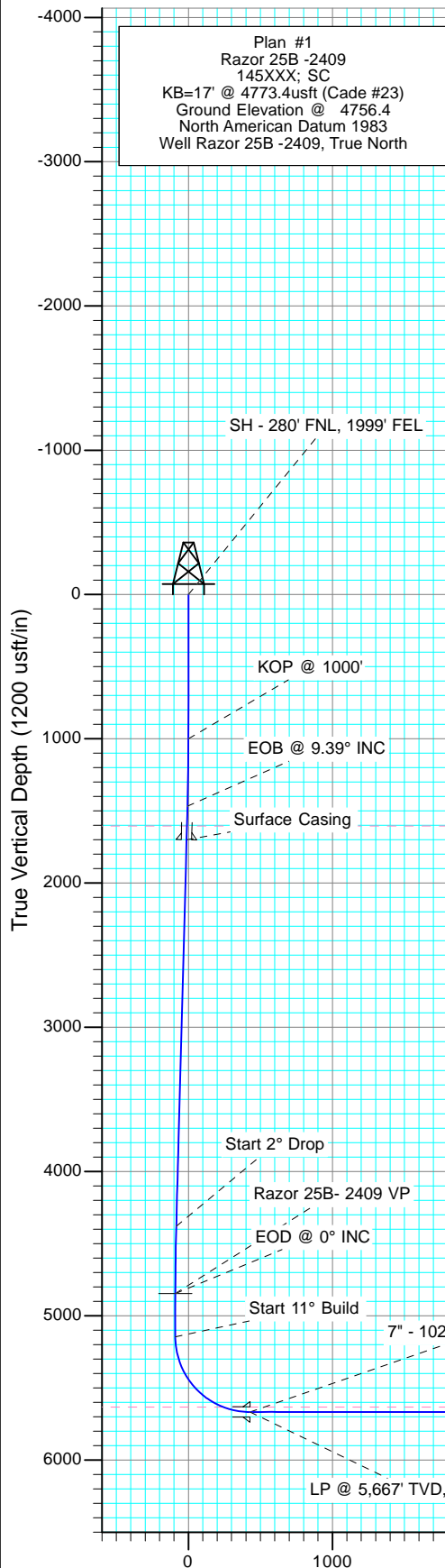
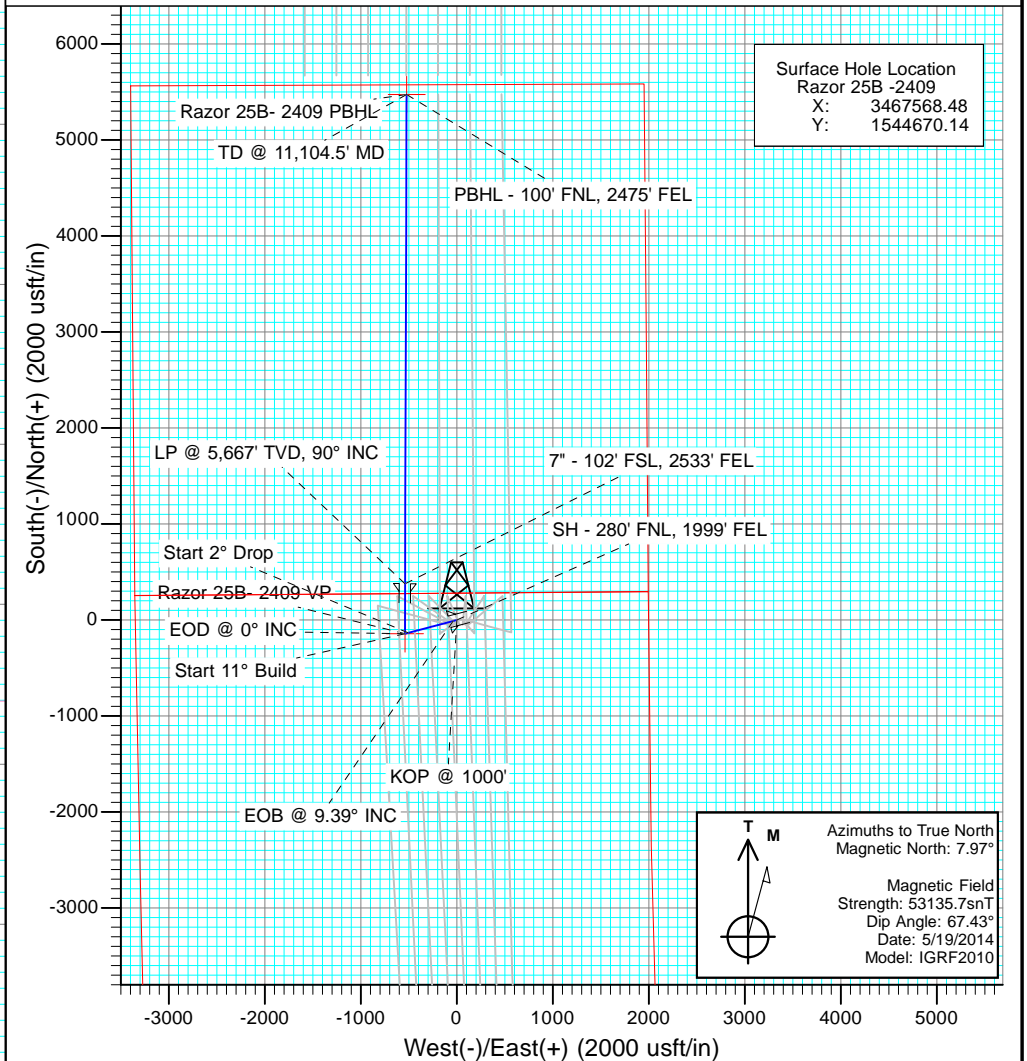




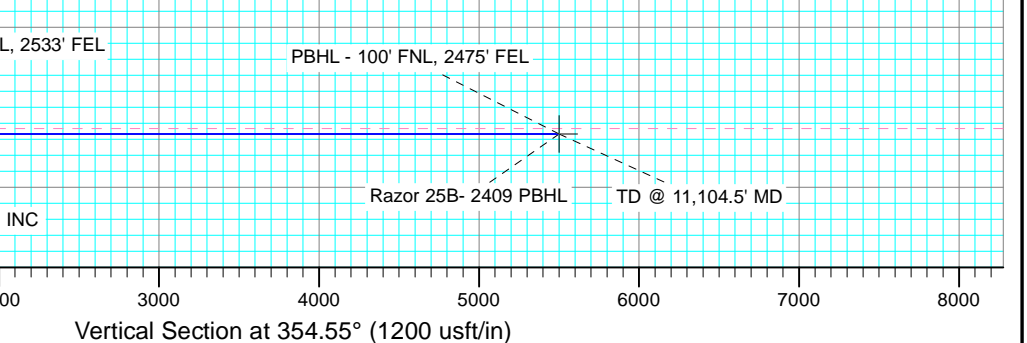
Project: Weld County, CO
Site: S25-T10N-R58W
Well: Razor 25B -2409
Wellbore: HZ
Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1469.6	9.39	255.27	1467.5	-9.8	-37.1	2.00	255.27	-6.2	
4	4420.2	9.39	255.27	4378.6	-132.2	-502.9	0.00	0.00	-83.9	
5	4889.9	0.00	0.00	4846.1	-142.0	-540.0	2.00	180.00	-90.1	Razor 25B- 2409 VP
6	5189.9	0.00	0.00	5146.1	-142.0	-540.0	0.00	0.00	-90.1	
7	6008.0	90.00	0.18	5667.0	378.9	-538.3	11.00	0.18	428.2	
8	11104.5	90.00	0.18	5667.0	5475.3	-521.9	0.00	0.00	5500.1	Razor 25B- 2409 PBHL



DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor 25B- 2409 VP	4846.1	-142.0	-540.0	1544517.88	3467031.28
Razor 25B- 2409 PBHL	5667.0	5475.3	-521.9	1550134.53	3466942.35



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2409
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2409	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		S25-T10N-R58W			
Site Position:		Northing:	1,544,670.15 usft	Latitude:	40.816275
From:	Lat/Long	Easting:	3,467,568.48 usft	Longitude:	-103.810706
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.09 °

Well	Razor 25B -2409					
Well Position	+N/-S	0.0 usft	Northing:	1,544,670.14 usft	Latitude:	40.816275
	+E/-W	0.0 usft	Easting:	3,467,568.48 usft	Longitude:	-103.810706
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,756.4 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/19/2014	7.97	67.43	53,136

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	354.55

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,469.6	9.39	255.27	1,467.5	-9.8	-37.1	2.00	2.00	0.00	255.27	
4,420.2	9.39	255.27	4,378.6	-132.2	-502.9	0.00	0.00	0.00	0.00	
4,889.9	0.00	0.00	4,846.1	-142.0	-540.0	2.00	-2.00	0.00	180.00	Razor 25B- 2409 VP
5,189.9	0.00	0.00	5,146.1	-142.0	-540.0	0.00	0.00	0.00	0.00	
6,008.0	90.00	0.18	5,667.0	378.9	-538.3	11.00	11.00	0.02	0.18	
11,104.5	90.00	0.18	5,667.0	5,475.3	-521.9	0.00	0.00	0.00	0.00	Razor 25B- 2409 PB

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2409
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2409	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	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 280' FNL, 1999' FEL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1000'
1,100.0	2.00	255.27	1,100.0	-0.4	-1.7	-0.3	2.00	2.00	
1,200.0	4.00	255.27	1,199.8	-1.8	-6.7	-1.1	2.00	2.00	
1,300.0	6.00	255.27	1,299.5	-4.0	-15.2	-2.5	2.00	2.00	
1,400.0	8.00	255.27	1,398.7	-7.1	-27.0	-4.5	2.00	2.00	
1,469.6	9.39	255.27	1,467.5	-9.8	-37.1	-6.2	2.00	2.00	EOB @ 9.39° INC
1,500.0	9.39	255.27	1,497.5	-11.0	-41.9	-7.0	0.00	0.00	
1,600.0	9.39	255.27	1,596.2	-15.2	-57.7	-9.6	0.00	0.00	
1,608.0	9.39	255.27	1,604.0	-15.5	-59.0	-9.8	0.00	0.00	Pierre
1,700.0	9.39	255.27	1,694.8	-19.3	-73.5	-12.3	0.00	0.00	
1,705.3	9.39	255.27	1,700.0	-19.5	-74.3	-12.4	0.00	0.00	Surface Casing
1,800.0	9.39	255.27	1,793.5	-23.5	-89.3	-14.9	0.00	0.00	
1,900.0	9.39	255.27	1,892.1	-27.6	-105.1	-17.5	0.00	0.00	
2,000.0	9.39	255.27	1,990.8	-31.8	-120.9	-20.2	0.00	0.00	
2,100.0	9.39	255.27	2,089.4	-35.9	-136.6	-22.8	0.00	0.00	
2,200.0	9.39	255.27	2,188.1	-40.1	-152.4	-25.4	0.00	0.00	
2,300.0	9.39	255.27	2,286.8	-44.2	-168.2	-28.1	0.00	0.00	
2,400.0	9.39	255.27	2,385.4	-48.4	-184.0	-30.7	0.00	0.00	
2,500.0	9.39	255.27	2,484.1	-52.5	-199.8	-33.3	0.00	0.00	
2,600.0	9.39	255.27	2,582.7	-56.7	-215.6	-36.0	0.00	0.00	
2,700.0	9.39	255.27	2,681.4	-60.8	-231.3	-38.6	0.00	0.00	
2,800.0	9.39	255.27	2,780.1	-65.0	-247.1	-41.2	0.00	0.00	
2,900.0	9.39	255.27	2,878.7	-69.1	-262.9	-43.9	0.00	0.00	
3,000.0	9.39	255.27	2,977.4	-73.3	-278.7	-46.5	0.00	0.00	
3,100.0	9.39	255.27	3,076.0	-77.4	-294.5	-49.1	0.00	0.00	
3,200.0	9.39	255.27	3,174.7	-81.6	-310.3	-51.8	0.00	0.00	
3,300.0	9.39	255.27	3,273.4	-85.7	-326.0	-54.4	0.00	0.00	
3,400.0	9.39	255.27	3,372.0	-89.9	-341.8	-57.0	0.00	0.00	
3,500.0	9.39	255.27	3,470.7	-94.0	-357.6	-59.7	0.00	0.00	
3,600.0	9.39	255.27	3,569.3	-98.2	-373.4	-62.3	0.00	0.00	
3,700.0	9.39	255.27	3,668.0	-102.3	-389.2	-64.9	0.00	0.00	
3,800.0	9.39	255.27	3,766.7	-106.5	-405.0	-67.6	0.00	0.00	
3,900.0	9.39	255.27	3,865.3	-110.6	-420.7	-70.2	0.00	0.00	
4,000.0	9.39	255.27	3,964.0	-114.8	-436.5	-72.8	0.00	0.00	
4,100.0	9.39	255.27	4,062.6	-118.9	-452.3	-75.5	0.00	0.00	
4,200.0	9.39	255.27	4,161.3	-123.1	-468.1	-78.1	0.00	0.00	
4,300.0	9.39	255.27	4,260.0	-127.2	-483.9	-80.8	0.00	0.00	
4,400.0	9.39	255.27	4,358.6	-131.4	-499.7	-83.4	0.00	0.00	
4,420.2	9.39	255.27	4,378.6	-132.2	-502.9	-83.9	0.00	0.00	Start 2° Drop
4,500.0	7.80	255.27	4,457.4	-135.3	-514.4	-85.8	2.00	-2.00	
4,600.0	5.80	255.27	4,556.7	-138.3	-525.8	-87.8	2.00	-2.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2409
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2409	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
4,700.0	3.80	255.27	4,656.4	-140.4	-533.9	-89.1	2.00	-2.00	
4,800.0	1.80	255.27	4,756.3	-141.6	-538.6	-89.9	2.00	-2.00	
4,889.9	0.00	0.00	4,846.1	-142.0	-540.0	-90.1	2.00	-2.00	EOD @ 0° INC
4,900.0	0.00	0.00	4,856.2	-142.0	-540.0	-90.1	0.00	0.00	
5,000.0	0.00	0.00	4,956.2	-142.0	-540.0	-90.1	0.00	0.00	
5,100.0	0.00	0.00	5,056.2	-142.0	-540.0	-90.1	0.00	0.00	
5,189.9	0.00	0.00	5,146.1	-142.0	-540.0	-90.1	0.00	0.00	Start 11° Build
5,200.0	1.12	0.18	5,156.2	-141.9	-540.0	-90.0	11.00	11.00	
5,250.0	6.62	0.18	5,206.1	-138.5	-540.0	-86.7	11.00	11.00	
5,300.0	12.12	0.18	5,255.4	-130.4	-540.0	-78.6	11.00	11.00	
5,350.0	17.62	0.18	5,303.7	-117.6	-539.9	-65.8	11.00	11.00	
5,400.0	23.12	0.18	5,350.6	-100.2	-539.9	-48.5	11.00	11.00	
5,450.0	28.62	0.18	5,395.6	-78.4	-539.8	-26.8	11.00	11.00	
5,500.0	34.12	0.18	5,438.2	-52.4	-539.7	-0.9	11.00	11.00	
5,550.0	39.62	0.18	5,478.2	-22.4	-539.6	28.9	11.00	11.00	
5,600.0	45.12	0.18	5,515.2	11.3	-539.5	62.4	11.00	11.00	
5,650.0	50.62	0.18	5,548.7	48.4	-539.4	99.3	11.00	11.00	
5,700.0	56.12	0.18	5,578.5	88.5	-539.3	139.2	11.00	11.00	
5,750.0	61.62	0.18	5,604.3	131.3	-539.1	181.8	11.00	11.00	
5,800.0	67.12	0.18	5,626.0	176.3	-539.0	226.7	11.00	11.00	
5,818.9	69.19	0.18	5,633.0	193.8	-538.9	244.1	11.00	11.00	Niobrara
5,850.0	72.62	0.18	5,643.2	223.2	-538.8	273.4	11.00	11.00	
5,900.0	78.12	0.18	5,655.8	271.6	-538.7	321.5	11.00	11.00	
5,950.0	83.62	0.18	5,663.7	320.9	-538.5	370.6	11.00	11.00	
6,000.0	89.12	0.18	5,666.9	370.8	-538.4	420.2	11.00	11.00	
6,008.0	90.00	0.18	5,667.0	378.8	-538.3	428.2	11.00	11.00	LP @ 5,667' TVD, 90° INC - 7" - 102' FSL, 253°
6,100.0	90.00	0.18	5,667.0	470.8	-538.0	519.8	0.00	0.00	
6,200.0	90.00	0.18	5,667.0	570.8	-537.7	619.3	0.00	0.00	
6,300.0	90.00	0.18	5,667.0	670.8	-537.4	718.8	0.00	0.00	
6,400.0	90.00	0.18	5,667.0	770.8	-537.1	818.3	0.00	0.00	
6,500.0	90.00	0.18	5,667.0	870.8	-536.7	917.8	0.00	0.00	
6,600.0	90.00	0.18	5,667.0	970.8	-536.4	1,017.3	0.00	0.00	
6,700.0	90.00	0.18	5,667.0	1,070.8	-536.1	1,116.9	0.00	0.00	
6,800.0	90.00	0.18	5,667.0	1,170.8	-535.8	1,216.4	0.00	0.00	
6,900.0	90.00	0.18	5,667.0	1,270.8	-535.5	1,315.9	0.00	0.00	
7,000.0	90.00	0.18	5,667.0	1,370.8	-535.1	1,415.4	0.00	0.00	
7,100.0	90.00	0.18	5,667.0	1,470.8	-534.8	1,514.9	0.00	0.00	
7,200.0	90.00	0.18	5,667.0	1,570.8	-534.5	1,614.5	0.00	0.00	
7,300.0	90.00	0.18	5,667.0	1,670.8	-534.2	1,714.0	0.00	0.00	
7,400.0	90.00	0.18	5,667.0	1,770.8	-533.8	1,813.5	0.00	0.00	
7,500.0	90.00	0.18	5,667.0	1,870.8	-533.5	1,913.0	0.00	0.00	
7,600.0	90.00	0.18	5,667.0	1,970.8	-533.2	2,012.5	0.00	0.00	
7,700.0	90.00	0.18	5,667.0	2,070.8	-532.9	2,112.0	0.00	0.00	
7,800.0	90.00	0.18	5,667.0	2,170.8	-532.6	2,211.6	0.00	0.00	
7,900.0	90.00	0.18	5,667.0	2,270.8	-532.2	2,311.1	0.00	0.00	
8,000.0	90.00	0.18	5,667.0	2,370.8	-531.9	2,410.6	0.00	0.00	
8,100.0	90.00	0.18	5,667.0	2,470.8	-531.6	2,510.1	0.00	0.00	
8,200.0	90.00	0.18	5,667.0	2,570.8	-531.3	2,609.6	0.00	0.00	
8,300.0	90.00	0.18	5,667.0	2,670.8	-531.0	2,709.1	0.00	0.00	
8,400.0	90.00	0.18	5,667.0	2,770.8	-530.6	2,808.7	0.00	0.00	
8,500.0	90.00	0.18	5,667.0	2,870.8	-530.3	2,908.2	0.00	0.00	
8,600.0	90.00	0.18	5,667.0	2,970.8	-530.0	3,007.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2409
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2409	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
8,700.0	90.00	0.18	5,667.0	3,070.8	-529.7	3,107.2	0.00	0.00	
8,800.0	90.00	0.18	5,667.0	3,170.8	-529.3	3,206.7	0.00	0.00	
8,900.0	90.00	0.18	5,667.0	3,270.8	-529.0	3,306.3	0.00	0.00	
9,000.0	90.00	0.18	5,667.0	3,370.8	-528.7	3,405.8	0.00	0.00	
9,100.0	90.00	0.18	5,667.0	3,470.8	-528.4	3,505.3	0.00	0.00	
9,200.0	90.00	0.18	5,667.0	3,570.8	-528.1	3,604.8	0.00	0.00	
9,300.0	90.00	0.18	5,667.0	3,670.8	-527.7	3,704.3	0.00	0.00	
9,400.0	90.00	0.18	5,667.0	3,770.8	-527.4	3,803.8	0.00	0.00	
9,500.0	90.00	0.18	5,667.0	3,870.8	-527.1	3,903.4	0.00	0.00	
9,600.0	90.00	0.18	5,667.0	3,970.8	-526.8	4,002.9	0.00	0.00	
9,700.0	90.00	0.18	5,667.0	4,070.8	-526.4	4,102.4	0.00	0.00	
9,800.0	90.00	0.18	5,667.0	4,170.8	-526.1	4,201.9	0.00	0.00	
9,900.0	90.00	0.18	5,667.0	4,270.8	-525.8	4,301.4	0.00	0.00	
10,000.0	90.00	0.18	5,667.0	4,370.8	-525.5	4,400.9	0.00	0.00	
10,100.0	90.00	0.18	5,667.0	4,470.8	-525.2	4,500.5	0.00	0.00	
10,200.0	90.00	0.18	5,667.0	4,570.8	-524.8	4,600.0	0.00	0.00	
10,300.0	90.00	0.18	5,667.0	4,670.8	-524.5	4,699.5	0.00	0.00	
10,400.0	90.00	0.18	5,667.0	4,770.8	-524.2	4,799.0	0.00	0.00	
10,500.0	90.00	0.18	5,667.0	4,870.8	-523.9	4,898.5	0.00	0.00	
10,600.0	90.00	0.18	5,667.0	4,970.8	-523.6	4,998.1	0.00	0.00	
10,700.0	90.00	0.18	5,667.0	5,070.8	-523.2	5,097.6	0.00	0.00	
10,800.0	90.00	0.18	5,667.0	5,170.8	-522.9	5,197.1	0.00	0.00	
10,900.0	90.00	0.18	5,667.0	5,270.8	-522.6	5,296.6	0.00	0.00	
11,000.0	90.00	0.18	5,667.0	5,370.8	-522.3	5,396.1	0.00	0.00	
11,104.5	90.00	0.18	5,667.0	5,475.3	-521.9	5,500.1	0.00	0.00	PBHL - 100' FNL, 2475' FEL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Razor 25B- 2409 VP - hit/miss target - Shape - Point	0.00	0.00	4,846.1	-142.0	-540.0	1,544,517.88	3,467,031.28	40.815885	-103.812657
Razor 25B- 2409 PBHL - plan hits target center - Point	0.00	0.00	5,667.0	5,475.3	-521.9	1,550,134.53	3,466,942.35	40.831303	-103.812592

