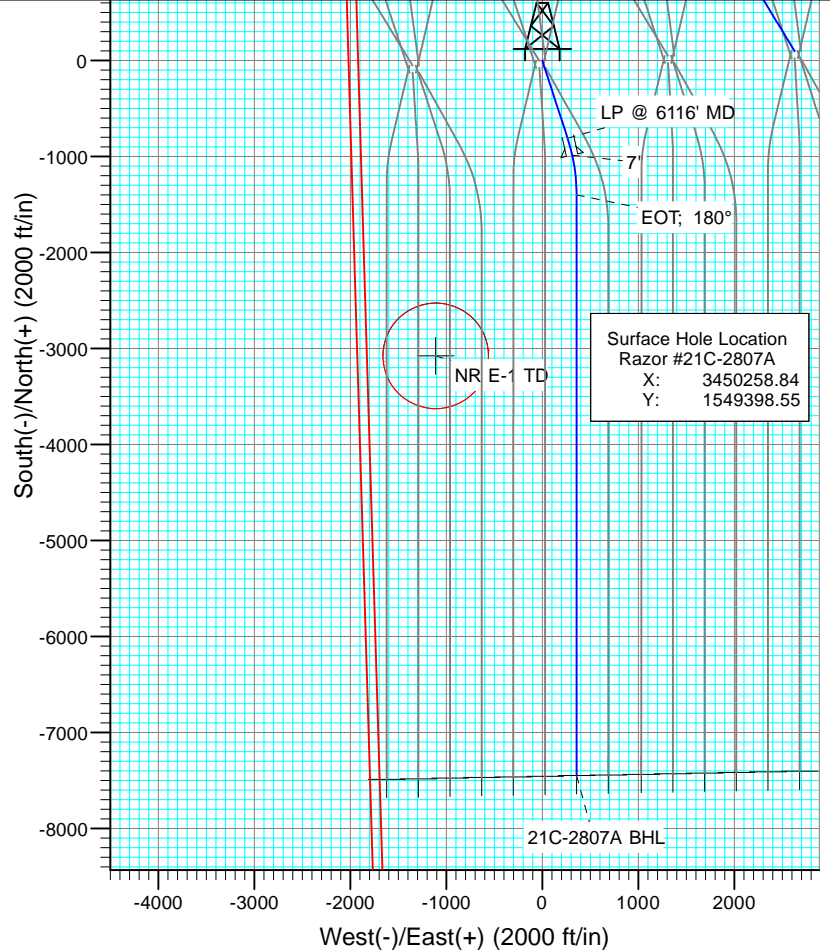
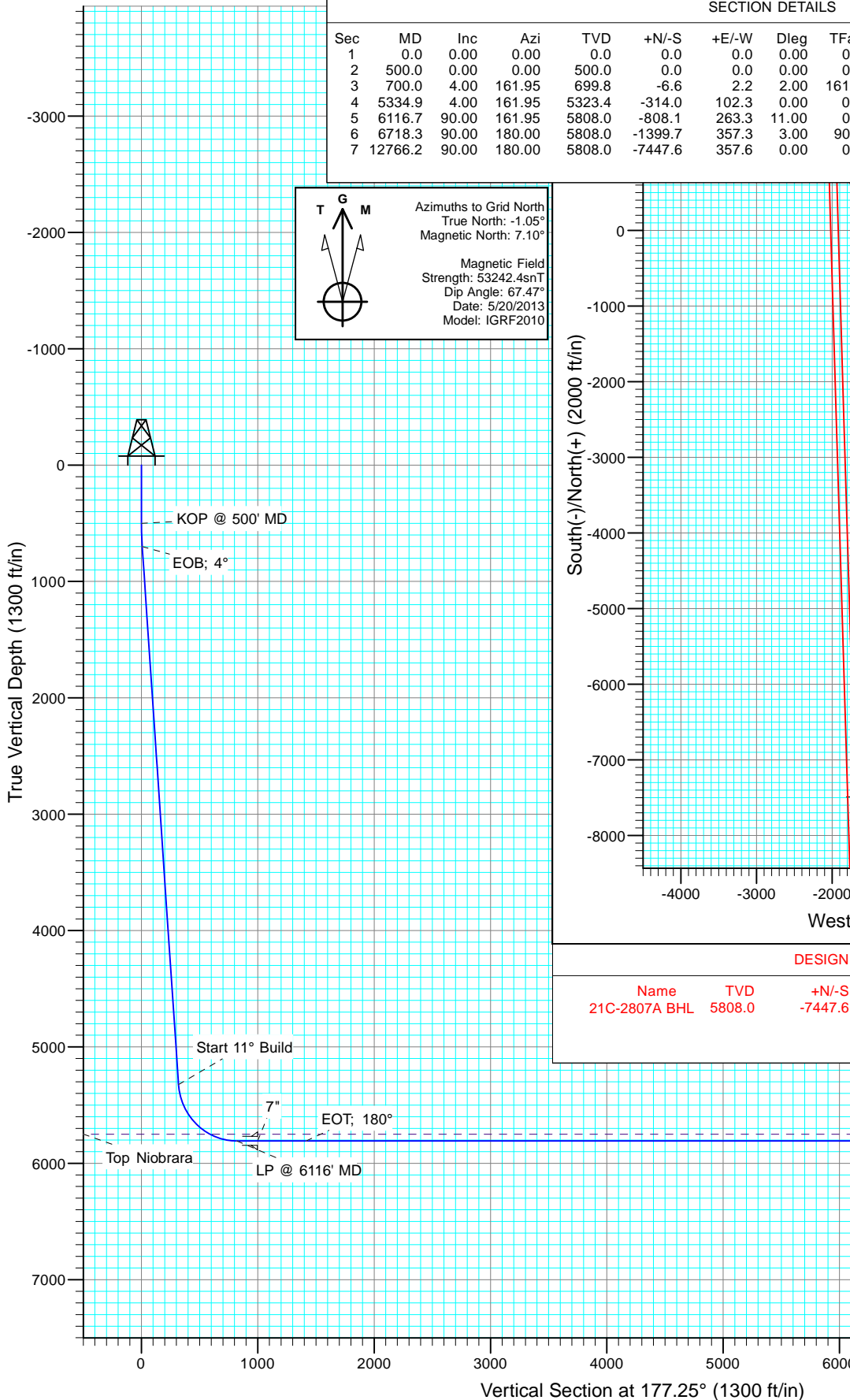
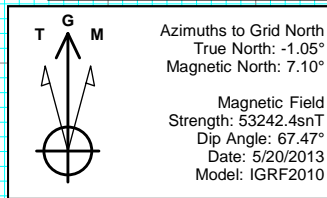


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0		KOP @ 500' MD
3	700.0	4.00	161.95	699.8	-6.6	2.2	2.00	161.95	6.7		EOB; 4°
4	5334.9	4.00	161.95	5323.4	-314.0	102.3	0.00	0.00	318.6		Start 11° Build
5	6116.7	90.00	161.95	5808.0	-808.1	263.3	11.00	0.00	819.8		LP @ 6116' MD
6	6718.3	90.00	180.00	5808.0	-1399.7	357.3	3.00	90.00	1415.3		EOT; 180°
7	12766.2	90.00	180.00	5808.0	-7447.6	357.6	0.00	0.00	7456.2	21C-2807A BHL	PBHL @ 12766' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
21C-2807A BHL	5808.0	-7447.6	357.6	1541950.94	3450616.45

Plan #1
 Razor #21C-2807A
 WELL @ 4860.5ft (Original Well Elev)
 Ground Elevation @ 4844.0
 North American Datum 1983
 Well Razor #21C-2807A, Grid North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-2807A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21C-2807A	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		S21-T10N-R58W			
Site Position:		Northing:	1,549,497.72 ft	Latitude:	40° 49' 48.98 N
From:	Lat/Long	Easting:	3,452,853.58 ft	Longitude:	103° 51' 48.82 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.06 °

Well	Razor #21C-2807A					
Well Position	+N/-S	0.0 ft	Northing:	1,549,398.55 ft	Latitude:	40° 49' 48.47 N
	+E/-W	0.0 ft	Easting:	3,450,258.84 ft	Longitude:	103° 52' 22.59 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,844.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/20/2013	8.15	67.47	53,242

