772.5	5,772.6	5,750.0	14.8	14.4	105.47	338.0	217.6	267.4	238.7	28.69	9.320		
5,900.0	5,850.8	5,860.2	5,821.8	15.6	15.0	102.97	383.4	238.0	297.7	267.8	29.91	9.952		
6,000.0	5,915.9	5,945.5	5,882.8	16.5	15.7	99.95	437.7	262.5	334.6	303.1	31.49	10.624		
6,100.0	5,965.3	6,029.0	5,932.4	17.7	16.5	96.56	498.8	290.0	376.6	343.2	33.40	11.274		
6,200.0	5,997.3	6,111.4	5,970.2	19.0	17.5	92.91	565.5	320.0	422.4	386.8	35.57	11.877		
6,300.0	6,010.6	6,193.8	5,996.0	20.4	18.6	89.18	636.8	352.2	470.6	432.7	37.89	12.419		
6,400.0	6,011.0	6,279.2	6,009.5	21.8	19.8	89.81	713.6	386.8	518.3	477.9	40.46	12.812		
6,500.0	6,011.0	6,390.2	6,011.0	23.2	21.3	90.00	815.3	431.1	560.8	517.4	43.39	12.923		
6,600.0	6,011.0	6,524.9	6,011.0	24.7	23.2	90.00	941.8	477.4	595.2	548.6	46.62	12.766		
6,700.0	6,011.0	6,666.1	6,011.0	26.3	25.2	90.00	1,077.5	516.1	622.7	572.5	50.19	12.405		
6,800.0	6,011.0	6,812.6	6,011.0	28.0	27.4	90.00	1,221.0	545.7	642.8	588.8	54.01	11.903		
6,900.0	6,011.0	6,962.9	6,011.0	29.7	29.7	90.00	1,370.1	564.4	655.3	597.3	58.02	11.294		
7,000.0	6,011.0	7,115.3	6,011.0	31.4	32.1	90.00	1,522.3	571.5	660.0	597.8	62.18	10.614		
7,100.0	6,011.0	7,219.4	6,011.0	33.1	33.7	90.00	1,626.3	571.5	660.0	594.4	65.61	10.059		
7,200.0	6,011.0	7,319.4	6,011.0	34.9	35.3	90.00	1,726.3	571.5	660.0	591.0	69.02	9.562		
7,300.0	6,011.0	7,419.4	6,011.0	36.7	36.9	90.00	1,826.3	571.5	660.0	587.5	72.47	9.107		
7,400.0	6,011.0	7,519.4	6,011.0	38.5	38.6	90.00	1,926.3	571.5	660.0	584.0	75.96	8.688		
7,500.0	6,011.0	7,619.4	6,011.0	40.3	40.3	90.00	2,026.3	571.5	660.0	580.5	79.48	8.303		
7,600.0	6,011.0	7,719.4	6,011.0	42.1	42.0	90.00	2,126.3	571.5	660.0	576.9	83.04	7.948		
7,700.0	6,011.0	7,819.4	6,011.0	43.9	43.7	90.00	2,226.3	571.5	660.0	573.4	86.61	7.620		
7,800.0	6,011.0	7,919.4	6,011.0	45.7	45.4	90.00	2,326.3	571.5	660.0	569.8	90.21	7.316		
7,900.0	6,011.0	8,019.4	6,011.0	47.6	47.1	90.00	2,426.3	571.5	660.0	566.2	93.83	7.034		
8,000.0	6,011.0	8,119.4	6,011.0	49.4	48.9	90.00	2,526.3	571.5	660.0	562.5	97.46	6.772		
8,100.0	6,011.0	8,219.4	6,011.0	51.3	50.7	90.00	2,626.3	571.5	660.0	558.9	101.11	6.527		
8,200.0	6,011.0	8,319.4	6,011.0	53.1	52.5	90.00	2,726.3	571.5	660.0	555.2	104.78	6.299		
8,300.0	6,011.0	8,419.4	6,011.0	55.0	54.2	90.00	2,826.3	571.5	660.0	551.5	108.45	6.086		
8,400.0	6,011.0	8,519.4	6,011.0	56.8	56.0	90.00	2,926.3	571.5	660.0	547.9	112.14	5.886		
8,500.0	6,011.0	8,619.4	6,011.0	58.7	57.9	90.00	3,026.3	571.5	660.0	544.2	115.84	5.698		
8,600.0	6,011.0	8,719.4	6,011.0	60.6	59.7	90.00	3,126.3	571.5	660.0	540.5	119.54	5.521		
8,700.0	6,011.0	8,819.4	6,011.0	62.5	61.5	90.00	3,226.3	571.5	660.0	536.7	123.26	5.355		
8,800.0	6,011.0	8,919.4	6,011.0	64.3	63.3	90.00	3,326.3	571.5	660.0	533.0	126.98	5.198		
8,900.0	6,011.0	9,019.4	6,011.0	66.2	65.1	90.00	3,426.3	571.5	660.0	529.3	130.71	5.049		
9,000.0	6,011.0	9,119.4	6,011.0	68.1	67.0	90.00	3,526.3	571.5	660.0	525.6	134.45	4.909		
9,100.0	6,011.0	9,219.4	6,011.0	70.0	68.8	90.00	3,626.3	571.5	660.0	521.8	138.19	4.776		
9,200.0	6,011.0	9,319.4	6,011.0	71.9	70.7	90.00	3,726.3	571.5	660.0	518.1	141.94	4.650		
9,300.0	6,011.0	9,419.4	6,011.0	73.7	72.5	90.00	3,826.3	571.5	660.0	514.3	145.69	4.530		
9,400.0	6,011.0	9,519.4	6,011.0	75.6	74.4	90.00	3,926.3	571.5	660.0	510.6	149.45	4.416		
9,500.0	6,011.0	9,619.4	6,011.0	77.5	76.2	90.00	4,026.3	571.5	660.0	506.8	153.21	4.308		
9,600.0	6,011.0	9,719.4	6,011.0	79.4	78.1	90.00	4,126.3	571.5	660.0	503.0	156.97	4.205		
9,700.0	6,011.0	9,819.4	6,011.0	81.3	79.9	90.00	4,226.3	571.5	660.0	499.3	160.74	4.106		
9,800.0	6,011.0	9,919.4	6,011.0	83.2	81.8	90.00	4,326.3	571.5	660.0	495.5	164.51	4.012		
9,900.0	6,011.0	10,019.4	6,011.0	85.1	83.7	90.00	4,426.3	571.5	660.0	491.7	168.29	3.922		
10,000.0	6,011.0	10,119.4	6,011.0	87.0	85.6	90.00	4,526.3	571.5	660.0	488.0	172.07	3.836		
10,100.0	6,011.0	10,219.4	6,011.0	88.9	87.4	90.00	4,626.3	571.5	660.0	484.2	175.85	3.753		
10,200.0	6,011.0	10,319.4	6,011.0	90.8	89.3	90.00	4,726.3	571.5	660.0	480.4	179.63	3.674		
10,300.0	6,011.0	10,419.4	6,011.0	92.7	91.2	90.00	4,826.3	571.5	660.0	476.6	183.42	3.599		

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

Cathedral Energy Services

Anticollision Report

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Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
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Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,011.0	10,519.4	6,011.0	94.6	93.1	90.00	4,926.3	571.5	660.0	472.8	187.21	3.526		
10,500.0	6,011.0	10,619.4	6,011.0	96.5	94.9	90.00	5,026.3	571.5	660.0	469.0	191.00	3.456		
10,600.0	6,011.0	10,719.4	6,011.0	98.4	96.8	90.00	5,126.3	571.5	660.0	465.2	194.79	3.388		
10,700.0	6,011.0	10,819.4	6,011.0	100.3	98.7	90.00	5,226.3	571.5	660.0	461.5	198.58	3.324		
10,800.0	6,011.0	10,919.4	6,011.0	102.2	100.6	90.00	5,326.3	571.5	660.0	457.7	202.38	3.261		
10,900.0	6,011.0	11,019.4	6,011.0	104.1	102.5	90.00	5,426.3	571.5	660.0	453.9	206.18	3.201		
11,000.0	6,011.0	11,119.4	6,011.0	106.0	104.4	90.00	5,526.3	571.5	660.0	450.1	209.98	3.143		
11,100.0	6,011.0	11,219.4	6,011.0	107.9	106.2	90.00	5,626.3	571.5	660.0	446.3	213.78	3.087		
11,200.0	6,011.0	11,319.4	6,011.0	109.8	108.1	90.00	5,726.3	571.5	660.0	442.5	217.58	3.034		
11,300.0	6,011.0	11,419.4	6,011.0	111.7	110.0	90.00	5,826.3	571.5	660.0	438.7	221.39	2.981		
11,400.0	6,011.0	11,519.4	6,011.0	113.6	111.9	90.00	5,926.3	571.5	660.0	434.9	225.19	2.931		
11,500.0	6,011.0	11,619.4	6,011.0	115.5	113.8	90.00	6,026.3	571.5	660.0	431.1	229.00	2.882		
11,600.0	6,011.0	11,719.4	6,011.0	117.5	115.7	90.00	6,126.3	571.5	660.1	427.2	232.81	2.835		
11,700.0	6,011.0	11,819.4	6,011.0	119.4	117.6	90.00	6,226.3	571.5	660.1	423.4	236.62	2.790		
11,800.0	6,011.0	11,919.4	6,011.0	121.3	119.5	90.00	6,326.3	571.5	660.1	419.6	240.43	2.745		
11,900.0	6,011.0	12,019.4	6,011.0	123.2	121.4	90.00	6,426.3	571.5	660.1	415.8	244.24	2.703		
12,000.0	6,011.0	12,119.4	6,011.0	125.1	123.3	90.00	6,526.3	571.5	660.1	412.0	248.05	2.661		
12,100.0	6,011.0	12,219.4	6,011.0	127.0	125.2	90.00	6,626.3	571.5	660.1	408.2	251.86	2.621		
12,200.0	6,011.0	12,319.4	6,011.0	128.9	127.1	90.00	6,726.3	571.5	660.1	404.4	255.68	2.582		
12,300.0	6,011.0	12,419.4	6,011.0	130.8	129.0	90.00	6,826.3	571.5	660.1	400.6	259.49	2.544		
12,400.0	6,011.0	12,519.4	6,011.0	132.7	130.9	90.00	6,926.3	571.5	660.1	396.8	263.31	2.507		
12,500.0	6,011.0	12,619.4	6,011.0	134.6	132.8	90.00	7,026.3	571.5	660.1	392.9	267.12	2.471		
12,600.0	6,011.0	12,719.4	6,011.0	136.6	134.7	90.00	7,126.3	571.5	660.1	389.1	270.94	2.436		
12,700.0	6,011.0	12,819.4	6,011.0	138.5	136.6	90.00	7,226.3	571.5	660.1	385.3	274.76	2.402		
12,800.0	6,011.0	12,919.4	6,011.0	140.4	138.5	90.00	7,326.3	571.5	660.1	381.5	278.58	2.369		
12,900.0	6,011.0	13,019.4	6,011.0	142.3	140.4	90.00	7,426.3	571.5	660.1	377.7	282.40	2.337		
13,000.0	6,011.0	13,119.4	6,011.0	144.2	142.3	90.00	7,526.3	571.6	660.1	373.9	286.22	2.306		
13,100.0	6,011.0	13,219.4	6,011.0	146.1	144.2	90.00	7,626.3	571.6	660.1	370.0	290.04	2.276		
13,200.0	6,011.0	13,319.4	6,011.0	148.0	146.1	90.00	7,726.3	571.6	660.1	366.2	293.86	2.246		
13,300.0	6,011.0	13,419.4	6,011.0	149.9	148.0	90.00	7,826.3	571.6	660.1	362.4	297.68	2.217		
13,400.0	6,011.0	13,519.4	6,011.0	151.9	149.9	90.00	7,926.3	571.6	660.1	358.6	301.50	2.189		
13,500.0	6,011.0	13,619.4	6,011.0	153.8	151.8	90.00	8,026.3	571.6	660.1	354.8	305.32	2.162		
13,600.0	6,011.0	13,719.4	6,011.0	155.7	153.7	90.00	8,126.3	571.6	660.1	350.9	309.15	2.135		
13,700.0	6,011.0	13,819.4	6,011.0	157.6	155.6	90.00	8,226.3	571.6	660.1	347.1	312.97	2.109		
13,751.2	6,011.0	13,870.6	6,011.0	158.6	156.6	90.00	8,277.5	571.6	660.1	345.2	314.93	2.096 SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2809A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.45	1.1	114.3	114.3					
100.0	100.0	99.5	99.5	0.1	0.1	89.45	1.1	114.3	114.3	114.1	0.19	612.381		
200.0	200.0	199.5	199.5	0.3	0.3	89.45	1.1	114.3	114.3	113.7	0.64	179.851		
300.0	300.0	299.5	299.5	0.5	0.5	89.45	1.1	114.3	114.3	113.2	1.09	105.340		
400.0	400.0	399.5	399.5	0.8	0.8	89.45	1.1	114.3	114.3	112.8	1.53	74.482		
500.0	500.0	499.5	499.5	1.0	1.0	89.45	1.1	114.3	114.3	112.3	1.98	57.607		
600.0	600.0	599.5	599.5	1.2	1.2	89.45	1.1	114.3	114.3	111.9	2.43	46.966		
700.0	700.0	699.5	699.5	1.4	1.4	89.45	1.1	114.3	114.3	111.4	2.88	39.644 CC		
800.0	800.0	799.5	799.5	1.7	1.7	95.72	1.1	114.3	114.5	111.1	3.33	34.355 ES		
900.0	899.8	899.3	899.3	1.9	1.9	98.29	1.1	114.3	115.1	111.3	3.78	30.441		
1,000.0	999.6	999.1	999.1	2.1	2.1	101.69	1.1	114.3	116.3	112.1	4.24	27.458		
1,100.0	1,099.4	1,098.9	1,098.9	2.4	2.3	105.00	1.1	114.3	117.9	113.2	4.70	25.115		
1,200.0	1,199.1	1,198.6	1,198.6	2.6	2.6	108.21	1.1	114.3	119.9	114.8	5.16	23.252		
1,300.0	1,298.9	1,298.4	1,298.4	2.8	2.8	111.31	1.1	114.3	122.3	116.7	5.62	21.755		
1,400.0	1,398.6	1,398.1	1,398.1	3.1	3.0	114.29	1.1	114.3	125.0	118.9	6.09	20.541		
1,500.0	1,498.4	1,497.9	1,497.9	3.3	3.2	117.13	1.1	114.3	128.0	121.5	6.55	19.549		
1,600.0	1,598.1	1,596.9	1,596.8	3.6	3.4	120.51	-0.5	113.9	131.7	124.7	6.98	18.856		
