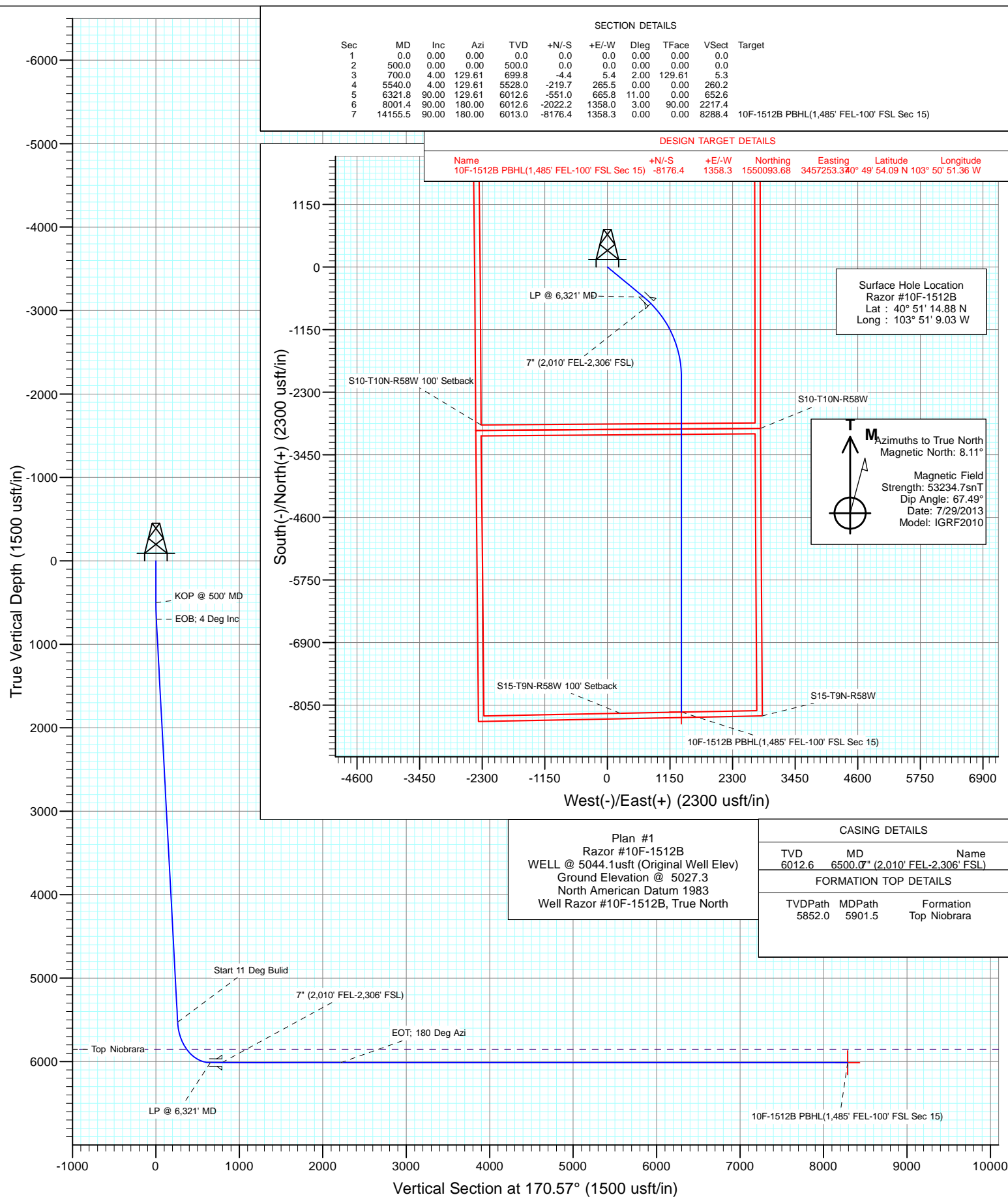




Project: Weld County, CO
Site: S10-T10N-R58W
Well: Razor #10F-1512B
Wellbore: HZ
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #10F-1512B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5044.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5044.1usft (Original Well Elev)
Site:	S10-T10N-R58W	North Reference:	True
Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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		S10-T10N-R58W			
Site Position:		Northing:	1,558,370.48 usft	Latitude:	40° 51' 15.74 N
From:	Lat/Long	Easting:	3,457,889.23 usft	Longitude:	103° 50' 41.08 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.07 °

Well	Razor #10F-1512B					
Well Position	+N/-S	0.0 usft	Northing:	1,558,243.40 usft	Latitude:	40° 51' 14.88 N
	+E/-W	0.0 usft	Easting:	3,455,743.39 usft	Longitude:	103° 51' 9.03 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,027.3 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/29/2013	8.11	67.49	53,235

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	170.57

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	129.61	699.8	-4.4	5.4	2.00	2.00	0.00	129.61	
5,540.0	4.00	129.61	5,528.0	-219.7	265.5	0.00	0.00	0.00	0.00	
6,321.8	90.00	129.61	6,012.6	-551.0	665.8	11.00	11.00	0.00	0.00	
8,001.4	90.00	180.00	6,012.6	-2,022.2	1,358.0	3.00	0.00	3.00	90.00	
14,155.5	90.00	180.00	6,013.0	-8,176.4	1,358.3	0.00	0.00	0.00	0.00	10F-1512B PBHL(1,4

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #10F-1512B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5044.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5044.1usft (Original Well Elev)
Site:	S10-T10N-R58W	North Reference:	True
Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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	
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	KOP @ 500' MD
600.0	2.00	129.61	600.0	-1.1	1.3	1.3	2.00	2.00	
700.0	4.00	129.61	699.8	-4.4	5.4	5.3	2.00	2.00	EOB; 4 Deg Inc
800.0	4.00	129.61	799.6	-8.9	10.8	10.5	0.00	0.00	
900.0	4.00	129.61	899.4	-13.3	16.1	15.8	0.00	0.00	
1,000.0	4.00	129.61	999.1	-17.8	21.5	21.1	0.00	0.00	
1,100.0	4.00	129.61	1,098.9	-22.2	26.9	26.3	0.00	0.00	
1,200.0	4.00	129.61	1,198.6	-26.7	32.2	31.6	0.00	0.00	
1,300.0	4.00	129.61	1,298.4	-31.1	37.6	36.9	0.00	0.00	
1,400.0	4.00	129.61	1,398.1	-35.6	43.0	42.1	0.00	0.00	
1,500.0	4.00	129.61	1,497.9	-40.0	48.4	47.4	0.00	0.00	
1,600.0	4.00	129.61	1,597.6	-44.5	53.7	52.7	0.00	0.00	
1,700.0	4.00	129.61	1,697.4	-48.9	59.1	57.9	0.00	0.00	
1,800.0	4.00	129.61	1,797.2	-53.4	64.5	63.2	0.00	0.00	
1,900.0	4.00	129.61	1,896.9	-57.8	69.9	68.5	0.00	0.00	
2,000.0	4.00	129.61	1,996.7	-62.3	75.2	73.8	0.00	0.00	
2,100.0	4.00	129.61	2,096.4	-66.7	80.6	79.0	0.00	0.00	
2,200.0	4.00	129.61	2,196.2	-71.2	86.0	84.3	0.00	0.00	
2,300.0	4.00	129.61	2,295.9	-75.6	91.4	89.6	0.00	0.00	
2,400.0	4.00	129.61	2,395.7	-80.1	96.7	94.8	0.00	0.00	
2,500.0	4.00	129.61	2,495.5	-84.5	102.1	100.1	0.00	0.00	
2,600.0	4.00	129.61	2,595.2	-88.9	107.5	105.4	0.00	0.00	
2,700.0	4.00	129.61	2,695.0	-93.4	112.9	110.6	0.00	0.00	
2,800.0	4.00	129.61	2,794.7	-97.8	118.2	115.9	0.00	0.00	
2,900.0	4.00	129.61	2,894.5	-102.3	123.6	121.2	0.00	0.00	
3,000.0	4.00	129.61	2,994.2	-106.7	129.0	126.4	0.00	0.00	
3,100.0	4.00	129.61	3,094.0	-111.2	134.4	131.7	0.00	0.00	
3,200.0	4.00	129.61	3,193.7	-115.6	139.7	137.0	0.00	0.00	
3,300.0	4.00	129.61	3,293.5	-120.1	145.1	142.2	0.00	0.00	
3,400.0	4.00	129.61	3,393.3	-124.5	150.5	147.5	0.00	0.00	
3,500.0	4.00	129.61	3,493.0	-129.0	155.8	152.8	0.00	0.00	
3,600.0	4.00	129.61	3,592.8	-133.4	161.2	158.0	0.00	0.00	
3,700.0	4.00	129.61	3,692.5	-137.9	166.6	163.3	0.00	0.00	
3,800.0	4.00	129.61	3,792.3	-142.3	172.0	168.6	0.00	0.00	
3,900.0	4.00	129.61	3,892.0	-146.8	177.3	173.8	0.00	0.00	
4,000.0	4.00	129.61	3,991.8	-151.2	182.7	179.1	0.00	0.00	
4,100.0	4.00	129.61	4,091.6	-155.7	188.1	184.4	0.00	0.00	
4,200.0	4.00	129.61	4,191.3	-160.1	193.5	189.6	0.00	0.00	
4,300.0	4.00	129.61	4,291.1	-164.6	198.8	194.9	0.00	0.00	
4,400.0	4.00	129.61	4,390.8	-169.0	204.2	200.2	0.00	0.00	
4,500.0	4.00	129.61	4,490.6	-173.4	209.6	205.5	0.00	0.00	
4,600.0	4.00	129.61	4,590.3	-177.9	215.0	210.7	0.00	0.00	
4,700.0	4.00	129.61	4,690.1	-182.3	220.3	216.0	0.00	0.00	
4,800.0	4.00	129.61	4,789.9	-186.8	225.7	221.3	0.00	0.00	
4,900.0	4.00	129.61	4,889.6	-191.2	231.1	226.5	0.00	0.00	
5,000.0	4.00	129.61	4,989.4	-195.7	236.5	231.8	0.00	0.00	
5,100.0	4.00	129.61	5,089.1	-200.1	241.8	237.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #10F-1512B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5044.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5044.1usft (Original Well Elev)
Site:	S10-T10N-R58W	North Reference:	True
Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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
5,200.0	4.00	129.61	5,188.9	-204.6	247.2	242.3	0.00	0.00	
5,300.0	4.00	129.61	5,288.6	-209.0	252.6	247.6	0.00	0.00	
5,400.0	4.00	129.61	5,388.4	-213.5	258.0	252.9	0.00	0.00	
5,500.0	4.00	129.61	5,488.1	-217.9	263.3	258.1	0.00	0.00	
5,540.0	4.00	129.61	5,528.0	-219.7	265.5	260.2	0.00	0.00	Start 11 Deg Bulid
5,550.0	5.10	129.61	5,538.0	-220.2	266.1	260.8	11.00	11.00	
5,600.0	10.60	129.61	5,587.5	-224.6	271.4	266.0	11.00	11.00	
5,650.0	16.10	129.61	5,636.2	-231.9	280.2	274.7	11.00	11.00	
5,700.0	21.60	129.61	5,683.5	-242.2	292.7	286.9	11.00	11.00	
5,750.0	27.10	129.61	5,729.0	-255.4	308.6	302.5	11.00	11.00	
5,800.0	32.60	129.61	5,772.3	-271.2	327.7	321.3	11.00	11.00	
5,850.0	38.10	129.61	5,813.1	-289.7	350.0	343.1	11.00	11.00	
5,900.0	43.60	129.61	5,850.9	-310.5	375.2	367.8	11.00	11.00	
5,901.5	43.77	129.61	5,852.0	-311.2	376.0	368.6	11.00	11.00	Top Niobrara
5,950.0	49.10	129.61	5,885.4	-333.6	403.1	395.1	11.00	11.00	
6,000.0	54.60	129.61	5,916.3	-358.6	433.3	424.8	11.00	11.00	
6,050.0	60.10	129.61	5,943.2	-385.4	465.8	456.6	11.00	11.00	
6,100.0	65.60	129.61	5,966.1	-413.8	500.0	490.1	11.00	11.00	
6,150.0	71.10	129.61	5,984.5	-443.4	535.8	525.2	11.00	11.00	
6,200.0	76.60	129.61	5,998.4	-474.0	572.8	561.5	11.00	11.00	
6,250.0	82.10	129.61	6,007.6	-505.3	610.6	598.6	11.00	11.00	
6,300.0	87.60	129.61	6,012.1	-537.1	649.0	636.2	11.00	11.00	
6,321.8	90.00	129.61	6,012.6	-551.0	665.8	652.6	11.00	11.00	LP @ 6,321' MD
6,400.0	90.00	131.96	6,012.6	-602.1	725.0	712.7	3.00	0.00	
6,500.0	90.00	134.96	6,012.6	-670.8	797.6	792.4	3.00	0.00	7" (2,010' FEL-2,306' FSL)
6,600.0	90.00	137.96	6,012.6	-743.3	866.5	875.2	3.00	0.00	
6,700.0	90.00	140.96	6,012.6	-819.3	931.4	960.9	3.00	0.00	
6,800.0	90.00	143.96	6,012.6	-898.6	992.4	1,049.0	3.00	0.00	
6,900.0	90.00	146.96	6,012.6	-980.9	1,049.1	1,139.6	3.00	0.00	
7,000.0	90.00	149.96	6,012.6	-1,066.1	1,101.4	1,232.2	3.00	0.00	
7,100.0	90.00	152.96	6,012.6	-1,154.0	1,149.2	1,326.7	3.00	0.00	
7,200.0	90.00	155.96	6,012.6	-1,244.2	1,192.3	1,422.8	3.00	0.00	
7,300.0	90.00	158.96	6,012.6	-1,336.5	1,230.6	1,520.1	3.00	0.00	
7,400.0	90.00	161.96	6,012.6	-1,430.8	1,264.1	1,618.6	3.00	0.00	
7,500.0	90.00	164.96	6,012.6	-1,526.6	1,292.5	1,717.8	3.00	0.00	
7,600.0	90.00	167.96	6,012.6	-1,623.8	1,316.0	1,817.5	3.00	0.00	
7,700.0	90.00	170.96	6,012.6	-1,722.1	1,334.2	1,917.5	3.00	0.00	
7,800.0	90.00	173.96	6,012.6	-1,821.2	1,347.4	2,017.4	3.00	0.00	
7,900.0	90.00	176.96	6,012.6	-1,920.9	1,355.3	2,117.1	3.00	0.00	
8,001.4	90.00	180.00	6,012.6	-2,022.2	1,358.0	2,217.4	3.00	0.00	EOT; 180 Deg Azi
8,100.0	90.00	180.00	6,012.6	-2,120.9	1,358.0	2,314.7	0.00	0.00	
8,200.0	90.00	180.00	6,012.6	-2,220.9	1,358.0	2,413.4	0.00	0.00	
8,300.0	90.00	180.00	6,012.6	-2,320.9	1,358.0	2,512.0	0.00	0.00	
8,400.0	90.00	180.00	6,012.7	-2,420.9	1,358.0	2,610.7	0.00	0.00	
8,500.0	90.00	180.00	6,012.7	-2,520.9	1,358.0	2,709.3	0.00	0.00	
8,600.0	90.00	180.00	6,012.7	-2,620.9	1,358.0	2,808.0	0.00	0.00	
8,700.0	90.00	180.00	6,012.7	-2,720.9	1,358.0	2,906.6	0.00	0.00	
8,800.0	90.00	180.00	6,012.7	-2,820.9	1,358.0	3,005.3	0.00	0.00	
8,900.0	90.00	180.00	6,012.7	-2,920.9	1,358.0	3,103.9	0.00	0.00	
9,000.0	90.00	180.00	6,012.7	-3,020.9	1,358.0	3,202.6	0.00	0.00	
9,100.0	90.00	180.00	6,012.7	-3,120.9	1,358.1	3,301.2	0.00	0.00	
9,200.0	90.00	180.00	6,012.7	-3,220.9	1,358.1	3,399.9	0.00	0.00	

Cathedral Energy Services

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Project:	Weld County, CO	MD Reference:	WELL @ 5044.1usft (Original Well Elev)
Site:	S10-T10N-R58W	North Reference:	True
Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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
9,300.0	90.00	180.00	6,012.7	-3,320.9	1,358.1	3,498.5	0.00	0.00	
9,400.0	90.00	180.00	6,012.7	-3,420.9	1,358.1	3,597.2	0.00	0.00	
9,500.0	90.00	180.00	6,012.7	-3,520.9	1,358.1	3,695.8	0.00	0.00	
9,600.0	90.00	180.00	6,012.7	-3,620.9	1,358.1	3,794.5	0.00	0.00	
9,700.0	90.00	180.00	6,012.7	-3,720.9	1,358.1	3,893.1	0.00	0.00	
9,800.0	90.00	180.00	6,012.7	-3,820.9	1,358.1	3,991.8	0.00	0.00	
9,900.0	90.00	180.00	6,012.7	-3,920.9	1,358.1	4,090.4	0.00	0.00	
10,000.0	90.00	180.00	6,012.7	-4,020.9	1,358.1	4,189.1	0.00	0.00	
10,100.0	90.00	180.00	6,012.8	-4,120.9	1,358.1	4,287.7	0.00	0.00	
10,200.0	90.00	180.00	6,012.8	-4,220.9	1,358.1	4,386.4	0.00	0.00	
10,300.0	90.00	180.00	6,012.8	-4,320.9	1,358.1	4,485.0	0.00	0.00	
10,400.0	90.00	180.00	6,012.8	-4,420.9	1,358.1	4,583.7	0.00	0.00	
10,500.0	90.00	180.00	6,012.8	-4,520.9	1,358.1	4,682.3	0.00	0.00	
10,600.0	90.00	180.00	6,012.8	-4,620.9	1,358.1	4,781.0	0.00	0.00	
10,700.0	90.00	180.00	6,012.8	-4,720.9	1,358.1	4,879.6	0.00	0.00	
10,800.0	90.00	180.00	6,012.8	-4,820.9	1,358.1	4,978.3	0.00	0.00	
10,900.0	90.00	180.00	6,012.8	-4,920.9	1,358.1	5,076.9	0.00	0.00	
11,000.0	90.00	180.00	6,012.8	-5,020.9	1,358.2	5,175.6	0.00	0.00	
11,100.0	90.00	180.00	6,012.8	-5,120.9	1,358.2	5,274.2	0.00	0.00	
11,200.0	90.00	180.00	6,012.8	-5,220.9	1,358.2	5,372.9	0.00	0.00	
11,300.0	90.00	180.00	6,012.8	-5,320.9	1,358.2	5,471.5	0.00	0.00	
11,400.0	90.00	180.00	6,012.8	-5,420.9	1,358.2	5,570.2	0.00	0.00	
11,500.0	90.00	180.00	6,012.8	-5,520.9	1,358.2	5,668.8	0.00	0.00	
11,600.0	90.00	180.00	6,012.8	-5,620.9	1,358.2	5,767.5	0.00	0.00	
11,700.0	90.00	180.00	6,012.9	-5,720.9	1,358.2	5,866.1	0.00	0.00	
11,800.0	90.00	180.00	6,012.9	-5,820.9	1,358.2	5,964.8	0.00	0.00	
11,900.0	90.00	180.00	6,012.9	-5,920.9	1,358.2	6,063.4	0.00	0.00	
12,000.0	90.00	180.00	6,012.9	-6,020.9	1,358.2	6,162.0	0.00	0.00	
12,100.0	90.00	180.00	6,012.9	-6,120.9	1,358.2	6,260.7	0.00	0.00	
12,200.0	90.00	180.00	6,012.9	-6,220.9	1,358.2	6,359.3	0.00	0.00	
12,300.0	90.00	180.00	6,012.9	-6,320.9	1,358.2	6,458.0	0.00	0.00	
12,400.0	90.00	180.00	6,012.9	-6,420.9	1,358.2	6,556.6	0.00	0.00	
12,500.0	90.00	180.00	6,012.9	-6,520.9	1,358.2	6,655.3	0.00	0.00	
12,600.0	90.00	180.00	6,012.9	-6,620.9	1,358.2	6,753.9	0.00	0.00	
12,700.0	90.00	180.00	6,012.9	-6,720.9	1,358.2	6,852.6	0.00	0.00	
12,800.0	90.00	180.00	6,012.9	-6,820.9	1,358.2	6,951.2	0.00	0.00	
12,900.0	90.00	180.00	6,012.9	-6,920.9	1,358.3	7,049.9	0.00	0.00	
13,000.0	90.00	180.00	6,012.9	-7,020.9	1,358.3	7,148.5	0.00	0.00	
13,100.0	90.00	180.00	6,012.9	-7,120.9	1,358.3	7,247.2	0.00	0.00	
13,200.0	90.00	180.00	6,012.9	-7,220.9	1,358.3	7,345.8	0.00	0.00	
13,300.0	90.00	180.00	6,012.9	-7,320.9	1,358.3	7,444.5	0.00	0.00	
13,400.0	90.00	180.00	6,013.0	-7,420.9	1,358.3	7,543.1	0.00	0.00	
13,500.0	90.00	180.00	6,013.0	-7,520.9	1,358.3	7,641.8	0.00	0.00	
13,600.0	90.00	180.00	6,013.0	-7,620.9	1,358.3	7,740.4	0.00	0.00	
13,700.0	90.00	180.00	6,013.0	-7,720.9	1,358.3	7,839.1	0.00	0.00	
13,800.0	90.00	180.00	6,013.0	-7,820.9	1,358.3	7,937.7	0.00	0.00	
13,900.0	90.00	180.00	6,013.0	-7,920.9	1,358.3	8,036.4	0.00	0.00	
14,000.0	90.00	180.00	6,013.0	-8,020.9	1,358.3	8,135.0	0.00	0.00	
14,100.0	90.00	180.00	6,013.0	-8,120.9	1,358.3	8,233.7	0.00	0.00	
14,155.5	90.00	180.00	6,013.0	-8,176.4	1,358.3	8,288.4	0.00	0.00	PBHL @ 14,155' MD

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #10F-1512B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5044.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5044.1usft (Original Well Elev)
Site:	S10-T10N-R58W	North Reference:	True
Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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									
10F-1512B PBHL(1,485'	0.00	0.00	6,013.0	-8,176.4	1,358.3	1,550,093.68	3,457,253.37	40° 49' 54.09 N	103° 50' 51.36 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
6,500.0	6,012.6	7" (2,010' FEL-2,306' FSL)		7	7-1/2

Formations					
Measured Depth	Vertical Depth	Name		Dip	Dip Direction
(usft)	(usft)			(°)	(°)
5,901.5	5,852.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
(usft)	(usft)	(usft)	(usft)		
500.0	500.0	0.0	0.0	KOP @ 500' MD	
700.0	699.8	-4.4	5.4	EOB; 4 Deg Inc	
5,540.0	5,528.0	-219.7	265.5	Start 11 Deg Bulid	
6,321.8	6,012.6	-551.0	665.8	LP @ 6,321' MD	
8,001.4	6,012.6	-2,022.2	1,358.0	EOT; 180 Deg Azi	
14,155.5	6,013.0	-8,176.4	1,358.3	PBHL @ 14,155' MD	