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,705.3	1,700.0	Surface Casing	0	0	
6,008.0	5,667.0	7" - 102' FSL, 2533' FEL	0	0	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2409
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,608.0	1,604.0	Pierre				
5,818.9	5,633.0	Niobrara				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
0.5	0.5	0.0	0.0	SH - 280' FNL, 1999' FEL	
1,000.0	1,000.0	0.0	0.0	KOP @ 1000'	
1,469.6	1,467.5	-9.8	-37.1	EOB @ 9.39° INC	
4,420.2	4,378.6	-132.2	-502.9	Start 2° Drop	
4,889.9	4,846.1	-142.0	-540.0	EOD @ 0° INC	
5,189.9	5,146.1	-142.0	-540.0	Start 11° Build	
6,008.0	5,667.0	378.9	-538.3	LP @ 5,667' TVD, 90° INC	
11,104.5	5,667.0	5,475.3	-521.9	PBHL - 100' FNL, 2475' FEL	
11,104.5	5,667.0	5,475.3	-521.9	TD @ 11,104.5' MD	

Whiting Petroleum Corporation

Weld County, CO

S25-T10N-R58W

Razor 25B -2409

HZ

Plan #1

Anticollision Report

28 May, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,310.5usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	5/28/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,104.5	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S12-T10N-R58W						
Razor Federal #12F-1306B - HZ - Plan #3	11,104.5	13,695.8	1,080.7	817.4	4.105	CC, ES, SF
Razor Federal #12F-1307A - HZ - Plan #3	11,104.5	13,658.4	758.0	494.5	2.877	CC, ES, SF
Razor Federal #12F-1308B - HZ - Plan #3	11,104.5	13,925.4	451.5	191.0	1.733	CC, ES, SF
Razor Federal #12G-1309A - HZ - Plan #1	11,104.5	13,221.6	206.9	105.7	2.045	CC, ES, SF
Razor Federal #12G-1310B - HZ - Plan #1	11,104.5	13,293.1	387.0	130.0	1.506	CC, ES, SF
Razor Federal #12G-1311A - HZ - Plan #1	11,104.5	13,250.1	690.5	431.0	2.662	CC, ES, SF
Razor Federal #12G-1312B - HZ - Plan #1	11,104.5	13,435.7	1,009.7	749.8	3.885	CC, ES, SF
S25-T10N-R58W						
Razor 25B -2410 - HZ - Plan #1	919.3	920.0	17.0	13.2	4.480	CC, ES
Razor 25B -2410 - HZ - Plan #1	11,104.5	11,146.7	339.4	130.9	1.628	SF
Razor 25B -2411 - HZ - Plan #1	400.0	400.0	60.1	58.5	39.133	CC, ES
Razor 25B -2411 - HZ - Plan #1	11,104.5	11,064.8	659.8	446.2	3.090	SF
Razor 25B -2412 - HZ - Plan #1	500.0	500.0	90.0	88.0	45.330	CC, ES
Razor 25B -2412 - HZ - Plan #1	11,104.5	11,162.1	992.6	779.4	4.656	SF
Razor 25B -2549 - HZ - Plan #2	500.0	500.0	102.7	100.7	51.753	CC, ES
Razor 25B -2549 - HZ - Plan #2	5,662.8	5,654.2	276.1	250.5	10.808	SF
Razor 25B -2550 - HZ - Plan #2	5,717.6	5,678.5	72.0	46.3	2.803	CC, ES, SF
Razor 25B -2551 - HZ - Plan #2	755.3	755.4	57.7	54.6	18.454	CC
Razor 25B -2551 - HZ - Plan #2	800.0	800.0	57.8	54.5	17.360	ES
Razor 25B -2551 - HZ - Plan #2	5,795.9	5,668.4	88.6	62.2	3.360	SF
Razor 25B -2552 - HZ - Plan #2	1,453.6	1,453.5	15.6	9.4	2.508	CC, ES, SF
Razor 25B -2553 - HZ - Plan #1	1,248.8	1,251.8	29.8	24.5	5.609	CC, ES
Razor 25B -2553 - HZ - Plan #1	1,300.0	1,302.6	30.8	25.2	5.539	SF
Razor 25B -2554 - HZ - Plan #2	1,061.0	1,063.1	67.8	63.2	14.946	CC, ES
Razor 25B -2554 - HZ - Plan #2	1,200.0	1,201.3	71.8	66.7	13.937	SF
Razor 25B -2555 - HZ - Plan #2	535.1	535.1	102.7	100.6	47.943	CC
Razor 25B -2555 - HZ - Plan #2	700.0	699.5	103.1	100.2	35.778	ES
Razor 25B -2555 - HZ - Plan #2	1,200.0	1,196.5	122.2	117.1	23.698	SF
Razor 25B -2556 - HZ - Plan #2	500.0	500.0	130.0	128.0	65.481	CC, ES
Razor 25B -2556 - HZ - Plan #2	1,200.0	1,188.5	173.3	168.1	33.656	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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S12-T10N-R58W - Razor Federal #12F-1306B - HZ - Plan #3		Offset Site Error:		0.0 usft
Survey Program:													0-ISCWSA MWD		Offset Well Error:		0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
10,600.0	5,667.0	13,695.8	5,912.0	97.0	157.7	-93.49	5,671.6	-1,582.7	1,271.6	1,018.0	253.68	5.013					
10,700.0	5,667.0	13,695.8	5,912.0	98.9	157.7	-93.49	5,671.6	-1,582.7	1,219.7	964.1	255.58	4.772					
10,800.0	5,667.0	13,695.8	5,912.0	100.8	157.7	-93.49	5,671.6	-1,582.7	1,173.9	916.4	257.49	4.559					
10,900.0	5,667.0	13,695.8	5,912.0	102.6	157.7	-93.49	5,671.6	-1,582.7	1,135.2	875.8	259.39	4.376					
11,000.0	5,667.0	13,695.8	5,912.0	104.5	157.7	-93.49	5,671.6	-1,582.7	1,104.1	842.8	261.29	4.226					
11,100.0	5,667.0	13,695.8	5,912.0	106.5	157.7	-93.49	5,671.6	-1,582.7	1,081.5	818.3	263.20	4.109					
11,104.5	5,667.0	13,695.8	5,912.0	106.5	157.7	-93.49	5,671.6	-1,582.7	1,080.7	817.4	263.28	4.105 CC, ES, SF					

