

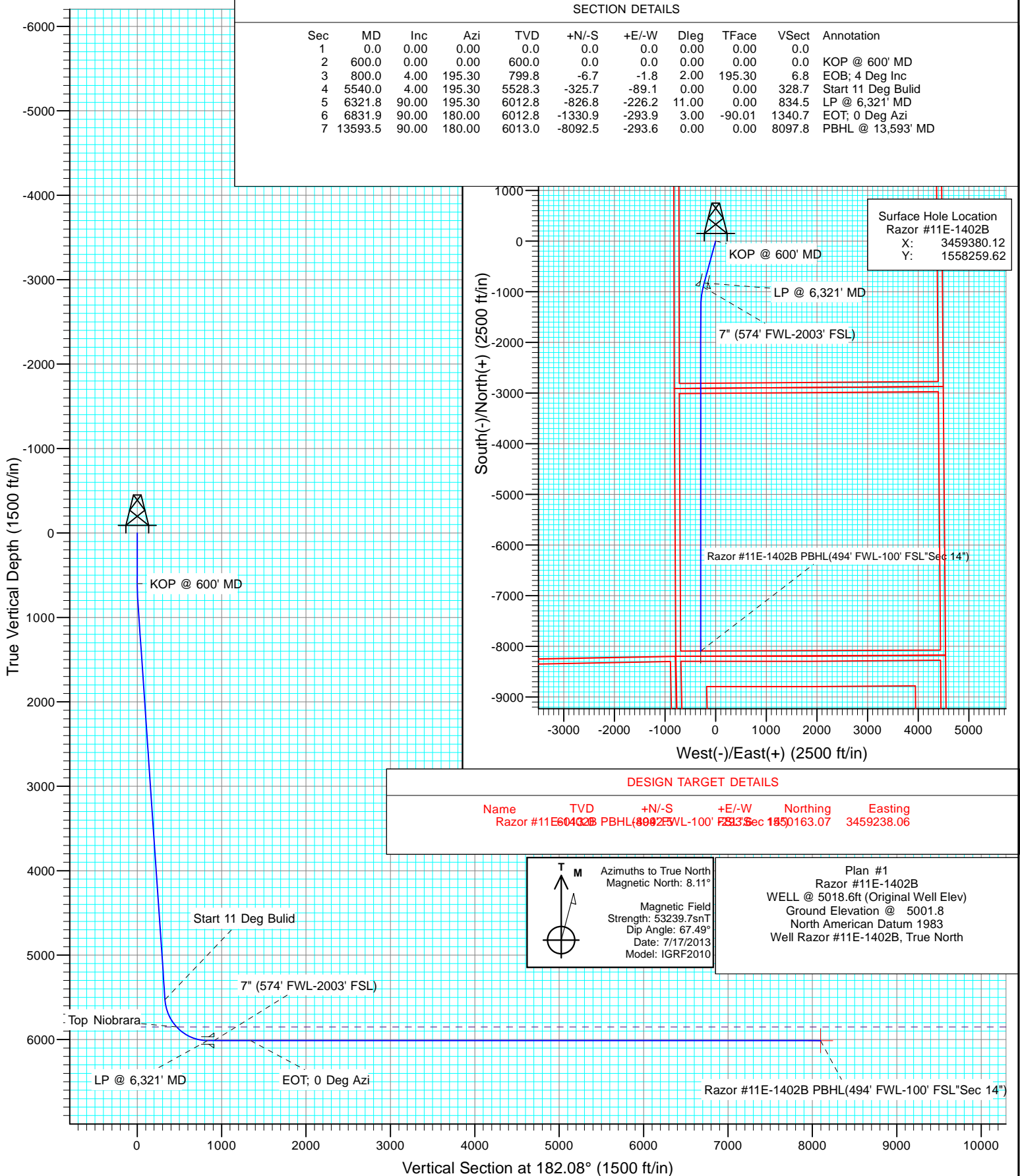


Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11E-1402B
Wellbore: HZ
Design: Plan #1



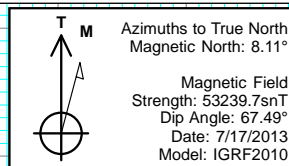
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	KOP @ 600' MD
3	800.0	4.00	195.30	799.8	-6.7	-1.8	2.00	195.30	6.8	EOB; 4 Deg Inc
4	5540.0	4.00	195.30	5528.3	-325.7	-89.1	0.00	0.00	328.7	Start 11 Deg Build
5	6321.8	90.00	195.30	6012.8	-826.8	-226.2	11.00	0.00	834.5	LP @ 6,321' MD
6	6831.9	90.00	180.00	6012.8	-1330.9	-293.9	3.00	-90.01	1340.7	EOT; 0 Deg Azi
7	13593.5	90.00	180.00	6013.0	-8092.5	-293.6	0.00	0.00	8097.8	PBHL @ 13,593' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor #11E-1402B PBHL(494' FWL-100' FSL"Sec 14")	6013.0	-8092.5	-293.6	50163.07	3459238.06



Plan #1
Razor #11E-1402B
WELL @ 5018.6ft (Original Well Elev)
Ground Elevation @ 5001.8
North American Datum 1983
Well Razor #11E-1402B, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11E-1402B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11E-1402B	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		S11-T10N-R58W			
Site Position:		Northing:	1,558,623.69 ft	Latitude:	40.854775
From:	Lat/Long	Easting:	3,463,396.85 ft	Longitude:	-103.824847
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.08 °

Well	Razor #11E-1402B					
Well Position	+N/-S	0.0 ft	Northing:	1,558,259.62 ft	Latitude:	40.853983
	+E/-W	0.0 ft	Easting:	3,459,380.12 ft	Longitude:	-103.839389
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,001.8 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2013	8.11	67.49	53,240

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	182.08

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	4.00	195.30	799.8	-6.7	-1.8	2.00	2.00	0.00	195.30	
5,540.0	4.00	195.30	5,528.3	-325.7	-89.1	0.00	0.00	0.00	0.00	
6,321.8	90.00	195.30	6,012.8	-826.8	-226.2	11.00	11.00	0.00	0.00	
6,831.9	90.00	180.00	6,012.8	-1,330.9	-293.9	3.00	0.00	-3.00	-90.01	
13,593.5	90.00	180.00	6,013.0	-8,092.5	-293.6	0.00	0.00	0.00	0.00	Razor #11E-1402B PI

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11E-1402B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11E-1402B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	KOP @ 600' MD
700.0	2.00	195.30	700.0	-1.7	-0.5	1.7	2.00	2.00	
800.0	4.00	195.30	799.8	-6.7	-1.8	6.8	2.00	2.00	EOB; 4 Deg Inc
900.0	4.00	195.30	899.6	-13.5	-3.7	13.6	0.00	0.00	
1,000.0	4.00	195.30	999.4	-20.2	-5.5	20.4	0.00	0.00	
1,100.0	4.00	195.30	1,099.1	-26.9	-7.4	27.2	0.00	0.00	
1,200.0	4.00	195.30	1,198.9	-33.6	-9.2	34.0	0.00	0.00	
1,300.0	4.00	195.30	1,298.6	-40.4	-11.0	40.7	0.00	0.00	
1,400.0	4.00	195.30	1,398.4	-47.1	-12.9	47.5	0.00	0.00	
1,500.0	4.00	195.30	1,498.1	-53.8	-14.7	54.3	0.00	0.00	
1,600.0	4.00	195.30	1,597.9	-60.6	-16.6	61.1	0.00	0.00	
1,700.0	4.00	195.30	1,697.6	-67.3	-18.4	67.9	0.00	0.00	
1,800.0	4.00	195.30	1,797.4	-74.0	-20.2	74.7	0.00	0.00	
1,900.0	4.00	195.30	1,897.2	-80.7	-22.1	81.5	0.00	0.00	
2,000.0	4.00	195.30	1,996.9	-87.5	-23.9	88.3	0.00	0.00	
2,100.0	4.00	195.30	2,096.7	-94.2	-25.8	95.1	0.00	0.00	
2,200.0	4.00	195.30	2,196.4	-100.9	-27.6	101.9	0.00	0.00	
2,300.0	4.00	195.30	2,296.2	-107.7	-29.5	108.7	0.00	0.00	
2,400.0	4.00	195.30	2,395.9	-114.4	-31.3	115.4	0.00	0.00	
2,500.0	4.00	195.30	2,495.7	-121.1	-33.1	122.2	0.00	0.00	
2,600.0	4.00	195.30	2,595.5	-127.8	-35.0	129.0	0.00	0.00	
2,700.0	4.00	195.30	2,695.2	-134.6	-36.8	135.8	0.00	0.00	
2,800.0	4.00	195.30	2,795.0	-141.3	-38.7	142.6	0.00	0.00	
2,900.0	4.00	195.30	2,894.7	-148.0	-40.5	149.4	0.00	0.00	
3,000.0	4.00	195.30	2,994.5	-154.8	-42.3	156.2	0.00	0.00	
3,100.0	4.00	195.30	3,094.2	-161.5	-44.2	163.0	0.00	0.00	
3,200.0	4.00	195.30	3,194.0	-168.2	-46.0	169.8	0.00	0.00	
3,300.0	4.00	195.30	3,293.7	-174.9	-47.9	176.6	0.00	0.00	
3,400.0	4.00	195.30	3,393.5	-181.7	-49.7	183.4	0.00	0.00	
3,500.0	4.00	195.30	3,493.3	-188.4	-51.5	190.1	0.00	0.00	
3,600.0	4.00	195.30	3,593.0	-195.1	-53.4	196.9	0.00	0.00	
3,700.0	4.00	195.30	3,692.8	-201.9	-55.2	203.7	0.00	0.00	
3,800.0	4.00	195.30	3,792.5	-208.6	-57.1	210.5	0.00	0.00	
3,900.0	4.00	195.30	3,892.3	-215.3	-58.9	217.3	0.00	0.00	
4,000.0	4.00	195.30	3,992.0	-222.0	-60.7	224.1	0.00	0.00	
4,100.0	4.00	195.30	4,091.8	-228.8	-62.6	230.9	0.00	0.00	
4,200.0	4.00	195.30	4,191.6	-235.5	-64.4	237.7	0.00	0.00	
4,300.0	4.00	195.30	4,291.3	-242.2	-66.3	244.5	0.00	0.00	
4,400.0	4.00	195.30	4,391.1	-249.0	-68.1	251.3	0.00	0.00	
4,500.0	4.00	195.30	4,490.8	-255.7	-69.9	258.1	0.00	0.00	
4,600.0	4.00	195.30	4,590.6	-262.4	-71.8	264.8	0.00	0.00	
4,700.0	4.00	195.30	4,690.3	-269.1	-73.6	271.6	0.00	0.00	
4,800.0	4.00	195.30	4,790.1	-275.9	-75.5	278.4	0.00	0.00	
4,900.0	4.00	195.30	4,889.9	-282.6	-77.3	285.2	0.00	0.00	
5,000.0	4.00	195.30	4,989.6	-289.3	-79.2	292.0	0.00	0.00	
5,100.0	4.00	195.30	5,089.4	-296.1	-81.0	298.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11E-1402B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11E-1402B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	4.00	195.30	5,189.1	-302.8	-82.8	305.6	0.00	0.00	
5,300.0	4.00	195.30	5,288.9	-309.5	-84.7	312.4	0.00	0.00	
5,400.0	4.00	195.30	5,388.6	-316.2	-86.5	319.2	0.00	0.00	
5,500.0	4.00	195.30	5,488.4	-323.0	-88.4	326.0	0.00	0.00	
5,540.0	4.00	195.30	5,528.3	-325.7	-89.1	328.7	0.00	0.00	Start 11 Deg Bulid
5,550.0	5.10	195.30	5,538.3	-326.4	-89.3	329.4	11.00	11.00	
5,600.0	10.60	195.30	5,587.8	-333.0	-91.1	336.1	11.00	11.00	
5,650.0	16.10	195.30	5,636.4	-344.1	-94.1	347.3	11.00	11.00	
5,700.0	21.60	195.30	5,683.7	-359.7	-98.4	363.0	11.00	11.00	
5,750.0	27.10	195.30	5,729.2	-379.6	-103.8	383.1	11.00	11.00	
5,800.0	32.60	195.30	5,772.6	-403.6	-110.4	407.3	11.00	11.00	
5,850.0	38.10	195.30	5,813.4	-431.5	-118.0	435.5	11.00	11.00	
5,900.0	43.60	195.30	5,851.2	-463.0	-126.7	467.3	11.00	11.00	
5,901.2	43.73	195.30	5,852.0	-463.8	-126.9	468.1	11.00	11.00	Top Niobrara
5,950.0	49.10	195.30	5,885.7	-497.9	-136.2	502.5	11.00	11.00	
6,000.0	54.60	195.30	5,916.5	-535.8	-146.6	540.8	11.00	11.00	
6,050.0	60.10	195.30	5,943.5	-576.4	-157.7	581.7	11.00	11.00	
6,100.0	65.60	195.30	5,966.3	-619.3	-169.4	625.0	11.00	11.00	
6,150.0	71.10	195.30	5,984.7	-664.1	-181.7	670.3	11.00	11.00	
6,200.0	76.60	195.30	5,998.6	-710.4	-194.3	717.0	11.00	11.00	
6,250.0	82.10	195.30	6,007.9	-757.8	-207.3	764.8	11.00	11.00	
6,300.0	87.60	195.30	6,012.4	-805.8	-220.4	813.3	11.00	11.00	
6,321.8	90.00	195.30	6,012.8	-826.8	-226.2	834.5	11.00	11.00	LP @ 6,321' MD
6,400.0	90.00	192.95	6,012.8	-902.7	-245.3	911.0	3.00	0.00	7" (574' FWL-2003' FSL)
6,500.0	90.00	189.95	6,012.8	-1,000.7	-265.1	1,009.6	3.00	0.00	
6,600.0	90.00	186.95	6,012.8	-1,099.6	-279.8	1,109.0	3.00	0.00	
6,700.0	90.00	183.95	6,012.8	-1,199.1	-289.3	1,208.8	3.00	0.00	
6,800.0	90.00	180.95	6,012.8	-1,299.0	-293.6	1,308.8	3.00	0.00	
6,831.9	90.00	180.00	6,012.8	-1,330.9	-293.9	1,340.7	3.00	0.00	EOT; 0 Deg Azi
6,900.0	90.00	180.00	6,012.8	-1,399.0	-293.9	1,408.7	0.00	0.00	
7,000.0	90.00	180.00	6,012.8	-1,499.0	-293.9	1,508.7	0.00	0.00	
7,100.0	90.00	180.00	6,012.8	-1,599.0	-293.9	1,608.6	0.00	0.00	
7,200.0	90.00	180.00	6,012.8	-1,699.0	-293.9	1,708.5	0.00	0.00	
7,300.0	90.00	180.00	6,012.8	-1,799.0	-293.9	1,808.5	0.00	0.00	
7,400.0	90.00	180.00	6,012.9	-1,899.0	-293.9	1,908.4	0.00	0.00	
7,500.0	90.00	180.00	6,012.9	-1,999.0	-293.9	2,008.3	0.00	0.00	
7,600.0	90.00	180.00	6,012.9	-2,099.0	-293.9	2,108.3	0.00	0.00	
7,700.0	90.00	180.00	6,012.9	-2,199.0	-293.9	2,208.2	0.00	0.00	
7,800.0	90.00	180.00	6,012.9	-2,299.0	-293.9	2,308.1	0.00	0.00	
7,900.0	90.00	180.00	6,012.9	-2,399.0	-293.9	2,408.1	0.00	0.00	
8,000.0	90.00	180.00	6,012.9	-2,499.0	-293.8	2,508.0	0.00	0.00	
8,100.0	90.00	180.00	6,012.9	-2,599.0	-293.8	2,607.9	0.00	0.00	
8,200.0	90.00	180.00	6,012.9	-2,699.0	-293.8	2,707.9	0.00	0.00	
8,300.0	90.00	180.00	6,012.9	-2,799.0	-293.8	2,807.8	0.00	0.00	
8,400.0	90.00	180.00	6,012.9	-2,899.0	-293.8	2,907.7	0.00	0.00	
8,500.0	90.00	180.00	6,012.9	-2,999.0	-293.8	3,007.7	0.00	0.00	
8,600.0	90.00	180.00	6,012.9	-3,099.0	-293.8	3,107.6	0.00	0.00	
8,700.0	90.00	180.00	6,012.9	-3,199.0	-293.8	3,207.5	0.00	0.00	
8,800.0	90.00	180.00	6,012.9	-3,299.0	-293.8	3,307.5	0.00	0.00	
8,900.0	90.00	180.00	6,012.9	-3,399.0	-293.8	3,407.4	0.00	0.00	
9,000.0	90.00	180.00	6,012.9	-3,499.0	-293.8	3,507.3	0.00	0.00	
9,100.0	90.00	180.00	6,012.9	-3,599.0	-293.8	3,607.3	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11E-1402B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,200.0	90.00	180.00	6,012.9	-3,699.0	-293.8	3,707.2	0.00	0.00	
9,300.0	90.00	180.00	6,012.9	-3,799.0	-293.8	3,807.1	0.00	0.00	
9,400.0	90.00	180.00	6,012.9	-3,899.0	-293.8	3,907.1	0.00	0.00	
9,500.0	90.00	180.00	6,012.9	-3,999.0	-293.8	4,007.0	0.00	0.00	
9,600.0	90.00	180.00	6,012.9	-4,099.0	-293.8	4,106.9	0.00	0.00	
9,700.0	90.00	180.00	6,012.9	-4,199.0	-293.8	4,206.9	0.00	0.00	
9,800.0	90.00	180.00	6,012.9	-4,299.0	-293.8	4,306.8	0.00	0.00	
9,900.0	90.00	180.00	6,012.9	-4,399.0	-293.8	4,406.7	0.00	0.00	
10,000.0	90.00	180.00	6,012.9	-4,499.0	-293.8	4,506.7	0.00	0.00	
10,100.0	90.00	180.00	6,012.9	-4,599.0	-293.8	4,606.6	0.00	0.00	
10,200.0	90.00	180.00	6,012.9	-4,699.0	-293.8	4,706.5	0.00	0.00	
10,300.0	90.00	180.00	6,012.9	-4,799.0	-293.8	4,806.5	0.00	0.00	
10,400.0	90.00	180.00	6,012.9	-4,899.0	-293.8	4,906.4	0.00	0.00	
10,500.0	90.00	180.00	6,012.9	-4,999.0	-293.8	5,006.3	0.00	0.00	
10,600.0	90.00	180.00	6,012.9	-5,099.0	-293.8	5,106.3	0.00	0.00	
10,700.0	90.00	180.00	6,012.9	-5,199.0	-293.8	5,206.2	0.00	0.00	
10,800.0	90.00	180.00	6,012.9	-5,299.0	-293.7	5,306.2	0.00	0.00	
10,900.0	90.00	180.00	6,012.9	-5,399.0	-293.7	5,406.1	0.00	0.00	
11,000.0	90.00	180.00	6,012.9	-5,499.0	-293.7	5,506.0	0.00	0.00	
11,100.0	90.00	180.00	6,012.9	-5,599.0	-293.7	5,606.0	0.00	0.00	
11,200.0	90.00	180.00	6,012.9	-5,699.0	-293.7	5,705.9	0.00	0.00	
11,300.0	90.00	180.00	6,012.9	-5,799.0	-293.7	5,805.8	0.00	0.00	
11,400.0	90.00	180.00	6,012.9	-5,899.0	-293.7	5,905.8	0.00	0.00	
11,500.0	90.00	180.00	6,012.9	-5,999.0	-293.7	6,005.7	0.00	0.00	
11,600.0	90.00	180.00	6,013.0	-6,099.0	-293.7	6,105.6	0.00	0.00	
11,700.0	90.00	180.00	6,013.0	-6,199.0	-293.7	6,205.6	0.00	0.00	
11,800.0	90.00	180.00	6,013.0	-6,299.0	-293.7	6,305.5	0.00	0.00	
11,900.0	90.00	180.00	6,013.0	-6,399.0	-293.7	6,405.4	0.00	0.00	
12,000.0	90.00	180.00	6,013.0	-6,499.0	-293.7	6,505.4	0.00	0.00	
12,100.0	90.00	180.00	6,013.0	-6,599.0	-293.7	6,605.3	0.00	0.00	
12,200.0	90.00	180.00	6,013.0	-6,699.0	-293.7	6,705.2	0.00	0.00	
12,300.0	90.00	180.00	6,013.0	-6,799.0	-293.7	6,805.2	0.00	0.00	
12,400.0	90.00	180.00	6,013.0	-6,899.0	-293.7	6,905.1	0.00	0.00	
12,500.0	90.00	180.00	6,013.0	-6,999.0	-293.7	7,005.0	0.00	0.00	
12,600.0	90.00	180.00	6,013.0	-7,099.0	-293.7	7,105.0	0.00	0.00	
12,700.0	90.00	180.00	6,013.0	-7,199.0	-293.7	7,204.9	0.00	0.00	
12,800.0	90.00	180.00	6,013.0	-7,299.0	-293.7	7,304.8	0.00	0.00	
12,900.0	90.00	180.00	6,013.0	-7,399.0	-293.7	7,404.8	0.00	0.00	
13,000.0	90.00	180.00	6,013.0	-7,499.0	-293.7	7,504.7	0.00	0.00	
13,100.0	90.00	180.00	6,013.0	-7,599.0	-293.7	7,604.6	0.00	0.00	
13,200.0	90.00	180.00	6,013.0	-7,699.0	-293.7	7,704.6	0.00	0.00	
13,300.0	90.00	180.00	6,013.0	-7,799.0	-293.7	7,804.5	0.00	0.00	
13,400.0	90.00	180.00	6,013.0	-7,899.0	-293.7	7,904.4	0.00	0.00	
13,500.0	90.00	180.00	6,013.0	-7,999.0	-293.7	8,004.4	0.00	0.00	
13,593.5	90.00	180.00	6,013.0	-8,092.5	-293.6	8,097.8	0.00	0.00	PBHL @ 13,593' MD