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	177.25

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	161.95	699.8	-6.6	2.2	2.00	2.00	0.00	161.95	
5,334.9	4.00	161.95	5,323.4	-314.0	102.3	0.00	0.00	0.00	0.00	
6,116.7	90.00	161.95	5,808.0	-808.1	263.3	11.00	11.00	0.00	0.00	
6,718.3	90.00	180.00	5,808.0	-1,399.7	357.3	3.00	0.00	3.00	90.00	
12,766.2	90.00	180.00	5,808.0	-7,447.6	357.6	0.00	0.00	0.00	0.00	21C-2807A BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-2807A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21C-2807A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
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	161.95	600.0	-1.7	0.5	1.7	2.00	2.00	
700.0	4.00	161.95	699.8	-6.6	2.2	6.7	2.00	2.00	EOB; 4°
800.0	4.00	161.95	799.6	-13.3	4.3	13.5	0.00	0.00	
900.0	4.00	161.95	899.4	-19.9	6.5	20.2	0.00	0.00	
1,000.0	4.00	161.95	999.1	-26.5	8.6	26.9	0.00	0.00	
1,100.0	4.00	161.95	1,098.9	-33.2	10.8	33.6	0.00	0.00	
1,200.0	4.00	161.95	1,198.6	-39.8	13.0	40.4	0.00	0.00	
1,300.0	4.00	161.95	1,298.4	-46.4	15.1	47.1	0.00	0.00	
1,400.0	4.00	161.95	1,398.1	-53.1	17.3	53.8	0.00	0.00	
1,500.0	4.00	161.95	1,497.9	-59.7	19.5	60.6	0.00	0.00	
1,600.0	4.00	161.95	1,597.6	-66.3	21.6	67.3	0.00	0.00	
1,700.0	4.00	161.95	1,697.4	-73.0	23.8	74.0	0.00	0.00	
1,800.0	4.00	161.95	1,797.2	-79.6	25.9	80.7	0.00	0.00	
1,900.0	4.00	161.95	1,896.9	-86.2	28.1	87.5	0.00	0.00	
2,000.0	4.00	161.95	1,996.7	-92.9	30.3	94.2	0.00	0.00	
2,100.0	4.00	161.95	2,096.4	-99.5	32.4	100.9	0.00	0.00	
2,200.0	4.00	161.95	2,196.2	-106.1	34.6	107.7	0.00	0.00	
2,300.0	4.00	161.95	2,295.9	-112.8	36.7	114.4	0.00	0.00	
2,400.0	4.00	161.95	2,395.7	-119.4	38.9	121.1	0.00	0.00	
2,500.0	4.00	161.95	2,495.5	-126.0	41.1	127.8	0.00	0.00	
2,600.0	4.00	161.95	2,595.2	-132.6	43.2	134.6	0.00	0.00	
2,700.0	4.00	161.95	2,695.0	-139.3	45.4	141.3	0.00	0.00	
2,800.0	4.00	161.95	2,794.7	-145.9	47.6	148.0	0.00	0.00	
2,900.0	4.00	161.95	2,894.5	-152.5	49.7	154.8	0.00	0.00	
3,000.0	4.00	161.95	2,994.2	-159.2	51.9	161.5	0.00	0.00	
3,100.0	4.00	161.95	3,094.0	-165.8	54.0	168.2	0.00	0.00	
3,200.0	4.00	161.95	3,193.7	-172.4	56.2	174.9	0.00	0.00	
3,300.0	4.00	161.95	3,293.5	-179.1	58.4	181.7	0.00	0.00	
3,400.0	4.00	161.95	3,393.3	-185.7	60.5	188.4	0.00	0.00	
3,500.0	4.00	161.95	3,493.0	-192.3	62.7	195.1	0.00	0.00	
3,600.0	4.00	161.95	3,592.8	-199.0	64.8	201.9	0.00	0.00	
3,700.0	4.00	161.95	3,692.5	-205.6	67.0	208.6	0.00	0.00	
3,800.0	4.00	161.95	3,792.3	-212.2	69.2	215.3	0.00	0.00	
3,900.0	4.00	161.95	3,892.0	-218.9	71.3	222.0	0.00	0.00	
4,000.0	4.00	161.95	3,991.8	-225.5	73.5	228.8	0.00	0.00	
4,100.0	4.00	161.95	4,091.6	-232.1	75.6	235.5	0.00	0.00	
4,200.0	4.00	161.95	4,191.3	-238.8	77.8	242.2	0.00	0.00	
4,300.0	4.00	161.95	4,291.1	-245.4	80.0	249.0	0.00	0.00	
4,400.0	4.00	161.95	4,390.8	-252.0	82.1	255.7	0.00	0.00	
4,500.0	4.00	161.95	4,490.6	-258.7	84.3	262.4	0.00	0.00	
4,600.0	4.00	161.95	4,590.3	-265.3	86.5	269.1	0.00	0.00	
4,700.0	4.00	161.95	4,690.1	-271.9	88.6	275.9	0.00	0.00	
4,800.0	4.00	161.95	4,789.9	-278.6	90.8	282.6	0.00	0.00	
4,900.0	4.00	161.95	4,889.6	-285.2	92.9	289.3	0.00	0.00	
5,000.0	4.00	161.95	4,989.4	-291.8	95.1	296.1	0.00	0.00	
5,100.0	4.00	161.95	5,089.1	-298.5	97.3	302.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-2807A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21C-2807A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	4.00	161.95	5,188.9	-305.1	99.4	309.5	0.00	0.00	
5,300.0	4.00	161.95	5,288.6	-311.7	101.6	316.2	0.00	0.00	
5,334.9	4.00	161.95	5,323.4	-314.0	102.3	318.6	0.00	0.00	Start 11° Build
5,350.0	5.66	161.95	5,338.5	-315.2	102.7	319.8	11.00	11.00	
5,400.0	11.16	161.95	5,387.9	-322.2	105.0	326.9	11.00	11.00	
5,450.0	16.66	161.95	5,436.5	-333.6	108.7	338.5	11.00	11.00	
5,500.0	22.16	161.95	5,483.6	-349.4	113.9	354.5	11.00	11.00	
5,550.0	27.66	161.95	5,528.9	-369.4	120.4	374.8	11.00	11.00	
5,600.0	33.16	161.95	5,572.0	-393.5	128.2	399.2	11.00	11.00	
5,650.0	38.66	161.95	5,612.5	-421.4	137.3	427.5	11.00	11.00	
5,700.0	44.16	161.95	5,650.0	-452.8	147.6	459.3	11.00	11.00	
5,750.0	49.66	161.95	5,684.1	-487.5	158.9	494.6	11.00	11.00	
5,800.0	55.16	161.95	5,714.6	-525.2	171.1	532.8	11.00	11.00	
5,850.0	60.66	161.95	5,741.2	-565.4	184.3	573.6	11.00	11.00	
5,870.8	62.95	161.95	5,751.0	-582.8	189.9	591.3	11.00	11.00	Top Niobrara
5,900.0	66.16	161.95	5,763.5	-607.9	198.1	616.7	11.00	11.00	
5,950.0	71.66	161.95	5,781.5	-652.2	212.6	661.7	11.00	11.00	
6,000.0	77.16	161.95	5,795.0	-698.0	227.5	708.1	11.00	11.00	
6,050.0	82.66	161.95	5,803.7	-744.8	242.7	755.6	11.00	11.00	
6,100.0	88.16	161.95	5,807.7	-792.2	258.2	803.6	11.00	11.00	
6,116.7	90.00	161.95	5,808.0	-808.1	263.3	819.8	11.00	11.00	LP @ 6116' MD
6,200.0	90.00	164.45	5,808.0	-887.8	287.4	900.6	3.00	0.00	
6,300.0	90.00	167.45	5,808.0	-984.8	311.7	998.6	3.00	0.00	7"
6,400.0	90.00	170.45	5,808.0	-1,082.9	330.9	1,097.5	3.00	0.00	
6,500.0	90.00	173.45	5,808.0	-1,181.9	344.9	1,197.1	3.00	0.00	
6,600.0	90.00	176.45	5,808.0	-1,281.5	353.7	1,297.0	3.00	0.00	
6,700.0	90.00	179.45	5,808.0	-1,381.4	357.2	1,397.0	3.00	0.00	
6,718.3	90.00	180.00	5,808.0	-1,399.7	357.3	1,415.3	3.00	0.00	EOT; 180°
6,800.0	90.00	180.00	5,808.0	-1,481.4	357.3	1,496.9	0.00	0.00	
6,900.0	90.00	180.00	5,808.0	-1,581.4	357.3	1,596.8	0.00	0.00	
7,000.0	90.00	180.00	5,808.0	-1,681.4	357.3	1,696.7	0.00	0.00	
7,100.0	90.00	180.00	5,808.0	-1,781.4	357.3	1,796.5	0.00	0.00	
7,200.0	90.00	180.00	5,808.0	-1,881.4	357.4	1,896.4	0.00	0.00	
7,300.0	90.00	180.00	5,808.0	-1,981.4	357.4	1,996.3	0.00	0.00	
7,400.0	90.00	180.00	5,808.0	-2,081.4	357.4	2,096.2	0.00	0.00	
7,500.0	90.00	180.00	5,808.0	-2,181.4	357.4	2,196.1	0.00	0.00	
7,600.0	90.00	180.00	5,808.0	-2,281.4	357.4	2,296.0	0.00	0.00	
7,700.0	90.00	180.00	5,808.0	-2,381.4	357.4	2,395.8	0.00	0.00	
7,800.0	90.00	180.00	5,808.0	-2,481.4	357.4	2,495.7	0.00	0.00	
7,900.0	90.00	180.00	5,808.0	-2,581.4	357.4	2,595.6	0.00	0.00	
8,000.0	90.00	180.00	5,808.0	-2,681.4	357.4	2,695.5	0.00	0.00	
8,100.0	90.00	180.00	5,808.0	-2,781.4	357.4	2,795.4	0.00	0.00	
8,200.0	90.00	180.00	5,808.0	-2,881.4	357.4	2,895.3	0.00	0.00	
8,300.0	90.00	180.00	5,808.0	-2,981.4	357.4	2,995.2	0.00	0.00	
8,400.0	90.00	180.00	5,808.0	-3,081.4	357.4	3,095.0	0.00	0.00	
8,500.0	90.00	180.00	5,808.0	-3,181.4	357.4	3,194.9	0.00	0.00	
8,600.0	90.00	180.00	5,808.0	-3,281.4	357.4	3,294.8	0.00	0.00	
8,700.0	90.00	180.00	5,808.0	-3,381.4	357.4	3,394.7	0.00	0.00	
8,800.0	90.00	180.00	5,808.0	-3,481.4	357.4	3,494.6	0.00	0.00	
8,900.0	90.00	180.00	5,808.0	-3,581.4	357.4	3,594.5	0.00	0.00	
9,000.0	90.00	180.00	5,808.0	-3,681.4	357.4	3,694.4	0.00	0.00	
9,100.0	90.00	180.00	5,808.0	-3,781.4	357.4	3,794.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-2807A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21C-2807A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,200.0	90.00	180.00	5,808.0	-3,881.4	357.4	3,894.1	0.00	0.00	
9,300.0	90.00	180.00	5,808.0	-3,981.4	357.5	3,994.0	0.00	0.00	
9,400.0	90.00	180.00	5,808.0	-4,081.4	357.5	4,093.9	0.00	0.00	
9,500.0	90.00	180.00	5,808.0	-4,181.4	357.5	4,193.8	0.00	0.00	
9,600.0	90.00	180.00	5,808.0	-4,281.4	357.5	4,293.7	0.00	0.00	
9,700.0	90.00	180.00	5,808.0	-4,381.4	357.5	4,393.5	0.00	0.00	
9,800.0	90.00	180.00	5,808.0	-4,481.4	357.5	4,493.4	0.00	0.00	
9,900.0	90.00	180.00	5,808.0	-4,581.4	357.5	4,593.3	0.00	0.00	
10,000.0	90.00	180.00	5,808.0	-4,681.4	357.5	4,693.2	0.00	0.00	
10,100.0	90.00	180.00	5,808.0	-4,781.4	357.5	4,793.1	0.00	0.00	
10,200.0	90.00	180.00	5,808.0	-4,881.4	357.5	4,893.0	0.00	0.00	
10,300.0	90.00	180.00	5,808.0	-4,981.4	357.5	4,992.9	0.00	0.00	
10,400.0	90.00	180.00	5,808.0	-5,081.4	357.5	5,092.7	0.00	0.00	
10,500.0	90.00	180.00	5,808.0	-5,181.4	357.5	5,192.6	0.00	0.00	
10,600.0	90.00	180.00	5,808.0	-5,281.4	357.5	5,292.5	0.00	0.00	
10,700.0	90.00	180.00	5,808.0	-5,381.4	357.5	5,392.4	0.00	0.00	
10,800.0	90.00	180.00	5,808.0	-5,481.4	357.5	5,492.3	0.00	0.00	
10,900.0	90.00	180.00	5,808.0	-5,581.4	357.5	5,592.2	0.00	0.00	
11,000.0	90.00	180.00	5,808.0	-5,681.4	357.5	5,692.1	0.00	0.00	
11,100.0	90.00	180.00	5,808.0	-5,781.4	357.5	5,791.9	0.00	0.00	
11,200.0	90.00	180.00	5,808.0	-5,881.4	357.5	5,891.8	0.00	0.00	
11,300.0	90.00	180.00	5,808.0	-5,981.4	357.5	5,991.7	0.00	0.00	
11,400.0	90.00	180.00	5,808.0	-6,081.4	357.5	6,091.6	0.00	0.00	
11,500.0	90.00	180.00	5,808.0	-6,181.4	357.6	6,191.5	0.00	0.00	
11,600.0	90.00	180.00	5,808.0	-6,281.4	357.6	6,291.4	0.00	0.00	
11,700.0	90.00	180.00	5,808.0	-6,381.4	357.6	6,391.3	0.00	0.00	
11,800.0	90.00	180.00	5,808.0	-6,481.4	357.6	6,491.1	0.00	0.00	
11,900.0	90.00	180.00	5,808.0	-6,581.4	357.6	6,591.0	0.00	0.00	
12,000.0	90.00	180.00	5,808.0	-6,681.4	357.6	6,690.9	0.00	0.00	
12,100.0	90.00	180.00	5,808.0	-6,781.4	357.6	6,790.8	0.00	0.00	
12,200.0	90.00	180.00	5,808.0	-6,881.4	357.6	6,890.7	0.00	0.00	
12,300.0	90.00	180.00	5,808.0	-6,981.4	357.6	6,990.6	0.00	0.00	
12,400.0	90.00	180.00	5,808.0	-7,081.4	357.6	7,090.4	0.00	0.00	
12,500.0	90.00	180.00	5,808.0	-7,181.4	357.6	7,190.3	0.00	0.00	
12,600.0	90.00	180.00	5,808.0	-7,281.4	357.6	7,290.2	0.00	0.00	
12,700.0	90.00	180.00	5,808.0	-7,381.4	357.6	7,390.1	0.00	0.00	
12,766.2	90.00	180.00	5,808.0	-7,447.6	357.6	7,456.2	0.00	0.00	PBHL @ 12766' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
21C-2807A BHL	0.00	0.00	5,808.0	-7,447.6	357.6	1,541,950.94	3,450,616.45	40° 48' 34.83 N	103° 52' 19.72 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-2807A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21C-2807A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,300.0	5,808.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,870.8	5,751.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500' MD
700.0	699.8	-6.6	2.2	EOB; 4°
5,334.9	5,323.4	-314.0	102.3	Start 11° Build
6,116.7	5,808.0	-808.1	263.3	LP @ 6116' MD
6,718.3	5,808.0	-1,399.7	357.3	EOT; 180°
12,766.2	5,808.0	-7,447.6	357.6	PBHL @ 12766' MD

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21C-2807A

HZ

Plan #1

Anticollision Report

28 May, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	5/28/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,766.2	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
S21-T10N-R58W						
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Nelson Ranches E-1 (Existing) - Existing - ASSUMED VE						Out of range
Razor #21A-0913A - HZ - Plan #1						Out of range
Razor #21A-0914B - HZ - Plan #1						Out of range
Razor #21A-0915A - HZ - Plan #1						Out of range
Razor #21A-0916B - HZ - Plan #1						Out of range
Razor #21A-2813A - HZ - Plan #1						Out of range
Razor #21A-2814B - HZ - Plan #1						Out of range
Razor #21A-2815A - HZ - Plan #1						Out of range
Razor #21A-2816B - HZ - Plan #1						Out of range
Razor #21B-0909A - HZ - Plan #1						Out of range
Razor #21B-0910B - HZ - Plan #1						Out of range
Razor #21B-0911A - HZ - Plan #1						Out of range
Razor #21B-0912B - HZ - Plan #1						Out of range
Razor #21B-2809A - HZ - Plan #1						Out of range
Razor #21B-2810B - HZ - Plan #1						Out of range
Razor #21B-2811A - HZ - Plan #1						Out of range
Razor #21B-2812B - HZ - Plan #1						Out of range
Razor #21C-0905A - HZ - Plan #1	500.0	500.0	32.1	30.1	16.166	CC, ES
Razor #21C-0905A - HZ - Plan #1	600.0	599.3	33.6	31.2	13.983	SF
Razor #21C-0906B - HZ - Plan #1	1,076.6	1,076.1	84.5	79.9	18.622	CC
Razor #21C-0906B - HZ - Plan #1	1,100.0	1,099.3	84.5	79.9	18.194	ES
Razor #21C-0906B - HZ - Plan #1	1,400.0	1,396.4	95.7	89.6	15.804	SF
Razor #21C-0907A - HZ - Plan #1	739.2	739.0	31.8	28.8	10.619	CC, ES
Razor #21C-0907A - HZ - Plan #1	1,000.0	998.3	37.7	33.6	9.098	SF
Razor #21C-0908B - HZ - Plan #1	1,458.8	1,457.6	13.1	6.8	2.076	CC, ES, SF
Razor #21C-2805A - HZ - Plan #1	500.0	500.0	65.3	63.3	32.889	CC, ES
Razor #21C-2805A - HZ - Plan #1	5,300.0	5,297.2	234.6	209.1	9.211	SF
Razor #21C-2806B - HZ - Plan #1	1,142.1	1,138.9	60.3	55.5	12.669	CC, ES
Razor #21C-2806B - HZ - Plan #1	12,766.2	12,752.8	339.7	62.1	1.224	Level 2, SF
Razor #21C-2808B - HZ - Plan #1	1,003.1	998.1	61.3	57.2	15.172	CC
Razor #21C-2808B - HZ - Plan #1	5,600.0	5,577.2	79.5	51.3	2.812	ES
Razor #21C-2808B - HZ - Plan #1	12,766.2	12,881.4	340.2	64.5	1.234	Level 2, SF
Razor #21D-0901A - HZ - Plan #1						Out of range
Razor #21D-0902B - HZ - Plan #1						Out of range
Razor #21D-0903A - HZ - Plan #1						Out of range
Razor #21D-0904B - HZ - Plan #1						Out of range
Razor #21D-2801A - HZ - Plan #1						Out of range
Razor #21D-2802B - HZ - Plan #1						Out of range
Razor #21D-2803A - HZ - Plan #1						Out of range
Razor #21D-2804B - HZ - Plan #1						Out of range