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12F-1307A - HZ - Plan #3												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	5,667.0	13,658.4	5,811.0	91.3	158.1	-87.17	5,672.6	-1,252.9	1,239.1	991.0	248.17	4.993	
10,400.0	5,667.0	13,658.4	5,811.0	93.2	158.1	-87.17	5,672.6	-1,252.9	1,160.0	909.9	250.07	4.639	
10,500.0	5,667.0	13,658.4	5,811.0	95.1	158.1	-87.17	5,672.6	-1,252.9	1,084.3	832.3	251.97	4.303	
10,600.0	5,667.0	13,658.4	5,811.0	97.0	158.1	-87.17	5,672.6	-1,252.9	1,012.8	758.9	253.87	3.989	
10,700.0	5,667.0	13,658.4	5,811.0	98.9	158.1	-87.17	5,672.6	-1,252.9	946.5	690.7	255.77	3.701	
10,800.0	5,667.0	13,658.4	5,811.0	100.8	158.1	-87.17	5,672.6	-1,252.9	886.6	628.9	257.67	3.441	
10,900.0	5,667.0	13,658.4	5,811.0	102.6	158.1	-87.17	5,672.6	-1,252.9	834.3	574.7	259.58	3.214	
11,000.0	5,667.0	13,658.4	5,811.0	104.5	158.1	-87.17	5,672.6	-1,252.9	791.3	529.9	261.48	3.026	
11,100.0	5,667.0	13,658.4	5,811.0	106.5	158.1	-87.17	5,672.6	-1,252.9	759.1	495.8	263.38	2.882	
11,104.5	5,667.0	13,658.4	5,811.0	106.5	158.1	-87.17	5,672.6	-1,252.9	758.0	494.5	263.47	2.877	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12F-1308B - HZ - Plan #3												Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD												Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
10,100.0	5,667.0	13,925.4	5,912.0	87.5	158.4	-99.18	5,673.6	-922.3	1,268.3	1,026.7	241.60	5.250	
10,200.0	5,667.0	13,925.4	5,912.0	89.4	158.4	-99.18	5,673.6	-922.3	1,174.1	930.6	243.48	4.822	
10,300.0	5,667.0	13,925.4	5,912.0	91.3	158.4	-99.18	5,673.6	-922.3	1,080.8	835.4	245.36	4.405	
10,400.0	5,667.0	13,925.4	5,912.0	93.2	158.4	-99.18	5,673.6	-922.3	988.8	741.6	247.25	3.999	
10,500.0	5,667.0	13,925.4	5,912.0	95.1	158.4	-99.18	5,673.6	-922.3	898.6	649.5	249.13	3.607	
10,600.0	5,667.0	13,925.4	5,912.0	97.0	158.4	-99.18	5,673.6	-922.3	810.7	559.7	251.01	3.230	
10,700.0	5,667.0	13,925.4	5,912.0	98.9	158.4	-99.18	5,673.6	-922.3	725.9	473.0	252.90	2.870	
10,800.0	5,667.0	13,925.4	5,912.0	100.8	158.4	-99.18	5,673.6	-922.3	645.4	390.6	254.78	2.533	
10,900.0	5,667.0	13,925.4	5,912.0	102.6	158.4	-99.18	5,673.6	-922.3	571.2	314.5	256.66	2.225	
11,000.0	5,667.0	13,925.4	5,912.0	104.5	158.4	-99.18	5,673.6	-922.3	505.9	247.4	258.55	1.957	
11,100.0	5,667.0	13,925.4	5,912.0	106.5	158.4	-99.18	5,673.6	-922.3	453.5	193.0	260.44	1.741	
11,104.5	5,667.0	13,925.4	5,912.0	106.5	158.4	-99.18	5,673.6	-922.3	451.5	191.0	260.52	1.733 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1309A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,000.0	5,667.0	13,221.6	5,812.0	85.6	150.9	-3.15	5,675.6	-524.1	1,305.9	1,212.9	92.98	14.044		
10,100.0	5,667.0	13,221.6	5,812.0	87.5	150.9	-3.15	5,675.6	-524.1	1,205.9	1,112.2	93.73	12.867		
10,200.0	5,667.0	13,221.6	5,812.0	89.4	150.9	-3.15	5,675.6	-524.1	1,106.0	1,011.6	94.47	11.708		
10,300.0	5,667.0	13,221.6	5,812.0	91.3	150.9	-3.15	5,675.6	-524.1	1,006.2	911.0	95.21	10.568		
10,400.0	5,667.0	13,221.6	5,812.0	93.2	150.9	-3.15	5,675.6	-524.1	906.3	810.4	95.95	9.445		
10,500.0	5,667.0	13,221.6	5,812.0	95.1	150.9	-3.15	5,675.6	-524.1	806.5	709.8	96.70	8.341		
10,600.0	5,667.0	13,221.6	5,812.0	97.0	150.9	-3.15	5,675.6	-524.1	706.7	609.3	97.44	7.253		
10,700.0	5,667.0	13,221.6	5,812.0	98.9	150.9	-3.15	5,675.6	-524.1	607.1	508.9	98.18	6.183		
10,800.0	5,667.0	13,221.6	5,812.0	100.8	150.9	-3.15	5,675.6	-524.1	507.5	408.6	98.92	5.130		
10,900.0	5,667.0	13,221.6	5,812.0	102.6	150.9	-3.15	5,675.6	-524.1	408.1	308.5	99.67	4.095		
11,000.0	5,667.0	13,221.6	5,812.0	104.5	150.9	-3.15	5,675.6	-524.1	309.2	208.8	100.41	3.080		
11,100.0	5,667.0	13,221.6	5,812.0	106.5	150.9	-3.15	5,675.6	-524.1	211.3	110.2	101.15	2.089		
11,104.5	5,667.0	13,221.6	5,812.0	106.5	150.9	-3.15	5,675.6	-524.1	206.9	105.7	101.19	2.045 CC, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1310B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,100.0	5,667.0	13,293.1	5,911.0	87.5	151.4	98.20	5,676.0	-194.4	1,250.7	1,011.8	238.84	5.236	
10,200.0	5,667.0	13,293.1	5,911.0	89.4	151.4	98.20	5,676.0	-194.4	1,154.5	913.9	240.65	4.798	
10,300.0	5,667.0	13,293.1	5,911.0	91.3	151.4	98.20	5,676.0	-194.4	1,059.1	816.7	242.45	4.368	
10,400.0	5,667.0	13,293.1	5,911.0	93.2	151.4	98.20	5,676.0	-194.4	964.6	720.3	244.26	3.949	
10,500.0	5,667.0	13,293.1	5,911.0	95.1	151.4	98.20	5,676.0	-194.4	871.3	625.2	246.07	3.541	
10,600.0	5,667.0	13,293.1	5,911.0	97.0	151.4	98.20	5,676.0	-194.4	779.7	531.8	247.88	3.146	
10,700.0	5,667.0	13,293.1	5,911.0	98.9	151.4	98.20	5,676.0	-194.4	690.4	440.7	249.69	2.765	
10,800.0	5,667.0	13,293.1	5,911.0	100.8	151.4	98.20	5,676.0	-194.4	604.5	353.0	251.50	2.404	
10,900.0	5,667.0	13,293.1	5,911.0	102.6	151.4	98.20	5,676.0	-194.4	523.6	270.3	253.31	2.067	
11,000.0	5,667.0	13,293.1	5,911.0	104.5	151.4	98.20	5,676.0	-194.4	450.5	195.3	255.12	1.766	
11,100.0	5,667.0	13,293.1	5,911.0	106.5	151.4	98.20	5,676.0	-194.4	389.4	132.5	256.93	1.516	
11,104.5	5,667.0	13,293.1	5,911.0	106.5	151.4	98.20	5,676.0	-194.4	387.0	130.0	257.01	1.506 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1311A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,200.0	5,667.0	13,250.1	5,812.0	89.4	151.1	85.49	5,677.6	136.2	1,290.3	1,047.3	242.95	5.311		
10,300.0	5,667.0	13,250.1	5,812.0	91.3	151.1	85.49	5,677.6	136.2	1,205.4	960.6	244.77	4.925		
10,400.0	5,667.0	13,250.1	5,812.0	93.2	151.1	85.49	5,677.6	136.2	1,123.0	876.4	246.59	4.554		
10,500.0	5,667.0	13,250.1	5,812.0	95.1	151.1	85.49	5,677.6	136.2	1,043.7	795.3	248.41	4.202		
10,600.0	5,667.0	13,250.1	5,812.0	97.0	151.1	85.49	5,677.6	136.2	968.3	718.1	250.23	3.870		
10,700.0	5,667.0	13,250.1	5,812.0	98.9	151.1	85.49	5,677.6	136.2	897.7	645.6	252.05	3.561		
10,800.0	5,667.0	13,250.1	5,812.0	100.8	151.1	85.49	5,677.6	136.2	833.1	579.2	253.87	3.281		
10,900.0	5,667.0	13,250.1	5,812.0	102.6	151.1	85.49	5,677.6	136.2	776.0	520.3	255.70	3.035		
11,000.0	5,667.0	13,250.1	5,812.0	104.5	151.1	85.49	5,677.6	136.2	728.3	470.8	257.52	2.828		
11,100.0	5,667.0	13,250.1	5,812.0	106.5	151.1	85.49	5,677.6	136.2	691.8	432.5	259.34	2.668		
11,104.5	5,667.0	13,250.1	5,812.0	106.5	151.1	85.49	5,677.6	136.2	690.5	431.0	259.43	2.662	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1312B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
10,500.0	5,667.0	13,435.7	5,911.0	95.1	151.2	92.73	5,678.7	466.0	1,278.5	1,029.6	248.90	5.137	
10,600.0	5,667.0	13,435.7	5,911.0	97.0	151.2	92.73	5,678.7	466.0	1,217.5	966.8	250.72	4.856	
10,700.0	5,667.0	13,435.7	5,911.0	98.9	151.2	92.73	5,678.7	466.0	1,162.0	909.4	252.54	4.601	
10,800.0	5,667.0	13,435.7	5,911.0	100.8	151.2	92.73	5,678.7	466.0	1,112.7	858.3	254.37	4.374	
10,900.0	5,667.0	13,435.7	5,911.0	102.6	151.2	92.73	5,678.7	466.0	1,070.4	814.2	256.19	4.178	
11,000.0	5,667.0	13,435.7	5,911.0	104.5	151.2	92.73	5,678.7	466.0	1,036.1	778.1	258.02	4.016	
11,100.0	5,667.0	13,435.7	5,911.0	106.5	151.2	92.73	5,678.7	466.0	1,010.6	750.8	259.85	3.889	
11,104.5	5,667.0	13,435.7	5,911.0	106.5	151.2	92.73	5,678.7	466.0	1,009.7	749.8	259.93	3.885 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2410 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	30.2	30.2					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.2	30.2	30.0	0.19	161.727		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.2	30.2	29.5	0.64	47.432		
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	30.2	30.2	29.1	1.09	27.792		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	30.2	30.2	28.6	1.54	19.654		
500.0	500.0	500.8	500.8	1.0	1.0	92.00	-1.0	28.7	28.7	26.8	1.97	14.601		
600.0	600.0	601.2	601.0	1.2	1.2	98.89	-3.8	24.6	24.9	22.5	2.40	10.369		
700.0	700.0	701.0	700.7	1.4	1.4	109.51	-7.0	19.9	21.1	18.3	2.83	7.449		
800.0	800.0	800.9	800.4	1.7	1.6	123.99	-10.2	15.2	18.3	15.1	3.27	5.607		
900.0	900.0	900.7	900.1	1.9	1.9	141.99	-13.4	10.5	17.1	13.3	3.71	4.596		
919.3	919.3	920.0	919.3	1.9	1.9	145.67	-14.1	9.6	17.0	13.2	3.80	4.480 CC, ES		
1,000.0	1,000.0	1,000.5	999.7	2.1	2.1	160.72	-16.6	5.8	17.6	13.5	4.17	4.224		
1,100.0	1,100.0	1,100.4	1,099.5	2.3	2.3	-83.50	-19.8	1.1	19.6	15.0	4.64	4.222		
1,200.0	1,199.8	1,200.4	1,199.3	2.5	2.6	-83.72	-23.0	-3.6	21.5	16.4	5.08	4.233		
1,300.0	1,299.5	1,300.3	1,299.1	2.7	2.8	-92.46	-26.2	-8.2	23.3	17.8	5.55	4.198		
1,400.0	1,398.7	1,400.1	1,398.6	3.0	3.1	-107.24	-29.4	-12.9	26.4	20.3	6.05	4.365		
1,500.0	1,497.5	1,499.5	1,497.9	3.2	3.3	-123.46	-32.6	-17.6	32.5	26.0	6.53	4.988		
1,600.0	1,596.2	1,598.9	1,597.2	3.5	3.6	-134.87	-35.8	-22.2	41.0	34.1	6.98	5.877		
1,700.0	1,694.8	1,698.3	1,696.4	3.9	3.8	-142.20	-39.0	-26.9	50.6	43.2	7.44	6.801		
1,800.0	1,793.5	1,797.7	1,795.6	4.2	4.1	-147.15	-42.2	-31.6	60.7	52.8	7.90	7.687		
1,900.0	1,892.1	1,897.0	1,894.8	4.5	4.3	-150.67	-45.4	-36.2	71.1	62.8	8.36	8.510		
2,000.0	1,990.8	1,996.4	1,994.0	4.9	4.6	-153.29	-48.5	-40.9	81.8	72.9	8.82	9.266		
2,100.0	2,089.4	2,095.8	2,093.2	5.2	4.8	-155.30	-51.7	-45.6	92.5	83.2	9.29	9.956		
2,200.0	2,188.1	2,195.2	2,192.4	5.6	5.0	-156.89	-54.9	-50.2	103.4	93.6	9.76	10.586		
2,300.0	2,286.8	2,294.5	2,291.6	5.9	5.3	-158.18	-58.1	-54.9	114.3	104.0	10.24	11.162		
2,400.0	2,385.4	2,393.9	2,390.9	6.3	5.5	-159.24	-61.3	-59.5	125.2	114.5	10.71	11.690		
2,500.0	2,484.1	2,493.3	2,490.1	6.7	5.8	-160.14	-64.5	-64.2	136.2	125.0	11.19	12.174		
2,600.0	2,582.7	2,592.6	2,589.3	7.0	6.0	-160.89	-67.6	-68.9	147.2	135.6	11.67	12.619		
2,700.0	2,681.4	2,692.0	2,688.5	7.4	6.3	-161.55	-70.8	-73.5	158.3	146.1	12.15	13.031		
2,800.0	2,780.1	2,791.4	2,787.7	7.8	6.5	-162.12	-74.0	-78.2	169.4	156.7	12.63	13.411		
2,900.0	2,878.7	2,890.8	2,886.9	8.1	6.8	-162.61	-77.2	-82.8	180.4	167.3	13.11	13.764		
3,000.0	2,977.4	2,990.1	2,986.1	8.5	7.0	-163.05	-80.4	-87.5	191.5	177.9	13.59	14.092		
3,100.0	3,076.0	3,089.5	3,085.3	8.9	7.3	-163.45	-83.6	-92.2	202.6	188.5	14.07	14.398		
3,200.0	3,174.7	3,188.9	3,184.6	9.3	7.5	-163.80	-86.7	-96.8	213.7	199.2	14.56	14.683		
3,300.0	3,273.4	3,288.3	3,283.8	9.7	7.8	-164.12	-89.9	-101.5	224.8	209.8	15.04	14.951		
3,400.0	3,372.0	3,387.6	3,383.0	10.0	8.0	-164.40	-93.1	-106.2	235.9	220.4	15.52	15.202		
3,500.0	3,470.7	3,487.0	3,482.2	10.4	8.3	-164.66	-96.3	-110.8	247.1	231.1	16.00	15.438		
3,600.0	3,569.3	3,586.4	3,581.4	10.8	8.5	-164.90	-99.5	-115.5	258.2	241.7	16.49	15.660		
3,700.0	3,668.0	3,685.8	3,680.6	11.2	8.8	-165.12	-102.7	-120.1	269.3	252.4	16.97	15.869		
3,800.0	3,766.7	3,785.1	3,779.8	11.6	9.0	-165.32	-105.8	-124.8	280.5	263.0	17.46	16.067		
3,900.0	3,865.3	3,884.5	3,879.1	11.9	9.3	-165.51	-109.0	-129.5	291.6	273.7	17.94	16.255		
4,000.0	3,964.0	3,983.9	3,978.3	12.3	9.5	-165.68	-112.2	-134.1	302.8	284.3	18.42	16.433		
4,100.0	4,062.6	4,083.2	4,077.5	12.7	9.8	-165.84	-115.4	-138.8	313.9	295.0	18.91	16.602		
4,200.0	4,161.3	4,182.6	4,176.7	13.1	10.0	-165.99	-118.6	-143.4	325.0	305.7	19.39	16.762		
4,300.0	4,260.0	4,282.0	4,275.9	13.5	10.3	-166.13	-121.8	-148.1	336.2	316.3	19.88	16.915		
4,400.0	4,358.6	4,381.4	4,375.1	13.9	10.5	-166.26	-124.9	-152.8	347.3	327.0	20.36	17.061		
4,500.0	4,457.4	4,480.9	4,474.4	14.2	10.8	-166.38	-128.1	-157.4	357.4	336.6	20.85	17.141		
4,600.0	4,556.7	4,580.6	4,574.0	14.4	11.0	-166.36	-131.3	-162.1	364.2	342.9	21.30	17.095		
4,700.0	4,656.4	4,680.6	4,673.8	14.6	11.3	-166.20	-134.5	-166.8	367.6	345.8	21.74	16.911		
4,800.0	4,756.3	4,779.5	4,772.6	14.8	11.5	-165.90	-137.7	-171.4	367.6	345.5	22.14	16.603		
4,900.0	4,856.2	4,869.9	4,862.9	15.0	11.7	89.63	-139.6	-174.3	365.8	343.4	22.44	16.300		
5,000.0	4,956.2	4,963.2	4,956.2	15.1	11.9	89.69	-140.0	-174.8	365.2	342.4	22.80	16.015		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2410 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,056.2	5,063.2	5,056.2	15.2	12.0	89.69	-140.0	-174.8	365.2	342.0	23.17	15.760		
5,200.0	5,156.2	5,163.2	5,156.2	15.4	12.2	89.52	-140.0	-174.8	365.2	341.6	23.55	15.506		
5,245.7	5,201.8	5,208.8	5,201.8	15.5	12.3	89.97	-140.0	-174.8	365.2	341.4	23.73	15.390		
5,300.0	5,255.4	5,263.0	5,256.0	15.5	12.4	91.18	-139.1	-174.8	365.2	341.3	23.98	15.231		
5,400.0	5,350.6	5,365.3	5,356.9	15.6	12.5	93.55	-123.3	-174.9	365.8	341.4	24.35	15.023		
5,500.0	5,438.2	5,470.8	5,455.6	15.7	12.6	95.82	-86.7	-175.0	366.7	342.1	24.60	14.908		
5,600.0	5,515.2	5,579.6	5,547.6	15.7	12.7	97.90	-28.9	-175.2	368.0	343.2	24.83	14.820		
5,700.0	5,578.5	5,691.5	5,627.6	15.8	12.8	99.68	49.0	-175.4	369.3	344.0	25.22	14.642		
5,800.0	5,626.0	5,806.1	5,690.3	16.0	13.0	101.08	144.7	-175.7	370.3	344.3	26.01	14.238		
5,900.0	5,655.8	5,922.8	5,731.2	16.3	13.8	102.02	253.7	-176.0	370.8	343.4	27.39	13.539		
6,000.0	5,666.9	6,040.7	5,746.9	16.9	14.9	102.45	370.3	-176.4	370.7	341.3	29.40	12.607		
6,100.0	5,667.0	6,142.3	5,747.0	17.7	16.0	102.48	471.9	-176.7	370.1	338.5	31.59	11.715		
6,200.0	5,667.0	6,242.3	5,747.0	18.8	17.3	102.51	571.9	-177.0	369.5	335.4	34.01	10.863		
6,300.0	5,667.0	6,342.3	5,747.0	19.9	18.6	102.53	671.9	-177.3	368.8	332.2	36.66	10.061		
6,400.0	5,667.0	6,442.3	5,747.0	21.2	20.1	102.55	771.9	-177.6	368.2	328.7	39.49	9.324		
6,500.0	5,667.0	6,542.3	5,747.0	22.6	21.6	102.57	871.9	-177.9	367.6	325.2	42.47	8.656		
6,600.0	5,667.0	6,642.3	5,747.0	24.1	23.2	102.59	971.9	-178.2	367.0	321.4	45.56	8.055		
6,700.0	5,667.0	6,742.3	5,747.0	25.7	24.8	102.61	1,071.9	-178.5	366.4	317.6	48.75	7.516		
6,800.0	5,667.0	6,842.3	5,747.0	27.3	26.5	102.63	1,171.9	-178.9	365.8	313.8	52.02	7.032		
6,900.0	5,667.0	6,942.3	5,747.0	28.9	28.2	102.66	1,271.9	-179.2	365.2	309.8	55.34	6.598		
7,000.0	5,667.0	7,042.3	5,747.0	30.5	29.9	102.68	1,371.9	-179.5	364.6	305.8	58.72	6.208		
7,100.0	5,667.0	7,142.3	5,747.0	32.2	31.7	102.70	1,471.9	-179.8	363.9	301.8	62.15	5.856		
7,200.0	5,667.0	7,242.3	5,747.0	34.0	33.5	102.72	1,571.9	-180.1	363.3	297.7	65.60	5.538		
7,300.0	5,667.0	7,342.3	5,747.0	35.7	35.2	102.74	1,671.9	-180.4	362.7	293.6	69.10	5.249		
7,400.0	5,667.0	7,442.3	5,747.0	37.4	37.0	102.76	1,771.9	-180.7	362.1	289.5	72.61	4.987		
7,500.0	5,667.0	7,542.3	5,747.0	39.2	38.8	102.79	1,871.9	-181.0	361.5	285.3	76.15	4.747		
7,600.0	5,667.0	7,642.3	5,747.0	41.0	40.7	102.81	1,971.9	-181.3	360.9	281.2	79.71	4.527		
7,700.0	5,667.0	7,742.3	5,747.0	42.8	42.5	102.83	2,071.9	-181.6	360.3	277.0	83.29	4.326		
7,800.0	5,667.0	7,842.3	5,747.0	44.6	44.3	102.85	2,171.9	-181.9	359.7	272.8	86.88	4.140		
7,900.0	5,667.0	7,942.3	5,747.0	46.4	46.2	102.87	2,271.9	-182.2	359.0	268.6	90.48	3.968		
8,000.0	5,667.0	8,042.3	5,747.0	48.2	48.0	102.90	2,371.9	-182.5	358.4	264.3	94.10	3.809		
8,100.0	5,667.0	8,142.3	5,747.0	50.1	49.9	102.92	2,471.9	-182.8	357.8	260.1	97.72	3.661		
8,200.0	5,667.0	8,242.3	5,747.0	51.9	51.7	102.94	2,571.9	-183.1	357.2	255.8	101.36	3.524		
8,300.0	5,667.0	8,342.3	5,747.0	53.8	53.6	102.96	2,671.9	-183.5	356.6	251.6	105.00	3.396		
8,400.0	5,667.0	8,442.3	5,747.0	55.6	55.5	102.99	2,771.9	-183.8	356.0	247.3	108.65	3.276		
8,500.0	5,667.0	8,542.3	5,747.0	57.4	57.3	103.01	2,871.9	-184.1	355.4	243.1	112.31	3.164		
8,600.0	5,667.0	8,642.3	5,747.0	59.3	59.2	103.03	2,971.9	-184.4	354.8	238.8	115.97	3.059		
8,700.0	5,667.0	8,742.3	5,747.0	61.2	61.1	103.06	3,071.9	-184.7	354.1	234.5	119.63	2.960		
8,800.0	5,667.0	8,842.3	5,747.0	63.0	63.0	103.08	3,171.9	-185.0	353.5	230.2	123.31	2.867		
8,900.0	5,667.0	8,942.3	5,747.0	64.9	64.9	103.10	3,271.9	-185.3	352.9	225.9	126.98	2.779		
9,000.0	5,667.0	9,042.3	5,747.0	66.8	66.7	103.13	3,371.9	-185.6	352.3	221.6	130.66	2.696		
9,100.0	5,667.0	9,142.3	5,747.0	68.6	68.6	103.15	3,471.9	-185.9	351.7	217.4	134.34	2.618		
9,200.0	5,667.0	9,242.3	5,747.0	70.5	70.5	103.17	3,571.9	-186.2	351.1	213.1	138.03	2.544		
9,300.0	5,667.0	9,342.3	5,747.0	72.4	72.4	103.20	3,671.9	-186.5	350.5	208.8	141.71	2.473		
9,400.0	5,667.0	9,442.3	5,747.0	74.3	74.3	103.22	3,771.9	-186.8	349.9	204.5	145.40	2.406		
9,500.0	5,667.0	9,542.3	5,747.0	76.2	76.2	103.24	3,871.8	-187.1	349.2	200.1	149.10	2.342		
9,600.0	5,667.0	9,642.3	5,747.0	78.0	78.1	103.27	3,971.8	-187.4	348.6	195.8	152.79	2.282		
9,700.0	5,667.0	9,742.2	5,747.0	79.9	80.0	103.29	4,071.8	-187.7	348.0	191.5	156.49	2.224		
9,800.0	5,667.0	9,842.2	5,747.0	81.8	81.9	103.31	4,171.8	-188.1	347.4	187.2	160.18	2.169		
9,900.0	5,667.0	9,942.2	5,747.0	83.7	83.8	103.34	4,271.8	-188.4	346.8	182.9	163.88	2.116		
10,000.0	5,667.0	10,042.2	5,747.0	85.6	85.7	103.36	4,371.8	-188.7	346.2	178.6	167.58	2.066		
10,100.0	5,667.0	10,142.2	5,747.0	87.5	87.6	103.39	4,471.8	-189.0	345.6	174.3	171.29	2.018		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2410 - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,200.0	5,667.0	10,242.2	5,747.0	89.4	89.5	103.41	4,571.8	-189.3	345.0	170.0	174.99	1.971		
10,300.0	5,667.0	10,342.2	5,747.0	91.3	91.4	103.43	4,671.8	-189.6	344.4	165.7	178.69	1.927		
10,400.0	5,667.0	10,442.2	5,747.0	93.2	93.3	103.46	4,771.8	-189.9	343.7	161.3	182.40	1.885		
10,500.0	5,667.0	10,542.2	5,747.0	95.1	95.2	103.48	4,871.8	-190.2	343.1	157.0	186.10	1.844		
10,600.0	5,667.0	10,642.2	5,747.0	97.0	97.1	103.51	4,971.8	-190.5	342.5	152.7	189.81	1.805		
10,700.0	5,667.0	10,742.2	5,747.0	98.9	99.0	103.53	5,071.8	-190.8	341.9	148.4	193.51	1.767		
10,800.0	5,667.0	10,842.2	5,747.0	100.8	100.9	103.56	5,171.8	-191.1	341.3	144.1	197.22	1.731		
10,900.0	5,667.0	10,942.2	5,747.0	102.6	102.8	103.58	5,271.8	-191.4	340.7	139.8	200.93	1.696		
11,000.0	5,667.0	11,042.2	5,747.0	104.5	104.7	103.61	5,371.8	-191.7	340.1	135.4	204.64	1.662		
11,100.0	5,667.0	11,142.2	5,747.0	106.5	106.6	103.63	5,471.8	-192.0	339.5	131.1	208.34	1.629		
11,104.5	5,667.0	11,146.7	5,747.0	106.5	106.7	103.63	5,476.3	-192.1	339.4	130.9	208.51	1.628 SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2411 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.96	1.1	60.1	60.1					
100.0	100.0	100.0	100.0	0.1	0.1	88.96	1.1	60.1	60.1	59.9	0.19	322.024		
200.0	200.0	200.0	200.0	0.3	0.3	88.96	1.1	60.1	60.1	59.4	0.64	94.445		
300.0	300.0	300.0	300.0	0.5	0.5	88.96	1.1	60.1	60.1	59.0	1.09	55.338		
400.0	400.0	400.0	400.0	0.8	0.8	88.96	1.1	60.1	60.1	58.5	1.54	39.133 CC, ES		
500.0	500.0	498.6	498.6	1.0	1.0	90.16	-0.2	61.2	61.2	59.3	1.96	31.225		
600.0	600.0	598.2	598.0	1.2	1.2	92.96	-3.3	64.0	64.1	61.7	2.38	26.924		
700.0	700.0	698.1	697.9	1.4	1.4	95.59	-6.5	66.9	67.2	64.4	2.81	23.891		
800.0	800.0	798.0	797.7	1.7	1.6	97.98	-9.8	69.8	70.5	67.2	3.26	21.649		
900.0	900.0	897.9	897.5	1.9	1.8	100.15	-13.0	72.6	73.8	70.1	3.70	19.942		
1,000.0	1,000.0	997.8	997.3	2.1	2.0	102.14	-16.2	75.5	77.3	73.2	4.15	18.607		
1,100.0	1,100.0	1,097.6	1,097.0	2.3	2.3	-151.85	-19.5	78.4	82.4	77.8	4.57	18.008		
1,200.0	1,199.8	1,197.3	1,196.6	2.5	2.5	-151.77	-22.7	81.3	90.6	85.6	5.00	18.120		
1,300.0	1,299.5	1,296.6	1,295.9	2.7	2.7	-152.60	-25.9	84.2	101.8	96.4	5.43	18.755		
1,400.0	1,398.7	1,395.6	1,394.7	3.0	3.0	-153.99	-29.1	87.0	116.2	110.3	5.86	19.808		
1,500.0	1,497.5	1,493.9	1,493.0	3.2	3.2	-155.68	-32.3	89.9	133.6	127.3	6.31	21.170		
1,600.0	1,596.2	1,592.2	1,591.1	3.5	3.4	-157.19	-35.5	92.7	151.9	145.1	6.77	22.435		
1,700.0	1,694.8	1,690.4	1,689.3	3.9	3.7	-158.37	-38.7	95.5	170.2	163.0	7.23	23.534		
1,800.0	1,793.5	1,788.7	1,787.5	4.2	3.9	-159.32	-41.8	98.4	188.6	180.9	7.70	24.495		
1,900.0	1,892.1	1,886.9	1,885.6	4.5	4.1	-160.10	-45.0	101.2	207.1	198.9	8.17	25.341		
2,000.0	1,990.8	1,985.2	1,983.8	4.9	4.4	-160.76	-48.2	104.0	225.6	217.0	8.65	26.090		
2,100.0	2,089.4	2,083.4	2,081.9	5.2	4.6	-161.31	-51.4	106.9	244.1	235.0	9.12	26.759		
2,200.0	2,188.1	2,181.7	2,180.1	5.6	4.8	-161.79	-54.6	109.7	262.7	253.1	9.60	27.358		
2,300.0	2,286.8	2,279.9	2,278.2	5.9	5.1	-162.20	-57.7	112.6	281.2	271.1	10.08	27.898		
2,400.0	2,385.4	2,378.2	2,376.4	6.3	5.3	-162.57	-60.9	115.4	299.8	289.2	10.56	28.388		
2,500.0	2,484.1	2,476.4	2,474.5	6.7	5.6	-162.89	-64.1	118.2	318.4	307.3	11.04	28.834		
2,600.0	2,582.7	2,574.6	2,572.7	7.0	5.8	-163.17	-67.3	121.1	336.9	325.4	11.52	29.241		
2,700.0	2,681.4	2,672.9	2,670.8	7.4	6.0	-163.43	-70.5	123.9	355.5	343.5	12.00	29.615		
2,800.0	2,780.1	2,771.1	2,769.0	7.8	6.3	-163.66	-73.6	126.7	374.1	361.6	12.49	29.960		
2,900.0	2,878.7	2,869.4	2,867.1	8.1	6.5	-163.86	-76.8	129.6	392.7	379.8	12.97	30.278		
3,000.0	2,977.4	2,967.6	2,965.3	8.5	6.7	-164.05	-80.0	132.4	411.3	397.9	13.45	30.574		
3,100.0	3,076.0	3,065.9	3,063.4	8.9	7.0	-164.23	-83.2	135.2	429.9	416.0	13.94	30.849		
3,200.0	3,174.7	3,164.1	3,161.6	9.3	7.2	-164.38	-86.4	138.1	448.6	434.1	14.42	31.105		
3,300.0	3,273.4	3,262.4	3,259.7	9.7	7.4	-164.53	-89.5	140.9	467.2	452.3	14.90	31.345		
3,400.0	3,372.0	3,360.6	3,357.9	10.0	7.7	-164.67	-92.7	143.8	485.8	470.4	15.39	31.570		
3,500.0	3,470.7	3,458.8	3,456.0	10.4	7.9	-164.79	-95.9	146.6	504.4	488.5	15.87	31.782		
3,600.0	3,569.3	3,557.1	3,554.2	10.8	8.2	-164.91	-99.1	149.4	523.0	506.7	16.35	31.982		
3,700.0	3,668.0	3,655.3	3,652.4	11.2	8.4	-165.01	-102.2	152.3	541.7	524.8	16.84	32.170		
3,800.0	3,766.7	3,753.6	3,750.5	11.6	8.6	-165.12	-105.4	155.1	560.3	543.0	17.32	32.348		
3,900.0	3,865.3	3,851.8	3,848.7	11.9	8.9	-165.21	-108.6	157.9	578.9	561.1	17.80	32.517		
4,000.0	3,964.0	3,950.1	3,946.8	12.3	9.1	-165.30	-111.8	160.8	597.6	579.3	18.29	32.678		
4,100.0	4,062.6	4,048.3	4,045.0	12.7	9.3	-165.38	-115.0	163.6	616.2	597.4	18.77	32.831		
4,200.0	4,161.3	4,146.6	4,143.1	13.1	9.6	-165.46	-118.1	166.4	634.8	615.6	19.25	32.977		
4,300.0	4,260.0	4,244.8	4,241.3	13.5	9.8	-165.53	-121.3	169.3	653.5	633.7	19.73	33.116		
4,400.0	4,358.6	4,343.1	4,339.4	13.9	10.0	-165.60	-124.5	172.1	672.1	651.9	20.21	33.248		
4,500.0	4,457.4	4,441.5	4,437.8	14.2	10.3	-165.71	-127.7	175.0	689.7	668.9	20.72	33.286		
4,600.0	4,556.7	4,540.5	4,536.6	14.4	10.5	-165.76	-130.9	177.8	704.0	682.8	21.18	33.232		
4,700.0	4,656.4	4,639.8	4,635.9	14.6	10.8	-165.71	-134.1	180.7	714.9	693.3	21.62	33.063		
4,800.0	4,756.3	4,742.3	4,738.3	14.8	11.0	-165.59	-137.4	183.6	722.5	700.5	22.04	32.786		
4,900.0	4,856.2	4,860.3	4,856.2	15.0	11.2	89.76	-138.9	185.0	725.0	702.6	22.42	32.338		
5,000.0	4,956.2	4,960.3	4,956.2	15.1	11.4	89.76	-138.9	185.0	725.0	702.2	22.78	31.818		
5,100.0	5,056.2	5,060.3	5,056.2	15.2	11.6	89.76	-138.9	185.0	725.0	701.8	23.15	31.322		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2411 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,156.2	5,160.3	5,156.3	15.4	11.8	89.57	-138.8	185.0	725.0	701.5	23.52	30.830		
5,300.0	5,255.4	5,260.9	5,256.0	15.5	11.9	89.58	-127.2	184.9	724.8	701.0	23.81	30.444		
5,400.0	5,350.6	5,361.5	5,351.7	15.6	12.0	89.61	-96.6	184.6	724.5	700.5	24.02	30.166		
5,500.0	5,438.2	5,462.0	5,439.6	15.7	12.1	89.64	-48.3	184.2	723.9	699.7	24.23	29.880		
5,600.0	5,515.2	5,562.4	5,516.6	15.7	12.2	89.70	15.9	183.7	723.2	698.6	24.57	29.428		
5,700.0	5,578.5	5,662.7	5,579.9	15.8	12.5	89.76	93.6	183.0	722.3	697.1	25.20	28.663		
5,800.0	5,626.0	5,763.0	5,627.0	16.0	13.0	89.83	181.9	182.3	721.3	695.1	26.21	27.514		
5,900.0	5,655.8	5,863.2	5,656.4	16.3	13.8	89.91	277.5	181.5	720.2	692.5	27.67	26.028		
6,000.0	5,666.9	5,963.2	5,666.9	16.9	14.8	89.99	376.9	180.6	719.0	689.5	29.52	24.354		
6,100.0	5,667.0	6,063.2	5,667.0	17.7	15.9	90.00	476.9	179.8	717.9	686.1	31.74	22.618		
6,200.0	5,667.0	6,163.2	5,667.0	18.8	17.2	90.00	576.8	179.0	716.7	682.5	34.22	20.941		
6,300.0	5,667.0	6,263.2	5,667.0	19.9	18.6	90.00	676.8	178.1	715.5	678.6	36.95	19.366		
6,400.0	5,667.0	6,363.2	5,667.0	21.2	20.0	90.00	776.8	177.3	714.4	674.5	39.86	17.924		
6,500.0	5,667.0	6,463.2	5,667.0	22.6	21.6	90.00	876.8	176.4	713.2	670.3	42.91	16.619		
6,600.0	5,667.0	6,563.2	5,667.0	24.1	23.2	90.00	976.8	175.6	712.0	666.0	46.09	15.449		
6,700.0	5,667.0	6,663.2	5,667.0	25.7	24.8	90.00	1,076.8	174.8	710.9	661.5	49.36	14.401		
6,800.0	5,667.0	6,763.2	5,667.0	27.3	26.5	90.00	1,176.8	173.9	709.7	657.0	52.72	13.463		
6,900.0	5,667.0	6,863.2	5,667.0	28.9	28.2	90.00	1,276.8	173.1	708.6	652.4	56.13	12.623		
7,000.0	5,667.0	6,963.2	5,667.0	30.5	29.9	90.00	1,376.8	172.2	707.4	647.8	59.60	11.869		
7,100.0	5,667.0	7,063.2	5,667.0	32.2	31.7	90.00	1,476.7	171.4	706.2	643.1	63.11	11.190		
7,200.0	5,667.0	7,163.1	5,667.0	34.0	33.5	90.00	1,576.7	170.6	705.1	638.4	66.66	10.577		
7,300.0	5,667.0	7,263.1	5,667.0	35.7	35.3	90.00	1,676.7	169.7	703.9	633.7	70.24	10.021		
7,400.0	5,667.0	7,363.1	5,667.0	37.4	37.1	90.00	1,776.7	168.9	702.8	628.9	73.85	9.516		
7,500.0	5,667.0	7,463.1	5,667.0	39.2	38.9	90.00	1,876.7	168.0	701.6	624.1	77.49	9.055		
7,600.0	5,667.0	7,563.1	5,667.0	41.0	40.7	90.00	1,976.7	167.2	700.4	619.3	81.14	8.633		
7,700.0	5,667.0	7,663.1	5,667.0	42.8	42.5	90.00	2,076.7	166.4	699.3	614.5	84.81	8.245		
7,800.0	5,667.0	7,763.1	5,667.0	44.6	44.4	90.00	2,176.7	165.5	698.1	609.6	88.49	7.889		
7,900.0	5,667.0	7,863.1	5,667.0	46.4	46.2	90.00	2,276.7	164.7	697.0	604.8	92.19	7.560		
8,000.0	5,667.0	7,963.1	5,667.0	48.2	48.1	90.00	2,376.7	163.9	695.8	599.9	95.90	7.255		
8,100.0	5,667.0	8,063.1	5,667.0	50.1	50.0	90.00	2,476.6	163.0	694.6	595.0	99.62	6.973		
8,200.0	5,667.0	8,163.1	5,667.0	51.9	51.8	90.00	2,576.6	162.2	693.5	590.1	103.35	6.710		
8,300.0	5,667.0	8,263.1	5,667.0	53.8	53.7	90.00	2,676.6	161.3	692.3	585.2	107.09	6.465		
8,400.0	5,667.0	8,363.1	5,667.0	55.6	55.6	90.00	2,776.6	160.5	691.1	580.3	110.84	6.236		
8,500.0	5,667.0	8,463.1	5,667.0	57.4	57.4	90.00	2,876.6	159.7	690.0	575.4	114.59	6.021		
8,600.0	5,667.0	8,563.1	5,667.0	59.3	59.3	90.00	2,976.6	158.8	688.8	570.5	118.35	5.820		
8,700.0	5,667.0	8,663.0	5,667.0	61.2	61.2	90.00	3,076.6	158.0	687.7	565.5	122.12	5.631		
8,800.0	5,667.0	8,763.0	5,667.0	63.0	63.1	90.00	3,176.6	157.1	686.5	560.6	125.89	5.453		
8,900.0	5,667.0	8,863.0	5,667.0	64.9	65.0	90.00	3,276.6	156.3	685.3	555.7	129.66	5.285		
9,000.0	5,667.0	8,963.0	5,667.0	66.8	66.8	90.00	3,376.6	155.5	684.2	550.7	133.44	5.127		
9,100.0	5,667.0	9,063.0	5,667.0	68.6	68.7	90.00	3,476.5	154.6	683.0	545.8	137.23	4.977		
9,200.0	5,667.0	9,163.0	5,667.0	70.5	70.6	90.00	3,576.5	153.8	681.9	540.8	141.01	4.835		
9,300.0	5,667.0	9,263.0	5,667.0	72.4	72.5	90.00	3,676.5	152.9	680.7	535.9	144.81	4.701		
9,400.0	5,667.0	9,363.0	5,667.0	74.3	74.4	90.00	3,776.5	152.1	679.5	530.9	148.60	4.573		
9,500.0	5,667.0	9,463.0	5,667.0	76.2	76.3	90.00	3,876.5	151.3	678.4	526.0	152.40	4.451		
9,600.0	5,667.0	9,563.0	5,667.0	78.0	78.2	90.00	3,976.5	150.4	677.2	521.0	156.19	4.336		
9,700.0	5,667.0	9,663.0	5,667.0	79.9	80.1	90.00	4,076.5	149.6	676.1	516.1	160.00	4.225		
9,800.0	5,667.0	9,763.0	5,667.0	81.8	82.0	90.00	4,176.5	148.7	674.9	511.1	163.80	4.120		
9,900.0	5,667.0	9,863.0	5,667.0	83.7	83.9	90.00	4,276.5	147.9	673.7	506.1	167.60	4.020		
10,000.0	5,667.0	9,963.0	5,667.0	85.6	85.8	90.00	4,376.5	147.1	672.6	501.2	171.41	3.924		
10,100.0	5,667.0	10,063.0	5,667.0	87.5	87.7	90.00	4,476.4	146.2	671.4	496.2	175.22	3.832		
10,200.0	5,667.0	10,162.9	5,667.0	89.4	89.6	90.00	4,576.4	145.4	670.2	491.2	179.03	3.744		
10,300.0	5,667.0	10,262.9	5,667.0	91.3	91.5	90.00	4,676.4	144.5	669.1	486.2	182.85	3.659		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S25-T10N-R58W - Razor 25B -2411 - HZ - Plan #1		Offset Site Error:		0.0 usft
Survey Program:													0-ISCSWA MWD		Offset Well Error:		0.0 usft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning				
10,400.0	5,667.0	10,362.9	5,667.0	93.2	93.4	90.00	4,776.4	143.7	667.9	481.3	186.66	3.578					
10,500.0	5,667.0	10,462.9	5,667.0	95.1	95.3	90.00	4,876.4	142.9	666.8	476.3	190.48	3.500					
10,600.0	5,667.0	10,562.9	5,667.0	97.0	97.2	90.00	4,976.4	142.0	665.6	471.3	194.29	3.426					
10,700.0	5,667.0	10,662.9	5,667.0	98.9	99.1	90.00	5,076.4	141.2	664.4	466.3	198.11	3.354					
10,800.0	5,667.0	10,762.9	5,667.0	100.8	101.1	90.00	5,176.4	140.3	663.3	461.3	201.93	3.285					
10,900.0	5,667.0	10,862.9	5,667.0	102.6	103.0	90.00	5,276.4	139.5	662.1	456.4	205.75	3.218					
11,000.0	5,667.0	10,962.9	5,667.0	104.5	104.9	90.00	5,376.3	138.7	661.0	451.4	209.58	3.154					
11,100.0	5,667.0	11,062.9	5,667.0	106.5	106.8	90.00	5,476.3	137.8	659.8	446.4	213.40	3.092					
11,104.5	5,667.0	11,064.8	5,667.0	106.5	106.8	90.00	5,478.2	137.8	659.8	446.2	213.52	3.090 SF					