Whiting Petroleum Corporation

Weld County, CO

S10-T10N-R58W

Razor #10F-1512B

HZ

Plan #1

Anticollision Report

19 August, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,356.1ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/19/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,155.5	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S10-T10N-R58W						
Razor #10F-0305A - HZ - Plan #1	500.0	500.0	262.2	260.2	132.095	CC, ES
Razor #10F-0305A - HZ - Plan #1	5,500.0	5,439.0	905.5	880.9	36.898	SF
Razor #10F-0306B - HZ - Plan #1	500.0	500.0	230.8	228.8	116.240	CC, ES
Razor #10F-0306B - HZ - Plan #1	5,500.0	5,445.1	852.9	828.2	34.635	SF
Razor #10F-0307A - HZ - Plan #1	500.0	500.0	199.8	197.8	100.640	CC, ES
Razor #10F-0307A - HZ - Plan #1	5,500.0	5,444.5	791.5	766.8	31.963	SF
Razor #10F-0308B - HZ - Plan #1	500.0	500.0	169.6	167.6	85.437	CC, ES
Razor #10F-0308B - HZ - Plan #1	5,500.0	5,461.0	711.3	686.2	28.373	SF
Razor #10F-0309A - HZ - Plan #1	500.0	500.0	141.4	139.4	71.212	CC, ES
Razor #10F-0309A - HZ - Plan #1	5,400.0	5,367.7	637.5	612.7	25.704	SF
Razor #10F-0310B - HZ - Plan #1	500.0	500.0	114.7	112.7	57.769	CC, ES
Razor #10F-0310B - HZ - Plan #1	5,500.0	5,472.4	588.2	562.7	23.079	SF
Razor #10F-0311A - HZ - Plan #1	500.0	500.0	92.2	90.2	46.450	CC, ES
Razor #10F-0311A - HZ - Plan #1	5,400.0	5,377.0	524.3	499.1	20.813	SF
Razor #10F-0312B - HZ - Plan #1	500.0	500.0	77.8	75.8	39.177	CC, ES
Razor #10F-0312B - HZ - Plan #1	5,500.0	5,479.7	486.7	460.8	18.827	SF
Razor #10F-1505A - HZ - Plan #1	500.0	500.0	251.3	249.3	126.584	CC, ES
Razor #10F-1505A - HZ - Plan #1	5,500.0	5,450.0	658.2	632.5	25.659	SF
Razor #10F-1506B - HZ - Plan #1	500.0	500.0	218.2	216.3	109.938	CC, ES
Razor #10F-1506B - HZ - Plan #1	5,500.0	5,482.0	576.0	550.0	22.139	SF
Razor #10F-1507A - HZ - Plan #1	500.0	500.0	186.0	184.0	93.680	CC, ES
Razor #10F-1507A - HZ - Plan #1	5,500.0	5,481.9	471.9	445.5	17.893	SF
Razor #10F-1508B - HZ - Plan #1	500.0	500.0	152.2	150.2	76.647	CC, ES
Razor #10F-1508B - HZ - Plan #1	14,155.5	13,690.0	1,253.8	938.0	3.971	SF
Razor #10F-1509A - HZ - Plan #1	500.0	500.0	119.9	117.9	60.389	CC, ES
Razor #10F-1509A - HZ - Plan #1	14,155.5	13,650.9	995.2	682.3	3.180	SF
Razor #10F-1510B - HZ - Plan #1	500.0	500.0	86.8	84.9	43.743	CC, ES
Razor #10F-1510B - HZ - Plan #1	14,155.5	13,851.0	660.3	346.7	2.105	SF
Razor #10F-1511A - HZ - Plan #1	500.0	500.0	53.8	51.8	27.097	CC
Razor #10F-1511A - HZ - Plan #1	14,155.5	13,899.6	345.6	45.2	1.150	Level 2, 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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0305A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)				Measured Depth (ft)	Vertical Depth (ft)	Offset (ft)
0.0	0.0	0.0	0.0	0.0	0.0	-73.39	75.0	-251.3	262.2					
100.0	100.0	100.0	100.0	0.1	0.1	-73.39	75.0	-251.3	262.2	0.19	1,402.235			
200.0	200.0	200.0	200.0	0.3	0.3	-73.39	75.0	-251.3	262.2	0.64	411.956			
300.0	300.0	300.0	300.0	0.5	0.5	-73.39	75.0	-251.3	262.2	1.09	241.445			
400.0	400.0	400.0	400.0	0.8	0.8	-73.39	75.0	-251.3	262.2	1.54	170.764			
500.0	500.0	500.0	500.0	1.0	1.0	-73.39	75.0	-251.3	262.2	1.99	132.095 CC, ES			
600.0	600.0	593.5	593.5	1.2	1.2	157.33	76.2	-252.1	265.1	2.40	110.459			
700.0	699.8	686.3	686.2	1.4	1.4	158.29	80.1	-254.5	273.6	2.81	97.378			
800.0	799.6	784.4	784.0	1.6	1.6	159.69	85.9	-258.1	285.5	3.24	88.222			
900.0	899.4	883.4	882.8	1.8	1.9	160.99	91.7	-261.7	297.5	3.67	81.096			
1,000.0	999.1	982.5	981.6	2.1	2.1	162.19	97.6	-265.4	309.7	4.11	75.390			
1,100.0	1,098.9	1,081.5	1,080.5	2.3	2.4	163.30	103.5	-269.1	322.0	4.55	70.743			
1,200.0	1,198.6	1,180.6	1,179.3	2.6	2.6	164.33	109.3	-272.7	334.5	5.00	66.902			
1,300.0	1,298.4	1,279.7	1,278.1	2.8	2.9	165.28	115.2	-276.4	347.0	5.45	63.686			
1,400.0	1,398.1	1,378.7	1,376.9	3.1	3.1	166.17	121.0	-280.0	359.6	5.90	60.961			
1,500.0	1,497.9	1,477.8	1,475.7	3.3	3.4	167.00	126.9	-283.7	372.3	6.35	58.622			
1,600.0	1,597.6	1,576.8	1,574.5	3.6	3.6	167.77	132.8	-287.3	385.1	6.80	56.602			
1,700.0	1,697.4	1,675.9	1,673.3	3.8	3.9	168.49	138.6	-291.0	397.9	7.26	54.837			
1,800.0	1,797.2	1,774.9	1,772.1	4.1	4.1	169.17	144.5	-294.7	410.8	7.71	53.285			
1,900.0	1,896.9	1,874.0	1,870.9	4.4	4.4	169.81	150.4	-298.3	423.8	8.16	51.910			
2,000.0	1,996.7	1,973.0	1,969.7	4.6	4.6	170.41	156.2	-302.0	436.7	8.62	50.683			
2,100.0	2,096.4	2,072.1	2,068.6	4.9	4.9	170.97	162.1	-305.6	449.8	9.07	49.584			
2,200.0	2,196.2	2,171.1	2,167.4	5.1	5.1	171.50	167.9	-309.3	462.9	9.53	48.593			
2,300.0	2,295.9	2,270.2	2,266.2	5.4	5.4	172.01	173.8	-312.9	476.0	9.98	47.695			
2,400.0	2,395.7	2,369.2	2,365.0	5.6	5.6	172.48	179.7	-316.6	489.1	10.43	46.878			
2,500.0	2,495.5	2,468.3	2,463.8	5.9	5.9	172.94	185.5	-320.3	502.3	10.89	46.132			
2,600.0	2,595.2	2,567.3	2,562.6	6.2	6.1	173.36	191.4	-323.9	515.5	11.34	45.448			
2,700.0	2,695.0	2,666.4	2,661.4	6.4	6.4	173.77	197.3	-327.6	528.8	11.80	44.819			
2,800.0	2,794.7	2,765.4	2,760.2	6.7	6.6	174.16	203.1	-331.2	542.0	12.25	44.238			
2,900.0	2,894.5	2,864.5	2,859.0	7.0	6.9	174.53	209.0	-334.9	555.3	12.71	43.701			
3,000.0	2,994.2	2,963.5	2,957.9	7.2	7.2	174.88	214.9	-338.5	568.6	13.16	43.202			
3,100.0	3,094.0	3,062.6	3,056.7	7.5	7.4	175.21	220.7	-342.2	581.9	13.62	42.737			
3,200.0	3,193.7	3,161.6	3,155.5	7.7	7.7	175.53	226.6	-345.8	595.3	14.07	42.304			
3,300.0	3,293.5	3,260.7	3,254.3	8.0	7.9	175.84	232.4	-349.5	608.6	14.53	41.900			
3,400.0	3,393.3	3,359.7	3,353.1	8.3	8.2	176.13	238.3	-353.2	622.0	14.98	41.520			
3,500.0	3,493.0	3,458.8	3,451.9	8.5	8.4	176.41	244.2	-356.8	635.4	15.44	41.164			
3,600.0	3,592.8	3,557.8	3,550.7	8.8	8.7	176.68	250.0	-360.5	648.8	15.89	40.830			
3,700.0	3,692.5	3,656.9	3,649.5	9.1	8.9	176.94	255.9	-364.1	662.2	16.35	40.514			
3,800.0	3,792.3	3,755.9	3,748.3	9.3	9.2	177.19	261.8	-367.8	675.7	16.80	40.216			
3,900.0	3,892.0	3,855.0	3,847.1	9.6	9.4	177.43	267.6	-371.4	689.1	17.26	39.935			
4,000.0	3,991.8	3,954.0	3,946.0	9.8	9.7	177.66	273.5	-375.1	702.6	17.71	39.669			
4,100.0	4,091.6	4,053.1	4,044.8	10.1	10.0	177.88	279.3	-378.8	716.1	18.17	39.416			
4,200.0	4,191.3	4,152.2	4,143.6	10.4	10.2	178.09	285.2	-382.4	729.5	18.62	39.177			
4,300.0	4,291.1	4,251.2	4,242.4	10.6	10.5	178.30	291.1	-386.1	743.0	19.08	38.949			
4,400.0	4,390.8	4,350.3	4,341.2	10.9	10.7	178.49	296.9	-389.7	756.5	19.53	38.732			
4,500.0	4,490.6	4,449.3	4,440.0	11.2	11.0	178.68	302.8	-393.4	770.0	19.99	38.526			
4,600.0	4,590.3	4,548.4	4,538.8	11.4	11.2	178.87	308.7	-397.0	783.5	20.44	38.329			
4,700.0	4,690.1	4,647.4	4,637.6	11.7	11.5	179.05	314.5	-400.7	797.1	20.90	38.141			
4,800.0	4,789.9	4,746.5	4,736.4	11.9	11.7	179.22	320.4	-404.3	810.6	21.35	37.961			
4,900.0	4,889.6	4,845.5	4,835.3	12.2	12.0	179.38	326.2	-408.0	824.1	21.81	37.789			
5,000.0	4,989.4	4,944.6	4,934.1	12.5	12.3	179.54	332.1	-411.7	837.7	22.26	37.624			

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0305A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISWWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,100.0	5,089.1	5,043.6	5,032.9	12.7	12.5	179.70	338.0	-415.3	851.2	828.5	22.72	37.466		
5,200.0	5,188.9	5,142.7	5,131.7	13.0	12.8	179.85	343.8	-419.0	864.8	841.6	23.17	37.315		
5,300.0	5,288.6	5,241.7	5,230.5	13.3	13.0	180.00	349.7	-422.6	878.3	854.7	23.63	37.169		
5,400.0	5,388.4	5,340.8	5,329.3	13.5	13.3	-179.86	355.6	-426.3	891.9	867.8	24.09	37.030		
5,500.0	5,488.1	5,439.0	5,427.3	13.8	13.5	-179.72	361.4	-429.9	905.5	880.9	24.54	36.898 SF		
5,600.0	5,587.5	5,475.9	5,464.0	14.1	13.6	-179.64	364.7	-432.0	925.8	901.3	24.54	37.733		
5,700.0	5,683.5	5,500.0	5,487.8	14.5	13.7	-179.52	368.0	-434.0	968.9	945.3	23.63	41.002		
5,800.0	5,772.3	5,550.0	5,536.4	15.2	13.9	-179.17	377.9	-440.2	1,032.8	1,010.8	22.00	46.943		
5,900.0	5,850.9	5,550.0	5,536.4	16.1	13.9	-178.92	377.9	-440.2	1,112.5	1,092.9	19.55	56.901		
6,000.0	5,916.3	5,569.1	5,554.6	17.2	14.0	-178.10	382.7	-443.2	1,203.6	1,187.0	16.58	72.595		
6,100.0	5,966.1	5,575.4	5,560.6	18.5	14.0	-174.79	384.4	-444.3	1,301.2	1,287.8	13.44	96.839		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0306B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-71.05	74.9	-218.2	230.8					
100.0	100.0	100.0	100.0	0.1	0.1	-71.05	74.9	-218.2	230.8	230.6	0.19	1,233.928		
200.0	200.0	200.0	200.0	0.3	0.3	-71.05	74.9	-218.2	230.8	230.1	0.64	362.510		
300.0	300.0	300.0	300.0	0.5	0.5	-71.05	74.9	-218.2	230.8	229.7	1.09	212.465		
400.0	400.0	400.0	400.0	0.8	0.8	-71.05	74.9	-218.2	230.8	229.2	1.54	150.268		
500.0	500.0	500.0	500.0	1.0	1.0	-71.05	74.9	-218.2	230.8	228.8	1.99	116.240	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	159.48	74.9	-218.2	232.4	230.0	2.41	96.245		
700.0	699.8	694.7	694.6	1.4	1.4	160.15	76.4	-218.8	238.4	235.6	2.82	84.445		
800.0	799.6	788.6	788.5	1.6	1.6	161.47	80.7	-220.5	248.3	245.0	3.24	76.639		
900.0	899.4	887.1	886.7	1.8	1.9	163.08	87.1	-223.0	259.7	256.0	3.67	70.681		
1,000.0	999.1	986.2	985.5	2.1	2.1	164.56	93.5	-225.6	271.3	267.2	4.11	65.956		
1,100.0	1,098.9	1,085.2	1,084.4	2.3	2.3	165.91	100.0	-228.1	283.1	278.5	4.56	62.113		
1,200.0	1,198.6	1,184.3	1,183.2	2.6	2.6	167.16	106.4	-230.6	295.0	290.0	5.01	58.939		
1,300.0	1,298.4	1,283.4	1,282.1	2.8	2.8	168.32	112.8	-233.1	307.1	301.6	5.46	56.286		
1,400.0	1,398.1	1,382.5	1,380.9	3.1	3.1	169.38	119.3	-235.7	319.3	313.4	5.91	54.042		
1,500.0	1,497.9	1,481.6	1,479.8	3.3	3.3	170.37	125.7	-238.2	331.5	325.2	6.36	52.123		
1,600.0	1,597.6	1,580.7	1,578.6	3.6	3.6	171.29	132.1	-240.7	343.9	337.1	6.81	50.466		
1,700.0	1,697.4	1,679.8	1,677.5	3.8	3.8	172.14	138.5	-243.3	356.3	349.1	7.27	49.024		
1,800.0	1,797.2	1,778.9	1,776.3	4.1	4.1	172.93	145.0	-245.8	368.9	361.1	7.72	47.758		
1,900.0	1,896.9	1,877.9	1,875.2	4.4	4.3	173.68	151.4	-248.3	381.4	373.3	8.18	46.638		
2,000.0	1,996.7	1,977.0	1,974.0	4.6	4.6	174.37	157.8	-250.9	394.1	385.5	8.63	45.642		
2,100.0	2,096.4	2,076.1	2,072.8	4.9	4.8	175.02	164.3	-253.4	406.8	397.7	9.09	44.751		
2,200.0	2,196.2	2,175.2	2,171.7	5.1	5.1	175.64	170.7	-255.9	419.5	410.0	9.55	43.950		
2,300.0	2,295.9	2,274.3	2,270.5	5.4	5.3	176.21	177.1	-258.5	432.3	422.3	10.00	43.225		
2,400.0	2,395.7	2,373.4	2,369.4	5.6	5.6	176.76	183.6	-261.0	445.1	434.7	10.46	42.566		
2,500.0	2,495.5	2,472.5	2,468.2	5.9	5.8	177.27	190.0	-263.5	458.0	447.1	10.91	41.966		
2,600.0	2,595.2	2,571.6	2,567.1	6.2	6.1	177.76	196.4	-266.0	470.9	459.5	11.37	41.417		
2,700.0	2,695.0	2,670.6	2,665.9	6.4	6.3	178.21	202.9	-268.6	483.8	472.0	11.83	40.912		
2,800.0	2,794.7	2,769.7	2,764.8	6.7	6.6	178.65	209.3	-271.1	496.8	484.5	12.28	40.447		
2,900.0	2,894.5	2,868.8	2,863.6	7.0	6.9	179.06	215.7	-273.6	509.8	497.1	12.74	40.018		
3,000.0	2,994.2	2,967.9	2,962.5	7.2	7.1	179.46	222.2	-276.2	522.8	509.6	13.20	39.619		
3,100.0	3,094.0	3,067.0	3,061.3	7.5	7.4	179.83	228.6	-278.7	535.8	522.2	13.65	39.249		
3,200.0	3,193.7	3,166.1	3,160.2	7.7	7.6	-179.81	235.0	-281.2	548.9	534.8	14.11	38.904		
3,300.0	3,293.5	3,265.2	3,259.0	8.0	7.9	-179.48	241.5	-283.8	562.0	547.4	14.57	38.582		
3,400.0	3,393.3	3,364.3	3,357.8	8.3	8.1	-179.15	247.9	-286.3	575.1	560.1	15.02	38.281		
3,500.0	3,493.0	3,463.3	3,456.7	8.5	8.4	-178.84	254.3	-288.8	588.2	572.7	15.48	37.998		
3,600.0	3,592.8	3,562.4	3,555.5	8.8	8.6	-178.55	260.8	-291.4	601.3	585.4	15.94	37.733		
3,700.0	3,692.5	3,661.5	3,654.4	9.1	8.9	-178.26	267.2	-293.9	614.5	598.1	16.39	37.483		
3,800.0	3,792.3	3,760.6	3,753.2	9.3	9.1	-177.99	273.6	-296.4	627.6	610.8	16.85	37.247		
3,900.0	3,892.0	3,859.7	3,852.1	9.6	9.4	-177.73	280.0	-298.9	640.8	623.5	17.31	37.025		
4,000.0	3,991.8	3,958.8	3,950.9	9.8	9.6	-177.48	286.5	-301.5	654.0	636.2	17.76	36.815		
4,100.0	4,091.6	4,057.9	4,049.8	10.1	9.9	-177.24	292.9	-304.0	667.2	649.0	18.22	36.615		
4,200.0	4,191.3	4,157.0	4,148.6	10.4	10.2	-177.01	299.3	-306.5	680.4	661.7	18.68	36.426		
4,300.0	4,291.1	4,256.0	4,247.5	10.6	10.4	-176.79	305.8	-309.1	693.6	674.5	19.14	36.247		
4,400.0	4,390.8	4,355.1	4,346.3	10.9	10.7	-176.57	312.2	-311.6	706.8	687.2	19.59	36.076		
4,500.0	4,490.6	4,454.2	4,445.2	11.2	10.9	-176.37	318.6	-314.1	720.1	700.0	20.05	35.914		
4,600.0	4,590.3	4,553.3	4,544.0	11.4	11.2	-176.17	325.1	-316.7	733.3	712.8	20.51	35.759		
4,700.0	4,690.1	4,652.4	4,642.8	11.7	11.4	-175.98	331.5	-319.2	746.6	725.6	20.96	35.611		
4,800.0	4,789.9	4,751.5	4,741.7	11.9	11.7	-175.79	337.9	-321.7	759.8	738.4	21.42	35.470		
4,900.0	4,889.6	4,850.6	4,840.5	12.2	11.9	-175.62	344.4	-324.3	773.1	751.2	21.88	35.335		
5,000.0	4,989.4	4,949.7	4,939.4	12.5	12.2	-175.44	350.8	-326.8	786.4	764.0	22.34	35.206		
5,100.0	5,089.1	5,048.7	5,038.2	12.7	12.4	-175.28	357.2	-329.3	799.7	776.9	22.79	35.082		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S10-T10N-R58W - Razor #10F-0306B - HZ - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-ISCSWA MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
5,200.0	5,188.9	5,147.8	5,137.1	13.0	12.7	-175.12	363.7	-331.9	813.0	789.7	23.25	34.963					
5,300.0	5,288.6	5,246.9	5,235.9	13.3	12.9	-174.96	370.1	-334.4	826.3	802.5	23.71	34.849					
5,400.0	5,388.4	5,346.0	5,334.8	13.5	13.2	-174.81	376.5	-336.9	839.6	815.4	24.17	34.740					
5,500.0	5,488.1	5,445.1	5,433.6	13.8	13.5	-174.66	383.0	-339.4	852.9	828.2	24.62	34.635 SF					
5,600.0	5,587.5	5,540.0	5,528.3	14.1	13.7	-174.42	389.1	-341.9	869.6	844.8	24.75	35.136					
5,700.0	5,683.5	5,577.6	5,565.7	14.5	13.8	-173.94	392.8	-343.3	906.4	882.6	23.87	37.967					
5,800.0	5,772.3	5,600.0	5,587.8	15.2	13.9	-172.99	396.2	-344.7	965.2	943.0	22.19	43.497					
5,900.0	5,850.9	5,631.5	5,618.5	16.1	14.0	-171.18	402.5	-347.1	1,041.2	1,021.3	19.90	52.321					
6,000.0	5,916.3	5,650.0	5,636.4	17.2	14.1	-167.29	407.0	-348.9	1,129.7	1,112.3	17.42	64.850					
6,100.0	5,966.1	5,650.0	5,636.4	18.5	14.1	-153.92	407.0	-348.9	1,225.9	1,207.8	18.10	67.728					
6,200.0	5,998.4	5,650.0	5,636.4	20.1	14.1	-57.77	407.0	-348.9	1,325.4	1,295.8	29.55	44.857					

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0307A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-67.97	74.9	-185.2	199.8					
100.0	100.0	100.0	100.0	0.1	0.1	-67.97	74.9	-185.2	199.8	199.6	0.19	1,068.335		
200.0	200.0	200.0	200.0	0.3	0.3	-67.97	74.9	-185.2	199.8	199.1	0.64	313.861		
300.0	300.0	300.0	300.0	0.5	0.5	-67.97	74.9	-185.2	199.8	198.7	1.09	183.952		
400.0	400.0	400.0	400.0	0.8	0.8	-67.97	74.9	-185.2	199.8	198.2	1.54	130.102		
500.0	500.0	500.0	500.0	1.0	1.0	-67.97	74.9	-185.2	199.8	197.8	1.99	100.640 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	162.56	74.9	-185.2	201.4	199.0	2.41	83.428		
700.0	699.8	699.8	699.8	1.4	1.4	162.97	74.9	-185.2	206.4	203.6	2.83	72.863		
800.0	799.6	795.8	795.8	1.6	1.7	163.86	76.5	-185.4	214.0	210.8	3.25	65.844		
900.0	899.4	891.2	891.1	1.8	1.9	165.38	81.2	-186.2	223.5	219.8	3.68	60.783		
1,000.0	999.1	990.0	989.6	2.1	2.1	167.21	88.0	-187.2	234.2	230.1	4.12	56.895		
1,100.0	1,098.9	1,089.1	1,088.5	2.3	2.3	168.90	94.9	-188.2	245.2	240.6	4.56	53.755		
1,200.0	1,198.6	1,188.3	1,187.4	2.6	2.6	170.43	101.7	-189.3	256.3	251.3	5.01	51.168		
1,300.0	1,298.4	1,287.4	1,286.3	2.8	2.8	171.84	108.5	-190.3	267.6	262.2	5.46	49.010		
1,400.0	1,398.1	1,386.6	1,385.2	3.1	3.1	173.14	115.4	-191.4	279.1	273.2	5.91	47.190		
1,500.0	1,497.9	1,485.7	1,484.1	3.3	3.3	174.33	122.2	-192.4	290.7	284.3	6.37	45.639		
1,600.0	1,597.6	1,584.9	1,583.0	3.6	3.5	175.43	129.1	-193.5	302.4	295.6	6.83	44.304		
1,700.0	1,697.4	1,684.0	1,681.9	3.8	3.8	176.45	135.9	-194.5	314.2	306.9	7.28	43.146		
1,800.0	1,797.2	1,783.2	1,780.9	4.1	4.0	177.39	142.7	-195.6	326.1	318.4	7.74	42.133		
1,900.0	1,896.9	1,882.3	1,879.8	4.4	4.3	178.27	149.6	-196.6	338.1	329.9	8.20	41.241		
2,000.0	1,996.7	1,981.5	1,978.7	4.6	4.5	179.09	156.4	-197.7	350.2	341.5	8.66	40.450		
2,100.0	2,096.4	2,080.6	2,077.6	4.9	4.8	179.85	163.2	-198.7	362.3	353.2	9.12	39.744		
2,200.0	2,196.2	2,179.8	2,176.5	5.1	5.0	-179.43	170.1	-199.8	374.5	364.9	9.57	39.111		
2,300.0	2,295.9	2,278.9	2,275.4	5.4	5.3	-178.76	176.9	-200.8	386.7	376.7	10.03	38.540		
2,400.0	2,395.7	2,378.1	2,374.3	5.6	5.5	-178.14	183.8	-201.8	399.0	388.5	10.49	38.023		
2,500.0	2,495.5	2,477.2	2,473.2	5.9	5.8	-177.55	190.6	-202.9	411.3	400.4	10.95	37.554		
2,600.0	2,595.2	2,576.4	2,572.1	6.2	6.0	-176.99	197.4	-203.9	423.7	412.3	11.41	37.125		
2,700.0	2,695.0	2,675.5	2,671.0	6.4	6.3	-176.47	204.3	-205.0	436.1	424.2	11.87	36.732		
2,800.0	2,794.7	2,774.7	2,769.9	6.7	6.6	-175.97	211.1	-206.0	448.6	436.2	12.33	36.370		
2,900.0	2,894.5	2,873.8	2,868.8	7.0	6.8	-175.50	217.9	-207.1	461.0	448.2	12.79	36.037		
3,000.0	2,994.2	2,973.0	2,967.8	7.2	7.1	-175.06	224.8	-208.1	473.5	460.3	13.25	35.729		
3,100.0	3,094.0	3,072.1	3,066.7	7.5	7.3	-174.64	231.6	-209.2	486.1	472.4	13.71	35.444		
3,200.0	3,193.7	3,171.3	3,165.6	7.7	7.6	-174.24	238.4	-210.2	498.6	484.5	14.17	35.178		
3,300.0	3,293.5	3,270.4	3,264.5	8.0	7.8	-173.86	245.3	-211.3	511.2	496.6	14.63	34.930		
3,400.0	3,393.3	3,369.6	3,363.4	8.3	8.1	-173.49	252.1	-212.3	523.8	508.7	15.10	34.699		
3,500.0	3,493.0	3,468.7	3,462.3	8.5	8.3	-173.15	259.0	-213.4	536.4	520.9	15.56	34.483		
3,600.0	3,592.8	3,567.9	3,561.2	8.8	8.6	-172.82	265.8	-214.4	549.1	533.0	16.02	34.280		
3,700.0	3,692.5	3,667.0	3,660.1	9.1	8.8	-172.51	272.6	-215.4	561.7	545.2	16.48	34.089		
3,800.0	3,792.3	3,766.2	3,759.0	9.3	9.1	-172.20	279.5	-216.5	574.4	557.4	16.94	33.910		
3,900.0	3,892.0	3,865.3	3,857.9	9.6	9.3	-171.92	286.3	-217.5	587.1	569.7	17.40	33.740		
4,000.0	3,991.8	3,964.5	3,956.8	9.8	9.6	-171.64	293.1	-218.6	599.8	581.9	17.86	33.581		
4,100.0	4,091.6	4,063.6	4,055.7	10.1	9.8	-171.38	300.0	-219.6	612.5	594.2	18.32	33.429		
4,200.0	4,191.3	4,162.8	4,154.7	10.4	10.1	-171.12	306.8	-220.7	625.2	606.4	18.78	33.286		
4,300.0	4,291.1	4,261.9	4,253.6	10.6	10.3	-170.88	313.7	-221.7	637.9	618.7	19.24	33.150		
4,400.0	4,390.8	4,361.1	4,352.5	10.9	10.6	-170.65	320.5	-222.8	650.7	631.0	19.70	33.021		
4,500.0	4,490.6	4,460.2	4,451.4	11.2	10.9	-170.42	327.3	-223.8	663.4	643.3	20.17	32.899		
4,600.0	4,590.3	4,559.4	4,550.3	11.4	11.1	-170.21	334.2	-224.9	676.2	655.6	20.63	32.782		
4,700.0	4,690.1	4,658.5	4,649.2	11.7	11.4	-170.00	341.0	-225.9	689.0	667.9	21.09	32.671		
4,800.0	4,789.9	4,757.7	4,748.1	11.9	11.6	-169.80	347.8	-227.0	701.8	680.2	21.55	32.565		
4,900.0	4,889.6	4,856.8	4,847.0	12.2	11.9	-169.60	354.7	-228.0	714.6	692.5	22.01	32.463		
5,000.0	4,989.4	4,956.0	4,945.9	12.5	12.1	-169.42	361.5	-229.0	727.4	704.9	22.47	32.366		
5,100.0	5,089.1	5,055.1	5,044.8	12.7	12.4	-169.24	368.3	-230.1	740.2	717.2	22.93	32.273		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0307A - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,188.9	5,154.3	5,143.7	13.0	12.6	-169.06	375.2	-231.1	753.0	729.6	23.40	32.185	
5,300.0	5,288.6	5,253.4	5,242.7	13.3	12.9	-168.90	382.0	-232.2	765.8	741.9	23.86	32.099	
5,400.0	5,388.4	5,352.6	5,341.6	13.5	13.1	-168.73	388.9	-233.2	778.6	754.3	24.32	32.018	
5,500.0	5,488.1	5,444.5	5,433.3	13.8	13.4	-168.59	395.2	-234.2	791.5	766.8	24.76	31.963 SF	
5,600.0	5,587.5	5,500.0	5,488.2	14.1	13.5	-168.08	402.5	-235.3	812.3	787.5	24.83	32.717	
5,700.0	5,683.5	5,524.1	5,511.9	14.5	13.6	-166.87	407.5	-236.1	855.1	831.1	23.99	35.639	
5,800.0	5,772.3	5,550.0	5,536.9	15.2	13.7	-164.56	414.0	-237.1	918.7	896.2	22.50	40.834	
5,900.0	5,850.9	5,578.5	5,564.0	16.1	13.9	-160.23	422.6	-238.4	998.1	977.4	20.75	48.105	
6,000.0	5,916.3	5,600.0	5,584.1	17.2	14.0	-150.89	430.1	-239.5	1,088.6	1,068.3	20.29	53.655	
6,100.0	5,966.1	5,600.0	5,584.1	18.5	14.0	-121.58	430.1	-239.5	1,185.3	1,157.7	27.63	42.898	
6,200.0	5,998.4	5,600.0	5,584.1	20.1	14.0	-55.15	430.1	-239.5	1,284.1	1,255.5	28.59	44.908	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0308B - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-63.78	74.9	-152.2	169.6				
100.0	100.0	100.0	100.0	0.1	0.1	-63.78	74.9	-152.2	169.6	169.4	0.19	906.943	
200.0	200.0	200.0	200.0	0.3	0.3	-63.78	74.9	-152.2	169.6	169.0	0.64	266.447	
300.0	300.0	300.0	300.0	0.5	0.5	-63.78	74.9	-152.2	169.6	168.5	1.09	156.163	
400.0	400.0	400.0	400.0	0.8	0.8	-63.78	74.9	-152.2	169.6	168.1	1.54	110.448	
500.0	500.0	500.0	500.0	1.0	1.0	-63.78	74.9	-152.2	169.6	167.6	1.99	85.437	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	166.74	74.9	-152.2	171.3	168.9	2.41	70.939	
700.0	699.8	699.8	699.8	1.4	1.4	167.10	74.9	-152.2	176.4	173.6	2.83	62.255	
800.0	799.6	799.6	799.6	1.6	1.7	167.59	74.9	-152.2	183.2	179.9	3.26	56.243	
900.0	899.4	897.2	897.2	1.8	1.9	168.50	76.6	-151.9	190.6	186.9	3.68	51.729	
1,000.0	999.1	994.3	994.2	2.1	2.1	170.24	81.4	-151.2	199.2	195.1	4.12	48.391	
1,100.0	1,098.9	1,093.5	1,093.1	2.3	2.3	172.33	88.3	-150.1	208.8	204.2	4.56	45.778	
1,200.0	1,198.6	1,192.7	1,192.1	2.6	2.6	174.25	95.1	-149.1	218.6	213.6	5.01	43.637	
1,300.0	1,298.4	1,292.0	1,291.1	2.8	2.8	176.00	102.0	-148.1	228.6	223.1	5.46	41.854	
1,400.0	1,398.1	1,391.2	1,390.1	3.1	3.0	177.61	108.8	-147.0	238.8	232.9	5.92	40.356	
1,500.0	1,497.9	1,490.5	1,489.2	3.3	3.3	179.08	115.7	-146.0	249.2	242.8	6.38	39.084	
1,600.0	1,597.6	1,589.8	1,588.2	3.6	3.5	-179.57	122.5	-145.0	259.7	252.9	6.84	37.995	
1,700.0	1,697.4	1,689.0	1,687.2	3.8	3.8	-178.32	129.4	-143.9	270.4	263.1	7.30	37.054	
1,800.0	1,797.2	1,788.3	1,786.2	4.1	4.0	-177.17	136.2	-142.9	281.2	273.4	7.76	36.236	
1,900.0	1,896.9	1,887.6	1,885.2	4.4	4.3	-176.10	143.0	-141.9	292.1	283.9	8.22	35.518	
2,000.0	1,996.7	1,986.8	1,984.3	4.6	4.5	-175.11	149.9	-140.8	303.1	294.4	8.69	34.885	
2,100.0	2,096.4	2,086.1	2,083.3	4.9	4.8	-174.19	156.7	-139.8	314.2	305.0	9.15	34.323	
2,200.0	2,196.2	2,185.3	2,182.3	5.1	5.0	-173.33	163.6	-138.8	325.3	315.7	9.62	33.822	
2,300.0	2,295.9	2,284.6	2,281.3	5.4	5.3	-172.53	170.4	-137.7	336.5	326.4	10.08	33.372	
2,400.0	2,395.7	2,383.9	2,380.3	5.6	5.5	-171.78	177.3	-136.7	347.8	337.2	10.55	32.966	
2,500.0	2,495.5	2,483.1	2,479.4	5.9	5.8	-171.08	184.1	-135.7	359.1	348.1	11.02	32.599	
2,600.0	2,595.2	2,582.4	2,578.4	6.2	6.0	-170.42	191.0	-134.6	370.5	359.0	11.48	32.265	
2,700.0	2,695.0	2,681.7	2,677.4	6.4	6.3	-169.80	197.8	-133.6	381.9	370.0	11.95	31.961	
2,800.0	2,794.7	2,780.9	2,776.4	6.7	6.5	-169.21	204.7	-132.6	393.4	381.0	12.42	31.682	
2,900.0	2,894.5	2,880.2	2,875.4	7.0	6.8	-168.66	211.5	-131.5	404.9	392.0	12.88	31.426	
3,000.0	2,994.2	2,979.4	2,974.5	7.2	7.0	-168.14	218.4	-130.5	416.4	403.1	13.35	31.190	
3,100.0	3,094.0	3,078.7	3,073.5	7.5	7.3	-167.65	225.2	-129.5	428.0	414.2	13.82	30.972	
3,200.0	3,193.7	3,178.0	3,172.5	7.7	7.5	-167.18	232.1	-128.4	439.6	425.3	14.29	30.770	
3,300.0	3,293.5	3,277.2	3,271.5	8.0	7.8	-166.74	238.9	-127.4	451.2	436.5	14.75	30.582	
3,400.0	3,393.3	3,376.5	3,370.5	8.3	8.0	-166.32	245.8	-126.4	462.9	447.7	15.22	30.408	
3,500.0	3,493.0	3,475.8	3,469.6	8.5	8.3	-165.92	252.6	-125.3	474.6	458.9	15.69	30.245	
3,600.0	3,592.8	3,575.0	3,568.6	8.8	8.5	-165.54	259.4	-124.3	486.3	470.1	16.16	30.093	
3,700.0	3,692.5	3,674.3	3,667.6	9.1	8.8	-165.17	266.3	-123.3	498.0	481.4	16.63	29.950	
3,800.0	3,792.3	3,773.5	3,766.6	9.3	9.0	-164.83	273.1	-122.2	509.7	492.6	17.10	29.816	
3,900.0	3,892.0	3,872.8	3,865.7	9.6	9.3	-164.50	280.0	-121.2	521.5	503.9	17.56	29.690	
4,000.0	3,991.8	3,972.1	3,964.7	9.8	9.5	-164.18	286.8	-120.2	533.3	515.2	18.03	29.571	
4,100.0	4,091.6	4,071.3	4,063.7	10.1	9.8	-163.88	293.7	-119.1	545.0	526.5	18.50	29.459	
4,200.0	4,191.3	4,170.6	4,162.7	10.4	10.0	-163.59	300.5	-118.1	556.9	537.9	18.97	29.354	
4,300.0	4,291.1	4,269.9	4,261.7	10.6	10.3	-163.31	307.4	-117.1	568.7	549.2	19.44	29.254	
4,400.0	4,390.8	4,369.1	4,360.8	10.9	10.6	-163.05	314.2	-116.0	580.5	560.6	19.91	29.159	
4,500.0	4,490.6	4,468.4	4,459.8	11.2	10.8	-162.79	321.1	-115.0	592.3	572.0	20.38	29.069	
4,600.0	4,590.3	4,567.6	4,558.8	11.4	11.1	-162.54	327.9	-114.0	604.2	583.3	20.85	28.984	
4,700.0	4,690.1	4,666.9	4,657.8	11.7	11.3	-162.31	334.8	-113.0	616.0	594.7	21.31	28.902	
4,800.0	4,789.9	4,766.2	4,756.8	11.9	11.6	-162.08	341.6	-111.9	627.9	606.1	21.78	28.825	
4,900.0	4,889.6	4,865.4	4,855.9	12.2	11.8	-161.86	348.5	-110.9	639.8	617.6	22.25	28.751	
5,000.0	4,989.4	4,964.7	4,954.9	12.5	12.1	-161.65	355.3	-109.9	651.7	629.0	22.72	28.681	
5,100.0	5,089.1	5,064.0	5,053.9	12.7	12.3	-161.45	362.1	-108.8	663.6	640.4	23.19	28.614	