1,700.0	1,697.9	1,695.2	1,695.0	3.8	3.6	125.07	-5.3	112.6	136.5	129.2	7.39	18.485		
1,800.0	1,797.6	1,794.2	1,793.8	4.1	3.8	130.02	-12.0	110.8	142.9	135.1	7.80	18.326		
1,900.0	1,897.4	1,893.2	1,892.6	4.3	4.0	134.52	-18.7	109.0	150.2	142.0	8.21	18.290 SF		
2,000.0	1,997.2	1,992.3	1,991.4	4.6	4.2	138.60	-25.3	107.2	158.4	149.8	8.63	18.346		
2,100.0	2,096.9	2,091.3	2,090.2	4.8	4.4	142.26	-32.0	105.5	167.3	158.2	9.06	18.470		
2,200.0	2,196.7	2,190.4	2,189.0	5.1	4.6	145.54	-38.7	103.7	176.8	167.3	9.48	18.642		
2,300.0	2,296.4	2,289.4	2,287.8	5.3	4.8	148.48	-45.4	101.9	186.8	176.9	9.91	18.847		
2,400.0	2,396.2	2,388.5	2,386.7	5.6	5.0	151.12	-52.0	100.1	197.3	187.0	10.34	19.075		
2,500.0	2,495.9	2,487.6	2,485.5	5.9	5.2	153.49	-58.7	98.3	208.2	197.4	10.78	19.316		
2,600.0	2,595.7	2,586.6	2,584.3	6.1	5.5	155.62	-65.4	96.5	219.3	208.1	11.21	19.564		
2,700.0	2,695.5	2,685.7	2,683.1	6.4	5.7	157.55	-72.1	94.8	230.8	219.1	11.65	19.814		
2,800.0	2,795.2	2,784.7	2,781.9	6.6	5.9	159.29	-78.7	93.0	242.5	230.4	12.08	20.064		
2,900.0	2,895.0	2,883.8	2,880.7	6.9	6.2	160.87	-85.4	91.2	254.3	241.8	12.52	20.311		
3,000.0	2,994.7	2,982.8	2,979.6	7.1	6.4	162.31	-92.1	89.4	266.4	253.4	12.96	20.552		
3,100.0	3,094.5	3,081.9	3,078.4	7.4	6.6	163.63	-98.8	87.6	278.6	265.2	13.40	20.788		
3,200.0	3,194.2	3,181.0	3,177.2	7.6	6.9	164.83	-105.5	85.8	290.9	277.1	13.84	21.017		
3,300.0	3,294.0	3,280.0	3,276.0	7.9	7.1	165.94	-112.1	84.1	303.4	289.1	14.29	21.238		
3,400.0	3,393.7	3,379.1	3,374.8	8.1	7.4	166.96	-118.8	82.3	316.0	301.2	14.73	21.452		
3,500.0	3,493.5	3,478.1	3,473.6	8.4	7.6	167.90	-125.5	80.5	328.6	313.4	15.17	21.658		
3,600.0	3,593.3	3,577.2	3,572.4	8.7	7.9	168.77	-132.2	78.7	341.3	325.7	15.62	21.857		
3,700.0	3,693.0	3,676.2	3,671.3	8.9	8.1	169.58	-138.8	76.9	354.1	338.1	16.06	22.049		
3,800.0	3,792.8	3,775.3	3,770.1	9.2	8.3	170.33	-145.5	75.1	367.0	350.5	16.51	22.233		
3,900.0	3,892.5	3,874.4	3,868.9	9.4	8.6	171.03	-152.2	73.4	379.9	363.0	16.95	22.410		
4,000.0	3,992.3	3,973.4	3,967.7	9.7	8.8	171.69	-158.9	71.6	392.9	375.5	17.40	22.580		
4,100.0	4,092.0	4,072.5	4,066.5	9.9	9.1	172.30	-165.5	69.8	405.9	388.1	17.85	22.744		
4,200.0	4,191.8	4,171.5	4,165.3	10.2	9.3	172.88	-172.2	68.0	419.0	400.7	18.30	22.902		
4,300.0	4,291.6	4,270.6	4,264.2	10.4	9.6	173.42	-178.9	66.2	432.1	413.4	18.74	23.053		
4,400.0	4,391.3	4,369.6	4,363.0	10.7	9.9	173.93	-185.6	64.4	445.3	426.1	19.19	23.199		
4,500.0	4,491.1	4,468.7	4,461.8	11.0	10.1	174.41	-192.2	62.7	458.4	438.8	19.64	23.339		
4,600.0	4,590.8	4,567.8	4,560.6	11.2	10.4	174.86	-198.9	60.9	471.6	451.6	20.09	23.475		
4,700.0	4,690.6	4,666.8	4,659.4	11.5	10.6	175.29	-205.6	59.1	484.9	464.3	20.54	23.605		
4,800.0	4,790.3	4,765.9	4,758.2	11.7	10.9	175.69	-212.3	57.3	498.1	477.1	20.99	23.730		
4,900.0	4,890.1	4,864.9	4,857.1	12.0	11.1	176.08	-218.9	55.5	511.4	490.0	21.44	23.851		
5,000.0	4,989.9	4,964.0	4,955.9	12.2	11.4	176.44	-225.6	53.7	524.7	502.8	21.89	23.967		
5,100.0	5,089.6	5,063.0	5,054.7	12.5	11.6	176.79	-232.3	52.0	538.0	515.7	22.34	24.080		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2809A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,162.1	5,153.5	12.7	11.9	177.12	-239.0	50.2	551.4	528.6	22.80	24.188		
5,300.0	5,289.1	5,261.2	5,252.3	13.0	12.1	177.43	-245.6	48.4	564.7	541.5	23.25	24.293		
5,400.0	5,388.9	5,338.5	5,329.5	13.3	12.3	177.69	-251.3	46.9	578.9	555.3	23.65	24.476		
5,500.0	5,488.6	5,386.2	5,376.5	13.5	12.5	177.98	-258.4	45.0	600.2	576.2	24.00	25.008		
5,600.0	5,588.0	5,430.9	5,419.9	13.8	12.7	178.32	-268.9	42.2	633.0	609.0	24.04	26.333		
5,700.0	5,683.8	5,468.6	5,455.6	14.2	12.9	178.62	-280.5	39.1	688.4	665.2	23.22	29.648		
5,800.0	5,772.5	5,500.0	5,484.7	14.8	13.0	178.91	-292.0	36.0	762.8	741.2	21.60	35.314		
5,900.0	5,850.8	5,516.1	5,499.3	15.6	13.1	178.91	-298.6	34.3	850.7	831.4	19.25	44.186		
6,000.0	5,915.9	5,526.2	5,508.3	16.5	13.2	178.41	-302.9	33.1	946.8	930.4	16.36	57.871		
6,100.0	5,965.3	5,528.7	5,510.5	17.7	13.2	8.06	-304.0	32.8	1,046.4	1,032.9	13.52	77.389		
6,200.0	5,997.3	5,524.7	5,507.0	19.0	13.2	1.11	-302.3	33.3	1,145.5	1,135.5	10.04	114.104		
6,300.0	6,010.6	5,500.0	5,484.7	20.4	13.0	0.99	-292.0	36.0	1,241.2	1,233.1	8.14	152.407		
6,400.0	6,011.0	5,500.0	5,484.7	21.8	13.0	6.31	-292.0	36.0	1,332.6	1,323.5	9.13	145.892		
6,500.0	6,011.0	5,500.0	5,484.7	23.2	13.0	13.32	-292.0	36.0	1,424.8	1,412.9	11.91	119.605		
6,600.0	6,011.0	5,500.0	5,484.7	24.7	13.0	13.32	-292.0	36.0	1,517.8	1,505.2	12.58	120.650		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	116.97	-75.0	147.5	165.5					
100.0	100.0	99.5	99.5	0.1	0.1	116.97	-75.0	147.5	165.5	165.3	0.19	886.689		
200.0	200.0	199.5	199.5	0.3	0.3	116.97	-75.0	147.5	165.5	164.9	0.64	260.413		
300.0	300.0	299.5	299.5	0.5	0.5	116.97	-75.0	147.5	165.5	164.4	1.09	152.526		
400.0	400.0	399.5	399.5	0.8	0.8	116.97	-75.0	147.5	165.5	164.0	1.53	107.846		
500.0	500.0	499.5	499.5	1.0	1.0	116.97	-75.0	147.5	165.5	163.5	1.98	83.412		
600.0	600.0	599.5	599.5	1.2	1.2	116.97	-75.0	147.5	165.5	163.1	2.43	68.004		
700.0	700.0	699.5	699.5	1.4	1.4	116.97	-75.0	147.5	165.5	162.6	2.88	57.402	CC, ES	
800.0	800.0	796.7	796.6	1.7	1.6	123.31	-76.7	147.6	167.3	164.0	3.30	50.707		
900.0	899.8	893.1	893.0	1.9	1.8	126.02	-81.6	147.8	172.9	169.2	3.70	46.715		
1,000.0	999.6	991.9	991.5	2.1	2.0	129.62	-88.4	148.0	181.2	177.1	4.12	43.945		
1,100.0	1,099.4	1,090.9	1,090.3	2.4	2.2	132.91	-95.3	148.3	190.1	185.6	4.56	41.736		
1,200.0	1,199.1	1,190.0	1,189.1	2.6	2.4	135.89	-102.2	148.6	199.6	194.6	5.00	39.964		
1,300.0	1,298.9	1,289.0	1,287.9	2.8	2.7	138.60	-109.1	148.8	209.6	204.2	5.44	38.536		
1,400.0	1,398.6	1,388.0	1,386.7	3.1	2.9	141.06	-116.0	149.1	220.1	214.2	5.89	37.379		
1,500.0	1,498.4	1,487.1	1,485.5	3.3	3.1	143.30	-122.9	149.4	230.9	224.5	6.34	36.435		
1,600.0	1,598.1	1,586.1	1,584.3	3.6	3.4	145.33	-129.8	149.7	242.0	235.2	6.79	35.658		
1,700.0	1,697.9	1,685.1	1,683.0	3.8	3.6	147.18	-136.7	149.9	253.4	246.1	7.24	35.013		
1,800.0	1,797.6	1,784.1	1,781.8	4.1	3.9	148.88	-143.7	150.2	265.0	257.3	7.69	34.474		
1,900.0	1,897.4	1,883.2	1,880.6	4.3	4.1	150.43	-150.6	150.5	276.8	268.7	8.14	34.020		
2,000.0	1,997.2	1,982.2	1,979.4	4.6	4.4	151.86	-157.5	150.7	288.9	280.3	8.59	33.636		
2,100.0	2,096.9	2,081.2	2,078.2	4.8	4.6	153.17	-164.4	151.0	301.0	292.0	9.04	33.307		
2,200.0	2,196.7	2,180.3	2,177.0	5.1	4.9	154.37	-171.3	151.3	313.4	303.9	9.49	33.025		
2,300.0	2,296.4	2,279.3	2,275.8	5.3	5.1	155.49	-178.2	151.5	325.8	315.9	9.94	32.781		
2,400.0	2,396.2	2,378.3	2,374.5	5.6	5.4	156.52	-185.1	151.8	338.4	328.0	10.39	32.569		
2,500.0	2,495.9	2,477.3	2,473.3	5.9	5.6	157.48	-192.0	152.1	351.1	340.2	10.84	32.384		
2,600.0	2,595.7	2,576.4	2,572.1	6.1	5.9	158.38	-198.9	152.4	363.8	352.6	11.29	32.222		
2,700.0	2,695.5	2,675.4	2,670.9	6.4	6.1	159.21	-205.8	152.6	376.7	364.9	11.74	32.078		
2,800.0	2,795.2	2,774.4	2,769.7	6.6	6.4	159.99	-212.7	152.9	389.6	377.4	12.19	31.951		
2,900.0	2,895.0	2,873.4	2,868.5	6.9	6.7	160.72	-219.6	153.2	402.6	389.9	12.65	31.838		
3,000.0	2,994.7	2,972.5	2,967.3	7.1	6.9	161.40	-226.5	153.4	415.6	402.5	13.10	31.737		
3,100.0	3,094.5	3,071.5	3,066.0	7.4	7.2	162.04	-233.4	153.7	428.7	415.2	13.55	31.647		
3,200.0	3,194.2	3,170.5	3,164.8	7.6	7.4	162.64	-240.3	154.0	441.9	427.9	14.00	31.565		
3,300.0	3,294.0	3,269.6	3,263.6	7.9	7.7	163.21	-247.2	154.3	455.1	440.6	14.45	31.492		
3,400.0	3,393.7	3,368.6	3,362.4	8.1	7.9	163.75	-254.1	154.5	468.3	453.4	14.90	31.426		
3,500.0	3,493.5	3,467.6	3,461.2	8.4	8.2	164.25	-261.0	154.8	481.6	466.2	15.35	31.365		
3,600.0	3,593.3	3,566.6	3,560.0	8.7	8.5	164.73	-267.9	155.1	494.9	479.1	15.81	31.311		
3,700.0	3,693.0	3,665.7	3,658.8	8.9	8.7	165.19	-274.8	155.3	508.2	492.0	16.26	31.261		
3,800.0	3,792.8	3,764.7	3,757.6	9.2	9.0	165.62	-281.7	155.6	521.6	504.9	16.71	31.215		
3,900.0	3,892.5	3,863.7	3,856.3	9.4	9.2	166.03	-288.6	155.9	535.0	517.8	17.16	31.173		
4,000.0	3,992.3	3,962.7	3,955.1	9.7	9.5	166.42	-295.5	156.2	548.4	530.8	17.62	31.135		
4,100.0	4,092.0	4,061.8	4,053.9	9.9	9.8	166.79	-302.4	156.4	561.9	543.8	18.07	31.099		
4,200.0	4,191.8	4,160.8	4,152.7	10.2	10.0	167.14	-309.3	156.7	575.4	556.8	18.52	31.066		
4,300.0	4,291.6	4,259.8	4,251.5	10.4	10.3	167.48	-316.2	157.0	588.8	569.9	18.97	31.036		
4,400.0	4,391.3	4,358.9	4,350.3	10.7	10.5	167.80	-323.1	157.2	602.4	582.9	19.43	31.008		
4,500.0	4,491.1	4,457.9	4,449.1	11.0	10.8	168.11	-330.0	157.5	615.9	596.0	19.88	30.982		
4,600.0	4,590.8	4,556.9	4,547.8	11.2	11.1	168.40	-336.9	157.8	629.4	609.1	20.33	30.958		
4,700.0	4,690.6	4,655.9	4,646.6	11.5	11.3	168.69	-343.8	158.0	643.0	622.2	20.78	30.936		
4,800.0	4,790.3	4,755.0	4,745.4	11.7	11.6	168.96	-350.7	158.3	656.6	635.3	21.24	30.915		
4,900.0	4,890.1	4,854.0	4,844.2	12.0	11.8	169.22	-357.6	158.6	670.2	648.5	21.69	30.895		
5,000.0	4,989.9	4,953.0	4,943.0	12.2	12.1	169.47	-364.5	158.9	683.8	661.6	22.14	30.877		
5,100.0	5,089.6	5,052.1	5,041.8	12.5	12.4	169.71	-371.4	159.1	697.4	674.8	22.60	30.860		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISWWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,151.1	5,140.6	12.7	12.6	169.94	-378.3	159.4	711.0	687.9	23.05	30.844		