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2412 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.31	1.1	90.0	90.0					
100.0	100.0	100.0	100.0	0.1	0.1	89.31	1.1	90.0	90.0	89.8	0.19	482.250		
200.0	200.0	200.0	200.0	0.3	0.3	89.31	1.1	90.0	90.0	89.3	0.64	141.437		
300.0	300.0	300.0	300.0	0.5	0.5	89.31	1.1	90.0	90.0	88.9	1.09	82.871		
400.0	400.0	400.0	400.0	0.8	0.8	89.31	1.1	90.0	90.0	88.4	1.54	58.604		
500.0	500.0	500.0	500.0	1.0	1.0	89.31	1.1	90.0	90.0	88.0	1.98	45.330 CC, ES		
600.0	600.0	597.8	597.8	1.2	1.2	89.47	0.8	90.9	90.9	88.5	2.42	37.598		
700.0	700.0	694.7	694.6	1.4	1.4	90.14	-0.2	94.8	95.0	92.1	2.84	33.457		
800.0	800.0	791.2	790.8	1.7	1.6	91.21	-2.1	101.9	102.3	99.0	3.28	31.223		
900.0	900.0	887.5	886.6	1.9	1.8	92.50	-4.9	112.0	113.0	109.2	3.74	30.197		
1,000.0	1,000.0	986.8	985.1	2.1	2.1	93.73	-8.1	123.7	124.9	120.6	4.24	29.485		
1,100.0	1,100.0	1,085.8	1,083.4	2.3	2.4	-160.68	-11.2	135.4	138.5	133.9	4.61	30.034		
1,200.0	1,199.8	1,184.4	1,181.2	2.5	2.7	-160.38	-14.4	147.0	155.3	150.3	5.04	30.843		
1,300.0	1,299.5	1,282.3	1,278.4	2.7	3.0	-160.49	-17.5	158.5	175.4	170.0	5.47	32.096		
1,400.0	1,398.7	1,379.6	1,374.9	3.0	3.3	-160.86	-20.6	169.9	198.8	192.9	5.90	33.698		
1,500.0	1,497.5	1,476.0	1,470.6	3.2	3.6	-161.44	-23.6	181.3	225.2	218.8	6.34	35.524		
1,600.0	1,596.2	1,572.2	1,566.1	3.5	3.9	-162.06	-26.7	192.6	252.4	245.6	6.79	37.151		
1,700.0	1,694.8	1,668.4	1,661.6	3.9	4.2	-162.56	-29.8	203.9	279.6	272.3	7.25	38.540		
1,800.0	1,793.5	1,764.6	1,757.1	4.2	4.5	-162.96	-32.8	215.2	306.8	299.1	7.72	39.737		
1,900.0	1,892.1	1,860.8	1,852.6	4.5	4.8	-163.31	-35.9	226.5	334.0	325.8	8.19	40.778		
2,000.0	1,990.8	1,957.0	1,948.1	4.9	5.1	-163.60	-39.0	237.8	361.3	352.6	8.67	41.689		
2,100.0	2,089.4	2,053.2	2,043.5	5.2	5.4	-163.85	-42.0	249.1	388.6	379.4	9.14	42.494		
2,200.0	2,188.1	2,149.4	2,139.0	5.6	5.7	-164.06	-45.1	260.5	415.8	406.2	9.62	43.210		
2,300.0	2,286.8	2,245.6	2,234.5	5.9	6.0	-164.25	-48.2	271.8	443.1	433.0	10.10	43.850		
2,400.0	2,385.4	2,341.8	2,330.0	6.3	6.3	-164.42	-51.2	283.1	470.4	459.8	10.59	44.426		
2,500.0	2,484.1	2,438.0	2,425.5	6.7	6.6	-164.57	-54.3	294.4	497.6	486.6	11.07	44.948		
2,600.0	2,582.7	2,534.2	2,521.0	7.0	6.9	-164.71	-57.3	305.7	524.9	513.4	11.56	45.422		
2,700.0	2,681.4	2,630.4	2,616.4	7.4	7.2	-164.83	-60.4	317.0	552.2	540.2	12.04	45.856		
2,800.0	2,780.1	2,726.6	2,711.9	7.8	7.5	-164.94	-63.5	328.3	579.5	567.0	12.53	46.253		
2,900.0	2,878.7	2,822.8	2,807.4	8.1	7.9	-165.04	-66.5	339.7	606.8	593.8	13.02	46.620		
3,000.0	2,977.4	2,919.0	2,902.9	8.5	8.2	-165.13	-69.6	351.0	634.1	620.6	13.50	46.960		
3,100.0	3,076.0	3,015.2	2,998.4	8.9	8.5	-165.21	-72.7	362.3	661.4	647.4	13.99	47.275		
3,200.0	3,174.7	3,111.4	3,093.9	9.3	8.8	-165.29	-75.7	373.6	688.6	674.2	14.48	47.569		
3,300.0	3,273.4	3,207.6	3,189.3	9.7	9.1	-165.36	-78.8	384.9	715.9	701.0	14.96	47.843		
3,400.0	3,372.0	3,303.8	3,284.8	10.0	9.4	-165.42	-81.9	396.2	743.2	727.8	15.45	48.100		
3,500.0	3,470.7	3,400.0	3,380.3	10.4	9.7	-165.49	-84.9	407.5	770.5	754.6	15.94	48.343		
3,600.0	3,569.3	3,496.2	3,475.8	10.8	10.0	-165.54	-88.0	418.9	797.8	781.4	16.43	48.571		
3,700.0	3,668.0	3,592.4	3,571.3	11.2	10.3	-165.60	-91.1	430.2	825.1	808.2	16.91	48.786		
3,800.0	3,766.7	3,688.6	3,666.7	11.6	10.6	-165.65	-94.1	441.5	852.4	835.0	17.40	48.991		
3,900.0	3,865.3	3,784.8	3,762.2	11.9	11.0	-165.69	-97.2	452.8	879.7	861.8	17.89	49.185		
4,000.0	3,964.0	3,881.0	3,857.7	12.3	11.3	-165.74	-100.2	464.1	907.0	888.6	18.37	49.369		
4,100.0	4,062.6	3,977.2	3,953.2	12.7	11.6	-165.78	-103.3	475.4	934.3	915.5	18.86	49.545		
4,200.0	4,161.3	4,073.4	4,048.7	13.1	11.9	-165.82	-106.4	486.7	961.6	942.3	19.34	49.713		
4,300.0	4,260.0	4,169.6	4,144.2	13.5	12.2	-165.85	-109.4	498.1	988.9	969.1	19.83	49.874		
4,400.0	4,358.6	4,265.8	4,239.6	13.9	12.5	-165.89	-112.5	509.4	1,016.2	995.9	20.31	50.028		
4,500.0	4,457.4	4,362.3	4,335.4	14.2	12.8	-166.01	-115.6	520.7	1,042.5	1,021.6	20.84	50.016		
4,600.0	4,556.7	4,459.6	4,432.0	14.4	13.1	-166.10	-118.7	532.2	1,065.5	1,044.2	21.34	49.939		
4,700.0	4,656.4	4,557.6	4,529.3	14.6	13.5	-166.12	-121.8	543.7	1,085.2	1,063.4	21.80	49.775		
4,800.0	4,756.3	4,658.8	4,656.7	14.8	13.8	-166.06	-125.6	557.7	1,101.0	1,078.7	22.29	49.402		
4,900.0	4,856.2	4,844.3	4,814.8	15.0	14.1	89.29	-128.3	567.9	1,108.7	1,086.0	22.74	48.751		
5,000.0	4,956.2	4,985.8	4,956.2	15.1	14.3	89.32	-128.9	570.0	1,110.0	1,086.9	23.18	47.897		
5,100.0	5,056.2	5,085.8	5,056.2	15.2	14.5	89.32	-128.9	570.0	1,110.0	1,086.5	23.54	47.146		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2412 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,156.2	5,185.8	5,156.2	15.4	14.6	89.15	-128.9	570.0	1,110.0	1,086.1	23.92	46.412		
5,300.0	5,255.4	5,286.0	5,256.5	15.5	14.8	89.71	-128.0	569.9	1,109.9	1,085.7	24.25	45.773		
5,400.0	5,350.6	5,390.0	5,359.0	15.6	14.9	90.55	-111.7	569.6	1,109.6	1,085.1	24.49	45.312		
5,500.0	5,438.2	5,497.3	5,459.1	15.7	15.0	91.37	-73.9	569.0	1,109.1	1,084.4	24.68	44.933		
5,600.0	5,515.2	5,607.7	5,552.0	15.7	15.1	92.16	-14.4	567.9	1,108.3	1,083.3	24.96	44.395		
5,700.0	5,578.5	5,721.2	5,632.1	15.8	15.2	92.86	65.6	566.4	1,107.2	1,081.7	25.50	43.412		
5,800.0	5,626.0	5,837.0	5,694.1	16.0	15.3	93.45	163.2	564.6	1,105.8	1,079.3	26.46	41.784		
5,900.0	5,655.8	5,954.5	5,733.4	16.3	15.7	93.88	273.7	562.6	1,104.0	1,076.1	27.94	39.509		
6,000.0	5,666.9	6,072.7	5,747.0	16.9	16.5	94.15	390.7	560.5	1,101.9	1,072.0	29.92	36.825		
6,100.0	5,667.0	6,172.8	5,747.0	17.7	17.4	94.17	490.9	558.6	1,099.8	1,067.7	32.10	34.257		
6,200.0	5,667.0	6,272.8	5,747.0	18.8	18.6	94.18	590.8	556.8	1,097.6	1,063.1	34.56	31.761		
6,300.0	5,667.0	6,372.8	5,747.0	19.9	19.8	94.19	690.8	555.0	1,095.5	1,058.2	37.25	29.408		
6,400.0	5,667.0	6,472.8	5,747.0	21.2	21.2	94.20	790.8	553.1	1,093.3	1,053.2	40.13	27.243		
6,500.0	5,667.0	6,572.8	5,747.0	22.6	22.6	94.21	890.7	551.3	1,091.2	1,048.0	43.17	25.279		
6,600.0	5,667.0	6,672.7	5,747.0	24.1	24.2	94.21	990.7	549.5	1,089.0	1,042.7	46.32	23.511		
6,700.0	5,667.0	6,772.7	5,747.0	25.7	25.7	94.22	1,090.6	547.7	1,086.9	1,037.3	49.57	21.925		
6,800.0	5,667.0	6,872.7	5,747.0	27.3	27.4	94.23	1,190.6	545.8	1,084.7	1,031.8	52.91	20.503		
6,900.0	5,667.0	6,972.7	5,747.0	28.9	29.0	94.24	1,290.6	544.0	1,082.6	1,026.3	56.31	19.227		
7,000.0	5,667.0	7,072.6	5,747.0	30.5	30.7	94.25	1,390.5	542.2	1,080.5	1,020.7	59.76	18.080		
7,100.0	5,667.0	7,172.6	5,747.0	32.2	32.4	94.26	1,490.5	540.3	1,078.3	1,015.1	63.26	17.046		
7,200.0	5,667.0	7,272.6	5,747.0	34.0	34.1	94.26	1,590.4	538.5	1,076.2	1,009.4	66.80	16.111		
7,300.0	5,667.0	7,372.6	5,747.0	35.7	35.9	94.27	1,690.4	536.7	1,074.0	1,003.7	70.37	15.263		
7,400.0	5,667.0	7,472.5	5,747.0	37.4	37.7	94.28	1,790.4	534.9	1,071.9	997.9	73.96	14.492		
7,500.0	5,667.0	7,572.5	5,747.0	39.2	39.5	94.29	1,890.3	533.0	1,069.7	992.2	77.59	13.788		
7,600.0	5,667.0	7,672.5	5,747.0	41.0	41.3	94.30	1,990.3	531.2	1,067.6	986.4	81.23	13.143		
7,700.0	5,667.0	7,772.5	5,747.0	42.8	43.1	94.31	2,090.2	529.4	1,065.4	980.6	84.89	12.551		
7,800.0	5,667.0	7,872.5	5,747.0	44.6	44.9	94.32	2,190.2	527.6	1,063.3	974.7	88.57	12.006		
7,900.0	5,667.0	7,972.4	5,747.0	46.4	46.7	94.32	2,290.2	525.7	1,061.2	968.9	92.26	11.502		
8,000.0	5,667.0	8,072.4	5,747.0	48.2	48.5	94.33	2,390.1	523.9	1,059.0	963.1	95.96	11.036		
8,100.0	5,667.0	8,172.4	5,747.0	50.1	50.4	94.34	2,490.1	522.1	1,056.9	957.2	99.67	10.603		
8,200.0	5,667.0	8,272.4	5,747.0	51.9	52.2	94.35	2,590.0	520.2	1,054.7	951.3	103.40	10.201		
8,300.0	5,667.0	8,372.3	5,747.0	53.8	54.1	94.36	2,690.0	518.4	1,052.6	945.5	107.13	9.825		
8,400.0	5,667.0	8,472.3	5,747.0	55.6	55.9	94.37	2,790.0	516.6	1,050.4	939.6	110.87	9.475		
8,500.0	5,667.0	8,572.3	5,747.0	57.4	57.8	94.38	2,889.9	514.8	1,048.3	933.7	114.62	9.146		
8,600.0	5,667.0	8,672.3	5,747.0	59.3	59.7	94.39	2,989.9	512.9	1,046.2	927.8	118.37	8.838		
8,700.0	5,667.0	8,772.2	5,747.0	61.2	61.5	94.40	3,089.8	511.1	1,044.0	921.9	122.13	8.548		
8,800.0	5,667.0	8,872.2	5,747.0	63.0	63.4	94.40	3,189.8	509.3	1,041.9	916.0	125.89	8.276		
8,900.0	5,667.0	8,972.2	5,747.0	64.9	65.3	94.41	3,289.8	507.4	1,039.7	910.1	129.66	8.019		
9,000.0	5,667.0	9,072.2	5,747.0	66.8	67.2	94.42	3,389.7	505.6	1,037.6	904.1	133.44	7.776		
9,100.0	5,667.0	9,172.2	5,747.0	68.6	69.0	94.43	3,489.7	503.8	1,035.4	898.2	137.22	7.546		
9,200.0	5,667.0	9,272.1	5,747.0	70.5	70.9	94.44	3,589.6	502.0	1,033.3	892.3	141.00	7.329		
9,300.0	5,667.0	9,372.1	5,747.0	72.4	72.8	94.45	3,689.6	500.1	1,031.2	886.4	144.78	7.122		
9,400.0	5,667.0	9,472.1	5,747.0	74.3	74.7	94.46	3,789.6	498.3	1,029.0	880.4	148.57	6.926		
9,500.0	5,667.0	9,572.1	5,747.0	76.2	76.6	94.47	3,889.5	496.5	1,026.9	874.5	152.36	6.740		
9,600.0	5,667.0	9,672.0	5,747.0	78.0	78.5	94.48	3,989.5	494.7	1,024.7	868.6	156.15	6.562		
9,700.0	5,667.0	9,772.0	5,747.0	79.9	80.4	94.49	4,089.4	492.8	1,022.6	862.6	159.95	6.393		
9,800.0	5,667.0	9,872.0	5,747.0	81.8	82.3	94.50	4,189.4	491.0	1,020.4	856.7	163.75	6.232		
9,900.0	5,667.0	9,972.0	5,747.0	83.7	84.1	94.51	4,289.4	489.2	1,018.3	850.7	167.55	6.078		
10,000.0	5,667.0	10,071.9	5,747.0	85.6	86.0	94.52	4,389.3	487.3	1,016.1	844.8	171.35	5.930		
10,100.0	5,667.0	10,171.9	5,747.0	87.5	87.9	94.53	4,489.3	485.5	1,014.0	838.9	175.15	5.789		
10,200.0	5,667.0	10,271.9	5,747.0	89.4	89.8	94.54	4,589.2	483.7	1,011.9	832.9	178.96	5.654		
10,300.0	5,667.0	10,371.9	5,747.0	91.3	91.7	94.55	4,689.2	481.9	1,009.7	827.0	182.77	5.525		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2412 - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	5,667.0	10,471.9	5,747.0	93.2	93.6	94.56	4,789.2	480.0	1,007.6	821.0	186.57	5.400		
10,500.0	5,667.0	10,571.8	5,747.0	95.1	95.5	94.56	4,889.1	478.2	1,005.4	815.0	190.38	5.281		
10,600.0	5,667.0	10,671.8	5,747.0	97.0	97.4	94.57	4,989.1	476.4	1,003.3	809.1	194.20	5.166		
10,700.0	5,667.0	10,771.8	5,747.0	98.9	99.3	94.58	5,089.0	474.5	1,001.1	803.1	198.01	5.056		
10,800.0	5,667.0	10,871.8	5,747.0	100.8	101.3	94.59	5,189.0	472.7	999.0	797.2	201.82	4.950		
10,900.0	5,667.0	10,971.7	5,747.0	102.6	103.2	94.60	5,289.0	470.9	996.9	791.2	205.64	4.848		
11,000.0	5,667.0	11,071.7	5,747.0	104.5	105.1	94.61	5,388.9	469.1	994.7	785.3	209.45	4.749		
11,100.0	5,667.0	11,162.1	5,747.0	106.5	106.8	94.62	5,479.3	467.4	992.6	779.5	213.08	4.658		
11,104.5	5,667.0	11,162.1	5,747.0	106.5	106.8	94.62	5,479.3	467.4	992.6	779.4	213.16	4.656 SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2549 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-118.86	-49.6	-90.0	102.7					
100.0	100.0	100.0	100.0	0.1	0.1	-118.86	-49.6	-90.0	102.7	102.5	0.19	550.576		
200.0	200.0	200.0	200.0	0.3	0.3	-118.86	-49.6	-90.0	102.7	102.1	0.64	161.476		
300.0	300.0	300.0	300.0	0.5	0.5	-118.86	-49.6	-90.0	102.7	101.6	1.09	94.612		
400.0	400.0	400.0	400.0	0.8	0.8	-118.86	-49.6	-90.0	102.7	101.2	1.54	66.908		
500.0	500.0	500.0	500.0	1.0	1.0	-118.86	-49.6	-90.0	102.7	100.7	1.98	51.753	CC, ES	
600.0	600.0	597.5	597.4	1.2	1.2	-118.22	-49.1	-91.6	103.9	101.5	2.42	42.931		
700.0	700.0	694.7	694.5	1.4	1.4	-116.40	-47.8	-96.3	107.7	104.8	2.86	37.653		
800.0	800.0	791.5	791.0	1.7	1.6	-113.65	-45.7	-104.2	114.2	110.9	3.32	34.412		
900.0	900.0	887.6	886.4	1.9	1.9	-110.32	-42.7	-115.2	123.6	119.8	3.80	32.506		
1,000.0	1,000.0	982.8	980.6	2.1	2.2	-106.75	-38.9	-129.1	136.2	131.9	4.32	31.501		
1,100.0	1,100.0	1,078.6	1,074.7	2.3	2.5	1.54	-34.2	-146.0	150.3	145.7	4.66	32.269		
1,200.0	1,199.8	1,177.5	1,171.8	2.5	2.9	4.77	-29.3	-164.1	162.2	157.1	5.09	31.840		
1,300.0	1,299.5	1,276.8	1,269.3	2.7	3.3	7.71	-24.3	-182.3	171.1	165.5	5.53	30.914		
1,400.0	1,398.7	1,376.2	1,366.9	3.0	3.6	10.54	-19.3	-200.6	176.9	170.9	5.98	29.603		
1,500.0	1,497.5	1,475.7	1,464.6	3.2	4.0	13.44	-14.3	-218.8	180.0	173.5	6.42	28.023		
1,600.0	1,596.2	1,575.3	1,562.3	3.5	4.5	16.32	-9.3	-237.1	182.6	175.7	6.89	26.507		
1,700.0	1,694.8	1,674.8	1,660.1	3.9	4.9	19.11	-4.3	-255.4	185.8	178.4	7.37	25.212		
1,800.0	1,793.5	1,774.4	1,757.8	4.2	5.3	21.80	0.7	-273.6	189.3	181.4	7.86	24.086		
1,900.0	1,892.1	1,873.9	1,855.5	4.5	5.7	24.39	5.7	-291.9	193.3	184.9	8.37	23.096		
2,000.0	1,990.8	1,973.5	1,953.2	4.9	6.1	26.87	10.7	-310.2	197.6	188.7	8.89	22.217		
2,100.0	2,089.4	2,073.0	2,051.0	5.2	6.5	29.24	15.7	-328.4	202.3	192.9	9.44	21.430		
2,200.0	2,188.1	2,172.6	2,148.7	5.6	6.9	31.50	20.7	-346.7	207.3	197.3	10.00	20.722		
2,300.0	2,286.8	2,272.1	2,246.4	5.9	7.4	33.65	25.7	-364.9	212.6	202.1	10.59	20.082		
2,400.0	2,385.4	2,371.7	2,344.2	6.3	7.8	35.69	30.7	-383.2	218.3	207.1	11.19	19.501		
2,500.0	2,484.1	2,471.2	2,441.9	6.7	8.2	37.63	35.7	-401.5	224.1	212.3	11.81	18.973		
2,600.0	2,582.7	2,570.7	2,539.6	7.0	8.6	39.46	40.7	-419.7	230.3	217.8	12.45	18.492		
2,700.0	2,681.4	2,670.3	2,637.3	7.4	9.0	41.21	45.7	-438.0	236.6	223.5	13.11	18.052		
2,800.0	2,780.1	2,769.8	2,735.1	7.8	9.5	42.86	50.7	-456.3	243.2	229.4	13.78	17.651		
2,900.0	2,878.7	2,869.4	2,832.8	8.1	9.9	44.42	55.7	-474.5	249.9	235.5	14.46	17.284		
3,000.0	2,977.4	2,968.9	2,930.5	8.5	10.3	45.90	60.7	-492.8	256.8	241.7	15.15	16.949		
3,100.0	3,076.0	3,068.5	3,028.3	8.9	10.7	47.30	65.7	-511.0	263.9	248.1	15.86	16.641		
3,200.0	3,174.7	3,168.0	3,126.0	9.3	11.2	48.63	70.7	-529.3	271.2	254.6	16.58	16.359		
3,300.0	3,273.4	3,267.6	3,223.7	9.7	11.6	49.88	75.6	-547.6	278.5	261.2	17.30	16.101		
3,400.0	3,372.0	3,367.1	3,321.4	10.0	12.0	51.08	80.6	-565.8	286.0	268.0	18.03	15.863		
3,500.0	3,470.7	3,466.7	3,419.2	10.4	12.4	52.21	85.6	-584.1	293.7	274.9	18.77	15.644		
3,600.0	3,569.3	3,566.2	3,516.9	10.8	12.9	53.28	90.6	-602.4	301.4	281.9	19.52	15.443		
3,700.0	3,668.0	3,665.7	3,614.6	11.2	13.3	54.30	95.6	-620.6	309.2	288.9	20.27	15.257		
3,800.0	3,766.7	3,765.3	3,712.3	11.6	13.7	55.27	100.6	-638.9	317.1	296.1	21.02	15.086		
3,900.0	3,865.3	3,864.8	3,810.1	11.9	14.1	56.19	105.6	-657.1	325.1	303.4	21.78	14.927		
4,000.0	3,964.0	3,964.4	3,907.8	12.3	14.6	57.07	110.6	-675.4	333.2	310.7	22.54	14.781		
4,100.0	4,062.6	4,063.9	4,005.5	12.7	15.0	57.91	115.6	-693.7	341.4	318.1	23.31	14.645		
4,200.0	4,161.3	4,163.5	4,103.3	13.1	15.4	58.70	120.6	-711.9	349.6	325.5	24.08	14.519		
4,300.0	4,260.0	4,263.0	4,201.0	13.5	15.8	59.47	125.6	-730.2	357.9	333.0	24.85	14.401		
4,400.0	4,358.6	4,362.6	4,298.7	13.9	16.3	60.19	130.6	-748.5	366.3	340.6	25.63	14.292		
4,500.0	4,457.4	4,462.1	4,396.4	14.2	16.7	60.86	135.6	-766.7	375.2	348.9	26.33	14.247		
4,600.0	4,556.7	4,571.8	4,504.4	14.4	17.1	61.21	140.8	-785.5	384.8	357.9	26.86	14.322		
4,700.0	4,656.4	4,684.5	4,616.0	14.6	17.4	61.36	144.9	-800.7	392.7	365.4	27.30	14.387		
4,800.0	4,756.3	4,797.7	4,728.6	14.8	17.6	61.31	147.9	-811.7	399.0	371.4	27.64	14.434		
4,900.0	4,856.2	4,911.2	4,841.8	15.0	17.8	-43.66	149.8	-818.5	403.6	375.7	27.89	14.472		
5,000.0	4,956.2	5,024.9	4,955.6	15.1	18.0	-43.84	150.4	-820.9	405.5	377.3	28.18	14.388		
5,100.0	5,056.2	5,125.6	5,056.2	15.2	18.1	-43.84	150.4	-820.9	405.5	377.0	28.49	14.232		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2549 - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,156.2	5,225.6	5,156.2	15.4	18.2	-44.04	150.4	-820.9	405.4	376.5	28.86	14.046		
5,300.0	5,255.4	5,324.8	5,255.4	15.5	18.3	-45.84	150.4	-820.9	397.2	368.5	28.73	13.823		
5,400.0	5,350.6	5,506.6	5,433.9	15.6	18.5	-58.75	121.0	-819.2	365.9	338.8	27.03	13.537		
5,500.0	5,438.2	5,606.6	5,524.5	15.7	18.4	-77.86	79.1	-816.7	318.5	292.9	25.64	12.423		
5,600.0	5,515.2	5,646.7	5,558.2	15.7	18.4	-89.70	57.5	-815.5	283.1	257.7	25.44	11.130		
5,662.8	5,556.7	5,654.2	5,564.4	15.8	18.4	-92.03	53.2	-815.3	276.1	250.5	25.54	10.808 SF		
5,700.0	5,578.5	5,654.4	5,564.6	15.8	18.4	-91.80	53.1	-815.2	278.6	253.0	25.65	10.863		
5,800.0	5,626.0	5,644.3	5,556.3	16.0	18.4	-86.23	58.9	-815.6	308.5	282.2	26.27	11.744		
5,900.0	5,655.8	5,623.6	5,539.0	16.3	18.4	-75.31	70.2	-816.2	362.3	335.5	26.78	13.527		
6,000.0	5,666.9	5,600.0	5,518.8	16.9	18.4	-62.64	82.4	-816.9	427.5	401.0	26.48	16.142		
6,100.0	5,667.0	5,568.7	5,491.2	17.7	18.5	-57.74	97.0	-817.8	498.9	472.3	26.63	18.736		
6,200.0	5,667.0	5,550.0	5,474.2	18.8	18.5	-55.36	104.9	-818.2	577.0	549.8	27.24	21.182		
6,300.0	5,667.0	5,527.0	5,453.0	19.9	18.5	-52.57	113.9	-818.8	659.7	631.9	27.76	23.764		
6,400.0	5,667.0	5,500.0	5,427.7	21.2	18.5	-49.49	123.1	-819.3	745.9	717.8	28.14	26.511		
6,500.0	5,667.0	5,500.0	5,427.7	22.6	18.5	-49.49	123.1	-819.3	834.4	804.9	29.42	28.358		
6,600.0	5,667.0	5,500.0	5,427.7	24.1	18.5	-49.49	123.1	-819.3	925.1	894.4	30.75	30.084		
6,700.0	5,667.0	5,475.2	5,403.9	25.7	18.4	-46.85	130.5	-819.7	1,016.8	985.6	31.17	32.615		
6,800.0	5,667.0	5,450.0	5,379.6	27.3	18.4	-44.35	136.8	-820.1	1,110.2	1,078.7	31.55	35.194		
6,900.0	5,667.0	5,450.0	5,379.6	28.9	18.4	-44.35	136.8	-820.1	1,204.0	1,171.1	32.88	36.616		
7,000.0	5,667.0	5,450.0	5,379.6	30.5	18.4	-44.35	136.8	-820.1	1,298.7	1,264.5	34.23	37.935		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2550 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-129.65	-49.6	-59.8	77.7					
100.0	100.0	100.0	100.0	0.1	0.1	-129.65	-49.6	-59.8	77.7	77.5	0.19	416.270		
200.0	200.0	200.0	200.0	0.3	0.3	-129.65	-49.6	-59.8	77.7	77.0	0.64	122.086		
300.0	300.0	300.0	300.0	0.5	0.5	-129.65	-49.6	-59.8	77.7	76.6	1.09	71.533		
400.0	400.0	400.0	400.0	0.8	0.8	-129.65	-49.6	-59.8	77.7	76.1	1.54	50.586		
500.0	500.0	500.0	500.0	1.0	1.0	-129.65	-49.6	-59.8	77.7	75.7	1.98	39.128		
533.7	533.7	533.7	533.7	1.1	1.1	-129.65	-49.6	-59.8	77.7	75.5	2.14	36.350		
600.0	600.0	599.5	599.5	1.2	1.2	-129.36	-49.4	-60.2	77.8	75.4	2.43	32.026		
700.0	700.0	698.4	698.3	1.4	1.4	-127.08	-47.7	-63.2	79.2	76.3	2.87	27.588		
800.0	800.0	796.9	796.6	1.7	1.7	-122.78	-44.5	-69.2	82.3	79.0	3.32	24.767		
900.0	900.0	894.8	894.0	1.9	1.9	-116.99	-39.8	-78.0	87.8	84.0	3.79	23.137		
1,000.0	1,000.0	991.9	990.2	2.1	2.2	-110.45	-33.5	-89.8	96.3	92.0	4.30	22.418		
1,100.0	1,100.0	1,090.4	1,087.4	2.3	2.5	0.63	-26.0	-103.6	105.8	101.1	4.70	22.522		
1,200.0	1,199.8	1,189.6	1,185.3	2.5	2.8	6.09	-18.5	-117.5	113.0	107.9	5.14	22.002		
1,300.0	1,299.5	1,289.0	1,283.4	2.7	3.1	11.18	-11.0	-131.5	117.7	112.1	5.57	21.121		
1,400.0	1,398.7	1,388.3	1,381.5	3.0	3.5	16.29	-3.5	-145.5	119.9	113.9	6.00	19.963		
1,500.0	1,497.5	1,487.7	1,479.6	3.2	3.8	21.76	4.0	-159.5	119.9	113.5	6.44	18.610		
1,517.7	1,514.9	1,505.2	1,496.9	3.3	3.9	22.75	5.3	-162.0	119.9	113.4	6.52	18.374		
1,600.0	1,596.2	1,587.0	1,577.6	3.5	4.2	27.36	11.5	-173.5	120.3	113.4	6.91	17.413		
1,700.0	1,694.8	1,686.3	1,675.6	3.9	4.5	32.87	19.0	-187.5	121.8	114.4	7.40	16.462		
1,800.0	1,793.5	1,785.6	1,773.6	4.2	4.9	38.20	26.5	-201.5	124.4	116.5	7.93	15.700		
1,900.0	1,892.1	1,884.9	1,871.7	4.5	5.3	43.27	34.1	-215.5	128.1	119.6	8.49	15.085		
2,000.0	1,990.8	1,984.2	1,969.7	4.9	5.6	48.02	41.6	-229.5	132.7	123.6	9.10	14.587		
2,100.0	2,089.4	2,083.5	2,067.7	5.2	6.0	52.43	49.1	-243.4	138.2	128.5	9.74	14.187		
2,200.0	2,188.1	2,182.8	2,165.7	5.6	6.4	56.49	56.6	-257.4	144.5	134.1	10.42	13.866		
2,300.0	2,286.8	2,282.1	2,263.7	5.9	6.7	60.19	64.1	-271.4	151.4	140.3	11.12	13.614		
2,400.0	2,385.4	2,381.4	2,361.8	6.3	7.1	63.57	71.6	-285.4	158.9	147.0	11.84	13.418		
2,500.0	2,484.1	2,480.7	2,459.8	6.7	7.5	66.63	79.1	-299.4	166.9	154.3	12.58	13.269		
2,600.0	2,582.7	2,580.0	2,557.8	7.0	7.8	69.40	86.6	-313.4	175.3	162.0	13.32	13.158		
2,700.0	2,681.4	2,679.3	2,655.8	7.4	8.2	71.92	94.1	-327.4	184.1	170.0	14.08	13.079		
2,800.0	2,780.1	2,778.6	2,753.9	7.8	8.6	74.21	101.7	-341.3	193.2	178.4	14.83	13.026		
2,900.0	2,878.7	2,877.9	2,851.9	8.1	8.9	76.28	109.2	-355.3	202.6	187.0	15.59	12.994		
3,000.0	2,977.4	2,977.2	2,949.9	8.5	9.3	78.17	116.7	-369.3	212.3	195.9	16.36	12.978		
3,100.0	3,076.0	3,076.5	3,047.9	8.9	9.7	79.90	124.2	-383.3	222.1	205.0	17.12	12.975		
3,200.0	3,174.7	3,175.8	3,145.9	9.3	10.1	81.48	131.7	-397.3	232.1	214.3	17.88	12.983		
3,300.0	3,273.4	3,275.1	3,244.0	9.7	10.4	82.93	139.2	-411.3	242.3	223.7	18.64	13.000		
3,400.0	3,372.0	3,374.4	3,342.0	10.0	10.8	84.26	146.7	-425.3	252.7	233.3	19.40	13.023		
3,500.0	3,470.7	3,473.7	3,440.0	10.4	11.2	85.48	154.2	-439.2	263.1	243.0	20.16	13.051		