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11E-1402B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11E-1402B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Razor #11E-1402B PBH	0.00	0.00	6,013.0	-8,092.5	-293.6	1,550,163.07	3,459,238.06	40.831772	-103.840450
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
6,400.0	6,012.8	7" (574' FWL-2003' FSL)		7.000	7.500

Formations					
Measured Depth	Vertical Depth	Name		Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,901.2	5,852.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
600.0	600.0	0.0	0.0	KOP @ 600' MD	
800.0	799.8	-6.7	-1.8	EOB; 4 Deg Inc	
5,540.0	5,528.3	-325.7	-89.1	Start 11 Deg Bulid	
6,321.8	6,012.8	-826.8	-226.2	LP @ 6,321' MD	
6,831.9	6,012.8	-1,330.9	-293.9	EOT; 0 Deg Azi	
13,593.5	6,013.0	-8,092.5	-293.6	PBHL @ 13,593' MD	

Whiting Petroleum Corporation

Weld County, CO

S11-T10N-R58W

Razor #11E-1402B

HZ

Plan #1

Anticollision Report

22 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/19/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,593.4	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						
S11-T10N-R58W						
Razor #11E-0201A - HZ - Plan #1	600.0	600.0	82.8	80.4	34.007	CC, ES
Razor #11E-0201A - HZ - Plan #1	1,000.0	992.5	106.5	102.4	25.931	SF
Razor #11E-0202B - HZ - Plan #1	600.0	600.0	74.9	72.5	30.764	CC, ES
Razor #11E-0202B - HZ - Plan #1	800.0	797.2	83.2	80.0	25.502	SF
Razor #11E-0203A - HZ - Plan #1	600.0	600.0	81.9	79.4	33.624	CC, ES
Razor #11E-0203A - HZ - Plan #1	800.0	794.2	94.8	91.5	29.005	SF
Razor #11E-0204B - HZ - Plan #1	500.0	500.0	100.7	98.7	50.703	CC, ES
Razor #11E-0204B - HZ - Plan #1	5,540.0	5,486.6	770.6	746.0	31.343	SF
Razor #11E-1401A - HZ - Plan #1	500.0	500.0	33.0	31.1	16.646	CC, ES
Razor #11E-1401A - HZ - Plan #1	13,594.1	13,579.9	344.9	47.6	1.160	Level 2, SF
Razor #11E-1403A - HZ - Plan #1	600.0	600.0	33.0	30.6	13.572	CC, ES
Razor #11E-1403A - HZ - Plan #1	13,594.1	13,470.7	345.6	46.0	1.154	Level 2, SF
Razor #11E-1404B - HZ - Plan #1	600.0	600.0	66.1	63.7	27.144	CC, ES
Razor #11E-1404B - HZ - Plan #1	13,594.1	13,609.2	660.3	349.0	2.121	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA 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)				
0.0	0.0	0.0	0.0	0.0	0.0	-23.52	75.9	-33.0	82.8					
100.0	100.0	100.0	100.0	0.1	0.1	-23.52	75.9	-33.0	82.8	82.6	0.19	442.750		
200.0	200.0	200.0	200.0	0.3	0.3	-23.52	75.9	-33.0	82.8	82.2	0.64	130.074		
300.0	300.0	300.0	300.0	0.5	0.5	-23.52	75.9	-33.0	82.8	81.7	1.09	76.235		
400.0	400.0	400.0	400.0	0.8	0.8	-23.52	75.9	-33.0	82.8	81.3	1.54	53.918		
500.0	500.0	500.0	500.0	1.0	1.0	-23.52	75.9	-33.0	82.8	80.8	1.99	41.708		
600.0	600.0	600.0	600.0	1.2	1.2	-23.52	75.9	-33.0	82.8	80.4	2.43	34.007 CC, ES		
700.0	700.0	700.0	700.0	1.4	1.4	141.91	75.9	-33.0	84.2	81.3	2.86	29.447		
800.0	799.8	799.8	799.8	1.6	1.7	143.95	75.9	-33.0	88.3	85.1	3.27	27.045		
900.0	899.6	896.5	896.4	1.8	1.9	146.17	77.3	-33.9	95.7	92.0	3.68	26.007		
1,000.0	999.3	992.5	992.4	2.0	2.1	147.66	81.5	-36.3	106.5	102.4	4.11	25.931 SF		
1,100.0	1,099.1	1,091.4	1,091.0	2.2	2.3	148.69	87.5	-39.7	119.2	114.6	4.54	26.233		
1,200.0	1,198.9	1,190.6	1,190.0	2.5	2.6	149.52	93.5	-43.2	131.9	126.9	4.98	26.481		
1,300.0	1,298.6	1,289.8	1,288.9	2.7	2.8	150.20	99.4	-46.7	144.6	139.2	5.42	26.671		
1,400.0	1,398.4	1,389.0	1,387.8	3.0	3.0	150.77	105.4	-50.2	157.4	151.5	5.87	26.817		
1,500.0	1,498.1	1,488.1	1,486.8	3.2	3.3	151.26	111.4	-53.6	170.1	163.8	6.32	26.932		
1,600.0	1,597.9	1,587.3	1,585.7	3.5	3.5	151.68	117.4	-57.1	182.9	176.1	6.77	27.024		
1,700.0	1,697.6	1,686.5	1,684.6	3.7	3.8	152.04	123.4	-60.6	195.7	188.5	7.22	27.097		
1,800.0	1,797.4	1,785.6	1,783.6	4.0	4.0	152.36	129.4	-64.1	208.5	200.8	7.68	27.157		
1,900.0	1,897.2	1,884.8	1,882.5	4.2	4.3	152.65	135.3	-67.5	221.3	213.2	8.13	27.207		
2,000.0	1,996.9	1,984.0	1,981.4	4.5	4.5	152.90	141.3	-71.0	234.1	225.5	8.59	27.248		
2,100.0	2,096.7	2,083.2	2,080.4	4.7	4.8	153.12	147.3	-74.5	246.9	237.9	9.05	27.282		
2,200.0	2,196.4	2,182.3	2,179.3	5.0	5.0	153.33	153.3	-77.9	259.7	250.2	9.51	27.311		
2,300.0	2,296.2	2,281.5	2,278.2	5.3	5.3	153.51	159.3	-81.4	272.5	262.6	9.97	27.336		
2,400.0	2,395.9	2,380.7	2,377.1	5.5	5.5	153.68	165.3	-84.9	285.3	274.9	10.43	27.357		
2,500.0	2,495.7	2,479.8	2,476.1	5.8	5.8	153.83	171.2	-88.4	298.2	287.3	10.89	27.376		
2,600.0	2,595.4	2,579.0	2,575.0	6.0	6.0	153.97	177.2	-91.8	311.0	299.6	11.35	27.391		
2,700.0	2,695.2	2,678.2	2,673.9	6.3	6.3	154.10	183.2	-95.3	323.8	312.0	11.82	27.405		
2,800.0	2,795.0	2,777.4	2,772.9	6.6	6.5	154.22	189.2	-98.8	336.6	324.4	12.28	27.417		
2,900.0	2,894.7	2,876.5	2,871.8	6.8	6.8	154.33	195.2	-102.3	349.5	336.7	12.74	27.427		
3,000.0	2,994.5	2,975.7	2,970.7	7.1	7.0	154.43	201.1	-105.7	362.3	349.1	13.20	27.437		
3,100.0	3,094.2	3,074.9	3,069.7	7.3	7.3	154.53	207.1	-109.2	375.1	361.4	13.67	27.445		
3,200.0	3,194.0	3,174.0	3,168.6	7.6	7.5	154.62	213.1	-112.7	387.9	373.8	14.13	27.452		
3,300.0	3,293.7	3,273.2	3,267.5	7.9	7.8	154.70	219.1	-116.1	400.8	386.2	14.60	27.458		
3,400.0	3,393.5	3,372.4	3,366.4	8.1	8.0	154.78	225.1	-119.6	413.6	398.5	15.06	27.464		
3,500.0	3,493.3	3,471.6	3,465.4	8.4	8.3	154.86	231.1	-123.1	426.4	410.9	15.52	27.469		
3,600.0	3,593.0	3,570.7	3,564.3	8.7	8.5	154.92	237.0	-126.6	439.3	423.3	15.99	27.473		
3,700.0	3,692.8	3,669.9	3,663.2	8.9	8.8	154.99	243.0	-130.0	452.1	435.6	16.45	27.477		
3,800.0	3,792.5	3,769.1	3,762.2	9.2	9.1	155.05	249.0	-133.5	464.9	448.0	16.92	27.481		
3,900.0	3,892.3	3,868.2	3,861.1	9.4	9.3	155.11	255.0	-137.0	477.8	460.4	17.38	27.484		
4,000.0	3,992.0	3,967.4	3,960.0	9.7	9.6	155.17	261.0	-140.5	490.6	472.8	17.85	27.487		
4,100.0	4,091.8	4,066.6	4,059.0	10.0	9.8	155.22	267.0	-143.9	503.4	485.1	18.31	27.490		
4,200.0	4,191.5	4,165.8	4,157.9	10.2	10.1	155.27	272.9	-147.4	516.3	497.5	18.78	27.492		
4,300.0	4,291.3	4,264.9	4,256.8	10.5	10.3	155.32	278.9	-150.9	529.1	509.9	19.24	27.494		
4,400.0	4,391.1	4,364.1	4,355.7	10.8	10.6	155.36	284.9	-154.3	541.9	522.2	19.71	27.496		
4,500.0	4,490.8	4,463.3	4,454.7	11.0	10.8	155.41	290.9	-157.8	554.8	534.6	20.18	27.498		
4,600.0	4,590.6	4,562.4	4,553.6	11.3	11.1	155.45	296.9	-161.3	567.6	547.0	20.64	27.499		
4,700.0	4,690.3	4,661.6	4,652.5	11.6	11.3	155.49	302.9	-164.8	580.4	559.3	21.11	27.501		
4,800.0	4,790.1	4,760.8	4,751.5	11.8	11.6	155.52	308.8	-168.2	593.3	571.7	21.57	27.502		
4,900.0	4,889.8	4,860.0	4,850.4	12.1	11.9	155.56	314.8	-171.7	606.1	584.1	22.04	27.503		
5,000.0	4,989.6	4,959.1	4,949.3	12.3	12.1	155.60	320.8	-175.2	619.0	596.5	22.50	27.504		
5,100.0	5,089.4	5,058.3	5,048.3	12.6	12.4	155.63	326.8	-178.6	631.8	608.8	22.97	27.505		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,157.5	5,147.2	12.9	12.6	155.66	332.8	-182.1	644.6	621.2	23.44	27.506		
5,300.0	5,288.9	5,256.6	5,246.1	13.1	12.9	155.69	338.8	-185.6	657.5	633.6	23.90	27.507		
5,400.0	5,388.6	5,355.8	5,345.0	13.4	13.1	155.72	344.7	-189.1	670.3	645.9	24.37	27.508		
5,500.0	5,488.4	5,445.6	5,434.6	13.7	13.4	155.75	350.2	-192.2	683.3	658.5	24.81	27.536		
5,540.0	5,528.3	5,450.0	5,439.0	13.8	13.4	155.74	350.5	-192.4	689.9	664.9	24.92	27.685		
5,550.0	5,538.2	5,467.8	5,456.6	13.8	13.4	155.64	352.2	-193.4	691.4	666.5	24.96	27.703		
5,600.0	5,587.8	5,500.0	5,488.5	14.0	13.5	155.04	356.6	-196.0	704.6	679.7	24.92	28.268		
5,650.0	5,636.4	5,500.0	5,488.5	14.2	13.5	154.08	356.6	-196.0	723.4	698.7	24.66	29.331		
5,700.0	5,683.7	5,528.4	5,516.2	14.4	13.6	152.86	361.9	-199.0	747.6	723.2	24.36	30.695		
5,750.0	5,729.2	5,550.0	5,537.0	14.7	13.7	151.21	366.8	-201.8	776.9	752.9	23.95	32.439		
5,800.0	5,772.6	5,550.0	5,537.0	15.1	13.7	148.67	366.8	-201.8	810.7	787.2	23.51	34.481		
5,850.0	5,813.3	5,573.7	5,559.7	15.4	13.8	145.77	373.0	-205.4	848.0	824.8	23.22	36.517		
5,900.0	5,851.1	5,600.0	5,584.3	15.9	14.0	142.11	380.9	-210.0	889.0	865.8	23.19	38.332		
5,950.0	5,885.6	5,600.0	5,584.3	16.4	14.0	136.05	380.9	-210.0	931.9	908.1	23.83	39.113		
6,000.0	5,916.5	5,600.0	5,584.3	16.9	14.0	127.39	380.9	-210.0	977.1	951.6	25.46	38.384		
6,050.0	5,943.5	5,600.0	5,584.3	17.5	14.0	115.10	380.9	-210.0	1,023.8	995.7	28.13	36.390		
6,100.0	5,966.3	5,600.0	5,584.3	18.1	14.0	98.67	380.9	-210.0	1,071.4	1,040.5	30.90	34.670		
6,150.0	5,984.7	5,600.0	5,584.3	18.8	14.0	79.75	380.9	-210.0	1,119.4	1,087.7	31.71	35.306		
6,200.0	5,998.6	5,600.0	5,584.3	19.5	14.0	62.16	380.9	-210.0	1,167.4	1,137.8	29.64	39.383		
6,250.0	6,007.9	5,600.0	5,584.3	20.2	14.0	48.44	380.9	-210.0	1,214.9	1,188.8	26.11	46.538		
6,300.0	6,012.4	5,600.0	5,584.3	20.9	14.0	38.60	380.9	-210.0	1,261.6	1,238.9	22.63	55.752		
6,321.8	6,012.8	5,600.0	5,584.3	21.2	14.0	35.27	380.9	-210.0	1,281.6	1,260.3	21.32	60.112		
6,400.0	6,012.8	5,600.0	5,584.3	22.3	14.0	30.60	380.9	-210.0	1,353.6	1,333.7	19.93	67.909		
6,500.0	6,012.8	5,600.0	5,584.3	23.7	14.0	23.30	380.9	-210.0	1,447.5	1,430.3	17.25	83.899		
6,600.0	6,012.8	5,581.5	5,567.0	25.1	13.9	13.38	375.2	-206.7	1,542.4	1,529.1	13.32	115.822		
6,700.0	6,012.8	5,574.1	5,560.0	26.5	13.8	3.13	373.1	-205.5	1,638.2	1,627.6	10.67	153.585		
6,800.0	6,012.8	5,550.0	5,537.0	28.0	13.7	-7.66	366.8	-201.8	1,734.8	1,722.9	11.86	146.276		
6,831.9	6,012.8	5,550.0	5,537.0	28.5	13.7	-10.96	366.8	-201.8	1,765.4	1,752.4	13.09	134.864		
6,900.0	6,012.8	5,550.0	5,537.0	29.6	13.7	-10.96	366.8	-201.8	1,831.0	1,817.5	13.58	134.855		
7,000.0	6,012.8	5,550.0	5,537.0	31.2	13.7	-10.96	366.8	-201.8	1,927.6	1,913.3	14.31	134.712		
7,100.0	6,012.8	5,550.0	5,537.0	32.9	13.7	-10.96	366.8	-201.8	2,024.6	2,009.5	15.05	134.508		
7,200.0	6,012.8	5,550.0	5,537.0	34.6	13.7	-10.96	366.8	-201.8	2,121.8	2,106.0	15.80	134.267		
7,300.0	6,012.8	5,550.0	5,537.0	36.4	13.7	-10.96	366.8	-201.8	2,219.3	2,202.7	16.56	134.005		
7,400.0	6,012.8	5,550.0	5,537.0	38.1	13.7	-10.96	366.8	-201.8	2,317.0	2,299.7	17.33	133.733		
7,500.0	6,012.8	5,528.7	5,516.5	39.9	13.6	-10.83	361.9	-199.0	2,414.4	2,396.4	18.03	133.907		