5,300.0	5,289.1	5,250.1	5,239.3	13.0	12.9	170.16	-385.2	159.7	724.6	701.1	23.50	30.829		
5,400.0	5,388.9	5,349.1	5,338.1	13.3	13.1	170.37	-392.1	159.9	738.3	714.3	23.96	30.815 SF		
5,500.0	5,488.6	5,422.7	5,411.5	13.5	13.4	170.53	-397.6	160.2	752.7	728.3	24.36	30.902		
5,600.0	5,588.0	5,450.0	5,438.5	13.8	13.4	170.28	-401.1	160.3	777.2	752.8	24.33	31.941		
5,700.0	5,683.8	5,500.0	5,487.5	14.2	13.6	169.61	-411.3	160.7	824.0	800.5	23.56	34.979		
5,800.0	5,772.5	5,525.4	5,511.9	14.8	13.7	167.99	-418.2	161.0	891.4	869.3	22.06	40.409		
5,900.0	5,850.8	5,550.0	5,535.2	15.6	13.9	164.72	-426.1	161.3	974.0	953.8	20.21	48.204		
6,000.0	5,915.9	5,550.0	5,535.2	16.5	13.9	155.07	-426.1	161.3	1,066.8	1,047.2	19.62	54.371		
6,100.0	5,965.3	5,550.0	5,535.2	17.7	13.9	112.01	-426.1	161.3	1,165.1	1,135.4	29.66	39.280		
6,200.0	5,997.3	5,550.0	5,535.2	19.0	13.9	33.40	-426.1	161.3	1,264.3	1,244.4	19.91	63.495		
6,300.0	6,010.6	5,550.0	5,535.2	20.4	13.9	15.77	-426.1	161.3	1,361.0	1,348.8	12.20	111.590		
6,400.0	6,011.0	5,550.0	5,535.2	21.8	13.9	20.34	-426.1	161.3	1,454.7	1,440.0	14.71	98.864		
6,500.0	6,011.0	5,550.0	5,535.2	23.2	13.9	27.72	-426.1	161.3	1,548.5	1,529.6	18.92	81.853		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.66	1.1	180.4	180.4					
100.0	100.0	99.5	99.5	0.1	0.1	89.66	1.1	180.4	180.4	180.3	0.19	966.734		
200.0	200.0	199.5	199.5	0.3	0.3	89.66	1.1	180.4	180.4	179.8	0.64	283.921		
300.0	300.0	299.5	299.5	0.5	0.5	89.66	1.1	180.4	180.4	179.4	1.09	166.295		
400.0	400.0	399.5	399.5	0.8	0.8	89.66	1.1	180.4	180.4	178.9	1.53	117.582		
500.0	500.0	499.5	499.5	1.0	1.0	89.66	1.1	180.4	180.4	178.5	1.98	90.942 CC, ES		
600.0	600.0	597.7	597.7	1.2	1.2	90.17	-0.5	180.9	180.9	178.5	2.40	75.277		
700.0	700.0	695.7	695.6	1.4	1.4	91.67	-5.3	182.4	182.5	179.7	2.81	64.876		
800.0	800.0	795.2	794.9	1.7	1.6	99.59	-12.0	184.4	185.1	181.8	3.24	57.066		
900.0	899.8	894.5	893.9	1.9	1.8	103.04	-18.6	186.3	188.8	185.1	3.69	51.227		
1,000.0	999.6	993.5	992.7	2.1	2.0	106.89	-25.2	188.3	193.7	189.6	4.14	46.799		
1,100.0	1,099.4	1,092.6	1,091.5	2.4	2.3	110.54	-31.8	190.3	199.5	194.9	4.60	43.356		
1,200.0	1,199.1	1,191.6	1,190.3	2.6	2.5	113.97	-38.5	192.3	206.0	201.0	5.07	40.666		
1,300.0	1,298.9	1,290.7	1,289.0	2.8	2.8	117.18	-45.1	194.3	213.3	207.7	5.53	38.546		
1,400.0	1,398.6	1,389.7	1,387.8	3.1	3.0	120.18	-51.7	196.3	221.1	215.1	6.00	36.863		
1,500.0	1,498.4	1,488.7	1,486.6	3.3	3.3	122.97	-58.3	198.2	229.6	223.1	6.46	35.516		
1,600.0	1,598.1	1,587.8	1,585.4	3.6	3.5	125.55	-64.9	200.2	238.5	231.6	6.93	34.432		
1,700.0	1,697.9	1,686.8	1,684.2	3.8	3.8	127.95	-71.5	202.2	247.9	240.5	7.39	33.551		
1,800.0	1,797.6	1,785.8	1,783.0	4.1	4.0	130.17	-78.2	204.2	257.7	249.9	7.85	32.833		
1,900.0	1,897.4	1,884.9	1,881.8	4.3	4.3	132.22	-84.8	206.2	267.9	259.5	8.31	32.243		
2,000.0	1,997.2	1,983.9	1,980.6	4.6	4.5	134.13	-91.4	208.2	278.3	269.6	8.76	31.755		
2,100.0	2,096.9	2,082.9	2,079.4	4.8	4.8	135.90	-98.0	210.2	289.1	279.9	9.22	31.352		
2,200.0	2,196.7	2,182.0	2,178.2	5.1	5.0	137.53	-104.6	212.1	300.1	290.4	9.68	31.015		
2,300.0	2,296.4	2,281.0	2,277.0	5.3	5.3	139.06	-111.2	214.1	311.3	301.2	10.13	30.734		
2,400.0	2,396.2	2,380.0	2,375.8	5.6	5.6	140.47	-117.9	216.1	322.8	312.2	10.58	30.498		
2,500.0	2,495.9	2,479.1	2,474.6	5.9	5.8	141.79	-124.5	218.1	334.4	323.4	11.04	30.299		
2,600.0	2,595.7	2,578.1	2,573.4	6.1	6.1	143.02	-131.1	220.1	346.2	334.7	11.49	30.132		
2,700.0	2,695.5	2,677.2	2,672.2	6.4	6.3	144.17	-137.7	222.1	358.1	346.2	11.94	29.990		
2,800.0	2,795.2	2,776.2	2,771.0	6.6	6.6	145.24	-144.3	224.0	370.2	357.8	12.39	29.870		
2,900.0	2,895.0	2,875.2	2,869.8	6.9	6.9	146.25	-150.9	226.0	382.4	369.5	12.84	29.769		
3,000.0	2,994.7	2,974.3	2,968.6	7.1	7.1	147.20	-157.6	228.0	394.7	381.4	13.30	29.683		
3,100.0	3,094.5	3,073.3	3,067.4	7.4	7.4	148.08	-164.2	230.0	407.1	393.3	13.75	29.610		
3,200.0	3,194.2	3,172.3	3,166.2	7.6	7.6	148.92	-170.8	232.0	419.6	405.4	14.20	29.548		
3,300.0	3,294.0	3,271.4	3,264.9	7.9	7.9	149.71	-177.4	234.0	432.1	417.5	14.65	29.495		
3,400.0	3,393.7	3,370.4	3,363.7	8.1	8.2	150.45	-184.0	236.0	444.8	429.7	15.10	29.451		
3,500.0	3,493.5	3,469.4	3,462.5	8.4	8.4	151.15	-190.7	237.9	457.5	441.9	15.55	29.414		
3,600.0	3,593.3	3,568.5	3,561.3	8.7	8.7	151.81	-197.3	239.9	470.3	454.3	16.01	29.382		
3,700.0	3,693.0	3,667.5	3,660.1	8.9	8.9	152.44	-203.9	241.9	483.1	466.7	16.46	29.356		
3,800.0	3,792.8	3,766.6	3,758.9	9.2	9.2	153.04	-210.5	243.9	496.0	479.1	16.91	29.334		
3,900.0	3,892.5	3,865.6	3,857.7	9.4	9.5	153.60	-217.1	245.9	509.0	491.6	17.36	29.317		
4,000.0	3,992.3	3,964.6	3,956.5	9.7	9.7	154.14	-223.7	247.9	521.9	504.1	17.81	29.302		
4,100.0	4,092.0	4,063.7	4,055.3	9.9	10.0	154.65	-230.4	249.9	535.0	516.7	18.26	29.291		
4,200.0	4,191.8	4,162.7	4,154.1	10.2	10.3	155.14	-237.0	251.8	548.1	529.3	18.72	29.282		
4,300.0	4,291.6	4,261.7	4,252.9	10.4	10.5	155.60	-243.6	253.8	561.2	542.0	19.17	29.275		
4,400.0	4,391.3	4,360.8	4,351.7	10.7	10.8	156.05	-250.2	255.8	574.3	554.7	19.62	29.270		
4,500.0	4,491.1	4,459.8	4,450.5	11.0	11.0	156.47	-256.8	257.8	587.5	567.4	20.07	29.267		
4,600.0	4,590.8	4,558.8	4,549.3	11.2	11.3	156.88	-263.4	259.8	600.7	580.2	20.53	29.265		
4,700.0	4,690.6	4,657.9	4,648.1	11.5	11.6	157.26	-270.1	261.8	613.9	593.0	20.98	29.265 SF		
4,800.0	4,790.3	4,756.9	4,746.9	11.7	11.8	157.64	-276.7	263.7	627.2	605.8	21.43	29.266		
4,900.0	4,890.1	4,856.0	4,845.7	12.0	12.1	157.99	-283.3	265.7	640.5	618.6	21.88	29.267		
5,000.0	4,989.9	4,955.0	4,944.5	12.2	12.3	158.33	-289.9	267.7	653.8	631.5	22.34	29.270		
5,100.0	5,089.6	5,054.0	5,043.3	12.5	12.6	158.66	-296.5	269.7	667.1	644.3	22.79	29.273		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,189.4	5,153.1	5,142.1	12.7	12.9	158.98	-303.1	271.7	680.5	657.2	23.24	29.277	
5,300.0	5,289.1	5,252.1	5,240.8	13.0	13.1	159.28	-309.8	273.7	693.9	670.2	23.70	29.282	
5,400.0	5,388.9	5,333.2	5,321.8	13.3	13.3	159.52	-315.3	275.3	707.6	683.5	24.11	29.350	
5,500.0	5,488.6	5,374.7	5,362.9	13.5	13.5	159.67	-320.7	276.9	727.4	703.0	24.44	29.760	
5,600.0	5,588.0	5,400.0	5,387.6	13.8	13.6	158.90	-325.5	278.4	758.4	733.9	24.47	30.996	
5,700.0	5,683.8	5,450.0	5,435.8	14.2	13.8	156.95	-338.3	282.2	810.1	786.2	23.92	33.870	
5,800.0	5,772.5	5,474.2	5,458.6	14.8	13.9	152.84	-346.1	284.6	880.6	857.6	23.04	38.225	
5,900.0	5,850.8	5,500.0	5,482.4	15.6	14.1	145.11	-355.5	287.4	964.8	942.0	22.83	42.254	
6,000.0	5,915.9	5,500.0	5,482.4	16.5	14.1	125.82	-355.5	287.4	1,057.5	1,031.2	26.26	40.263	
6,100.0	5,965.3	5,500.0	5,482.4	17.7	14.1	84.72	-355.5	287.4	1,154.4	1,122.7	31.62	36.509	
6,200.0	5,997.3	5,500.0	5,482.4	19.0	14.1	45.60	-355.5	287.4	1,251.4	1,226.6	24.80	50.451	
6,300.0	6,010.6	5,500.0	5,482.4	20.4	14.1	27.69	-355.5	287.4	1,345.3	1,327.6	17.69	76.052	
6,400.0	6,011.0	5,500.0	5,482.4	21.8	14.1	30.08	-355.5	287.4	1,435.8	1,416.3	19.47	73.746	
6,500.0	6,011.0	5,475.8	5,460.1	23.2	13.9	34.14	-346.7	284.7	1,525.6	1,503.5	22.09	69.049	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2812B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	109.36	-75.0	213.6	226.4					
100.0	100.0	99.5	99.5	0.1	0.1	109.36	-75.0	213.6	226.4	226.3	0.19	1,213.212		
200.0	200.0	199.5	199.5	0.3	0.3	109.36	-75.0	213.6	226.4	225.8	0.64	356.310		
300.0	300.0	299.5	299.5	0.5	0.5	109.36	-75.0	213.6	226.4	225.4	1.09	208.693		
400.0	400.0	399.5	399.5	0.8	0.8	109.36	-75.0	213.6	226.4	224.9	1.53	147.560		
500.0	500.0	499.5	499.5	1.0	1.0	109.36	-75.0	213.6	226.4	224.5	1.98	114.128		
600.0	600.0	599.5	599.5	1.2	1.2	109.36	-75.0	213.6	226.4	224.0	2.43	93.047		
700.0	700.0	699.5	699.5	1.4	1.4	109.36	-75.0	213.6	226.4	223.6	2.88	78.540 CC, ES		
800.0	800.0	799.5	799.5	1.7	1.7	115.14	-75.0	213.6	227.2	223.8	3.33	68.184		
900.0	899.8	899.3	899.3	1.9	1.9	116.28	-75.0	213.6	229.5	225.7	3.78	60.685		
1,000.0	999.6	993.2	993.2	2.1	2.1	117.97	-76.4	214.4	233.9	229.7	4.20	55.719		
1,100.0	1,099.4	1,086.5	1,086.3	2.4	2.3	120.02	-80.4	216.5	241.1	236.5	4.60	52.386		
1,200.0	1,199.1	1,184.6	1,184.2	2.6	2.4	122.33	-86.4	219.7	250.4	245.3	5.02	49.824		
1,300.0	1,298.9	1,283.7	1,283.1	2.8	2.6	124.49	-92.5	223.0	260.0	254.6	5.45	47.672		
1,400.0	1,398.6	1,382.7	1,381.9	3.1	2.9	126.50	-98.6	226.2	270.0	264.1	5.89	45.845		
1,500.0	1,498.4	1,481.8	1,480.7	3.3	3.1	128.36	-104.7	229.5	280.3	274.0	6.33	44.286		
1,600.0	1,598.1	1,580.9	1,579.5	3.6	3.3	130.09	-110.8	232.7	290.9	284.2	6.77	42.950		
1,700.0	1,697.9	1,679.9	1,678.4	3.8	3.5	131.70	-116.9	236.0	301.8	294.5	7.22	41.799		
1,800.0	1,797.6	1,779.0	1,777.2	4.1	3.8	133.20	-123.0	239.3	312.8	305.2	7.67	40.801		
1,900.0	1,897.4	1,878.1	1,876.0	4.3	4.0	134.59	-129.1	242.5	324.1	316.0	8.12	39.933		
2,000.0	1,997.2	1,977.1	1,974.8	4.6	4.3	135.89	-135.2	245.8	335.5	326.9	8.56	39.173		
2,100.0	2,096.9	2,076.2	2,073.6	4.8	4.5	137.11	-141.3	249.0	347.1	338.1	9.01	38.503		
2,200.0	2,196.7	2,175.3	2,172.5	5.1	4.7	138.24	-147.4	252.3	358.8	349.4	9.46	37.910		
2,300.0	2,296.4	2,274.3	2,271.3	5.3	5.0	139.31	-153.5	255.5	370.7	360.8	9.92	37.383		