3,600.0	3,569.3	3,573.0	3,538.0	10.8	11.5	86.62	161.7	-453.2	273.7	252.8	20.92	13.083		
3,700.0	3,668.0	3,672.3	3,636.1	11.2	11.9	87.66	169.3	-467.2	284.4	262.7	21.68	13.119		
3,800.0	3,766.7	3,771.6	3,734.1	11.6	12.3	88.64	176.8	-481.2	295.1	272.7	22.43	13.156		
3,900.0	3,865.3	3,870.9	3,832.1	11.9	12.7	89.54	184.3	-495.2	306.0	282.8	23.19	13.195		
4,000.0	3,964.0	3,970.2	3,930.1	12.3	13.0	90.38	191.8	-509.2	316.9	292.9	23.94	13.235		
4,100.0	4,062.6	4,069.5	4,028.1	12.7	13.4	91.16	199.3	-523.2	327.8	303.2	24.69	13.276		
4,200.0	4,161.3	4,168.8	4,126.2	13.1	13.8	91.90	206.8	-537.1	338.9	313.4	25.45	13.318		
4,300.0	4,260.0	4,268.1	4,224.2	13.5	14.2	92.59	214.3	-551.1	350.0	323.8	26.20	13.359		
4,400.0	4,358.6	4,367.4	4,322.2	13.9	14.5	93.23	221.8	-565.1	361.1	334.1	26.95	13.400		
4,500.0	4,457.4	4,466.7	4,420.3	14.2	14.9	93.85	229.3	-579.1	372.2	344.5	27.65	13.462		
4,600.0	4,556.7	4,570.7	4,523.1	14.4	15.3	94.01	237.0	-593.3	382.7	354.5	28.22	13.565		
4,700.0	4,656.4	4,679.6	4,631.1	14.6	15.5	93.99	243.2	-605.0	391.0	362.3	28.67	13.636		
4,800.0	4,756.3	4,788.9	4,740.0	14.8	15.8	93.83	247.6	-613.1	396.6	367.6	29.05	13.655		
4,900.0	4,856.2	4,898.5	4,849.4	15.0	16.0	-11.18	250.0	-617.5	399.6	370.3	29.34	13.619		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2550 - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Separation Factor		
5,000.0	4,956.2	5,005.3	4,956.2	15.1	16.1	-11.30	250.4	-618.4	400.2	370.6	29.63	13.505		
5,100.0	5,056.2	5,105.3	5,056.2	15.2	16.2	-11.30	250.4	-618.4	400.2	370.3	29.94	13.365		
5,200.0	5,156.2	5,205.3	5,156.2	15.4	16.4	-11.49	250.4	-618.4	400.1	369.8	30.28	13.213		
5,300.0	5,255.4	5,385.2	5,335.4	15.5	16.6	-12.94	238.9	-617.8	385.8	355.6	30.12	12.807		
5,400.0	5,350.6	5,609.0	5,537.6	15.6	16.4	-25.78	147.2	-613.4	318.7	290.2	28.51	11.177		
5,500.0	5,438.2	5,681.2	5,592.3	15.7	16.3	-61.08	100.2	-611.1	228.2	202.4	25.88	8.818		
5,600.0	5,515.2	5,694.2	5,601.4	15.7	16.3	-94.06	90.9	-610.6	137.3	112.0	25.30	5.426		
5,700.0	5,578.5	5,682.1	5,592.9	15.8	16.3	-94.72	99.5	-611.1	74.1	48.5	25.52	2.902		
5,717.6	5,588.1	5,678.5	5,590.3	15.8	16.3	-92.12	102.1	-611.2	72.0	46.3	25.69	2.803 CC, ES, SF		
5,800.0	5,626.0	5,657.6	5,575.1	16.0	16.4	-72.12	116.4	-611.9	107.2	81.5	25.70	4.171		
5,900.0	5,655.8	5,626.1	5,551.1	16.3	16.4	-44.67	136.7	-612.9	186.2	164.7	21.46	8.674		
6,000.0	5,666.9	5,590.3	5,522.4	16.9	16.5	-27.94	158.0	-613.9	268.1	251.4	16.68	16.070		
6,100.0	5,667.0	5,550.0	5,488.4	17.7	16.5	-23.05	179.7	-615.0	350.1	334.5	15.57	22.486		
6,200.0	5,667.0	5,527.7	5,468.9	18.8	16.5	-21.13	190.5	-615.5	435.8	420.3	15.56	28.019		
6,300.0	5,667.0	5,500.0	5,444.0	19.9	16.5	-19.10	202.7	-616.1	524.4	508.9	15.50	33.834		
6,400.0	5,667.0	5,484.6	5,429.9	21.2	16.5	-18.11	208.9	-616.4	615.0	599.1	15.87	38.746		
6,500.0	5,667.0	5,467.9	5,414.5	22.6	16.6	-17.13	215.2	-616.7	707.1	690.8	16.25	43.507		
6,600.0	5,667.0	5,450.0	5,397.7	24.1	16.6	-16.18	221.4	-617.0	800.4	783.8	16.64	48.092		
6,700.0	5,667.0	5,450.0	5,397.7	25.7	16.6	-16.18	221.4	-617.0	894.7	877.3	17.45	51.275		
6,800.0	5,667.0	5,430.3	5,379.0	27.3	16.6	-15.24	227.5	-617.3	989.6	971.8	17.83	55.490		
6,900.0	5,667.0	5,420.7	5,369.8	28.9	16.6	-14.82	230.3	-617.4	1,085.3	1,066.8	18.45	58.818		
7,000.0	5,667.0	5,400.0	5,349.8	30.5	16.6	-13.97	235.6	-617.7	1,181.6	1,162.8	18.86	62.638		
7,100.0	5,667.0	5,400.0	5,349.8	32.2	16.6	-13.97	235.6	-617.7	1,278.0	1,258.3	19.67	64.961		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2551 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: O-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-148.91	-49.6	-29.9	57.9					
100.0	100.0	100.0	100.0	0.1	0.1	-148.91	-49.6	-29.9	57.9	57.7	0.19	310.327		
200.0	200.0	200.0	200.0	0.3	0.3	-148.91	-49.6	-29.9	57.9	57.3	0.64	91.015		
300.0	300.0	300.0	300.0	0.5	0.5	-148.91	-49.6	-29.9	57.9	56.8	1.09	53.327		
400.0	400.0	400.0	400.0	0.8	0.8	-148.91	-49.6	-29.9	57.9	56.4	1.54	37.712		
500.0	500.0	500.0	500.0	1.0	1.0	-148.91	-49.6	-29.9	57.9	55.9	1.98	29.170		
600.0	600.0	600.0	600.0	1.2	1.2	-148.91	-49.6	-29.9	57.9	55.5	2.43	23.783		
700.0	700.0	700.1	700.1	1.4	1.4	-147.18	-48.6	-31.3	57.8	54.9	2.88	20.064		
755.3	755.3	755.4	755.3	1.6	1.6	-144.74	-47.1	-33.3	57.7	54.6	3.13	18.454 CC		
800.0	800.0	800.0	799.8	1.7	1.7	-142.00	-45.5	-35.6	57.8	54.5	3.33	17.360 ES		
900.0	900.0	899.3	898.8	1.9	1.9	-133.56	-40.6	-42.7	58.9	55.1	3.79	15.536		
1,000.0	1,000.0	998.3	997.0	2.1	2.2	-122.84	-33.7	-52.3	62.3	58.0	4.27	14.598		
1,100.0	1,100.0	1,097.6	1,095.6	2.3	2.4	-8.45	-26.5	-62.5	66.3	61.6	4.71	14.079		
1,200.0	1,199.8	1,197.1	1,194.3	2.5	2.7	-0.11	-19.3	-72.8	68.5	63.4	5.15	13.312		
1,300.0	1,299.5	1,296.6	1,293.0	2.7	3.0	7.95	-12.0	-83.0	68.6	63.0	5.58	12.306		
1,400.0	1,398.7	1,396.1	1,391.6	3.0	3.3	16.64	-4.8	-93.3	66.7	60.7	6.00	11.127		
1,500.0	1,497.5	1,495.3	1,490.1	3.2	3.6	26.90	2.5	-103.5	63.4	57.0	6.42	9.877		
1,600.0	1,596.2	1,594.5	1,588.5	3.5	3.9	38.33	9.7	-113.7	61.7	54.8	6.90	8.945		
1,616.7	1,612.7	1,611.1	1,605.0	3.6	4.0	40.28	10.9	-115.4	61.7	54.7	6.99	8.829		
1,700.0	1,694.8	1,693.7	1,686.9	3.9	4.2	49.90	16.9	-123.9	62.6	55.1	7.45	8.399		
1,800.0	1,793.5	1,792.9	1,785.3	4.2	4.5	60.75	24.1	-134.1	65.9	57.8	8.08	8.156		
1,900.0	1,892.1	1,892.1	1,883.7	4.5	4.9	70.26	31.4	-144.4	71.4	62.6	8.77	8.140		
2,000.0	1,990.8	1,991.3	1,982.1	4.9	5.2	78.26	38.6	-154.6	78.5	69.0	9.48	8.283		
2,100.0	2,089.4	2,090.5	2,080.5	5.2	5.5	84.83	45.8	-164.8	86.9	76.7	10.19	8.528		
2,200.0	2,188.1	2,189.7	2,178.9	5.6	5.8	90.19	53.0	-175.0	96.2	85.3	10.90	8.831		
2,300.0	2,286.8	2,288.9	2,277.3	5.9	6.1	94.58	60.2	-185.2	106.3	94.7	11.60	9.164		
2,400.0	2,385.4	2,388.1	2,375.7	6.3	6.4	98.20	67.5	-195.4	116.8	104.5	12.29	9.508		
2,500.0	2,484.1	2,487.3	2,474.1	6.7	6.8	101.21	74.7	-205.7	127.8	114.8	12.97	9.851		
2,600.0	2,582.7	2,586.5	2,572.5	7.0	7.1	103.74	81.9	-215.9	139.0	125.3	13.65	10.185		
2,700.0	2,681.4	2,685.7	2,670.9	7.4	7.4	105.90	89.1	-226.1	150.4	136.1	14.32	10.508		
2,800.0	2,780.1	2,784.9	2,769.3	7.8	7.7	107.74	96.4	-236.3	162.1	147.1	14.98	10.817		
2,900.0	2,878.7	2,884.1	2,867.7	8.1	8.0	109.34	103.6	-246.5	173.9	158.2	15.65	11.110		
3,000.0	2,977.4	2,983.3	2,966.1	8.5	8.4	110.74	110.8	-256.7	185.8	169.4	16.31	11.388		
3,100.0	3,076.0	3,082.4	3,064.5	8.9	8.7	111.96	118.0	-267.0	197.7	180.8	16.97	11.652		
3,200.0	3,174.7	3,181.6	3,162.9	9.3	9.0	113.05	125.3	-277.2	209.8	192.2	17.63	11.901		
3,300.0	3,273.4	3,280.8	3,261.3	9.7	9.3	114.02	132.5	-287.4	222.0	203.7	18.29	12.136		
3,400.0	3,372.0	3,380.0	3,359.8	10.0	9.6	114.89	139.7	-297.6	234.1	215.2	18.95	12.359		
3,500.0	3,470.7	3,479.2	3,458.2	10.4	10.0	115.67	146.9	-307.8	246.4	226.8	19.60	12.570		
3,600.0	3,569.3	3,578.4	3,556.6	10.8	10.3	116.37	154.2	-318.1	258.7	238.4	20.26	12.769		
3,700.0	3,668.0	3,677.6	3,655.0	11.2	10.6	117.02	161.4	-328.3	271.0	250.1	20.91	12.958		
3,800.0	3,766.7	3,776.8	3,753.4	11.6	10.9	117.60	168.6	-338.5	283.3	261.8	21.57	13.136		
3,900.0	3,865.3	3,876.0	3,851.8	11.9	11.2	118.14	175.8	-348.7	295.7	273.5	22.22	13.306		
4,000.0	3,964.0	3,975.2	3,950.2	12.3	11.6	118.64	183.1	-358.9	308.1	285.2	22.88	13.467		
4,100.0	4,062.6	4,074.4	4,048.6	12.7	11.9	119.09	190.3	-369.1	320.5	297.0	23.53	13.620		
4,200.0	4,161.3	4,173.6	4,147.0	13.1	12.2	119.52	197.5	-379.4	333.0	308.8	24.19	13.766		
4,300.0	4,260.0	4,272.8	4,245.4	13.5	12.5	119.91	204.7	-389.6	345.4	320.6	24.84	13.904		
4,400.0	4,358.6	4,372.0	4,343.8	13.9	12.9	120.27	212.0	-399.8	357.9	332.4	25.50	14.037		
4,500.0	4,457.4	4,471.3	4,442.3	14.2	13.2	120.63	219.2	-410.0	369.8	343.7	26.13	14.152		
4,600.0	4,556.7	4,570.7	4,540.9	14.4	13.5	120.54	226.4	-420.3	380.0	353.3	26.71	14.229		
4,700.0	4,656.4	4,670.2	4,639.6	14.6	13.8	119.99	233.7	-430.5	388.5	361.2	27.26	14.250		
4,800.0	4,756.3	4,772.4	4,741.0	14.8	14.1	119.03	240.8	-440.6	395.1	367.4	27.77	14.230		
4,900.0	4,856.2	4,877.4	4,845.6	15.0	14.4	13.29	246.3	-448.3	399.1	370.9	28.18	14.164		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2551 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,956.2	4,982.9	4,950.9	15.1	14.6	12.56	249.5	-452.8	401.1	372.6	28.53	14.057		
5,100.0	5,056.2	5,088.2	5,056.2	15.2	14.7	12.33	250.4	-454.2	401.7	372.9	28.85	13.923		
5,200.0	5,156.2	5,188.2	5,156.2	15.4	14.9	12.15	250.4	-454.2	401.6	372.4	29.17	13.768		
5,300.0	5,255.4	5,287.4	5,255.4	15.5	15.0	12.78	250.4	-454.2	390.4	361.5	28.88	13.515		
5,400.0	5,350.6	5,385.5	5,353.5	15.6	15.2	14.73	250.4	-454.2	360.9	333.3	27.59	13.081		
5,500.0	5,438.2	5,579.4	5,542.7	15.7	15.3	28.18	213.1	-452.4	298.4	273.0	25.43	11.734		
5,600.0	5,515.2	5,654.9	5,610.5	15.7	15.2	59.57	180.2	-450.8	213.3	188.6	24.69	8.637		
5,700.0	5,578.5	5,674.5	5,627.2	15.8	15.2	86.66	170.0	-450.3	130.2	104.2	25.95	5.017		
5,795.9	5,624.4	5,668.4	5,622.1	16.0	15.2	88.43	173.2	-450.4	88.6	62.2	26.36	3.360 SF		
5,800.0	5,626.0	5,667.8	5,621.6	16.0	15.2	88.04	173.5	-450.5	88.7	62.3	26.37	3.363		
5,900.0	5,655.8	5,650.0	5,606.3	16.3	15.2	71.07	182.6	-450.9	134.5	109.3	25.14	5.348		
6,000.0	5,666.9	5,619.4	5,579.3	16.9	15.3	45.78	196.9	-451.6	213.2	194.8	18.47	11.542		
6,100.0	5,667.0	5,600.0	5,561.7	17.7	15.3	39.53	205.1	-452.0	298.5	281.5	16.93	17.626		
6,200.0	5,667.0	5,568.5	5,532.5	18.8	15.3	32.68	217.1	-452.6	387.9	372.7	15.16	25.584		
6,300.0	5,667.0	5,550.0	5,515.1	19.9	15.3	29.51	223.3	-452.9	480.1	465.3	14.81	32.409		
6,400.0	5,667.0	5,534.9	5,500.7	21.2	15.3	27.27	227.9	-453.1	574.0	559.1	14.85	38.657		
6,500.0	5,667.0	5,522.1	5,488.5	22.6	15.3	25.60	231.5	-453.3	669.0	653.9	15.12	44.262		
6,600.0	5,667.0	5,500.0	5,467.0	24.1	15.3	23.09	236.9	-453.5	765.2	750.1	15.03	50.903		
6,700.0	5,667.0	5,500.0	5,467.0	25.7	15.3	23.09	236.9	-453.5	861.5	845.5	15.98	53.918		
6,800.0	5,667.0	5,500.0	5,467.0	27.3	15.3	23.09	236.9	-453.5	958.6	941.7	16.93	56.605		
6,900.0	5,667.0	5,500.0	5,467.0	28.9	15.3	23.09	236.9	-453.5	1,056.2	1,038.3	17.90	59.008		
7,000.0	5,667.0	5,480.5	5,448.0	30.5	15.3	21.22	241.0	-453.7	1,153.8	1,135.7	18.01	64.079		
7,100.0	5,667.0	5,475.0	5,442.5	32.2	15.3	20.74	242.0	-453.8	1,251.8	1,233.1	18.73	66.851		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2552 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-49.6	0.0	49.6					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-49.6	0.0	49.6	49.4	0.19	265.732		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-49.6	0.0	49.6	48.9	0.64	77.936		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-49.6	0.0	49.6	48.5	1.09	45.664		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-49.6	0.0	49.6	48.0	1.54	32.292		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-49.6	0.0	49.6	47.6	1.98	24.978		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-49.6	0.0	49.6	47.1	2.43	20.365		
700.0	700.0	700.6	700.6	1.4	1.4	-179.64	-49.3	-0.3	49.3	46.4	2.88	17.083		
800.0	800.0	801.7	801.7	1.7	1.7	-176.58	-46.7	-2.8	46.8	43.5	3.33	14.048		
900.0	900.0	902.5	902.2	1.9	1.9	-169.47	-41.6	-7.7	42.3	38.6	3.79	11.187		
1,000.0	1,000.0	1,002.4	1,001.5	2.1	2.1	-156.83	-34.4	-14.7	37.4	33.2	4.24	8.814		
1,100.0	1,100.0	1,101.9	1,100.5	2.3	2.4	-37.87	-26.9	-21.9	33.3	28.6	4.72	7.057		
1,200.0	1,199.8	1,201.5	1,199.5	2.5	2.7	-23.52	-19.4	-29.2	28.5	23.4	5.17	5.515		
1,300.0	1,299.5	1,301.0	1,298.5	2.7	2.9	-5.86	-12.0	-36.4	22.7	17.1	5.61	4.045		
1,400.0	1,398.7	1,400.3	1,397.3	3.0	3.2	23.51	-4.5	-43.6	16.9	10.9	5.99	2.822		
1,453.6	1,451.8	1,453.5	1,450.2	3.1	3.4	47.89	-0.5	-47.5	15.6	9.4	6.22	2.508 CC, ES, SF		
1,500.0	1,497.5	1,499.3	1,495.8	3.2	3.5	71.67	2.9	-50.8	16.6	10.1	6.50	2.554		
1,600.0	1,596.2	1,598.3	1,594.2	3.5	3.8	103.30	10.4	-58.0	25.6	18.4	7.17	3.570		
1,700.0	1,694.8	1,697.3	1,692.6	3.9	4.0	116.62	17.8	-65.2	38.1	30.3	7.76	4.910		
1,800.0	1,793.5	1,796.2	1,791.0	4.2	4.3	123.21	25.2	-72.3	51.6	43.3	8.32	6.201		
1,900.0	1,892.1	1,895.2	1,889.4	4.5	4.6	127.03	32.6	-79.5	65.5	56.6	8.88	7.375		
2,000.0	1,990.8	1,994.1	1,987.9	4.9	4.9	129.52	40.1	-86.7	79.6	70.2	9.44	8.428		
2,100.0	2,089.4	2,093.1	2,086.3	5.2	5.2	131.25	47.5	-93.9	93.8	83.8	10.01	9.370		
2,200.0	2,188.1	2,192.0	2,184.7	5.6	5.5	132.53	54.9	-101.1	108.0	97.5	10.58	10.215		
2,300.0	2,286.8	2,291.0	2,283.1	5.9	5.8	133.51	62.3	-108.2	122.3	111.2	11.15	10.971		
2,400.0	2,385.4	2,389.9	2,381.5	6.3	6.0	134.28	69.8	-115.4	136.6	124.9	11.73	11.654		
2,500.0	2,484.1	2,488.9	2,479.9	6.7	6.3	134.91	77.2	-122.6	151.0	138.7	12.30	12.271		
2,600.0	2,582.7	2,587.8	2,578.3	7.0	6.6	135.43	84.6	-129.8	165.3	152.5	12.88	12.833		
2,700.0	2,681.4	2,686.8	2,676.8	7.4	6.9	135.86	92.0	-137.0	179.7	166.2	13.47	13.345		
2,800.0	2,780.1	2,785.8	2,775.2	7.8	7.2	136.24	99.5	-144.2	194.1	180.0	14.05	13.813		
2,900.0	2,878.7	2,884.7	2,873.6	8.1	7.5	136.56	106.9	-151.3	208.5	193.8	14.64	14.244		
3,000.0	2,977.4	2,983.7	2,972.0	8.5	7.8	136.83	114.3	-158.5	222.8	207.6	15.22	14.640		
3,100.0	3,076.0	3,082.6	3,070.4	8.9	8.1	137.08	121.7	-165.7	237.2	221.4	15.81	15.006		
3,200.0	3,174.7	3,181.6	3,168.8	9.3	8.4	137.30	129.2	-172.9	251.6	235.2	16.40	15.346		
3,300.0	3,273.4	3,280.5	3,267.2	9.7	8.7	137.49	136.6	-180.1	266.0	249.0	16.99	15.661		
3,400.0	3,372.0	3,379.5	3,365.7	10.0	8.9	137.66	144.0	-187.3	280.4	262.8	17.58	15.955		
3,500.0	3,470.7	3,478.4	3,464.1	10.4	9.2	137.82	151.4	-194.4	294.8	276.7	18.17	16.229		
3,600.0	3,569.3	3,577.4	3,562.5	10.8	9.5	137.96	158.9	-201.6	309.2	290.5	18.76	16.485		
3,700.0	3,668.0	3,676.3	3,660.9	11.2	9.8	138.09	166.3	-208.8	323.6	304.3	19.35	16.726		
3,800.0	3,766.7	3,775.3	3,759.3	11.6	10.1	138.21	173.7	-216.0	338.0	318.1	19.94	16.951		
3,900.0	3,865.3	3,874.2	3,857.7	11.9	10.4	138.32	181.1	-223.2	352.5	331.9	20.54	17.163		
4,000.0	3,964.0	3,973.2	3,956.1	12.3	10.7	138.42	188.6	-230.4	366.9	345.7	21.13	17.363		
4,100.0	4,062.6	4,072.2	4,054.5	12.7	11.0	138.51	196.0	-237.5	381.3	359.6	21.72	17.552		
4,200.0	4,161.3	4,171.1	4,153.0	13.1	11.3	138.60	203.4	-244.7	395.7	373.4	22.32	17.731		
4,300.0	4,260.0	4,270.1	4,251.4	13.5	11.6	138.68	210.8	-251.9	410.1	387.2	22.91	17.900		
4,400.0	4,358.6	4,369.0	4,349.8	13.9	11.9	138.75	218.3	-259.1	424.5	401.0	23.51	18.060		
4,500.0	4,457.4	4,468.1	4,448.3	14.2	12.2	138.87	225.7	-266.3	438.1	414.0	24.10	18.176		
4,600.0	4,556.7	4,567.4	4,547.1	14.4	12.5	138.70	233.1	-273.5	449.1	424.5	24.66	18.214		
4,700.0	4,656.4	4,667.7	4,646.8	14.6	12.7	138.22	240.6	-280.7	457.6	432.4	25.19	18.163		
4,800.0	4,756.3	4,771.1	4,749.9	14.8	13.0	137.72	246.5	-286.4	463.0	437.3	25.63	18.065		
4,900.0	4,856.2	4,874.8	4,853.5	15.0	13.2	32.59	249.8	-289.6	465.0	439.0	26.00	17.886		
5,000.0	4,956.2	4,977.5	4,956.2	15.1	13.3	32.48	250.4	-290.2	465.2	438.9	26.33	17.665		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2552 - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,056.2	5,077.5	5,056.2	15.2	13.5	32.48	250.4	-290.2	465.2	438.5	26.68	17.435	
5,200.0	5,156.2	5,177.5	5,156.2	15.4	13.7	32.31	250.4	-290.2	465.1	438.1	27.01	17.220	
5,300.0	5,255.4	5,346.2	5,324.3	15.5	13.9	35.47	241.1	-289.7	453.2	426.4	26.74	16.949	
5,400.0	5,350.6	5,558.7	5,519.2	15.6	13.8	55.50	160.2	-285.8	401.0	375.9	25.11	15.969	
5,500.0	5,438.2	5,634.7	5,578.7	15.7	13.7	77.04	113.1	-283.5	335.8	311.0	24.84	13.516	
5,600.0	5,515.2	5,651.9	5,591.1	15.7	13.7	87.71	101.3	-282.9	282.3	257.1	25.21	11.199	
5,700.0	5,578.5	5,642.9	5,584.7	15.8	13.7	88.67	107.5	-283.2	256.8	231.4	25.46	10.087	
5,720.9	5,589.8	5,639.1	5,581.9	15.8	13.7	87.92	110.1	-283.3	256.0	230.5	25.48	10.049	
5,800.0	5,626.0	5,620.7	5,568.2	16.0	13.7	82.73	122.4	-283.9	267.0	241.4	25.58	10.438	
5,900.0	5,655.8	5,591.0	5,545.3	16.3	13.7	72.23	141.3	-284.9	306.0	281.1	24.84	12.316	
6,000.0	5,666.9	5,550.0	5,512.0	16.9	13.8	59.04	165.1	-286.0	360.6	338.2	22.40	16.093	
6,100.0	5,667.0	5,523.3	5,489.2	17.7	13.8	54.83	179.2	-286.7	424.1	402.0	22.10	19.192	
6,200.0	5,667.0	5,500.0	5,468.9	18.8	13.8	51.80	190.4	-287.3	496.6	474.4	22.19	22.377	
6,300.0	5,667.0	5,473.1	5,444.8	19.9	13.9	48.49	202.3	-287.8	575.4	553.2	22.20	25.922	
6,400.0	5,667.0	5,450.0	5,423.6	21.2	13.9	45.84	211.6	-288.3	658.7	636.3	22.40	29.405	
6,500.0	5,667.0	5,450.0	5,423.6	22.6	13.9	45.84	211.6	-288.3	745.4	721.8	23.60	31.580	
6,600.0	5,667.0	5,423.7	5,399.1	24.1	13.9	43.03	220.9	-288.8	834.0	810.3	23.71	35.177	
6,700.0	5,667.0	5,400.0	5,376.5	25.7	13.9	40.69	228.3	-289.1	924.8	900.9	23.94	38.628	
6,800.0	5,667.0	5,400.0	5,376.5	27.3	13.9	40.69	228.3	-289.1	1,016.7	991.5	25.17	40.386	
6,900.0	5,667.0	5,400.0	5,376.5	28.9	13.9	40.69	228.3	-289.1	1,109.9	1,083.5	26.43	42.003	
7,000.0	5,667.0	5,400.0	5,376.5	30.5	13.9	40.69	228.3	-289.1	1,204.3	1,176.6	27.69	43.487	
7,100.0	5,667.0	5,375.8	5,353.2	32.2	13.9	38.48	234.7	-289.4	1,298.7	1,270.9	27.85	46.625	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2553 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	148.66	-49.6	30.2	58.0					
100.0	100.0	100.0	100.0	0.1	0.1	148.66	-49.6	30.2	58.0	57.8	0.19	310.969		
200.0	200.0	200.0	200.0	0.3	0.3	148.66	-49.6	30.2	58.0	57.4	0.64	91.203		
300.0	300.0	300.0	300.0	0.5	0.5	148.66	-49.6	30.2	58.0	56.9	1.09	53.438		
400.0	400.0	400.0	400.0	0.8	0.8	148.66	-49.6	30.2	58.0	56.5	1.54	37.790		
500.0	500.0	500.0	500.0	1.0	1.0	148.66	-49.6	30.2	58.0	56.0	1.98	29.230		
600.0	600.0	600.0	600.0	1.2	1.2	148.66	-49.6	30.2	58.0	55.6	2.43	23.832		
700.0	700.0	700.0	700.0	1.4	1.4	148.66	-49.6	30.2	58.0	55.1	2.88	20.117		
800.0	800.0	802.0	802.0	1.7	1.7	148.40	-47.9	29.5	56.3	52.9	3.34	16.861		
900.0	900.0	903.7	903.6	1.9	1.9	147.51	-42.9	27.3	51.0	47.2	3.79	13.453		
1,000.0	1,000.0	1,004.0	1,003.5	2.1	2.1	145.75	-35.4	24.1	43.0	38.7	4.25	10.119		
1,100.0	1,100.0	1,103.7	1,102.8	2.3	2.4	-114.89	-27.8	20.9	35.6	30.9	4.68	7.602		
1,200.0	1,199.8	1,203.2	1,202.1	2.5	2.6	-128.34	-20.2	17.6	30.6	25.5	5.10	5.996		
1,248.8	1,248.5	1,251.8	1,250.4	2.6	2.7	-137.96	-16.5	16.0	29.8	24.5	5.32	5.609 CC, ES		
1,300.0	1,299.5	1,302.6	1,301.1	2.7	2.9	-149.08	-12.6	14.3	30.8	25.2	5.56	5.539 SF		
1,400.0	1,398.7	1,401.7	1,399.8	3.0	3.1	-168.36	-5.0	11.1	38.1	32.1	6.03	6.323		
1,500.0	1,497.5	1,500.3	1,498.1	3.2	3.4	179.47	2.6	7.9	51.6	45.1	6.50	7.944		
1,600.0	1,596.2	1,598.8	1,596.3	3.5	3.6	172.57	10.1	4.6	67.3	60.3	6.98	9.644		
1,700.0	1,694.8	1,697.3	1,694.4	3.9	3.9	168.31	17.6	1.4	83.5	76.1	7.46	11.197		
1,800.0	1,793.5	1,795.9	1,792.6	4.2	4.1	165.44	25.2	-1.8	100.1	92.1	7.95	12.589		
1,900.0	1,892.1	1,894.4	1,890.8	4.5	4.4	163.39	32.7	-5.1	116.8	108.4	8.45	13.830		
2,000.0	1,990.8	1,992.9	1,989.0	4.9	4.7	161.85	40.2	-8.3	133.6	124.7	8.95	14.938		
2,100.0	2,089.4	2,091.4	2,087.1	5.2	4.9	160.66	47.8	-11.5	150.6	141.1	9.45	15.928		
2,200.0	2,188.1	2,189.9	2,185.3	5.6	5.2	159.71	55.3	-14.7	167.5	157.6	9.96	16.817		
2,300.0	2,286.8	2,288.4	2,283.5	5.9	5.5	158.93	62.9	-18.0	184.5	174.0	10.47	17.618		
2,400.0	2,385.4	2,387.0	2,381.7	6.3	5.7	158.29	70.4	-21.2	201.5	190.6	10.99	18.343		
2,500.0	2,484.1	2,485.5	2,479.8	6.7	6.0	157.74	77.9	-24.4	218.6	207.1	11.50	19.001		
2,600.0	2,582.7	2,584.0	2,578.0	7.0	6.2	157.28	85.5	-27.7	235.7	223.6	12.03	19.596		
2,700.0	2,681.4	2,682.5	2,676.2	7.4	6.5	156.87	93.0	-30.9	252.7	240.2	12.55	20.135		
2,800.0	2,780.1	2,781.0	2,774.4	7.8	6.8	156.52	100.6	-34.1	269.8	256.7	13.08	20.630		
2,900.0	2,878.7	2,879.5	2,872.5	8.1	7.0	156.21	108.1	-37.4	286.9	273.3	13.61	21.084		
3,000.0	2,977.4	2,978.1	2,970.7	8.5	7.3	155.94	115.6	-40.6	304.0	289.9	14.14	21.503		
3,100.0	3,076.0	3,076.6	3,068.9	8.9	7.6	155.69	123.2	-43.8	321.1	306.5	14.67	21.890		
3,200.0	3,174.7	3,175.1	3,167.1	9.3	7.8	155.47	130.7	-47.0	338.2	323.0	15.20	22.249		
3,300.0	3,273.4	3,273.6	3,265.2	9.7	8.1	155.27	138.2	-50.3	355.4	339.6	15.74	22.583		
3,400.0	3,372.0	3,372.1	3,363.4	10.0	8.4	155.09	145.8	-53.5	372.5	356.2	16.27	22.893		
3,500.0	3,470.7	3,470.6	3,461.6	10.4	8.6	154.92	153.3	-56.7	389.6	372.8	16.81	23.184		
3,600.0	3,569.3	3,569.2	3,559.8	10.8	8.9	154.77	160.9	-60.0	406.7	389.4	17.34	23.455		
3,700.0	3,668.0	3,667.7	3,657.9	11.2	9.1	154.63	168.4	-63.2	423.9	406.0	17.88	23.709		
3,800.0	3,766.7	3,766.2	3,756.1	11.6	9.4	154.50	175.9	-66.4	441.0	422.6	18.42	23.948		