7,600.0	6,012.8	5,524.6	5,512.5	41.7	13.6	-10.80	361.1	-198.6	2,512.3	2,493.5	18.79	133.717		
7,700.0	6,012.8	5,520.8	5,508.8	43.5	13.6	-10.77	360.3	-198.1	2,610.2	2,590.7	19.55	133.527		
7,800.0	6,012.8	5,500.0	5,488.5	45.3	13.5	-10.59	356.6	-196.0	2,708.6	2,688.4	20.24	133.838		
7,900.0	6,012.9	5,500.0	5,488.5	47.1	13.5	-10.59	356.6	-196.0	2,806.8	2,785.7	21.02	133.551		
8,000.0	6,012.9	5,500.0	5,488.5	48.9	13.5	-10.59	356.6	-196.0	2,905.0	2,883.2	21.80	133.276		
8,100.0	6,012.9	5,500.0	5,488.5	50.7	13.5	-10.59	356.6	-196.0	3,003.3	2,980.8	22.58	133.013		
8,200.0	6,012.9	5,500.0	5,488.5	52.6	13.5	-10.59	356.6	-196.0	3,101.8	3,078.4	23.36	132.763		
8,300.0	6,012.9	5,500.0	5,488.5	54.4	13.5	-10.59	356.6	-196.0	3,200.4	3,176.2	24.15	132.525		
8,400.0	6,012.9	5,500.0	5,488.5	56.2	13.5	-10.59	356.6	-196.0	3,299.0	3,274.1	24.94	132.298		
8,500.0	6,012.9	5,500.0	5,488.5	58.1	13.5	-10.59	356.6	-196.0	3,397.7	3,372.0	25.72	132.083		
8,600.0	6,012.9	5,500.0	5,488.5	60.0	13.5	-10.59	356.6	-196.0	3,496.5	3,470.0	26.51	131.877		
8,700.0	6,012.9	5,500.0	5,488.5	61.8	13.5	-10.59	356.6	-196.0	3,595.4	3,568.1	27.30	131.681		
8,800.0	6,012.9	5,500.0	5,488.5	63.7	13.5	-10.59	356.6	-196.0	3,694.3	3,666.2	28.09	131.494		
8,900.0	6,012.9	5,500.0	5,488.5	65.5	13.5	-10.59	356.6	-196.0	3,793.3	3,764.4	28.89	131.316		
9,000.0	6,012.9	5,500.0	5,488.5	67.4	13.5	-10.59	356.6	-196.0	3,892.3	3,862.6	29.68	131.146		
9,100.0	6,012.9	5,500.0	5,488.5	69.3	13.5	-10.59	356.6	-196.0	3,991.4	3,960.9	30.47	130.984		
9,200.0	6,012.9	5,500.0	5,488.5	71.2	13.5	-10.59	356.6	-196.0	4,090.5	4,059.3	31.27	130.828		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0201A - 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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
9,300.0	6,012.9	5,500.0	5,488.5	73.0	13.5	-10.59	356.6	-196.0	4,189.7	4,157.6	32.06	130.680		
9,400.0	6,012.9	5,500.0	5,488.5	74.9	13.5	-10.59	356.6	-196.0	4,288.9	4,256.0	32.86	130.538		
9,500.0	6,012.9	5,477.7	5,466.5	76.8	13.5	-10.36	353.4	-194.1	4,387.7	4,354.2	33.50	130.993		
9,600.0	6,012.9	5,476.2	5,465.0	78.7	13.5	-10.34	353.2	-194.0	4,486.9	4,452.6	34.28	130.900		
9,700.0	6,012.9	5,474.8	5,463.6	80.6	13.4	-10.33	353.0	-193.9	4,586.1	4,551.1	35.06	130.811		
9,800.0	6,012.9	5,473.4	5,462.2	82.5	13.4	-10.31	352.9	-193.8	4,685.4	4,649.6	35.84	130.725		
9,900.0	6,012.9	5,450.0	5,439.0	84.4	13.4	-10.03	350.5	-192.4	4,785.1	4,748.7	36.44	131.319		
10,000.0	6,012.9	5,450.0	5,439.0	86.2	13.4	-10.03	350.5	-192.4	4,884.4	4,847.2	37.23	131.197		
10,100.0	6,012.9	5,450.0	5,439.0	88.1	13.4	-10.03	350.5	-192.4	4,983.7	4,945.7	38.02	131.080		
10,200.0	6,012.9	5,450.0	5,439.0	90.0	13.4	-10.03	350.5	-192.4	5,083.0	5,044.2	38.81	130.967		
10,300.0	6,012.9	5,450.0	5,439.0	91.9	13.4	-10.03	350.5	-192.4	5,182.4	5,142.8	39.60	130.859		
10,400.0	6,012.9	5,450.0	5,439.0	93.8	13.4	-10.03	350.5	-192.4	5,281.8	5,241.4	40.39	130.755		
10,500.0	6,012.9	5,450.0	5,439.0	95.7	13.4	-10.03	350.5	-192.4	5,381.2	5,340.0	41.19	130.655		
10,600.0	6,012.9	5,450.0	5,439.0	97.6	13.4	-10.03	350.5	-192.4	5,480.6	5,438.6	41.98	130.558		
10,700.0	6,012.9	5,450.0	5,439.0	99.5	13.4	-10.03	350.5	-192.4	5,580.0	5,537.3	42.77	130.465		
10,800.0	6,012.9	5,450.0	5,439.0	101.4	13.4	-10.03	350.5	-192.4	5,679.5	5,635.9	43.56	130.375		
10,900.0	6,012.9	5,450.0	5,439.0	103.3	13.4	-10.03	350.5	-192.4	5,779.0	5,734.6	44.36	130.289		
11,000.0	6,012.9	5,450.0	5,439.0	105.2	13.4	-10.03	350.5	-192.4	5,878.5	5,833.3	45.15	130.205		
11,100.0	6,012.9	5,450.0	5,439.0	107.1	13.4	-10.03	350.5	-192.4	5,978.0	5,932.1	45.94	130.125		
11,200.0	6,012.9	5,450.0	5,439.0	109.0	13.4	-10.03	350.5	-192.4	6,077.5	6,030.8	46.73	130.046		
11,300.0	6,012.9	5,450.0	5,439.0	110.9	13.4	-10.03	350.5	-192.4	6,177.1	6,129.5	47.53	129.971		
11,400.0	6,012.9	5,450.0	5,439.0	112.8	13.4	-10.03	350.5	-192.4	6,276.6	6,228.3	48.32	129.898		
11,500.0	6,012.9	5,450.0	5,439.0	114.7	13.4	-10.03	350.5	-192.4	6,376.2	6,327.1	49.11	129.827		
11,600.0	6,012.9	5,450.0	5,439.0	116.6	13.4	-10.03	350.5	-192.4	6,475.8	6,425.9	49.91	129.759		
11,700.0	6,012.9	5,450.0	5,439.0	118.5	13.4	-10.03	350.5	-192.4	6,575.4	6,524.7	50.70	129.692		
11,800.0	6,012.9	5,450.0	5,439.0	120.4	13.4	-10.03	350.5	-192.4	6,675.0	6,623.5	51.49	129.628		
11,900.0	6,012.9	5,450.0	5,439.0	122.3	13.4	-10.03	350.5	-192.4	6,774.6	6,722.3	52.29	129.565		
12,000.0	6,012.9	5,450.0	5,439.0	124.3	13.4	-10.03	350.5	-192.4	6,874.3	6,821.2	53.08	129.505		
12,100.0	6,013.0	5,450.0	5,439.0	126.2	13.4	-10.03	350.5	-192.4	6,973.9	6,920.0	53.88	129.446		
12,200.0	6,013.0	5,450.0	5,439.0	128.1	13.4	-10.03	350.5	-192.4	7,073.6	7,018.9	54.67	129.389		
12,300.0	6,013.0	5,450.0	5,439.0	130.0	13.4	-10.03	350.5	-192.4	7,173.2	7,117.8	55.46	129.333		
12,400.0	6,013.0	5,450.0	5,439.0	131.9	13.4	-10.03	350.5	-192.4	7,272.9	7,216.7	56.26	129.280		
12,500.0	6,013.0	5,450.0	5,439.0	133.8	13.4	-10.03	350.5	-192.4	7,372.6	7,315.5	57.05	129.227		
12,600.0	6,013.0	5,450.0	5,439.0	135.7	13.4	-10.03	350.5	-192.4	7,472.3	7,414.4	57.85	129.176		
12,700.0	6,013.0	5,450.0	5,439.0	137.6	13.4	-10.03	350.5	-192.4	7,572.0	7,513.3	58.64	129.126		
12,800.0	6,013.0	5,450.0	5,439.0	139.5	13.4	-10.03	350.5	-192.4	7,671.7	7,612.3	59.43	129.078		
12,900.0	6,013.0	5,450.0	5,439.0	141.4	13.4	-10.03	350.5	-192.4	7,771.4	7,711.2	60.23	129.031		
13,000.0	6,013.0	5,450.0	5,439.0	143.3	13.4	-10.03	350.5	-192.4	7,871.1	7,810.1	61.02	128.985		
13,100.0	6,013.0	5,450.0	5,439.0	145.3	13.4	-10.03	350.5	-192.4	7,970.9	7,909.0	61.82	128.941		
13,200.0	6,013.0	5,450.0	5,439.0	147.2	13.4	-10.03	350.5	-192.4	8,070.6	8,008.0	62.61	128.897		
13,300.0	6,013.0	5,450.0	5,439.0	149.1	13.4	-10.03	350.5	-192.4	8,170.3	8,106.9	63.41	128.855		
13,400.0	6,013.0	5,444.2	5,433.2	151.0	13.4	-9.96	350.1	-192.2	8,270.1	8,205.9	64.12	128.977		
13,500.0	6,013.0	5,443.7	5,432.7	152.9	13.4	-9.95	350.1	-192.2	8,369.8	8,304.9	64.91	128.950		
13,593.4	6,013.0	5,438.0	5,427.0	154.7	13.3	-9.88	349.7	-191.9	8,463.1	8,397.5	65.57	129.076		
13,594.1	6,013.0	5,438.0	5,427.0	154.7	13.3	-9.88	349.7	-191.9	8,463.8	8,398.2	65.57	129.081		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-ISCWSA 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)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	74.9	0.0	74.9					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	74.9	0.0	74.9	74.7	0.19	400.529		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	74.9	0.0	74.9	74.3	0.64	117.670		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	74.9	0.0	74.9	73.8	1.09	68.965		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	74.9	0.0	74.9	73.4	1.54	48.776		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	74.9	0.0	74.9	72.9	1.99	37.731		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	74.9	0.0	74.9	72.5	2.43	30.764	CC, ES	
700.0	700.0	700.0	700.0	1.4	1.4	165.04	74.9	0.0	76.6	73.7	2.86	26.789		
800.0	799.8	797.2	797.2	1.6	1.7	165.53	76.5	-0.5	83.2	80.0	3.26	25.502	SF	
900.0	899.6	893.7	893.6	1.8	1.9	165.54	81.1	-2.1	94.8	91.1	3.68	25.738		
1,000.0	999.3	992.6	992.2	2.0	2.1	165.21	87.6	-4.4	108.0	103.9	4.11	26.293		
1,100.0	1,099.1	1,091.7	1,091.1	2.2	2.3	164.94	94.1	-6.6	121.3	116.8	4.54	26.730		
1,200.0	1,198.9	1,190.9	1,190.0	2.5	2.6	164.73	100.7	-8.9	134.6	129.6	4.97	27.062		
1,300.0	1,298.6	1,290.0	1,288.9	2.7	2.8	164.56	107.2	-11.1	147.9	142.5	5.41	27.317		
1,400.0	1,398.4	1,389.1	1,387.7	3.0	3.1	164.41	113.8	-13.4	161.2	155.3	5.86	27.518		
1,500.0	1,498.1	1,488.2	1,486.6	3.2	3.3	164.29	120.3	-15.6	174.5	168.2	6.30	27.679		
1,600.0	1,597.9	1,587.3	1,585.5	3.5	3.6	164.18	126.8	-17.9	187.8	181.0	6.75	27.809		
1,700.0	1,697.6	1,686.4	1,684.3	3.7	3.8	164.09	133.4	-20.2	201.1	193.9	7.20	27.917		
1,800.0	1,797.4	1,785.5	1,783.2	4.0	4.1	164.01	139.9	-22.4	214.4	206.7	7.66	28.006		
1,900.0	1,897.2	1,884.6	1,882.1	4.2	4.3	163.94	146.4	-24.7	227.7	219.6	8.11	28.081		
2,000.0	1,996.9	1,983.7	1,980.9	4.5	4.5	163.88	153.0	-26.9	241.0	232.4	8.56	28.145		
2,100.0	2,096.7	2,082.9	2,079.8	4.7	4.8	163.82	159.5	-29.2	254.3	245.3	9.02	28.200		
2,200.0	2,196.4	2,182.0	2,178.7	5.0	5.1	163.77	166.0	-31.4	267.6	258.1	9.47	28.248		
2,300.0	2,296.2	2,281.1	2,277.6	5.3	5.3	163.73	172.6	-33.7	280.9	271.0	9.93	28.289		
2,400.0	2,395.9	2,380.2	2,376.4	5.5	5.6	163.68	179.1	-35.9	294.2	283.8	10.39	28.325		
2,500.0	2,495.7	2,479.3	2,475.3	5.8	5.8	163.65	185.7	-38.2	307.5	296.6	10.84	28.357		
2,600.0	2,595.4	2,578.4	2,574.2	6.0	6.1	163.61	192.2	-40.4	320.8	309.5	11.30	28.385		
2,700.0	2,695.2	2,677.5	2,673.0	6.3	6.3	163.58	198.7	-42.7	334.1	322.3	11.76	28.410		
2,800.0	2,795.0	2,776.6	2,771.9	6.6	6.6	163.55	205.3	-44.9	347.4	335.2	12.22	28.432		
2,900.0	2,894.7	2,875.8	2,870.8	6.8	6.8	163.52	211.8	-47.2	360.7	348.0	12.68	28.452		
3,000.0	2,994.5	2,974.9	2,969.6	7.1	7.1	163.50	218.3	-49.4	374.0	360.8	13.14	28.471		
3,100.0	3,094.2	3,074.0	3,068.5	7.3	7.3	163.47	224.9	-51.7	387.3	373.7	13.59	28.487		
3,200.0	3,194.0	3,173.1	3,167.4	7.6	7.6	163.45	231.4	-53.9	400.6	386.5	14.05	28.502		
3,300.0	3,293.7	3,272.2	3,266.3	7.9	7.8	163.43	237.9	-56.2	413.9	399.4	14.51	28.516		
3,400.0	3,393.5	3,371.3	3,365.1	8.1	8.1	163.41	244.5	-58.5	427.2	412.2	14.97	28.528		
3,500.0	3,493.3	3,470.4	3,464.0	8.4	8.3	163.39	251.0	-60.7	440.5	425.0	15.43	28.539		
3,600.0	3,593.0	3,569.5	3,562.9	8.7	8.6	163.37	257.5	-63.0	453.8	437.9	15.89	28.550		
3,700.0	3,692.8	3,668.6	3,661.7	8.9	8.8	163.36	264.1	-65.2	467.1	450.7	16.35	28.560		
3,800.0	3,792.5	3,767.8	3,760.6	9.2	9.1	163.34	270.6	-67.5	480.4	463.6	16.81	28.569		
3,900.0	3,892.3	3,866.9	3,859.5	9.4	9.3	163.33	277.2	-69.7	493.7	476.4	17.28	28.577		
4,000.0	3,992.0	3,966.0	3,958.3	9.7	9.6	163.31	283.7	-72.0	507.0	489.2	17.74	28.584		
4,100.0	4,091.8	4,065.1	4,057.2	10.0	9.9	163.30	290.2	-74.2	520.3	502.1	18.20	28.592		