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-0905A - 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		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	-91.02	-0.6	-32.1	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	-91.02	-0.6	-32.1	32.1	31.9	0.19	171.048		
200.0	200.0	200.0	200.0	0.3	0.3	-91.02	-0.6	-32.1	32.1	31.5	0.64	50.379		
300.0	300.0	300.0	300.0	0.5	0.5	-91.02	-0.6	-32.1	32.1	31.0	1.09	29.540		
400.0	400.0	400.0	400.0	0.8	0.8	-91.02	-0.6	-32.1	32.1	30.6	1.54	20.896		
500.0	500.0	500.0	500.0	1.0	1.0	-91.02	-0.6	-32.1	32.1	30.1	1.99	16.166 CC, ES		
600.0	600.0	599.3	599.3	1.2	1.2	112.36	0.9	-33.0	33.6	31.2	2.41	13.983 SF		
700.0	699.8	697.9	697.8	1.4	1.4	125.28	5.3	-35.7	39.7	36.9	2.82	14.075		
800.0	799.6	796.9	796.5	1.6	1.7	137.09	11.2	-39.3	50.0	46.8	3.25	15.395		
900.0	899.4	896.0	895.3	1.8	1.9	144.67	17.1	-42.8	61.8	58.1	3.68	16.778		
1,000.0	999.1	995.0	994.1	2.0	2.1	149.79	23.0	-46.4	74.2	70.1	4.12	18.032		
1,100.0	1,098.9	1,094.1	1,092.9	2.3	2.4	153.42	28.9	-50.0	87.1	82.5	4.55	19.124		
1,200.0	1,198.6	1,193.1	1,191.7	2.5	2.6	156.10	34.8	-53.6	100.2	95.2	4.99	20.064		
1,300.0	1,298.4	1,292.1	1,290.5	2.8	2.9	158.17	40.6	-57.2	113.5	108.1	5.44	20.873		
1,400.0	1,398.1	1,391.2	1,389.3	3.0	3.1	159.80	46.5	-60.8	126.9	121.0	5.88	21.572		
1,500.0	1,497.9	1,490.2	1,488.1	3.3	3.4	161.12	52.4	-64.4	140.4	134.1	6.33	22.179		
1,600.0	1,597.6	1,589.3	1,586.9	3.5	3.6	162.21	58.3	-68.0	153.9	147.2	6.78	22.712		
1,700.0	1,697.4	1,688.3	1,685.7	3.8	3.9	163.12	64.2	-71.6	167.5	160.3	7.23	23.181		
1,800.0	1,797.2	1,787.3	1,784.5	4.1	4.1	163.89	70.1	-75.2	181.1	173.5	7.68	23.597		
1,900.0	1,896.9	1,886.4	1,883.3	4.3	4.4	164.56	76.0	-78.8	194.8	186.7	8.13	23.968		
2,000.0	1,996.7	1,985.4	1,982.1	4.6	4.6	165.14	81.9	-82.4	208.5	199.9	8.58	24.300		
2,100.0	2,096.4	2,084.5	2,080.9	4.8	4.9	165.64	87.8	-86.0	222.2	213.1	9.03	24.600		
2,200.0	2,196.2	2,183.5	2,179.7	5.1	5.2	166.09	93.7	-89.6	235.9	226.4	9.48	24.872		
2,300.0	2,295.9	2,282.5	2,278.5	5.4	5.4	166.49	99.6	-93.2	249.6	239.7	9.94	25.118		
2,400.0	2,395.7	2,381.6	2,377.3	5.6	5.7	166.85	105.5	-96.8	263.3	252.9	10.39	25.344		
2,500.0	2,495.5	2,480.6	2,476.1	5.9	5.9	167.17	111.4	-100.4	277.1	266.2	10.84	25.550		
2,600.0	2,595.2	2,579.7	2,574.9	6.1	6.2	167.46	117.3	-104.0	290.8	279.5	11.30	25.740		
2,700.0	2,695.0	2,678.7	2,673.7	6.4	6.4	167.73	123.2	-107.6	304.6	292.8	11.75	25.916		
2,800.0	2,794.7	2,777.7	2,772.5	6.7	6.7	167.97	129.1	-111.2	318.3	306.1	12.21	26.078		
2,900.0	2,894.5	2,876.8	2,871.3	6.9	6.9	168.19	135.0	-114.8	332.1	319.4	12.66	26.229		
3,000.0	2,994.2	2,975.8	2,970.1	7.2	7.2	168.40	140.9	-118.4	345.9	332.8	13.12	26.369		
3,100.0	3,094.0	3,074.9	3,068.9	7.5	7.4	168.59	146.8	-122.0	359.7	346.1	13.57	26.499		
3,200.0	3,193.7	3,173.9	3,167.7	7.7	7.7	168.76	152.7	-125.6	373.4	359.4	14.03	26.622		
3,300.0	3,293.5	3,272.9	3,266.5	8.0	7.9	168.92	158.6	-129.2	387.2	372.7	14.48	26.736		
3,400.0	3,393.3	3,372.0	3,365.3	8.2	8.2	169.07	164.5	-132.8	401.0	386.1	14.94	26.843		
3,500.0	3,493.0	3,471.0	3,464.1	8.5	8.5	169.22	170.4	-136.4	414.8	399.4	15.39	26.944		
3,600.0	3,592.8	3,570.1	3,562.9	8.8	8.7	169.35	176.3	-140.0	428.6	412.7	15.85	27.040		
3,700.0	3,692.5	3,669.1	3,661.7	9.0	9.0	169.47	182.2	-143.6	442.4	426.1	16.31	27.129		
3,800.0	3,792.3	3,768.1	3,760.5	9.3	9.2	169.59	188.1	-147.2	456.2	439.4	16.76	27.214		
3,900.0	3,892.0	3,867.2	3,859.3	9.6	9.5	169.70	194.0	-150.8	470.0	452.7	17.22	27.295		
4,000.0	3,991.8	3,966.2	3,958.1	9.8	9.7	169.80	199.9	-154.4	483.8	466.1	17.67	27.371		
4,100.0	4,091.6	4,065.3	4,056.9	10.1	10.0	169.90	205.8	-158.0	497.6	479.4	18.13	27.443		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-0906B - 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-140.01	-76.2	-63.9	99.5					
100.0	100.0	100.0	100.0	0.1	0.1	-140.01	-76.2	-63.9	99.5	99.3	0.19	530.008		
200.0	200.0	200.0	200.0	0.3	0.3	-140.01	-76.2	-63.9	99.5	98.8	0.64	156.105		
300.0	300.0	300.0	300.0	0.5	0.5	-140.01	-76.2	-63.9	99.5	98.4	1.09	91.532		
400.0	400.0	400.0	400.0	0.8	0.8	-140.01	-76.2	-63.9	99.5	97.9	1.54	64.749		
500.0	500.0	500.0	500.0	1.0	1.0	-140.01	-76.2	-63.9	99.5	97.5	1.99	50.091		
600.0	600.0	600.0	600.0	1.2	1.2	58.91	-76.2	-63.9	98.6	96.1	2.41	40.898		
700.0	699.8	699.8	699.8	1.4	1.4	61.63	-76.2	-63.9	96.0	93.1	2.82	33.984		
800.0	799.6	800.9	800.9	1.6	1.7	66.47	-74.5	-64.5	92.1	88.9	3.26	28.265		
900.0	899.4	901.2	901.1	1.8	1.9	73.83	-69.5	-66.1	88.0	84.3	3.71	23.709		
1,000.0	999.1	1,000.2	999.8	2.0	2.1	82.78	-62.9	-68.3	85.1	81.0	4.17	20.400		
1,076.6	1,075.5	1,076.1	1,075.5	2.2	2.3	89.90	-57.9	-70.0	84.5	79.9	4.54	18.622 CC		
1,100.0	1,098.9	1,099.3	1,098.6	2.3	2.4	92.09	-56.4	-70.5	84.5	79.9	4.65	18.194 ES		
1,200.0	1,198.6	1,198.3	1,197.4	2.5	2.6	101.29	-49.8	-72.6	86.2	81.1	5.12	16.832		
1,300.0	1,298.4	1,297.3	1,296.2	2.8	2.8	109.93	-43.3	-74.8	90.0	84.4	5.59	16.094		
1,400.0	1,398.1	1,396.4	1,395.0	3.0	3.1	117.72	-36.7	-77.0	95.7	89.6	6.06	15.804 SF		
1,500.0	1,497.9	1,495.4	1,493.8	3.3	3.3	124.54	-30.1	-79.1	103.0	96.5	6.51	15.816		
1,600.0	1,597.6	1,594.4	1,592.6	3.5	3.6	130.40	-23.6	-81.3	111.5	104.6	6.96	16.024		
1,700.0	1,697.4	1,693.4	1,691.3	3.8	3.8	135.39	-17.0	-83.4	121.1	113.7	7.41	16.350		
1,800.0	1,797.2	1,792.5	1,790.1	4.1	4.1	139.63	-10.5	-85.6	131.4	123.6	7.85	16.743		
1,900.0	1,896.9	1,891.5	1,888.9	4.3	4.3	143.24	-3.9	-87.8	142.4	134.1	8.29	17.170		
2,000.0	1,996.7	1,990.5	1,987.7	4.6	4.6	146.33	2.7	-89.9	153.8	145.1	8.73	17.609		
2,100.0	2,096.4	2,089.5	2,086.5	4.8	4.8	148.99	9.2	-92.1	165.6	156.4	9.18	18.047		
2,200.0	2,196.2	2,188.6	2,185.3	5.1	5.1	151.29	15.8	-94.3	177.7	168.1	9.62	18.475		
2,300.0	2,295.9	2,287.6	2,284.1	5.4	5.3	153.29	22.3	-96.4	190.1	180.0	10.06	18.888		
2,400.0	2,395.7	2,386.6	2,382.8	5.6	5.6	155.05	28.9	-98.6	202.6	192.1	10.51	19.284		
2,500.0	2,495.5	2,485.6	2,481.6	5.9	5.8	156.61	35.5	-100.7	215.4	204.4	10.95	19.662		
2,600.0	2,595.2	2,584.7	2,580.4	6.1	6.1	157.99	42.0	-102.9	228.2	216.8	11.40	20.021		
2,700.0	2,695.0	2,683.7	2,679.2	6.4	6.3	159.22	48.6	-105.1	241.2	229.4	11.85	20.361		
2,800.0	2,794.7	2,782.7	2,778.0	6.7	6.6	160.32	55.1	-107.2	254.3	242.0	12.29	20.684		
2,900.0	2,894.5	2,881.8	2,876.8	6.9	6.8	161.32	61.7	-109.4	267.5	254.7	12.74	20.989		
3,000.0	2,994.2	2,980.8	2,975.6	7.2	7.1	162.23	68.3	-111.6	280.7	267.5	13.19	21.279		
3,100.0	3,094.0	3,079.8	3,074.3	7.5	7.3	163.05	74.8	-113.7	294.0	280.4	13.64	21.553		
3,200.0	3,193.7	3,178.8	3,173.1	7.7	7.6	163.80	81.4	-115.9	307.4	293.3	14.09	21.813		
3,300.0	3,293.5	3,277.9	3,271.9	8.0	7.8	164.49	87.9	-118.1	320.8	306.2	14.54	22.059		
3,400.0	3,393.3	3,376.9	3,370.7	8.2	8.1	165.12	94.5	-120.2	334.2	319.2	14.99	22.293		
3,500.0	3,493.0	3,475.9	3,469.5	8.5	8.3	165.71	101.1	-122.4	347.7	332.2	15.44	22.515		
3,600.0	3,592.8	3,574.9	3,568.3	8.8	8.6	166.25	107.6	-124.5	361.2	345.3	15.89	22.726		
3,700.0	3,692.5	3,674.0	3,667.1	9.0	8.9	166.75	114.2	-126.7	374.8	358.4	16.35	22.927		
3,800.0	3,792.3	3,773.0	3,765.8	9.3	9.1	167.22	120.7	-128.9	388.3	371.5	16.80	23.118		
3,900.0	3,892.0	3,872.0	3,864.6	9.6	9.4	167.65	127.3	-131.0	401.9	384.7	17.25	23.300		
4,000.0	3,991.8	3,971.1	3,963.4	9.8	9.6	168.06	133.9	-133.2	415.5	397.8	17.70	23.474		
4,100.0	4,091.6	4,070.1	4,062.2	10.1	9.9	168.44	140.4	-135.4	429.2	411.0	18.15	23.640		
4,200.0	4,191.3	4,169.1	4,161.0	10.4	10.1	168.80	147.0	-137.5	442.8	424.2	18.61	23.799		
4,300.0	4,291.1	4,268.1	4,259.8	10.6	10.4	169.14	153.5	-139.7	456.5	437.4	19.06	23.951		
4,400.0	4,390.8	4,367.2	4,358.5	10.9	10.6	169.45	160.1	-141.9	470.2	450.7	19.51	24.096		
4,500.0	4,490.6	4,466.2	4,457.3	11.1	10.9	169.75	166.7	-144.0	483.9	463.9	19.97	24.235		
4,600.0	4,590.3	4,565.2	4,556.1	11.4	11.1	170.03	173.2	-146.2	497.6	477.2	20.42	24.368		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-0907A - 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		
0.0	0.0	0.0	0.0	0.0	0.0	88.96	0.6	33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	88.96	0.6	33.2	33.2	33.0	0.19	176.946		
200.0	200.0	200.0	200.0	0.3	0.3	88.96	0.6	33.2	33.2	32.6	0.64	52.116		
300.0	300.0	300.0	300.0	0.5	0.5	88.96	0.6	33.2	33.2	32.1	1.09	30.558		
400.0	400.0	400.0	400.0	0.8	0.8	88.96	0.6	33.2	33.2	31.7	1.54	21.617		
500.0	500.0	500.0	500.0	1.0	1.0	88.96	0.6	33.2	33.2	31.2	1.99	16.723		
600.0	600.0	600.0	600.0	1.2	1.2	-75.92	0.6	33.2	32.7	30.3	2.41	13.594		
700.0	699.8	699.8	699.8	1.4	1.4	-85.08	0.6	33.2	31.9	29.1	2.82	11.300		
739.2	739.0	739.0	739.0	1.5	1.5	-90.00	0.6	33.2	31.8	28.8	2.99	10.619	CC, ES	
800.0	799.6	799.6	799.6	1.6	1.7	-97.58	0.6	33.2	32.0	28.8	3.25	9.843		
900.0	899.4	899.4	899.4	1.8	1.9	-109.41	0.6	33.2	33.7	30.0	3.70	9.101		
1,000.0	999.1	998.3	998.2	2.0	2.1	-121.62	2.3	33.0	37.7	33.6	4.15	9.098	SF	
1,100.0	1,098.9	1,096.5	1,096.3	2.3	2.3	-133.73	7.3	32.3	45.9	41.3	4.59	9.999		
1,200.0	1,198.6	1,195.5	1,195.1	2.5	2.6	-142.88	14.1	31.4	57.1	52.1	5.03	11.353		
1,300.0	1,298.4	1,294.5	1,293.8	2.8	2.8	-148.95	21.0	30.5	69.3	63.8	5.47	12.670		
1,400.0	1,398.1	1,393.5	1,392.6	3.0	3.0	-153.17	27.8	29.5	82.0	76.1	5.91	13.878		
1,500.0	1,497.9	1,492.6	1,491.4	3.3	3.3	-156.25	34.7	28.6	95.0	88.7	6.35	14.966		
1,600.0	1,597.6	1,591.6	1,590.2	3.5	3.5	-158.59	41.5	27.7	108.2	101.5	6.79	15.938		
1,700.0	1,697.4	1,690.6	1,689.0	3.8	3.7	-160.41	48.3	26.7	121.6	114.4	7.24	16.806		
1,800.0	1,797.2	1,789.7	1,787.8	4.1	4.0	-161.87	55.2	25.8	135.1	127.4	7.68	17.583		
1,900.0	1,896.9	1,888.7	1,886.6	4.3	4.2	-163.07	62.0	24.9	148.7	140.5	8.13	18.282		
2,000.0	1,996.7	1,987.7	1,985.4	4.6	4.5	-164.06	68.9	24.0	162.3	153.7	8.58	18.911		
2,100.0	2,096.4	2,086.8	2,084.2	4.8	4.7	-164.91	75.7	23.0	175.9	166.9	9.03	19.481		
2,200.0	2,196.2	2,185.8	2,183.0	5.1	5.0	-165.63	82.6	22.1	189.6	180.1	9.48	19.999		
2,300.0	2,295.9	2,284.8	2,281.8	5.4	5.2	-166.25	89.4	21.2	203.3	193.3	9.93	20.471		
2,400.0	2,395.7	2,383.9	2,380.6	5.6	5.5	-166.79	96.3	20.3	217.0	206.6	10.38	20.904		
2,500.0	2,495.5	2,482.9	2,479.4	5.9	5.7	-167.27	103.1	19.3	230.7	219.9	10.83	21.301		
2,600.0	2,595.2	2,581.9	2,578.2	6.1	6.0	-167.70	110.0	18.4	244.5	233.2	11.28	21.666		
2,700.0	2,695.0	2,681.0	2,677.0	6.4	6.2	-168.08	116.8	17.5	258.2	246.5	11.74	22.004		
2,800.0	2,794.7	2,780.0	2,775.8	6.7	6.5	-168.42	123.7	16.6	272.0	259.8	12.19	22.317		
2,900.0	2,894.5	2,879.0	2,874.5	6.9	6.7	-168.73	130.5	15.6	285.8	273.1	12.64	22.608		
3,000.0	2,994.2	2,978.1	2,973.3	7.2	7.0	-169.01	137.3	14.7	299.6	286.5	13.09	22.879		
3,100.0	3,094.0	3,077.1	3,072.1	7.5	7.2	-169.27	144.2	13.8	313.4	299.8	13.55	23.132		
3,200.0	3,193.7	3,176.1	3,170.9	7.7	7.5	-169.50	151.0	12.9	327.2	313.2	14.00	23.368		
3,300.0	3,293.5	3,275.2	3,269.7	8.0	7.7	-169.72	157.9	11.9	341.0	326.5	14.45	23.590		