2,400.0	2,396.2	2,373.4	2,370.1	5.6	5.2	140.31	-159.5	258.8	382.7	372.3	10.37	36.913		
2,500.0	2,495.9	2,472.4	2,468.9	5.9	5.5	141.24	-165.6	262.1	394.8	383.9	10.82	36.490		
2,600.0	2,595.7	2,571.5	2,567.8	6.1	5.7	142.12	-171.7	265.3	407.0	395.7	11.27	36.110		
2,700.0	2,695.5	2,670.6	2,666.6	6.4	6.0	142.96	-177.8	268.6	419.2	407.5	11.72	35.765		
2,800.0	2,795.2	2,769.6	2,765.4	6.6	6.2	143.74	-183.9	271.8	431.6	419.4	12.17	35.453		
2,900.0	2,895.0	2,868.7	2,864.2	6.9	6.5	144.48	-190.0	275.1	444.0	431.4	12.63	35.168		
3,000.0	2,994.7	2,967.8	2,963.1	7.1	6.8	145.18	-196.1	278.3	456.5	443.5	13.08	34.908		
3,100.0	3,094.5	3,066.8	3,061.9	7.4	7.0	145.84	-202.2	281.6	469.1	455.6	13.53	34.670		
3,200.0	3,194.2	3,165.9	3,160.7	7.6	7.3	146.47	-208.3	284.8	481.7	467.7	13.98	34.451		
3,300.0	3,294.0	3,265.0	3,259.5	7.9	7.5	147.06	-214.4	288.1	494.4	480.0	14.44	34.249		
3,400.0	3,393.7	3,364.0	3,358.3	8.1	7.8	147.63	-220.5	291.4	507.1	492.3	14.89	34.063		
3,500.0	3,493.5	3,463.1	3,457.2	8.4	8.0	148.17	-226.6	294.6	519.9	504.6	15.34	33.890		
3,600.0	3,593.3	3,562.2	3,556.0	8.7	8.3	148.68	-232.7	297.9	532.7	517.0	15.79	33.730		
3,700.0	3,693.0	3,661.2	3,654.8	8.9	8.6	149.17	-238.8	301.1	545.6	529.4	16.25	33.580		
3,800.0	3,792.8	3,760.3	3,753.6	9.2	8.8	149.63	-244.9	304.4	558.5	541.8	16.70	33.441		
3,900.0	3,892.5	3,859.3	3,852.5	9.4	9.1	150.08	-251.0	307.6	571.4	554.3	17.15	33.311		
4,000.0	3,992.3	3,958.4	3,951.3	9.7	9.3	150.50	-257.1	310.9	584.4	566.8	17.61	33.189		
4,100.0	4,092.0	4,057.5	4,050.1	9.9	9.6	150.91	-263.2	314.2	597.4	579.3	18.06	33.075		
4,200.0	4,191.8	4,156.5	4,148.9	10.2	9.8	151.30	-269.3	317.4	610.4	591.9	18.52	32.968		
4,300.0	4,291.6	4,255.6	4,247.8	10.4	10.1	151.67	-275.4	320.7	623.5	604.5	18.97	32.867		
4,400.0	4,391.3	4,354.7	4,346.6	10.7	10.4	152.03	-281.4	323.9	636.6	617.1	19.42	32.772		
4,500.0	4,491.1	4,453.7	4,445.4	11.0	10.6	152.37	-287.5	327.2	649.7	629.8	19.88	32.682		
4,600.0	4,590.8	4,552.8	4,544.2	11.2	10.9	152.70	-293.6	330.4	662.8	642.4	20.33	32.598		
4,700.0	4,690.6	4,651.9	4,643.1	11.5	11.1	153.02	-299.7	333.7	675.9	655.1	20.79	32.517		
4,800.0	4,790.3	4,750.9	4,741.9	11.7	11.4	153.32	-305.8	337.0	689.1	667.8	21.24	32.441		
4,900.0	4,890.1	4,850.0	4,840.7	12.0	11.7	153.62	-311.9	340.2	702.3	680.6	21.70	32.369		
5,000.0	4,989.9	4,949.1	4,939.5	12.2	11.9	153.90	-318.0	343.5	715.5	693.3	22.15	32.301		
5,100.0	5,089.6	5,048.1	5,038.3	12.5	12.2	154.17	-324.1	346.7	728.7	706.1	22.60	32.236		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2812B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,189.4	5,147.2	5,137.2	12.7	12.4	154.43	-330.2	350.0	741.9	718.8	23.06	32.174	
5,300.0	5,289.1	5,246.3	5,236.0	13.0	12.7	154.69	-336.3	353.2	755.1	731.6	23.51	32.115	
5,400.0	5,388.9	5,345.3	5,334.8	13.3	13.0	154.93	-342.4	356.5	768.4	744.4	23.97	32.058 SF	
5,500.0	5,488.6	5,420.2	5,409.5	13.5	13.2	155.11	-347.2	359.1	782.3	757.9	24.37	32.099	
5,600.0	5,588.0	5,450.0	5,439.0	13.8	13.3	154.39	-350.6	360.9	805.7	781.2	24.42	32.992	
5,700.0	5,683.8	5,500.0	5,488.0	14.2	13.4	152.41	-359.6	365.7	850.5	826.5	23.95	35.515	
5,800.0	5,772.5	5,520.5	5,507.7	14.8	13.5	148.26	-364.5	368.3	914.5	891.3	23.21	39.401	
5,900.0	5,850.8	5,550.0	5,535.7	15.6	13.7	141.16	-372.7	372.7	993.6	970.4	23.12	42.978	
6,000.0	5,915.9	5,550.0	5,535.7	16.5	13.7	125.58	-372.7	372.7	1,082.3	1,056.6	25.76	42.016	
6,100.0	5,965.3	5,550.0	5,535.7	17.7	13.7	96.03	-372.7	372.7	1,176.8	1,145.9	30.93	38.042	
6,200.0	5,997.3	5,550.0	5,535.7	19.0	13.7	60.54	-372.7	372.7	1,272.6	1,243.7	28.93	43.993	
6,300.0	6,010.6	5,550.0	5,535.7	20.4	13.7	38.18	-372.7	372.7	1,366.4	1,344.3	22.13	61.752	
6,400.0	6,011.0	5,550.0	5,535.7	21.8	13.7	39.41	-372.7	372.7	1,457.2	1,433.7	23.47	62.083	
6,500.0	6,011.0	5,550.0	5,535.7	23.2	13.7	44.17	-372.7	372.7	1,547.8	1,521.4	26.36	58.713	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.0	0.0	6.7	6.7	0.0	0.0	-91.12	-26.2	-1,343.0	1,343.3					
100.0	100.0	106.7	106.7	0.1	0.1	-91.12	-26.2	-1,343.0	1,343.3	1,343.1	0.20		6,662.998	
200.0	200.0	206.7	206.7	0.3	0.3	-91.12	-26.2	-1,343.0	1,343.3	1,342.6	0.65		2,062.993	
300.0	300.0	306.7	306.7	0.5	0.6	-91.12	-26.2	-1,343.0	1,343.3	1,342.2	1.10		1,220.431	
400.0	400.0	406.7	406.7	0.8	0.8	-91.12	-26.2	-1,343.0	1,343.3	1,341.7	1.55		866.527	
500.0	500.0	506.7	506.7	1.0	1.0	-91.12	-26.2	-1,343.0	1,343.3	1,341.3	2.00		671.735	
600.0	600.0	606.7	606.7	1.2	1.2	-91.12	-26.2	-1,343.0	1,343.3	1,340.8	2.45		548.446	
664.3	664.3	671.0	671.0	1.4	1.4	-91.12	-26.2	-1,343.0	1,343.3	1,340.6	2.74		490.576	
700.0	700.0	706.5	706.5	1.4	1.5	-91.12	-26.2	-1,343.0	1,343.3	1,340.4	2.90		463.489	
800.0	800.0	803.0	803.0	1.7	1.7	-85.71	-24.3	-1,343.2	1,343.3	1,340.0	3.34		402.420	
900.0	899.8	900.0	899.8	1.9	1.9	-85.71	-19.2	-1,343.7	1,343.3	1,339.5	3.78		355.252	
915.7	915.5	915.3	915.1	1.9	1.9	-85.71	-18.2	-1,343.8	1,343.3	1,339.5	3.85		348.582	
1,000.0	999.6	999.6	999.2	2.1	2.1	-85.71	-12.3	-1,344.4	1,343.3	1,339.1	4.24		316.608	
1,100.0	1,099.4	1,099.6	1,098.9	2.4	2.4	-85.71	-5.4	-1,345.0	1,343.3	1,338.6	4.72		284.861	
1,200.0	1,199.1	1,199.6	1,198.7	2.6	2.6	-85.71	1.6	-1,345.7	1,343.3	1,338.1	5.20		258.525	
1,300.0	1,298.9	1,299.6	1,298.4	2.8	2.8	-85.71	8.5	-1,346.4	1,343.4	1,337.7	5.68		236.413	
1,400.0	1,398.6	1,399.6	1,398.2	3.1	3.1	-85.71	15.4	-1,347.0	1,343.4	1,337.2	6.17		217.634	
1,500.0	1,498.4	1,499.6	1,497.9	3.3	3.3	-85.71	22.4	-1,347.7	1,343.4	1,336.7	6.67		201.518	
1,600.0	1,598.1	1,599.6	1,597.7	3.6	3.6	-85.71	29.3	-1,348.4	1,343.4	1,336.2	7.16		187.555	
1,700.0	1,697.9	1,699.6	1,697.5	3.8	3.8	-85.71	36.3	-1,349.0	1,343.4	1,335.7	7.66		175.352	
1,800.0	1,797.6	1,799.6	1,797.2	4.1	4.1	-85.71	43.2	-1,349.7	1,343.4	1,335.2	8.16		164.606	
1,900.0	1,897.4	1,899.6	1,897.0	4.3	4.3	-85.71	50.2	-1,350.4	1,343.4	1,334.7	8.66		155.075	
2,000.0	1,997.2	1,999.6	1,996.7	4.6	4.6	-85.71	57.1	-1,351.0	1,343.4	1,334.3	9.17		146.568	
2,100.0	2,096.9	2,099.6	2,096.5	4.8	4.8	-85.71	64.0	-1,351.7	1,343.4	1,333.8	9.67		138.931	
2,200.0	2,196.7	2,199.6	2,196.2	5.1	5.1	-85.71	71.0	-1,352.4	1,343.4	1,333.3	10.17		132.039	
2,300.0	2,296.4	2,299.6	2,296.0	5.3	5.3	-85.71	77.9	-1,353.0	1,343.4	1,332.8	10.68		125.790	
2,400.0	2,396.2	2,399.6	2,395.7	5.6	5.6	-85.71	84.9	-1,353.7	1,343.5	1,332.3	11.19		120.099	
2,500.0	2,495.9	2,499.6	2,495.5	5.9	5.8	-85.71	91.8	-1,354.4	1,343.5	1,331.8	11.69		114.896	
2,600.0	2,595.7	2,599.6	2,595.3	6.1	6.1	-85.71	98.8	-1,355.0	1,343.5	1,331.3	12.20		110.120	
2,700.0	2,695.5	2,699.6	2,695.0	6.4	6.4	-85.71	105.7	-1,355.7	1,343.5	1,330.8	12.71		105.722	
2,800.0	2,795.2	2,799.6	2,794.8	6.6	6.6	-85.71	112.7	-1,356.3	1,343.5	1,330.3	13.22		101.658	
2,900.0	2,895.0	2,899.6	2,894.5	6.9	6.9	-85.71	119.6	-1,357.0	1,343.5	1,329.8	13.72		97.894	
3,000.0	2,994.7	2,999.6	2,994.3	7.1	7.1	-85.71	126.5	-1,357.7	1,343.5	1,329.3	14.23		94.396	
3,100.0	3,094.5	3,099.6	3,094.0	7.4	7.4	-85.71	133.5	-1,358.3	1,343.5	1,328.8	14.74		91.137	
3,200.0	3,194.2	3,199.6	3,193.8	7.6	7.6	-85.71	140.4	-1,359.0	1,343.5	1,328.3	15.25		88.095	
3,300.0	3,294.0	3,299.6	3,293.6	7.9	7.9	-85.71	147.4	-1,359.7	1,343.5	1,327.8	15.76		85.249	
3,400.0	3,393.7	3,399.6	3,393.3	8.1	8.1	-85.71	154.3	-1,360.3	1,343.5	1,327.3	16.27		82.579	
3,500.0	3,493.5	3,499.6	3,493.1	8.4	8.4	-85.71	161.3	-1,361.0	1,343.6	1,326.8	16.78		80.071	
3,600.0	3,593.3	3,599.6	3,592.8	8.7	8.7	-85.71	168.2	-1,361.7	1,343.6	1,326.3	17.29		77.710	
3,700.0	3,693.0	3,699.6	3,692.6	8.9	8.9	-85.71	175.2	-1,362.3	1,343.6	1,325.8	17.80		75.483	
3,800.0	3,792.8	3,799.6	3,792.3	9.2	9.2	-85.71	182.1	-1,363.0	1,343.6	1,325.3	18.31		73.380	
3,900.0	3,892.5	3,899.6	3,892.1	9.4	9.4	-85.71	189.0	-1,363.7	1,343.6	1,324.8	18.82		71.391	
4,000.0	3,992.3	3,999.6	3,991.8	9.7	9.7	-85.71	196.0	-1,364.3	1,343.6	1,324.3	19.33		69.506	
4,100.0	4,092.0	4,099.6	4,091.6	9.9	9.9	-85.71	202.9	-1,365.0	1,343.6	1,323.8	19.84		67.718	
4,200.0	4,191.8	4,199.6	4,191.4	10.2	10.2	-85.71	209.9	-1,365.7	1,343.6	1,323.3	20.35		66.019	
4,300.0	4,291.6	4,299.6	4,291.1	10.4	10.4	-85.71	216.8	-1,366.3	1,343.6	1,322.8	20.86		64.403	
4,400.0	4,391.3	4,399.6	4,390.9	10.7	10.7	-85.71	223.8	-1,367.0	1,343.6	1,322.3	21.37		62.864	
4,500.0	4,491.1	4,499.6	4,490.6	11.0	10.9	-85.71	230.7	-1,367.7	1,343.7	1,321.8	21.88		61.397	
4,600.0	4,590.8	4,599.6	4,590.4	11.2	11.2	-85.71	237.6	-1,368.3	1,343.7	1,321.3	22.40		59.997	
4,700.0	4,690.6	4,699.6	4,690.1	11.5	11.5	-85.71	244.6	-1,369.0	1,343.7	1,320.8	22.91		58.658	
4,800.0	4,790.3	4,799.6	4,789.9	11.7	11.7	-85.71	251.5	-1,369.7	1,343.7	1,320.3	23.42		57.378	
4,900.0	4,890.1	4,899.6	4,889.7	12.0	12.0	-85.71	258.5	-1,370.3	1,343.7	1,319.8	23.93		56.153	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,989.9	4,999.6	4,989.4	12.2	12.2	-85.71	265.4	-1,371.0	1,343.7	1,319.3	24.44	54.979		
5,100.0	5,089.6	5,099.6	5,089.2	12.5	12.5	-85.71	272.4	-1,371.7	1,343.7	1,318.8	24.95	53.852		
5,200.0	5,189.4	5,199.6	5,188.9	12.7	12.7	-85.71	279.3	-1,372.3	1,343.7	1,318.3	25.46	52.771		
5,300.0	5,289.1	5,299.6	5,288.7	13.0	13.0	-85.71	286.3	-1,373.0	1,343.7	1,317.8	25.97	51.733		