4,200.0	4,191.5	4,164.2	4,156.1	10.2	10.1	163.29	296.8	-76.5	533.6	514.9	18.66	28.598		
4,300.0	4,291.3	4,263.3	4,255.0	10.5	10.4	163.28	303.3	-78.7	546.9	527.8	19.12	28.605		
4,400.0	4,391.1	4,362.4	4,353.8	10.8	10.6	163.26	309.8	-81.0	560.2	540.6	19.58	28.610		
4,500.0	4,490.8	4,461.5	4,452.7	11.0	10.9	163.25	316.4	-83.2	573.5	553.4	20.04	28.616		
4,600.0	4,590.6	4,560.6	4,551.6	11.3	11.1	163.24	322.9	-85.5	586.8	566.3	20.50	28.621		
4,700.0	4,690.3	4,659.8	4,650.4	11.6	11.4	163.23	329.4	-87.7	600.1	579.1	20.96	28.626		
4,800.0	4,790.1	4,758.9	4,749.3	11.8	11.6	163.22	336.0	-90.0	613.4	592.0	21.42	28.630		
4,900.0	4,889.8	4,858.0	4,848.2	12.1	11.9	163.22	342.5	-92.3	626.7	604.8	21.89	28.634		
5,000.0	4,989.6	4,957.1	4,947.0	12.3	12.1	163.21	349.1	-94.5	640.0	617.6	22.35	28.638		
5,100.0	5,089.4	5,056.2	5,045.9	12.6	12.4	163.20	355.6	-96.8	653.3	630.5	22.81	28.642		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,155.3	5,144.8	12.9	12.7	163.19	362.1	-99.0	666.6	643.3	23.27	28.646		
5,300.0	5,288.9	5,254.4	5,243.7	13.1	12.9	163.18	368.7	-101.3	679.9	656.2	23.73	28.649		
5,400.0	5,388.6	5,353.5	5,342.5	13.4	13.2	163.18	375.2	-103.5	693.2	669.0	24.19	28.653		
5,500.0	5,488.4	5,452.6	5,441.4	13.7	13.4	163.17	381.7	-105.8	706.5	681.8	24.65	28.656		
5,540.0	5,528.3	5,492.3	5,480.9	13.8	13.5	163.17	384.4	-106.7	711.8	687.0	24.84	28.657		
5,550.0	5,538.2	5,502.2	5,490.8	13.8	13.5	163.12	385.0	-106.9	713.2	688.4	24.85	28.697		
5,600.0	5,587.8	5,544.8	5,533.3	14.0	13.7	162.86	387.8	-107.9	723.1	698.3	24.80	29.157		
5,650.0	5,636.4	5,595.1	5,583.5	14.2	13.7	162.38	389.7	-108.5	738.7	714.1	24.52	30.127		
5,700.0	5,683.7	5,641.1	5,629.2	14.4	13.8	161.67	392.2	-109.4	760.2	736.1	24.07	31.585		
5,750.0	5,729.2	5,690.0	5,678.0	14.7	13.8	160.64	394.7	-110.2	787.1	763.6	23.47	33.541		
5,800.0	5,772.6	5,717.1	5,704.8	15.1	13.9	159.25	397.9	-111.4	818.9	796.1	22.77	35.960		
5,850.0	5,813.3	5,760.7	5,748.0	15.4	13.9	157.32	400.9	-112.4	855.0	832.9	22.05	38.778		
5,900.0	5,851.1	5,800.0	5,788.0	15.9	14.0	154.80	405.6	-114.0	894.8	873.4	21.42	41.766		
5,950.0	5,885.6	5,830.0	5,818.0	16.4	14.0	150.67	405.6	-114.0	937.5	916.3	21.18	44.263		
6,000.0	5,916.5	5,860.0	5,848.0	16.9	14.0	144.38	405.6	-114.0	982.7	960.9	21.81	45.057		
6,050.0	5,943.5	5,890.0	5,878.0	17.5	14.0	134.32	405.6	-114.0	1,029.8	1,005.7	24.06	42.804		
6,100.0	5,966.3	5,913.1	5,901.0	18.1	14.1	120.92	410.6	-115.7	1,077.6	1,049.9	27.69	38.912		
6,150.0	5,984.7	5,930.0	5,918.0	18.8	14.1	97.83	411.2	-115.9	1,126.4	1,094.4	32.06	35.137		
6,200.0	5,998.6	5,940.0	5,928.0	19.5	14.1	70.55	411.3	-115.9	1,175.5	1,143.8	31.62	37.172		
6,250.0	6,007.9	5,948.9	5,937.0	20.2	14.1	48.98	410.9	-115.8	1,224.3	1,197.7	26.54	46.132		
6,300.0	6,012.4	5,950.0	5,938.0	20.9	14.0	33.71	405.6	-114.0	1,272.8	1,252.1	20.66	61.596		
6,321.8	6,012.8	5,950.0	5,938.0	21.2	14.0	29.98	405.6	-114.0	1,293.5	1,274.4	19.07	67.837		
6,400.0	6,012.8	5,950.0	5,938.0	22.3	14.0	23.73	405.6	-114.0	1,367.6	1,350.8	16.77	81.538		
6,500.0	6,012.8	5,950.0	5,938.0	23.7	14.0	14.06	405.6	-114.0	1,463.5	1,450.6	12.98	112.767		
6,600.0	6,012.8	5,950.0	5,938.0	25.1	14.0	2.68	405.6	-114.0	1,560.3	1,550.3	9.99	156.217		
6,700.0	6,012.8	5,950.0	5,938.0	26.5	14.0	-9.69	405.6	-114.0	1,657.5	1,645.6	11.95	138.728		
6,800.0	6,012.8	5,950.0	5,938.0	28.0	14.0	-21.90	405.6	-114.0	1,754.8	1,736.8	18.04	97.262		
6,831.9	6,012.8	5,950.0	5,938.0	28.5	14.0	-25.57	405.6	-114.0	1,785.8	1,765.6	20.20	88.417		
6,900.0	6,012.8	5,927.5	5,915.0	29.6	13.9	-24.56	400.2	-112.1	1,851.6	1,831.3	20.24	91.493		
7,000.0	6,012.8	5,922.5	5,910.0	31.2	13.9	-24.34	399.1	-111.7	1,948.8	1,927.8	21.03	92.673		
7,100.0	6,012.8	5,900.0	5,888.0	32.9	13.8	-23.39	394.7	-110.2	2,046.7	2,025.3	21.39	95.686		
7,200.0	6,012.8	5,900.0	5,888.0	34.6	13.8	-23.39	394.7	-110.2	2,144.2	2,121.9	22.32	96.077		
7,300.0	6,012.8	5,900.0	5,888.0	36.4	13.8	-23.39	394.7	-110.2	2,242.0	2,218.7	23.26	96.404		
7,400.0	6,012.8	5,900.0	5,888.0	38.1	13.8	-23.39	394.7	-110.2	2,339.9	2,315.7	24.20	96.678		
7,500.0	6,012.8	5,900.0	5,888.0	39.9	13.8	-23.39	394.7	-110.2	2,438.0	2,412.9	25.16	96.910		
7,600.0	6,012.8	5,900.0	5,888.0	41.7	13.8	-23.39	394.7	-110.2	2,536.3	2,510.1	26.12	97.108		
7,700.0	6,012.8	5,900.0	5,888.0	43.5	13.8	-23.39	394.7	-110.2	2,634.6	2,607.6	27.08	97.276		
7,800.0	6,012.8	5,900.0	5,888.0	45.3	13.8	-23.39	394.7	-110.2	2,733.2	2,705.1	28.06	97.421		
7,900.0	6,012.9	5,900.0	5,888.0	47.1	13.8	-23.39	394.7	-110.2	2,831.8	2,802.7	29.03	97.546		
8,000.0	6,012.9	5,900.0	5,888.0	48.9	13.8	-23.39	394.7	-110.2	2,930.5	2,900.4	30.01	97.654		
8,100.0	6,012.9	5,900.0	5,888.0	50.7	13.8	-23.39	394.7	-110.2	3,029.2	2,998.3	30.99	97.748		
8,200.0	6,012.9	5,900.0	5,888.0	52.6	13.8	-23.39	394.7	-110.2	3,128.1	3,096.1	31.97	97.830		
8,300.0	6,012.9	5,900.0	5,888.0	54.4	13.8	-23.39	394.7	-110.2	3,227.0	3,194.1	32.96	97.901		
8,400.0	6,012.9	5,900.0	5,888.0	56.2	13.8	-23.39	394.7	-110.2	3,326.0	3,292.1	33.95	97.964		
8,500.0	6,012.9	5,777.2	5,765.5	58.1	13.7	-22.46	391.2	-109.0	3,424.6	3,390.4	34.16	100.238		
8,600.0	6,012.9	5,757.4	5,745.7	60.0	13.7	-22.39	391.0	-109.0	3,523.6	3,488.5	35.08	100.450		
8,700.0	6,012.9	5,737.7	5,726.0	61.8	13.7	-22.32	390.7	-108.9	3,622.6	3,586.7	35.99	100.646		
8,800.0	6,012.9	5,727.0	5,715.4	63.7	13.7	-22.26	390.5	-108.8	3,721.8	3,684.8	36.91	100.829		
8,900.0	6,012.9	5,550.0	5,538.5	65.5	13.7	-21.41	388.2	-108.0	3,821.3	3,784.2	37.12	102.945		
9,000.0	6,012.9	5,550.0	5,538.5	67.4	13.7	-21.41	388.2	-108.0	3,920.5	3,882.4	38.08	102.948		
9,100.0	6,012.9	5,550.0	5,538.5	69.3	13.7	-21.41	388.2	-108.0	4,019.6	3,980.6	39.04	102.950		
9,200.0	6,012.9	5,550.0	5,538.5	71.2	13.7	-21.41	388.2	-108.0	4,118.9	4,078.8	40.01	102.950		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0202B - 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		
9,300.0	6,012.9	5,550.0	5,538.5	73.0	13.7	-21.41	388.2	-108.0	4,218.1	4,177.1	40.97	102.948		
9,400.0	6,012.9	5,550.0	5,538.5	74.9	13.7	-21.41	388.2	-108.0	4,317.4	4,275.5	41.94	102.946		
9,500.0	6,012.9	5,550.0	5,538.5	76.8	13.7	-21.41	388.2	-108.0	4,416.7	4,373.8	42.90	102.942		
9,600.0	6,012.9	5,550.0	5,538.5	78.7	13.7	-21.41	388.2	-108.0	4,516.1	4,472.2	43.87	102.938		
9,700.0	6,012.9	5,550.0	5,538.5	80.6	13.7	-21.41	388.2	-108.0	4,615.4	4,570.6	44.84	102.933		
9,800.0	6,012.9	5,550.0	5,538.5	82.5	13.7	-21.41	388.2	-108.0	4,714.8	4,669.0	45.81	102.928		
9,900.0	6,012.9	5,550.0	5,538.5	84.4	13.7	-21.41	388.2	-108.0	4,814.3	4,767.5	46.78	102.922		
10,000.0	6,012.9	5,550.0	5,538.5	86.2	13.7	-21.41	388.2	-108.0	4,913.7	4,866.0	47.74	102.916		
10,100.0	6,012.9	5,550.0	5,538.5	88.1	13.7	-21.41	388.2	-108.0	5,013.2	4,964.5	48.71	102.909		
10,200.0	6,012.9	5,550.0	5,538.5	90.0	13.7	-21.41	388.2	-108.0	5,112.7	5,063.0	49.68	102.903		
10,300.0	6,012.9	5,550.0	5,538.5	91.9	13.7	-21.41	388.2	-108.0	5,212.2	5,161.5	50.66	102.896		
10,400.0	6,012.9	5,550.0	5,538.5	93.8	13.7	-21.41	388.2	-108.0	5,311.7	5,260.1	51.63	102.889		
10,500.0	6,012.9	5,550.0	5,538.5	95.7	13.7	-21.41	388.2	-108.0	5,411.3	5,358.7	52.60	102.881		
10,600.0	6,012.9	5,550.0	5,538.5	97.6	13.7	-21.41	388.2	-108.0	5,510.8	5,457.3	53.57	102.874		
10,700.0	6,012.9	5,550.0	5,538.5	99.5	13.7	-21.41	388.2	-108.0	5,610.4	5,555.9	54.54	102.866		
10,800.0	6,012.9	5,550.0	5,538.5	101.4	13.7	-21.41	388.2	-108.0	5,710.0	5,654.5	55.51	102.859		
10,900.0	6,012.9	5,550.0	5,538.5	103.3	13.7	-21.41	388.2	-108.0	5,809.6	5,753.1	56.49	102.852		
11,000.0	6,012.9	5,550.0	5,538.5	105.2	13.7	-21.41	388.2	-108.0	5,909.2	5,851.8	57.46	102.844		
11,100.0	6,012.9	5,550.0	5,538.5	107.1	13.7	-21.41	388.2	-108.0	6,008.9	5,950.4	58.43	102.837		
11,200.0	6,012.9	5,550.0	5,538.5	109.0	13.7	-21.41	388.2	-108.0	6,108.5	6,049.1	59.40	102.829		
11,300.0	6,012.9	5,550.0	5,538.5	110.9	13.7	-21.41	388.2	-108.0	6,208.2	6,147.8	60.38	102.822		
11,400.0	6,012.9	5,550.0	5,538.5	112.8	13.7	-21.41	388.2	-108.0	6,307.8	6,246.5	61.35	102.814		
11,500.0	6,012.9	5,545.3	5,533.8	114.7	13.7	-21.23	387.9	-107.9	6,407.5	6,345.4	62.08	103.211		
11,600.0	6,012.9	5,544.7	5,533.2	116.6	13.7	-21.21	387.8	-107.9	6,507.2	6,444.1	63.02	103.254		
11,700.0	6,012.9	5,540.0	5,528.5	118.5	13.6	-21.03	387.5	-107.8	6,606.9	6,543.1	63.74	103.648		
11,800.0	6,012.9	5,540.0	5,528.5	120.4	13.6	-21.03	387.5	-107.8	6,706.6	6,641.9	64.71	103.639		
11,900.0	6,012.9	5,540.0	5,528.5	122.3	13.6	-21.03	387.5	-107.8	6,806.3	6,740.6	65.68	103.630		
12,000.0	6,012.9	5,540.0	5,528.5	124.3	13.6	-21.03	387.5	-107.8	6,906.0	6,839.3	66.65	103.622		
12,100.0	6,013.0	5,540.0	5,528.5	126.2	13.6	-21.03	387.5	-107.8	7,005.7	6,938.1	67.61	103.613		
12,200.0	6,013.0	5,540.0	5,528.5	128.1	13.6	-21.03	387.5	-107.8	7,105.4	7,036.9	68.58	103.605		
12,300.0	6,013.0	5,540.0	5,528.5	130.0	13.6	-21.03	387.5	-107.8	7,205.2	7,135.6	69.55	103.597		
12,400.0	6,013.0	5,540.0	5,528.5	131.9	13.6	-21.03	387.5	-107.8	7,304.9	7,234.4	70.52	103.589		
12,500.0	6,013.0	5,540.0	5,528.5	133.8	13.6	-21.03	387.5	-107.8	7,404.7	7,333.2	71.49	103.581		
12,600.0	6,013.0	5,533.8	5,522.3	135.7	13.6	-20.80	387.1	-107.6	7,504.4	7,432.3	72.09	104.092		
12,700.0	6,013.0	5,527.2	5,515.7	137.6	13.6	-20.57	386.7	-107.5	7,604.2	7,531.5	72.68	104.623		
12,800.0	6,013.0	5,520.6	5,509.2	139.5	13.6	-20.33	386.2	-107.3	7,703.9	7,630.7	73.27	105.142		
12,900.0	6,013.0	5,514.0	5,502.6	141.4	13.6	-20.11	385.8	-107.2	7,803.7	7,729.8	73.86	105.650		
13,000.0	6,013.0	5,507.4	5,496.0	143.3	13.6	-19.89	385.3	-107.0	7,903.5	7,829.0	74.46	106.149		
13,100.0	6,013.0	5,500.8	5,489.4	145.3	13.5	-19.67	384.9	-106.9	8,003.2	7,928.2	75.05	106.636		
13,200.0	6,013.0	5,494.2	5,482.8	147.2	13.5	-19.46	384.5	-106.7	8,103.0	8,027.3	75.65	107.114		
13,300.0	6,013.0	5,487.6	5,476.3	149.1	13.5	-19.25	384.0	-106.6	8,202.7	8,126.5	76.25	107.583		
13,400.0	6,013.0	5,481.0	5,469.7	151.0	13.5	-19.05	383.6	-106.4	8,302.5	8,225.6	76.85	108.041		