3,400.0	3,393.3	3,374.2	3,368.5	8.2	8.0	-169.92	164.7	11.0	354.8	339.9	14.91	23.798		
3,500.0	3,493.0	3,473.2	3,467.3	8.5	8.2	-170.10	171.6	10.1	368.6	353.2	15.36	23.994		
3,600.0	3,592.8	3,572.3	3,566.1	8.8	8.5	-170.27	178.4	9.2	382.4	366.6	15.82	24.179		
3,700.0	3,692.5	3,671.3	3,664.9	9.0	8.7	-170.43	185.3	8.2	396.2	380.0	16.27	24.354		
3,800.0	3,792.3	3,770.4	3,763.7	9.3	9.0	-170.58	192.1	7.3	410.1	393.3	16.72	24.519		
3,900.0	3,892.0	3,869.4	3,862.5	9.6	9.2	-170.72	199.0	6.4	423.9	406.7	17.18	24.675		
4,000.0	3,991.8	3,968.4	3,961.3	9.8	9.5	-170.85	205.8	5.5	437.7	420.1	17.63	24.823		
4,100.0	4,091.6	4,067.5	4,060.1	10.1	9.7	-170.97	212.6	4.5	451.5	433.4	18.09	24.964		
4,200.0	4,191.3	4,166.5	4,158.9	10.4	10.0	-171.08	219.5	3.6	465.4	446.8	18.54	25.098		
4,300.0	4,291.1	4,265.5	4,257.7	10.6	10.2	-171.19	226.3	2.7	479.2	460.2	19.00	25.225		
4,400.0	4,390.8	4,364.6	4,356.4	10.9	10.5	-171.29	233.2	1.8	493.0	473.6	19.45	25.346		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-0908B - 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		
0.0	0.0	0.0	0.0	0.0	0.0	178.95	-75.0	1.4	75.0					
100.0	100.0	100.0	100.0	0.1	0.1	178.95	-75.0	1.4	75.0	74.9	0.19	399.865		
200.0	200.0	200.0	200.0	0.3	0.3	178.95	-75.0	1.4	75.0	74.4	0.64	117.773		
300.0	300.0	300.0	300.0	0.5	0.5	178.95	-75.0	1.4	75.0	74.0	1.09	69.056		
400.0	400.0	400.0	400.0	0.8	0.8	178.95	-75.0	1.4	75.0	73.5	1.54	48.850		
500.0	500.0	500.0	500.0	1.0	1.0	178.95	-75.0	1.4	75.0	73.1	1.99	37.791		
600.0	600.0	600.0	600.0	1.2	1.2	17.41	-75.0	1.4	73.4	71.0	2.41	30.427		
700.0	699.8	699.8	699.8	1.4	1.4	18.75	-75.0	1.4	68.4	65.6	2.83	24.210		
800.0	799.6	799.6	799.6	1.6	1.7	20.83	-75.0	1.4	61.8	58.6	3.25	19.041		
900.0	899.4	899.4	899.4	1.8	1.9	23.39	-75.0	1.4	55.4	51.7	3.68	15.045		
1,000.0	999.1	999.1	999.1	2.0	2.1	26.63	-75.0	1.4	49.0	44.9	4.12	11.898		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	30.81	-75.0	1.4	42.9	38.3	4.57	9.387		
1,200.0	1,198.6	1,199.9	1,199.8	2.5	2.6	36.66	-73.3	1.8	35.4	30.3	5.04	7.022		
1,300.0	1,298.4	1,300.2	1,300.1	2.8	2.8	47.50	-68.2	3.0	25.0	19.5	5.53	4.525		
1,400.0	1,398.1	1,399.3	1,398.9	3.0	3.0	74.84	-61.5	4.5	15.3	9.3	6.05	2.530		
1,458.8	1,456.8	1,457.6	1,457.1	3.2	3.2	105.61	-57.5	5.5	13.1	6.8	6.32	2.076 CC, ES, SF		
1,500.0	1,497.9	1,498.4	1,497.8	3.3	3.2	128.24	-54.8	6.1	14.2	7.8	6.45	2.207		
1,600.0	1,597.6	1,597.5	1,596.6	3.5	3.5	160.63	-48.0	7.7	23.0	16.2	6.80	3.387		
1,700.0	1,697.4	1,696.6	1,695.5	3.8	3.7	173.34	-41.3	9.2	34.9	27.7	7.23	4.830		
1,800.0	1,797.2	1,795.7	1,794.3	4.1	4.0	179.46	-34.6	10.8	47.6	39.9	7.67	6.204		
1,900.0	1,896.9	1,894.8	1,893.2	4.3	4.2	-177.01	-27.8	12.4	60.6	52.5	8.12	7.461		
2,000.0	1,996.7	1,993.9	1,992.0	4.6	4.4	-174.73	-21.1	13.9	73.7	65.2	8.57	8.601		
2,100.0	2,096.4	2,093.0	2,090.9	4.8	4.7	-173.15	-14.4	15.5	87.0	77.9	9.03	9.634		
2,200.0	2,196.2	2,192.1	2,189.8	5.1	4.9	-171.98	-7.6	17.1	100.2	90.8	9.48	10.572		
2,300.0	2,295.9	2,291.2	2,288.6	5.4	5.2	-171.09	-0.9	18.6	113.6	103.6	9.94	11.427		
2,400.0	2,395.7	2,390.3	2,387.5	5.6	5.4	-170.38	5.8	20.2	126.9	116.5	10.39	12.208		
2,500.0	2,495.5	2,489.4	2,486.3	5.9	5.7	-169.81	12.6	21.8	140.2	129.4	10.85	12.925		
2,600.0	2,595.2	2,588.5	2,585.2	6.1	5.9	-169.34	19.3	23.3	153.6	142.3	11.31	13.584		
2,700.0	2,695.0	2,687.6	2,684.0	6.4	6.2	-168.94	26.0	24.9	166.9	155.2	11.76	14.193		
2,800.0	2,794.7	2,786.7	2,782.9	6.7	6.4	-168.60	32.8	26.5	180.3	168.1	12.22	14.756		
2,900.0	2,894.5	2,885.8	2,881.7	6.9	6.6	-168.31	39.5	28.0	193.7	181.0	12.68	15.279		
3,000.0	2,994.2	2,984.9	2,980.6	7.2	6.9	-168.06	46.2	29.6	207.1	193.9	13.13	15.765		
3,100.0	3,094.0	3,084.0	3,079.5	7.5	7.1	-167.83	53.0	31.2	220.5	206.9	13.59	16.219		
3,200.0	3,193.7	3,183.1	3,178.3	7.7	7.4	-167.64	59.7	32.7	233.8	219.8	14.05	16.643		
3,300.0	3,293.5	3,282.2	3,277.2	8.0	7.6	-167.46	66.4	34.3	247.2	232.7	14.51	17.040		
3,400.0	3,393.3	3,381.3	3,376.0	8.2	7.9	-167.30	73.2	35.9	260.6	245.6	14.97	17.413		
3,500.0	3,493.0	3,480.3	3,474.9	8.5	8.1	-167.16	79.9	37.4	274.0	258.6	15.43	17.764		
3,600.0	3,592.8	3,579.4	3,573.7	8.8	8.4	-167.03	86.6	39.0	287.4	271.5	15.88	18.094		
3,700.0	3,692.5	3,678.5	3,672.6	9.0	8.6	-166.91	93.4	40.6	300.8	284.5	16.34	18.406		
3,800.0	3,792.3	3,777.6	3,771.4	9.3	8.9	-166.81	100.1	42.1	314.2	297.4	16.80	18.701		
3,900.0	3,892.0	3,876.7	3,870.3	9.6	9.2	-166.71	106.8	43.7	327.6	310.3	17.26	18.980		
4,000.0	3,991.8	3,975.8	3,969.2	9.8	9.4	-166.62	113.6	45.3	341.0	323.3	17.72	19.245		
4,100.0	4,091.6	4,074.9	4,068.0	10.1	9.7	-166.53	120.3	46.8	354.4	336.2	18.18	19.496		
4,200.0	4,191.3	4,174.0	4,166.9	10.4	9.9	-166.45	127.0	48.4	367.8	349.2	18.64	19.735		
4,300.0	4,291.1	4,273.1	4,265.7	10.6	10.2	-166.38	133.8	50.0	381.2	362.1	19.10	19.962		
4,400.0	4,390.8	4,372.2	4,364.6	10.9	10.4	-166.31	140.5	51.5	394.6	375.0	19.56	20.178		
4,500.0	4,490.6	4,471.3	4,463.4	11.1	10.7	-166.25	147.2	53.1	408.0	388.0	20.01	20.385		
4,600.0	4,590.3	4,570.4	4,562.3	11.4	10.9	-166.19	154.0	54.7	421.4	400.9	20.47	20.582		
4,700.0	4,690.1	4,669.5	4,661.1	11.7	11.2	-166.13	160.7	56.2	434.8	413.9	20.93	20.771		
4,800.0	4,789.9	4,768.6	4,760.0	11.9	11.4	-166.08	167.4	57.8	448.2	426.8	21.39	20.951		
4,900.0	4,889.6	4,867.7	4,858.9	12.2	11.7	-166.03	174.2	59.4	461.6	439.7	21.85	21.124		
5,000.0	4,989.4	4,966.8	4,957.7	12.5	11.9	-165.99	180.9	60.9	475.0	452.7	22.31	21.290		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-0908B - 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 +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)			
5,100.0	5,089.1	5,065.9	5,056.6	12.7	12.2	-165.94	187.6	62.5	488.4	465.6	22.77	21.449	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2805A - 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		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	-91.03	-1.2	-65.3	65.3					
100.0	100.0	100.0	100.0	0.1	0.1	-91.03	-1.2	-65.3	65.3	65.1	0.19	347.994		
200.0	200.0	200.0	200.0	0.3	0.3	-91.03	-1.2	-65.3	65.3	64.7	0.64	102.496		
300.0	300.0	300.0	300.0	0.5	0.5	-91.03	-1.2	-65.3	65.3	64.2	1.09	60.098		
400.0	400.0	400.0	400.0	0.8	0.8	-91.03	-1.2	-65.3	65.3	63.8	1.54	42.513		
500.0	500.0	500.0	500.0	1.0	1.0	-91.03	-1.2	-65.3	65.3	63.3	1.99	32.889 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	108.46	-1.2	-65.3	65.8	63.4	2.41	27.337		
700.0	699.8	699.8	699.8	1.4	1.4	112.63	-1.2	-65.3	67.7	64.9	2.82	23.994		
800.0	799.6	799.6	799.6	1.6	1.7	117.85	-1.2	-65.3	70.7	67.4	3.25	21.736		
900.0	899.4	899.4	899.4	1.8	1.9	122.61	-1.2	-65.3	74.2	70.5	3.69	20.094		
1,000.0	999.1	999.1	999.1	2.0	2.1	126.91	-1.2	-65.3	78.2	74.0	4.14	18.891		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	130.78	-1.2	-65.3	82.6	78.0	4.59	17.996		
1,200.0	1,198.6	1,198.6	1,198.6	2.5	2.6	134.25	-1.2	-65.3	87.3	82.2	5.04	17.323		
1,300.0	1,298.4	1,299.2	1,299.2	2.8	2.8	136.34	-2.8	-65.7	91.8	86.4	5.47	16.804		
1,400.0	1,398.1	1,400.0	1,399.8	3.0	2.9	136.20	-8.0	-66.9	95.5	89.7	5.88	16.256		
1,500.0	1,497.9	1,499.9	1,499.5	3.3	3.1	135.09	-14.7	-68.5	98.8	92.5	6.30	15.672		
1,600.0	1,597.6	1,599.9	1,599.2	3.5	3.3	134.05	-21.5	-70.1	102.1	95.4	6.75	15.137		
1,700.0	1,697.4	1,699.8	1,698.9	3.8	3.5	133.08	-28.3	-71.7	105.4	98.3	7.20	14.650		
1,800.0	1,797.2	1,799.7	1,798.6	4.1	3.7	132.16	-35.1	-73.4	108.8	101.2	7.66	14.208		
1,900.0	1,896.9	1,899.6	1,898.3	4.3	4.0	131.30	-41.9	-75.0	112.2	104.1	8.13	13.806		
2,000.0	1,996.7	1,999.6	1,998.0	4.6	4.2	130.49	-48.7	-76.6	115.6	107.0	8.60	13.440		
2,100.0	2,096.4	2,099.5	2,097.6	4.8	4.4	129.73	-55.4	-78.2	119.1	110.0	9.08	13.107		
2,200.0	2,196.2	2,199.4	2,197.3	5.1	4.6	129.01	-62.2	-79.8	122.5	112.9	9.57	12.803		
2,300.0	2,295.9	2,299.4	2,297.0	5.4	4.9	128.33	-69.0	-81.4	126.0	115.9	10.06	12.524		
2,400.0	2,395.7	2,399.3	2,396.7	5.6	5.1	127.69	-75.8	-83.0	129.5	118.9	10.55	12.269		
2,500.0	2,495.5	2,499.2	2,496.4	5.9	5.4	127.08	-82.6	-84.6	133.0	121.9	11.05	12.035		
2,600.0	2,595.2	2,599.1	2,596.1	6.1	5.6	126.50	-89.3	-86.2	136.5	125.0	11.55	11.820		
2,700.0	2,695.0	2,699.1	2,695.8	6.4	5.8	125.95	-96.1	-87.8	140.0	128.0	12.05	11.621		
2,800.0	2,794.7	2,799.0	2,795.4	6.7	6.1	125.43	-102.9	-89.4	143.6	131.0	12.56	11.436		
2,900.0	2,894.5	2,898.9	2,895.1	6.9	6.3	124.93	-109.7	-91.1	147.1	134.1	13.06	11.266		
3,000.0	2,994.2	2,998.9	2,994.8	7.2	6.6	124.46	-116.5	-92.7	150.7	137.1	13.57	11.107		
3,100.0	3,094.0	3,098.8	3,094.5	7.5	6.8	124.00	-123.3	-94.3	154.3	140.2	14.08	10.960		
3,200.0	3,193.7	3,198.7	3,194.2	7.7	7.1	123.57	-130.0	-95.9	157.9	143.3	14.59	10.822		
3,300.0	3,293.5	3,298.6	3,293.9	8.0	7.3	123.16	-136.8	-97.5	161.5	146.4	15.10	10.694		
3,400.0	3,393.3	3,398.6	3,393.5	8.2	7.6	122.77	-143.6	-99.1	165.1	149.5	15.61	10.573		
3,500.0	3,493.0	3,498.5	3,493.2	8.5	7.9	122.39	-150.4	-100.7	168.7	152.6	16.13	10.461		
3,600.0	3,592.8	3,598.4	3,592.9	8.8	8.1	122.03	-157.2	-102.3	172.3	155.7	16.64	10.355		
3,700.0	3,692.5	3,698.4	3,692.6	9.0	8.4	121.68	-164.0	-103.9	175.9	158.8	17.16	10.255		
3,800.0	3,792.3	3,798.3	3,792.3	9.3	8.6	121.35	-170.7	-105.5	179.6	161.9	17.67	10.161		
3,900.0	3,892.0	3,898.2	3,892.0	9.6	8.9	121.03	-177.5	-107.2	183.2	165.0	18.19	10.072		
4,000.0	3,991.8	3,998.2	3,991.7	9.8	9.1	120.73	-184.3	-108.8	186.8	168.1	18.71	9.989		
4,100.0	4,091.6	4,098.1	4,091.3	10.1	9.4	120.43	-191.1	-110.4	190.5	171.3	19.22	9.909		
4,200.0	4,191.3	4,198.0	4,191.0	10.4	9.6	120.15	-197.9	-112.0	194.1	174.4	19.74	9.834		
4,300.0	4,291.1	4,297.9	4,290.7	10.6	9.9	119.87	-204.6	-113.6	197.8	177.5	20.26	9.763		
4,400.0	4,390.8	4,397.9	4,390.4	10.9	10.2	119.61	-211.4	-115.2	201.5	180.7	20.78	9.695		
4,500.0	4,490.6	4,497.8	4,490.1	11.1	10.4	119.36	-218.2	-116.8	205.1	183.8	21.30	9.631		
4,600.0	4,590.3	4,597.7	4,589.8	11.4	10.7	119.11	-225.0	-118.4	208.8	187.0	21.82	9.570		
4,700.0	4,690.1	4,697.7	4,689.5	11.7	10.9	118.87	-231.8	-120.0	212.5	190.1	22.34	9.511		
4,800.0	4,789.9	4,797.6	4,789.1	11.9	11.2	118.64	-238.6	-121.6	216.2	193.3	22.86	9.455		
4,900.0	4,889.6	4,897.5	4,888.8	12.2	11.5	118.42	-245.3	-123.2	219.8	196.4	23.38	9.402		
5,000.0	4,989.4	4,997.4	4,988.5	12.5	11.7	118.21	-252.1	-124.9	223.5	199.6	23.90	9.351		
5,100.0	5,089.1	5,097.4	5,088.2	12.7	12.0	118.00	-258.9	-126.5	227.2	202.8	24.42	9.303		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2805A - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor		
5,200.0	5,188.9	5,197.3	5,187.9	13.0	12.2	117.80	-265.7	-128.1	230.9	205.9	24.94	9.256		
5,300.0	5,288.6	5,297.2	5,287.6	13.3	12.5	117.61	-272.5	-129.7	234.6	209.1	25.47	9.211 SF		
5,400.0	5,387.9	5,395.1	5,384.9	13.6	12.8	116.95	-282.6	-132.1	240.4	214.4	25.99	9.248		
5,500.0	5,483.6	5,490.7	5,476.5	14.0	13.2	115.03	-308.2	-138.2	255.5	228.8	26.68	9.577		
5,600.0	5,572.0	5,583.8	5,559.8	14.7	13.8	112.08	-348.4	-147.7	279.9	252.2	27.64	10.124		