5,400.0	5,388.9	5,399.6	5,388.4	13.3	13.3	-85.71	293.2	-1,373.7	1,343.7	1,317.3	26.49	50.734		
5,500.0	5,488.6	5,499.6	5,488.2	13.5	13.5	-85.71	300.1	-1,374.3	1,343.7	1,316.7	27.00	49.773		
5,600.0	5,588.0	5,591.6	5,579.9	13.8	13.8	-85.79	308.1	-1,375.1	1,343.6	1,316.1	27.53	48.800		
5,700.0	5,683.8	5,675.7	5,661.7	14.2	14.1	-86.03	327.0	-1,376.9	1,343.2	1,315.0	28.29	47.488		
5,800.0	5,772.5	5,760.6	5,740.1	14.8	14.5	-86.40	359.2	-1,380.0	1,342.7	1,313.4	29.32	45.795		
5,900.0	5,850.8	5,846.6	5,813.1	15.6	15.1	-86.89	404.2	-1,384.3	1,342.1	1,311.4	30.67	43.756		
6,000.0	5,915.9	5,934.2	5,878.8	16.5	15.8	-87.48	461.8	-1,389.8	1,341.5	1,309.1	32.38	41.431		
6,100.0	5,965.3	6,023.9	5,935.1	17.7	16.7	-88.15	531.1	-1,396.4	1,341.0	1,306.5	34.44	38.934		
6,200.0	5,997.3	6,115.9	5,979.5	19.0	17.8	-88.89	611.2	-1,404.1	1,340.6	1,303.8	36.84	36.387		
6,298.0	6,010.5	6,209.0	6,009.4	20.4	19.0	-89.67	698.9	-1,412.5	1,340.5	1,301.0	39.47	33.958 CC		
6,300.0	6,010.6	6,211.0	6,009.9	20.4	19.0	-89.68	700.8	-1,412.7	1,340.5	1,300.9	39.53	33.912		
6,400.0	6,011.0	6,310.0	6,023.5	21.8	20.4	-90.25	798.3	-1,422.0	1,342.3	1,299.9	42.32	31.714		
6,500.0	6,011.0	6,538.6	6,024.0	23.2	23.6	-90.27	1,026.4	-1,432.9	1,344.4	1,297.7	46.70	28.788		
6,600.0	6,011.0	6,638.6	6,024.0	24.7	25.2	-90.27	1,126.4	-1,432.9	1,344.4	1,294.6	49.76	27.015		
6,700.0	6,011.0	6,738.6	6,024.0	26.3	26.8	-90.27	1,226.4	-1,432.9	1,344.4	1,291.4	53.02	25.355		
6,800.0	6,011.0	6,838.6	6,024.0	28.0	28.5	-90.27	1,326.4	-1,432.8	1,344.4	1,288.0	56.36	23.855		
6,900.0	6,011.0	6,938.6	6,024.0	29.7	30.2	-90.27	1,426.4	-1,432.8	1,344.4	1,284.6	59.75	22.500		
7,000.0	6,011.0	7,038.6	6,024.0	31.4	31.9	-90.27	1,526.4	-1,432.8	1,344.4	1,281.2	63.20	21.273		
7,100.0	6,011.0	7,138.6	6,024.0	33.1	33.6	-90.27	1,626.4	-1,432.8	1,344.4	1,277.7	66.68	20.160		
7,200.0	6,011.0	7,238.6	6,024.0	34.9	35.4	-90.27	1,726.4	-1,432.8	1,344.4	1,274.1	70.21	19.147		
7,300.0	6,011.0	7,338.6	6,024.0	36.7	37.2	-90.27	1,826.4	-1,432.8	1,344.4	1,270.6	73.77	18.224		
7,400.0	6,011.0	7,438.6	6,024.0	38.5	39.0	-90.27	1,926.4	-1,432.8	1,344.3	1,267.0	77.35	17.379		
7,500.0	6,011.0	7,538.6	6,024.0	40.3	40.8	-90.27	2,026.4	-1,432.8	1,344.3	1,263.4	80.96	16.605		
7,600.0	6,011.0	7,638.6	6,024.0	42.1	42.6	-90.27	2,126.4	-1,432.8	1,344.3	1,259.7	84.59	15.892		
7,700.0	6,011.0	7,738.6	6,024.0	43.9	44.4	-90.27	2,226.4	-1,432.8	1,344.3	1,256.1	88.24	15.235		
7,800.0	6,011.0	7,838.6	6,024.0	45.7	46.2	-90.27	2,326.4	-1,432.8	1,344.3	1,252.4	91.90	14.628		
7,900.0	6,011.0	7,938.6	6,024.0	47.6	48.1	-90.27	2,426.4	-1,432.8	1,344.3	1,248.7	95.58	14.065		
8,000.0	6,011.0	8,038.6	6,024.0	49.4	49.9	-90.27	2,526.4	-1,432.8	1,344.3	1,245.0	99.27	13.542		
8,100.0	6,011.0	8,138.6	6,024.0	51.3	51.8	-90.27	2,626.4	-1,432.8	1,344.3	1,241.3	102.97	13.055		
8,200.0	6,011.0	8,238.6	6,024.0	53.1	53.6	-90.27	2,726.4	-1,432.8	1,344.3	1,237.6	106.68	12.601		
8,300.0	6,011.0	8,338.6	6,024.0	55.0	55.5	-90.27	2,826.4	-1,432.8	1,344.3	1,233.9	110.40	12.176		
8,400.0	6,011.0	8,438.6	6,024.0	56.8	57.3	-90.27	2,926.4	-1,432.8	1,344.3	1,230.2	114.13	11.779		
8,500.0	6,011.0	8,538.6	6,024.0	58.7	59.2	-90.27	3,026.4	-1,432.8	1,344.3	1,226.4	117.86	11.405		
8,600.0	6,011.0	8,638.6	6,024.0	60.6	61.1	-90.27	3,126.4	-1,432.8	1,344.3	1,222.7	121.61	11.054		
8,700.0	6,011.0	8,738.6	6,024.0	62.5	62.9	-90.27	3,226.4	-1,432.7	1,344.3	1,218.9	125.35	10.724		
8,800.0	6,011.0	8,838.6	6,024.0	64.3	64.8	-90.27	3,326.4	-1,432.7	1,344.3	1,215.2	129.11	10.412		
8,900.0	6,011.0	8,938.6	6,024.0	66.2	66.7	-90.27	3,426.4	-1,432.7	1,344.3	1,211.4	132.87	10.117		
9,000.0	6,011.0	9,038.6	6,024.0	68.1	68.6	-90.27	3,526.4	-1,432.7	1,344.3	1,207.6	136.63	9.839		
9,100.0	6,011.0	9,138.6	6,024.0	70.0	70.5	-90.27	3,626.4	-1,432.7	1,344.2	1,203.8	140.40	9.574		
9,200.0	6,011.0	9,238.6	6,024.0	71.9	72.4	-90.27	3,726.4	-1,432.7	1,344.2	1,200.1	144.17	9.324		
9,300.0	6,011.0	9,338.6	6,024.0	73.7	74.2	-90.27	3,826.4	-1,432.7	1,344.2	1,196.3	147.95	9.086		
9,400.0	6,011.0	9,438.6	6,024.0	75.6	76.1	-90.27	3,926.4	-1,432.7	1,344.2	1,192.5	151.73	8.860		
9,500.0	6,011.0	9,538.6	6,024.0	77.5	78.0	-90.27	4,026.4	-1,432.7	1,344.2	1,188.7	155.51	8.644		
9,600.0	6,011.0	9,638.6	6,024.0	79.4	79.9	-90.27	4,126.4	-1,432.7	1,344.2	1,184.9	159.29	8.439		
9,700.0	6,011.0	9,738.6	6,024.0	81.3	81.8	-90.27	4,226.4	-1,432.7	1,344.2	1,181.1	163.08	8.243		
9,800.0	6,011.0	9,838.6	6,024.0	83.2	83.7	-90.27	4,326.4	-1,432.7	1,344.2	1,177.3	166.87	8.055		
9,900.0	6,011.0	9,938.6	6,024.0	85.1	85.6	-90.27	4,426.4	-1,432.7	1,344.2	1,173.5	170.66	7.876		
10,000.0	6,011.0	10,038.6	6,024.0	87.0	87.5	-90.27	4,526.4	-1,432.7	1,344.2	1,169.7	174.46	7.705		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,100.0	6,011.0	10,138.6	6,024.0	88.9	89.4	-90.27	4,626.4	-1,432.7	1,344.2	1,165.9	178.25	7.541	
10,200.0	6,011.0	10,238.6	6,024.0	90.8	91.3	-90.27	4,726.4	-1,432.7	1,344.2	1,162.1	182.05	7.384	
10,300.0	6,011.0	10,338.6	6,024.0	92.7	93.2	-90.27	4,826.4	-1,432.7	1,344.2	1,158.3	185.85	7.233	
10,400.0	6,011.0	10,438.6	6,024.0	94.6	95.1	-90.27	4,926.4	-1,432.7	1,344.2	1,154.5	189.65	7.087	
10,500.0	6,011.0	10,538.6	6,024.0	96.5	97.0	-90.27	5,026.4	-1,432.7	1,344.2	1,150.7	193.46	6.948	
10,600.0	6,011.0	10,638.6	6,024.0	98.4	98.9	-90.27	5,126.4	-1,432.7	1,344.2	1,146.9	197.26	6.814	
10,700.0	6,011.0	10,738.6	6,024.0	100.3	100.8	-90.27	5,226.4	-1,432.6	1,344.2	1,143.1	201.07	6.685	
10,800.0	6,011.0	10,838.6	6,024.0	102.2	102.7	-90.27	5,326.4	-1,432.6	1,344.1	1,139.3	204.88	6.561	
10,900.0	6,011.0	10,938.6	6,024.0	104.1	104.6	-90.27	5,426.4	-1,432.6	1,344.1	1,135.5	208.69	6.441	
11,000.0	6,011.0	11,038.6	6,024.0	106.0	106.5	-90.27	5,526.4	-1,432.6	1,344.1	1,131.6	212.50	6.325	
11,100.0	6,011.0	11,138.6	6,024.0	107.9	108.4	-90.27	5,626.4	-1,432.6	1,344.1	1,127.8	216.31	6.214	
11,200.0	6,011.0	11,238.6	6,024.0	109.8	110.3	-90.27	5,726.4	-1,432.6	1,344.1	1,124.0	220.12	6.106	
11,300.0	6,011.0	11,338.6	6,024.0	111.7	112.2	-90.27	5,826.4	-1,432.6	1,344.1	1,120.2	223.94	6.002	
11,400.0	6,011.0	11,438.6	6,024.0	113.6	114.1	-90.27	5,926.4	-1,432.6	1,344.1	1,116.4	227.75	5.902	
11,500.0	6,011.0	11,538.6	6,024.0	115.5	116.0	-90.27	6,026.4	-1,432.6	1,344.1	1,112.5	231.57	5.804	
11,600.0	6,011.0	11,638.6	6,024.0	117.5	118.0	-90.27	6,126.4	-1,432.6	1,344.1	1,108.7	235.38	5.710	
11,700.0	6,011.0	11,738.6	6,024.0	119.4	119.9	-90.27	6,226.4	-1,432.6	1,344.1	1,104.9	239.20	5.619	
11,800.0	6,011.0	11,838.6	6,024.0	121.3	121.8	-90.27	6,326.4	-1,432.6	1,344.1	1,101.1	243.02	5.531	
11,900.0	6,011.0	11,938.6	6,024.0	123.2	123.7	-90.27	6,426.4	-1,432.6	1,344.1	1,097.2	246.84	5.445	
12,000.0	6,011.0	12,038.6	6,024.0	125.1	125.6	-90.27	6,526.4	-1,432.6	1,344.1	1,093.4	250.66	5.362	
12,100.0	6,011.0	12,138.6	6,024.0	127.0	127.5	-90.27	6,626.4	-1,432.6	1,344.1	1,089.6	254.48	5.282	
12,200.0	6,011.0	12,238.6	6,024.0	128.9	129.4	-90.27	6,726.4	-1,432.6	1,344.1	1,085.8	258.30	5.204	
12,300.0	6,011.0	12,338.6	6,024.0	130.8	131.3	-90.27	6,826.4	-1,432.6	1,344.1	1,081.9	262.12	5.128	
12,400.0	6,011.0	12,438.6	6,024.0	132.7	133.2	-90.27	6,926.4	-1,432.6	1,344.1	1,078.1	265.94	5.054	
12,500.0	6,011.0	12,538.6	6,024.0	134.6	135.1	-90.27	7,026.4	-1,432.6	1,344.1	1,074.3	269.76	4.982	
12,600.0	6,011.0	12,638.6	6,024.0	136.6	137.1	-90.27	7,126.4	-1,432.5	1,344.0	1,070.5	273.59	4.913	
12,700.0	6,011.0	12,738.6	6,024.0	138.5	139.0	-90.27	7,226.4	-1,432.5	1,344.0	1,066.6	277.41	4.845	
12,800.0	6,011.0	12,838.6	6,024.0	140.4	140.9	-90.27	7,326.4	-1,432.5	1,344.0	1,062.8	281.24	4.779	
12,900.0	6,011.0	12,938.6	6,024.0	142.3	142.8	-90.27	7,426.4	-1,432.5	1,344.0	1,059.0	285.06	4.715	
13,000.0	6,011.0	13,038.6	6,024.0	144.2	144.7	-90.27	7,526.4	-1,432.5	1,344.0	1,055.1	288.89	4.652	
13,100.0	6,011.0	13,138.6	6,024.0	146.1	146.6	-90.27	7,626.4	-1,432.5	1,344.0	1,051.3	292.71	4.592	
13,200.0	6,011.0	13,238.6	6,024.0	148.0	148.5	-90.27	7,726.4	-1,432.5	1,344.0	1,047.5	296.54	4.532	
13,300.0	6,011.0	13,338.6	6,024.0	149.9	150.4	-90.27	7,826.4	-1,432.5	1,344.0	1,043.6	300.36	4.475	
13,400.0	6,011.0	13,438.6	6,024.0	151.9	152.4	-90.27	7,926.4	-1,432.5	1,344.0	1,039.8	304.19	4.418	
13,500.0	6,011.0	13,538.6	6,024.0	153.8	154.3	-90.27	8,026.4	-1,432.5	1,344.0	1,036.0	308.02	4.363	
13,600.0	6,011.0	13,638.6	6,024.0	155.7	156.2	-90.27	8,126.4	-1,432.5	1,344.0	1,032.1	311.85	4.310	
13,700.0	6,011.0	13,738.6	6,024.0	157.6	158.1	-90.27	8,226.4	-1,432.5	1,344.0	1,028.3	315.67	4.257	
13,751.2	6,011.0	13,789.7	6,024.0	158.6	159.1	-90.27	8,277.6	-1,432.5	1,344.0	1,026.3	317.63	4.231 ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	6.7	6.7	0.0	0.0	-91.15	-26.2	-1,310.1	1,310.4					
100.0	100.0	106.7	106.7	0.1	0.1	-91.15	-26.2	-1,310.1	1,310.4	1,310.2	0.20	6,499.678		
200.0	200.0	206.7	206.7	0.3	0.3	-91.15	-26.2	-1,310.1	1,310.4	1,309.7	0.65	2,012.426		
300.0	300.0	306.7	306.7	0.5	0.6	-91.15	-26.2	-1,310.1	1,310.4	1,309.3	1.10	1,190.517		
400.0	400.0	406.7	406.7	0.8	0.8	-91.15	-26.2	-1,310.1	1,310.4	1,308.8	1.55	845.287		