13,500.0	6,013.0	5,474.4	5,463.1	152.9	13.5	-18.85	383.2	-106.3	8,402.2	8,324.8	77.45	108.490		
13,593.4	6,013.0	5,468.3	5,457.0	154.7	13.5	-18.67	382.8	-106.1	8,495.5	8,417.5	78.01	108.902		
13,594.1	6,013.0	5,468.2	5,456.9	154.7	13.5	-18.67	382.8	-106.1	8,496.2	8,418.2	78.01	108.908		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0203A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	23.81	74.9	33.0	81.9					
100.0	100.0	100.0	100.0	0.1	0.1	23.81	74.9	33.0	81.9	81.7	0.19	437.750		
200.0	200.0	200.0	200.0	0.3	0.3	23.81	74.9	33.0	81.9	81.2	0.64	128.608		
300.0	300.0	300.0	300.0	0.5	0.5	23.81	74.9	33.0	81.9	80.8	1.09	75.376		
400.0	400.0	400.0	400.0	0.8	0.8	23.81	74.9	33.0	81.9	80.3	1.54	53.310		
500.0	500.0	500.0	500.0	1.0	1.0	23.81	74.9	33.0	81.9	79.9	1.99	41.238		
600.0	600.0	600.0	600.0	1.2	1.2	23.81	74.9	33.0	81.9	79.4	2.43	33.624 CC, ES		
700.0	700.0	697.4	697.4	1.4	1.4	-172.19	76.5	32.9	85.1	82.2	2.86	29.796		
800.0	799.8	794.2	794.1	1.6	1.7	-174.01	81.5	32.5	94.8	91.5	3.27	29.005 SF		
900.0	899.6	893.1	892.7	1.8	1.9	-176.03	88.3	31.8	108.0	104.3	3.69	29.293		
1,000.0	999.3	992.2	991.5	2.0	2.1	-177.62	95.2	31.2	121.3	117.2	4.11	29.522		
1,100.0	1,099.1	1,091.2	1,090.3	2.2	2.4	-178.89	102.1	30.6	134.8	130.2	4.54	29.682		
1,200.0	1,198.9	1,190.3	1,189.2	2.5	2.6	-179.94	109.0	30.0	148.2	143.2	4.97	29.794		
1,300.0	1,298.6	1,289.3	1,288.0	2.7	2.8	179.20	115.8	29.4	161.7	156.3	5.41	29.874		
1,400.0	1,398.4	1,388.4	1,386.8	3.0	3.1	178.46	122.7	28.7	175.2	169.4	5.85	29.933		
1,500.0	1,498.1	1,487.4	1,485.6	3.2	3.3	177.83	129.6	28.1	188.8	182.5	6.30	29.974		
1,600.0	1,597.9	1,586.5	1,584.4	3.5	3.6	177.29	136.5	27.5	202.4	195.6	6.74	30.006		
1,700.0	1,697.6	1,685.6	1,683.2	3.7	3.8	176.81	143.4	26.9	216.0	208.8	7.19	30.029		
1,800.0	1,797.4	1,784.6	1,782.1	4.0	4.1	176.39	150.3	26.3	229.6	221.9	7.64	30.047		
1,900.0	1,897.2	1,883.7	1,880.9	4.2	4.3	176.02	157.1	25.6	243.2	235.1	8.09	30.059		
2,000.0	1,996.9	1,982.7	1,979.7	4.5	4.6	175.69	164.0	25.0	256.8	248.2	8.54	30.068		
2,100.0	2,096.7	2,081.8	2,078.5	4.7	4.8	175.39	170.9	24.4	270.4	261.4	8.99	30.075		
2,200.0	2,196.4	2,180.8	2,177.3	5.0	5.1	175.11	177.8	23.8	284.1	274.6	9.44	30.079		
2,300.0	2,296.2	2,279.9	2,276.1	5.3	5.3	174.87	184.7	23.2	297.7	287.8	9.90	30.082		
2,400.0	2,395.9	2,379.0	2,375.0	5.5	5.6	174.64	191.5	22.6	311.3	301.0	10.35	30.084		
2,500.0	2,495.7	2,478.0	2,473.8	5.8	5.8	174.44	198.4	21.9	325.0	314.2	10.80	30.085		
2,600.0	2,595.4	2,577.1	2,572.6	6.0	6.1	174.25	205.3	21.3	338.6	327.4	11.26	30.084		
2,700.0	2,695.2	2,676.1	2,671.4	6.3	6.3	174.07	212.2	20.7	352.3	340.6	11.71	30.084		
2,800.0	2,795.0	2,775.2	2,770.2	6.6	6.6	173.91	219.1	20.1	366.0	353.8	12.17	30.083		
2,900.0	2,894.7	2,874.3	2,869.0	6.8	6.9	173.76	226.0	19.5	379.6	367.0	12.62	30.081		
3,000.0	2,994.5	2,973.3	2,967.9	7.1	7.1	173.62	232.8	18.8	393.3	380.2	13.08	30.080		
3,100.0	3,094.2	3,072.4	3,066.7	7.3	7.4	173.49	239.7	18.2	407.0	393.4	13.53	30.078		
3,200.0	3,194.0	3,171.4	3,165.5	7.6	7.6	173.37	246.6	17.6	420.6	406.6	13.99	30.076		
3,300.0	3,293.7	3,270.5	3,264.3	7.9	7.9	173.26	253.5	17.0	434.3	419.9	14.44	30.074		
3,400.0	3,393.5	3,369.5	3,363.1	8.1	8.1	173.15	260.4	16.4	448.0	433.1	14.90	30.071		
3,500.0	3,493.3	3,468.6	3,461.9	8.4	8.4	173.05	267.3	15.7	461.7	446.3	15.35	30.069		
3,600.0	3,593.0	3,567.7	3,560.7	8.7	8.6	172.96	274.1	15.1	475.3	459.5	15.81	30.067		
3,700.0	3,692.8	3,666.7	3,659.6	8.9	8.9	172.87	281.0	14.5	489.0	472.7	16.27	30.064		
3,800.0	3,792.5	3,765.8	3,758.4	9.2	9.1	172.78	287.9	13.9	502.7	486.0	16.72	30.062		
3,900.0	3,892.3	3,864.8	3,857.2	9.4	9.4	172.70	294.8	13.3	516.4	499.2	17.18	30.059		
4,000.0	3,992.0	3,963.9	3,956.0	9.7	9.6	172.62	301.7	12.6	530.0	512.4	17.63	30.057		
4,100.0	4,091.8	4,062.9	4,054.8	10.0	9.9	172.55	308.5	12.0	543.7	525.6	18.09	30.055		
4,200.0	4,191.5	4,162.0	4,153.6	10.2	10.1	172.48	315.4	11.4	557.4	538.9	18.55	30.052		
4,300.0	4,291.3	4,261.1	4,252.5	10.5	10.4	172.42	322.3	10.8	571.1	552.1	19.00	30.050		
4,400.0	4,391.1	4,360.1	4,351.3	10.8	10.6	172.36	329.2	10.2	584.8	565.3	19.46	30.048		
4,500.0	4,490.8	4,459.2	4,450.1	11.0	10.9	172.30	336.1	9.6	598.5	578.5	19.92	30.046		
4,600.0	4,590.6	4,558.2	4,548.9	11.3	11.2	172.24	343.0	8.9	612.1	591.8	20.38	30.043		
4,700.0	4,690.3	4,657.3	4,647.7	11.6	11.4	172.19	349.8	8.3	625.8	605.0	20.83	30.041		
4,800.0	4,790.1	4,756.3	4,746.5	11.8	11.7	172.13	356.7	7.7	639.5	618.2	21.29	30.039		
4,900.0	4,889.8	4,855.4	4,845.4	12.1	11.9	172.08	363.6	7.1	653.2	631.5	21.75	30.037		
5,000.0	4,989.6	4,954.5	4,944.2	12.3	12.2	172.04	370.5	6.5	666.9	644.7	22.20	30.035		
5,100.0	5,089.4	5,053.5	5,043.0	12.6	12.4	171.99	377.4	5.8	680.6	657.9	22.66	30.033		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0203A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,152.6	5,141.8	12.9	12.7	171.95	384.2	5.2	694.3	671.1	23.12	30.031		
5,300.0	5,288.9	5,251.6	5,240.6	13.1	12.9	171.90	391.1	4.6	707.9	684.4	23.58	30.029		
5,400.0	5,388.6	5,350.7	5,339.4	13.4	13.2	171.86	398.0	4.0	721.6	697.6	24.03	30.027		
5,500.0	5,488.4	5,443.5	5,432.0	13.7	13.4	171.83	404.5	3.4	735.4	710.9	24.48	30.044		
5,540.0	5,528.3	5,450.0	5,438.5	13.8	13.4	171.82	405.0	3.3	742.0	717.4	24.58	30.181		
5,550.0	5,538.2	5,450.0	5,438.5	13.8	13.4	171.79	405.0	3.3	744.0	719.4	24.57	30.277		
5,600.0	5,587.8	5,484.2	5,472.4	14.0	13.5	171.54	409.2	3.0	757.0	732.5	24.49	30.915		
5,650.0	5,636.4	5,500.0	5,488.0	14.2	13.6	171.19	411.9	2.7	776.5	752.4	24.16	32.146		
5,700.0	5,683.7	5,520.4	5,508.0	14.4	13.7	170.69	416.1	2.4	801.8	778.2	23.65	33.904		
5,750.0	5,729.2	5,550.0	5,536.6	14.7	13.8	170.03	423.5	1.7	832.6	809.6	22.98	36.226		
5,800.0	5,772.6	5,550.0	5,536.6	15.1	13.8	169.06	423.5	1.7	867.4	845.3	22.09	39.268		
5,850.0	5,813.3	5,550.0	5,536.6	15.4	13.8	167.65	423.5	1.7	906.6	885.5	21.08	42.999		
5,900.0	5,851.1	5,571.2	5,556.8	15.9	13.9	165.83	429.8	1.1	948.7	928.7	20.07	47.266		
5,950.0	5,885.6	5,578.8	5,564.0	16.4	13.9	162.90	432.3	0.9	993.7	974.5	19.17	51.834		
6,000.0	5,916.5	5,600.0	5,583.9	16.9	14.0	158.66	439.7	0.2	1,041.0	1,022.3	18.73	55.593		
6,050.0	5,943.5	5,600.0	5,583.9	17.5	14.0	149.63	439.7	0.2	1,089.3	1,069.3	20.01	54.432		
6,100.0	5,966.3	5,600.0	5,583.9	18.1	14.0	128.53	439.7	0.2	1,138.6	1,112.6	25.99	43.806		
6,150.0	5,984.7	5,600.0	5,583.9	18.8	14.0	80.76	439.7	0.2	1,188.3	1,156.0	32.33	36.761		
6,200.0	5,998.6	5,600.0	5,583.9	19.5	14.0	40.73	439.7	0.2	1,238.0	1,214.6	23.36	52.999		
6,250.0	6,007.9	5,600.0	5,583.9	20.2	14.0	24.53	439.7	0.2	1,287.2	1,270.6	16.58	77.648		
6,300.0	6,012.4	5,600.0	5,583.9	20.9	14.0	17.14	439.7	0.2	1,335.5	1,322.4	13.11	101.859		
6,321.8	6,012.8	5,600.0	5,583.9	21.2	14.0	15.11	439.7	0.2	1,356.2	1,344.0	12.20	111.177		
6,400.0	6,012.8	5,575.9	5,561.3	22.3	13.9	7.45	431.3	1.0	1,429.7	1,419.9	9.78	146.184		
6,500.0	6,012.8	5,550.0	5,536.6	23.7	13.8	-2.00	423.5	1.7	1,525.2	1,516.0	9.14	166.824		
6,600.0	6,012.8	5,550.0	5,536.6	25.1	13.8	-11.29	423.5	1.7	1,620.4	1,608.5	11.94	135.685		
6,700.0	6,012.8	5,550.0	5,536.6	26.5	13.8	-20.54	423.5	1.7	1,715.9	1,699.2	16.73	102.550		
6,800.0	6,012.8	5,550.0	5,536.6	28.0	13.8	-29.24	423.5	1.7	1,811.3	1,789.4	21.98	82.424		
6,831.9	6,012.8	5,550.0	5,536.6	28.5	13.8	-31.83	423.5	1.7	1,841.7	1,818.1	23.60	78.033		
6,900.0	6,012.8	5,550.0	5,536.6	29.6	13.8	-31.83	423.5	1.7	1,906.7	1,882.4	24.29	78.510		
7,000.0	6,012.8	5,550.0	5,536.6	31.2	13.8	-31.83	423.5	1.7	2,002.5	1,977.2	25.33	79.044		
7,100.0	6,012.8	5,550.0	5,536.6	32.9	13.8	-31.83	423.5	1.7	2,098.7	2,072.3	26.40	79.499		
7,200.0	6,012.8	5,525.4	5,512.9	34.6	13.7	-30.65	417.2	2.2	2,194.5	2,167.8	26.73	82.109		
7,300.0	6,012.8	5,521.0	5,508.6	36.4	13.7	-30.44	416.2	2.3	2,291.1	2,263.4	27.66	82.824		
7,400.0	6,012.8	5,500.0	5,488.0	38.1	13.6	-29.48	411.9	2.7	2,388.2	2,360.1	28.09	85.007		
7,500.0	6,012.8	5,500.0	5,488.0	39.9	13.6	-29.48	411.9	2.7	2,485.1	2,456.0	29.16	85.221		
7,600.0	6,012.8	5,500.0	5,488.0	41.7	13.6	-29.48	411.9	2.7	2,582.3	2,552.0	30.23	85.407		
7,700.0	6,012.8	5,500.0	5,488.0	43.5	13.6	-29.48	411.9	2.7	2,679.6	2,648.3	31.31	85.570		
7,800.0	6,012.8	5,500.0	5,488.0	45.3	13.6	-29.48	411.9	2.7	2,777.1	2,744.7	32.40	85.713		
7,900.0	6,012.9	5,500.0	5,488.0	47.1	13.6	-29.48	411.9	2.7	2,874.8	2,841.3	33.49	85.840		
8,000.0	6,012.9	5,500.0	5,488.0	48.9	13.6	-29.48	411.9	2.7	2,972.7	2,938.1	34.59	85.952		
8,100.0	6,012.9	5,500.0	5,488.0	50.7	13.6	-29.48	411.9	2.7	3,070.7	3,035.0	35.68	86.053		
8,200.0	6,012.9	5,500.0	5,488.0	52.6	13.6	-29.48	411.9	2.7	3,168.8	3,132.0	36.78	86.143		
8,300.0	6,012.9	5,500.0	5,488.0	54.4	13.6	-29.48	411.9	2.7	3,267.0	3,229.1	37.89	86.225		
8,400.0	6,012.9	5,500.0	5,488.0	56.2	13.6	-29.48	411.9	2.7	3,365.3	3,326.3	39.00	86.298		
8,500.0	6,012.9	5,500.0	5,488.0	58.1	13.6	-29.48	411.9	2.7	3,463.8	3,423.7	40.11	86.365		
8,600.0	6,012.9	5,500.0	5,488.0	60.0	13.6	-29.48	411.9	2.7	3,562.3	3,521.1	41.22	86.426		
8,700.0	6,012.9	5,500.0	5,488.0	61.8	13.6	-29.48	411.9	2.7	3,660.9	3,618.5	42.33	86.481		
8,800.0	6,012.9	5,500.0	5,488.0	63.7	13.6	-29.48	411.9	2.7	3,759.5	3,716.1	43.45	86.532		
8,900.0	6,012.9	5,477.7	5,466.1	65.5	13.5	-28.51	408.3	3.1	3,857.8	3,814.1	43.64	88.403		
9,000.0	6,012.9	5,476.1	5,464.4	67.4	13.5	-28.44	408.0	3.1	3,956.5	3,911.8	44.67	88.576		
9,100.0	6,012.9	5,474.4	5,462.8	69.3	13.5	-28.37	407.8	3.1	4,055.2	4,009.6	45.70	88.738		
9,200.0	6,012.9	5,472.9	5,461.3	71.2	13.5	-28.31	407.6	3.1	4,154.1	4,107.3	46.73	88.891		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0203A - 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		
9,300.0	6,012.9	5,450.0	5,438.5	73.0	13.4	-27.37	405.0	3.3	4,253.5	4,206.6	46.86	90.767		
9,400.0	6,012.9	5,450.0	5,438.5	74.9	13.4	-27.37	405.0	3.3	4,352.3	4,304.4	47.94	90.783		
9,500.0	6,012.9	5,450.0	5,438.5	76.8	13.4	-27.37	405.0	3.3	4,451.2	4,402.2	49.02	90.797		