5,700.0	5,650.0	5,673.9	5,632.2	15.5	14.4	108.36	-400.5	-160.1	312.5	283.5	29.04	10.764		
5,800.0	5,714.6	5,761.0	5,692.4	16.6	15.3	104.08	-461.6	-174.6	352.2	321.2	30.95	11.380		
5,900.0	5,763.5	5,845.5	5,740.1	17.9	16.2	99.43	-529.4	-190.7	397.3	364.0	33.29	11.936		
6,000.0	5,795.0	5,928.4	5,775.2	19.3	17.2	94.61	-602.3	-208.0	446.3	410.4	35.91	12.426		
6,100.0	5,807.7	6,010.8	5,798.0	20.8	18.3	89.80	-679.3	-226.2	497.5	458.8	38.67	12.863		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2806B - 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	-157.89	-75.6	-30.7	81.6					
100.0	100.0	100.0	100.0	0.1	0.1	-157.89	-75.6	-30.7	81.6	81.4	0.19	434.894		
200.0	200.0	200.0	200.0	0.3	0.3	-157.89	-75.6	-30.7	81.6	81.0	0.64	128.091		
300.0	300.0	300.0	300.0	0.5	0.5	-157.89	-75.6	-30.7	81.6	80.5	1.09	75.106		
400.0	400.0	400.0	400.0	0.8	0.8	-157.89	-75.6	-30.7	81.6	80.1	1.54	53.129		
500.0	500.0	500.0	500.0	1.0	1.0	-157.89	-75.6	-30.7	81.6	79.6	1.99	41.102		
600.0	600.0	600.0	600.0	1.2	1.2	40.98	-75.6	-30.7	80.3	77.9	2.41	33.306		
700.0	699.8	699.8	699.8	1.4	1.4	43.61	-75.6	-30.7	76.4	73.6	2.82	27.053		
800.0	799.6	799.6	799.6	1.6	1.7	47.46	-75.6	-30.7	71.5	68.3	3.25	21.983		
900.0	899.4	899.4	899.4	1.8	1.9	51.85	-75.6	-30.7	67.0	63.3	3.70	18.124		
1,000.0	999.1	999.1	999.1	2.0	2.1	56.84	-75.6	-30.7	62.9	58.8	4.15	15.155		
1,100.0	1,098.9	1,097.5	1,097.5	2.3	2.3	61.22	-77.3	-30.6	60.5	55.9	4.58	13.203		
1,142.1	1,140.8	1,138.9	1,138.9	2.4	2.4	62.45	-79.0	-30.5	60.3	55.5	4.76	12.669 CC, ES		
1,200.0	1,198.6	1,196.1	1,195.9	2.5	2.5	63.43	-82.3	-30.3	60.7	55.7	5.00	12.139		
1,300.0	1,298.4	1,296.0	1,295.6	2.8	2.7	64.31	-89.3	-29.8	62.1	56.7	5.43	11.440		
1,400.0	1,398.1	1,396.0	1,395.3	3.0	2.9	65.15	-96.2	-29.3	63.6	57.7	5.88	10.823		
1,500.0	1,497.9	1,496.0	1,495.1	3.3	3.1	65.96	-103.2	-28.9	65.1	58.7	6.33	10.277		
1,600.0	1,597.6	1,596.0	1,594.8	3.5	3.3	66.72	-110.1	-28.4	66.5	59.8	6.80	9.794		
1,700.0	1,697.4	1,695.9	1,694.6	3.8	3.5	67.46	-117.1	-27.9	68.0	60.8	7.27	9.364		
1,800.0	1,797.2	1,795.9	1,794.3	4.1	3.8	68.16	-124.1	-27.5	69.5	61.8	7.74	8.980		
1,900.0	1,896.9	1,895.9	1,894.0	4.3	4.0	68.83	-131.0	-27.0	71.1	62.8	8.23	8.637		
2,000.0	1,996.7	1,995.9	1,993.8	4.6	4.2	69.48	-138.0	-26.5	72.6	63.9	8.72	8.328		
2,100.0	2,096.4	2,095.9	2,093.5	4.8	4.5	70.09	-144.9	-26.1	74.1	64.9	9.21	8.050		
2,200.0	2,196.2	2,195.9	2,193.3	5.1	4.7	70.69	-151.9	-25.6	75.7	66.0	9.70	7.798		
2,300.0	2,295.9	2,295.8	2,293.0	5.4	5.0	71.26	-158.9	-25.1	77.2	67.0	10.20	7.569		
2,400.0	2,395.7	2,395.8	2,392.8	5.6	5.2	71.80	-165.8	-24.7	78.8	68.1	10.70	7.360		
2,500.0	2,495.5	2,495.8	2,492.5	5.9	5.5	72.33	-172.8	-24.2	80.3	69.1	11.20	7.169		
2,600.0	2,595.2	2,595.8	2,592.2	6.1	5.7	72.83	-179.7	-23.7	81.9	70.2	11.71	6.993		
2,700.0	2,695.0	2,695.8	2,692.0	6.4	6.0	73.32	-186.7	-23.2	83.5	71.3	12.22	6.832		
2,800.0	2,794.7	2,795.8	2,791.7	6.7	6.2	73.79	-193.6	-22.8	85.0	72.3	12.73	6.683		
2,900.0	2,894.5	2,895.8	2,891.5	6.9	6.5	74.24	-200.6	-22.3	86.6	73.4	13.24	6.545		
3,000.0	2,994.2	2,995.7	2,991.2	7.2	6.7	74.67	-207.6	-21.8	88.2	74.5	13.75	6.418		
3,100.0	3,094.0	3,095.7	3,090.9	7.5	7.0	75.09	-214.5	-21.4	89.8	75.6	14.26	6.299		
3,200.0	3,193.7	3,195.7	3,190.7	7.7	7.2	75.50	-221.5	-20.9	91.4	76.7	14.77	6.188		
3,300.0	3,293.5	3,295.7	3,290.4	8.0	7.5	75.89	-228.4	-20.4	93.0	77.7	15.29	6.085		
3,400.0	3,393.3	3,395.7	3,390.2	8.2	7.7	76.27	-235.4	-20.0	94.6	78.8	15.80	5.988		
3,500.0	3,493.0	3,495.7	3,489.9	8.5	8.0	76.63	-242.4	-19.5	96.3	79.9	16.32	5.897		
3,600.0	3,592.8	3,595.7	3,589.7	8.8	8.3	76.98	-249.3	-19.0	97.9	81.0	16.84	5.812		
3,700.0	3,692.5	3,695.6	3,689.4	9.0	8.5	77.32	-256.3	-18.6	99.5	82.1	17.36	5.732		
3,800.0	3,792.3	3,795.6	3,789.1	9.3	8.8	77.65	-263.2	-18.1	101.1	83.2	17.88	5.656		
3,900.0	3,892.0	3,895.6	3,888.9	9.6	9.0	77.97	-270.2	-17.6	102.7	84.3	18.40	5.585		
4,000.0	3,991.8	3,995.6	3,988.6	9.8	9.3	78.28	-277.2	-17.2	104.4	85.5	18.92	5.517		
4,100.0	4,091.6	4,095.6	4,088.4	10.1	9.6	78.58	-284.1	-16.7	106.0	86.6	19.44	5.453		
4,200.0	4,191.3	4,195.6	4,188.1	10.4	9.8	78.88	-291.1	-16.2	107.6	87.7	19.96	5.393		
4,300.0	4,291.1	4,295.5	4,287.8	10.6	10.1	79.16	-298.0	-15.8	109.3	88.8	20.48	5.335		
4,400.0	4,390.8	4,395.5	4,387.6	10.9	10.3	79.43	-305.0	-15.3	110.9	89.9	21.01	5.281		
4,500.0	4,490.6	4,495.5	4,487.3	11.1	10.6	79.70	-311.9	-14.8	112.6	91.0	21.53	5.229		
4,600.0	4,590.3	4,595.5	4,587.1	11.4	10.9	79.96	-318.9	-14.3	114.2	92.2	22.05	5.180		
4,700.0	4,690.1	4,695.5	4,686.8	11.7	11.1	80.21	-325.9	-13.9	115.9	93.3	22.58	5.132		
4,800.0	4,789.9	4,795.5	4,786.6	11.9	11.4	80.45	-332.8	-13.4	117.5	94.4	23.10	5.088		
4,900.0	4,889.6	4,895.5	4,886.3	12.2	11.6	80.69	-339.8	-12.9	119.2	95.5	23.62	5.045		
5,000.0	4,989.4	4,995.4	4,986.0	12.5	11.9	80.92	-346.7	-12.5	120.8	96.7	24.15	5.004		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2806B - 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		
5,100.0	5,089.1	5,095.4	5,085.8	12.7	12.2	81.14	-353.7	-12.0	122.5	97.8	24.67	4.964		
5,200.0	5,188.9	5,195.4	5,185.5	13.0	12.4	81.36	-360.7	-11.5	124.1	98.9	25.20	4.927		
5,300.0	5,288.6	5,295.4	5,285.3	13.3	12.7	81.58	-367.6	-11.1	125.8	100.1	25.72	4.891		
5,400.0	5,387.9	5,395.2	5,384.8	13.6	13.0	83.53	-374.6	-10.6	126.9	100.6	26.32	4.822		
5,500.0	5,483.6	5,488.9	5,477.7	14.0	13.2	90.52	-385.9	-9.8	129.1	101.9	27.19	4.748		
5,600.0	5,572.0	5,583.1	5,567.7	14.7	13.7	97.22	-413.3	-8.0	137.7	109.5	28.27	4.873		
5,700.0	5,650.0	5,679.8	5,653.4	15.5	14.3	102.63	-457.8	-5.0	152.7	123.2	29.50	5.176		
5,800.0	5,714.6	5,779.3	5,731.4	16.6	15.1	106.34	-519.2	-0.9	172.9	142.0	30.94	5.589		
5,900.0	5,763.5	5,881.9	5,798.0	17.9	16.1	108.38	-596.8	4.4	197.1	164.4	32.73	6.022		
6,000.0	5,795.0	5,988.0	5,849.5	19.3	17.4	109.00	-689.1	10.6	223.9	188.8	35.02	6.393		
6,100.0	5,807.7	6,097.9	5,882.1	20.8	18.9	108.50	-793.6	17.6	251.8	214.0	37.83	6.656		
6,200.0	5,808.0	6,209.3	5,892.0	22.3	20.5	108.09	-904.1	25.0	276.0	235.0	41.03	6.727		
6,300.0	5,808.0	6,300.0	5,892.0	23.8	21.8	106.78	-994.8	28.5	295.6	251.5	44.09	6.704		
6,400.0	5,808.0	6,388.2	5,892.0	25.2	23.1	105.75	-1,082.9	28.7	313.6	266.6	47.06	6.664		
6,500.0	5,808.0	6,487.2	5,892.0	26.7	24.7	104.98	-1,181.9	28.7	327.1	276.9	50.25	6.510		
6,600.0	5,808.0	6,586.8	5,892.0	28.3	26.3	104.52	-1,281.5	28.7	335.7	282.3	53.35	6.292		
6,700.0	5,808.0	6,686.7	5,892.0	29.8	28.0	104.34	-1,381.4	28.7	339.1	282.8	56.32	6.021		
6,800.0	5,808.0	6,786.7	5,892.0	31.4	29.7	104.34	-1,481.4	28.7	339.2	279.7	59.53	5.698		
6,900.0	5,808.0	6,886.7	5,892.0	33.1	31.5	104.34	-1,581.4	28.7	339.2	276.3	62.92	5.392		
7,000.0	5,808.0	6,986.7	5,892.0	34.8	33.2	104.34	-1,681.4	28.7	339.2	272.9	66.34	5.114		
7,100.0	5,808.0	7,086.7	5,892.0	36.5	35.0	104.34	-1,781.4	28.7	339.2	269.5	69.79	4.861		
7,200.0	5,808.0	7,186.7	5,892.0	38.3	36.8	104.34	-1,881.4	28.7	339.2	266.0	73.27	4.630		
7,300.0	5,808.0	7,286.7	5,892.0	40.0	38.6	104.34	-1,981.4	28.7	339.3	262.5	76.77	4.419		
7,400.0	5,808.0	7,386.7	5,892.0	41.8	40.4	104.34	-2,081.4	28.7	339.3	259.0	80.30	4.225		
7,500.0	5,808.0	7,486.7	5,892.0	43.6	42.3	104.34	-2,181.4	28.7	339.3	255.4	83.84	4.047		
7,600.0	5,808.0	7,586.7	5,892.0	45.4	44.1	104.34	-2,281.4	28.7	339.3	251.9	87.40	3.882		
7,700.0	5,808.0	7,686.7	5,892.0	47.2	45.9	104.34	-2,381.4	28.7	339.3	248.3	90.97	3.730		
7,800.0	5,808.0	7,786.7	5,892.0	49.0	47.8	104.34	-2,481.4	28.6	339.3	244.7	94.56	3.588		
7,900.0	5,808.0	7,886.7	5,892.0	50.9	49.6	104.34	-2,581.4	28.6	339.3	241.2	98.15	3.457		
8,000.0	5,808.0	7,986.7	5,892.0	52.7	51.5	104.34	-2,681.4	28.6	339.3	237.6	101.76	3.334		
8,100.0	5,808.0	8,086.7	5,892.0	54.5	53.3	104.33	-2,781.4	28.6	339.3	233.9	105.38	3.220		
8,200.0	5,808.0	8,186.7	5,892.0	56.4	55.2	104.33	-2,881.4	28.6	339.3	230.3	109.00	3.113		
8,300.0	5,808.0	8,286.7	5,892.0	58.2	57.1	104.33	-2,981.4	28.6	339.3	226.7	112.63	3.013		
8,400.0	5,808.0	8,386.7	5,892.0	60.1	59.0	104.33	-3,081.4	28.6	339.3	223.1	116.27	2.919		
8,500.0	5,808.0	8,486.7	5,892.0	61.9	60.8	104.33	-3,181.4	28.6	339.4	219.4	119.91	2.830		
8,600.0	5,808.0	8,586.7	5,892.0	63.8	62.7	104.33	-3,281.4	28.6	339.4	215.8	123.56	2.747		
8,700.0	5,808.0	8,686.7	5,892.0	65.6	64.6	104.33	-3,381.4	28.6	339.4	212.2	127.21	2.668		
8,800.0	5,808.0	8,786.7	5,892.0	67.5	66.5	104.33	-3,481.4	28.6	339.4	208.5	130.87	2.593		
8,900.0	5,808.0	8,886.7	5,892.0	69.4	68.3	104.33	-3,581.4	28.6	339.4	204.9	134.54	2.523		
9,000.0	5,808.0	8,986.7	5,892.0	71.2	70.2	104.33	-3,681.4	28.6	339.4	201.2	138.20	2.456		
9,100.0	5,808.0	9,086.7	5,892.0	73.1	72.1	104.33	-3,781.4	28.6	339.4	197.5	141.87	2.392		
9,200.0	5,808.0	9,186.7	5,892.0	75.0	74.0	104.33	-3,881.4	28.6	339.4	193.9	145.54	2.332		
9,300.0	5,808.0	9,286.7	5,892.0	76.9	75.9	104.33	-3,981.4	28.6	339.4	190.2	149.22	2.275		
9,400.0	5,808.0	9,386.7	5,892.0	78.8	77.8	104.33	-4,081.4	28.6	339.4	186.5	152.90	2.220		
9,500.0	5,808.0	9,486.7	5,892.0	80.6	79.7	104.33	-4,181.4	28.6	339.4	182.9	156.58	2.168		
9,600.0	5,808.0	9,586.7	5,892.0	82.5	81.6	104.33	-4,281.4	28.6	339.4	179.2	160.27	2.118		
9,700.0	5,808.0	9,686.7	5,892.0	84.4	83.5	104.33	-4,381.4	28.6	339.5	175.5	163.95	2.070		
9,800.0	5,808.0	9,786.7	5,892.0	86.3	85.4	104.33	-4,481.4	28.6	339.5	171.8	167.64	2.025		
9,900.0	5,808.0	9,886.7	5,892.0	88.2	87.3	104.33	-4,581.4	28.6	339.5	168.1	171.33	1.981		
10,000.0	5,808.0	9,986.7	5,892.0	90.1	89.2	104.33	-4,681.4	28.6	339.5	164.5	175.02	1.940		
10,100.0	5,808.0	10,086.7	5,892.0	92.0	91.1	104.33	-4,781.4	28.6	339.5	160.8	178.72	1.900		
10,200.0	5,808.0	10,186.7	5,892.0	93.8	93.0	104.33	-4,881.4	28.6	339.5	157.1	182.41	1.861		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2806B - 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		
10,300.0	5,808.0	10,286.7	5,892.0	95.7	94.9	104.33	-4,981.4	28.6	339.5	153.4	186.11	1.824		
10,400.0	5,808.0	10,386.7	5,892.0	97.6	96.8	104.33	-5,081.4	28.5	339.5	149.7	189.81	1.789		
10,500.0	5,808.0	10,486.7	5,892.0	99.5	98.7	104.33	-5,181.4	28.5	339.5	146.0	193.51	1.755		
10,600.0	5,808.0	10,586.7	5,892.0	101.4	100.6	104.32	-5,281.4	28.5	339.5	142.3	197.21	1.722		
10,700.0	5,808.0	10,686.7	5,892.0	103.3	102.5	104.32	-5,381.4	28.5	339.5	138.6	200.91	1.690		
10,800.0	5,808.0	10,786.7	5,892.0	105.2	104.4	104.32	-5,481.4	28.5	339.5	134.9	204.61	1.659		
10,900.0	5,808.0	10,886.7	5,892.0	107.1	106.3	104.32	-5,581.4	28.5	339.6	131.2	208.32	1.630		
11,000.0	5,808.0	10,986.7	5,892.0	109.0	108.2	104.32	-5,681.4	28.5	339.6	127.5	212.02	1.602		
11,100.0	5,808.0	11,086.7	5,892.0	110.9	110.1	104.32	-5,781.4	28.5	339.6	123.8	215.73	1.574		
11,200.0	5,808.0	11,186.7	5,892.0	112.8	112.0	104.32	-5,881.4	28.5	339.6	120.1	219.44	1.547		
11,300.0	5,808.0	11,286.7	5,892.0	114.7	113.9	104.32	-5,981.4	28.5	339.6	116.4	223.15	1.522		