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0308B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISWWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,163.2	5,152.9	13.0	12.6	-161.25	369.0	-107.8	675.5	651.8	23.66	28.550		
5,300.0	5,288.6	5,262.5	5,251.9	13.3	12.8	-161.06	375.8	-106.8	687.4	663.3	24.13	28.488		
5,400.0	5,388.4	5,361.7	5,351.0	13.5	13.1	-160.88	382.7	-105.7	699.3	674.7	24.60	28.429		
5,500.0	5,488.1	5,461.0	5,450.0	13.8	13.3	-160.70	389.5	-104.7	711.3	686.2	25.07	28.373 SF		
5,600.0	5,587.5	5,550.0	5,538.7	14.1	13.6	-160.22	395.8	-103.7	726.6	701.3	25.23	28.795		
5,700.0	5,683.5	5,600.0	5,588.3	14.5	13.7	-158.79	402.5	-102.7	762.3	737.7	24.57	31.025		
5,800.0	5,772.3	5,631.9	5,619.4	15.2	13.8	-155.97	409.3	-101.7	819.1	795.7	23.35	35.070		
5,900.0	5,850.9	5,650.0	5,636.9	16.1	13.9	-150.65	413.9	-101.0	892.9	870.8	22.19	40.242		
6,000.0	5,916.3	5,682.6	5,667.9	17.2	14.1	-140.95	423.8	-99.5	978.7	956.0	22.67	43.179		
6,100.0	5,966.1	5,700.0	5,684.2	18.5	14.1	-120.18	429.9	-98.6	1,072.2	1,044.4	27.81	38.554		
6,200.0	5,998.4	5,700.0	5,684.2	20.1	14.1	-78.98	429.9	-98.6	1,169.0	1,136.0	32.95	35.474		
6,300.0	6,012.1	5,700.0	5,684.2	21.8	14.1	-44.02	429.9	-98.6	1,265.5	1,239.9	25.54	49.542		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0309A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-58.00	74.9	-119.9	141.4					
100.0	100.0	100.0	100.0	0.1	0.1	-58.00	74.9	-119.9	141.4	141.2	0.19	755.943		
200.0	200.0	200.0	200.0	0.3	0.3	-58.00	74.9	-119.9	141.4	140.7	0.64	222.085		
300.0	300.0	300.0	300.0	0.5	0.5	-58.00	74.9	-119.9	141.4	140.3	1.09	130.162		
400.0	400.0	400.0	400.0	0.8	0.8	-58.00	74.9	-119.9	141.4	139.8	1.54	92.059		
500.0	500.0	500.0	500.0	1.0	1.0	-58.00	74.9	-119.9	141.4	139.4	1.99	71.212 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	172.48	74.9	-119.9	143.1	140.7	2.41	59.255		
700.0	699.8	699.8	699.8	1.4	1.4	172.73	74.9	-119.9	148.3	145.5	2.83	52.329		
800.0	799.6	799.6	799.6	1.6	1.7	173.06	74.9	-119.9	155.2	152.0	3.26	47.652		
900.0	899.4	899.4	899.4	1.8	1.9	173.36	74.9	-119.9	162.1	158.4	3.69	43.961		
1,000.0	999.1	997.7	997.7	2.1	2.1	174.18	76.5	-119.3	169.5	165.3	4.12	41.129		
1,100.0	1,098.9	1,095.7	1,095.6	2.3	2.3	175.98	81.2	-117.6	177.7	173.2	4.56	39.007		
1,200.0	1,198.6	1,195.0	1,194.6	2.6	2.6	178.18	87.7	-115.2	186.7	181.7	5.00	37.329		
1,300.0	1,298.4	1,294.4	1,293.7	2.8	2.8	-179.82	94.2	-112.9	195.9	190.5	5.45	35.936		
1,400.0	1,398.1	1,393.7	1,392.8	3.1	3.0	-177.99	100.7	-110.5	205.4	199.5	5.91	34.766		
1,500.0	1,497.9	1,493.1	1,491.9	3.3	3.3	-176.33	107.3	-108.1	215.0	208.6	6.37	33.773		
1,600.0	1,597.6	1,592.4	1,591.0	3.6	3.5	-174.82	113.8	-105.8	224.8	218.0	6.83	32.926		
1,700.0	1,697.4	1,691.8	1,690.2	3.8	3.7	-173.43	120.3	-103.4	234.7	227.4	7.29	32.195		
1,800.0	1,797.2	1,791.1	1,789.3	4.1	4.0	-172.15	126.8	-101.0	244.8	237.0	7.76	31.561		
1,900.0	1,896.9	1,890.5	1,888.4	4.4	4.2	-170.98	133.3	-98.7	255.0	246.8	8.22	31.008		
2,000.0	1,996.7	1,989.8	1,987.5	4.6	4.5	-169.89	139.8	-96.3	265.2	256.6	8.69	30.520		
2,100.0	2,096.4	2,089.2	2,086.6	4.9	4.7	-168.89	146.3	-94.0	275.6	266.5	9.16	30.089		
2,200.0	2,196.2	2,188.5	2,185.7	5.1	5.0	-167.95	152.9	-91.6	286.1	276.4	9.63	29.706		
2,300.0	2,295.9	2,287.9	2,284.8	5.4	5.2	-167.09	159.4	-89.2	296.6	286.5	10.10	29.363		
2,400.0	2,395.7	2,387.2	2,383.9	5.6	5.5	-166.28	165.9	-86.9	307.1	296.6	10.57	29.055		
2,500.0	2,495.5	2,486.6	2,483.0	5.9	5.7	-165.53	172.4	-84.5	317.8	306.7	11.04	28.777		
2,600.0	2,595.2	2,585.9	2,582.1	6.2	6.0	-164.83	178.9	-82.1	328.4	316.9	11.51	28.525		
2,700.0	2,695.0	2,685.3	2,681.2	6.4	6.2	-164.17	185.4	-79.8	339.2	327.2	11.99	28.296		
2,800.0	2,794.7	2,784.6	2,780.3	6.7	6.5	-163.55	191.9	-77.4	349.9	337.5	12.46	28.087		
2,900.0	2,894.5	2,884.0	2,879.4	7.0	6.7	-162.97	198.5	-75.0	360.7	347.8	12.93	27.895		
3,000.0	2,994.2	2,983.3	2,978.6	7.2	7.0	-162.42	205.0	-72.7	371.6	358.2	13.41	27.719		
3,100.0	3,094.0	3,082.7	3,077.7	7.5	7.2	-161.90	211.5	-70.3	382.5	368.6	13.88	27.557		
3,200.0	3,193.7	3,182.0	3,176.8	7.7	7.5	-161.41	218.0	-67.9	393.4	379.0	14.35	27.407		
3,300.0	3,293.5	3,281.4	3,275.9	8.0	7.7	-160.95	224.5	-65.6	404.3	389.5	14.83	27.269		
3,400.0	3,393.3	3,380.7	3,375.0	8.3	8.0	-160.51	231.0	-63.2	415.2	399.9	15.30	27.140		
3,500.0	3,493.0	3,480.1	3,474.1	8.5	8.2	-160.10	237.5	-60.8	426.2	410.4	15.77	27.020		
3,600.0	3,592.8	3,579.4	3,573.2	8.8	8.5	-159.70	244.1	-58.5	437.2	421.0	16.25	26.908		
3,700.0	3,692.5	3,678.8	3,672.3	9.1	8.7	-159.33	250.6	-56.1	448.2	431.5	16.72	26.803		
3,800.0	3,792.3	3,778.1	3,771.4	9.3	9.0	-158.97	257.1	-53.8	459.3	442.1	17.20	26.705		
3,900.0	3,892.0	3,877.5	3,870.5	9.6	9.2	-158.63	263.6	-51.4	470.3	452.6	17.67	26.613		
4,000.0	3,991.8	3,976.8	3,969.6	9.8	9.5	-158.31	270.1	-49.0	481.4	463.2	18.15	26.527		
4,100.0	4,091.6	4,076.2	4,068.7	10.1	9.8	-158.00	276.6	-46.7	492.4	473.8	18.62	26.445		
4,200.0	4,191.3	4,175.5	4,167.8	10.4	10.0	-157.70	283.1	-44.3	503.5	484.4	19.10	26.368		
4,300.0	4,291.1	4,274.9	4,267.0	10.6	10.3	-157.42	289.7	-41.9	514.6	495.1	19.57	26.296		
4,400.0	4,390.8	4,374.2	4,366.1	10.9	10.5	-157.14	296.2	-39.6	525.8	505.7	20.05	26.227		
4,500.0	4,490.6	4,473.6	4,465.2	11.2	10.8	-156.88	302.7	-37.2	536.9	516.4	20.52	26.163		
4,600.0	4,590.3	4,572.9	4,564.3	11.4	11.0	-156.63	309.2	-34.8	548.0	527.0	21.00	26.101		
4,700.0	4,690.1	4,672.3	4,663.4	11.7	11.3	-156.39	315.7	-32.5	559.2	537.7	21.47	26.043		
4,800.0	4,789.9	4,771.6	4,762.5	11.9	11.5	-156.16	322.2	-30.1	570.3	548.4	21.95	25.987		
4,900.0	4,889.6	4,871.0	4,861.6	12.2	11.8	-155.94	328.7	-27.7	581.5	559.1	22.42	25.934		
5,000.0	4,989.4	4,970.3	4,960.7	12.5	12.0	-155.73	335.3	-25.4	592.7	569.8	22.90	25.884		
5,100.0	5,089.1	5,069.7	5,059.8	12.7	12.3	-155.52	341.8	-23.0	603.9	580.5	23.37	25.836		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S10-T10N-R58W - Razor #10F-0309A - HZ - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-ISCWSA MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty	Separation Factor					
5,200.0	5,188.9	5,169.0	5,158.9	13.0	12.5	-155.33	348.3	-20.7	615.1	591.2	23.85	25.790					
5,300.0	5,288.6	5,268.4	5,258.0	13.3	12.8	-155.13	354.8	-18.3	626.3	601.9	24.32	25.746					
5,400.0	5,388.4	5,367.7	5,357.1	13.5	13.1	-154.95	361.3	-15.9	637.5	612.7	24.80	25.704	SF				
5,500.0	5,488.1	5,450.0	5,439.2	13.8	13.3	-154.79	366.8	-13.9	649.0	623.8	25.24	25.718					
5,600.0	5,587.5	5,500.0	5,488.7	14.1	13.4	-153.84	373.4	-11.5	668.9	643.5	25.36	26.372					
5,700.0	5,683.5	5,550.0	5,537.3	14.5	13.6	-151.32	384.5	-7.5	710.1	685.2	24.89	28.526					
5,800.0	5,772.3	5,600.0	5,584.5	15.2	13.8	-147.04	399.8	-1.9	770.9	746.7	24.14	31.928					
5,900.0	5,850.9	5,621.8	5,604.6	16.1	14.0	-139.65	407.8	1.0	846.6	822.7	23.85	35.493					
6,000.0	5,916.3	5,650.0	5,630.0	17.2	14.1	-126.90	419.3	5.1	933.0	907.3	25.69	36.316					
6,100.0	5,966.1	5,650.0	5,630.0	18.5	14.1	-102.25	419.3	5.1	1,025.6	995.0	30.67	33.447					
6,200.0	5,998.4	5,650.0	5,630.0	20.1	14.1	-69.04	419.3	5.1	1,120.7	1,089.4	31.38	35.716					
6,300.0	6,012.1	5,650.0	5,630.0	21.8	14.1	-44.21	419.3	5.1	1,214.6	1,189.2	25.43	47.766					
6,400.0	6,012.6	5,650.0	5,630.0	23.6	14.1	-36.04	419.3	5.1	1,306.8	1,283.7	23.11	56.557					