3,900.0	3,865.3	3,864.7	3,854.3	11.9	9.7	154.38	183.5	-69.6	458.1	439.2	18.95	24.173		
4,000.0	3,964.0	3,963.2	3,952.5	12.3	9.9	154.27	191.0	-72.9	475.3	455.8	19.49	24.385		
4,100.0	4,062.6	4,061.7	4,050.6	12.7	10.2	154.17	198.5	-76.1	492.4	472.4	20.03	24.585		
4,200.0	4,161.3	4,160.3	4,148.8	13.1	10.5	154.08	206.1	-79.3	509.6	489.0	20.57	24.774		
4,300.0	4,260.0	4,258.8	4,247.0	13.5	10.7	153.99	213.6	-82.6	526.7	505.6	21.11	24.953		
4,400.0	4,358.6	4,357.3	4,345.2	13.9	11.0	153.90	221.2	-85.8	543.8	522.2	21.65	25.123		
4,500.0	4,457.4	4,456.0	4,443.5	14.2	11.3	153.89	228.7	-89.0	560.0	537.8	22.21	25.216		
4,600.0	4,556.7	4,555.1	4,542.2	14.4	11.5	153.73	236.3	-92.3	573.1	550.4	22.73	25.212		
4,700.0	4,656.4	4,656.7	4,643.6	14.6	11.8	153.41	243.9	-95.5	583.1	559.9	23.22	25.108		
4,800.0	4,756.3	4,763.3	4,750.0	14.8	12.0	153.18	249.0	-97.7	589.1	565.5	23.63	24.930		
4,900.0	4,856.2	4,869.6	4,856.2	15.0	12.2	48.38	250.4	-98.3	590.8	566.9	23.98	24.642		
5,000.0	4,956.2	4,969.6	4,956.2	15.1	12.4	48.38	250.4	-98.3	590.8	566.5	24.35	24.267		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2553 - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,056.2	5,069.6	5,056.2	15.2	12.6	48.38	250.4	-98.3	590.8	566.1	24.73	23.896		
5,200.0	5,156.2	5,195.1	5,181.7	15.4	12.8	48.33	249.2	-98.3	590.6	565.4	25.11	23.515		
5,300.0	5,255.4	5,472.5	5,440.7	15.5	12.7	61.08	159.2	-94.4	562.8	538.3	24.50	22.976		
5,400.0	5,350.6	5,588.2	5,528.1	15.6	12.6	77.31	83.9	-91.1	516.5	492.1	24.40	21.164		
5,500.0	5,438.2	5,622.2	5,550.4	15.7	12.6	86.20	58.2	-90.0	476.5	451.7	24.74	19.255		
5,600.0	5,515.2	5,621.3	5,549.8	15.7	12.6	88.71	58.9	-90.1	453.3	428.3	24.94	18.174		
5,662.2	5,556.3	5,611.5	5,543.5	15.8	12.6	87.93	66.4	-90.4	449.2	424.2	25.03	17.944		
5,700.0	5,578.5	5,603.4	5,538.2	15.8	12.6	86.76	72.6	-90.7	450.7	425.6	25.09	17.961		
5,800.0	5,626.0	5,576.3	5,519.9	16.0	12.6	81.65	92.5	-91.5	467.4	442.3	25.19	18.560		
5,900.0	5,655.8	5,550.0	5,501.1	16.3	12.7	75.14	110.9	-92.3	499.0	473.9	25.06	19.915		
6,000.0	5,666.9	5,500.0	5,462.9	16.9	12.7	65.77	143.1	-93.7	539.6	515.6	23.99	22.497		
6,100.0	5,667.0	5,472.4	5,440.6	17.7	12.7	63.02	159.3	-94.4	587.5	563.1	24.31	24.164		
6,200.0	5,667.0	5,450.0	5,421.8	18.8	12.8	61.10	171.6	-94.9	644.6	619.7	24.95	25.840		
6,300.0	5,667.0	5,418.4	5,394.5	19.9	12.8	58.43	187.4	-95.6	709.3	683.8	25.43	27.886		
6,400.0	5,667.0	5,400.0	5,378.2	21.2	12.8	56.90	195.9	-96.0	780.0	753.8	26.26	29.704		
6,500.0	5,667.0	5,379.3	5,359.5	22.6	12.8	55.21	204.8	-96.4	855.6	828.6	27.05	31.627		
6,600.0	5,667.0	5,350.0	5,332.4	24.1	12.8	52.88	216.0	-96.8	935.4	907.7	27.62	33.865		
6,700.0	5,667.0	5,350.0	5,332.4	25.7	12.8	52.88	216.0	-96.8	1,017.6	988.6	29.00	35.095		
6,800.0	5,667.0	5,350.0	5,332.4	27.3	12.8	52.88	216.0	-96.8	1,102.8	1,072.4	30.40	36.273		
6,900.0	5,667.0	5,327.4	5,311.1	28.9	12.8	51.14	223.6	-97.2	1,189.7	1,158.5	31.14	38.199		
7,000.0	5,667.0	5,317.9	5,302.1	30.5	12.8	50.43	226.6	-97.3	1,278.3	1,246.1	32.27	39.609		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2554 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	129.52	-49.6	60.1	77.9					
100.0	100.0	100.0	100.0	0.1	0.1	129.52	-49.6	60.1	77.9	77.7	0.19	417.413		
200.0	200.0	200.0	200.0	0.3	0.3	129.52	-49.6	60.1	77.9	77.2	0.64	122.422		
300.0	300.0	300.0	300.0	0.5	0.5	129.52	-49.6	60.1	77.9	76.8	1.09	71.730		
400.0	400.0	400.0	400.0	0.8	0.8	129.52	-49.6	60.1	77.9	76.3	1.54	50.725		
500.0	500.0	500.0	500.0	1.0	1.0	129.52	-49.6	60.1	77.9	75.9	1.98	39.236		
600.0	600.0	600.0	600.0	1.2	1.2	129.52	-49.6	60.1	77.9	75.4	2.43	31.990		
700.0	700.0	701.5	701.4	1.4	1.4	128.40	-47.8	60.3	76.9	74.0	2.89	26.643		
800.0	800.0	802.7	802.5	1.7	1.7	124.89	-42.4	60.9	74.2	70.9	3.34	22.209		
900.0	900.0	902.5	902.1	1.9	1.9	119.71	-35.2	61.7	71.0	67.2	3.80	18.702		
1,000.0	1,000.0	1,002.2	1,001.5	2.1	2.1	114.09	-27.9	62.5	68.5	64.2	4.25	16.101		
1,061.0	1,061.0	1,063.1	1,062.2	2.2	2.3	-145.11	-23.5	63.0	67.8	63.2	4.53	14.946 CC, ES		
1,100.0	1,100.0	1,101.9	1,100.9	2.3	2.4	-147.96	-20.7	63.3	68.1	63.4	4.71	14.454		
1,200.0	1,199.8	1,201.3	1,200.1	2.5	2.6	-155.85	-13.5	64.1	71.8	66.7	5.15	13.937 SF		
1,300.0	1,299.5	1,300.5	1,299.0	2.7	2.9	-163.55	-6.3	64.9	80.1	74.5	5.60	14.305		
1,400.0	1,398.7	1,399.1	1,397.4	3.0	3.1	-170.09	0.9	65.7	93.0	87.0	6.05	15.387		
1,500.0	1,497.5	1,497.2	1,495.2	3.2	3.4	-175.16	8.0	66.5	110.1	103.6	6.49	16.972		
1,600.0	1,596.2	1,595.2	1,592.9	3.5	3.6	-178.89	15.2	67.3	128.7	121.7	6.94	18.537		
1,700.0	1,694.8	1,693.2	1,690.6	3.9	3.9	178.33	22.3	68.1	147.6	140.2	7.40	19.952		
1,800.0	1,793.5	1,791.1	1,788.3	4.2	4.1	176.18	29.4	68.9	166.9	159.0	7.86	21.225		
1,900.0	1,892.1	1,889.1	1,886.0	4.5	4.4	174.47	36.5	69.7	186.3	177.9	8.33	22.368		
2,000.0	1,990.8	1,987.1	1,983.7	4.9	4.6	173.09	43.6	70.5	205.8	197.0	8.80	23.396		
2,100.0	2,089.4	2,085.0	2,081.4	5.2	4.9	171.94	50.8	71.3	225.4	216.1	9.27	24.323		
2,200.0	2,188.1	2,183.0	2,179.1	5.6	5.1	170.98	57.9	72.1	245.1	235.4	9.74	25.161		
2,300.0	2,286.8	2,281.0	2,276.8	5.9	5.4	170.17	65.0	72.9	264.8	254.6	10.22	25.920		
2,400.0	2,385.4	2,378.9	2,374.5	6.3	5.6	169.46	72.1	73.7	284.6	273.9	10.70	26.612		
2,500.0	2,484.1	2,476.9	2,472.2	6.7	5.9	168.85	79.2	74.4	304.5	293.3	11.18	27.244		
2,600.0	2,582.7	2,574.9	2,570.0	7.0	6.1	168.31	86.4	75.2	324.3	312.7	11.66	27.823		
2,700.0	2,681.4	2,672.8	2,667.7	7.4	6.4	167.84	93.5	76.0	344.2	332.1	12.14	28.355		
2,800.0	2,780.1	2,770.8	2,765.4	7.8	6.6	167.41	100.6	76.8	364.1	351.5	12.63	28.836		
2,900.0	2,878.7	2,868.8	2,863.1	8.1	6.9	167.03	107.7	77.6	384.0	370.9	13.12	29.276		
3,000.0	2,977.4	2,966.7	2,960.8	8.5	7.1	166.69	114.9	78.4	404.0	390.4	13.61	29.683		
3,100.0	3,076.0	3,064.7	3,058.5	8.9	7.4	166.38	122.0	79.2	423.9	409.8	14.10	30.059		
3,200.0	3,174.7	3,162.7	3,156.2	9.3	7.6	166.10	129.1	80.0	443.9	429.3	14.60	30.409		
3,300.0	3,273.4	3,260.6	3,253.9	9.7	7.9	165.84	136.2	80.8	463.9	448.8	15.09	30.735		
3,400.0	3,372.0	3,358.6	3,351.6	10.0	8.1	165.60	143.3	81.6	483.8	468.3	15.59	31.039		
3,500.0	3,470.7	3,456.6	3,449.3	10.4	8.4	165.39	150.5	82.4	503.8	487.7	16.08	31.324		
3,600.0	3,569.3	3,554.5	3,547.0	10.8	8.7	165.18	157.6	83.2	523.8	507.2	16.58	31.590		
3,700.0	3,668.0	3,652.5	3,644.7	11.2	8.9	165.00	164.7	84.0	543.8	526.7	17.08	31.840		
3,800.0	3,766.7	3,750.4	3,742.4	11.6	9.2	164.83	171.8	84.8	563.8	546.2	17.58	32.076		
3,900.0	3,865.3	3,848.4	3,840.1	11.9	9.4	164.66	178.9	85.6	583.8	565.8	18.08	32.297		
4,000.0	3,964.0	3,946.4	3,937.8	12.3	9.7	164.51	186.1	86.4	603.8	585.3	18.58	32.507		
4,100.0	4,062.6	4,044.3	4,035.5	12.7	9.9	164.37	193.2	87.2	623.9	604.8	19.08	32.704		
4,200.0	4,161.3	4,142.3	4,133.2	13.1	10.2	164.24	200.3	88.0	643.9	624.3	19.58	32.891		
4,300.0	4,260.0	4,240.3	4,230.9	13.5	10.4	164.12	207.4	88.8	663.9	643.8	20.08	33.069		
4,400.0	4,358.6	4,338.2	4,328.6	13.9	10.7	164.00	214.5	89.6	683.9	663.3	20.58	33.237		
4,500.0	4,457.4	4,436.4	4,426.5	14.2	10.9	163.95	221.7	90.4	702.9	681.8	21.11	33.293		
4,600.0	4,556.7	4,535.1	4,525.0	14.4	11.2	163.83	228.9	91.2	718.7	697.0	21.61	33.250		
4,700.0	4,656.4	4,634.3	4,623.8	14.6	11.4	163.62	236.1	92.0	731.1	709.0	22.09	33.102		
4,800.0	4,756.3	4,735.0	4,724.3	14.8	11.7	163.33	243.4	92.8	740.2	717.7	22.53	32.857		
4,900.0	4,856.2	4,853.8	4,842.9	15.0	11.9	58.30	249.2	93.4	744.6	721.7	22.94	32.465		
5,000.0	4,956.2	4,967.1	4,956.2	15.1	12.1	58.23	250.4	93.6	745.3	721.9	23.32	31.958		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2554 - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,056.2	5,067.1	5,056.2	15.2	12.3	58.23	250.4	93.6	745.3	721.6	23.71	31.437	
5,200.0	5,156.2	5,167.1	5,156.2	15.4	12.5	58.05	250.4	93.6	745.2	721.1	24.09	30.937	
5,300.0	5,255.4	5,329.1	5,317.8	15.5	12.8	60.82	242.3	93.9	737.9	713.7	24.28	30.398	
5,400.0	5,350.6	5,533.9	5,507.2	15.6	12.7	73.59	168.1	96.6	708.3	684.0	24.29	29.161	
5,500.0	5,438.2	5,611.9	5,569.5	15.7	12.6	83.57	121.3	98.4	674.2	649.6	24.67	27.332	
5,600.0	5,515.2	5,631.6	5,584.0	15.7	12.6	88.12	108.1	98.9	649.4	624.4	24.97	26.009	
5,700.0	5,578.5	5,624.6	5,578.9	15.8	12.6	88.71	112.8	98.7	638.4	613.2	25.23	25.310	
5,723.6	5,591.2	5,620.7	5,576.0	15.8	12.6	88.41	115.5	98.6	638.0	612.7	25.33	25.191	
5,800.0	5,626.0	5,600.0	5,560.4	16.0	12.6	86.16	129.1	98.1	642.2	616.6	25.61	25.071	
5,900.0	5,655.8	5,575.3	5,541.2	16.3	12.6	82.27	144.4	97.5	658.8	632.8	26.04	25.300	
6,000.0	5,666.9	5,550.0	5,520.6	16.9	12.7	77.33	159.2	97.0	685.4	659.1	26.31	26.057	
6,100.0	5,667.0	5,500.0	5,478.1	17.7	12.7	73.43	185.5	96.0	720.5	693.7	26.78	26.900	
6,200.0	5,667.0	5,482.6	5,462.7	18.8	12.7	72.16	193.6	95.7	765.0	737.2	27.74	27.574	
6,300.0	5,667.0	5,450.0	5,433.2	19.9	12.7	69.76	207.5	95.2	818.2	789.6	28.58	28.624	
6,400.0	5,667.0	5,450.0	5,433.2	21.2	12.7	69.76	207.5	95.2	878.4	848.5	29.95	29.331	
6,500.0	5,667.0	5,425.5	5,410.5	22.6	12.8	67.97	216.7	94.8	944.7	913.7	31.00	30.479	
6,600.0	5,667.0	5,400.0	5,386.5	24.1	12.8	66.11	225.2	94.5	1,016.3	984.2	32.03	31.726	
6,700.0	5,667.0	5,400.0	5,386.5	25.7	12.8	66.11	225.2	94.5	1,091.6	1,058.0	33.55	32.535	
6,800.0	5,667.0	5,400.0	5,386.5	27.3	12.8	66.11	225.2	94.5	1,170.6	1,135.5	35.11	33.345	
6,900.0	5,667.0	5,380.1	5,367.4	28.9	12.8	64.68	230.9	94.3	1,252.1	1,215.8	36.28	34.516	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2555 - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	118.85	-49.6	90.0	102.7					
100.0	100.0	100.0	100.0	0.1	0.1	118.85	-49.6	90.0	102.7	102.5	0.19	550.565		
200.0	200.0	200.0	200.0	0.3	0.3	118.85	-49.6	90.0	102.7	102.1	0.64	161.473		
300.0	300.0	300.0	300.0	0.5	0.5	118.85	-49.6	90.0	102.7	101.6	1.09	94.611		
400.0	400.0	400.0	400.0	0.8	0.8	118.85	-49.6	90.0	102.7	101.2	1.54	66.906		
500.0	500.0	500.0	500.0	1.0	1.0	118.85	-49.6	90.0	102.7	100.7	1.98	51.752		
535.1	535.1	535.1	535.1	1.1	1.1	118.85	-49.6	90.0	102.7	100.6	2.14	47.943 CC		
600.0	600.0	599.9	599.9	1.2	1.2	118.61	-49.2	90.2	102.7	100.3	2.43	42.229		
700.0	700.0	699.5	699.4	1.4	1.4	116.69	-46.3	92.1	103.1	100.2	2.88	35.778 ES		
800.0	800.0	798.7	798.4	1.7	1.7	112.92	-40.5	95.9	104.1	100.7	3.33	31.221		
900.0	900.0	898.3	897.6	1.9	1.9	108.24	-33.2	100.6	106.0	102.2	3.79	27.997		
1,000.0	1,000.0	997.9	996.8	2.1	2.2	103.75	-25.8	105.4	108.6	104.4	4.24	25.637		
1,100.0	1,100.0	1,097.4	1,095.9	2.3	2.4	-156.08	-18.5	110.2	113.4	108.7	4.72	24.053		
1,200.0	1,199.8	1,196.5	1,194.6	2.5	2.7	-160.78	-11.1	115.0	122.2	117.1	5.16	23.698 SF		
1,300.0	1,299.5	1,295.2	1,292.9	2.7	2.9	-165.18	-3.8	119.8	135.1	129.5	5.60	24.130		
1,400.0	1,398.7	1,393.2	1,390.6	3.0	3.2	-169.05	3.4	124.5	152.0	146.0	6.04	25.188		
1,500.0	1,497.5	1,490.6	1,487.6	3.2	3.4	-172.30	10.6	129.2	172.8	166.3	6.47	26.698		
1,600.0	1,596.2	1,587.8	1,584.4	3.5	3.7	-174.92	17.8	133.9	194.8	187.8	6.92	28.157		
1,700.0	1,694.8	1,685.0	1,681.3	3.9	4.0	-177.00	25.0	138.5	217.1	209.7	7.37	29.469		
1,800.0	1,793.5	1,782.2	1,778.1	4.2	4.2	-178.70	32.2	143.2	239.6	231.8	7.82	30.646		
1,900.0	1,892.1	1,879.5	1,874.9	4.5	4.5	179.90	39.4	147.9	262.3	254.0	8.27	31.704		
2,000.0	1,990.8	1,976.7	1,971.8	4.9	4.8	178.72	46.5	152.6	285.1	276.3	8.73	32.657		
2,100.0	2,089.4	2,073.9	2,068.6	5.2	5.0	177.71	53.7	157.3	308.0	298.8	9.19	33.518		
2,200.0	2,188.1	2,171.1	2,165.4	5.6	5.3	176.85	60.9	162.0	331.0	321.3	9.65	34.299		
2,300.0	2,286.8	2,268.3	2,262.2	5.9	5.5	176.09	68.1	166.6	354.0	343.9	10.11	35.009		
2,400.0	2,385.4	2,365.5	2,359.1	6.3	5.8	175.43	75.3	171.3	377.1	366.6	10.58	35.656		
2,500.0	2,484.1	2,462.7	2,455.9	6.7	6.1	174.84	82.5	176.0	400.3	389.2	11.04	36.250		
2,600.0	2,582.7	2,559.9	2,552.7	7.0	6.3	174.32	89.7	180.7	423.5	412.0	11.51	36.795		
2,700.0	2,681.4	2,657.1	2,649.6	7.4	6.6	173.85	96.8	185.4	446.7	434.7	11.98	37.297		
2,800.0	2,780.1	2,754.3	2,746.4	7.8	6.9	173.43	104.0	190.0	469.9	457.5	12.44	37.762		
2,900.0	2,878.7	2,851.5	2,843.2	8.1	7.1	173.05	111.2	194.7	493.2	480.3	12.91	38.193		
3,000.0	2,977.4	2,948.7	2,940.0	8.5	7.4	172.70	118.4	199.4	516.4	503.1	13.39	38.575		
3,100.0	3,076.0	3,045.9	3,036.9	8.9	7.7	172.39	125.6	204.1	539.7	525.9	13.86	38.928		
3,200.0	3,174.7	3,143.1	3,133.7	9.3	7.9	172.10	132.8	208.8	563.0	548.7	14.34	39.257		
3,300.0	3,273.4	3,240.4	3,230.5	9.7	8.2	171.83	139.9	213.5	586.4	571.5	14.82	39.562		
3,400.0	3,372.0	3,337.6	3,327.4	10.0	8.5	171.58	147.1	218.1	609.7	594.4	15.30	39.848		
3,500.0	3,470.7	3,434.8	3,424.2	10.4	8.7	171.35	154.3	222.8	633.0	617.3	15.78	40.115		
3,600.0	3,569.3	3,532.0	3,521.0	10.8	9.0	171.14	161.5	227.5	656.4	640.1	16.26	40.365		
3,700.0	3,668.0	3,629.2	3,617.8	11.2	9.3	170.94	168.7	232.2	679.8	663.0	16.74	40.600		
3,800.0	3,766.7	3,726.4	3,714.7	11.6	9.5	170.75	175.9	236.9	703.1	685.9	17.22	40.821		
3,900.0	3,865.3	3,823.6	3,811.5	11.9	9.8	170.58	183.1	241.6	726.5	708.8	17.71	41.029		
4,000.0	3,964.0	3,920.8	3,908.3	12.3	10.1	170.42	190.2	246.2	749.9	731.7	18.19	41.226		
4,100.0	4,062.6	4,018.0	4,005.2	12.7	10.3	170.27	197.4	250.9	773.3	754.6	18.67	41.412		
4,200.0	4,161.3	4,115.2	4,102.0	13.1	10.6	170.12	204.6	255.6	796.6	777.5	19.16	41.588		
4,300.0	4,260.0	4,212.4	4,198.8	13.5	10.9	169.99	211.8	260.3	820.0	800.4	19.64	41.754		
4,400.0	4,358.6	4,309.6	4,295.6	13.9	11.1	169.86	219.0	265.0	843.4	823.3	20.12	41.912		
4,500.0	4,457.4	4,407.1	4,392.7	14.2	11.4	169.79	226.2	269.7	865.8	845.1	20.65	41.920		
4,600.0	4,556.7	4,505.2	4,490.5	14.4	11.7	169.69	233.4	274.4	884.8	863.7	21.15	41.835		
4,700.0	4,656.4	4,603.9	4,588.8	14.6	12.0	169.54	240.7	279.1	900.5	878.9	21.62	41.653		
4,800.0	4,756.3	4,738.3	4,722.8	14.8	12.2	169.36	248.2	284.0	911.0	888.9	22.09	41.246		
4,900.0	4,856.2	4,871.7	4,856.2	15.0	12.5	64.57	250.4	285.5	914.0	891.5	22.49	40.641		
5,000.0	4,956.2	4,971.7	4,956.2	15.1	12.7	64.57	250.4	285.5	914.0	891.1	22.88	39.950		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2555 - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,056.2	5,071.7	5,056.2	15.2	12.8	64.57	250.4	285.5	914.0	890.7	23.28	39.269		
5,200.0	5,156.2	5,195.7	5,180.1	15.4	13.1	64.49	249.3	285.5	913.8	890.1	23.70	38.551		
5,300.0	5,255.4	5,464.5	5,432.2	15.5	13.0	72.92	164.8	288.2	896.8	872.8	23.97	37.419		
5,400.0	5,350.6	5,581.1	5,521.7	15.6	12.9	82.40	90.5	290.5	869.0	844.7	24.31	35.740		
5,500.0	5,438.2	5,617.0	5,545.7	15.7	12.9	87.37	63.8	291.4	846.0	821.4	24.64	34.337		
5,600.0	5,515.2	5,617.6	5,546.1	15.7	12.9	88.85	63.3	291.4	833.1	808.3	24.82	33.559		
5,664.3	5,557.6	5,608.2	5,540.0	15.8	12.9	88.46	70.5	291.1	830.8	805.8	24.99	33.242		
5,700.0	5,578.5	5,600.0	5,534.5	15.8	12.9	87.83	76.7	290.9	831.5	806.4	25.07	33.162		
5,800.0	5,626.0	5,574.5	5,517.1	16.0	12.9	85.19	95.2	290.4	840.4	814.9	25.45	33.020		
5,900.0	5,655.8	5,550.0	5,499.5	16.3	12.9	81.72	112.3	289.8	858.0	832.1	25.89	33.139		
6,000.0	5,666.9	5,500.0	5,461.2	16.9	13.0	76.27	144.4	288.8	881.9	855.8	26.13	33.753		
6,100.0	5,667.0	5,472.3	5,438.7	17.7	13.0	74.57	160.5	288.3	911.7	884.8	26.93	33.858		
6,200.0	5,667.0	5,450.0	5,420.0	18.8	13.0	73.37	172.6	287.9	949.3	921.4	27.93	33.991		
6,300.0	5,667.0	5,418.9	5,393.1	19.9	13.1	71.66	188.2	287.4	994.1	965.2	28.94	34.347		
6,400.0	5,667.0	5,400.0	5,376.3	21.2	13.1	70.61	196.8	287.2	1,045.6	1,015.5	30.13	34.701		
6,500.0	5,667.0	5,380.3	5,358.4	22.6	13.1	69.51	205.2	286.9	1,103.0	1,071.6	31.36	35.173		
6,600.0	5,667.0	5,350.0	5,330.4	24.1	13.1	67.82	216.7	286.5	1,165.8	1,133.3	32.49	35.886		
6,700.0	5,667.0	5,350.0	5,330.4	25.7	13.1	67.82	216.7	286.5	1,232.6	1,198.6	34.02	36.234		
6,800.0	5,667.0	5,350.0	5,330.4	27.3	13.1	67.82	216.7	286.5	1,303.7	1,268.1	35.59	36.633		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2556 - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	112.42	-49.6	120.1	130.0					
100.0	100.0	100.0	100.0	0.1	0.1	112.42	-49.6	120.1	130.0	129.8	0.19	696.617		
200.0	200.0	200.0	200.0	0.3	0.3	112.42	-49.6	120.1	130.0	129.3	0.64	204.308		
300.0	300.0	300.0	300.0	0.5	0.5	112.42	-49.6	120.1	130.0	128.9	1.09	119.709		
400.0	400.0	400.0	400.0	0.8	0.8	112.42	-49.6	120.1	130.0	128.4	1.54	84.655		
500.0	500.0	500.0	500.0	1.0	1.0	112.42	-49.6	120.1	130.0	128.0	1.98	65.481	CC, ES	
600.0	600.0	597.9	597.9	1.2	1.2	111.77	-48.5	121.4	130.8	128.3	2.43	53.893		
700.0	700.0	695.6	695.4	1.4	1.4	109.88	-45.3	125.2	133.3	130.4	2.87	46.421		
800.0	800.0	792.8	792.3	1.7	1.7	106.89	-40.0	131.6	137.7	134.4	3.32	41.475		
900.0	900.0	891.3	890.2	1.9	1.9	103.23	-32.9	140.0	144.1	140.3	3.78	38.129		
1,000.0	1,000.0	990.7	988.9	2.1	2.2	99.81	-25.7	148.6	151.2	146.9	4.24	35.649		
1,100.0	1,100.0	1,089.9	1,087.5	2.3	2.5	-158.72	-18.5	157.1	160.3	155.6	4.71	34.054		
1,200.0	1,199.8	1,188.5	1,185.5	2.5	2.7	-161.96	-11.3	165.7	173.3	168.1	5.15	33.656	SF	
1,300.0	1,299.5	1,286.6	1,283.0	2.7	3.0	-165.00	-4.2	174.2	190.1	184.5	5.59	34.018		
1,400.0	1,398.7	1,384.0	1,379.7	3.0	3.3	-167.73	2.9	182.6	210.6	204.6	6.02	34.985		
1,500.0	1,497.5	1,480.6	1,475.7	3.2	3.6	-170.13	9.9	190.9	234.8	228.4	6.45	36.392		
1,600.0	1,596.2	1,576.9	1,571.4	3.5	3.9	-172.16	16.9	199.3	260.2	253.3	6.90	37.732		
1,700.0	1,694.8	1,673.3	1,667.2	3.9	4.2	-173.83	23.9	207.6	285.8	278.4	7.34	38.927		
1,800.0	1,793.5	1,769.7	1,762.9	4.2	4.5	-175.23	30.9	216.0	311.6	303.8	7.79	39.996		
1,900.0	1,892.1	1,866.0	1,858.7	4.5	4.7	-176.42	37.9	224.3	337.5	329.2	8.24	40.954		
2,000.0	1,990.8	1,962.4	1,954.4	4.9	5.0	-177.44	44.9	232.6	363.5	354.8	8.69	41.816		
2,100.0	2,089.4	2,058.7	2,050.1	5.2	5.3	-178.32	51.9	241.0	389.7	380.5	9.15	42.595		
2,200.0	2,188.1	2,155.1	2,145.9	5.6	5.6	-179.09	58.9	249.3	415.9	406.3	9.60	43.301		
2,300.0	2,286.8	2,251.5	2,241.6	5.9	5.9	-179.77	65.9	257.6	442.2	432.1	10.06	43.943		
2,400.0	2,385.4	2,347.8	2,337.4	6.3	6.2	179.63	72.9	266.0	468.5	458.0	10.52	44.530		
2,500.0	2,484.1	2,444.2	2,433.1	6.7	6.5	179.09	80.0	274.3	494.9	483.9	10.98	45.068		
2,600.0	2,582.7	2,540.5	2,528.9	7.0	6.8	178.61	87.0	282.6	521.3	509.8	11.44	45.563		
2,700.0	2,681.4	2,636.9	2,624.6	7.4	7.1	178.17	94.0	291.0	547.7	535.8	11.90	46.020		
2,800.0	2,780.1	2,733.3	2,720.3	7.8	7.4	177.77	101.0	299.3	574.2	561.8	12.36	46.444		
2,900.0	2,878.7	2,829.6	2,816.1	8.1	7.7	177.41	108.0	307.7	600.7	587.9	12.83	46.837		
3,000.0	2,977.4	2,926.0	2,911.8	8.5	8.0	177.08	115.0	316.0	627.2	613.9	13.29	47.204		
3,100.0	3,076.0	3,022.3	3,007.6	8.9	8.2	176.77	122.0	324.3	653.7	640.0	13.75	47.546		
3,200.0	3,174.7	3,118.7	3,103.3	9.3	8.5	176.49	129.0	332.7	680.3	666.1	14.22	47.840		
3,300.0	3,273.4	3,215.1	3,199.1	9.7	8.8	176.23	136.0	341.0	706.8	692.1	14.69	48.115		
3,400.0	3,372.0	3,311.4	3,294.8	10.0	9.1	175.99	143.0	349.3	733.4	718.2	15.16	48.370		
3,500.0	3,470.7	3,407.8	3,390.6	10.4	9.4	175.77	150.0	357.7	760.0	744.4	15.63	48.609		
3,600.0	3,569.3	3,504.1	3,486.3	10.8	9.7	175.56	157.0	366.0	786.6	770.5	16.11	48.833		
3,700.0	3,668.0	3,600.5	3,582.0	11.2	10.0	175.36	164.0	374.3	813.2	796.6	16.58	49.044		
3,800.0	3,766.7	3,696.9	3,677.8	11.6	10.3	175.18	171.0	382.7	839.8	822.7	17.05	49.241		
3,900.0	3,865.3	3,793.2	3,773.5	11.9	10.6	175.01	178.0	391.0	866.4	848.9	17.53	49.427		
4,000.0	3,964.0	3,889.6	3,869.3	12.3	10.9	174.84	185.0	399.4	893.0	875.0	18.00	49.603		
4,100.0	4,062.6	3,985.9	3,965.0	12.7	11.2	174.69	192.0	407.7	919.7	901.2	18.48	49.768		
4,200.0	4,161.3	4,082.3	4,060.8	13.1	11.5	174.55	199.0	416.0	946.3	927.4	18.95	49.925		
4,300.0	4,260.0	4,178.7	4,156.5	13.5	11.8	174.41	206.0	424.4	973.0	953.5	19.43	50.074		
4,400.0	4,358.6	4,275.0	4,252.2	13.9	12.1	174.28	213.0	432.7	999.6	979.7	19.91	50.215		
4,500.0	4,457.4	4,371.7	4,348.3	14.2	12.4	174.20	220.0	441.1	1,025.2	1,004.8	20.44	50.164		
4,600.0	4,556.7	4,469.1	4,445.1	14.4	12.7	174.10	227.1	449.5	1,047.5	1,026.5	20.94	50.028		
4,700.0	4,656.4	4,567.3	4,542.6	14.6	13.0	173.99	234.3	458.0	1,066.4	1,045.0	21.41	49.805		
4,800.0	4,756.3	4,667.4	4,642.0	14.8	13.3	173.82	242.6	467.9	1,081.5	1,059.6	21.89	49.408		
4,900.0	4,856.2	4,767.7	4,742.0	15.0	13.6	173.64	249.1	475.6	1,099.0	1,076.7	22.35	48.729		
5,000.0	4,956.2	4,868.0	4,842.0	15.1	13.8	173.48	254.4	482.2	1,116.3	1,093.0	22.78	47.858		
5,100.0	5,056.2	5,002.0	5,002.0	15.2	14.0	173.32	259.7	489.3	1,133.4	1,110.1	23.17	47.052		