11,400.0	5,808.0	11,386.7	5,892.0	116.6	115.8	104.32	-6,081.4	28.5	339.6	112.7	226.86	1.497 Level 3		
11,500.0	5,808.0	11,486.7	5,892.0	118.5	117.7	104.32	-6,181.4	28.5	339.6	109.0	230.57	1.473 Level 3		
11,600.0	5,808.0	11,586.7	5,892.0	120.4	119.6	104.32	-6,281.4	28.5	339.6	105.3	234.28	1.450 Level 3		
11,700.0	5,808.0	11,686.7	5,892.0	122.3	121.5	104.32	-6,381.4	28.5	339.6	101.6	237.99	1.427 Level 3		
11,800.0	5,808.0	11,786.7	5,892.0	124.2	123.4	104.32	-6,481.4	28.5	339.6	97.9	241.70	1.405 Level 3		
11,900.0	5,808.0	11,886.7	5,892.0	126.1	125.3	104.32	-6,581.4	28.5	339.6	94.2	245.42	1.384 Level 3		
12,000.0	5,808.0	11,986.7	5,892.0	128.0	127.2	104.32	-6,681.4	28.5	339.6	90.5	249.13	1.363 Level 3		
12,100.0	5,808.0	12,086.7	5,892.0	129.9	129.1	104.32	-6,781.4	28.5	339.7	86.8	252.84	1.343 Level 3		
12,200.0	5,808.0	12,186.7	5,892.0	131.8	131.0	104.32	-6,881.4	28.5	339.7	83.1	256.56	1.324 Level 3		
12,300.0	5,808.0	12,286.7	5,892.0	133.7	133.0	104.32	-6,981.4	28.5	339.7	79.4	260.27	1.305 Level 3		
12,400.0	5,808.0	12,386.7	5,892.0	135.6	134.9	104.32	-7,081.4	28.5	339.7	75.7	263.99	1.287 Level 3		
12,500.0	5,808.0	12,486.7	5,892.0	137.5	136.8	104.32	-7,181.4	28.5	339.7	72.0	267.71	1.269 Level 3		
12,600.0	5,808.0	12,586.7	5,892.0	139.4	138.7	104.32	-7,281.4	28.5	339.7	68.3	271.42	1.252 Level 3		
12,700.0	5,808.0	12,686.7	5,892.0	141.4	140.6	104.32	-7,381.4	28.5	339.7	64.6	275.14	1.235 Level 2		
12,766.2	5,808.0	12,752.8	5,892.0	142.6	141.8	104.32	-7,447.6	28.5	339.7	62.1	277.60	1.224 Level 2, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2808B - 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	155.08	-74.4	34.6	82.1					
100.0	100.0	100.0	100.0	0.1	0.1	155.08	-74.4	34.6	82.1	81.9	0.19	437.343		
200.0	200.0	200.0	200.0	0.3	0.3	155.08	-74.4	34.6	82.1	81.4	0.64	128.812		
300.0	300.0	300.0	300.0	0.5	0.5	155.08	-74.4	34.6	82.1	81.0	1.09	75.529		
400.0	400.0	400.0	400.0	0.8	0.8	155.08	-74.4	34.6	82.1	80.5	1.54	53.428		
500.0	500.0	500.0	500.0	1.0	1.0	155.08	-74.4	34.6	82.1	80.1	1.99	41.334		
600.0	600.0	600.0	600.0	1.2	1.2	-7.02	-74.4	34.6	80.3	77.9	2.41	33.318		
700.0	699.8	699.8	699.8	1.4	1.4	-7.52	-74.4	34.6	75.2	72.3	2.82	26.611		
800.0	799.6	799.6	799.6	1.6	1.7	-8.29	-74.4	34.6	68.2	65.0	3.24	21.039		
900.0	899.4	897.2	897.2	1.8	1.9	-9.26	-75.9	35.4	63.0	59.4	3.64	17.319		
1,000.0	999.1	995.1	994.9	2.0	2.0	-10.45	-80.2	37.8	61.3	57.2	4.03	15.217		
1,003.1	1,002.2	998.1	998.0	2.1	2.0	-10.49	-80.4	37.9	61.3	57.2	4.04	15.172 CC		
1,100.0	1,098.9	1,095.0	1,094.6	2.3	2.2	-11.72	-86.3	41.2	61.4	57.0	4.43	13.859		
1,200.0	1,198.6	1,195.0	1,194.3	2.5	2.4	-12.98	-92.4	44.7	61.5	56.7	4.84	12.706		
1,300.0	1,298.4	1,295.0	1,294.1	2.8	2.7	-14.24	-98.5	48.1	61.7	56.5	5.27	11.720		
1,400.0	1,398.1	1,394.9	1,393.8	3.0	2.9	-15.49	-104.6	51.5	62.0	56.3	5.70	10.873		
1,500.0	1,497.9	1,494.9	1,493.6	3.3	3.1	-16.73	-110.6	54.9	62.2	56.1	6.13	10.140		
1,600.0	1,597.6	1,594.9	1,593.3	3.5	3.4	-17.96	-116.7	58.3	62.5	55.9	6.58	9.500		
1,700.0	1,697.4	1,694.9	1,693.1	3.8	3.6	-19.18	-122.8	61.7	62.8	55.8	7.02	8.939		
1,800.0	1,797.2	1,794.9	1,792.8	4.1	3.9	-20.39	-128.9	65.1	63.1	55.6	7.48	8.444		
1,900.0	1,896.9	1,894.9	1,892.6	4.3	4.1	-21.58	-135.0	68.5	63.5	55.6	7.93	8.005		
2,000.0	1,996.7	1,994.9	1,992.3	4.6	4.4	-22.76	-141.0	72.0	63.9	55.5	8.39	7.613		
2,100.0	2,096.4	2,094.9	2,092.1	4.8	4.6	-23.93	-147.1	75.4	64.3	55.4	8.85	7.262		
2,200.0	2,196.2	2,194.9	2,191.8	5.1	4.9	-25.08	-153.2	78.8	64.7	55.4	9.32	6.946		
2,300.0	2,295.9	2,294.9	2,291.5	5.4	5.1	-26.21	-159.3	82.2	65.2	55.4	9.79	6.661		
2,400.0	2,395.7	2,394.9	2,391.3	5.6	5.4	-27.32	-165.4	85.6	65.7	55.4	10.26	6.402		
2,500.0	2,495.5	2,494.8	2,491.0	5.9	5.6	-28.42	-171.5	89.0	66.2	55.5	10.74	6.166		
2,600.0	2,595.2	2,594.8	2,590.8	6.1	5.9	-29.51	-177.5	92.4	66.8	55.5	11.22	5.951		
2,700.0	2,695.0	2,694.8	2,690.5	6.4	6.1	-30.57	-183.6	95.9	67.3	55.6	11.70	5.754		
2,800.0	2,794.7	2,794.8	2,790.3	6.7	6.4	-31.62	-189.7	99.3	67.9	55.7	12.18	5.574		
2,900.0	2,894.5	2,894.8	2,890.0	6.9	6.6	-32.64	-195.8	102.7	68.5	55.9	12.67	5.407		
3,000.0	2,994.2	2,994.8	2,989.8	7.2	6.9	-33.65	-201.9	106.1	69.2	56.0	13.16	5.254		
3,100.0	3,094.0	3,094.8	3,089.5	7.5	7.2	-34.64	-208.0	109.5	69.8	56.2	13.65	5.112		
3,200.0	3,193.7	3,194.8	3,189.3	7.7	7.4	-35.61	-214.0	112.9	70.5	56.3	14.15	4.981		
3,300.0	3,293.5	3,294.8	3,289.0	8.0	7.7	-36.57	-220.1	116.3	71.2	56.5	14.65	4.859		
3,400.0	3,393.3	3,394.8	3,388.8	8.2	7.9	-37.50	-226.2	119.7	71.9	56.7	15.15	4.746		
3,500.0	3,493.0	3,494.8	3,488.5	8.5	8.2	-38.42	-232.3	123.2	72.6	57.0	15.65	4.641		
3,600.0	3,592.8	3,594.7	3,588.3	8.8	8.5	-39.32	-238.4	126.6	73.4	57.2	16.15	4.542		
3,700.0	3,692.5	3,694.7	3,688.0	9.0	8.7	-40.20	-244.5	130.0	74.1	57.5	16.66	4.450		
3,800.0	3,792.3	3,794.7	3,787.8	9.3	9.0	-41.06	-250.5	133.4	74.9	57.8	17.17	4.364		
3,900.0	3,892.0	3,894.7	3,887.5	9.6	9.3	-41.90	-256.6	136.8	75.7	58.0	17.68	4.284		
4,000.0	3,991.8	3,994.7	3,987.2	9.8	9.5	-42.72	-262.7	140.2	76.5	58.4	18.19	4.208		
4,100.0	4,091.6	4,094.7	4,087.0	10.1	9.8	-43.53	-268.8	143.6	77.4	58.7	18.70	4.138		
4,200.0	4,191.3	4,194.7	4,186.7	10.4	10.0	-44.32	-274.9	147.1	78.2	59.0	19.22	4.071		
4,300.0	4,291.1	4,294.7	4,286.5	10.6	10.3	-45.09	-280.9	150.5	79.1	59.4	19.73	4.008		
4,400.0	4,390.8	4,394.7	4,386.2	10.9	10.6	-45.85	-287.0	153.9	80.0	59.7	20.25	3.949		
4,500.0	4,490.6	4,494.7	4,486.0	11.1	10.8	-46.59	-293.1	157.3	80.9	60.1	20.77	3.893		
4,600.0	4,590.3	4,594.6	4,585.7	11.4	11.1	-47.31	-299.2	160.7	81.8	60.5	21.29	3.841		
4,700.0	4,690.1	4,694.6	4,685.5	11.7	11.3	-48.02	-305.3	164.1	82.7	60.9	21.81	3.791		
4,800.0	4,789.9	4,794.6	4,785.2	11.9	11.6	-48.71	-311.4	167.5	83.6	61.3	22.33	3.744		
4,900.0	4,889.6	4,894.6	4,885.0	12.2	11.9	-49.39	-317.4	170.9	84.5	61.7	22.85	3.699		
5,000.0	4,989.4	4,994.6	4,984.7	12.5	12.1	-50.05	-323.5	174.4	85.5	62.1	23.38	3.657		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2808B - 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		
5,100.0	5,089.1	5,094.6	5,084.5	12.7	12.4	-50.70	-329.6	177.8	86.5	62.6	23.90	3.617		
5,200.0	5,188.9	5,194.6	5,184.2	13.0	12.7	-51.33	-335.7	181.2	87.4	63.0	24.43	3.579		
5,300.0	5,288.6	5,294.6	5,284.0	13.3	12.9	-51.95	-341.8	184.6	88.4	63.5	24.96	3.543		
5,400.0	5,387.9	5,394.4	5,383.5	13.6	13.2	-54.83	-347.8	188.0	87.0	61.4	25.57	3.402		
5,500.0	5,483.6	5,485.9	5,474.4	14.0	13.5	-65.61	-357.2	193.3	80.3	53.6	26.66	3.012		
5,561.0	5,538.6	5,541.4	5,528.0	14.4	13.7	-73.77	-369.3	200.0	78.9	51.3	27.62	2.857		
5,600.0	5,572.0	5,577.2	5,561.8	14.7	13.9	-79.28	-379.7	205.9	79.5	51.3	28.28	2.812 ES		
5,700.0	5,650.0	5,671.2	5,645.7	15.5	14.5	-92.83	-416.4	226.5	87.0	57.0	29.97	2.903		
5,800.0	5,714.6	5,768.4	5,723.0	16.6	15.3	-103.41	-467.5	255.2	102.2	71.0	31.27	3.269		
5,900.0	5,763.5	5,869.1	5,790.3	17.9	16.3	-110.32	-532.7	291.8	123.0	90.6	32.43	3.794		
6,000.0	5,795.0	5,974.0	5,843.7	19.3	17.6	-114.18	-611.3	335.9	147.1	113.2	33.91	4.338		
6,100.0	5,807.7	6,083.5	5,879.0	20.8	19.2	-115.85	-701.5	386.5	172.5	136.5	36.01	4.791		
6,200.0	5,808.0	6,198.1	5,892.0	22.3	21.1	-115.98	-800.6	442.1	196.4	157.7	38.74	5.071		
6,300.0	5,808.0	6,306.1	5,892.0	23.8	22.8	-113.25	-896.2	492.4	218.1	175.9	42.15	5.173		
6,400.0	5,808.0	6,415.6	5,892.0	25.2	24.4	-111.04	-995.8	537.7	239.7	194.3	45.41	5.278		
6,500.0	5,808.0	6,526.7	5,892.0	26.7	26.2	-109.23	-1,099.4	577.8	261.1	212.5	48.57	5.375		
6,600.0	5,808.0	6,639.5	5,892.0	28.3	28.0	-107.73	-1,206.8	612.3	282.1	230.5	51.61	5.465		
6,700.0	5,808.0	6,754.0	5,892.0	29.8	29.8	-106.47	-1,317.6	640.8	302.6	248.0	54.53	5.549		
6,800.0	5,808.0	6,870.5	5,892.0	31.4	31.7	-105.37	-1,432.0	662.9	320.8	262.6	58.17	5.514		
6,900.0	5,808.0	6,989.3	5,892.0	33.1	33.6	-104.67	-1,549.8	678.2	333.2	271.2	62.00	5.374		
7,000.0	5,808.0	7,109.6	5,892.0	34.8	35.5	-104.33	-1,669.9	686.3	339.7	273.9	65.78	5.164		
7,100.0	5,808.0	7,221.3	5,892.0	36.5	37.3	-104.28	-1,781.5	687.4	340.6	271.3	69.33	4.913		
7,200.0	5,808.0	7,321.3	5,892.0	38.3	38.9	-104.28	-1,881.5	687.4	340.6	267.9	72.73	4.684		
7,300.0	5,808.0	7,421.3	5,892.0	40.0	40.5	-104.28	-1,981.5	687.4	340.6	264.5	76.15	4.473		
7,400.0	5,808.0	7,521.3	5,892.0	41.8	42.2	-104.28	-2,081.5	687.4	340.6	261.0	79.61	4.278		
7,500.0	5,808.0	7,621.3	5,892.0	43.6	43.9	-104.28	-2,181.5	687.4	340.6	257.5	83.09	4.099		
7,600.0	5,808.0	7,721.3	5,892.0	45.4	45.6	-104.28	-2,281.5	687.4	340.6	254.0	86.59	3.933		
7,700.0	5,808.0	7,821.3	5,892.0	47.2	47.3	-104.28	-2,381.5	687.4	340.6	250.5	90.11	3.779		
7,800.0	5,808.0	7,921.3	5,892.0	49.0	49.0	-104.28	-2,481.5	687.4	340.6	246.9	93.65	3.637		
7,900.0	5,808.0	8,021.3	5,892.0	50.9	50.8	-104.28	-2,581.5	687.4	340.6	243.4	97.20	3.504		
8,000.0	5,808.0	8,121.3	5,892.0	52.7	52.5	-104.28	-2,681.5	687.4	340.6	239.8	100.77	3.380		
8,100.0	5,808.0	8,221.3	5,892.0	54.5	54.3	-104.28	-2,781.5	687.4	340.5	236.2	104.34	3.264		
8,200.0	5,808.0	8,321.3	5,892.0	56.4	56.1	-104.28	-2,881.5	687.4	340.5	232.6	107.93	3.155		
8,300.0	5,808.0	8,421.3	5,892.0	58.2	57.9	-104.28	-2,981.5	687.4	340.5	229.0	111.53	3.053		
8,400.0	5,808.0	8,521.3	5,892.0	60.1	59.7	-104.28	-3,081.5	687.4	340.5	225.4	115.13	2.958		
8,500.0	5,808.0	8,621.3	5,892.0	61.9	61.5	-104.28	-3,181.5	687.4	340.5	221.8	118.75	2.868		
8,600.0	5,808.0	8,721.3	5,892.0	63.8	63.3	-104.29	-3,281.5	687.4	340.5	218.1	122.37	2.783		
8,700.0	5,808.0	8,821.3	5,892.0	65.6	65.1	-104.29	-3,381.5	687.4	340.5	214.5	126.00	2.702		
8,800.0	5,808.0	8,921.3	5,892.0	67.5	66.9	-104.29	-3,481.5	687.4	340.5	210.9	129.63	2.627		
8,900.0	5,808.0	9,021.3	5,892.0	69.4	68.7	-104.29	-3,581.5	687.4	340.5	207.2	133.27	2.555		
9,000.0	5,808.0	9,121.3	5,892.0	71.2	70.6	-104.29	-3,681.5	687.4	340.5	203.6	136.91	2.487		
9,100.0	5,808.0	9,221.3	5,892.0	73.1	72.4	-104.29	-3,781.5	687.4	340.5	199.9	140.56	2.422		
9,200.0	5,808.0	9,321.3	5,892.0	75.0	74.2	-104.29	-3,881.5	687.4	340.5	196.2	144.22	2.361		
9,300.0	5,808.0	9,421.3	5,892.0	76.9	76.1	-104.29	-3,981.5	687.4	340.5	192.6	147.87	2.302		
9,400.0	5,808.0	9,521.3	5,892.0	78.8	77.9	-104.29	-4,081.5	687.4	340.4	188.9	151.53	2.247		
9,500.0	5,808.0	9,621.3	5,892.0	80.6	79.8	-104.29	-4,181.5	687.4	340.4	185.2	155.20	2.194		
9,600.0	5,808.0	9,721.3	5,892.0	82.5	81.6	-104.29	-4,281.5	687.4	340.4	181.6	158.87	2.143		
9,700.0	5,808.0	9,821.3	5,892.0	84.4	83.5	-104.29	-4,381.5	687.4	340.4	177.9	162.54	2.094		
9,800.0	5,808.0	9,921.3	5,892.0	86.3	85.4	-104.29	-4,481.5	687.4	340.4	174.2	166.21	2.048		
9,900.0	5,808.0	10,021.3	5,892.0	88.2	87.2	-104.29	-4,581.5	687.4	340.4	170.5	169.88	2.004		
10,000.0	5,808.0	10,121.3	5,892.0	90.1	89.1	-104.29	-4,681.5	687.3	340.4	166.8	173.56	1.961		
10,100.0	5,808.0	10,221.3	5,892.0	92.0	90.9	-104.29	-4,781.5	687.3	340.4	163.1	177.24	1.920		