500.0	500.0	506.7	506.7	1.0	1.0	-91.15	-26.2	-1,310.1	1,310.4	1,308.4	2.00	655.270		
600.0	600.0	606.7	606.7	1.2	1.2	-91.15	-26.2	-1,310.1	1,310.4	1,307.9	2.45	535.003		
700.0	700.0	706.7	706.7	1.4	1.5	-91.15	-26.2	-1,310.1	1,310.4	1,307.5	2.90	452.037		
800.0	800.0	806.7	806.7	1.7	1.7	-85.82	-26.2	-1,310.1	1,310.2	1,306.9	3.35	391.419		
900.0	899.8	907.3	907.3	1.9	1.9	-86.06	-26.2	-1,310.1	1,309.9	1,306.1	3.80	344.792		
1,000.0	999.6	1,018.8	1,018.8	2.1	2.2	-86.30	-23.8	-1,309.6	1,308.9	1,304.6	4.28	305.771		
1,100.0	1,099.4	1,127.3	1,127.1	2.4	2.4	-86.35	-17.5	-1,308.3	1,307.1	1,302.3	4.76	274.436		
1,200.0	1,199.1	1,227.3	1,226.8	2.6	2.6	-86.36	-10.7	-1,306.9	1,305.0	1,299.8	5.23	249.320		
1,300.0	1,298.9	1,327.3	1,326.6	2.8	2.9	-86.37	-3.8	-1,305.5	1,303.0	1,297.2	5.71	228.077		
1,400.0	1,398.6	1,427.3	1,426.3	3.1	3.1	-86.38	3.0	-1,304.1	1,300.9	1,294.7	6.20	209.930		
1,500.0	1,498.4	1,527.3	1,526.1	3.3	3.3	-86.38	9.8	-1,302.7	1,298.8	1,292.1	6.69	194.287		
1,600.0	1,598.1	1,627.2	1,625.8	3.6	3.6	-86.39	16.7	-1,301.3	1,296.8	1,289.6	7.18	180.686		
1,700.0	1,697.9	1,727.2	1,725.5	3.8	3.8	-86.40	23.5	-1,299.9	1,294.7	1,287.0	7.67	168.768		
1,800.0	1,797.6	1,827.2	1,825.3	4.1	4.1	-86.41	30.3	-1,298.5	1,292.7	1,284.5	8.17	158.250		
1,900.0	1,897.4	1,927.2	1,925.0	4.3	4.3	-86.42	37.2	-1,297.0	1,290.6	1,281.9	8.67	148.904		
2,000.0	1,997.2	2,027.1	2,024.7	4.6	4.6	-86.42	44.0	-1,295.6	1,288.5	1,279.4	9.17	140.551		
2,100.0	2,096.9	2,127.1	2,124.5	4.8	4.8	-86.43	50.8	-1,294.2	1,286.5	1,276.8	9.67	133.044		
2,200.0	2,196.7	2,227.1	2,224.2	5.1	5.1	-86.44	57.6	-1,292.8	1,284.4	1,274.2	10.17	126.263		
2,300.0	2,296.4	2,327.1	2,323.9	5.3	5.3	-86.45	64.5	-1,291.4	1,282.4	1,271.7	10.68	120.110		
2,400.0	2,396.2	2,427.1	2,423.7	5.6	5.6	-86.46	71.3	-1,290.0	1,280.3	1,269.1	11.18	114.502		
2,500.0	2,495.9	2,527.0	2,523.4	5.9	5.8	-86.46	78.1	-1,288.6	1,278.2	1,266.5	11.69	109.371		
2,600.0	2,595.7	2,627.0	2,623.1	6.1	6.1	-86.47	85.0	-1,287.2	1,276.2	1,264.0	12.19	104.660		
2,700.0	2,695.5	2,727.0	2,722.9	6.4	6.3	-86.48	91.8	-1,285.8	1,274.1	1,261.4	12.70	100.320		
2,800.0	2,795.2	2,827.0	2,822.6	6.6	6.6	-86.49	98.6	-1,284.4	1,272.1	1,258.9	13.21	96.309		
2,900.0	2,895.0	2,927.0	2,922.3	6.9	6.8	-86.50	105.5	-1,283.0	1,270.0	1,256.3	13.72	92.592		
3,000.0	2,994.7	3,026.9	3,022.1	7.1	7.1	-86.50	112.3	-1,281.6	1,267.9	1,253.7	14.22	89.137		
3,100.0	3,094.5	3,126.9	3,121.8	7.4	7.3	-86.51	119.1	-1,280.2	1,265.9	1,251.1	14.73	85.919		
3,200.0	3,194.2	3,226.9	3,221.5	7.6	7.6	-86.52	126.0	-1,278.8	1,263.8	1,248.6	15.24	82.913		
3,300.0	3,294.0	3,326.9	3,321.3	7.9	7.8	-86.53	132.8	-1,277.3	1,261.8	1,246.0	15.75	80.100		
3,400.0	3,393.7	3,426.8	3,421.0	8.1	8.1	-86.54	139.6	-1,275.9	1,259.7	1,243.4	16.26	77.462		
3,500.0	3,493.5	3,526.8	3,520.8	8.4	8.4	-86.55	146.4	-1,274.5	1,257.6	1,240.9	16.77	74.983		
3,600.0	3,593.3	3,626.8	3,620.5	8.7	8.6	-86.55	153.3	-1,273.1	1,255.6	1,238.3	17.28	72.649		
3,700.0	3,693.0	3,726.8	3,720.2	8.9	8.9	-86.56	160.1	-1,271.7	1,253.5	1,235.7	17.79	70.448		
3,800.0	3,792.8	3,826.8	3,820.0	9.2	9.1	-86.57	166.9	-1,270.3	1,251.5	1,233.2	18.30	68.369		
3,900.0	3,892.5	3,926.7	3,919.7	9.4	9.4	-86.58	173.8	-1,268.9	1,249.4	1,230.6	18.82	66.402		
4,000.0	3,992.3	4,026.7	4,019.4	9.7	9.6	-86.59	180.6	-1,267.5	1,247.3	1,228.0	19.33	64.539		
4,100.0	4,092.0	4,126.7	4,119.2	9.9	9.9	-86.60	187.4	-1,266.1	1,245.3	1,225.4	19.84	62.771		
4,200.0	4,191.8	4,226.7	4,218.9	10.2	10.1	-86.60	194.3	-1,264.7	1,243.2	1,222.9	20.35	61.091		
4,300.0	4,291.6	4,326.7	4,318.6	10.4	10.4	-86.61	201.1	-1,263.3	1,241.2	1,220.3	20.86	59.493		
4,400.0	4,391.3	4,426.6	4,418.4	10.7	10.6	-86.62	207.9	-1,261.9	1,239.1	1,217.7	21.37	57.971		
4,500.0	4,491.1	4,526.6	4,518.1	11.0	10.9	-86.63	214.8	-1,260.5	1,237.1	1,215.2	21.89	56.521		
4,600.0	4,590.8	4,626.6	4,617.8	11.2	11.2	-86.64	221.6	-1,259.0	1,235.0	1,212.6	22.40	55.136		
4,700.0	4,690.6	4,726.6	4,717.6	11.5	11.4	-86.65	228.4	-1,257.6	1,232.9	1,210.0	22.91	53.812		
4,800.0	4,790.3	4,826.5	4,817.3	11.7	11.7	-86.66	235.2	-1,256.2	1,230.9	1,207.5	23.42	52.547		
4,900.0	4,890.1	4,926.5	4,917.0	12.0	11.9	-86.66	242.1	-1,254.8	1,228.8	1,204.9	23.94	51.335		
5,000.0	4,989.9	5,026.5	5,016.8	12.2	12.2	-86.67	248.9	-1,253.4	1,226.8	1,202.3	24.45	50.174		
5,100.0	5,089.6	5,126.5	5,116.5	12.5	12.4	-86.68	255.7	-1,252.0	1,224.7	1,199.7	24.96	49.060		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.4	5,226.5	5,216.2	12.7	12.7	-86.69	262.6	-1,250.6	1,222.6	1,197.2	25.48	47.991	
5,300.0	5,289.1	5,326.4	5,316.0	13.0	12.9	-86.70	269.4	-1,249.2	1,220.6	1,194.6	25.99	46.964	
5,400.0	5,388.9	5,426.4	5,415.7	13.3	13.2	-86.71	276.2	-1,247.8	1,218.5	1,192.0	26.50	45.977	
5,500.0	5,488.6	5,518.3	5,502.1	13.5	13.9	-85.44	316.3	-1,239.5	1,213.4	1,185.9	27.48	44.152	
5,600.0	5,588.0	5,792.6	5,748.6	13.8	15.1	-82.75	407.4	-1,220.8	1,200.9	1,171.9	28.94	41.497	
5,700.0	5,683.8	5,928.1	5,836.5	14.2	16.3	-81.09	508.0	-1,200.0	1,183.3	1,152.7	30.65	38.613	
5,800.0	5,772.5	6,038.2	5,886.4	14.8	17.6	-80.17	603.8	-1,180.3	1,162.7	1,130.2	32.48	35.800	
5,900.0	5,850.8	6,131.9	5,912.0	15.6	18.8	-79.82	692.0	-1,162.1	1,140.2	1,105.8	34.41	33.133	
6,000.0	5,915.9	6,215.2	5,920.8	16.5	20.0	-79.91	773.0	-1,145.4	1,116.6	1,080.2	36.47	30.618	
6,100.0	5,965.3	6,273.0	5,921.0	17.7	20.8	-80.93	829.7	-1,134.3	1,093.2	1,054.8	38.42	28.452	
6,200.0	5,997.3	6,331.4	5,921.0	19.0	21.6	-82.33	887.3	-1,124.7	1,071.0	1,030.4	40.60	26.376	
6,300.0	6,010.6	6,400.0	5,921.0	20.4	22.5	-84.14	955.3	-1,115.7	1,049.9	1,006.8	43.11	24.353	
6,400.0	6,011.0	6,457.3	5,921.0	21.8	23.4	-84.58	1,012.3	-1,110.0	1,032.3	986.7	45.62	22.629	
6,500.0	6,011.0	6,522.1	5,921.0	23.2	24.3	-84.57	1,077.0	-1,105.7	1,023.1	974.9	48.14	21.254	
6,600.0	6,011.0	6,600.0	5,921.0	24.7	25.5	-84.56	1,154.9	-1,103.4	1,019.9	969.1	50.84	20.063	
6,650.6	6,011.0	6,622.1	5,921.0	25.5	25.8	-84.56	1,177.0	-1,103.3	1,019.5	967.4	52.06	19.583	
6,700.0	6,011.0	6,671.5	5,921.0	26.3	26.6	-84.56	1,226.4	-1,103.3	1,019.4	965.9	53.60	19.021	
6,800.0	6,011.0	6,771.5	5,921.0	28.0	28.2	-84.56	1,326.4	-1,103.3	1,019.4	962.6	56.87	17.926	
6,900.0	6,011.0	6,871.5	5,921.0	29.7	29.8	-84.56	1,426.4	-1,103.3	1,019.4	959.2	60.22	16.929	
7,000.0	6,011.0	6,971.5	5,921.0	31.4	31.5	-84.56	1,526.4	-1,103.3	1,019.4	955.8	63.62	16.024	
7,100.0	6,011.0	7,071.5	5,921.0	33.1	33.2	-84.56	1,626.4	-1,103.3	1,019.4	952.4	67.07	15.200	
7,200.0	6,011.0	7,171.5	5,921.0	34.9	35.0	-84.56	1,726.4	-1,103.3	1,019.4	948.9	70.56	14.448	
7,300.0	6,011.0	7,271.5	5,921.0	36.7	36.7	-84.56	1,826.4	-1,103.3	1,019.4	945.3	74.08	13.761	
7,400.0	6,011.0	7,371.5	5,921.0	38.5	38.5	-84.56	1,926.4	-1,103.3	1,019.4	941.8	77.63	13.131	
7,500.0	6,011.0	7,471.5	5,921.0	40.3	40.3	-84.56	2,026.4	-1,103.3	1,019.4	938.2	81.21	12.553	
7,600.0	6,011.0	7,571.5	5,921.0	42.1	42.0	-84.56	2,126.4	-1,103.3	1,019.4	934.6	84.81	12.020	
7,700.0	6,011.0	7,671.5	5,921.0	43.9	43.9	-84.56	2,226.4	-1,103.3	1,019.4	931.0	88.43	11.528	
7,800.0	6,011.0	7,771.5	5,921.0	45.7	45.7	-84.56	2,326.4	-1,103.3	1,019.4	927.3	92.07	11.072	
7,900.0	6,011.0	7,871.5	5,921.0	47.6	47.5	-84.56	2,426.4	-1,103.3	1,019.4	923.7	95.72	10.650	
8,000.0	6,011.0	7,971.5	5,921.0	49.4	49.3	-84.56	2,526.4	-1,103.3	1,019.4	920.0	99.38	10.257	
8,100.0	6,011.0	8,071.5	5,921.0	51.3	51.2	-84.56	2,626.4	-1,103.3	1,019.4	916.3	103.06	9.891	
8,200.0	6,011.0	8,171.5	5,921.0	53.1	53.0	-84.56	2,726.4	-1,103.3	1,019.4	912.6	106.75	9.549	
8,300.0	6,011.0	8,271.5	5,921.0	55.0	54.8	-84.56	2,826.4	-1,103.3	1,019.4	908.9	110.44	9.230	
8,400.0	6,011.0	8,371.5	5,921.0	56.8	56.7	-84.56	2,926.4	-1,103.3	1,019.4	905.2	114.15	8.930	
8,500.0	6,011.0	8,471.5	5,921.0	58.7	58.6	-84.56	3,026.4	-1,103.2	1,019.4	901.5	117.86	8.649	
8,600.0	6,011.0	8,571.5	5,921.0	60.6	60.4	-84.56	3,126.4	-1,103.2	1,019.3	897.8	121.59	8.384	
8,700.0	6,011.0	8,671.5	5,921.0	62.5	62.3	-84.56	3,226.4	-1,103.2	1,019.3	894.0	125.31	8.134	
8,800.0	6,011.0	8,771.5	5,921.0	64.3	64.1	-84.56	3,326.4	-1,103.2	1,019.3	890.3	129.05	7.899	
8,900.0	6,011.0	8,871.5	5,921.0	66.2	66.0	-84.56	3,426.4	-1,103.2	1,019.3	886.5	132.79	7.677	
9,000.0	6,011.0	8,971.5	5,921.0	68.1	67.9	-84.56	3,526.4	-1,103.2	1,019.3	882.8	136.53	7.466	
9,100.0	6,011.0	9,071.5	5,921.0	70.0	69.8	-84.56	3,626.4	-1,103.2	1,019.3	879.0	140.28	7.266	
9,200.0	6,011.0	9,171.5	5,921.0	71.9	71.6	-84.56	3,726.4	-1,103.2	1,019.3	875.3	144.03	7.077	
9,300.0	6,011.0	9,271.5	5,921.0	73.7	73.5	-84.56	3,826.4	-1,103.2	1,019.3	871.5	147.79	6.897	
9,400.0	6,011.0	9,371.5	5,921.0	75.6	75.4	-84.56	3,926.4	-1,103.2	1,019.3	867.8	151.55	6.726	
9,500.0	6,011.0	9,471.5	5,921.0	77.5	77.3	-84.56	4,026.4	-1,103.2	1,019.3	864.0	155.31	6.563	
9,600.0	6,011.0	9,571.5	5,921.0	79.4	79.2	-84.56	4,126.4	-1,103.2	1,019.3	860.2	159.08	6.408	
9,700.0	6,011.0	9,671.5	5,921.0	81.3	81.1	-84.56	4,226.4	-1,103.2	1,019.3	856.4	162.85	6.259	
9,800.0	6,011.0	9,771.5	5,921.0	83.2	83.0	-84.56	4,326.4	-1,103.2	1,019.3	852.7	166.62	6.118	
9,900.0	6,011.0	9,871.5	5,921.0	85.1	84.9	-84.56	4,426.4	-1,103.2	1,019.3	848.9	170.39	5.982	