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 25B -2409
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2409	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2556 - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,156.2	5,182.0	5,156.2	15.4	14.2	68.73	250.4	477.2	1,090.3	1,066.7	23.57	46.263		
5,300.0	5,255.4	5,342.6	5,316.4	15.5	14.4	70.74	242.5	477.4	1,085.3	1,061.3	23.99	45.240		
5,400.0	5,350.6	5,545.6	5,504.5	15.6	14.3	79.38	169.8	479.3	1,065.5	1,041.1	24.44	43.590		
5,500.0	5,438.2	5,624.0	5,567.4	15.7	14.3	85.76	123.1	480.5	1,043.3	1,018.4	24.84	42.003		
5,600.0	5,515.2	5,644.2	5,582.4	15.7	14.2	88.65	109.6	480.9	1,027.3	1,002.2	25.11	40.909		
5,700.0	5,578.5	5,637.7	5,577.6	15.8	14.3	89.06	114.0	480.8	1,020.4	994.9	25.41	40.153		
5,725.0	5,591.9	5,633.6	5,574.6	15.8	14.3	88.86	116.7	480.7	1,020.1	994.5	25.53	39.961		
5,800.0	5,626.0	5,617.3	5,562.3	16.0	14.3	87.70	127.4	480.4	1,022.6	996.7	25.86	39.543		
5,900.0	5,655.8	5,589.0	5,540.2	16.3	14.3	85.08	145.1	480.0	1,033.0	1,006.5	26.45	39.046		
6,000.0	5,666.9	5,550.0	5,508.2	16.9	14.3	81.32	167.4	479.4	1,049.9	1,022.8	27.07	38.780		
6,100.0	5,667.0	5,523.4	5,485.5	17.7	14.4	79.89	181.2	479.0	1,072.9	1,044.9	28.00	38.320		
6,200.0	5,667.0	5,500.0	5,465.0	18.8	14.4	78.77	192.4	478.7	1,103.2	1,074.1	29.09	37.926		
6,300.0	5,667.0	5,474.6	5,442.1	19.9	14.4	77.54	203.6	478.4	1,140.5	1,110.3	30.26	37.686		
6,400.0	5,667.0	5,450.0	5,419.5	21.2	14.4	76.33	213.2	478.2	1,184.5	1,152.9	31.52	37.581		
6,500.0	5,667.0	5,450.0	5,419.5	22.6	14.4	76.33	213.2	478.2	1,234.4	1,201.4	33.00	37.412		
6,600.0	5,667.0	5,426.2	5,397.2	24.1	14.4	75.14	221.5	478.0	1,289.7	1,255.3	34.35	37.543		