9,600.0	6,012.9	5,450.0	5,438.5	78.7	13.4	-27.37	405.0	3.3	4,550.2	4,500.1	50.11	90.810		
9,700.0	6,012.9	5,450.0	5,438.5	80.6	13.4	-27.37	405.0	3.3	4,649.2	4,598.0	51.19	90.822		
9,800.0	6,012.9	5,450.0	5,438.5	82.5	13.4	-27.37	405.0	3.3	4,748.2	4,696.0	52.27	90.834		
9,900.0	6,012.9	5,450.0	5,438.5	84.4	13.4	-27.37	405.0	3.3	4,847.3	4,794.0	53.36	90.844		
10,000.0	6,012.9	5,450.0	5,438.5	86.2	13.4	-27.37	405.0	3.3	4,946.5	4,892.0	54.44	90.853		
10,100.0	6,012.9	5,450.0	5,438.5	88.1	13.4	-27.37	405.0	3.3	5,045.6	4,990.1	55.53	90.862		
10,200.0	6,012.9	5,450.0	5,438.5	90.0	13.4	-27.37	405.0	3.3	5,144.8	5,088.2	56.62	90.870		
10,300.0	6,012.9	5,450.0	5,438.5	91.9	13.4	-27.37	405.0	3.3	5,244.0	5,186.3	57.70	90.878		
10,400.0	6,012.9	5,450.0	5,438.5	93.8	13.4	-27.37	405.0	3.3	5,343.3	5,284.5	58.79	90.885		
10,500.0	6,012.9	5,450.0	5,438.5	95.7	13.4	-27.37	405.0	3.3	5,442.6	5,382.7	59.88	90.892		
10,600.0	6,012.9	5,450.0	5,438.5	97.6	13.4	-27.37	405.0	3.3	5,541.9	5,480.9	60.97	90.898		
10,700.0	6,012.9	5,450.0	5,438.5	99.5	13.4	-27.37	405.0	3.3	5,641.2	5,579.1	62.06	90.903		
10,800.0	6,012.9	5,450.0	5,438.5	101.4	13.4	-27.37	405.0	3.3	5,740.5	5,677.4	63.15	90.909		
10,900.0	6,012.9	5,450.0	5,438.5	103.3	13.4	-27.37	405.0	3.3	5,839.9	5,775.7	64.24	90.914		
11,000.0	6,012.9	5,450.0	5,438.5	105.2	13.4	-27.37	405.0	3.3	5,939.3	5,874.0	65.33	90.919		
11,100.0	6,012.9	5,450.0	5,438.5	107.1	13.4	-27.37	405.0	3.3	6,038.7	5,972.3	66.42	90.923		
11,200.0	6,012.9	5,450.0	5,438.5	109.0	13.4	-27.37	405.0	3.3	6,138.2	6,070.7	67.51	90.927		
11,300.0	6,012.9	5,450.0	5,438.5	110.9	13.4	-27.37	405.0	3.3	6,237.6	6,169.0	68.60	90.931		
11,400.0	6,012.9	5,450.0	5,438.5	112.8	13.4	-27.37	405.0	3.3	6,337.1	6,267.4	69.69	90.935		
11,500.0	6,012.9	5,450.0	5,438.5	114.7	13.4	-27.37	405.0	3.3	6,436.6	6,365.8	70.78	90.938		
11,600.0	6,012.9	5,450.0	5,438.5	116.6	13.4	-27.37	405.0	3.3	6,536.1	6,464.2	71.87	90.942		
11,700.0	6,012.9	5,450.0	5,438.5	118.5	13.4	-27.37	405.0	3.3	6,635.6	6,562.6	72.96	90.945		
11,800.0	6,012.9	5,450.0	5,438.5	120.4	13.4	-27.37	405.0	3.3	6,735.1	6,661.1	74.05	90.948		
11,900.0	6,012.9	5,450.0	5,438.5	122.3	13.4	-27.37	405.0	3.3	6,834.7	6,759.5	75.15	90.951		
12,000.0	6,012.9	5,450.0	5,438.5	124.3	13.4	-27.37	405.0	3.3	6,934.2	6,858.0	76.24	90.953		
12,100.0	6,013.0	5,450.0	5,438.5	126.2	13.4	-27.37	405.0	3.3	7,033.8	6,956.5	77.33	90.956		
12,200.0	6,013.0	5,450.0	5,438.5	128.1	13.4	-27.37	405.0	3.3	7,133.4	7,054.9	78.42	90.958		
12,300.0	6,013.0	5,444.8	5,433.3	130.0	13.4	-27.16	404.6	3.4	7,232.9	7,153.8	79.18	91.348		
12,400.0	6,013.0	5,444.2	5,432.8	131.9	13.4	-27.14	404.5	3.4	7,332.5	7,252.3	80.23	91.390		
12,500.0	6,013.0	5,439.0	5,427.5	133.8	13.4	-26.94	404.1	3.4	7,432.2	7,351.2	80.98	91.779		
12,600.0	6,013.0	5,439.0	5,427.5	135.7	13.4	-26.94	404.1	3.4	7,531.8	7,449.7	82.06	91.780		
12,700.0	6,013.0	5,439.0	5,427.5	137.6	13.4	-26.94	404.1	3.4	7,631.4	7,548.3	83.15	91.780		
12,800.0	6,013.0	5,439.0	5,427.5	139.5	13.4	-26.94	404.1	3.4	7,731.0	7,646.8	84.23	91.781		
12,900.0	6,013.0	5,439.0	5,427.5	141.4	13.4	-26.94	404.1	3.4	7,830.7	7,745.4	85.32	91.782		
13,000.0	6,013.0	5,439.0	5,427.5	143.3	13.4	-26.94	404.1	3.4	7,930.3	7,843.9	86.40	91.782		
13,100.0	6,013.0	5,439.0	5,427.5	145.3	13.4	-26.94	404.1	3.4	8,030.0	7,942.5	87.49	91.783		
13,200.0	6,013.0	5,439.0	5,427.5	147.2	13.4	-26.94	404.1	3.4	8,129.7	8,041.1	88.57	91.784		
13,300.0	6,013.0	5,439.0	5,427.5	149.1	13.4	-26.94	404.1	3.4	8,229.3	8,139.7	89.66	91.784		
13,400.0	6,013.0	5,439.0	5,427.5	151.0	13.4	-26.94	404.1	3.4	8,329.0	8,238.3	90.75	91.785		
13,500.0	6,013.0	5,439.0	5,427.5	152.9	13.4	-26.94	404.1	3.4	8,428.7	8,336.9	91.83	91.785		
13,593.4	6,013.0	5,434.6	5,423.1	154.7	13.4	-26.76	403.8	3.5	8,521.9	8,429.4	92.52	92.107		
13,594.1	6,013.0	5,434.5	5,423.1	154.7	13.4	-26.76	403.8	3.5	8,522.6	8,430.1	92.52	92.113		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0204B - 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	41.04	75.9	66.1	100.7					
100.0	100.0	100.0	100.0	0.1	0.1	41.04	75.9	66.1	100.7	100.5	0.19	538.234		
200.0	200.0	200.0	200.0	0.3	0.3	41.04	75.9	66.1	100.7	100.0	0.64	158.125		
300.0	300.0	300.0	300.0	0.5	0.5	41.04	75.9	66.1	100.7	99.6	1.09	92.676		
400.0	400.0	400.0	400.0	0.8	0.8	41.04	75.9	66.1	100.7	99.1	1.54	65.546		
500.0	500.0	500.0	500.0	1.0	1.0	41.04	75.9	66.1	100.7	98.7	1.99	50.703 CC, ES		
600.0	600.0	597.0	597.0	1.2	1.2	40.59	77.5	66.4	102.1	99.7	2.43	42.048		
700.0	700.0	693.6	693.5	1.4	1.4	-156.31	82.3	67.4	108.2	105.3	2.85	37.911		
800.0	799.8	792.7	792.3	1.6	1.7	-158.76	89.1	68.8	119.3	116.0	3.27	36.472		
900.0	899.6	891.7	891.1	1.8	1.9	-161.13	95.9	70.2	132.2	128.5	3.69	35.870		
1,000.0	999.3	990.7	989.9	2.0	2.1	-163.07	102.6	71.6	145.3	141.2	4.11	35.359		
1,100.0	1,099.1	1,089.8	1,088.6	2.2	2.4	-164.68	109.4	73.0	158.6	154.0	4.54	34.924		
1,200.0	1,198.9	1,188.8	1,187.4	2.5	2.6	-166.05	116.2	74.3	171.9	166.9	4.97	34.554		
1,300.0	1,298.6	1,287.8	1,286.2	2.7	2.9	-167.22	122.9	75.7	185.3	179.9	5.41	34.238		
1,400.0	1,398.4	1,386.8	1,385.0	3.0	3.1	-168.23	129.7	77.1	198.8	193.0	5.85	33.965		
1,500.0	1,498.1	1,485.9	1,483.8	3.2	3.4	-169.12	136.5	78.5	212.4	206.1	6.30	33.726		
1,600.0	1,597.9	1,584.9	1,582.6	3.5	3.6	-169.90	143.2	79.9	226.0	219.2	6.74	33.518		
1,700.0	1,697.6	1,683.9	1,681.4	3.7	3.9	-170.58	150.0	81.3	239.6	232.4	7.19	33.335		
1,800.0	1,797.4	1,782.9	1,780.1	4.0	4.1	-171.20	156.8	82.7	253.3	245.6	7.63	33.172		
1,900.0	1,897.2	1,882.0	1,878.9	4.2	4.4	-171.75	163.5	84.1	267.0	258.9	8.08	33.027		
2,000.0	1,996.9	1,981.0	1,977.7	4.5	4.6	-172.25	170.3	85.5	280.7	272.1	8.53	32.896		
2,100.0	2,096.7	2,080.0	2,076.5	4.7	4.9	-172.70	177.1	86.8	294.4	285.4	8.98	32.778		
2,200.0	2,196.4	2,179.1	2,175.3	5.0	5.1	-173.11	183.8	88.2	308.1	298.7	9.43	32.671		
2,300.0	2,296.2	2,278.1	2,274.1	5.3	5.4	-173.49	190.6	89.6	321.9	312.0	9.88	32.574		
2,400.0	2,395.9	2,377.1	2,372.9	5.5	5.6	-173.83	197.4	91.0	335.7	325.3	10.33	32.485		
2,500.0	2,495.7	2,476.1	2,471.6	5.8	5.9	-174.15	204.1	92.4	349.4	338.7	10.78	32.403		
2,600.0	2,595.4	2,575.2	2,570.4	6.0	6.1	-174.45	210.9	93.8	363.2	352.0	11.24	32.327		
2,700.0	2,695.2	2,674.2	2,669.2	6.3	6.4	-174.72	217.7	95.2	377.0	365.4	11.69	32.258		
2,800.0	2,795.0	2,773.2	2,768.0	6.6	6.6	-174.97	224.4	96.6	390.8	378.7	12.14	32.193		
2,900.0	2,894.7	2,872.2	2,866.8	6.8	6.9	-175.21	231.2	98.0	404.7	392.1	12.59	32.133		
3,000.0	2,994.5	2,971.3	2,965.6	7.1	7.1	-175.43	238.0	99.3	418.5	405.4	13.05	32.077		
3,100.0	3,094.2	3,070.3	3,064.4	7.3	7.4	-175.63	244.7	100.7	432.3	418.8	13.50	32.025		
3,200.0	3,194.0	3,169.3	3,163.2	7.6	7.7	-175.83	251.5	102.1	446.1	432.2	13.95	31.976		
3,300.0	3,293.7	3,268.4	3,261.9	7.9	7.9	-176.01	258.3	103.5	460.0	445.6	14.41	31.930		
3,400.0	3,393.5	3,367.4	3,360.7	8.1	8.2	-176.18	265.0	104.9	473.8	459.0	14.86	31.887		
3,500.0	3,493.3	3,466.4	3,459.5	8.4	8.4	-176.34	271.8	106.3	487.7	472.4	15.31	31.846		
3,600.0	3,593.0	3,565.4	3,558.3	8.7	8.7	-176.50	278.6	107.7	501.5	485.7	15.77	31.808		
3,700.0	3,692.8	3,664.5	3,657.1	8.9	8.9	-176.64	285.3	109.1	515.4	499.1	16.22	31.772		
3,800.0	3,792.5	3,763.5	3,755.9	9.2	9.2	-176.78	292.1	110.5	529.2	512.5	16.67	31.738		
3,900.0	3,892.3	3,862.5	3,854.7	9.4	9.4	-176.91	298.9	111.8	543.1	526.0	17.13	31.705		
4,000.0	3,992.0	3,961.6	3,953.4	9.7	9.7	-177.03	305.6	113.2	556.9	539.4	17.58	31.674		
4,100.0	4,091.8	4,060.6	4,052.2	10.0	9.9	-177.15	312.4	114.6	570.8	552.8	18.04	31.645		
4,200.0	4,191.5	4,159.6	4,151.0	10.2	10.2	-177.26	319.2	116.0	584.7	566.2	18.49	31.617		
4,300.0	4,291.3	4,258.6	4,249.8	10.5	10.4	-177.37	325.9	117.4	598.5	579.6	18.95	31.591		
4,400.0	4,391.1	4,357.7	4,348.6	10.8	10.7	-177.47	332.7	118.8	612.4	593.0	19.40	31.566		
4,500.0	4,490.8	4,456.7	4,447.4	11.0	10.9	-177.57	339.5	120.2	626.3	606.4	19.86	31.541		
4,600.0	4,590.6	4,555.7	4,546.2	11.3	11.2	-177.66	346.2	121.6	640.1	619.8	20.31	31.518		
4,700.0	4,690.3	4,654.7	4,644.9	11.6	11.5	-177.75	353.0	123.0	654.0	633.3	20.77	31.496		
4,800.0	4,790.1	4,753.8	4,743.7	11.8	11.7	-177.83	359.8	124.3	667.9	646.7	21.22	31.475		
4,900.0	4,889.8	4,852.8	4,842.5	12.1	12.0	-177.91	366.5	125.7	681.8	660.1	21.67	31.455		
5,000.0	4,989.6	4,951.8	4,941.3	12.3	12.2	-177.99	373.3	127.1	695.7	673.5	22.13	31.436		
5,100.0	5,089.4	5,050.9	5,040.1	12.6	12.5	-178.07	380.1	128.5	709.5	687.0	22.58	31.417		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0204B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,149.9	5,138.9	12.9	12.7	-178.14	386.8	129.9	723.4	700.4	23.04	31.399		
5,300.0	5,288.9	5,248.9	5,237.7	13.1	13.0	-178.21	393.6	131.3	737.3	713.8	23.49	31.382		
5,400.0	5,388.6	5,347.9	5,336.5	13.4	13.2	-178.28	400.4	132.7	751.2	727.2	23.95	31.365		
5,500.0	5,488.4	5,447.0	5,435.2	13.7	13.5	-178.34	407.1	134.1	765.1	740.7	24.40	31.349		
5,540.0	5,528.3	5,486.6	5,474.8	13.8	13.6	-178.37	409.8	134.6	770.6	746.0	24.59	31.343 SF		
5,550.0	5,538.2	5,496.5	5,484.6	13.8	13.6	-178.37	410.5	134.8	772.1	747.5	24.60	31.389		
5,600.0	5,587.8	5,540.0	5,528.0	14.0	13.7	-178.37	413.5	135.4	782.4	757.9	24.51	31.914		
5,650.0	5,636.4	5,550.0	5,538.0	14.2	13.7	-178.33	414.3	135.5	798.5	774.3	24.15	33.061		
5,700.0	5,683.7	5,578.6	5,566.5	14.4	13.8	-178.29	417.5	136.2	820.3	796.7	23.63	34.711		
5,750.0	5,729.2	5,600.0	5,587.5	14.7	13.9	-178.23	420.9	136.9	847.9	825.0	22.90	37.030		
5,800.0	5,772.6	5,600.0	5,587.5	15.1	13.9	-178.08	420.9	136.9	880.5	858.6	21.93	40.152		
5,850.0	5,813.3	5,621.4	5,608.5	15.4	14.0	-177.95	425.2	137.8	917.3	896.4	20.83	44.028		
5,900.0	5,851.1	5,631.8	5,618.6	15.9	14.0	-177.70	427.6	138.3	957.8	938.3	19.56	48.979		
5,950.0	5,885.6	5,650.0	5,636.1	16.4	14.1	-177.40	432.2	139.2	1,001.6	983.5	18.16	55.164		
6,000.0	5,916.5	5,650.0	5,636.1	16.9	14.1	-176.75	432.2	139.2	1,047.6	1,030.9	16.63	62.979		
6,050.0	5,943.5	5,650.0	5,636.1	17.5	14.1	-175.51	432.2	139.2	1,095.4	1,080.3	15.09	72.569		