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0310B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-49.22	74.9	-86.8	114.7					
100.0	100.0	100.0	100.0	0.1	0.1	-49.22	74.9	-86.8	114.7	114.5	0.19	613.237		
200.0	200.0	200.0	200.0	0.3	0.3	-49.22	74.9	-86.8	114.7	114.0	0.64	180.160		
300.0	300.0	300.0	300.0	0.5	0.5	-49.22	74.9	-86.8	114.7	113.6	1.09	105.591		
400.0	400.0	400.0	400.0	0.8	0.8	-49.22	74.9	-86.8	114.7	113.1	1.54	74.680		
500.0	500.0	500.0	500.0	1.0	1.0	-49.22	74.9	-86.8	114.7	112.7	1.99	57.769 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-178.85	74.9	-86.8	116.4	114.0	2.42	48.207		
700.0	699.8	699.8	699.8	1.4	1.4	-178.89	74.9	-86.8	121.7	118.8	2.83	42.926		
800.0	799.6	799.6	799.6	1.6	1.7	-178.95	74.9	-86.8	128.6	125.4	3.26	39.489		
900.0	899.4	899.4	899.4	1.8	1.9	-179.01	74.9	-86.8	135.6	131.9	3.69	36.770		
1,000.0	999.1	999.1	999.1	2.1	2.1	-179.06	74.9	-86.8	142.6	138.5	4.12	34.576		
1,100.0	1,098.9	1,098.0	1,097.9	2.3	2.3	-178.47	76.3	-86.0	149.8	145.3	4.56	32.868		
1,200.0	1,198.6	1,196.5	1,196.4	2.6	2.6	-176.72	80.7	-83.4	157.8	152.8	5.00	31.581		
1,300.0	1,298.4	1,295.9	1,295.5	2.8	2.8	-174.51	86.6	-79.8	166.4	160.9	5.44	30.556		
1,400.0	1,398.1	1,395.3	1,394.7	3.1	3.0	-172.52	92.6	-76.3	175.1	169.2	5.90	29.695		
1,500.0	1,497.9	1,494.8	1,493.9	3.3	3.2	-170.72	98.6	-72.7	184.1	177.7	6.36	28.964		
1,600.0	1,597.6	1,594.2	1,593.1	3.6	3.5	-169.09	104.5	-69.2	193.2	186.4	6.82	28.339		
1,700.0	1,697.4	1,693.7	1,692.3	3.8	3.7	-167.60	110.5	-65.6	202.5	195.2	7.28	27.801		
1,800.0	1,797.2	1,793.1	1,791.5	4.1	4.0	-166.25	116.4	-62.1	211.8	204.1	7.75	27.334		
1,900.0	1,896.9	1,892.5	1,890.7	4.4	4.2	-165.01	122.4	-58.5	221.3	213.1	8.22	26.927		
2,000.0	1,996.7	1,992.0	1,989.9	4.6	4.5	-163.87	128.3	-54.9	230.9	222.2	8.69	26.569		
2,100.0	2,096.4	2,091.4	2,089.1	4.9	4.7	-162.83	134.3	-51.4	240.6	231.4	9.16	26.254		
2,200.0	2,196.2	2,190.9	2,188.3	5.1	4.9	-161.86	140.2	-47.8	250.3	240.7	9.64	25.973		
2,300.0	2,295.9	2,290.3	2,287.5	5.4	5.2	-160.97	146.2	-44.3	260.1	250.0	10.11	25.723		
2,400.0	2,395.7	2,389.7	2,386.7	5.6	5.4	-160.14	152.2	-40.7	270.0	259.4	10.59	25.499		
2,500.0	2,495.5	2,489.2	2,485.9	5.9	5.7	-159.37	158.1	-37.2	279.9	268.9	11.07	25.297		
2,600.0	2,595.2	2,588.6	2,585.1	6.2	5.9	-158.66	164.1	-33.6	289.9	278.3	11.54	25.114		
2,700.0	2,695.0	2,688.1	2,684.3	6.4	6.2	-157.99	170.0	-30.1	299.9	287.9	12.02	24.948		
2,800.0	2,794.7	2,787.5	2,783.5	6.7	6.4	-157.36	176.0	-26.5	309.9	297.4	12.50	24.797		
2,900.0	2,894.5	2,886.9	2,882.7	7.0	6.7	-156.78	181.9	-23.0	320.0	307.0	12.98	24.659		
3,000.0	2,994.2	2,986.4	2,981.9	7.2	6.9	-156.23	187.9	-19.4	330.1	316.7	13.46	24.533		
3,100.0	3,094.0	3,085.8	3,081.1	7.5	7.2	-155.71	193.9	-15.8	340.3	326.3	13.94	24.416		
3,200.0	3,193.7	3,185.3	3,180.3	7.7	7.4	-155.22	199.8	-12.3	350.4	336.0	14.42	24.309		
3,300.0	3,293.5	3,284.7	3,279.5	8.0	7.7	-154.76	205.8	-8.7	360.6	345.7	14.90	24.210		
3,400.0	3,393.3	3,384.1	3,378.6	8.3	7.9	-154.33	211.7	-5.2	370.8	355.4	15.38	24.118		
3,500.0	3,493.0	3,483.6	3,477.8	8.5	8.2	-153.92	217.7	-1.6	381.0	365.2	15.86	24.032		
3,600.0	3,592.8	3,583.0	3,577.0	8.8	8.5	-153.52	223.6	1.9	391.3	375.0	16.34	23.953		
3,700.0	3,692.5	3,682.4	3,676.2	9.1	8.7	-153.15	229.6	5.5	401.6	384.7	16.82	23.878		
3,800.0	3,792.3	3,781.9	3,775.4	9.3	9.0	-152.80	235.6	9.0	411.8	394.5	17.30	23.809		
3,900.0	3,892.0	3,881.3	3,874.6	9.6	9.2	-152.47	241.5	12.6	422.1	404.4	17.78	23.744		
4,000.0	3,991.8	3,980.8	3,973.8	9.8	9.5	-152.15	247.5	16.2	432.4	414.2	18.26	23.683		
4,100.0	4,091.6	4,080.2	4,073.0	10.1	9.7	-151.85	253.4	19.7	442.8	424.0	18.74	23.625		
4,200.0	4,191.3	4,179.6	4,172.2	10.4	10.0	-151.56	259.4	23.3	453.1	433.9	19.22	23.571		
4,300.0	4,291.1	4,279.1	4,271.4	10.6	10.2	-151.28	265.3	26.8	463.4	443.7	19.70	23.520		
4,400.0	4,390.8	4,378.5	4,370.6	10.9	10.5	-151.01	271.3	30.4	473.8	453.6	20.19	23.472		
4,500.0	4,490.6	4,478.0	4,469.8	11.2	10.7	-150.76	277.2	33.9	484.2	463.5	20.67	23.427		
4,600.0	4,590.3	4,577.4	4,569.0	11.4	11.0	-150.52	283.2	37.5	494.5	473.4	21.15	23.384		
4,700.0	4,690.1	4,676.8	4,668.2	11.7	11.2	-150.28	289.2	41.0	504.9	483.3	21.63	23.343		
4,800.0	4,789.9	4,776.3	4,767.4	11.9	11.5	-150.06	295.1	44.6	515.3	493.2	22.11	23.304		
4,900.0	4,889.6	4,875.7	4,866.6	12.2	11.7	-149.85	301.1	48.1	525.7	503.1	22.59	23.267		
5,000.0	4,989.4	4,975.2	4,965.8	12.5	12.0	-149.64	307.0	51.7	536.1	513.0	23.08	23.232		
5,100.0	5,089.1	5,074.6	5,065.0	12.7	12.3	-149.44	313.0	55.3	546.5	523.0	23.56	23.199		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0310B - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,188.9	5,174.0	5,164.2	13.0	12.5	-149.25	318.9	58.8	556.9	532.9	24.04	23.167	
5,300.0	5,288.6	5,273.5	5,263.4	13.3	12.8	-149.07	324.9	62.4	567.4	542.8	24.52	23.136	
5,400.0	5,388.4	5,372.9	5,362.6	13.5	13.0	-148.89	330.9	65.9	577.8	552.8	25.00	23.107	
5,500.0	5,488.1	5,472.4	5,461.8	13.8	13.3	-148.72	336.8	69.5	588.2	562.7	25.49	23.079	SF
5,600.0	5,587.5	5,550.0	5,539.2	14.1	13.5	-148.09	341.6	72.3	602.0	576.3	25.70	23.426	
5,700.0	5,683.5	5,611.0	5,599.5	14.5	13.7	-146.14	349.4	77.0	635.2	609.9	25.36	25.047	
5,800.0	5,772.3	5,650.0	5,637.3	15.2	13.8	-142.35	357.5	81.8	688.4	663.7	24.77	27.794	
5,900.0	5,850.9	5,700.0	5,684.6	16.1	14.0	-136.27	371.4	90.1	757.6	732.9	24.65	30.732	
6,000.0	5,916.3	5,724.6	5,707.2	17.2	14.2	-125.64	379.7	95.1	838.6	812.4	26.15	32.063	
6,100.0	5,966.1	5,750.0	5,730.1	18.5	14.3	-108.76	389.2	100.8	927.3	897.4	29.94	30.972	
6,200.0	5,998.4	5,750.0	5,730.1	20.1	14.3	-82.31	389.2	100.8	1,019.8	986.8	32.94	30.960	
6,300.0	6,012.1	5,750.0	5,730.1	21.8	14.3	-56.68	389.2	100.8	1,112.7	1,082.8	29.85	37.281	
6,400.0	6,012.6	5,750.0	5,730.1	23.6	14.3	-48.55	389.2	100.8	1,205.0	1,176.5	28.49	42.296	
6,500.0	6,012.6	5,750.0	5,730.1	25.3	14.3	-42.38	389.2	100.8	1,299.6	1,272.3	27.28	47.644	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0311A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-35.69	74.9	-53.8	92.2					
100.0	100.0	100.0	100.0	0.1	0.1	-35.69	74.9	-53.8	92.2	92.0	0.19	493.084		
200.0	200.0	200.0	200.0	0.3	0.3	-35.69	74.9	-53.8	92.2	91.6	0.64	144.861		
300.0	300.0	300.0	300.0	0.5	0.5	-35.69	74.9	-53.8	92.2	91.1	1.09	84.902		
400.0	400.0	400.0	400.0	0.8	0.8	-35.69	74.9	-53.8	92.2	90.7	1.54	60.048		
500.0	500.0	500.0	500.0	1.0	1.0	-35.69	74.9	-53.8	92.2	90.2	1.99	46.450	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	-165.56	74.9	-53.8	93.9	91.5	2.42	38.878		
700.0	699.8	699.8	699.8	1.4	1.4	-166.29	74.9	-53.8	99.0	96.1	2.83	34.916		
800.0	799.6	799.6	799.6	1.6	1.7	-167.19	74.9	-53.8	105.8	102.5	3.26	32.454		
900.0	899.4	899.4	899.4	1.8	1.9	-167.97	74.9	-53.8	112.6	108.9	3.69	30.507		
1,000.0	999.1	999.1	999.1	2.1	2.1	-168.67	74.9	-53.8	119.4	115.3	4.13	28.938		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	-169.29	74.9	-53.8	126.3	121.7	4.57	27.651		
1,200.0	1,198.6	1,197.9	1,197.8	2.6	2.6	-169.14	76.2	-52.7	133.4	128.4	5.00	26.657		
1,300.0	1,298.4	1,296.6	1,296.5	2.8	2.8	-167.63	80.0	-49.4	141.2	135.7	5.44	25.928		
1,400.0	1,398.1	1,396.1	1,395.7	3.1	3.0	-165.58	85.3	-44.9	149.4	143.6	5.90	25.351		
1,500.0	1,497.9	1,495.6	1,495.0	3.3	3.2	-163.75	90.5	-40.4	157.9	151.5	6.35	24.858		
1,600.0	1,597.6	1,595.2	1,594.3	3.6	3.5	-162.10	95.8	-35.8	166.5	159.7	6.81	24.435		
1,700.0	1,697.4	1,694.7	1,693.6	3.8	3.7	-160.62	101.1	-31.3	175.2	167.9	7.28	24.068		
1,800.0	1,797.2	1,794.2	1,792.8	4.1	3.9	-159.28	106.3	-26.8	184.0	176.3	7.75	23.749		
1,900.0	1,896.9	1,893.7	1,892.1	4.4	4.2	-158.06	111.6	-22.3	192.9	184.7	8.22	23.469		
2,000.0	1,996.7	1,993.3	1,991.4	4.6	4.4	-156.95	116.9	-17.8	201.9	193.2	8.69	23.223		
2,100.0	2,096.4	2,092.8	2,090.7	4.9	4.7	-155.94	122.2	-13.2	211.0	201.8	9.17	23.005		
2,200.0	2,196.2	2,192.3	2,190.0	5.1	4.9	-155.00	127.4	-8.7	220.1	210.4	9.65	22.811		
2,300.0	2,295.9	2,291.8	2,289.2	5.4	5.2	-154.15	132.7	-4.2	229.3	219.1	10.13	22.638		
2,400.0	2,395.7	2,391.3	2,388.5	5.6	5.4	-153.35	138.0	0.3	238.5	227.9	10.61	22.482		
2,500.0	2,495.5	2,490.9	2,487.8	5.9	5.7	-152.62	143.2	4.9	247.7	236.7	11.09	22.342		
2,600.0	2,595.2	2,590.4	2,587.1	6.2	5.9	-151.94	148.5	9.4	257.0	245.5	11.57	22.215		
2,700.0	2,695.0	2,689.9	2,686.4	6.4	6.1	-151.31	153.8	13.9	266.4	254.3	12.05	22.100		
2,800.0	2,794.7	2,789.4	2,785.6	6.7	6.4	-150.72	159.0	18.4	275.7	263.2	12.54	21.994		
2,900.0	2,894.5	2,889.0	2,884.9	7.0	6.6	-150.17	164.3	22.9	285.1	272.1	13.02	21.898		
3,000.0	2,994.2	2,988.5	2,984.2	7.2	6.9	-149.65	169.6	27.5	294.5	281.0	13.50	21.810		
3,100.0	3,094.0	3,088.0	3,083.5	7.5	7.2	-149.17	174.8	32.0	304.0	290.0	13.99	21.729		
3,200.0	3,193.7	3,187.5	3,182.8	7.7	7.4	-148.72	180.1	36.5	313.4	298.9	14.47	21.654		
3,300.0	3,293.5	3,287.0	3,282.0	8.0	7.7	-148.29	185.4	41.0	322.9	307.9	14.96	21.585		
3,400.0	3,393.3	3,386.6	3,381.3	8.3	7.9	-147.88	190.6	45.6	332.4	316.9	15.45	21.520		
3,500.0	3,493.0	3,486.1	3,480.6	8.5	8.2	-147.50	195.9	50.1	341.9	326.0	15.93	21.461		
3,600.0	3,592.8	3,585.6	3,579.9	8.8	8.4	-147.14	201.2	54.6	351.4	335.0	16.42	21.405		
3,700.0	3,692.5	3,685.1	3,679.2	9.1	8.7	-146.80	206.4	59.1	360.9	344.0	16.90	21.353		
3,800.0	3,792.3	3,784.6	3,778.4	9.3	8.9	-146.48	211.7	63.6	370.5	353.1	17.39	21.304		
3,900.0	3,892.0	3,884.2	3,877.7	9.6	9.2	-146.17	217.0	68.2	380.0	362.2	17.88	21.259		
4,000.0	3,991.8	3,983.7	3,977.0	9.8	9.4	-145.88	222.2	72.7	389.6	371.2	18.36	21.216		
4,100.0	4,091.6	4,083.2	4,076.3	10.1	9.7	-145.60	227.5	77.2	399.2	380.3	18.85	21.176		
4,200.0	4,191.3	4,182.7	4,175.6	10.4	9.9	-145.33	232.8	81.7	408.8	389.4	19.34	21.138		
4,300.0	4,291.1	4,282.3	4,274.8	10.6	10.2	-145.08	238.0	86.2	418.4	398.5	19.83	21.103		
4,400.0	4,390.8	4,381.8	4,374.1	10.9	10.4	-144.84	243.3	90.8	428.0	407.7	20.31	21.069		
4,500.0	4,490.6	4,481.3	4,473.4	11.2	10.7	-144.61	248.6	95.3	437.6	416.8	20.80	21.037		
4,600.0	4,590.3	4,580.8	4,572.7	11.4	10.9	-144.39	253.9	99.8	447.2	425.9	21.29	21.007		
4,700.0	4,690.1	4,680.3	4,672.0	11.7	11.2	-144.17	259.1	104.3	456.8	435.0	21.78	20.978		
4,800.0	4,789.9	4,779.9	4,771.2	11.9	11.5	-143.97	264.4	108.9	466.4	444.2	22.26	20.951		
4,900.0	4,889.6	4,879.4	4,870.5	12.2	11.7	-143.78	269.7	113.4	476.1	453.3	22.75	20.925		
5,000.0	4,989.4	4,978.9	4,969.8	12.5	12.0	-143.59	274.9	117.9	485.7	462.5	23.24	20.901		
5,100.0	5,089.1	5,078.4	5,069.1	12.7	12.2	-143.41	280.2	122.4	495.4	471.6	23.73	20.877		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0311A - HZ - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-ISWWSA MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,188.9	5,178.0	5,168.4	13.0	12.5	-143.24	285.5	126.9	505.0	480.8	24.21	20.855	
5,300.0	5,288.6	5,277.5	5,267.6	13.3	12.7	-143.07	290.7	131.5	514.7	489.9	24.70	20.834	
5,400.0	5,388.4	5,377.0	5,366.9	13.5	13.0	-142.91	296.0	136.0	524.3	499.1	25.19	20.813 SF	
5,500.0	5,488.1	5,462.0	5,451.7	13.8	13.2	-142.73	300.9	140.2	534.5	508.8	25.65	20.838	
5,600.0	5,587.5	5,522.4	5,511.1	14.1	13.4	-141.33	308.8	147.0	553.0	527.1	25.91	21.343	
5,700.0	5,683.5	5,577.8	5,564.3	14.5	13.6	-138.09	320.7	157.2	591.1	565.3	25.82	22.896	
5,800.0	5,772.3	5,625.9	5,608.8	15.2	13.9	-132.97	334.3	168.9	647.0	621.3	25.73	25.152	
5,900.0	5,850.9	5,665.5	5,644.1	16.1	14.1	-125.17	347.9	180.5	717.0	690.7	26.29	27.271	
6,000.0	5,916.3	5,700.0	5,673.7	17.2	14.3	-113.69	361.3	192.1	797.1	768.9	28.23	28.240	
6,100.0	5,966.1	5,718.4	5,689.0	18.5	14.5	-96.91	369.1	198.8	883.4	852.3	31.18	28.337	
6,200.0	5,998.4	5,732.4	5,700.4	20.1	14.6	-76.77	375.3	204.1	972.7	940.3	32.43	29.996	
6,300.0	6,012.1	5,750.0	5,714.4	21.8	14.7	-58.96	383.4	211.0	1,062.0	1,031.4	30.53	34.789	
6,400.0	6,012.6	5,750.0	5,714.4	23.6	14.7	-52.54	383.4	211.0	1,150.7	1,120.8	29.97	38.391	
6,500.0	6,012.6	5,737.3	5,704.3	25.3	14.6	-46.42	377.5	206.0	1,242.6	1,213.6	28.98	42.870	
6,600.0	6,012.6	5,734.3	5,701.9	27.1	14.6	-39.74	376.2	204.8	1,337.0	1,309.7	27.30	48.968	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0312B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-15.47	75.0	-20.7	77.8					
100.0	100.0	100.0	100.0	0.1	0.1	-15.47	75.0	-20.7	77.8	77.6	0.19	415.875		
200.0	200.0	200.0	200.0	0.3	0.3	-15.47	75.0	-20.7	77.8	77.1	0.64	122.178		
300.0	300.0	300.0	300.0	0.5	0.5	-15.47	75.0	-20.7	77.8	76.7	1.09	71.608		
400.0	400.0	400.0	400.0	0.8	0.8	-15.47	75.0	-20.7	77.8	76.2	1.54	50.645		
500.0	500.0	500.0	500.0	1.0	1.0	-15.47	75.0	-20.7	77.8	75.8	1.99	39.177 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-145.79	75.0	-20.7	79.2	76.8	2.41	32.799		
700.0	699.8	699.8	699.8	1.4	1.4	-147.76	75.0	-20.7	83.6	80.8	2.84	29.479		
800.0	799.6	799.6	799.6	1.6	1.7	-150.14	75.0	-20.7	89.6	86.3	3.26	27.446		
900.0	899.4	899.4	899.4	1.8	1.9	-152.22	75.0	-20.7	95.7	92.0	3.70	25.874		
1,000.0	999.1	999.1	999.1	2.1	2.1	-154.05	75.0	-20.7	101.9	97.8	4.14	24.633		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	-155.66	75.0	-20.7	108.2	103.7	4.58	23.635		
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	-157.10	75.0	-20.7	114.6	109.6	5.02	22.820		
1,300.0	1,298.4	1,297.5	1,297.5	2.8	2.8	-157.60	76.0	-19.5	121.4	116.0	5.46	22.225		
1,400.0	1,398.1	1,396.2	1,396.1	3.1	3.0	-156.57	79.3	-15.6	129.0	123.1	5.91	21.837		
1,500.0	1,497.9	1,495.8	1,495.4	3.3	3.2	-154.90	83.8	-10.4	137.1	130.7	6.36	21.547		
1,600.0	1,597.6	1,595.4	1,594.7	3.6	3.4	-153.41	88.3	-5.1	145.3	138.5	6.82	21.292		
1,700.0	1,697.4	1,695.0	1,694.1	3.8	3.7	-152.08	92.9	0.2	153.6	146.3	7.29	21.067		
1,800.0	1,797.2	1,794.6	1,793.4	4.1	3.9	-150.89	97.4	5.5	161.9	154.2	7.76	20.867		
1,900.0	1,896.9	1,894.2	1,892.8	4.4	4.2	-149.81	101.9	10.8	170.3	162.1	8.23	20.689		
2,000.0	1,996.7	1,993.8	1,992.2	4.6	4.4	-148.84	106.4	16.0	178.8	170.1	8.71	20.531		
2,100.0	2,096.4	2,093.4	2,091.5	4.9	4.6	-147.95	110.9	21.3	187.3	178.1	9.19	20.388		
2,200.0	2,196.2	2,193.0	2,190.9	5.1	4.9	-147.14	115.4	26.6	195.9	186.2	9.67	20.260		
2,300.0	2,295.9	2,292.6	2,290.2	5.4	5.1	-146.40	119.9	31.9	204.5	194.3	10.15	20.145		
2,400.0	2,395.7	2,392.2	2,389.6	5.6	5.4	-145.72	124.5	37.2	213.1	202.5	10.63	20.040		
2,500.0	2,495.5	2,491.7	2,488.9	5.9	5.6	-145.09	129.0	42.4	221.7	210.6	11.12	19.945		
2,600.0	2,595.2	2,591.3	2,588.3	6.2	5.9	-144.51	133.5	47.7	230.4	218.8	11.60	19.858		
2,700.0	2,695.0	2,690.9	2,687.6	6.4	6.1	-143.97	138.0	53.0	239.1	227.0	12.09	19.778		
2,800.0	2,794.7	2,790.5	2,787.0	6.7	6.4	-143.47	142.5	58.3	247.8	235.3	12.58	19.705		
2,900.0	2,894.5	2,890.1	2,886.3	7.0	6.6	-143.00	147.0	63.6	256.6	243.5	13.07	19.638		
3,000.0	2,994.2	2,989.7	2,985.7	7.2	6.9	-142.57	151.5	68.9	265.3	251.8	13.55	19.576		
3,100.0	3,094.0	3,089.3	3,085.1	7.5	7.1	-142.16	156.0	74.1	274.1	260.0	14.04	19.518		
3,200.0	3,193.7	3,188.9	3,184.4	7.7	7.4	-141.78	160.6	79.4	282.9	268.3	14.53	19.465		
3,300.0	3,293.5	3,288.5	3,283.8	8.0	7.6	-141.42	165.1	84.7	291.6	276.6	15.02	19.415		
3,400.0	3,393.3	3,388.1	3,383.1	8.3	7.9	-141.08	169.6	90.0	300.4	284.9	15.51	19.369		
3,500.0	3,493.0	3,487.7	3,482.5	8.5	8.1	-140.76	174.1	95.3	309.3	293.3	16.00	19.326		
3,600.0	3,592.8	3,587.3	3,581.8	8.8	8.4	-140.46	178.6	100.5	318.1	301.6	16.49	19.285		
3,700.0	3,692.5	3,686.9	3,681.2	9.1	8.6	-140.17	183.1	105.8	326.9	309.9	16.98	19.247		
3,800.0	3,792.3	3,786.5	3,780.5	9.3	8.9	-139.90	187.6	111.1	335.7	318.3	17.48	19.212		
3,900.0	3,892.0	3,886.1	3,879.9	9.6	9.1	-139.65	192.2	116.4	344.6	326.6	17.97	19.178		
4,000.0	3,991.8	3,985.7	3,979.2	9.8	9.4	-139.40	196.7	121.7	353.4	335.0	18.46	19.147		
4,100.0	4,091.6	4,085.3	4,078.6	10.1	9.6	-139.17	201.2	127.0	362.3	343.3	18.95	19.117		
4,200.0	4,191.3	4,184.9	4,177.9	10.4	9.9	-138.95	205.7	132.2	371.1	351.7	19.44	19.089		
4,300.0	4,291.1	4,284.5	4,277.3	10.6	10.1	-138.74	210.2	137.5	380.0	360.1	19.93	19.062		
4,400.0	4,390.8	4,384.1	4,376.7	10.9	10.4	-138.54	214.7	142.8	388.9	368.4	20.43	19.037		
4,500.0	4,490.6	4,483.7	4,476.0	11.2	10.6	-138.35	219.2	148.1	397.7	376.8	20.92	19.013		
4,600.0	4,590.3	4,583.3	4,575.4	11.4	10.9	-138.16	223.8	153.4	406.6	385.2	21.41	18.990		
4,700.0	4,690.1	4,682.9	4,674.7	11.7	11.2	-137.99	228.3	158.6	415.5	393.6	21.91	18.969		
4,800.0	4,789.9	4,782.5	4,774.1	11.9	11.4	-137.82	232.8	163.9	424.4	402.0	22.40	18.948		
4,900.0	4,889.6	4,882.1	4,873.4	12.2	11.7	-137.66	237.3	169.2	433.3	410.4	22.89	18.928		
5,000.0	4,989.4	4,981.7	4,972.8	12.5	11.9	-137.50	241.8	174.5	442.2	418.8	23.38	18.910		
5,100.0	5,089.1	5,081.3	5,072.1	12.7	12.2	-137.35	246.3	179.8	451.1	427.2	23.88	18.892		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-0312B - HZ - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,188.9	5,180.9	5,171.5	13.0	12.4	-137.21	250.8	185.0	460.0	435.6	24.37	18.875	
5,300.0	5,288.6	5,280.5	5,270.8	13.3	12.7	-137.07	255.4	190.3	468.9	444.0	24.86	18.858	
5,400.0	5,388.4	5,380.1	5,370.2	13.5	12.9	-136.94	259.9	195.6	477.8	452.4	25.36	18.843	
5,500.0	5,488.1	5,479.7	5,469.6	13.8	13.2	-136.81	264.4	200.9	486.7	460.8	25.85	18.827 SF	
5,600.0	5,587.5	5,565.2	5,554.8	14.1	13.4	-136.19	268.7	205.9	498.6	472.5	26.17	19.053	
5,700.0	5,683.5	5,627.3	5,615.9	14.5	13.6	-134.10	275.9	214.4	528.3	502.2	26.16	20.193	
5,800.0	5,772.3	5,683.1	5,669.3	15.2	13.9	-130.30	286.4	226.6	576.0	549.8	26.17	22.012	
5,900.0	5,850.9	5,731.0	5,713.5	16.1	14.1	-124.31	298.2	240.5	638.4	611.7	26.67	23.936	
6,000.0	5,916.3	5,770.0	5,748.2	17.2	14.3	-115.35	309.9	254.1	712.2	683.9	28.26	25.199	
6,100.0	5,966.1	5,800.0	5,773.9	18.5	14.5	-102.57	319.9	265.9	793.8	762.8	30.95	25.644	
6,200.0	5,998.4	5,821.4	5,791.7	20.1	14.7	-86.06	327.7	275.0	879.9	846.6	33.24	26.467	
6,300.0	6,012.1	5,833.9	5,801.8	21.8	14.8	-68.08	332.4	280.5	967.5	934.6	32.92	29.389	
6,400.0	6,012.6	5,839.7	5,806.5	23.6	14.8	-62.81	334.7	283.1	1,056.0	1,022.7	33.31	31.699	
6,500.0	6,012.6	5,850.0	5,814.6	25.3	14.9	-60.81	338.8	287.9	1,148.1	1,113.8	34.32	33.450	
6,600.0	6,012.6	5,850.0	5,814.6	27.1	14.9	-56.14	338.8	287.9	1,242.9	1,208.5	34.34	36.192	
6,700.0	6,012.6	5,850.0	5,814.6	29.0	14.9	-49.24	338.8	287.9	1,339.5	1,306.4	33.10	40.466	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1505A - HZ - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.1	-251.3	251.3						
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.1	-251.3	251.3	251.1	0.19	1,343.736			
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.1	-251.3	251.3	250.6	0.64	394.770			
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.1	-251.3	251.3	250.2	1.09	231.372			
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.1	-251.3	251.3	249.8	1.54	163.640			
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.1	-251.3	251.3	249.3	1.99	126.584	CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	140.64	0.1	-251.3	252.6	250.2	2.41	104.659			
700.0	699.8	699.8	699.8	1.4	1.4	141.33	0.1	-251.3	256.7	253.9	2.83	90.601			
800.0	799.6	799.6	799.6	1.6	1.7	142.28	0.1	-251.3	262.2	258.9	3.26	80.346			
900.0	899.4	899.4	899.4	1.8	1.9	143.19	0.1	-251.3	267.7	264.0	3.70	72.322			
1,000.0	999.1	999.1	999.1	2.1	2.1	144.07	0.1	-251.3	273.4	269.2	4.15	65.923			
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	144.91	0.1	-251.3	279.1	274.5	4.60	60.728			
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	145.71	0.1	-251.3	284.8	279.7	5.05	56.435			
1,300.0	1,298.4	1,294.6	1,294.6	2.8	2.8	146.18	-1.3	-252.0	291.2	285.8	5.47	53.274			
1,400.0	1,398.1	1,390.4	1,390.3	3.1	2.9	146.05	-5.5	-254.4	299.0	293.1	5.87	50.922			
1,500.0	1,497.9	1,489.6	1,489.2	3.3	3.1	145.59	-11.5	-257.7	307.5	301.2	6.29	48.873			
1,600.0	1,597.6	1,589.2	1,588.6	3.6	3.3	145.14	-17.6	-261.1	316.1	309.4	6.72	47.008			
1,700.0	1,697.4	1,688.8	1,687.9	3.8	3.5	144.72	-23.6	-264.5	324.7	317.6	7.17	45.311			
1,800.0	1,797.2	1,788.4	1,787.3	4.1	3.7	144.33	-29.7	-267.9	333.3	325.7	7.62	43.769			
1,900.0	1,896.9	1,888.0	1,886.7	4.4	3.9	143.95	-35.8	-271.2	342.0	333.9	8.07	42.366			
2,000.0	1,996.7	1,987.6	1,986.0	4.6	4.2	143.59	-41.9	-274.6	350.6	342.1	8.53	41.088			
2,100.0	2,096.4	2,087.2	2,085.4	4.9	4.4	143.25	-47.9	-278.0	359.3	350.3	9.00	39.923			
2,200.0	2,196.2	2,186.8	2,184.7	5.1	4.6	142.92	-54.0	-281.4	367.9	358.5	9.47	38.857			
2,300.0	2,295.9	2,286.4	2,284.1	5.4	4.9	142.61	-60.1	-284.8	376.6	366.7	9.94	37.880			
2,400.0	2,395.7	2,386.0	2,383.5	5.6	5.1	142.32	-66.1	-288.1	385.3	374.9	10.42	36.982			
2,500.0	2,495.5	2,485.6	2,482.8	5.9	5.4	142.03	-72.2	-291.5	394.0	383.1	10.90	36.155			
2,600.0	2,595.2	2,585.2	2,582.2	6.2	5.6	141.76	-78.3	-294.9	402.7	391.3	11.38	35.392			
2,700.0	2,695.0	2,684.8	2,681.5	6.4	5.8	141.50	-84.3	-298.3	411.4	399.6	11.86	34.686			
2,800.0	2,794.7	2,784.4	2,780.9	6.7	6.1	141.25	-90.4	-301.6	420.2	407.8	12.35	34.031			
2,900.0	2,894.5	2,884.0	2,880.3	7.0	6.3	141.01	-96.5	-305.0	428.9	416.1	12.83	33.422			
3,000.0	2,994.2	2,983.6	2,979.6	7.2	6.6	140.78	-102.6	-308.4	437.6	424.3	13.32	32.855			
3,100.0	3,094.0	3,083.2	3,079.0	7.5	6.8	140.56	-108.6	-311.8	446.4	432.6	13.81	32.326			
3,200.0	3,193.7	3,182.8	3,178.3	7.7	7.1	140.35	-114.7	-315.2	455.2	440.9	14.30	31.831			
3,300.0	3,293.5	3,282.4	3,277.7	8.0	7.3	140.15	-120.8	-318.5	463.9	449.1	14.79	31.368			
3,400.0	3,393.3	3,382.0	3,377.1	8.3	7.6	139.95	-126.8	-321.9	472.7	457.4	15.28	30.932			
3,500.0	3,493.0	3,481.6	3,476.4	8.5	7.8	139.76	-132.9	-325.3	481.5	465.7	15.77	30.523			
3,600.0	3,592.8	3,581.2	3,575.8	8.8	8.1	139.58	-139.0	-328.7	490.2	474.0	16.27	30.137			
3,700.0	3,692.5	3,680.9	3,675.1	9.1	8.4	139.40	-145.1	-332.1	499.0	482.3	16.76	29.774			
3,800.0	3,792.3	3,780.5	3,774.5	9.3	8.6	139.23	-151.1	-335.4	507.8	490.5	17.25	29.430			
3,900.0	3,892.0	3,880.1	3,873.9	9.6	8.9	139.07	-157.2	-338.8	516.6	498.8	17.75	29.105			
4,000.0	3,991.8	3,979.7	3,973.2	9.8	9.1	138.91	-163.3	-342.2	525.4	507.1	18.24	28.797			
4,100.0	4,091.6	4,079.3	4,072.6	10.1	9.4	138.76	-169.3	-345.6	534.2	515.4	18.74	28.505			
4,200.0	4,191.3	4,178.9	4,171.9	10.4	9.6	138.61	-175.4	-349.0	543.0	523.7	19.24	28.227			
4,300.0	4,291.1	4,278.5	4,271.3	10.6	9.9	138.47	-181.5	-352.3	551.8	532.1	19.73	27.964			
4,400.0	4,390.8	4,378.1	4,370.6	10.9	10.1	138.33	-187.6	-355.7	560.6	540.4	20.23	27.712			
4,500.0	4,490.6	4,477.7	4,470.0	11.2	10.4	138.19	-193.6	-359.1	569.4	548.7	20.73	27.473			
4,600.0	4,590.3	4,577.3	4,569.4	11.4	10.7	138.06	-199.7	-362.5	578.2	557.0	21.22	27.244			
4,700.0	4,690.1	4,676.9	4,668.7	11.7	10.9	137.93	-205.8	-365.8	587.0	565.3	21.72	27.026			
4,800.0	4,789.9	4,776.5	4,768.1	11.9	11.2	137.81	-211.8	-369.2	595.9	573.6	22.22	26.818			
4,900.0	4,889.6	4,876.1	4,867.4	12.2	11.4	137.69	-217.9	-372.6	604.7	582.0	22.72	26.618			
5,000.0	4,989.4	4,975.7	4,966.8	12.5	11.7	137.58	-224.0	-376.0	613.5	590.3	23.22	26.427			
5,100.0	5,089.1	5,075.3	5,066.2	12.7	12.0	137.46	-230.0	-379.4	622.3	598.6	23.71	26.244			