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 #21C-2807A
Project:	Weld County, CO	TVD Reference:	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21C-2807A	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 S21-T10N-R58W - Razor #21C-2808B - 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		
10,200.0	5,808.0	10,321.3	5,892.0	93.8	92.8	-104.29	-4,881.5	687.3	340.4	159.5	180.93	1.881		
10,300.0	5,808.0	10,421.3	5,892.0	95.7	94.7	-104.29	-4,981.5	687.3	340.4	155.8	184.61	1.844		
10,400.0	5,808.0	10,521.3	5,892.0	97.6	96.6	-104.29	-5,081.5	687.3	340.4	152.1	188.30	1.808		
10,500.0	5,808.0	10,621.3	5,892.0	99.5	98.4	-104.29	-5,181.5	687.3	340.4	148.4	191.99	1.773		
10,600.0	5,808.0	10,721.3	5,892.0	101.4	100.3	-104.29	-5,281.5	687.3	340.3	144.7	195.68	1.739		
10,700.0	5,808.0	10,821.3	5,892.0	103.3	102.2	-104.29	-5,381.5	687.3	340.3	141.0	199.37	1.707		
10,800.0	5,808.0	10,921.3	5,892.0	105.2	104.1	-104.29	-5,481.5	687.3	340.3	137.3	203.06	1.676		
10,900.0	5,808.0	11,021.3	5,892.0	107.1	105.9	-104.29	-5,581.5	687.3	340.3	133.6	206.76	1.646		
11,000.0	5,808.0	11,121.3	5,892.0	109.0	107.8	-104.29	-5,681.5	687.3	340.3	129.9	210.45	1.617		
11,100.0	5,808.0	11,221.3	5,892.0	110.9	109.7	-104.29	-5,781.5	687.3	340.3	126.2	214.15	1.589		
11,200.0	5,808.0	11,321.3	5,892.0	112.8	111.6	-104.29	-5,881.5	687.3	340.3	122.5	217.85	1.562		
11,300.0	5,808.0	11,421.3	5,892.0	114.7	113.5	-104.29	-5,981.5	687.3	340.3	118.7	221.55	1.536		
11,400.0	5,808.0	11,521.3	5,892.0	116.6	115.4	-104.29	-6,081.5	687.3	340.3	115.0	225.25	1.511		
11,500.0	5,808.0	11,621.3	5,892.0	118.5	117.3	-104.29	-6,181.5	687.3	340.3	111.3	228.95	1.486	Level 3	
11,600.0	5,808.0	11,721.3	5,892.0	120.4	119.1	-104.29	-6,281.5	687.3	340.3	107.6	232.65	1.463	Level 3	
11,700.0	5,808.0	11,821.3	5,892.0	122.3	121.0	-104.29	-6,381.5	687.3	340.3	103.9	236.35	1.440	Level 3	
11,800.0	5,808.0	11,921.3	5,892.0	124.2	122.9	-104.29	-6,481.5	687.3	340.3	100.2	240.06	1.417	Level 3	
11,900.0	5,808.0	12,021.3	5,892.0	126.1	124.8	-104.29	-6,581.5	687.3	340.2	96.5	243.76	1.396	Level 3	
12,000.0	5,808.0	12,121.3	5,892.0	128.0	126.7	-104.29	-6,681.5	687.3	340.2	92.8	247.47	1.375	Level 3	
12,100.0	5,808.0	12,221.3	5,892.0	129.9	128.6	-104.29	-6,781.5	687.3	340.2	89.1	251.18	1.355	Level 3	
12,200.0	5,808.0	12,321.3	5,892.0	131.8	130.5	-104.29	-6,881.5	687.3	340.2	85.3	254.89	1.335	Level 3	
12,300.0	5,808.0	12,421.3	5,892.0	133.7	132.4	-104.29	-6,981.5	687.3	340.2	81.6	258.59	1.316	Level 3	
12,400.0	5,808.0	12,521.3	5,892.0	135.6	134.3	-104.29	-7,081.5	687.3	340.2	77.9	262.30	1.297	Level 3	
12,500.0	5,808.0	12,621.3	5,892.0	137.5	136.2	-104.30	-7,181.5	687.3	340.2	74.2	266.01	1.279	Level 3	
12,600.0	5,808.0	12,721.3	5,892.0	139.4	138.1	-104.30	-7,281.5	687.3	340.2	70.5	269.72	1.261	Level 3	
12,700.0	5,808.0	12,821.3	5,892.0	141.4	140.0	-104.30	-7,381.5	687.3	340.2	66.8	273.43	1.244	Level 2	
12,747.1	5,808.0	12,868.3	5,892.0	142.2	140.9	-104.30	-7,428.5	687.3	340.2	65.0	275.17	1.236	Level 2	
12,766.2	5,808.0	12,881.4	5,892.0	142.6	141.1	-104.30	-7,441.6	687.3	340.2	64.5	275.77	1.234	Level 2, SF	