6,100.0	5,966.3	5,650.0	5,636.1	18.1	14.1	-172.42	432.2	139.2	1,144.5	1,130.7	13.86	82.559		
6,150.0	5,984.7	5,650.0	5,636.1	18.8	14.1	-153.27	432.2	139.2	1,194.3	1,176.0	18.33	65.176		
6,200.0	5,998.6	5,650.0	5,636.1	19.5	14.1	-14.76	432.2	139.2	1,244.3	1,231.4	12.96	96.041		
6,250.0	6,007.9	5,650.0	5,636.1	20.2	14.1	-5.84	432.2	139.2	1,294.0	1,284.5	9.55	135.496		
6,300.0	6,012.4	5,650.0	5,636.1	20.9	14.1	-3.60	432.2	139.2	1,343.0	1,334.5	8.53	157.535		
6,321.8	6,012.8	5,650.0	5,636.1	21.2	14.1	-3.08	432.2	139.2	1,364.1	1,355.7	8.35	163.452		
6,400.0	6,012.8	5,650.0	5,636.1	22.3	14.1	-11.33	432.2	139.2	1,439.3	1,428.3	10.99	131.023		
6,500.0	6,012.8	5,650.0	5,636.1	23.7	14.1	-21.79	432.2	139.2	1,535.8	1,519.5	16.27	94.395		
6,600.0	6,012.8	5,650.0	5,636.1	25.1	14.1	-31.47	432.2	139.2	1,632.1	1,610.3	21.86	74.680		
6,700.0	6,012.8	5,625.6	5,612.6	26.5	14.0	-38.14	426.2	138.0	1,727.5	1,701.5	25.97	66.523		
6,800.0	6,012.8	5,620.5	5,607.6	28.0	14.0	-44.82	425.0	137.7	1,822.8	1,792.7	30.07	60.625		
6,831.9	6,012.8	5,600.0	5,587.5	28.5	13.9	-45.37	420.9	136.9	1,853.5	1,822.9	30.57	60.623		
6,900.0	6,012.8	5,600.0	5,587.5	29.6	13.9	-45.37	420.9	136.9	1,918.0	1,886.6	31.41	61.065		
7,000.0	6,012.8	5,600.0	5,587.5	31.2	13.9	-45.37	420.9	136.9	2,013.1	1,980.4	32.69	61.577		
7,100.0	6,012.8	5,600.0	5,587.5	32.9	13.9	-45.37	420.9	136.9	2,108.7	2,074.7	34.00	62.026		
7,200.0	6,012.8	5,600.0	5,587.5	34.6	13.9	-45.37	420.9	136.9	2,204.7	2,169.3	35.32	62.422		
7,300.0	6,012.8	5,600.0	5,587.5	36.4	13.9	-45.37	420.9	136.9	2,301.0	2,264.3	36.66	62.773		
7,400.0	6,012.8	5,600.0	5,587.5	38.1	13.9	-45.37	420.9	136.9	2,397.6	2,359.6	38.00	63.087		
7,500.0	6,012.8	5,600.0	5,587.5	39.9	13.9	-45.37	420.9	136.9	2,494.5	2,455.1	39.37	63.368		
7,600.0	6,012.8	5,600.0	5,587.5	41.7	13.9	-45.37	420.9	136.9	2,591.6	2,550.9	40.73	63.621		
7,700.0	6,012.8	5,600.0	5,587.5	43.5	13.9	-45.37	420.9	136.9	2,688.9	2,646.8	42.11	63.851		
7,800.0	6,012.8	5,600.0	5,587.5	45.3	13.9	-45.37	420.9	136.9	2,786.5	2,743.0	43.50	64.060		
7,900.0	6,012.9	5,600.0	5,587.5	47.1	13.9	-45.37	420.9	136.9	2,884.2	2,839.3	44.89	64.250		
8,000.0	6,012.9	5,600.0	5,587.5	48.9	13.9	-45.37	420.9	136.9	2,982.0	2,935.7	46.29	64.425		
8,100.0	6,012.9	5,600.0	5,587.5	50.7	13.9	-45.37	420.9	136.9	3,080.0	3,032.3	47.69	64.585		
8,200.0	6,012.9	5,577.4	5,565.2	52.6	13.8	-43.86	417.3	136.2	3,177.5	3,129.6	47.98	66.225		
8,300.0	6,012.9	5,575.5	5,563.4	54.4	13.8	-43.74	417.1	136.1	3,275.7	3,226.4	49.27	66.485		
8,400.0	6,012.9	5,573.7	5,561.6	56.2	13.8	-43.62	416.8	136.1	3,373.9	3,323.3	50.56	66.728		
8,500.0	6,012.9	5,572.0	5,559.9	58.1	13.8	-43.51	416.6	136.0	3,472.2	3,420.4	51.86	66.956		
8,600.0	6,012.9	5,550.0	5,538.0	60.0	13.7	-42.13	414.3	135.5	3,571.1	3,519.0	52.10	68.541		
8,700.0	6,012.9	5,550.0	5,538.0	61.8	13.7	-42.13	414.3	135.5	3,669.5	3,616.0	53.46	68.635		
8,800.0	6,012.9	5,550.0	5,538.0	63.7	13.7	-42.13	414.3	135.5	3,768.0	3,713.2	54.83	68.723		
8,900.0	6,012.9	5,550.0	5,538.0	65.5	13.7	-42.13	414.3	135.5	3,866.6	3,810.4	56.20	68.806		
9,000.0	6,012.9	5,550.0	5,538.0	67.4	13.7	-42.13	414.3	135.5	3,965.3	3,907.7	57.56	68.883		
9,100.0	6,012.9	5,550.0	5,538.0	69.3	13.7	-42.13	414.3	135.5	4,064.0	4,005.0	58.94	68.956		
9,200.0	6,012.9	5,550.0	5,538.0	71.2	13.7	-42.13	414.3	135.5	4,162.8	4,102.4	60.31	69.025		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-0204B - 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		
9,300.0	6,012.9	5,550.0	5,538.0	73.0	13.7	-42.13	414.3	135.5	4,261.6	4,199.9	61.68	69.090		
9,400.0	6,012.9	5,550.0	5,538.0	74.9	13.7	-42.13	414.3	135.5	4,360.5	4,297.4	63.06	69.152		
9,500.0	6,012.9	5,550.0	5,538.0	76.8	13.7	-42.13	414.3	135.5	4,459.4	4,395.0	64.43	69.210		
9,600.0	6,012.9	5,550.0	5,538.0	78.7	13.7	-42.13	414.3	135.5	4,558.4	4,492.6	65.81	69.265		
9,700.0	6,012.9	5,550.0	5,538.0	80.6	13.7	-42.13	414.3	135.5	4,657.4	4,590.2	67.19	69.318		
9,800.0	6,012.9	5,550.0	5,538.0	82.5	13.7	-42.13	414.3	135.5	4,756.5	4,687.9	68.57	69.368		
9,900.0	6,012.9	5,550.0	5,538.0	84.4	13.7	-42.13	414.3	135.5	4,855.6	4,785.7	69.95	69.416		
10,000.0	6,012.9	5,550.0	5,538.0	86.2	13.7	-42.13	414.3	135.5	4,954.8	4,883.4	71.33	69.462		
10,100.0	6,012.9	5,550.0	5,538.0	88.1	13.7	-42.13	414.3	135.5	5,053.9	4,981.2	72.71	69.505		
10,200.0	6,012.9	5,550.0	5,538.0	90.0	13.7	-42.13	414.3	135.5	5,153.1	5,079.1	74.10	69.547		
10,300.0	6,012.9	5,550.0	5,538.0	91.9	13.7	-42.13	414.3	135.5	5,252.4	5,176.9	75.48	69.586		
10,400.0	6,012.9	5,550.0	5,538.0	93.8	13.7	-42.13	414.3	135.5	5,351.7	5,274.8	76.86	69.625		
10,500.0	6,012.9	5,550.0	5,538.0	95.7	13.7	-42.13	414.3	135.5	5,451.0	5,372.7	78.25	69.661		
10,600.0	6,012.9	5,550.0	5,538.0	97.6	13.7	-42.13	414.3	135.5	5,550.3	5,470.6	79.64	69.696		
10,700.0	6,012.9	5,550.0	5,538.0	99.5	13.7	-42.13	414.3	135.5	5,649.6	5,568.6	81.02	69.730		
10,800.0	6,012.9	5,550.0	5,538.0	101.4	13.7	-42.13	414.3	135.5	5,749.0	5,666.6	82.41	69.762		
10,900.0	6,012.9	5,550.0	5,538.0	103.3	13.7	-42.13	414.3	135.5	5,848.4	5,764.6	83.80	69.793		
11,000.0	6,012.9	5,550.0	5,538.0	105.2	13.7	-42.13	414.3	135.5	5,947.8	5,862.6	85.18	69.823		
11,100.0	6,012.9	5,545.3	5,533.4	107.1	13.7	-41.85	413.9	135.5	6,047.2	5,961.0	86.20	70.152		
11,200.0	6,012.9	5,544.7	5,532.8	109.0	13.7	-41.81	413.8	135.4	6,146.6	6,059.1	87.54	70.219		
11,300.0	6,012.9	5,540.0	5,528.0	110.9	13.7	-41.53	413.5	135.4	6,246.1	6,157.6	88.53	70.550		
11,400.0	6,012.9	5,540.0	5,528.0	112.8	13.7	-41.53	413.5	135.4	6,345.6	6,255.7	89.91	70.575		
11,500.0	6,012.9	5,540.0	5,528.0	114.7	13.7	-41.53	413.5	135.4	6,445.1	6,353.8	91.29	70.599		
11,600.0	6,012.9	5,540.0	5,528.0	116.6	13.7	-41.53	413.5	135.4	6,544.6	6,451.9	92.67	70.623		
11,700.0	6,012.9	5,540.0	5,528.0	118.5	13.7	-41.53	413.5	135.4	6,644.1	6,550.0	94.05	70.646		
11,800.0	6,012.9	5,540.0	5,528.0	120.4	13.7	-41.53	413.5	135.4	6,743.6	6,648.2	95.43	70.668		
11,900.0	6,012.9	5,540.0	5,528.0	122.3	13.7	-41.53	413.5	135.4	6,843.2	6,746.3	96.81	70.689		
12,000.0	6,012.9	5,540.0	5,528.0	124.3	13.7	-41.53	413.5	135.4	6,942.7	6,844.5	98.19	70.710		
12,100.0	6,013.0	5,538.5	5,526.6	126.2	13.7	-41.44	413.4	135.4	7,042.3	6,942.8	99.43	70.824		
12,200.0	6,013.0	5,531.7	5,519.8	128.1	13.7	-41.04	412.9	135.3	7,141.9	7,041.7	100.19	71.280		
12,300.0	6,013.0	5,524.9	5,513.0	130.0	13.7	-40.65	412.4	135.2	7,241.4	7,140.5	100.95	71.736		
12,400.0	6,013.0	5,518.0	5,506.1	131.9	13.7	-40.26	412.0	135.1	7,341.0	7,239.3	101.69	72.190		
12,500.0	6,013.0	5,511.2	5,499.3	133.8	13.6	-39.87	411.5	135.0	7,440.6	7,338.2	102.43	72.643		
12,600.0	6,013.0	5,504.4	5,492.5	135.7	13.6	-39.50	411.0	134.9	7,540.2	7,437.1	103.16	73.095		
12,700.0	6,013.0	5,497.5	5,485.7	137.6	13.6	-39.13	410.6	134.8	7,639.8	7,535.9	103.88	73.546		
12,800.0	6,013.0	5,490.7	5,478.9	139.5	13.6	-38.76	410.1	134.7	7,739.4	7,634.8	104.59	73.996		
12,900.0	6,013.0	5,483.9	5,472.1	141.4	13.6	-38.40	409.6	134.6	7,839.0	7,733.7	105.30	74.444		
13,000.0	6,013.0	5,477.1	5,465.3	143.3	13.6	-38.04	409.2	134.5	7,938.6	7,832.6	106.00	74.891		
13,100.0	6,013.0	5,470.2	5,458.4	145.3	13.5	-37.69	408.7	134.4	8,038.3	7,931.6	106.70	75.336		
13,200.0	6,013.0	5,463.4	5,451.6	147.2	13.5	-37.35	408.2	134.3	8,137.9	8,030.5	107.39	75.780		
13,300.0	6,013.0	5,456.6	5,444.8	149.1	13.5	-37.01	407.8	134.2	8,237.5	8,129.4	108.07	76.223		
13,400.0	6,013.0	5,449.7	5,438.0	151.0	13.5	-36.68	407.3	134.1	8,337.1	8,228.4	108.75	76.664		
13,500.0	6,013.0	5,442.9	5,431.2	152.9	13.5	-36.35	406.8	134.0	8,436.8	8,327.3	109.42	77.103		
13,593.4	6,013.0	5,436.5	5,424.8	154.7	13.5	-36.04	406.4	133.9	8,529.9	8,419.9	110.05	77.512		
13,594.1	6,013.0	5,436.5	5,424.8	154.7	13.5	-36.04	406.4	133.9	8,530.6	8,420.5	110.05	77.516		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1401A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-33.0	33.0					
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-33.0	33.0	32.9	0.19	176.708		
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-33.0	33.0	32.4	0.64	51.914		
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-33.0	33.0	32.0	1.09	30.426		
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-33.0	33.0	31.5	1.54	21.519		
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-33.0	33.0	31.1	1.99	16.646	CC, ES	
600.0	600.0	599.4	599.4	1.2	1.2	-92.60	-1.5	-33.8	33.9	31.5	2.41	14.061		
700.0	700.0	698.7	698.6	1.4	1.4	67.51	-6.1	-36.1	36.0	33.2	2.79	12.892		
800.0	799.8	798.7	798.3	1.6	1.6	66.04	-12.4	-39.3	37.9	34.7	3.18	11.920		
900.0	899.6	898.7	898.0	1.8	1.8	67.05	-18.6	-42.4	39.1	35.5	3.60	10.867		
1,000.0	999.3	998.7	997.8	2.0	2.0	67.99	-24.8	-45.6	40.3	36.3	4.04	9.979		
1,100.0	1,099.1	1,098.7	1,097.5	2.2	2.3	68.89	-31.1	-48.7	41.6	37.1	4.50	9.234		
1,200.0	1,198.9	1,198.7	1,197.3	2.5	2.5	69.73	-37.3	-51.8	42.8	37.8	4.97	8.608		
1,300.0	1,298.6	1,298.6	1,297.0	2.7	2.8	70.52	-43.5	-55.0	44.1	38.6	5.46	8.078		
1,400.0	1,398.4	1,398.6	1,396.8	3.0	3.0	71.27	-49.7	-58.1	45.3	39.4	5.95	7.626		
1,500.0	1,498.1	1,498.6	1,496.5	3.2	3.3	71.98	-56.0	-61.3	46.6	40.2	6.44	7.237		
1,600.0	1,597.9	1,598.6	1,596.3	3.5	3.5	72.65	-62.2	-64.4	47.9	40.9	6.94	6.900		
1,700.0	1,697.6	1,698.6	1,696.0	3.7	3.8	73.28	-68.4	-67.5	49.2	41.7	7.44	6.605		
1,800.0	1,797.4	1,798.6	1,795.8	4.0	4.1	73.88	-74.7	-70.7	50.5	42.5	7.95	6.346		
1,900.0	1,897.2	1,898.6	1,895.5	4.2	4.3	74.46	-80.9	-73.8	51.8	43.3	8.46	6.117		
2,000.0	1,996.9	1,998.6	1,995.3	4.5	4.6	75.00	-87.1	-77.0	53.1	44.1	8.97	5.913		
2,100.0	2,096.7	2,098.6	2,095.0	4.7	4.8	75.52	-93.3	-80.1	54.4	44.9	9.49	5.730		
2,200.0	2,196.4	2,198.6	2,194.7	5.0	5.1	76.02	-99.6	-83.2	55.7	45.7	10.00	5.565		
2,300.0	2,296.2	2,298.5	2,294.5	5.3	5.4	76.49	-105.8	-86.4	57.0	46.5	10.52	5.417		
2,400.0	2,395.9	2,398.5	2,394.2	5.5	5.6	76.94	-112.0	-89.5	58.3	47.3	11.04	5.282		