10,000.0	6,011.0	9,971.5	5,921.0	87.0	86.7	-84.56	4,526.4	-1,103.2	1,019.3	845.1	174.17	5.852	
10,100.0	6,011.0	10,071.5	5,921.0	88.9	88.6	-84.56	4,626.4	-1,103.2	1,019.3	841.3	177.95	5.728	
10,200.0	6,011.0	10,171.5	5,921.0	90.8	90.5	-84.56	4,726.4	-1,103.2	1,019.3	837.5	181.73	5.609	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,300.0	6,011.0	10,271.5	5,921.0	92.7	92.4	-84.56	4,826.4	-1,103.2	1,019.3	833.7	185.51	5.494	
10,400.0	6,011.0	10,371.5	5,921.0	94.6	94.3	-84.56	4,926.4	-1,103.2	1,019.3	830.0	189.30	5.384	
10,500.0	6,011.0	10,471.5	5,921.0	96.5	96.2	-84.56	5,026.4	-1,103.2	1,019.2	826.2	193.08	5.279	
10,600.0	6,011.0	10,571.5	5,921.0	98.4	98.1	-84.56	5,126.4	-1,103.1	1,019.2	822.4	196.87	5.177	
10,700.0	6,011.0	10,671.5	5,921.0	100.3	100.0	-84.56	5,226.4	-1,103.1	1,019.2	818.6	200.66	5.079	
10,800.0	6,011.0	10,771.5	5,921.0	102.2	101.9	-84.56	5,326.4	-1,103.1	1,019.2	814.8	204.45	4.985	
10,900.0	6,011.0	10,871.5	5,921.0	104.1	103.8	-84.56	5,426.4	-1,103.1	1,019.2	811.0	208.24	4.894	
11,000.0	6,011.0	10,971.5	5,921.0	106.0	105.7	-84.56	5,526.4	-1,103.1	1,019.2	807.2	212.04	4.807	
11,100.0	6,011.0	11,071.5	5,921.0	107.9	107.6	-84.56	5,626.4	-1,103.1	1,019.2	803.4	215.83	4.722	
11,200.0	6,011.0	11,171.5	5,921.0	109.8	109.5	-84.56	5,726.4	-1,103.1	1,019.2	799.6	219.63	4.641	
11,300.0	6,011.0	11,271.5	5,921.0	111.7	111.4	-84.56	5,826.4	-1,103.1	1,019.2	795.8	223.42	4.562	
11,400.0	6,011.0	11,371.5	5,921.0	113.6	113.3	-84.56	5,926.4	-1,103.1	1,019.2	792.0	227.22	4.485	
11,500.0	6,011.0	11,471.5	5,921.0	115.5	115.3	-84.56	6,026.4	-1,103.1	1,019.2	788.2	231.02	4.412	
11,600.0	6,011.0	11,571.5	5,921.0	117.5	117.2	-84.56	6,126.4	-1,103.1	1,019.2	784.4	234.82	4.340	
11,700.0	6,011.0	11,671.5	5,921.0	119.4	119.1	-84.56	6,226.4	-1,103.1	1,019.2	780.6	238.62	4.271	
11,800.0	6,011.0	11,771.5	5,921.0	121.3	121.0	-84.56	6,326.4	-1,103.1	1,019.2	776.8	242.42	4.204	
11,900.0	6,011.0	11,871.5	5,921.0	123.2	122.9	-84.56	6,426.4	-1,103.1	1,019.2	772.9	246.23	4.139	
12,000.0	6,011.0	11,971.5	5,921.0	125.1	124.8	-84.56	6,526.4	-1,103.1	1,019.2	769.1	250.03	4.076	
12,100.0	6,011.0	12,071.5	5,921.0	127.0	126.7	-84.56	6,626.4	-1,103.1	1,019.2	765.3	253.83	4.015	
12,200.0	6,011.0	12,171.5	5,921.0	128.9	128.6	-84.56	6,726.4	-1,103.1	1,019.2	761.5	257.64	3.956	
12,300.0	6,011.0	12,271.5	5,921.0	130.8	130.5	-84.56	6,826.4	-1,103.1	1,019.1	757.7	261.44	3.898	
12,400.0	6,011.0	12,371.5	5,921.0	132.7	132.4	-84.56	6,926.4	-1,103.1	1,019.1	753.9	265.25	3.842	
12,500.0	6,011.0	12,471.5	5,921.0	134.6	134.3	-84.56	7,026.4	-1,103.1	1,019.1	750.1	269.06	3.788	
12,600.0	6,011.0	12,571.5	5,921.0	136.6	136.2	-84.56	7,126.4	-1,103.1	1,019.1	746.3	272.86	3.735	
12,700.0	6,011.0	12,671.5	5,921.0	138.5	138.1	-84.56	7,226.4	-1,103.1	1,019.1	742.5	276.67	3.684	
12,800.0	6,011.0	12,771.5	5,921.0	140.4	140.1	-84.56	7,326.4	-1,103.0	1,019.1	738.6	280.48	3.633	
12,900.0	6,011.0	12,871.5	5,921.0	142.3	142.0	-84.56	7,426.4	-1,103.0	1,019.1	734.8	284.29	3.585	
13,000.0	6,011.0	12,971.5	5,921.0	144.2	143.9	-84.56	7,526.4	-1,103.0	1,019.1	731.0	288.10	3.537	
13,100.0	6,011.0	13,071.5	5,921.0	146.1	145.8	-84.56	7,626.4	-1,103.0	1,019.1	727.2	291.91	3.491	
13,200.0	6,011.0	13,171.5	5,921.0	148.0	147.7	-84.56	7,726.4	-1,103.0	1,019.1	723.4	295.72	3.446	
13,300.0	6,011.0	13,271.5	5,921.0	149.9	149.6	-84.56	7,826.4	-1,103.0	1,019.1	719.6	299.53	3.402	
13,400.0	6,011.0	13,371.5	5,921.0	151.9	151.5	-84.56	7,926.4	-1,103.0	1,019.1	715.8	303.34	3.360	
13,500.0	6,011.0	13,471.5	5,921.0	153.8	153.4	-84.56	8,026.4	-1,103.0	1,019.1	711.9	307.15	3.318	
13,600.0	6,011.0	13,571.5	5,921.0	155.7	155.4	-84.56	8,126.4	-1,103.0	1,019.1	708.1	310.96	3.277	
13,700.0	6,011.0	13,671.5	5,921.0	157.6	157.3	-84.56	8,226.4	-1,103.0	1,019.1	704.3	314.78	3.237	
13,751.2	6,011.0	13,722.7	5,921.0	158.6	158.2	-84.55	8,277.6	-1,103.0	1,019.1	702.3	316.73	3.218 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	6.7	6.7	0.0	0.0	-91.18	-26.2	-1,276.9	1,277.2					
100.0	100.0	106.7	106.7	0.1	0.1	-91.18	-26.2	-1,276.9	1,277.2	1,277.0	0.20	6,334.988		
200.0	200.0	206.7	206.7	0.3	0.3	-91.18	-26.2	-1,276.9	1,277.2	1,276.5	0.65	1,961.435		
300.0	300.0	306.7	306.7	0.5	0.6	-91.18	-26.2	-1,276.9	1,277.2	1,276.1	1.10	1,160.351		
400.0	400.0	406.7	406.7	0.8	0.8	-91.18	-26.2	-1,276.9	1,277.2	1,275.6	1.55	823.869		
500.0	500.0	506.7	506.7	1.0	1.0	-91.18	-26.2	-1,276.9	1,277.2	1,275.2	2.00	638.666		
600.0	600.0	606.7	606.7	1.2	1.2	-91.18	-26.2	-1,276.9	1,277.2	1,274.7	2.45	521.447		
700.0	700.0	706.7	706.7	1.4	1.5	-91.18	-26.2	-1,276.9	1,277.2	1,274.3	2.90	440.583		
800.0	800.0	806.7	806.7	1.7	1.7	-85.86	-26.2	-1,276.9	1,277.0	1,273.7	3.35	381.501		
900.0	899.8	906.5	906.5	1.9	1.9	-86.10	-26.2	-1,276.9	1,276.7	1,272.9	3.80	336.197		
1,000.0	999.6	1,006.3	1,006.3	2.1	2.1	-86.41	-26.2	-1,276.9	1,276.2	1,272.0	4.25	300.026		
1,100.0	1,099.4	1,107.5	1,107.5	2.4	2.4	-86.72	-26.2	-1,276.9	1,275.8	1,271.1	4.72	270.388		
1,200.0	1,199.1	1,232.0	1,232.0	2.6	2.6	-86.99	-23.4	-1,275.7	1,274.3	1,269.1	5.24	243.323		
1,300.0	1,298.9	1,345.4	1,345.1	2.8	2.9	-87.06	-16.9	-1,272.7	1,271.1	1,265.4	5.74	221.599		
1,400.0	1,398.6	1,445.3	1,444.8	3.1	3.1	-87.10	-10.6	-1,269.9	1,267.7	1,261.4	6.21	204.101		
1,500.0	1,498.4	1,545.3	1,544.5	3.3	3.4	-87.13	-4.2	-1,267.0	1,264.2	1,257.5	6.69	188.949		
1,600.0	1,598.1	1,645.2	1,644.2	3.6	3.6	-87.16	2.2	-1,264.2	1,260.7	1,253.5	7.17	175.722		
1,700.0	1,697.9	1,745.2	1,743.9	3.8	3.8	-87.19	8.5	-1,261.3	1,257.2	1,249.6	7.66	164.092		
1,800.0	1,797.6	1,845.1	1,843.6	4.1	4.1	-87.23	14.9	-1,258.5	1,253.7	1,245.6	8.15	153.799		
1,900.0	1,897.4	1,945.0	1,943.3	4.3	4.3	-87.26	21.2	-1,255.7	1,250.3	1,241.6	8.64	144.634		
2,000.0	1,997.2	2,045.0	2,043.0	4.6	4.6	-87.30	27.6	-1,252.8	1,246.8	1,237.6	9.14	136.427		
2,100.0	2,096.9	2,144.9	2,142.7	4.8	4.8	-87.33	34.0	-1,250.0	1,243.3	1,233.7	9.64	129.040		
2,200.0	2,196.7	2,244.8	2,242.4	5.1	5.0	-87.36	40.3	-1,247.1	1,239.8	1,229.7	10.13	122.359		
2,300.0	2,296.4	2,344.8	2,342.1	5.3	5.3	-87.40	46.7	-1,244.3	1,236.4	1,225.7	10.63	116.290		
2,400.0	2,396.2	2,444.7	2,441.8	5.6	5.5	-87.43	53.1	-1,241.4	1,232.9	1,221.8	11.13	110.754		
2,500.0	2,495.9	2,544.7	2,541.5	5.9	5.8	-87.47	59.4	-1,238.6	1,229.4	1,217.8	11.63	105.685		
2,600.0	2,595.7	2,644.6	2,641.2	6.1	6.0	-87.50	65.8	-1,235.7	1,225.9	1,213.8	12.13	101.027		
2,700.0	2,695.5	2,744.5	2,740.8	6.4	6.3	-87.54	72.1	-1,232.9	1,222.5	1,209.8	12.64	96.734		
2,800.0	2,795.2	2,844.5	2,840.5	6.6	6.5	-87.57	78.5	-1,230.0	1,219.0	1,205.8	13.14	92.764		
2,900.0	2,895.0	2,944.4	2,940.2	6.9	6.8	-87.61	84.9	-1,227.2	1,215.5	1,201.9	13.64	89.083		
3,000.0	2,994.7	3,044.3	3,039.9	7.1	7.0	-87.65	91.2	-1,224.3	1,212.0	1,197.9	14.15	85.661		
3,100.0	3,094.5	3,144.3	3,139.6	7.4	7.3	-87.68	97.6	-1,221.5	1,208.6	1,193.9	14.65	82.472		
3,200.0	3,194.2	3,244.2	3,239.3	7.6	7.5	-87.72	104.0	-1,218.6	1,205.1	1,189.9	15.16	79.492		
3,300.0	3,294.0	3,344.1	3,339.0	7.9	7.8	-87.75	110.3	-1,215.8	1,201.6	1,186.0	15.67	76.704		
3,400.0	3,393.7	3,444.1	3,438.7	8.1	8.1	-87.79	116.7	-1,212.9	1,198.2	1,182.0	16.17	74.087		
3,500.0	3,493.5	3,544.0	3,538.4	8.4	8.3	-87.83	123.0	-1,210.1	1,194.7	1,178.0	16.68	71.628		
3,600.0	3,593.3	3,644.0	3,638.1	8.7	8.6	-87.87	129.4	-1,207.2	1,191.2	1,174.0	17.19	69.313		
3,700.0	3,693.0	3,743.9	3,737.8	8.9	8.8	-87.90	135.8	-1,204.4	1,187.8	1,170.1	17.69	67.130		
3,800.0	3,792.8	3,843.8	3,837.5	9.2	9.1	-87.94	142.1	-1,201.5	1,184.3	1,166.1	18.20	65.067		
3,900.0	3,892.5	3,943.8	3,937.2	9.4	9.3	-87.98	148.5	-1,198.7	1,180.8	1,162.1	18.71	63.115		
4,000.0	3,992.3	4,043.7	4,036.9	9.7	9.6	-88.02	154.9	-1,195.8	1,177.4	1,158.1	19.22	61.265		
4,100.0	4,092.0	4,143.6	4,136.6	9.9	9.8	-88.05	161.2	-1,193.0	1,173.9	1,154.2	19.73	59.510		
4,200.0	4,191.8	4,243.6	4,236.2	10.2	10.1	-88.09	167.6	-1,190.1	1,170.4	1,150.2	20.23	57.843		
4,300.0	4,291.6	4,343.5	4,335.9	10.4	10.3	-88.13	173.9	-1,187.3	1,167.0	1,146.2	20.74	56.257		
4,400.0	4,391.3	4,443.5	4,435.6	10.7	10.6	-88.17	180.3	-1,184.4	1,163.5	1,142.2	21.25	54.746		
4,500.0	4,491.1	4,543.4	4,535.3	11.0	10.8	-88.21	186.7	-1,181.6	1,160.0	1,138.3	21.76	53.306		
4,600.0	4,590.8	4,643.3	4,635.0	11.2	11.1	-88.25	193.0	-1,178.7	1,156.6	1,134.3	22.27	51.931		
4,700.0	4,690.6	4,743.3	4,734.7	11.5	11.4	-88.29	199.4	-1,175.9	1,153.1	1,130.3	22.78	50.617		
4,800.0	4,790.3	4,843.2	4,834.4	11.7	11.6	-88.33	205.8	-1,173.0	1,149.6	1,126.3	23.29	49.361		
4,900.0	4,890.1	4,943.1	4,934.1	12.0	11.9	-88.37	212.1	-1,170.2	1,146.2	1,122.4	23.80	48.158		
5,000.0	4,989.9	5,043.1	5,033.8	12.2	12.1	-88.41	218.5	-1,167.3	1,142.7	1,118.4	24.31	47.005		
5,100.0	5,089.6	5,143.0	5,133.5	12.5	12.4	-88.45	224.8	-1,164.5	1,139.3	1,114.4	24.82	45.899		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.4	5,242.9	5,233.2	12.7	12.6	-88.49	231.2	-1,161.6	1,135.8	1,110.5	25.33	44.837		
5,300.0	5,289.1	5,342.9	5,332.9	13.0	12.9	-88.53	237.6	-1,158.8	1,132.3	1,106.5	25.84	43.818		
5,400.0	5,388.9	5,442.8	5,432.6	13.3	13.1	-88.57	243.9	-1,155.9	1,128.9	1,102.5	26.35	42.837		