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1505A - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISWWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,174.9	5,165.5	13.0	12.2	137.35	-236.1	-382.7	631.2	607.0	24.21	26.068		
5,300.0	5,288.6	5,274.5	5,264.9	13.3	12.5	137.25	-242.2	-386.1	640.0	615.3	24.71	25.899		
5,400.0	5,388.4	5,374.1	5,364.2	13.5	12.7	137.14	-248.3	-389.5	648.8	623.6	25.21	25.737		
5,500.0	5,488.1	5,450.0	5,440.0	13.8	12.9	137.05	-253.0	-392.2	658.2	632.5	25.65	25.659 SF		
5,600.0	5,587.5	5,517.0	5,506.1	14.1	13.2	135.77	-262.3	-397.3	674.7	648.7	25.98	25.970		
5,700.0	5,683.5	5,571.4	5,558.4	14.5	13.4	132.71	-275.2	-404.5	709.1	683.1	26.03	27.245		
5,800.0	5,772.3	5,619.8	5,603.5	15.2	13.7	127.90	-290.7	-413.1	760.1	734.0	26.13	29.091		
5,900.0	5,850.9	5,650.0	5,630.6	16.1	13.8	120.55	-302.2	-419.5	824.7	797.8	26.87	30.697		
6,000.0	5,916.3	5,700.0	5,673.8	17.2	14.2	110.97	-324.1	-431.7	899.1	870.2	28.81	31.211		
6,100.0	5,966.1	5,721.8	5,691.8	18.5	14.3	97.37	-334.8	-437.7	980.1	948.6	31.57	31.043		
6,200.0	5,998.4	5,750.0	5,714.4	20.1	14.5	82.18	-349.6	-445.9	1,064.8	1,031.2	33.59	31.702		
6,300.0	6,012.1	5,750.0	5,714.4	21.8	14.5	65.09	-349.6	-445.9	1,150.0	1,117.0	32.99	34.860		
6,400.0	6,012.6	5,750.0	5,714.4	23.6	14.5	63.39	-349.6	-445.9	1,234.3	1,199.8	34.54	35.734		
6,500.0	6,012.6	5,767.4	5,727.9	25.3	14.7	66.73	-359.2	-451.3	1,318.2	1,280.8	37.46	35.187		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1506B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.1	-218.2	218.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.1	-218.2	218.2	218.1	0.19	1,167.037		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.1	-218.2	218.2	217.6	0.64	342.858		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.1	-218.2	218.2	217.2	1.09	200.947		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.1	-218.2	218.2	216.7	1.54	142.122		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.1	-218.2	218.2	216.3	1.99	109.938 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	140.68	0.1	-218.2	219.6	217.2	2.41	90.970		
700.0	699.8	699.8	699.8	1.4	1.4	141.48	0.1	-218.2	223.7	220.8	2.83	78.940		
800.0	799.6	799.6	799.6	1.6	1.7	142.56	0.1	-218.2	229.2	225.9	3.26	70.229		
900.0	899.4	899.4	899.4	1.8	1.9	143.59	0.1	-218.2	234.7	231.0	3.70	63.414		
1,000.0	999.1	999.1	999.1	2.1	2.1	144.58	0.1	-218.2	240.4	236.3	4.15	57.983		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	145.52	0.1	-218.2	246.1	241.5	4.59	53.575		
1,200.0	1,198.6	1,196.9	1,196.9	2.6	2.5	146.04	-1.5	-218.7	252.2	247.2	5.01	50.305		
1,300.0	1,298.4	1,294.8	1,294.7	2.8	2.7	145.80	-6.3	-220.2	259.1	253.7	5.42	47.811		
1,400.0	1,398.1	1,394.4	1,394.0	3.1	2.9	145.18	-12.9	-222.3	266.3	260.5	5.84	45.603		
1,500.0	1,497.9	1,494.1	1,493.5	3.3	3.1	144.59	-19.5	-224.4	273.6	267.3	6.27	43.609		
1,600.0	1,597.6	1,593.8	1,592.9	3.6	3.3	144.03	-26.1	-226.5	280.9	274.2	6.72	41.812		
1,700.0	1,697.4	1,693.5	1,692.4	3.8	3.5	143.50	-32.8	-228.7	288.3	281.1	7.17	40.191		
1,800.0	1,797.2	1,793.2	1,791.8	4.1	3.7	142.99	-39.4	-230.8	295.6	288.0	7.63	38.730		
1,900.0	1,896.9	1,892.9	1,891.3	4.4	4.0	142.51	-46.0	-232.9	303.0	294.9	8.10	37.410		
2,000.0	1,996.7	1,992.6	1,990.8	4.6	4.2	142.05	-52.7	-235.0	310.4	301.8	8.57	36.215		
2,100.0	2,096.4	2,092.3	2,090.2	4.9	4.4	141.61	-59.3	-237.1	317.8	308.8	9.05	35.130		
2,200.0	2,196.2	2,192.0	2,189.7	5.1	4.7	141.20	-65.9	-239.2	325.3	315.7	9.53	34.142		
2,300.0	2,295.9	2,291.7	2,289.1	5.4	4.9	140.80	-72.5	-241.3	332.7	322.7	10.01	33.240		
2,400.0	2,395.7	2,391.4	2,388.6	5.6	5.1	140.42	-79.2	-243.4	340.2	329.7	10.49	32.415		
2,500.0	2,495.5	2,491.1	2,488.0	5.9	5.4	140.05	-85.8	-245.5	347.7	336.7	10.98	31.657		
2,600.0	2,595.2	2,590.8	2,587.5	6.2	5.6	139.70	-92.4	-247.6	355.2	343.7	11.47	30.959		
2,700.0	2,695.0	2,690.5	2,686.9	6.4	5.9	139.37	-99.1	-249.7	362.7	350.7	11.96	30.315		
2,800.0	2,794.7	2,790.2	2,786.4	6.7	6.1	139.05	-105.7	-251.8	370.2	357.7	12.46	29.719		
2,900.0	2,894.5	2,889.9	2,885.8	7.0	6.4	138.74	-112.3	-253.9	377.7	364.8	12.95	29.166		
3,000.0	2,994.2	2,989.6	2,985.3	7.2	6.6	138.44	-118.9	-256.0	385.3	371.8	13.45	28.652		
3,100.0	3,094.0	3,089.3	3,084.7	7.5	6.9	138.16	-125.6	-258.1	392.8	378.9	13.94	28.173		
3,200.0	3,193.7	3,189.0	3,184.2	7.7	7.1	137.88	-132.2	-260.2	400.4	385.9	14.44	27.726		
3,300.0	3,293.5	3,288.6	3,283.6	8.0	7.4	137.62	-138.8	-262.3	408.0	393.0	14.94	27.308		
3,400.0	3,393.3	3,388.3	3,383.1	8.3	7.7	137.37	-145.5	-264.4	415.5	400.1	15.44	26.915		
3,500.0	3,493.0	3,488.0	3,482.5	8.5	7.9	137.12	-152.1	-266.5	423.1	407.2	15.94	26.547		
3,600.0	3,592.8	3,587.7	3,582.0	8.8	8.2	136.88	-158.7	-268.6	430.7	414.3	16.44	26.201		
3,700.0	3,692.5	3,687.4	3,681.5	9.1	8.4	136.66	-165.3	-270.7	438.3	421.4	16.94	25.874		
3,800.0	3,792.3	3,787.1	3,780.9	9.3	8.7	136.44	-172.0	-272.8	445.9	428.5	17.44	25.566		
3,900.0	3,892.0	3,886.8	3,880.4	9.6	8.9	136.22	-178.6	-274.9	453.5	435.6	17.94	25.275		
4,000.0	3,991.8	3,986.5	3,979.8	9.8	9.2	136.02	-185.2	-277.0	461.2	442.7	18.45	25.000		
4,100.0	4,091.6	4,086.2	4,079.3	10.1	9.5	135.82	-191.9	-279.1	468.8	449.8	18.95	24.739		
4,200.0	4,191.3	4,185.9	4,178.7	10.4	9.7	135.62	-198.5	-281.2	476.4	457.0	19.45	24.491		
4,300.0	4,291.1	4,285.6	4,278.2	10.6	10.0	135.44	-205.1	-283.3	484.0	464.1	19.96	24.256		
4,400.0	4,390.8	4,385.3	4,377.6	10.9	10.2	135.26	-211.7	-285.4	491.7	471.2	20.46	24.032		
4,500.0	4,490.6	4,485.0	4,477.1	11.2	10.5	135.08	-218.4	-287.5	499.3	478.4	20.96	23.818		
4,600.0	4,590.3	4,584.7	4,576.5	11.4	10.7	134.91	-225.0	-289.6	507.0	485.5	21.47	23.615		
4,700.0	4,690.1	4,684.4	4,676.0	11.7	11.0	134.74	-231.6	-291.7	514.6	492.7	21.97	23.421		
4,800.0	4,789.9	4,784.1	4,775.4	11.9	11.3	134.58	-238.3	-293.8	522.3	499.8	22.48	23.236		
4,900.0	4,889.6	4,883.8	4,874.9	12.2	11.5	134.43	-244.9	-295.9	530.0	507.0	22.98	23.058		
5,000.0	4,989.4	4,983.5	4,974.3	12.5	11.8	134.28	-251.5	-298.0	537.6	514.1	23.49	22.889		
5,100.0	5,089.1	5,083.2	5,073.8	12.7	12.0	134.13	-258.1	-300.2	545.3	521.3	23.99	22.726		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1506B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,182.9	5,173.2	13.0	12.3	133.99	-264.8	-302.3	553.0	528.5	24.50	22.570		
5,300.0	5,288.6	5,282.6	5,272.7	13.3	12.6	133.85	-271.4	-304.4	560.6	535.6	25.01	22.421		
5,400.0	5,388.4	5,382.3	5,372.2	13.5	12.8	133.71	-278.0	-306.5	568.3	542.8	25.51	22.277		
5,500.0	5,488.1	5,482.0	5,471.6	13.8	13.1	133.58	-284.7	-308.6	576.0	550.0	26.02	22.139 SF		
5,600.0	5,587.5	5,568.0	5,557.3	14.1	13.3	132.97	-291.1	-310.6	586.5	560.2	26.38	22.234		
5,700.0	5,683.5	5,633.4	5,621.6	14.5	13.6	130.93	-302.8	-314.3	613.1	586.7	26.49	23.150		
5,800.0	5,772.3	5,700.0	5,684.9	15.2	13.9	127.39	-322.5	-320.6	656.2	629.5	26.65	24.622		
5,900.0	5,850.9	5,750.0	5,730.3	16.1	14.2	121.91	-342.2	-326.8	713.0	685.7	27.26	26.156		
6,000.0	5,916.3	5,800.0	5,773.6	17.2	14.5	114.31	-366.0	-334.4	780.9	751.9	28.93	26.991		
6,100.0	5,966.1	5,832.7	5,800.6	18.5	14.7	103.67	-383.6	-340.0	856.6	825.0	31.61	27.102		
6,200.0	5,998.4	5,863.6	5,824.9	20.1	15.0	90.64	-401.8	-345.7	937.5	903.1	34.38	27.269		
6,300.0	6,012.1	5,886.7	5,842.4	21.8	15.2	76.15	-416.2	-350.3	1,020.8	985.0	35.75	28.556		
6,400.0	6,012.6	5,900.0	5,852.1	23.6	15.3	74.76	-424.8	-353.0	1,104.2	1,066.4	37.79	29.220		
6,500.0	6,012.6	5,927.4	5,871.4	25.3	15.5	77.86	-443.4	-358.9	1,187.0	1,146.5	40.51	29.299		
6,600.0	6,012.6	5,950.0	5,886.5	27.1	15.8	80.12	-459.4	-364.0	1,269.0	1,226.0	43.08	29.461		
6,700.0	6,012.6	5,986.5	5,909.4	29.0	16.1	82.68	-486.5	-372.6	1,349.8	1,304.1	45.68	29.546		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1507A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-186.0	186.0					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-186.0	186.0	185.8	0.19	994.447		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-186.0	186.0	185.3	0.64	292.154		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-186.0	186.0	184.9	1.09	171.229		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-186.0	186.0	184.4	1.54	121.104		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-186.0	186.0	184.0	1.99	93.680 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	140.73	0.0	-186.0	187.3	184.9	2.41	77.600		
700.0	699.8	699.8	699.8	1.4	1.4	141.67	0.0	-186.0	191.4	188.6	2.83	67.552		
800.0	799.6	799.6	799.6	1.6	1.7	142.93	0.0	-186.0	196.9	193.7	3.26	60.350		
900.0	899.4	899.4	899.4	1.8	1.9	144.11	0.0	-186.0	202.5	198.8	3.70	54.718		
1,000.0	999.1	999.1	999.1	2.1	2.1	145.24	0.0	-186.0	208.2	204.1	4.15	50.234		
1,100.0	1,098.9	1,099.3	1,099.2	2.3	2.3	145.85	-1.7	-186.0	213.9	209.3	4.57	46.855		
1,200.0	1,198.6	1,199.5	1,199.3	2.6	2.5	145.51	-6.9	-186.3	219.4	214.4	4.97	44.148		
1,300.0	1,298.4	1,299.3	1,298.9	2.8	2.7	144.74	-13.8	-186.6	224.9	219.5	5.39	41.707		
1,400.0	1,398.1	1,399.1	1,398.4	3.1	2.9	144.01	-20.8	-186.9	230.4	224.5	5.83	39.527		
1,500.0	1,497.9	1,498.9	1,498.0	3.3	3.1	143.31	-27.8	-187.2	235.9	229.6	6.28	37.586		
1,600.0	1,597.6	1,598.7	1,597.6	3.6	3.3	142.64	-34.7	-187.5	241.5	234.7	6.73	35.858		
1,700.0	1,697.4	1,698.5	1,697.1	3.8	3.5	142.00	-41.7	-187.8	247.1	239.9	7.20	34.316		
1,800.0	1,797.2	1,798.3	1,796.7	4.1	3.8	141.39	-48.6	-188.1	252.7	245.0	7.67	32.938		
1,900.0	1,896.9	1,898.1	1,896.3	4.4	4.0	140.81	-55.6	-188.5	258.3	250.2	8.15	31.701		
2,000.0	1,996.7	1,997.9	1,995.8	4.6	4.2	140.26	-62.5	-188.8	264.0	255.4	8.63	30.588		
2,100.0	2,096.4	2,097.7	2,095.4	4.9	4.5	139.72	-69.5	-189.1	269.7	260.6	9.12	29.583		
2,200.0	2,196.2	2,197.5	2,195.0	5.1	4.7	139.21	-76.4	-189.4	275.4	265.8	9.61	28.672		
2,300.0	2,295.9	2,297.4	2,294.5	5.4	5.0	138.72	-83.4	-189.7	281.2	271.1	10.10	27.844		
2,400.0	2,395.7	2,397.2	2,394.1	5.6	5.2	138.25	-90.3	-190.0	286.9	276.3	10.59	27.088		
2,500.0	2,495.5	2,497.0	2,493.6	5.9	5.5	137.80	-97.3	-190.3	292.7	281.6	11.09	26.396		
2,600.0	2,595.2	2,596.8	2,593.2	6.2	5.7	137.36	-104.3	-190.6	298.5	286.9	11.59	25.761		
2,700.0	2,695.0	2,696.6	2,692.8	6.4	6.0	136.94	-111.2	-190.9	304.3	292.2	12.09	25.176		
2,800.0	2,794.7	2,796.4	2,792.3	6.7	6.2	136.54	-118.2	-191.3	310.2	297.6	12.59	24.636		
2,900.0	2,894.5	2,896.2	2,891.9	7.0	6.5	136.15	-125.1	-191.6	316.0	302.9	13.09	24.136		
3,000.0	2,994.2	2,996.0	2,991.5	7.2	6.7	135.78	-132.1	-191.9	321.9	308.3	13.60	23.672		
3,100.0	3,094.0	3,095.8	3,091.0	7.5	7.0	135.42	-139.0	-192.2	327.7	313.6	14.10	23.241		
3,200.0	3,193.7	3,195.6	3,190.6	7.7	7.2	135.07	-146.0	-192.5	333.6	319.0	14.61	22.839		
3,300.0	3,293.5	3,295.4	3,290.2	8.0	7.5	134.74	-152.9	-192.8	339.5	324.4	15.11	22.463		
3,400.0	3,393.3	3,395.2	3,389.7	8.3	7.7	134.41	-159.9	-193.1	345.4	329.8	15.62	22.112		
3,500.0	3,493.0	3,495.0	3,489.3	8.5	8.0	134.10	-166.9	-193.4	351.3	335.2	16.13	21.782		
3,600.0	3,592.8	3,594.8	3,588.8	8.8	8.3	133.80	-173.8	-193.7	357.3	340.6	16.64	21.472		
3,700.0	3,692.5	3,694.6	3,688.4	9.1	8.5	133.50	-180.8	-194.1	363.2	346.1	17.15	21.181		
3,800.0	3,792.3	3,794.5	3,788.0	9.3	8.8	133.22	-187.7	-194.4	369.2	351.5	17.66	20.906		
3,900.0	3,892.0	3,894.3	3,887.5	9.6	9.0	132.95	-194.7	-194.7	375.1	357.0	18.17	20.647		
4,000.0	3,991.8	3,994.1	3,987.1	9.8	9.3	132.68	-201.6	-195.0	381.1	362.4	18.68	20.402		
4,100.0	4,091.6	4,093.9	4,086.7	10.1	9.5	132.42	-208.6	-195.3	387.1	367.9	19.19	20.169		
4,200.0	4,191.3	4,193.7	4,186.2	10.4	9.8	132.17	-215.5	-195.6	393.0	373.3	19.70	19.949		
4,300.0	4,291.1	4,293.5	4,285.8	10.6	10.1	131.93	-222.5	-195.9	399.0	378.8	20.21	19.741		
4,400.0	4,390.8	4,393.3	4,385.4	10.9	10.3	131.70	-229.5	-196.2	405.0	384.3	20.73	19.542		
4,500.0	4,490.6	4,493.1	4,484.9	11.2	10.6	131.47	-236.4	-196.5	411.0	389.8	21.24	19.353		
4,600.0	4,590.3	4,592.9	4,584.5	11.4	10.8	131.25	-243.4	-196.9	417.0	395.3	21.75	19.173		
4,700.0	4,690.1	4,692.7	4,684.0	11.7	11.1	131.03	-250.3	-197.2	423.0	400.8	22.26	19.002		
4,800.0	4,789.9	4,792.5	4,783.6	11.9	11.4	130.82	-257.3	-197.5	429.1	406.3	22.78	18.838		
4,900.0	4,889.6	4,892.3	4,883.2	12.2	11.6	130.62	-264.2	-197.8	435.1	411.8	23.29	18.682		
5,000.0	4,989.4	4,992.1	4,982.7	12.5	11.9	130.42	-271.2	-198.1	441.1	417.3	23.80	18.532		
5,100.0	5,089.1	5,091.9	5,082.3	12.7	12.2	130.23	-278.1	-198.4	447.2	422.8	24.32	18.389		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1507A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISWWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,191.7	5,181.9	13.0	12.4	130.04	-285.1	-198.7	453.2	428.4	24.83	18.252		
5,300.0	5,288.6	5,291.6	5,281.4	13.3	12.7	129.86	-292.1	-199.0	459.2	433.9	25.34	18.120		
5,400.0	5,388.4	5,391.4	5,381.0	13.5	12.9	129.68	-299.0	-199.3	465.3	439.4	25.86	17.994		
5,500.0	5,488.1	5,481.9	5,471.1	13.8	13.2	129.30	-307.1	-199.7	471.9	445.5	26.37	17.893 SF		
5,600.0	5,587.5	5,561.8	5,548.8	14.1	13.5	127.17	-325.4	-200.5	484.1	457.2	26.88	18.010		
5,700.0	5,683.5	5,637.2	5,618.8	14.5	13.9	123.42	-353.3	-201.8	510.9	483.5	27.34	18.688		
5,800.0	5,772.3	5,706.9	5,679.3	15.2	14.4	118.42	-387.8	-203.3	551.6	523.6	27.97	19.724		
5,900.0	5,850.9	5,770.4	5,729.9	16.1	14.9	112.16	-426.0	-205.0	603.9	574.8	29.06	20.782		
6,000.0	5,916.3	5,827.9	5,771.4	17.2	15.4	104.63	-465.7	-206.8	665.0	634.1	30.87	21.542		
6,100.0	5,966.1	5,879.9	5,805.0	18.5	15.9	95.98	-505.3	-208.6	732.4	699.3	33.13	22.105		
6,200.0	5,998.4	5,927.0	5,831.9	20.1	16.4	86.64	-544.0	-210.3	803.6	768.3	35.36	22.727		
6,300.0	6,012.1	5,970.0	5,853.3	21.8	16.9	77.23	-581.3	-212.0	876.6	839.5	37.06	23.652		
6,400.0	6,012.6	6,012.4	5,871.3	23.6	17.5	77.56	-619.6	-213.7	949.4	909.7	39.68	23.927		
6,500.0	6,012.6	6,060.7	5,887.9	25.3	18.1	80.07	-664.8	-215.7	1,020.9	978.3	42.61	23.962		
6,600.0	6,012.6	6,115.1	5,901.6	27.1	18.9	81.98	-717.4	-218.1	1,090.5	1,044.9	45.55	23.942		
6,700.0	6,012.6	6,175.0	5,910.1	29.0	19.7	83.27	-776.6	-220.7	1,157.5	1,109.0	48.50	23.867		
6,800.0	6,012.6	6,282.8	5,912.1	30.9	21.3	84.12	-884.3	-224.5	1,221.1	1,169.2	51.84	23.554		
6,900.0	6,012.6	6,379.3	5,912.1	32.7	22.7	84.62	-980.8	-224.6	1,277.6	1,222.5	55.11	23.184		
7,000.0	6,012.6	6,464.5	5,912.0	34.6	24.0	84.99	-1,066.0	-224.6	1,329.8	1,271.5	58.33	22.798		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1508B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-152.2	152.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-152.2	152.2	152.0	0.19	813.638		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-152.2	152.2	151.5	0.64	239.035		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-152.2	152.2	151.1	1.09	140.097		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-152.2	152.2	150.6	1.54	99.085		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-152.2	152.2	150.2	1.99	76.647	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	140.80	0.0	-152.2	153.5	151.1	2.41	63.592		
700.0	699.8	699.8	699.8	1.4	1.4	141.95	0.0	-152.2	157.6	154.8	2.83	55.622		
800.0	799.6	799.6	799.6	1.6	1.7	143.46	0.0	-152.2	163.2	159.9	3.26	50.003		
900.0	899.4	899.4	899.4	1.8	1.9	144.87	0.0	-152.2	168.8	165.1	3.70	45.615		
1,000.0	999.1	1,001.1	1,001.1	2.1	2.1	145.66	-1.7	-151.7	174.0	169.9	4.12	42.234		
1,100.0	1,098.9	1,103.0	1,102.9	2.3	2.3	145.31	-6.9	-150.4	178.0	173.5	4.53	39.335		
1,200.0	1,198.6	1,203.0	1,202.5	2.6	2.5	144.48	-13.7	-148.8	181.5	176.6	4.95	36.686		
1,300.0	1,298.4	1,302.9	1,302.2	2.8	2.7	143.68	-20.5	-147.1	185.0	179.7	5.39	34.359		
1,400.0	1,398.1	1,402.8	1,401.9	3.1	2.9	142.91	-27.2	-145.4	188.6	182.8	5.84	32.320		
1,500.0	1,497.9	1,502.7	1,501.5	3.3	3.1	142.17	-34.0	-143.7	192.2	185.9	6.30	30.529		
1,600.0	1,597.6	1,602.6	1,601.2	3.6	3.3	141.45	-40.8	-142.1	195.9	189.1	6.77	28.953		
1,700.0	1,697.4	1,702.5	1,700.8	3.8	3.6	140.77	-47.5	-140.4	199.5	192.3	7.24	27.559		
1,800.0	1,797.2	1,802.4	1,800.5	4.1	3.8	140.10	-54.3	-138.7	203.2	195.5	7.72	26.321		
1,900.0	1,896.9	1,902.3	1,900.2	4.4	4.0	139.46	-61.1	-137.0	207.0	198.7	8.21	25.216		
2,000.0	1,996.7	2,002.2	1,999.8	4.6	4.3	138.85	-67.8	-135.4	210.7	202.0	8.70	24.227		
2,100.0	2,096.4	2,102.1	2,099.5	4.9	4.5	138.25	-74.6	-133.7	214.5	205.3	9.19	23.337		
2,200.0	2,196.2	2,202.0	2,199.2	5.1	4.8	137.68	-81.4	-132.0	218.3	208.6	9.69	22.533		
2,300.0	2,295.9	2,301.9	2,298.8	5.4	5.0	137.13	-88.1	-130.3	222.1	211.9	10.19	21.803		
2,400.0	2,395.7	2,401.8	2,398.5	5.6	5.3	136.59	-94.9	-128.7	225.9	215.2	10.69	21.140		
2,500.0	2,495.5	2,501.7	2,498.1	5.9	5.5	136.07	-101.6	-127.0	229.8	218.6	11.19	20.533		
2,600.0	2,595.2	2,601.6	2,597.8	6.2	5.8	135.57	-108.4	-125.3	233.6	221.9	11.69	19.978		
2,700.0	2,695.0	2,701.5	2,697.5	6.4	6.0	135.09	-115.2	-123.6	237.5	225.3	12.20	19.467		
2,800.0	2,794.7	2,801.4	2,797.1	6.7	6.3	134.62	-121.9	-122.0	241.4	228.7	12.71	18.996		
2,900.0	2,894.5	2,901.3	2,896.8	7.0	6.6	134.17	-128.7	-120.3	245.3	232.1	13.22	18.560		
3,000.0	2,994.2	3,001.2	2,996.4	7.2	6.8	133.73	-135.5	-118.6	249.3	235.5	13.73	18.157		
3,100.0	3,094.0	3,101.1	3,096.1	7.5	7.1	133.30	-142.2	-116.9	253.2	239.0	14.24	17.782		
3,200.0	3,193.7	3,201.0	3,195.8	7.7	7.3	132.89	-149.0	-115.3	257.2	242.4	14.75	17.433		
3,300.0	3,293.5	3,301.0	3,295.4	8.0	7.6	132.49	-155.8	-113.6	261.2	245.9	15.27	17.108		
3,400.0	3,393.3	3,400.9	3,395.1	8.3	7.9	132.10	-162.5	-111.9	265.1	249.4	15.78	16.803		
3,500.0	3,493.0	3,500.8	3,494.7	8.5	8.1	131.72	-169.3	-110.2	269.1	252.8	16.29	16.518		
3,600.0	3,592.8	3,600.7	3,594.4	8.8	8.4	131.36	-176.1	-108.6	273.2	256.3	16.81	16.250		
3,700.0	3,692.5	3,700.6	3,694.1	9.1	8.6	131.00	-182.8	-106.9	277.2	259.8	17.33	15.998		
3,800.0	3,792.3	3,800.5	3,793.7	9.3	8.9	130.66	-189.6	-105.2	281.2	263.4	17.84	15.761		
3,900.0	3,892.0	3,900.4	3,893.4	9.6	9.1	130.32	-196.4	-103.6	285.2	266.9	18.36	15.537		
4,000.0	3,991.8	4,000.3	3,993.1	9.8	9.4	130.00	-203.1	-101.9	289.3	270.4	18.88	15.326		
4,100.0	4,091.6	4,100.2	4,092.7	10.1	9.7	129.68	-209.9	-100.2	293.4	274.0	19.39	15.126		
4,200.0	4,191.3	4,200.1	4,192.4	10.4	9.9	129.37	-216.7	-98.5	297.4	277.5	19.91	14.937		
4,300.0	4,291.1	4,300.0	4,292.0	10.6	10.2	129.07	-223.4	-96.9	301.5	281.1	20.43	14.757		
4,400.0	4,390.8	4,399.9	4,391.7	10.9	10.5	128.78	-230.2	-95.2	305.6	284.6	20.95	14.587		
4,500.0	4,490.6	4,499.8	4,491.4	11.2	10.7	128.50	-236.9	-93.5	309.7	288.2	21.47	14.425		
4,600.0	4,590.3	4,599.7	4,591.0	11.4	11.0	128.22	-243.7	-91.8	313.8	291.8	21.99	14.271		
4,700.0	4,690.1	4,699.6	4,690.7	11.7	11.2	127.95	-250.5	-90.2	317.9	295.4	22.51	14.124		
4,800.0	4,789.9	4,799.5	4,790.3	11.9	11.5	127.69	-257.2	-88.5	322.0	299.0	23.03	13.983		
4,900.0	4,889.6	4,899.4	4,890.0	12.2	11.8	127.43	-264.0	-86.8	326.1	302.6	23.55	13.850		
5,000.0	4,989.4	4,999.3	4,989.7	12.5	12.0	127.18	-270.8	-85.1	330.2	306.2	24.07	13.722		
5,100.0	5,089.1	5,099.2	5,089.3	12.7	12.3	126.94	-277.5	-83.5	334.4	309.8	24.59	13.599		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1508B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,199.1	5,189.0	13.0	12.5	126.70	-284.3	-81.8	338.5	313.4	25.11	13.482		
5,300.0	5,288.6	5,299.0	5,288.7	13.3	12.8	126.47	-291.1	-80.1	342.7	317.0	25.63	13.370		
5,400.0	5,388.4	5,398.9	5,388.3	13.5	13.1	126.25	-297.8	-78.4	346.8	320.7	26.15	13.262		
5,500.0	5,488.1	5,498.9	5,488.0	13.8	13.3	126.02	-304.6	-76.8	351.0	324.3	26.67	13.159		
5,600.0	5,587.5	5,598.2	5,586.7	14.1	13.6	125.31	-314.6	-74.3	357.2	330.0	27.17	13.147		
5,700.0	5,683.5	5,695.4	5,680.1	14.5	14.1	123.07	-340.3	-67.9	373.7	346.0	27.72	13.482		
5,800.0	5,772.3	5,789.2	5,764.0	15.2	14.6	119.52	-380.7	-57.9	401.0	372.5	28.51	14.064		
5,900.0	5,850.9	5,878.6	5,835.8	16.1	15.4	114.90	-432.2	-45.2	437.9	408.2	29.74	14.725		
6,000.0	5,916.3	5,963.6	5,894.8	17.2	16.2	109.43	-491.5	-30.5	483.0	451.3	31.66	15.257		
6,100.0	5,966.1	6,044.8	5,941.1	18.5	17.1	103.31	-556.2	-14.5	534.4	500.2	34.20	15.625		
6,200.0	5,998.4	6,123.3	5,975.6	20.1	18.1	96.82	-624.5	2.4	590.3	553.2	37.14	15.897		
6,300.0	6,012.1	6,200.0	5,998.6	21.8	19.2	90.28	-695.5	20.0	648.8	608.6	40.15	16.158		
6,400.0	6,012.6	6,279.8	6,010.9	23.6	20.3	89.84	-772.0	38.9	706.8	663.5	43.30	16.324		
6,500.0	6,012.6	6,351.7	6,012.6	25.3	21.4	90.00	-841.7	55.9	761.1	714.7	46.42	16.395		
6,600.0	6,012.6	6,400.0	6,012.6	27.1	22.1	90.00	-888.9	66.1	813.4	764.1	49.33	16.489		
6,700.0	6,012.6	6,472.0	6,012.6	29.0	23.1	90.00	-959.8	79.2	863.7	811.3	52.42	16.477		
6,800.0	6,012.6	6,531.7	6,012.6	30.9	24.0	90.00	-1,018.8	88.0	912.3	857.0	55.36	16.480		
6,900.0	6,012.6	6,600.0	6,012.6	32.7	24.9	90.00	-1,086.6	95.8	959.1	900.8	58.34	16.442		
7,000.0	6,012.6	6,650.1	6,012.6	34.6	25.7	90.00	-1,136.5	99.9	1,003.9	942.9	61.02	16.451		
7,100.0	6,012.6	6,700.0	6,012.6	36.4	26.4	90.00	-1,186.4	102.8	1,046.9	983.3	63.58	16.465		
7,200.0	6,012.6	6,767.4	6,012.6	38.2	27.4	90.00	-1,253.7	104.6	1,087.7	1,021.5	66.23	16.424		
7,300.0	6,012.6	6,850.1	6,012.6	40.0	28.8	90.00	-1,336.5	104.6	1,126.0	1,056.9	69.02	16.313		
7,400.0	6,012.6	6,944.4	6,012.6	41.7	30.4	90.00	-1,430.7	104.6	1,159.4	1,087.5	71.89	16.128		
7,500.0	6,012.6	7,040.2	6,012.6	43.4	32.0	90.00	-1,526.6	104.6	1,187.9	1,113.3	74.63	15.916		
7,600.0	6,012.6	7,137.4	6,012.6	45.0	33.7	90.00	-1,623.8	104.6	1,211.3	1,134.1	77.24	15.683		
7,700.0	6,012.6	7,235.7	6,012.6	46.6	35.4	90.00	-1,722.1	104.6	1,229.6	1,149.9	79.67	15.433		
7,800.0	6,012.6	7,334.9	6,012.6	48.1	37.2	90.00	-1,821.2	104.6	1,242.7	1,160.8	81.92	15.170		
7,900.0	6,012.6	7,434.5	6,012.6	49.6	38.9	90.00	-1,920.9	104.6	1,250.7	1,166.7	83.96	14.896		
8,000.0	6,012.6	7,534.5	6,012.6	51.0	40.7	90.00	-2,020.8	104.6	1,253.4	1,167.6	85.76	14.615		
8,100.0	6,012.6	7,634.5	6,012.6	52.4	42.5	90.00	-2,120.8	104.6	1,253.4	1,164.1	89.22	14.049		
8,200.0	6,012.7	7,734.5	6,012.6	53.8	44.3	90.00	-2,220.8	104.6	1,253.4	1,160.7	92.70	13.520		
8,300.0	6,012.7	7,834.5	6,012.6	55.3	46.2	90.00	-2,320.8	104.6	1,253.4	1,157.2	96.22	13.026		
8,400.0	6,012.7	7,934.5	6,012.6	56.8	48.0	90.00	-2,420.8	104.6	1,253.4	1,153.6	99.76	12.564		
8,500.0	6,012.7	8,034.5	6,012.7	58.2	49.8	90.00	-2,520.8	104.6	1,253.4	1,150.1	103.32	12.131		
8,600.0	6,012.7	8,134.5	6,012.7	59.8	51.7	90.00	-2,620.8	104.6	1,253.4	1,146.5	106.90	11.725		
8,700.0	6,012.7	8,234.5	6,012.7	61.3	53.5	90.00	-2,720.8	104.6	1,253.4	1,142.9	110.50	11.343		
8,800.0	6,012.7	8,334.5	6,012.7	62.9	55.4	90.00	-2,820.8	104.6	1,253.4	1,139.3	114.11	10.984		
8,900.0	6,012.7	8,434.5	6,012.7	64.4	57.3	90.00	-2,920.8	104.6	1,253.4	1,135.7	117.74	10.645		
9,000.0	6,012.7	8,534.5	6,012.7	66.0	59.1	90.00	-3,020.8	104.6	1,253.4	1,132.0	121.39	10.326		
9,100.0	6,012.7	8,634.5	6,012.7	67.7	61.0	90.00	-3,120.8	104.6	1,253.4	1,128.4	125.04	10.024		
9,200.0	6,012.7	8,734.5	6,012.7	69.3	62.9	90.00	-3,220.8	104.6	1,253.4	1,124.7	128.71	9.739		
9,300.0	6,012.7	8,834.5	6,012.7	70.9	64.7	90.00	-3,320.8	104.6	1,253.4	1,121.1	132.38	9.468		
9,400.0	6,012.7	8,934.5	6,012.7	72.6	66.6	90.00	-3,420.8	104.6	1,253.5	1,117.4	136.07	9.212		
9,500.0	6,012.7	9,034.5	6,012.7	74.2	68.5	90.00	-3,520.8	104.6	1,253.5	1,113.7	139.76	8.968		
9,600.0	6,012.7	9,134.5	6,012.7	75.9	70.4	90.00	-3,620.8	104.6	1,253.5	1,110.0	143.47	8.737		
9,700.0	6,012.7	9,234.5	6,012.7	77.6	72.2	90.00	-3,720.8	104.6	1,253.5	1,106.3	147.18	8.517		
9,800.0	6,012.7	9,334.5	6,012.7	79.3	74.1	90.00	-3,820.8	104.6	1,253.5	1,102.6	150.89	8.307		
9,900.0	6,012.8	9,434.5	6,012.7	81.0	76.0	90.00	-3,920.8	104.6	1,253.5	1,098.9	154.61	8.107		
10,000.0	6,012.8	9,534.5	6,012.7	82.8	77.9	90.00	-4,020.8	104.6	1,253.5	1,095.1	158.34	7.916		
10,100.0	6,012.8	9,634.5	6,012.8	84.5	79.8	90.00	-4,120.8	104.6	1,253.5	1,091.4	162.08	7.734		
10,200.0	6,012.8	9,734.5	6,012.8	86.2	81.7	90.00	-4,220.8	104.6	1,253.5	1,087.7	165.81	7.560		
10,300.0	6,012.8	9,834.5	6,012.8	88.0	83.6	90.00	-4,320.8	104.6	1,253.5	1,084.0	169.56	7.393		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1508B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
10,400.0	6,012.8	9,934.5	6,012.8	89.7	85.5	90.00	-4,420.8	104.6	1,253.5	1,080.2	173.31	7.233		
10,500.0	6,012.8	10,034.5	6,012.8	91.5	87.4	90.00	-4,520.8	104.6	1,253.5	1,076.5	177.06	7.080		
10,600.0	6,012.8	10,134.5	6,012.8	93.3	89.3	90.00	-4,620.8	104.6	1,253.5	1,072.7	180.81	6.933		
10,700.0	6,012.8	10,234.5	6,012.8	95.0	91.2	90.00	-4,720.8	104.6	1,253.5	1,069.0	184.57	6.792		
10,800.0	6,012.8	10,334.5	6,012.8	96.8	93.1	90.00	-4,820.8	104.6	1,253.5	1,065.2	188.34	6.656		
10,900.0	6,012.8	10,434.5	6,012.8	98.6	95.0	90.00	-4,920.8	104.6	1,253.6	1,061.4	192.10	6.525		
11,000.0	6,012.8	10,534.5	6,012.8	100.4	96.9	90.00	-5,020.8	104.6	1,253.6	1,057.7	195.87	6.400		
11,100.0	6,012.8	10,634.5	6,012.8	102.2	98.8	90.00	-5,120.8	104.6	1,253.6	1,053.9	199.64	6.279		
11,200.0	6,012.8	10,734.5	6,012.8	104.0	100.7	90.00	-5,220.8	104.6	1,253.6	1,050.2	203.42	6.163		
11,300.0	6,012.8	10,834.5	6,012.8	105.8	102.6	90.00	-5,320.8	104.6	1,253.6	1,046.4	207.20	6.050		
11,400.0	6,012.8	10,934.5	6,012.8	107.6	104.5	90.00	-5,420.8	104.6	1,253.6	1,042.6	210.98	5.942		
11,500.0	6,012.9	11,034.5	6,012.8	109.4	106.4	90.00	-5,520.8	104.6	1,253.6	1,038.8	214.76	5.837		
11,600.0	6,012.9	11,134.5	6,012.8	111.2	108.3	90.00	-5,620.8	104.6	1,253.6	1,035.1	218.54	5.736		
11,700.0	6,012.9	11,234.5	6,012.9	113.0	110.2	90.00	-5,720.8	104.6	1,253.6	1,031.3	222.33	5.639		
11,800.0	6,012.9	11,334.5	6,012.9	114.9	112.1	90.00	-5,820.8	104.6	1,253.6	1,027.5	226.12	5.544		
11,900.0	6,012.9	11,434.5	6,012.9	116.7	114.0	90.00	-5,920.8	104.6	1,253.6	1,023.7	229.91	5.453		
12,000.0	6,012.9	11,534.5	6,012.9	118.5	115.9	90.00	-6,020.8	104.6	1,253.6	1,019.9	233.70	5.364		
12,100.0	6,012.9	11,634.5	6,012.9	120.3	117.8	90.00	-6,120.8	104.6	1,253.6	1,016.1	237.49	5.279		
12,200.0	6,012.9	11,734.5	6,012.9	122.2	119.7	90.00	-6,220.8	104.6	1,253.6	1,012.4	241.29	5.196		
12,300.0	6,012.9	11,834.5	6,012.9	124.0	121.6	90.00	-6,320.8	104.6	1,253.6	1,008.6	245.08	5.115		
12,400.0	6,012.9	11,934.5	6,012.9	125.9	123.5	90.00	-6,420.8	104.6	1,253.7	1,004.8	248.88	5.037		
12,500.0	6,012.9	12,034.5	6,012.9	127.7	125.4	90.00	-6,520.8	104.6	1,253.7	1,001.0	252.68	4.961		
12,600.0	6,012.9	12,134.5	6,012.9	129.5	127.4	90.00	-6,620.8	104.6	1,253.7	997.2	256.48	4.888		
12,700.0	6,012.9	12,234.5	6,012.9	131.4	129.3	90.00	-6,720.8	104.6	1,253.7	993.4	260.28	4.817		
12,800.0	6,012.9	12,334.5	6,012.9	133.2	131.2	90.00	-6,820.8	104.6	1,253.7	989.6	264.09	4.747		
12,900.0	6,012.9	12,434.5	6,012.9	135.1	133.1	90.00	-6,920.8	104.6	1,253.7	985.8	267.89	4.680		
13,000.0	6,012.9	12,534.5	6,012.9	136.9	135.0	90.00	-7,020.8	104.6	1,253.7	982.0	271.70	4.614		
13,100.0	6,012.9	12,634.5	6,012.9	138.8	136.9	90.00	-7,120.8	104.6	1,253.7	978.2	275.50	4.551		
13,200.0	6,013.0	12,734.5	6,013.0	140.7	138.8	90.00	-7,220.8	104.6	1,253.7	974.4	279.31	4.489		
13,300.0	6,013.0	12,834.5	6,013.0	142.5	140.7	90.00	-7,320.8	104.6	1,253.7	970.6	283.12	4.428		
13,400.0	6,013.0	12,934.5	6,013.0	144.4	142.6	90.00	-7,420.8	104.6	1,253.7	966.8	286.93	4.369		
13,500.0	6,013.0	13,034.5	6,013.0	146.2	144.6	90.00	-7,520.8	104.6	1,253.7	963.0	290.74	4.312		
13,600.0	6,013.0	13,134.5	6,013.0	148.1	146.5	90.00	-7,620.8	104.6	1,253.7	959.2	294.55	4.256		
13,700.0	6,013.0	13,234.5	6,013.0	150.0	148.4	90.00	-7,720.8	104.6	1,253.7	955.4	298.36	4.202		
13,800.0	6,013.0	13,334.5	6,013.0	151.8	150.3	90.00	-7,820.8	104.6	1,253.7	951.6	302.18	4.149		
13,900.0	6,013.0	13,434.5	6,013.0	153.7	152.2	90.00	-7,920.8	104.5	1,253.8	947.8	305.99	4.097		
14,000.0	6,013.0	13,534.5	6,013.0	155.6	154.1	90.00	-8,020.8	104.5	1,253.8	944.0	309.80	4.047		
14,100.0	6,013.0	13,634.5	6,013.0	157.4	156.0	90.00	-8,120.8	104.5	1,253.8	940.2	313.62	3.998		
14,155.5	6,013.0	13,690.0	6,013.0	158.5	157.1	90.00	-8,176.4	104.5	1,253.8	938.0	315.74	3.971 SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1509A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-119.9	119.9					
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-119.9	119.9	119.7	0.19	641.048		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-119.9	119.9	119.2	0.64	188.331		
300.0	300.0	300.0	300.0	0.5	0.5	-89.98	0.0	-119.9	119.9	118.8	1.09	110.379		
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-119.9	119.9	118.3	1.54	78.067		
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-119.9	119.9	117.9	1.99	60.389 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	140.91	0.0	-119.9	121.2	118.8	2.41	50.222		
700.0	699.8	699.8	699.8	1.4	1.4	142.37	0.0	-119.9	125.3	122.5	2.83	44.237		
800.0	799.6	799.6	799.6	1.6	1.7	144.23	0.0	-119.9	130.9	127.7	3.26	40.133		
900.0	899.4	901.7	901.6	1.8	1.9	145.31	-1.6	-119.2	135.8	132.1	3.68	36.943		
1,000.0	999.1	1,003.8	1,003.7	2.1	2.1	145.01	-6.6	-117.0	139.0	134.9	4.08	34.071		
1,100.0	1,098.9	1,103.8	1,103.4	2.3	2.3	144.14	-13.0	-114.2	141.5	137.0	4.50	31.423		
1,200.0	1,198.6	1,203.7	1,203.1	2.6	2.5	143.29	-19.4	-111.5	144.0	139.0	4.94	29.136		
1,300.0	1,298.4	1,303.7	1,302.8	2.8	2.7	142.47	-25.8	-108.7	146.5	141.1	5.39	27.163		
1,400.0	1,398.1	1,403.6	1,402.5	3.1	2.9	141.69	-32.2	-106.0	149.1	143.2	5.86	25.456		
1,500.0	1,497.9	1,503.6	1,502.2	3.3	3.1	140.92	-38.6	-103.2	151.6	145.3	6.33	23.972		
1,600.0	1,597.6	1,603.5	1,601.9	3.6	3.4	140.19	-45.0	-100.4	154.2	147.4	6.80	22.674		
1,700.0	1,697.4	1,703.5	1,701.6	3.8	3.6	139.48	-51.4	-97.7	156.9	149.6	7.28	21.533		
1,800.0	1,797.2	1,803.4	1,801.3	4.1	3.9	138.79	-57.8	-94.9	159.5	151.7	7.77	20.524		
1,900.0	1,896.9	1,903.4	1,901.0	4.4	4.1	138.12	-64.2	-92.1	162.2	153.9	8.26	19.627		
2,000.0	1,996.7	2,003.3	2,000.7	4.6	4.4	137.48	-70.6	-89.4	164.9	156.1	8.76	18.825		
2,100.0	2,096.4	2,103.2	2,100.4	4.9	4.6	136.85	-77.0	-86.6	167.6	158.3	9.26	18.106		
2,200.0	2,196.2	2,203.2	2,200.1	5.1	4.9	136.25	-83.4	-83.8	170.3	160.6	9.76	17.457		
2,300.0	2,295.9	2,303.1	2,299.8	5.4	5.1	135.67	-89.8	-81.1	173.1	162.8	10.26	16.870		
2,400.0	2,395.7	2,403.1	2,399.5	5.6	5.4	135.10	-96.2	-78.3	175.8	165.1	10.76	16.336		
2,500.0	2,495.5	2,503.0	2,499.2	5.9	5.6	134.55	-102.6	-75.6	178.6	167.4	11.27	15.848		
2,600.0	2,595.2	2,603.0	2,598.9	6.2	5.9	134.02	-109.0	-72.8	181.4	169.7	11.78	15.402		
2,700.0	2,695.0	2,702.9	2,698.6	6.4	6.1	133.51	-115.4	-70.0	184.2	172.0	12.29	14.992		
2,800.0	2,794.7	2,802.9	2,798.3	6.7	6.4	133.01	-121.8	-67.3	187.1	174.3	12.80	14.615		
2,900.0	2,894.5	2,902.8	2,898.0	7.0	6.7	132.52	-128.2	-64.5	189.9	176.6	13.31	14.266		
3,000.0	2,994.2	3,002.8	2,997.7	7.2	6.9	132.05	-134.6	-61.7	192.8	179.0	13.83	13.943		
3,100.0	3,094.0	3,102.7	3,097.4	7.5	7.2	131.59	-141.0	-59.0	195.7	181.3	14.34	13.643		
3,200.0	3,193.7	3,202.7	3,197.1	7.7	7.4	131.15	-147.4	-56.2	198.5	183.7	14.86	13.363		
3,300.0	3,293.5	3,302.6	3,296.8	8.0	7.7	130.72	-153.8	-53.5	201.4	186.1	15.37	13.103		
3,400.0	3,393.3	3,402.6	3,396.5	8.3	8.0	130.30	-160.2	-50.7	204.3	188.4	15.89	12.859		
3,500.0	3,493.0	3,502.5	3,496.2	8.5	8.2	129.90	-166.6	-47.9	207.3	190.8	16.41	12.631		
3,600.0	3,592.8	3,602.5	3,595.9	8.8	8.5	129.50	-173.0	-45.2	210.2	193.3	16.93	12.418		
3,700.0	3,692.5	3,702.4	3,695.7	9.1	8.7	129.12	-179.4	-42.4	213.1	195.7	17.44	12.216		
3,800.0	3,792.3	3,802.3	3,785.4	9.3	9.0	128.74	-185.8	-39.6	216.1	198.1	17.96	12.027		
3,900.0	3,892.0	3,902.3	3,895.1	9.6	9.3	128.38	-192.2	-36.9	219.0	200.5	18.48	11.849		
4,000.0	3,991.8	4,002.2	3,994.8	9.8	9.5	128.02	-198.6	-34.1	222.0	203.0	19.00	11.680		
4,100.0	4,091.6	4,102.2	4,094.5	10.1	9.8	127.68	-205.1	-31.3	224.9	205.4	19.53	11.521		
4,200.0	4,191.3	4,202.1	4,194.2	10.4	10.0	127.34	-211.5	-28.6	227.9	207.9	20.05	11.370		
4,300.0	4,291.1	4,302.1	4,293.9	10.6	10.3	127.02	-217.9	-25.8	230.9	210.3	20.57	11.227		
4,400.0	4,390.8	4,402.0	4,393.6	10.9	10.6	126.70	-224.3	-23.1	233.9	212.8	21.09	11.091		
4,500.0	4,490.6	4,502.0	4,493.3	11.2	10.8	126.39	-230.7	-20.3	236.9	215.3	21.61	10.962		
4,600.0	4,590.3	4,601.9	4,593.0	11.4	11.1	126.08	-237.1	-17.5	239.9	217.8	22.13	10.839		
4,700.0	4,690.1	4,701.9	4,692.7	11.7	11.4	125.79	-243.5	-14.8	242.9	220.3	22.66	10.722		
4,800.0	4,789.9	4,801.8	4,792.4	11.9	11.6	125.50	-249.9	-12.0	246.0	222.8	23.18	10.610		
4,900.0	4,889.6	4,901.8	4,892.1	12.2	11.9	125.22	-256.3	-9.2	249.0	225.3	23.70	10.504		
5,000.0	4,989.4	5,001.7	4,991.8	12.5	12.1	124.94	-262.7	-6.5	252.0	227.8	24.23	10.402		
5,100.0	5,089.1	5,101.7	5,091.5	12.7	12.4	124.68	-269.1	-3.7	255.0	230.3	24.75	10.305		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1509A - HZ - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,200.0	5,188.9	5,201.6	5,191.2	13.0	12.7	124.41	-275.5	-1.0	258.1	232.8	25.27	10.212			
5,300.0	5,288.6	5,301.5	5,290.9	13.3	12.9	124.16	-281.9	1.8	261.1	235.3	25.80	10.122			
5,400.0	5,388.4	5,401.5	5,390.6	13.5	13.2	123.91	-288.3	4.6	264.2	237.9	26.32	10.037			
5,500.0	5,488.1	5,505.0	5,493.4	13.8	13.5	122.76	-298.7	9.1	266.8	239.9	26.92	9.912			
5,600.0	5,587.5	5,606.3	5,590.2	14.1	14.0	118.12	-325.6	20.7	270.3	242.5	27.72	9.749			
5,700.0	5,683.5	5,702.1	5,674.9	14.5	14.6	112.25	-366.4	38.3	283.2	254.5	28.71	9.865			
5,800.0	5,772.3	5,792.5	5,746.2	15.2	15.4	105.97	-417.3	60.3	305.9	275.8	30.02	10.190			
5,900.0	5,850.9	5,878.1	5,803.8	16.1	16.2	99.68	-475.3	85.3	336.8	305.1	31.68	10.630			
6,000.0	5,916.3	5,959.5	5,848.4	17.2	17.2	93.63	-537.8	112.3	373.9	340.2	33.63	11.118			
6,100.0	5,966.1	6,037.8	5,880.7	18.5	18.3	87.99	-603.1	140.5	415.2	379.3	35.85	11.580			
6,200.0	5,998.4	6,113.8	5,901.6	20.1	19.4	82.86	-670.1	169.4	458.8	420.5	38.30	11.980			
6,300.0	6,012.1	6,188.6	5,911.6	21.8	20.5	78.33	-738.2	198.8	503.2	462.4	40.84	12.322			
6,400.0	6,012.6	6,260.9	5,912.6	23.6	21.7	78.31	-804.7	227.1	546.8	502.8	43.97	12.435			
6,500.0	6,012.6	6,330.8	5,912.6	25.3	22.7	79.24	-869.9	252.2	589.1	541.9	47.16	12.492			
6,600.0	6,012.6	6,400.0	5,912.6	27.1	23.7	80.01	-935.3	274.8	630.1	579.7	50.31	12.522			
6,700.0	6,012.6	6,468.5	5,912.6	29.0	24.8	80.67	-1,000.9	294.7	669.6	616.2	53.46	12.526			
6,800.0	6,012.6	6,536.5	5,912.6	30.9	25.8	81.24	-1,066.6	312.2	707.7	651.2	56.54	12.518			
6,900.0	6,012.6	6,600.0	5,912.6	32.7	26.8	81.71	-1,128.4	326.4	744.3	684.8	59.48	12.514			
7,000.0	6,012.6	6,671.1	5,912.6	34.6	27.9	82.15	-1,198.2	339.9	779.3	716.9	62.41	12.487			
7,100.0	6,012.6	6,737.7	5,912.5	36.4	28.9	82.52	-1,264.0	350.1	812.8	747.6	65.16	12.474			
7,200.0	6,012.6	6,800.0	5,912.5	38.2	29.9	82.83	-1,325.9	357.6	844.6	776.9	67.69	12.477			
7,300.0	6,012.6	6,869.7	5,912.5	40.0	31.0	83.13	-1,395.4	363.6	874.8	804.6	70.17	12.466			
7,400.0	6,012.6	6,935.2	5,912.5	41.7	32.1	83.38	-1,460.8	366.9	903.2	830.8	72.40	12.475			
7,500.0	6,012.6	7,001.1	5,912.5	43.4	33.1	83.61	-1,526.6	368.0	930.0	855.5	74.45	12.491			
7,600.0	6,012.6	7,068.3	5,912.5	45.0	34.7	83.84	-1,623.8	368.0	953.3	876.4	76.81	12.410			
7,700.0	6,012.6	7,136.6	5,912.5	46.6	36.3	84.01	-1,722.1	368.0	971.4	892.4	79.03	12.293			
7,800.0	6,012.6	7,205.7	5,912.5	48.1	38.0	84.13	-1,821.3	368.0	984.5	903.5	81.04	12.148			
7,900.0	6,012.6	7,275.4	5,912.5	49.6	39.7	84.20	-1,920.9	368.0	992.4	909.5	82.84	11.979			
8,000.0	6,012.6	7,345.4	5,912.5	51.0	41.4	84.22	-2,020.9	368.0	995.1	910.7	84.40	11.790			
8,100.0	6,012.6	7,415.4	5,912.5	52.4	43.2	84.22	-2,120.9	368.0	995.1	907.3	87.81	11.332			
8,200.0	6,012.7	7,485.4	5,912.5	53.8	44.9	84.22	-2,220.9	368.0	995.1	903.8	91.26	10.903			
8,300.0	6,012.7	7,555.4	5,912.5	55.3	46.7	84.22	-2,320.9	368.0	995.1	900.3	94.74	10.503			
8,400.0	6,012.7	7,625.4	5,912.5	56.8	48.5	84.22	-2,420.9	368.0	995.1	896.8	98.24	10.129			
8,500.0	6,012.7	7,695.4	5,912.5	58.2	50.3	84.22	-2,520.9	368.0	995.1	893.3	101.77	9.778			
8,600.0	6,012.7	7,765.4	5,912.4	59.8	52.1	84.22	-2,620.9	368.0	995.1	889.8	105.32	9.448			
8,700.0	6,012.7	7,835.4	5,912.4	61.3	53.9	84.22	-2,720.9	368.0	995.1	886.2	108.89	9.139			
8,800.0	6,012.7	7,905.4	5,912.4	62.9	55.7	84.22	-2,820.9	368.0	995.1	882.6	112.47	8.847			
8,900.0	6,012.7	7,975.4	5,912.4	64.4	57.5	84.22	-2,920.9	368.0	995.1	879.0	116.07	8.573			
9,000.0	6,012.7	8,045.4	5,912.4	66.0	59.4	84.22	-3,020.9	368.0	995.1	875.4	119.69	8.314			
9,100.0	6,012.7	8,115.4	5,912.4	67.7	61.2	84.22	-3,120.9	368.0	995.1	871.8	123.31	8.070			
9,200.0	6,012.7	8,185.4	5,912.4	69.3	63.1	84.21	-3,220.9	368.0	995.1	868.1	126.95	7.838			
9,300.0	6,012.7	8,255.4	5,912.4	70.9	64.9	84.21	-3,320.9	368.0	995.1	864.5	130.60	7.619			
9,400.0	6,012.7	8,325.4	5,912.4	72.6	66.8	84.21	-3,420.9	368.0	995.1	860.8	134.26	7.412			
9,500.0	6,012.7	8,395.4	5,912.4	74.2	68.6	84.21	-3,520.9	368.0	995.1	857.2	137.93	7.215			
9,600.0	6,012.7	8,465.4	5,912.4	75.9	70.5	84.21	-3,620.9	368.0	995.1	853.5	141.61	7.027			
9,700.0	6,012.7	8,535.4	5,912.4	77.6	72.3	84.21	-3,720.9	368.0	995.1	849.8	145.29	6.849			
9,800.0	6,012.7	8,605.4	5,912.4	79.3	74.2	84.21	-3,820.9	368.1	995.1	846.1	148.98	6.679			
9,900.0	6,012.8	8,675.4	5,912.3	81.0	76.1	84.21	-3,920.9	368.1	995.1	842.4	152.68	6.518			
10,000.0	6,012.8	8,745.4	5,912.3	82.8	77.9	84.21	-4,020.9	368.1	995.1	838.7	156.38	6.363			
10,100.0	6,012.8	8,815.4	5,912.3	84.5	79.8	84.21	-4,120.9	368.1	995.1	835.0	160.10	6.216			
10,200.0	6,012.8	8,885.4	5,912.3	86.2	81.7	84.21	-4,220.9	368.1	995.1	831.3	163.81	6.075			
10,300.0	6,012.8	8,955.4	5,912.3	88.0	83.6	84.21	-4,320.9	368.1	995.1	827.6	167.53	5.940			