Cathedral Energy Services

Anticollision Report

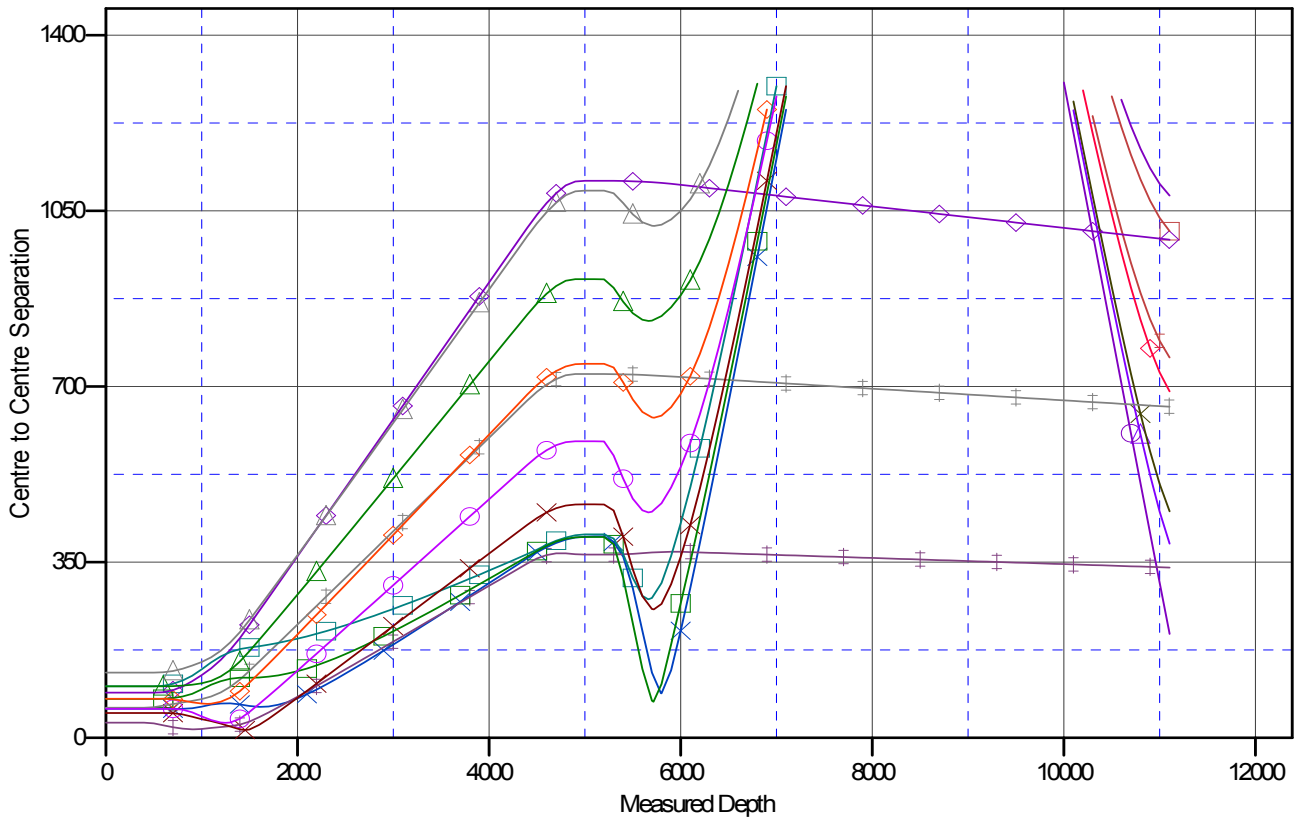
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S25-T10N-R58W
Site Error: 0.0usft
Reference Well: Razor 25B -2409
Well Error: 0.0usft
Reference Wellbore: HZ
Reference Design: Plan #1

Local Co-ordinate Reference: Well Razor 25B -2409
TVD Reference: KB=17' @ 4773.4usft (Cade #23)
MD Reference: KB=17' @ 4773.4usft (Cade #23)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=17' @ 4773.4usft (Cade #23)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor 25B -2409
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.09°

Ladder Plot



LEGEND

- | | | |
|---|---|-----------------------------------|
| ✕ Razor 25B -2551, HZ, Plan #2 V0 | ✖ Razor Federal#12G-1311A, HZ, Plan #1 V0 | ✖ Razor 25B -2550, HZ, Plan #2 V0 |
| ✖ Razor Federal#12F-1306B, HZ, Plan #3 V0 | ✖ Razor Federal#12G-1312B, HZ, Plan #1 V0 | ✖ Razor 25B -2552, HZ, Plan #2 V0 |
| ✖ Razor Federal#12F-1307A, HZ, Plan #3 V0 | ✖ Razor 25B -2410, HZ, Plan #1 V0 | ✖ Razor 25B -2553, HZ, Plan #1 V0 |
| ✖ Razor Federal#12F-1308B, HZ, Plan #3 V0 | ✖ Razor 25B -2411, HZ, Plan #1 V0 | ✖ Razor 25B -2554, HZ, Plan #2 V0 |
| ✖ Razor Federal#12G-1309A, HZ, Plan #1 V0 | ✖ Razor 25B -2412, HZ, Plan #1 V0 | ✖ Razor 25B -2555, HZ, Plan #2 V0 |
| ✖ Razor Federal#12G-1310B, HZ, Plan #1 V0 | ✖ Razor 25B -2549, HZ, Plan #2 V0 | ✖ Razor 25B -2556, HZ, Plan #2 V0 |