Cathedral Energy Services

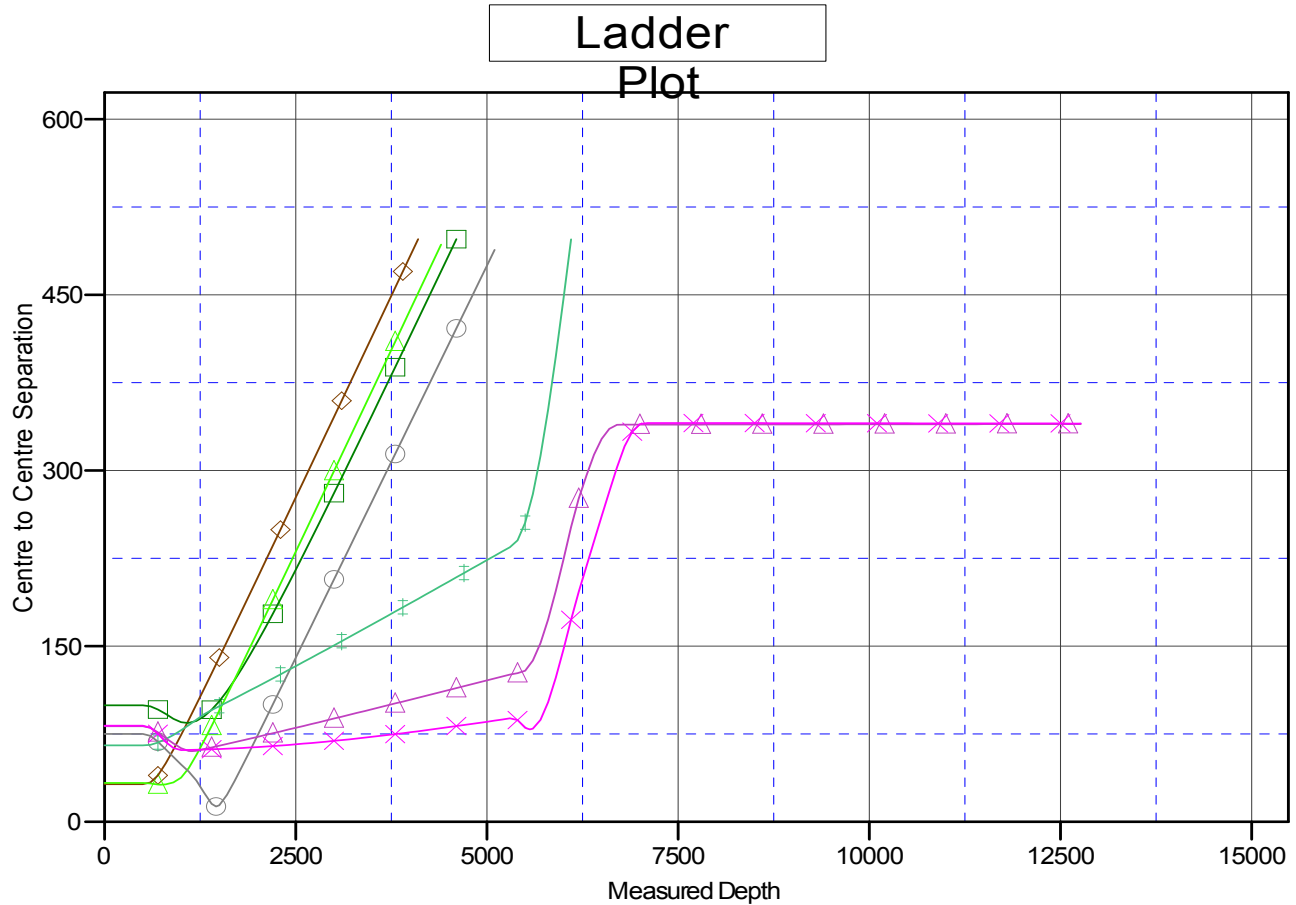
Anticollision Report

Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S21-T10N-R58W
Site Error: 0.0ft
Reference Well: Razor #21C-2807A
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #1

Local Co-ordinate Reference: Well Razor #21C-2807A
TVD Reference: WELL @ 4860.5ft (Original Well Elev)
MD Reference: WELL @ 4860.5ft (Original Well Elev)
North Reference: Grid
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 @ 4860.5ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #21C-2807A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.05°



LEGEND

Brown diamond: Razor #21C-0905A, HZ, Plan #1 V0
 Green square: Razor #21C-0906B, HZ, Plan #1 V0
 Green triangle: Razor #21C-0907A, HZ, Plan #1 V0
 Grey circle: Razor #21C-0908B, HZ, Plan #1 V0
 Teal plus: Razor #21C-2805A, HZ, Plan #1 V0
 Purple triangle: Razor #21C-2806B, HZ, Plan #1 V0
 Pink cross: Razor #21C-2808B, HZ, Plan #1 V0