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1509A - HZ - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis		Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
10,400.0	6,012.8	9,895.4	5,912.3	89.7	85.4	84.20	-4,420.9	368.1	995.1	823.9	171.26	5.811	
10,500.0	6,012.8	9,995.4	5,912.3	91.5	87.3	84.20	-4,520.9	368.1	995.1	820.1	174.99	5.687	
10,600.0	6,012.8	10,095.4	5,912.3	93.3	89.2	84.20	-4,620.9	368.1	995.1	816.4	178.72	5.568	
10,700.0	6,012.8	10,195.4	5,912.3	95.0	91.1	84.20	-4,720.9	368.1	995.1	812.7	182.46	5.454	
10,800.0	6,012.8	10,295.4	5,912.3	96.8	93.0	84.20	-4,820.9	368.1	995.1	808.9	186.20	5.345	
10,900.0	6,012.8	10,395.4	5,912.3	98.6	94.9	84.20	-4,920.9	368.1	995.1	805.2	189.94	5.239	
11,000.0	6,012.8	10,495.4	5,912.3	100.4	96.8	84.20	-5,020.9	368.1	995.2	801.5	193.69	5.138	
11,100.0	6,012.8	10,595.4	5,912.3	102.2	98.6	84.20	-5,120.9	368.1	995.2	797.7	197.44	5.040	
11,200.0	6,012.8	10,695.4	5,912.2	104.0	100.5	84.20	-5,220.9	368.1	995.2	794.0	201.20	4.946	
11,300.0	6,012.8	10,795.4	5,912.2	105.8	102.4	84.20	-5,320.9	368.1	995.2	790.2	204.95	4.856	
11,400.0	6,012.8	10,895.4	5,912.2	107.6	104.3	84.20	-5,420.9	368.1	995.2	786.5	208.71	4.768	
11,500.0	6,012.9	10,995.4	5,912.2	109.4	106.2	84.20	-5,520.9	368.1	995.2	782.7	212.47	4.684	
11,600.0	6,012.9	11,095.4	5,912.2	111.2	108.1	84.20	-5,620.9	368.1	995.2	778.9	216.24	4.602	
11,700.0	6,012.9	11,195.4	5,912.2	113.0	110.0	84.19	-5,720.9	368.1	995.2	775.2	220.00	4.523	
11,800.0	6,012.9	11,295.4	5,912.2	114.9	111.9	84.19	-5,820.9	368.1	995.2	771.4	223.77	4.447	
11,900.0	6,012.9	11,395.4	5,912.2	116.7	113.8	84.19	-5,920.9	368.1	995.2	767.6	227.54	4.374	
12,000.0	6,012.9	11,495.4	5,912.2	118.5	115.7	84.19	-6,020.9	368.1	995.2	763.9	231.31	4.302	
12,100.0	6,012.9	11,595.4	5,912.2	120.3	117.6	84.19	-6,120.9	368.1	995.2	760.1	235.09	4.233	
12,200.0	6,012.9	11,695.4	5,912.2	122.2	119.5	84.19	-6,220.9	368.1	995.2	756.3	238.86	4.166	
12,300.0	6,012.9	11,795.4	5,912.2	124.0	121.4	84.19	-6,320.9	368.1	995.2	752.6	242.64	4.102	
12,400.0	6,012.9	11,895.4	5,912.1	125.9	123.3	84.19	-6,420.9	368.1	995.2	748.8	246.42	4.039	
12,500.0	6,012.9	11,995.4	5,912.1	127.7	125.2	84.19	-6,520.9	368.2	995.2	745.0	250.20	3.978	
12,600.0	6,012.9	12,095.4	5,912.1	129.5	127.1	84.19	-6,620.9	368.2	995.2	741.2	253.98	3.918	
12,700.0	6,012.9	12,195.4	5,912.1	131.4	129.0	84.19	-6,720.9	368.2	995.2	737.4	257.76	3.861	
12,800.0	6,012.9	12,295.4	5,912.1	133.2	130.9	84.19	-6,820.9	368.2	995.2	733.7	261.54	3.805	
12,900.0	6,012.9	12,395.4	5,912.1	135.1	132.8	84.19	-6,920.9	368.2	995.2	729.9	265.33	3.751	
13,000.0	6,012.9	12,495.4	5,912.1	136.9	134.7	84.18	-7,020.9	368.2	995.2	726.1	269.11	3.698	
13,100.0	6,012.9	12,595.4	5,912.1	138.8	136.6	84.18	-7,120.9	368.2	995.2	722.3	272.90	3.647	
13,200.0	6,013.0	12,695.4	5,912.1	140.7	138.5	84.18	-7,220.9	368.2	995.2	718.5	276.69	3.597	
13,300.0	6,013.0	12,795.4	5,912.1	142.5	140.4	84.18	-7,320.9	368.2	995.2	714.7	280.48	3.548	
13,400.0	6,013.0	12,895.4	5,912.1	144.4	142.3	84.18	-7,420.9	368.2	995.2	711.0	284.27	3.501	
13,500.0	6,013.0	12,995.4	5,912.1	146.2	144.3	84.18	-7,520.9	368.2	995.2	707.2	288.06	3.455	
13,600.0	6,013.0	13,095.4	5,912.1	148.1	146.2	84.18	-7,620.9	368.2	995.2	703.4	291.85	3.410	
13,700.0	6,013.0	13,195.4	5,912.0	150.0	148.1	84.18	-7,720.9	368.2	995.2	699.6	295.64	3.366	
13,800.0	6,013.0	13,295.4	5,912.0	151.8	150.0	84.18	-7,820.9	368.2	995.2	695.8	299.44	3.324	
13,900.0	6,013.0	13,395.4	5,912.0	153.7	151.9	84.18	-7,920.9	368.2	995.2	692.0	303.23	3.282	
14,000.0	6,013.0	13,495.4	5,912.0	155.6	153.8	84.18	-8,020.9	368.2	995.2	688.2	307.03	3.242	
14,100.0	6,013.0	13,595.4	5,912.0	157.4	155.7	84.18	-8,120.9	368.2	995.2	684.4	310.82	3.202	
14,155.5	6,013.0	13,650.9	5,912.0	158.5	156.8	84.18	-8,176.4	368.2	995.2	682.3	312.93	3.180 SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1510B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-86.8	86.8					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-86.8	86.8	86.6	0.19	464.349		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-86.8	86.8	86.2	0.64	136.419		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-86.8	86.8	85.7	1.09	79.954		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-86.8	86.8	85.3	1.54	56.548		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-86.8	86.8	84.9	1.99	43.743	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	141.11	0.0	-86.8	88.2	85.8	2.41	36.534		
700.0	699.8	699.8	699.8	1.4	1.4	143.10	0.0	-86.8	92.3	89.5	2.83	32.585		
800.0	799.6	801.7	801.7	1.6	1.6	144.76	-1.5	-85.8	96.9	93.7	3.24	29.916		
900.0	899.4	903.8	903.6	1.8	1.8	144.65	-6.0	-82.8	99.3	95.7	3.64	27.287		
1,000.0	999.1	1,003.7	1,003.3	2.1	2.0	143.81	-11.8	-79.0	100.8	96.7	4.06	24.811		
1,100.0	1,098.9	1,103.7	1,103.1	2.3	2.3	142.99	-17.7	-75.2	102.2	97.7	4.50	22.717		
1,200.0	1,198.6	1,203.7	1,202.8	2.6	2.5	142.20	-23.5	-71.3	103.7	98.7	4.95	20.943		
1,300.0	1,298.4	1,303.7	1,302.5	2.8	2.7	141.42	-29.3	-67.5	105.2	99.8	5.41	19.433		
1,400.0	1,398.1	1,403.7	1,402.3	3.1	3.0	140.67	-35.1	-63.6	106.7	100.8	5.88	18.139		
1,500.0	1,497.9	1,503.6	1,502.0	3.3	3.2	139.94	-40.9	-59.8	108.2	101.9	6.36	17.020		
1,600.0	1,597.6	1,603.6	1,601.7	3.6	3.4	139.23	-46.8	-55.9	109.8	102.9	6.84	16.048		
1,700.0	1,697.4	1,703.6	1,701.5	3.8	3.7	138.54	-52.6	-52.1	111.3	104.0	7.33	15.195		
1,800.0	1,797.2	1,803.6	1,801.2	4.1	3.9	137.87	-58.4	-48.2	112.9	105.1	7.82	14.444		
1,900.0	1,896.9	1,903.6	1,900.9	4.4	4.2	137.21	-64.2	-44.4	114.5	106.2	8.31	13.777		
2,000.0	1,996.7	2,003.5	2,000.7	4.6	4.4	136.58	-70.0	-40.6	116.1	107.3	8.81	13.183		
2,100.0	2,096.4	2,103.5	2,100.4	4.9	4.7	135.96	-75.9	-36.7	117.7	108.4	9.31	12.649		
2,200.0	2,196.2	2,203.5	2,200.2	5.1	5.0	135.36	-81.7	-32.9	119.4	109.6	9.81	12.169		
2,300.0	2,295.9	2,303.5	2,299.9	5.4	5.2	134.78	-87.5	-29.0	121.0	110.7	10.32	11.734		
2,400.0	2,395.7	2,403.4	2,399.6	5.6	5.5	134.21	-93.3	-25.2	122.7	111.9	10.82	11.339		
2,500.0	2,495.5	2,503.4	2,499.4	5.9	5.7	133.65	-99.1	-21.3	124.4	113.0	11.33	10.978		
2,600.0	2,595.2	2,603.4	2,599.1	6.2	6.0	133.12	-104.9	-17.5	126.1	114.2	11.84	10.648		
2,700.0	2,695.0	2,703.4	2,698.8	6.4	6.2	132.59	-110.8	-13.6	127.8	115.4	12.35	10.345		
2,800.0	2,794.7	2,803.4	2,798.6	6.7	6.5	132.08	-116.6	-9.8	129.5	116.6	12.86	10.065		
2,900.0	2,894.5	2,903.3	2,898.3	7.0	6.8	131.58	-122.4	-6.0	131.2	117.8	13.37	9.807		
3,000.0	2,994.2	3,003.3	2,998.0	7.2	7.0	131.10	-128.2	-2.1	132.9	119.0	13.89	9.568		
3,100.0	3,094.0	3,103.3	3,097.8	7.5	7.3	130.63	-134.0	1.7	134.6	120.2	14.40	9.347		
3,200.0	3,193.7	3,203.3	3,197.5	7.7	7.5	130.17	-139.9	5.6	136.4	121.5	14.92	9.140		
3,300.0	3,293.5	3,303.3	3,297.2	8.0	7.8	129.72	-145.7	9.4	138.1	122.7	15.44	8.947		
3,400.0	3,393.3	3,403.2	3,397.0	8.3	8.1	129.28	-151.5	13.3	139.9	123.9	15.96	8.767		
3,500.0	3,493.0	3,503.2	3,496.7	8.5	8.3	128.86	-157.3	17.1	141.7	125.2	16.47	8.599		
3,600.0	3,592.8	3,603.2	3,596.4	8.8	8.6	128.44	-163.1	20.9	143.4	126.4	16.99	8.440		
3,700.0	3,692.5	3,703.2	3,696.2	9.1	8.9	128.04	-169.0	24.8	145.2	127.7	17.51	8.292		
3,800.0	3,792.3	3,803.2	3,795.9	9.3	9.1	127.64	-174.8	28.6	147.0	129.0	18.03	8.151		
3,900.0	3,892.0	3,903.1	3,895.7	9.6	9.4	127.26	-180.6	32.5	148.8	130.2	18.56	8.019		
4,000.0	3,991.8	4,003.1	3,995.4	9.8	9.6	126.88	-186.4	36.3	150.6	131.5	19.08	7.895		
4,100.0	4,091.6	4,103.1	4,095.1	10.1	9.9	126.51	-192.2	40.2	152.4	132.8	19.60	7.777		
4,200.0	4,191.3	4,203.1	4,194.9	10.4	10.2	126.15	-198.1	44.0	154.2	134.1	20.12	7.665		
4,300.0	4,291.1	4,303.0	4,294.6	10.6	10.4	125.80	-203.9	47.9	156.1	135.4	20.64	7.559		
4,400.0	4,390.8	4,403.0	4,394.3	10.9	10.7	125.46	-209.7	51.7	157.9	136.7	21.17	7.459		
4,500.0	4,490.6	4,503.0	4,494.1	11.2	11.0	125.12	-215.5	55.5	159.7	138.0	21.69	7.363		
4,600.0	4,590.3	4,603.0	4,593.8	11.4	11.2	124.80	-221.3	59.4	161.6	139.3	22.22	7.272		
4,700.0	4,690.1	4,703.0	4,693.5	11.7	11.5	124.48	-227.1	63.2	163.4	140.7	22.74	7.186		
4,800.0	4,789.9	4,802.9	4,793.3	11.9	11.7	124.17	-233.0	67.1	165.3	142.0	23.26	7.103		
4,900.0	4,889.6	4,902.9	4,893.0	12.2	12.0	123.86	-238.8	70.9	167.1	143.3	23.79	7.024		
5,000.0	4,989.4	5,002.9	4,992.7	12.5	12.3	123.56	-244.6	74.8	169.0	144.6	24.31	6.949		
5,100.0	5,089.1	5,102.9	5,092.5	12.7	12.5	123.27	-250.4	78.6	170.8	146.0	24.84	6.877		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1510B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,202.9	5,192.2	13.0	12.8	122.98	-256.2	82.5	172.7	147.3	25.37	6.808		
5,300.0	5,288.6	5,302.8	5,291.9	13.3	13.1	122.70	-262.1	86.3	174.6	148.7	25.89	6.742		
5,400.0	5,388.4	5,402.8	5,391.7	13.5	13.3	122.43	-267.9	90.1	176.4	150.0	26.42	6.679		
5,500.0	5,488.1	5,502.8	5,491.4	13.8	13.6	122.16	-273.7	94.0	178.3	151.4	26.94	6.618		
5,600.0	5,587.5	5,608.9	5,596.7	14.1	13.9	121.33	-283.6	100.6	181.0	153.4	27.51	6.577		
5,700.0	5,683.5	5,717.7	5,700.3	14.5	14.4	118.79	-311.0	118.6	187.9	159.6	28.30	6.639		
5,800.0	5,772.3	5,824.7	5,793.3	15.2	15.2	114.94	-354.8	147.6	199.7	170.2	29.48	6.774		
5,900.0	5,850.9	5,929.4	5,872.1	16.1	16.1	110.27	-412.1	185.4	216.3	185.1	31.22	6.927		
6,000.0	5,916.3	6,031.5	5,934.2	17.2	17.3	105.25	-479.5	230.0	237.3	203.7	33.57	7.068		
6,100.0	5,966.1	6,131.3	5,978.6	18.5	18.6	100.21	-554.0	279.1	261.9	225.5	36.42	7.191		
6,200.0	5,998.4	6,229.0	6,004.8	20.1	20.1	95.38	-632.4	331.0	289.1	249.5	39.64	7.295		
6,300.0	6,012.1	6,321.8	6,013.1	21.8	21.6	90.94	-709.4	381.8	317.9	274.9	43.03	7.388		
6,400.0	6,012.6	6,400.0	6,013.1	23.6	22.9	90.08	-775.5	423.6	347.8	301.5	46.30	7.511		
6,500.0	6,012.6	6,486.5	6,013.1	25.3	24.2	90.08	-850.6	466.6	376.6	327.0	49.60	7.594		
6,600.0	6,012.6	6,566.2	6,013.1	27.1	25.5	90.07	-921.4	503.2	404.6	351.7	52.86	7.655		
6,700.0	6,012.6	6,645.3	6,013.1	29.0	26.8	90.07	-993.0	536.5	431.5	375.4	56.09	7.694		
6,800.0	6,012.6	6,723.6	6,013.1	30.9	28.1	90.06	-1,065.4	566.5	457.4	398.1	59.25	7.720		
6,900.0	6,012.6	6,800.0	6,013.1	32.7	29.4	90.06	-1,137.1	593.0	482.1	419.8	62.29	7.740		
7,000.0	6,012.6	6,878.6	6,013.1	34.6	30.7	90.06	-1,211.8	617.2	505.7	440.4	65.24	7.751		
7,100.0	6,012.6	6,955.3	6,013.1	36.4	32.0	90.05	-1,285.7	637.8	528.1	460.1	68.03	7.763		
7,200.0	6,012.6	7,031.5	6,013.1	38.2	33.2	90.05	-1,359.9	655.3	549.3	478.6	70.64	7.776		
7,300.0	6,012.6	7,100.0	6,013.1	40.0	34.3	90.05	-1,427.1	668.5	569.3	496.4	72.95	7.804		
7,400.0	6,012.6	7,182.7	6,013.1	41.7	35.7	90.05	-1,508.8	681.3	588.0	512.7	75.28	7.810		
7,500.0	6,012.6	7,257.7	6,013.1	43.4	36.9	90.04	-1,583.3	689.8	605.4	528.1	77.29	7.833		
7,600.0	6,012.6	7,332.4	6,013.1	45.0	38.0	90.04	-1,657.8	695.3	621.6	542.5	79.07	7.861		
7,700.0	6,012.6	7,406.8	6,013.1	46.6	39.2	90.04	-1,732.1	697.9	636.4	555.8	80.62	7.894		
7,800.0	6,012.6	7,495.9	6,013.1	48.1	40.6	90.04	-1,821.2	698.2	649.2	567.0	82.18	7.900		
7,900.0	6,012.6	7,595.6	6,013.1	49.6	42.2	90.04	-1,920.9	698.2	657.1	573.5	83.69	7.852		
8,000.0	6,012.6	7,695.5	6,013.1	51.0	43.8	90.04	-2,020.8	698.2	659.8	574.9	84.97	7.765		
8,100.0	6,012.6	7,795.5	6,013.1	52.4	45.4	90.04	-2,120.8	698.1	659.9	571.5	88.35	7.469		
8,200.0	6,012.7	7,895.5	6,013.1	53.8	47.1	90.04	-2,220.8	698.1	659.9	568.1	91.77	7.190		
8,300.0	6,012.7	7,995.5	6,013.1	55.3	48.8	90.04	-2,320.8	698.1	659.9	564.6	95.22	6.930		
8,400.0	6,012.7	8,095.5	6,013.1	56.8	50.4	90.03	-2,420.8	698.1	659.9	561.2	98.70	6.686		
8,500.0	6,012.7	8,195.5	6,013.1	58.2	52.2	90.03	-2,520.8	698.1	659.9	557.7	102.21	6.456		
8,600.0	6,012.7	8,295.5	6,013.1	59.8	53.9	90.03	-2,620.8	698.1	659.9	554.2	105.74	6.241		
8,700.0	6,012.7	8,395.5	6,013.1	61.3	55.6	90.03	-2,720.8	698.1	659.9	550.6	109.29	6.038		
8,800.0	6,012.7	8,495.5	6,013.1	62.9	57.4	90.03	-2,820.8	698.1	659.9	547.0	112.86	5.847		
8,900.0	6,012.7	8,595.5	6,013.1	64.4	59.1	90.03	-2,920.8	698.1	659.9	543.5	116.45	5.667		
9,000.0	6,012.7	8,695.5	6,013.1	66.0	60.9	90.03	-3,020.8	698.1	659.9	539.9	120.05	5.497		
9,100.0	6,012.7	8,795.5	6,013.1	67.7	62.7	90.03	-3,120.8	698.1	659.9	536.3	123.67	5.336		
9,200.0	6,012.7	8,895.5	6,013.1	69.3	64.5	90.03	-3,220.8	698.1	659.9	532.6	127.30	5.184		
9,300.0	6,012.7	8,995.5	6,013.1	70.9	66.2	90.03	-3,320.8	698.1	659.9	529.0	130.94	5.040		
9,400.0	6,012.7	9,095.5	6,013.1	72.6	68.0	90.03	-3,420.8	698.1	660.0	525.4	134.60	4.903		
9,500.0	6,012.7	9,195.5	6,013.1	74.2	69.9	90.03	-3,520.8	698.1	660.0	521.7	138.26	4.773		
9,600.0	6,012.7	9,295.5	6,013.1	75.9	71.7	90.03	-3,620.8	698.1	660.0	518.0	141.94	4.650		
9,700.0	6,012.7	9,395.5	6,013.0	77.6	73.5	90.03	-3,720.8	698.1	660.0	514.4	145.62	4.532		
9,800.0	6,012.7	9,495.5	6,013.0	79.3	75.3	90.03	-3,820.8	698.1	660.0	510.7	149.31	4.420		
9,900.0	6,012.8	9,595.5	6,013.0	81.0	77.1	90.03	-3,920.8	698.1	660.0	507.0	153.01	4.313		
10,000.0	6,012.8	9,695.5	6,013.0	82.8	79.0	90.02	-4,020.8	698.1	660.0	503.3	156.72	4.211		
10,100.0	6,012.8	9,795.5	6,013.0	84.5	80.8	90.02	-4,120.8	698.1	660.0	499.6	160.43	4.114		
10,200.0	6,012.8	9,895.5	6,013.0	86.2	82.6	90.02	-4,220.8	698.1	660.0	495.9	164.15	4.021		
10,300.0	6,012.8	9,995.5	6,013.0	88.0	84.5	90.02	-4,320.8	698.1	660.0	492.1	167.88	3.932		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1510B - HZ - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	6,012.8	10,095.5	6,013.0	89.7	86.3	90.02	-4,420.8	698.1	660.0	488.4	171.60	3.846	
10,500.0	6,012.8	10,195.5	6,013.0	91.5	88.2	90.02	-4,520.8	698.1	660.0	484.7	175.34	3.764	
10,600.0	6,012.8	10,295.5	6,013.0	93.3	90.0	90.02	-4,620.8	698.1	660.0	481.0	179.08	3.686	
10,700.0	6,012.8	10,395.5	6,013.0	95.0	91.9	90.02	-4,720.8	698.1	660.1	477.2	182.82	3.610	
10,800.0	6,012.8	10,495.5	6,013.0	96.8	93.8	90.02	-4,820.8	698.1	660.1	473.5	186.57	3.538	
10,900.0	6,012.8	10,595.5	6,013.0	98.6	95.6	90.02	-4,920.8	698.1	660.1	469.7	190.32	3.468	
11,000.0	6,012.8	10,695.5	6,013.0	100.4	97.5	90.02	-5,020.8	698.1	660.1	466.0	194.08	3.401	
11,100.0	6,012.8	10,795.5	6,013.0	102.2	99.4	90.02	-5,120.8	698.1	660.1	462.3	197.83	3.337	
11,200.0	6,012.8	10,895.5	6,013.0	104.0	101.2	90.02	-5,220.8	698.1	660.1	458.5	201.60	3.274	
11,300.0	6,012.8	10,995.5	6,013.0	105.8	103.1	90.02	-5,320.8	698.1	660.1	454.7	205.36	3.214	
11,400.0	6,012.8	11,095.5	6,013.0	107.6	105.0	90.02	-5,420.8	698.1	660.1	451.0	209.13	3.156	
11,500.0	6,012.9	11,195.5	6,013.0	109.4	106.8	90.02	-5,520.8	698.1	660.1	447.2	212.90	3.101	
11,600.0	6,012.9	11,295.5	6,013.0	111.2	108.7	90.02	-5,620.8	698.1	660.1	443.5	216.67	3.047	
11,700.0	6,012.9	11,395.5	6,013.0	113.0	110.6	90.01	-5,720.8	698.1	660.1	439.7	220.45	2.995	
11,800.0	6,012.9	11,495.5	6,013.0	114.9	112.5	90.01	-5,820.8	698.1	660.1	435.9	224.22	2.944	
11,900.0	6,012.9	11,595.5	6,013.0	116.7	114.4	90.01	-5,920.8	698.1	660.1	432.1	228.00	2.895	
12,000.0	6,012.9	11,695.5	6,013.0	118.5	116.2	90.01	-6,020.8	698.0	660.2	428.4	231.79	2.848	
12,100.0	6,012.9	11,795.5	6,013.0	120.3	118.1	90.01	-6,120.8	698.0	660.2	424.6	235.57	2.802	
12,200.0	6,012.9	11,895.5	6,013.0	122.2	120.0	90.01	-6,220.8	698.0	660.2	420.8	239.36	2.758	
12,300.0	6,012.9	11,995.5	6,013.0	124.0	121.9	90.01	-6,320.8	698.0	660.2	417.0	243.14	2.715	
12,400.0	6,012.9	12,095.5	6,013.0	125.9	123.8	90.01	-6,420.8	698.0	660.2	413.3	246.93	2.674	
12,500.0	6,012.9	12,195.5	6,013.0	127.7	125.7	90.01	-6,520.8	698.0	660.2	409.5	250.72	2.633	
12,600.0	6,012.9	12,295.5	6,013.0	129.5	127.5	90.01	-6,620.8	698.0	660.2	405.7	254.52	2.594	
12,700.0	6,012.9	12,395.5	6,013.0	131.4	129.4	90.01	-6,720.8	698.0	660.2	401.9	258.31	2.556	
12,800.0	6,012.9	12,495.5	6,013.0	133.2	131.3	90.01	-6,820.8	698.0	660.2	398.1	262.11	2.519	
12,900.0	6,012.9	12,595.5	6,013.0	135.1	133.2	90.01	-6,920.8	698.0	660.2	394.3	265.90	2.483	
13,000.0	6,012.9	12,695.5	6,013.0	136.9	135.1	90.01	-7,020.8	698.0	660.2	390.5	269.70	2.448	
13,100.0	6,012.9	12,795.5	6,013.0	138.8	137.0	90.01	-7,120.8	698.0	660.2	386.7	273.50	2.414	
13,200.0	6,013.0	12,895.5	6,013.0	140.7	138.9	90.01	-7,220.8	698.0	660.3	382.9	277.30	2.381	
13,300.0	6,013.0	12,995.5	6,013.0	142.5	140.8	90.01	-7,320.8	698.0	660.3	379.2	281.10	2.349	
13,400.0	6,013.0	13,095.5	6,013.0	144.4	142.7	90.00	-7,420.8	698.0	660.3	375.4	284.91	2.317	
13,500.0	6,013.0	13,195.5	6,013.0	146.2	144.6	90.00	-7,520.8	698.0	660.3	371.6	288.71	2.287	
13,600.0	6,013.0	13,295.5	6,013.0	148.1	146.5	90.00	-7,620.8	698.0	660.3	367.8	292.51	2.257	
13,700.0	6,013.0	13,395.5	6,013.0	150.0	148.4	90.00	-7,720.8	698.0	660.3	364.0	296.32	2.228	
13,800.0	6,013.0	13,495.5	6,013.0	151.8	150.3	90.00	-7,820.8	698.0	660.3	360.2	300.13	2.200	
13,900.0	6,013.0	13,595.5	6,013.0	153.7	152.2	90.00	-7,920.8	698.0	660.3	356.4	303.94	2.173	
14,000.0	6,013.0	13,695.5	6,013.0	155.6	154.1	90.00	-8,020.8	698.0	660.3	352.6	307.74	2.146	
14,100.0	6,013.0	13,795.5	6,013.0	157.4	156.0	90.00	-8,120.8	698.0	660.3	348.8	311.55	2.119	
14,155.5	6,013.0	13,851.0	6,013.0	158.5	157.0	90.00	-8,176.4	698.0	660.3	346.7	313.67	2.105 SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1511A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-53.8	53.8					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-53.8	53.8	53.6	0.19	287.650		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-53.8	53.8	53.2	0.64	84.507		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-53.8	53.8	52.7	1.09	49.529		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-53.8	53.8	52.3	1.54	35.030		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-53.8	53.8	51.8	1.99	27.097 CC		
600.0	600.0	600.0	600.0	1.2	1.2	141.54	0.0	-53.8	55.1	52.7	2.41	22.846		
700.0	699.8	701.3	701.3	1.4	1.4	143.49	-1.3	-52.6	58.1	55.2	2.81	20.660		
800.0	799.6	802.8	802.6	1.6	1.6	143.93	-5.3	-48.9	59.9	56.7	3.21	18.679		
900.0	899.4	902.8	902.4	1.8	1.8	143.24	-10.4	-44.2	60.5	56.9	3.62	16.691		
1,000.0	999.1	1,002.8	1,002.1	2.1	2.0	142.57	-15.5	-39.5	61.1	57.0	4.06	15.048		
1,100.0	1,098.9	1,102.8	1,101.9	2.3	2.3	141.91	-20.7	-34.8	61.7	57.2	4.51	13.686		
1,200.0	1,198.6	1,202.8	1,201.6	2.6	2.5	141.27	-25.8	-30.0	62.4	57.4	4.97	12.548		
1,300.0	1,298.4	1,302.8	1,301.4	2.8	2.8	140.64	-30.9	-25.3	63.0	57.6	5.44	11.586		
1,400.0	1,398.1	1,402.8	1,401.1	3.1	3.0	140.02	-36.0	-20.6	63.6	57.7	5.91	10.767		
1,500.0	1,497.9	1,502.7	1,500.9	3.3	3.3	139.42	-41.2	-15.9	64.3	57.9	6.39	10.062		
1,600.0	1,597.6	1,602.7	1,600.6	3.6	3.5	138.82	-46.3	-11.1	65.0	58.1	6.87	9.451		
1,700.0	1,697.4	1,702.7	1,700.4	3.8	3.8	138.24	-51.4	-6.4	65.6	58.3	7.36	8.916		
1,800.0	1,797.2	1,802.7	1,800.1	4.1	4.0	137.67	-56.6	-1.7	66.3	58.5	7.85	8.446		
1,900.0	1,896.9	1,902.7	1,899.9	4.4	4.3	137.12	-61.7	3.1	67.0	58.6	8.34	8.028		
2,000.0	1,996.7	2,002.7	1,999.6	4.6	4.5	136.57	-66.8	7.8	67.7	58.8	8.84	7.656		
2,100.0	2,096.4	2,102.7	2,099.4	4.9	4.8	136.04	-72.0	12.5	68.4	59.0	9.34	7.322		
2,200.0	2,196.2	2,202.7	2,199.1	5.1	5.0	135.51	-77.1	17.2	69.1	59.2	9.84	7.021		
2,300.0	2,295.9	2,302.7	2,298.9	5.4	5.3	135.00	-82.2	22.0	69.8	59.4	10.34	6.749		
2,400.0	2,395.7	2,402.7	2,398.6	5.6	5.6	134.49	-87.4	26.7	70.5	59.6	10.84	6.501		
2,500.0	2,495.5	2,502.7	2,498.4	5.9	5.8	134.00	-92.5	31.4	71.2	59.9	11.35	6.275		
2,600.0	2,595.2	2,602.7	2,598.1	6.2	6.1	133.52	-97.6	36.1	71.9	60.1	11.86	6.067		
2,700.0	2,695.0	2,702.7	2,697.9	6.4	6.3	133.04	-102.7	40.9	72.7	60.3	12.36	5.877		
2,800.0	2,794.7	2,802.7	2,797.6	6.7	6.6	132.58	-107.9	45.6	73.4	60.5	12.87	5.701		
2,900.0	2,894.5	2,902.7	2,897.4	7.0	6.9	132.12	-113.0	50.3	74.1	60.7	13.38	5.539		
3,000.0	2,994.2	3,002.7	2,997.2	7.2	7.1	131.68	-118.1	55.0	74.9	61.0	13.89	5.389		
3,100.0	3,094.0	3,102.7	3,096.9	7.5	7.4	131.24	-123.3	59.8	75.6	61.2	14.41	5.249		
3,200.0	3,193.7	3,202.7	3,196.7	7.7	7.6	130.81	-128.4	64.5	76.4	61.4	14.92	5.118		
3,300.0	3,293.5	3,302.7	3,296.4	8.0	7.9	130.39	-133.5	69.2	77.1	61.7	15.43	4.997		
3,400.0	3,393.3	3,402.7	3,396.2	8.3	8.2	129.98	-138.7	73.9	77.9	61.9	15.95	4.883		
3,500.0	3,493.0	3,502.7	3,495.9	8.5	8.4	129.57	-143.8	78.7	78.6	62.2	16.47	4.776		
3,600.0	3,592.8	3,602.7	3,595.7	8.8	8.7	129.18	-148.9	83.4	79.4	62.4	16.98	4.676		
3,700.0	3,692.5	3,702.6	3,695.4	9.1	9.0	128.79	-154.0	88.1	80.2	62.7	17.50	4.582		
3,800.0	3,792.3	3,802.6	3,795.2	9.3	9.2	128.41	-159.2	92.8	81.0	62.9	18.02	4.493		
3,900.0	3,892.0	3,902.6	3,894.9	9.6	9.5	128.03	-164.3	97.6	81.7	63.2	18.54	4.409		
4,000.0	3,991.8	4,002.6	3,994.7	9.8	9.7	127.67	-169.4	102.3	82.5	63.5	19.06	4.330		
4,100.0	4,091.6	4,102.6	4,094.4	10.1	10.0	127.30	-174.6	107.0	83.3	63.7	19.58	4.255		
4,200.0	4,191.3	4,202.6	4,194.2	10.4	10.3	126.95	-179.7	111.7	84.1	64.0	20.10	4.184		
4,300.0	4,291.1	4,302.6	4,293.9	10.6	10.5	126.60	-184.8	116.5	84.9	64.3	20.62	4.117		
4,400.0	4,390.8	4,402.6	4,393.7	10.9	10.8	126.26	-190.0	121.2	85.7	64.5	21.14	4.053		
4,500.0	4,490.6	4,502.6	4,493.4	11.2	11.1	125.93	-195.1	125.9	86.5	64.8	21.66	3.992		
4,600.0	4,590.3	4,602.6	4,593.2	11.4	11.3	125.60	-200.2	130.7	87.3	65.1	22.18	3.934		
4,700.0	4,690.1	4,702.6	4,692.9	11.7	11.6	125.28	-205.3	135.4	88.1	65.4	22.70	3.879		
4,800.0	4,789.9	4,802.6	4,792.7	11.9	11.8	124.96	-210.5	140.1	88.9	65.6	23.23	3.826		
4,900.0	4,889.6	4,902.6	4,892.4	12.2	12.1	124.65	-215.6	144.8	89.7	65.9	23.75	3.776		
5,000.0	4,989.4	5,002.6	4,992.2	12.5	12.4	124.35	-220.7	149.6	90.5	66.2	24.27	3.728		
5,100.0	5,089.1	5,102.6	5,091.9	12.7	12.6	124.05	-225.9	154.3	91.3	66.5	24.80	3.682		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1511A - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,202.6	5,191.7	13.0	12.9	123.75	-231.0	159.0	92.1	66.8	25.32	3.638		
5,300.0	5,288.6	5,302.6	5,291.4	13.3	13.2	123.46	-236.1	163.7	92.9	67.1	25.85	3.596		
5,400.0	5,388.4	5,402.6	5,391.2	13.5	13.4	123.18	-241.3	168.5	93.8	67.4	26.37	3.555		
5,500.0	5,488.1	5,507.5	5,495.4	13.8	13.7	120.37	-249.9	176.4	92.9	65.8	27.05	3.434		
5,600.0	5,587.5	5,610.8	5,593.9	14.1	14.2	108.03	-272.4	197.1	88.5	60.4	28.17	3.142		
5,619.8	5,606.9	5,630.7	5,612.1	14.2	14.4	105.25	-278.3	202.6	88.4	59.9	28.43	3.109		
5,700.0	5,683.5	5,709.5	5,680.6	14.5	14.9	94.06	-306.8	228.8	90.9	61.4	29.42	3.089		
5,800.0	5,772.3	5,804.3	5,754.2	15.2	15.7	81.70	-350.6	269.1	100.3	69.7	30.60	3.277		
5,900.0	5,850.9	5,895.7	5,813.8	16.1	16.7	72.26	-401.4	315.9	114.6	83.1	31.58	3.631		
6,000.0	5,916.3	5,984.2	5,859.3	17.2	17.9	65.62	-457.2	367.4	131.6	99.2	32.45	4.056		
6,100.0	5,966.1	6,070.5	5,890.5	18.5	19.2	61.18	-516.3	421.8	149.4	115.9	33.48	4.463		
6,200.0	5,998.4	6,155.1	5,907.9	20.1	20.6	58.35	-577.1	477.8	166.8	131.9	34.91	4.779		
6,300.0	6,012.1	6,240.2	5,912.1	21.8	22.0	56.83	-639.7	535.3	182.9	146.0	36.96	4.949		
6,400.0	6,012.6	6,331.4	5,912.1	23.6	23.6	58.87	-708.8	594.7	196.1	155.5	40.60	4.830		
6,500.0	6,012.6	6,421.9	5,912.1	25.3	25.1	61.00	-780.1	650.5	209.0	164.7	44.28	4.721		
6,600.0	6,012.6	6,511.9	5,912.1	27.1	26.7	62.81	-853.6	702.4	221.8	173.8	47.93	4.626		
6,700.0	6,012.6	6,600.0	5,912.1	29.0	28.2	64.36	-927.8	749.8	234.2	182.7	51.51	4.547		
6,800.0	6,012.6	6,690.3	5,912.1	30.9	29.8	65.73	-1,006.1	794.9	246.3	191.3	55.03	4.475		
6,900.0	6,012.6	6,778.8	5,912.1	32.7	31.4	66.91	-1,084.7	835.4	258.0	199.6	58.38	4.419		
7,000.0	6,012.6	6,866.8	5,912.1	34.6	32.9	67.93	-1,164.8	872.0	269.2	207.6	61.55	4.373		
7,100.0	6,012.6	6,954.4	5,912.1	36.4	34.5	68.83	-1,246.0	904.8	279.8	215.3	64.54	4.336		
7,200.0	6,012.6	7,041.7	5,912.1	38.2	36.0	69.61	-1,328.3	933.6	290.0	222.6	67.33	4.307		
7,300.0	6,012.6	7,128.6	5,912.1	40.0	37.5	70.30	-1,411.5	958.6	299.5	229.6	69.89	4.285		
7,400.0	6,012.6	7,215.1	5,912.1	41.7	38.9	70.90	-1,495.5	979.7	308.4	236.2	72.22	4.271		
7,500.0	6,012.6	7,300.0	5,912.1	43.4	40.3	71.42	-1,578.6	996.7	316.7	242.4	74.29	4.264		
7,600.0	6,012.6	7,387.3	5,912.1	45.0	41.7	71.89	-1,664.9	1,010.3	324.3	248.2	76.15	4.259		
7,700.0	6,012.6	7,473.1	5,912.1	46.6	43.1	72.29	-1,750.1	1,019.9	331.3	253.5	77.73	4.262		
7,800.0	6,012.6	7,558.6	5,912.1	48.1	44.4	72.63	-1,835.4	1,025.5	337.5	258.4	79.05	4.269		
7,900.0	6,012.6	7,644.1	5,912.1	49.6	45.6	72.93	-1,920.9	1,027.4	343.0	262.9	80.11	4.281		
8,000.0	6,012.6	7,744.1	5,912.1	51.0	47.1	73.08	-2,020.9	1,027.4	345.6	264.5	81.10	4.261		
8,100.0	6,012.6	7,844.1	5,912.1	52.4	48.6	73.08	-2,120.9	1,027.4	345.6	261.3	84.30	4.100		
8,200.0	6,012.7	7,944.1	5,912.1	53.8	50.2	73.08	-2,220.9	1,027.4	345.6	258.0	87.55	3.947		
8,300.0	6,012.7	8,044.1	5,912.1	55.3	51.7	73.08	-2,320.9	1,027.4	345.6	254.8	90.83	3.805		
8,400.0	6,012.7	8,144.1	5,912.1	56.8	53.3	73.08	-2,420.9	1,027.4	345.6	251.4	94.15	3.671		
8,500.0	6,012.7	8,244.1	5,912.1	58.2	54.9	73.08	-2,520.9	1,027.4	345.6	248.1	97.49	3.545		
8,600.0	6,012.7	8,344.1	5,912.1	59.8	56.5	73.07	-2,620.9	1,027.4	345.6	244.7	100.86	3.427		
8,700.0	6,012.7	8,444.1	5,912.1	61.3	58.2	73.07	-2,720.9	1,027.4	345.6	241.3	104.25	3.315		
8,800.0	6,012.7	8,544.1	5,912.1	62.9	59.8	73.07	-2,820.9	1,027.4	345.6	237.9	107.66	3.210		
8,900.0	6,012.7	8,644.1	5,912.1	64.4	61.5	73.07	-2,920.9	1,027.4	345.6	234.5	111.09	3.111		
9,000.0	6,012.7	8,744.1	5,912.1	66.0	63.2	73.07	-3,020.9	1,027.4	345.6	231.1	114.53	3.017		
9,100.0	6,012.7	8,844.1	5,912.1	67.7	64.9	73.07	-3,120.9	1,027.4	345.6	227.6	117.99	2.929		
9,200.0	6,012.7	8,944.1	5,912.1	69.3	66.6	73.07	-3,220.9	1,027.4	345.6	224.1	121.47	2.845		
9,300.0	6,012.7	9,044.1	5,912.1	70.9	68.3	73.07	-3,320.9	1,027.5	345.6	220.6	124.96	2.766		
9,400.0	6,012.7	9,144.1	5,912.1	72.6	70.1	73.06	-3,420.9	1,027.5	345.6	217.1	128.46	2.690		
9,500.0	6,012.7	9,244.1	5,912.1	74.2	71.8	73.06	-3,520.9	1,027.5	345.6	213.6	131.97	2.619		
9,600.0	6,012.7	9,344.1	5,912.1	75.9	73.6	73.06	-3,620.9	1,027.5	345.6	210.1	135.49	2.551		
9,700.0	6,012.7	9,444.1	5,912.1	77.6	75.3	73.06	-3,720.9	1,027.5	345.6	206.6	139.02	2.486		
9,800.0	6,012.7	9,544.1	5,912.1	79.3	77.1	73.06	-3,820.9	1,027.5	345.6	203.0	142.56	2.424		
9,900.0	6,012.8	9,644.1	5,912.0	81.0	78.9	73.06	-3,920.9	1,027.5	345.6	199.5	146.11	2.365		
10,000.0	6,012.8	9,744.1	5,912.0	82.8	80.6	73.06	-4,020.9	1,027.5	345.6	195.9	149.66	2.309		
10,100.0	6,012.8	9,844.1	5,912.0	84.5	82.4	73.06	-4,120.9	1,027.5	345.6	192.4	153.22	2.256		
10,200.0	6,012.8	9,944.1	5,912.0	86.2	84.2	73.06	-4,220.9	1,027.5	345.6	188.8	156.79	2.204		