5,500.0	5,488.6	6,331.8	6,024.0	13.5	20.4	-62.89	725.0	-940.5	1,125.1	1,090.6	34.50	32.610		
5,600.0	5,588.0	6,331.8	6,024.0	13.8	20.4	-66.21	725.0	-940.5	1,077.3	1,042.5	34.77	30.986		
5,700.0	5,683.8	6,359.4	6,024.0	14.2	20.7	-70.05	750.3	-929.4	1,029.8	994.4	35.41	29.084		
5,800.0	5,772.5	6,386.3	6,024.0	14.8	21.1	-73.98	775.0	-919.0	983.6	947.4	36.14	27.218		
5,900.0	5,850.8	6,423.2	6,024.0	15.6	21.6	-77.35	809.2	-905.2	939.0	901.8	37.21	25.234		
6,000.0	5,915.9	6,469.3	6,024.0	16.5	22.3	-80.33	852.3	-888.9	896.6	857.9	38.68	23.181		
6,100.0	5,965.3	6,523.4	6,024.0	17.7	23.0	-83.17	903.5	-871.1	856.3	815.8	40.54	21.122		
6,200.0	5,997.3	6,584.0	6,024.0	19.0	23.9	-86.22	961.3	-852.9	818.2	775.5	42.77	19.133		
6,300.0	6,010.6	6,649.1	6,024.0	20.4	24.8	-89.73	1,024.0	-835.4	782.6	737.3	45.27	17.288		
6,400.0	6,011.0	6,717.0	6,024.0	21.8	25.8	-90.50	1,089.9	-819.5	751.7	703.5	48.14	15.615		
6,500.0	6,011.0	6,800.0	6,024.0	23.2	27.1	-90.51	1,171.3	-803.2	729.3	678.1	51.22	14.240		
6,600.0	6,011.0	6,858.8	6,024.0	24.7	28.0	-90.52	1,229.4	-793.8	712.8	659.1	53.72	13.271		
6,700.0	6,011.0	6,931.2	6,024.0	26.3	29.1	-90.52	1,301.2	-784.7	700.3	643.7	56.54	12.385		
6,800.0	6,011.0	7,000.0	6,024.0	28.0	30.1	-90.53	1,369.7	-778.6	691.5	632.1	59.35	11.651		
6,900.0	6,011.0	7,077.7	6,024.0	29.7	31.3	-90.53	1,447.3	-774.6	686.5	624.2	62.32	11.015		
7,000.0	6,011.0	7,156.8	6,024.0	31.4	32.6	-90.53	1,526.4	-773.7	685.3	619.9	65.35	10.487		
7,100.0	6,011.0	7,256.8	6,024.0	33.1	34.1	-90.53	1,626.4	-773.7	685.3	616.5	68.72	9.972		
7,200.0	6,011.0	7,356.8	6,024.0	34.9	35.7	-90.53	1,726.4	-773.7	685.3	613.1	72.14	9.499		
7,300.0	6,011.0	7,456.8	6,024.0	36.7	37.4	-90.53	1,826.4	-773.7	685.3	609.7	75.60	9.065		
7,400.0	6,011.0	7,556.8	6,024.0	38.5	39.0	-90.53	1,926.4	-773.7	685.2	606.2	79.09	8.664		
7,500.0	6,011.0	7,656.8	6,024.0	40.3	40.7	-90.53	2,026.4	-773.7	685.2	602.6	82.62	8.294		
7,600.0	6,011.0	7,756.8	6,024.0	42.1	42.4	-90.53	2,126.4	-773.7	685.2	599.1	86.18	7.952		
7,700.0	6,011.0	7,856.8	6,024.0	43.9	44.1	-90.53	2,226.4	-773.7	685.2	595.5	89.75	7.634		
7,800.0	6,011.0	7,956.8	6,024.0	45.7	45.9	-90.53	2,326.4	-773.7	685.2	591.9	93.36	7.340		
7,900.0	6,011.0	8,056.8	6,024.0	47.6	47.6	-90.53	2,426.4	-773.7	685.2	588.2	96.98	7.066		
8,000.0	6,011.0	8,156.8	6,024.0	49.4	49.4	-90.53	2,526.4	-773.7	685.2	584.6	100.61	6.810		
8,100.0	6,011.0	8,256.8	6,024.0	51.3	51.1	-90.53	2,626.4	-773.6	685.2	580.9	104.27	6.572		
8,200.0	6,011.0	8,356.8	6,024.0	53.1	52.9	-90.53	2,726.4	-773.6	685.2	577.2	107.93	6.348		
8,300.0	6,011.0	8,456.8	6,024.0	55.0	54.7	-90.53	2,826.4	-773.6	685.2	573.6	111.61	6.139		
8,400.0	6,011.0	8,556.8	6,024.0	56.8	56.5	-90.53	2,926.4	-773.6	685.2	569.9	115.30	5.943		
8,500.0	6,011.0	8,656.8	6,024.0	58.7	58.3	-90.53	3,026.4	-773.6	685.2	566.2	119.00	5.758		
8,600.0	6,011.0	8,756.8	6,024.0	60.6	60.1	-90.53	3,126.4	-773.6	685.1	562.4	122.71	5.584		
8,700.0	6,011.0	8,856.8	6,024.0	62.5	62.0	-90.53	3,226.4	-773.6	685.1	558.7	126.42	5.419		
8,800.0	6,011.0	8,956.8	6,024.0	64.3	63.8	-90.53	3,326.4	-773.6	685.1	555.0	130.15	5.264		
8,900.0	6,011.0	9,056.8	6,024.0	66.2	65.6	-90.53	3,426.4	-773.6	685.1	551.2	133.88	5.118		
9,000.0	6,011.0	9,156.8	6,024.0	68.1	67.5	-90.53	3,526.4	-773.6	685.1	547.5	137.61	4.979		
9,100.0	6,011.0	9,256.8	6,024.0	70.0	69.3	-90.53	3,626.4	-773.6	685.1	543.8	141.36	4.847		
9,200.0	6,011.0	9,356.8	6,024.0	71.9	71.2	-90.53	3,726.4	-773.6	685.1	540.0	145.10	4.721		
9,300.0	6,011.0	9,456.8	6,024.0	73.7	73.0	-90.53	3,826.4	-773.6	685.1	536.2	148.86	4.602		
9,400.0	6,011.0	9,556.8	6,024.0	75.6	74.9	-90.53	3,926.4	-773.6	685.1	532.5	152.61	4.489		
9,500.0	6,011.0	9,656.8	6,024.0	77.5	76.7	-90.53	4,026.4	-773.5	685.1	528.7	156.38	4.381		
9,600.0	6,011.0	9,756.8	6,024.0	79.4	78.6	-90.53	4,126.4	-773.5	685.1	524.9	160.14	4.278		
9,700.0	6,011.0	9,856.8	6,024.0	81.3	80.4	-90.53	4,226.4	-773.5	685.1	521.1	163.91	4.179		
9,800.0	6,011.0	9,956.8	6,024.0	83.2	82.3	-90.53	4,326.4	-773.5	685.1	517.4	167.68	4.085		
9,900.0	6,011.0	10,056.8	6,024.0	85.1	84.2	-90.53	4,426.4	-773.5	685.0	513.6	171.46	3.995		
10,000.0	6,011.0	10,156.8	6,024.0	87.0	86.1	-90.53	4,526.4	-773.5	685.0	509.8	175.24	3.909		
10,100.0	6,011.0	10,256.8	6,024.0	88.9	87.9	-90.53	4,626.4	-773.5	685.0	506.0	179.02	3.827		
10,200.0	6,011.0	10,356.8	6,024.0	90.8	89.8	-90.53	4,726.4	-773.5	685.0	502.2	182.80	3.747		
10,300.0	6,011.0	10,456.8	6,024.0	92.7	91.7	-90.53	4,826.4	-773.5	685.0	498.4	186.59	3.671		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0910B
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0910B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2											Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	
10,400.0	6,011.0	10,556.8	6,024.0	94.6	93.6	-90.53	4,926.4	-773.5	685.0	494.6	190.38	3.598
10,500.0	6,011.0	10,656.8	6,024.0	96.5	95.4	-90.53	5,026.4	-773.5	685.0	490.8	194.17	3.528
10,600.0	6,011.0	10,756.8	6,024.0	98.4	97.3	-90.53	5,126.4	-773.5	685.0	487.0	197.96	3.460
10,700.0	6,011.0	10,856.8	6,024.0	100.3	99.2	-90.53	5,226.4	-773.5	685.0	483.2	201.76	3.395
10,800.0	6,011.0	10,956.8	6,024.0	102.2	101.1	-90.53	5,326.4	-773.5	685.0	479.4	205.55	3.332
10,900.0	6,011.0	11,056.8	6,024.0	104.1	103.0	-90.53	5,426.4	-773.4	685.0	475.6	209.35	3.272
11,000.0	6,011.0	11,156.8	6,024.0	106.0	104.9	-90.53	5,526.4	-773.4	685.0	471.8	213.15	3.213
11,100.0	6,011.0	11,256.8	6,024.0	107.9	106.8	-90.53	5,626.4	-773.4	684.9	468.0	216.95	3.157
11,200.0	6,011.0	11,356.8	6,024.0	109.8	108.6	-90.53	5,726.4	-773.4	684.9	464.2	220.76	3.103
11,300.0	6,011.0	11,456.8	6,024.0	111.7	110.5	-90.53	5,826.4	-773.4	684.9	460.4	224.56	3.050
11,400.0	6,011.0	11,556.8	6,024.0	113.6	112.4	-90.53	5,926.4	-773.4	684.9	456.6	228.37	2.999
11,500.0	6,011.0	11,656.8	6,024.0	115.5	114.3	-90.53	6,026.4	-773.4	684.9	452.7	232.17	2.950
11,600.0	6,011.0	11,756.8	6,024.0	117.5	116.2	-90.53	6,126.4	-773.4	684.9	448.9	235.98	2.902
11,700.0	6,011.0	11,856.8	6,024.0	119.4	118.1	-90.53	6,226.4	-773.4	684.9	445.1	239.79	2.856
11,800.0	6,011.0	11,956.8	6,024.0	121.3	120.0	-90.53	6,326.4	-773.4	684.9	441.3	243.60	2.812
11,900.0	6,011.0	12,056.8	6,024.0	123.2	121.9	-90.53	6,426.4	-773.4	684.9	437.5	247.41	2.768
12,000.0	6,011.0	12,156.8	6,024.0	125.1	123.8	-90.53	6,526.4	-773.4	684.9	433.7	251.22	2.726
12,100.0	6,011.0	12,256.8	6,024.0	127.0	125.7	-90.53	6,626.4	-773.4	684.9	429.8	255.04	2.685
12,200.0	6,011.0	12,356.8	6,024.0	128.9	127.6	-90.53	6,726.4	-773.3	684.9	426.0	258.85	2.646
12,300.0	6,011.0	12,456.8	6,024.0	130.8	129.5	-90.53	6,826.4	-773.3	684.9	422.2	262.67	2.607
12,400.0	6,011.0	12,556.8	6,024.0	132.7	131.4	-90.53	6,926.4	-773.3	684.8	418.4	266.48	2.570
12,500.0	6,011.0	12,656.8	6,024.0	134.6	133.3	-90.53	7,026.4	-773.3	684.8	414.5	270.30	2.534
12,600.0	6,011.0	12,756.8	6,024.0	136.6	135.2	-90.53	7,126.4	-773.3	684.8	410.7	274.12	2.498
12,700.0	6,011.0	12,856.8	6,024.0	138.5	137.1	-90.53	7,226.4	-773.3	684.8	406.9	277.93	2.464
12,800.0	6,011.0	12,956.8	6,024.0	140.4	139.0	-90.53	7,326.4	-773.3	684.8	403.1	281.75	2.431
12,900.0	6,011.0	13,056.8	6,024.0	142.3	140.9	-90.53	7,426.4	-773.3	684.8	399.2	285.57	2.398
13,000.0	6,011.0	13,156.8	6,024.0	144.2	142.8	-90.53	7,526.4	-773.3	684.8	395.4	289.39	2.366
13,100.0	6,011.0	13,256.8	6,024.0	146.1	144.7	-90.53	7,626.4	-773.3	684.8	391.6	293.21	2.335
13,200.0	6,011.0	13,356.8	6,024.0	148.0	146.6	-90.53	7,726.4	-773.3	684.8	387.7	297.03	2.305
13,300.0	6,011.0	13,456.8	6,024.0	149.9	148.5	-90.53	7,826.4	-773.3	684.8	383.9	300.85	2.276
13,400.0	6,011.0	13,556.8	6,024.0	151.9	150.4	-90.53	7,926.4	-773.3	684.8	380.1	304.68	2.248
13,500.0	6,011.0	13,656.8	6,024.0	153.8	152.3	-90.53	8,026.4	-773.3	684.8	376.3	308.50	2.220
13,600.0	6,011.0	13,756.8	6,024.0	155.7	154.2	-90.53	8,126.4	-773.2	684.7	372.4	312.32	2.192
13,700.0	6,011.0	13,856.8	6,024.0	157.6	156.1	-90.53	8,226.4	-773.2	684.7	368.6	316.14	2.166
13,751.2	6,011.0	13,908.0	6,024.0	158.6	157.1	-90.53	8,277.6	-773.2	684.7	366.6	318.10	2.153 CC, ES, SF

Cathedral Energy Services

Anticollision Report

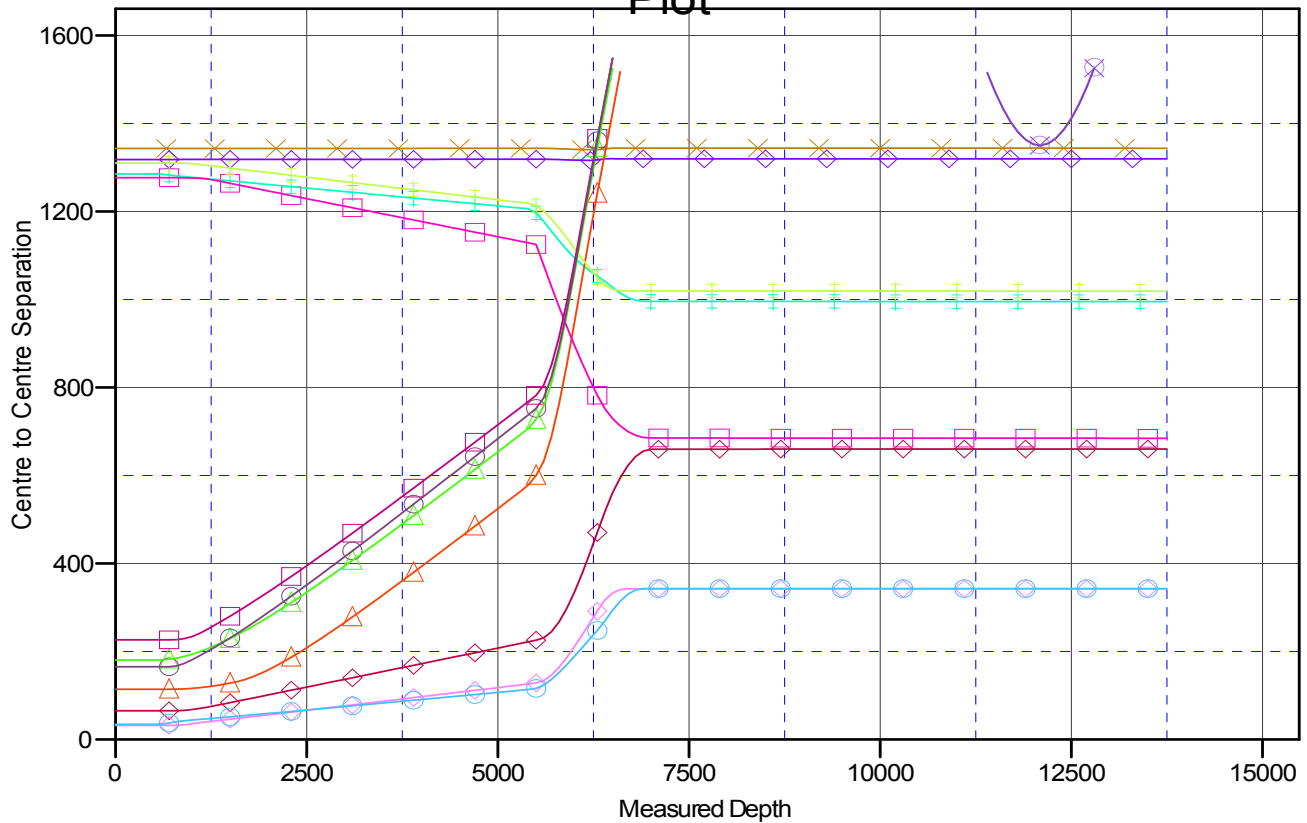
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S21-T10N-R58W
Site Error: 0.0usft
Reference Well: Razor #21B-0910B
Well Error: 0.0usft
Reference Wellbore: HZ
Reference Design: Plan #2

Local Co-ordinate Reference: Well Razor #21B-0910B
TVD Reference: KB=17' @ 4854.3usft
MD Reference: KB=17' @ 4854.3usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=17' @ 4854.3usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor #21B-0910B
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.05°

Ladder Plot



LEGEND

(EXISTING), CREST WELL, NO SURVEYS V0
 0912B, HZ, Plan #2 V0
 Existing, Existing, ASSUMED VERTICAL V0
 0911A, HZ, Plan #2 V0
 0906B, HZ, Plan #2 V0

Razor #21B-2811A, HZ, Plan #1 V0
 Razor #21A-0913A, HZ, Plan #2 V0
 Razor #21A-0914B, HZ, Plan #2 V0
 Razor #21B-2809A, HZ, Plan #1 V0
 Razor #21C-0908B, HZ, Plan #2 V0

Razor #21B-0909A, HZ, Plan #2 V0
 Razor #21C-0907A, HZ, Plan #2 V0
 Razor #21B-2812B, HZ, Plan #1 V0
 Razor #21B-2810B, HZ, Plan #1 V0