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 #10F-1512B
Project:	Weld County, CO	TVD Reference:	WELL @ 5044.1ft (Original Well Elev)
Reference Site:	S10-T10N-R58W	MD Reference:	WELL @ 5044.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #10F-1512B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10F-1511A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,300.0	6,012.8	10,044.1	5,912.0	88.0	86.0	73.05	-4,320.9	1,027.5	345.6	185.2	160.36	2.155		
10,400.0	6,012.8	10,144.1	5,912.0	89.7	87.8	73.05	-4,420.9	1,027.5	345.6	181.7	163.94	2.108		
10,500.0	6,012.8	10,244.1	5,912.0	91.5	89.6	73.05	-4,520.9	1,027.5	345.6	178.1	167.53	2.063		
10,600.0	6,012.8	10,344.1	5,912.0	93.3	91.4	73.05	-4,620.9	1,027.5	345.6	174.5	171.12	2.020		
10,700.0	6,012.8	10,444.1	5,912.0	95.0	93.3	73.05	-4,720.9	1,027.5	345.6	170.9	174.71	1.978		
10,800.0	6,012.8	10,544.1	5,912.0	96.8	95.1	73.05	-4,820.9	1,027.6	345.6	167.3	178.31	1.938		
10,900.0	6,012.8	10,644.1	5,912.0	98.6	96.9	73.05	-4,920.9	1,027.6	345.6	163.7	181.91	1.900		
11,000.0	6,012.8	10,744.1	5,912.0	100.4	98.7	73.05	-5,020.9	1,027.6	345.6	160.1	185.52	1.863		
11,100.0	6,012.8	10,844.1	5,912.0	102.2	100.6	73.04	-5,120.9	1,027.6	345.6	156.5	189.13	1.827		
11,200.0	6,012.8	10,944.1	5,912.0	104.0	102.4	73.04	-5,220.9	1,027.6	345.6	152.9	192.74	1.793		
11,300.0	6,012.8	11,044.1	5,912.0	105.8	104.2	73.04	-5,320.9	1,027.6	345.6	149.3	196.36	1.760		
11,400.0	6,012.8	11,144.1	5,912.0	107.6	106.1	73.04	-5,420.9	1,027.6	345.6	145.6	199.98	1.728		
11,500.0	6,012.9	11,244.1	5,912.0	109.4	107.9	73.04	-5,520.9	1,027.6	345.6	142.0	203.60	1.698		
11,600.0	6,012.9	11,344.1	5,912.0	111.2	109.8	73.04	-5,620.9	1,027.6	345.6	138.4	207.22	1.668		
11,700.0	6,012.9	11,444.1	5,912.0	113.0	111.6	73.04	-5,720.9	1,027.6	345.6	134.8	210.85	1.639		
11,800.0	6,012.9	11,544.1	5,912.0	114.9	113.5	73.04	-5,820.9	1,027.6	345.6	131.1	214.48	1.611		
11,900.0	6,012.9	11,644.1	5,912.0	116.7	115.3	73.04	-5,920.9	1,027.6	345.6	127.5	218.11	1.585		
12,000.0	6,012.9	11,744.1	5,912.0	118.5	117.2	73.03	-6,020.9	1,027.6	345.6	123.9	221.75	1.559		
12,100.0	6,012.9	11,844.1	5,912.0	120.3	119.1	73.03	-6,120.9	1,027.6	345.6	120.2	225.38	1.533		
12,200.0	6,012.9	11,944.1	5,912.0	122.2	120.9	73.03	-6,220.9	1,027.6	345.6	116.6	229.02	1.509		
12,300.0	6,012.9	12,044.1	5,912.0	124.0	122.8	73.03	-6,320.9	1,027.7	345.6	113.0	232.66	1.486 Level 3		
12,400.0	6,012.9	12,144.1	5,912.0	125.9	124.7	73.03	-6,420.9	1,027.7	345.6	109.3	236.30	1.463 Level 3		
12,500.0	6,012.9	12,244.1	5,912.0	127.7	126.5	73.03	-6,520.9	1,027.7	345.6	105.7	239.95	1.440 Level 3		
12,600.0	6,012.9	12,344.1	5,912.0	129.5	128.4	73.03	-6,620.9	1,027.7	345.6	102.0	243.59	1.419 Level 3		
12,700.0	6,012.9	12,444.1	5,912.0	131.4	130.3	73.03	-6,720.9	1,027.7	345.6	98.4	247.24	1.398 Level 3		
12,800.0	6,012.9	12,544.1	5,912.0	133.2	132.1	73.03	-6,820.9	1,027.7	345.6	94.7	250.89	1.378 Level 3		
12,900.0	6,012.9	12,644.1	5,912.0	135.1	134.0	73.02	-6,920.9	1,027.7	345.6	91.1	254.54	1.358 Level 3		
13,000.0	6,012.9	12,744.1	5,912.0	136.9	135.9	73.02	-7,020.9	1,027.7	345.6	87.4	258.19	1.339 Level 3		
13,100.0	6,012.9	12,844.1	5,912.0	138.8	137.8	73.02	-7,120.9	1,027.7	345.6	83.8	261.84	1.320 Level 3		
13,200.0	6,013.0	12,944.1	5,912.0	140.7	139.6	73.02	-7,220.9	1,027.7	345.6	80.1	265.49	1.302 Level 3		
13,300.0	6,013.0	13,044.1	5,912.0	142.5	141.5	73.02	-7,320.9	1,027.7	345.6	76.5	269.15	1.284 Level 3		
13,400.0	6,013.0	13,144.1	5,912.0	144.4	143.4	73.02	-7,420.9	1,027.7	345.6	72.8	272.80	1.267 Level 3		
13,500.0	6,013.0	13,244.1	5,912.0	146.2	145.3	73.02	-7,520.9	1,027.7	345.6	69.2	276.46	1.250 Level 3		
13,600.0	6,013.0	13,344.1	5,912.0	148.1	147.2	73.02	-7,620.9	1,027.7	345.6	65.5	280.12	1.234 Level 2		
13,700.0	6,013.0	13,444.1	5,912.0	150.0	149.0	73.01	-7,720.9	1,027.7	345.6	61.9	283.78	1.218 Level 2		
13,800.0	6,013.0	13,544.1	5,912.0	151.8	150.9	73.01	-7,820.9	1,027.7	345.6	58.2	287.44	1.202 Level 2		
13,900.0	6,013.0	13,644.1	5,912.0	153.7	152.8	73.01	-7,920.9	1,027.8	345.6	54.5	291.10	1.187 Level 2		
14,000.0	6,013.0	13,744.1	5,912.0	155.6	154.7	73.01	-8,020.9	1,027.8	345.6	50.9	294.76	1.173 Level 2		
14,100.0	6,013.0	13,844.1	5,912.0	157.4	156.6	73.01	-8,120.9	1,027.8	345.6	47.2	298.42	1.158 Level 2		
14,155.5	6,013.0	13,899.6	5,912.0	158.5	157.6	73.01	-8,176.4	1,027.8	345.6	45.2	300.46	1.150 Level 2, ES, SF		

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

Cathedral Energy Services

Anticollision Report

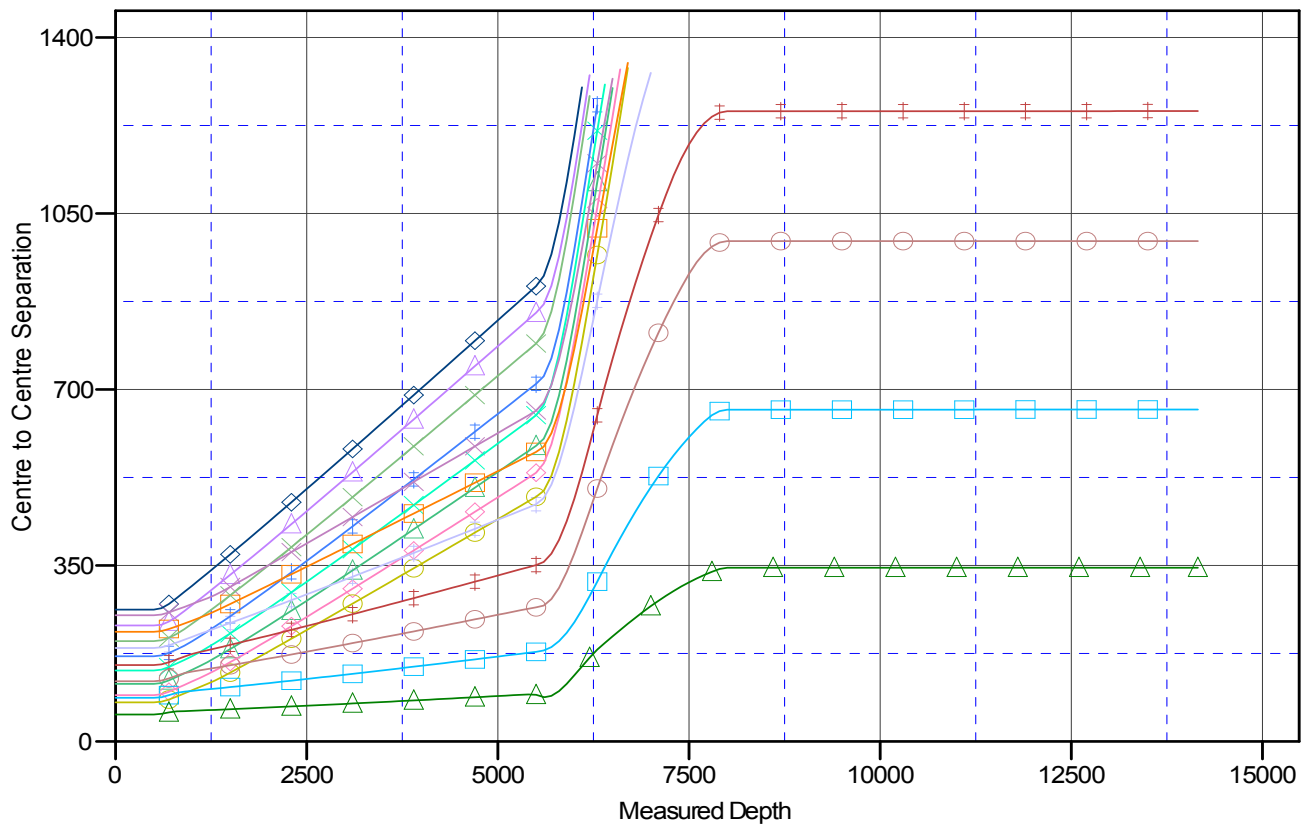
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S10-T10N-R58W
Site Error: 0.0ft
Reference Well: Razor #10F-1512B
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #1

Local Co-ordinate Reference: Well Razor #10F-1512B
TVD Reference: WELL @ 5044.1ft (Original Well Elev)
MD Reference: WELL @ 5044.1ft (Original Well Elev)
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 WELL @ 5044.1ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor #10F-1512B
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.06°

Ladder Plot



LEGEND

◆ Razor #10F-0305A, HZ, Plan #1 V0	▲ Razor #10F-0310B, HZ, Plan #1 V0	◆ Razor #10F-1507A, HZ, Plan #1 V0
▲ Razor #10F-0306B, HZ, Plan #1 V0	◆ Razor #10F-0311A, HZ, Plan #1 V0	◆ Razor #10F-1508B, HZ, Plan #1 V0
◆ Razor #10F-0307A, HZ, Plan #1 V0	◆ Razor #10F-0312B, HZ, Plan #1 V0	◆ Razor #10F-1509A, HZ, Plan #1 V0
◆ Razor #10F-0308B, HZ, Plan #1 V0	◆ Razor #10F-1505A, HZ, Plan #1 V0	◆ Razor #10F-1510B, HZ, Plan #1 V0
◆ Razor #10F-0309A, HZ, Plan #1 V0	◆ Razor #10F-1506B, HZ, Plan #1 V0	▲ Razor #10F-1511A, HZ, Plan #1 V0