2,500.0	2,495.7	2,498.5	2,494.0	5.8	5.9	77.37	-118.3	-92.7	59.6	48.1	11.56	5.158		
2,600.0	2,595.4	2,598.5	2,593.7	6.0	6.1	77.78	-124.5	-95.8	60.9	48.9	12.08	5.046		
2,700.0	2,695.2	2,698.5	2,693.5	6.3	6.4	78.17	-130.7	-98.9	62.3	49.7	12.60	4.942		
2,800.0	2,795.0	2,798.5	2,793.2	6.6	6.7	78.55	-136.9	-102.1	63.6	50.5	13.12	4.847		
2,900.0	2,894.7	2,898.5	2,893.0	6.8	6.9	78.91	-143.2	-105.2	64.9	51.3	13.64	4.759		
3,000.0	2,994.5	2,998.5	2,992.7	7.1	7.2	79.26	-149.4	-108.4	66.3	52.1	14.17	4.677		
3,100.0	3,094.2	3,098.5	3,092.5	7.3	7.5	79.60	-155.6	-111.5	67.6	52.9	14.69	4.601		
3,200.0	3,194.0	3,198.5	3,192.2	7.6	7.7	79.92	-161.9	-114.6	68.9	53.7	15.21	4.531		
3,300.0	3,293.7	3,298.5	3,292.0	7.9	8.0	80.23	-168.1	-117.8	70.3	54.5	15.74	4.465		
3,400.0	3,393.5	3,398.4	3,391.7	8.1	8.2	80.52	-174.3	-120.9	71.6	55.3	16.26	4.403		
3,500.0	3,493.3	3,498.4	3,491.5	8.4	8.5	80.81	-180.5	-124.0	73.0	56.2	16.79	4.345		
3,600.0	3,593.0	3,598.4	3,591.2	8.7	8.8	81.09	-186.8	-127.2	74.3	57.0	17.31	4.291		
3,700.0	3,692.8	3,698.4	3,690.9	8.9	9.0	81.35	-193.0	-130.3	75.6	57.8	17.84	4.240		
3,800.0	3,792.5	3,798.4	3,790.7	9.2	9.3	81.61	-199.2	-133.5	77.0	58.6	18.37	4.192		
3,900.0	3,892.3	3,898.4	3,890.4	9.4	9.6	81.86	-205.5	-136.6	78.3	59.5	18.89	4.147		
4,000.0	3,992.0	3,998.4	3,990.2	9.7	9.8	82.10	-211.7	-139.7	79.7	60.3	19.42	4.104		
4,100.0	4,091.8	4,098.4	4,089.9	10.0	10.1	82.33	-217.9	-142.9	81.1	61.1	19.95	4.063		
4,200.0	4,191.5	4,198.4	4,189.7	10.2	10.4	82.55	-224.1	-146.0	82.4	61.9	20.47	4.025		
4,300.0	4,291.3	4,298.4	4,289.4	10.5	10.6	82.77	-230.4	-149.2	83.8	62.8	21.00	3.988		
4,400.0	4,391.1	4,398.3	4,389.2	10.8	10.9	82.98	-236.6	-152.3	85.1	63.6	21.53	3.954		
4,500.0	4,490.8	4,498.3	4,488.9	11.0	11.1	83.18	-242.8	-155.4	86.5	64.4	22.06	3.921		
4,600.0	4,590.6	4,598.3	4,588.7	11.3	11.4	83.38	-249.1	-158.6	87.8	65.3	22.58	3.889		
4,700.0	4,690.3	4,698.3	4,688.4	11.6	11.7	83.57	-255.3	-161.7	89.2	66.1	23.11	3.859		
4,800.0	4,790.1	4,798.3	4,788.2	11.8	11.9	83.75	-261.5	-164.9	90.6	66.9	23.64	3.831		
4,900.0	4,889.8	4,898.3	4,887.9	12.1	12.2	83.93	-267.7	-168.0	91.9	67.8	24.17	3.803		
5,000.0	4,989.6	4,998.3	4,987.7	12.3	12.5	84.11	-274.0	-171.1	93.3	68.6	24.70	3.777		
5,100.0	5,089.4	5,098.3	5,087.4	12.6	12.7	84.28	-280.2	-174.3	94.6	69.4	25.22	3.752		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1401A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,198.3	5,187.1	12.9	13.0	84.44	-286.4	-177.4	96.0	70.3	25.75	3.728		
5,300.0	5,288.9	5,298.3	5,286.9	13.1	13.3	84.60	-292.7	-180.6	97.4	71.1	26.28	3.705		
5,400.0	5,388.6	5,398.2	5,386.6	13.4	13.5	84.76	-298.9	-183.7	98.7	71.9	26.81	3.683		
5,500.0	5,488.4	5,494.9	5,482.8	13.7	13.8	83.27	-307.6	-188.1	101.1	73.7	27.33	3.698		
5,540.0	5,528.3	5,532.1	5,519.1	13.8	14.0	80.54	-314.6	-191.6	103.5	76.0	27.51	3.763		
5,550.0	5,538.2	5,541.2	5,527.9	13.8	14.0	79.64	-316.7	-192.7	104.3	76.8	27.55	3.786		
5,600.0	5,587.8	5,586.7	5,571.2	14.0	14.2	75.47	-329.0	-198.9	109.1	81.3	27.79	3.927		
5,650.0	5,636.4	5,631.4	5,612.5	14.2	14.5	71.90	-344.4	-206.7	115.0	87.0	28.05	4.100		
5,700.0	5,683.7	5,675.6	5,651.6	14.4	14.8	68.94	-362.7	-215.9	121.8	93.5	28.34	4.298		
5,750.0	5,729.2	5,719.2	5,688.4	14.7	15.1	66.55	-383.6	-226.4	129.2	100.6	28.63	4.513		
5,800.0	5,772.6	5,762.3	5,722.7	15.1	15.4	64.67	-406.8	-238.1	137.1	108.2	28.95	4.736		
5,850.0	5,813.3	5,804.9	5,754.4	15.4	15.8	63.24	-432.2	-250.9	145.4	116.1	29.30	4.961		
5,900.0	5,851.1	5,850.0	5,785.3	15.9	16.3	62.19	-461.5	-265.7	153.8	124.1	29.72	5.176		
5,950.0	5,885.6	5,889.0	5,809.6	16.4	16.7	61.47	-488.7	-279.4	162.4	132.2	30.18	5.380		
6,000.0	5,916.5	5,930.5	5,833.0	16.9	17.2	61.03	-519.4	-294.8	171.0	140.2	30.75	5.560		
6,050.0	5,943.5	5,971.8	5,853.4	17.5	17.7	60.83	-551.4	-311.0	179.5	148.1	31.44	5.710		
6,100.0	5,966.3	6,012.8	5,870.9	18.1	18.2	60.83	-584.6	-327.7	188.1	155.8	32.28	5.826		
6,150.0	5,984.7	6,050.0	5,884.1	18.8	18.7	60.91	-615.6	-343.3	196.5	163.3	33.18	5.923		
6,200.0	5,998.6	6,094.6	5,896.6	19.5	19.4	61.34	-653.8	-362.6	204.7	170.4	34.38	5.955		
6,250.0	6,007.9	6,135.4	5,904.8	20.2	20.0	61.80	-689.5	-380.6	212.8	177.2	35.66	5.969		
6,300.0	6,012.4	6,176.3	5,909.9	20.9	20.6	62.39	-725.7	-398.8	220.7	183.7	37.06	5.956		
6,321.8	6,012.8	6,194.2	5,911.1	21.2	20.9	62.67	-741.6	-406.9	224.1	186.4	37.71	5.943		
6,400.0	6,012.8	6,270.9	5,911.8	22.3	22.0	64.45	-810.4	-440.8	238.6	198.3	40.27	5.925		
6,500.0	6,012.8	6,381.9	5,911.8	23.7	23.5	66.48	-912.1	-485.2	257.8	214.4	43.44	5.935		
6,600.0	6,012.8	6,494.3	5,911.8	25.1	25.1	68.19	-1,017.6	-524.1	276.7	230.2	46.52	5.948		
6,700.0	6,012.8	6,608.3	5,911.8	26.5	26.8	69.64	-1,126.7	-557.1	295.2	245.6	49.54	5.958		
6,800.0	6,012.8	6,723.9	5,911.8	28.0	28.5	70.87	-1,239.1	-583.8	313.1	260.6	52.49	5.964		
6,831.9	6,012.8	6,761.0	5,911.8	28.5	29.1	71.23	-1,275.6	-591.0	318.6	265.2	53.41	5.966		
6,900.0	6,012.8	6,841.2	5,911.8	29.6	30.3	71.96	-1,354.6	-604.0	329.1	273.3	55.87	5.891		
7,000.0	6,012.8	6,960.5	5,911.8	31.2	32.1	72.66	-1,473.2	-617.2	339.7	280.2	59.50	5.709		
7,100.0	6,012.8	7,081.0	5,911.8	32.9	34.0	72.94	-1,593.6	-623.0	344.3	281.2	63.09	5.457		
7,200.0	6,012.8	7,186.4	5,911.8	34.6	35.6	72.96	-1,699.0	-623.2	344.5	278.1	66.42	5.186		
7,300.0	6,012.8	7,286.4	5,911.8	36.4	37.2	72.96	-1,799.0	-623.3	344.5	274.8	69.74	4.940		
7,400.0	6,012.8	7,386.4	5,911.8	38.1	38.8	72.96	-1,899.0	-623.3	344.5	271.4	73.09	4.713		
7,500.0	6,012.8	7,486.4	5,911.9	39.9	40.5	72.96	-1,999.0	-623.3	344.5	268.0	76.48	4.505		
7,600.0	6,012.8	7,586.4	5,911.9	41.7	42.2	72.96	-2,099.0	-623.3	344.5	264.6	79.89	4.312		
7,700.0	6,012.8	7,686.4	5,911.9	43.5	43.9	72.96	-2,199.0	-623.3	344.5	261.2	83.33	4.135		
7,800.0	6,012.8	7,786.4	5,911.9	45.3	45.6	72.96	-2,299.0	-623.3	344.5	257.7	86.79	3.970		
7,900.0	6,012.9	7,886.4	5,911.9	47.1	47.3	72.96	-2,399.0	-623.3	344.5	254.3	90.27	3.817		
8,000.0	6,012.9	7,986.4	5,911.9	48.9	49.1	72.96	-2,499.0	-623.3	344.6	250.8	93.77	3.675		
8,100.0	6,012.9	8,086.4	5,911.9	50.7	50.8	72.96	-2,599.0	-623.3	344.6	247.3	97.28	3.542		
8,200.0	6,012.9	8,186.4	5,911.9	52.6	52.6	72.96	-2,699.0	-623.3	344.6	243.8	100.80	3.418		
8,300.0	6,012.9	8,286.4	5,911.9	54.4	54.4	72.96	-2,799.0	-623.3	344.6	240.2	104.34	3.302		
8,400.0	6,012.9	8,386.4	5,911.9	56.2	56.2	72.96	-2,899.0	-623.3	344.6	236.7	107.89	3.194		
8,500.0	6,012.9	8,486.4	5,911.9	58.1	58.0	72.96	-2,999.0	-623.3	344.6	233.1	111.44	3.092		
8,600.0	6,012.9	8,586.4	5,911.9	60.0	59.8	72.96	-3,099.0	-623.3	344.6	229.6	115.01	2.996		
8,700.0	6,012.9	8,686.4	5,911.9	61.8	61.6	72.96	-3,199.0	-623.3	344.6	226.0	118.59	2.906		
8,800.0	6,012.9	8,786.4	5,911.9	63.7	63.4	72.96	-3,299.0	-623.3	344.6	222.4	122.17	2.821		
8,900.0	6,012.9	8,886.4	5,911.9	65.5	65.2	72.96	-3,399.0	-623.3	344.6	218.8	125.76	2.740		
9,000.0	6,012.9	8,986.4	5,911.9	67.4	67.1	72.96	-3,499.0	-623.3	344.6	215.3	129.35	2.664		
9,100.0	6,012.9	9,086.4	5,911.9	69.3	68.9	72.96	-3,599.0	-623.3	344.6	211.7	132.96	2.592		
9,200.0	6,012.9	9,186.4	5,911.9	71.2	70.7	72.96	-3,699.0	-623.3	344.6	208.1	136.56	2.524		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1401A - 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		
9,300.0	6,012.9	9,286.4	5,911.9	73.0	72.6	72.96	-3,799.0	-623.3	344.6	204.5	140.17	2.459		
9,400.0	6,012.9	9,386.4	5,911.9	74.9	74.4	72.96	-3,899.0	-623.3	344.6	200.8	143.79	2.397		
9,500.0	6,012.9	9,486.4	5,911.9	76.8	76.3	72.96	-3,999.0	-623.3	344.6	197.2	147.41	2.338		
9,600.0	6,012.9	9,586.4	5,911.9	78.7	78.2	72.96	-4,099.0	-623.3	344.6	193.6	151.03	2.282		
9,700.0	6,012.9	9,686.4	5,911.9	80.6	80.0	72.96	-4,199.0	-623.3	344.7	190.0	154.66	2.228		
9,800.0	6,012.9	9,786.4	5,911.9	82.5	81.9	72.96	-4,299.0	-623.3	344.7	186.4	158.29	2.177		
9,900.0	6,012.9	9,886.4	5,911.9	84.4	83.7	72.96	-4,399.0	-623.3	344.7	182.7	161.93	2.129		
10,000.0	6,012.9	9,986.4	5,911.9	86.2	85.6	72.96	-4,499.0	-623.3	344.7	179.1	165.56	2.082		
10,100.0	6,012.9	10,086.4	5,911.9	88.1	87.5	72.96	-4,599.0	-623.3	344.7	175.5	169.20	2.037		
10,200.0	6,012.9	10,186.4	5,911.9	90.0	89.3	72.96	-4,699.0	-623.3	344.7	171.8	172.85	1.994		
10,300.0	6,012.9	10,286.4	5,911.9	91.9	91.2	72.97	-4,799.0	-623.3	344.7	168.2	176.49	1.953		
10,400.0	6,012.9	10,386.4	5,911.9	93.8	93.1	72.97	-4,899.0	-623.3	344.7	164.6	180.14	1.914		
10,500.0	6,012.9	10,486.4	5,911.9	95.7	95.0	72.97	-4,999.0	-623.3	344.7	160.9	183.79	1.876		
10,600.0	6,012.9	10,586.4	5,911.9	97.6	96.9	72.97	-5,099.0	-623.3	344.7	157.3	187.44	1.839		
10,700.0	6,012.9	10,686.4	5,911.9	99.5	98.7	72.97	-5,199.0	-623.3	344.7	153.6	191.09	1.804		
10,800.0	6,012.9	10,786.4	5,911.9	101.4	100.6	72.97	-5,299.0	-623.3	344.7	150.0	194.75	1.770		
10,900.0	6,012.9	10,886.4	5,911.9	103.3	102.5	72.97	-5,399.0	-623.4	344.7	146.3	198.40	1.738		
11,000.0	6,012.9	10,986.4	5,911.9	105.2	104.4	72.97	-5,499.0	-623.4	344.7	142.7	202.06	1.706		
11,100.0	6,012.9	11,086.4	5,911.9	107.1	106.3	72.97	-5,599.0	-623.4	344.7	139.0	205.72	1.676		
11,200.0	6,012.9	11,186.4	5,911.9	109.0	108.2	72.97	-5,699.0	-623.4	344.7	135.4	209.38	1.647		
11,300.0	6,012.9	11,286.4	5,911.9	110.9	110.1	72.97	-5,799.0	-623.4	344.8	131.7	213.04	1.618		
11,400.0	6,012.9	11,386.4	5,911.9	112.8	111.9	72.97	-5,899.0	-623.4	344.8	128.1	216.71	1.591		
11,500.0	6,012.9	11,486.4	5,911.9	114.7	113.8	72.97	-5,999.0	-623.4	344.8	124.4	220.37	1.564		
11,600.0	6,012.9	11,586.4	5,912.0	116.6	115.7	72.97	-6,099.0	-623.4	344.8	120.7	224.04	1.539		
11,700.0	6,012.9	11,686.4	5,912.0	118.5	117.6	72.97	-6,199.0	-623.4	344.8	117.1	227.70	1.514		
11,800.0	6,012.9	11,786.4	5,912.0	120.4	119.5	72.97	-6,299.0	-623.4	344.8	113.4	231.37	1.490	Level 3	
11,900.0	6,012.9	11,886.4	5,912.0	122.3	121.4	72.97	-6,399.0	-623.4	344.8	109.7	235.04	1.467	Level 3	
12,000.0	6,012.9	11,986.4	5,912.0	124.3	123.3	72.97	-6,499.0	-623.4	344.8	106.1	238.71	1.444	Level 3	
12,100.0	6,013.0	12,086.4	5,912.0	126.2	125.2	72.97	-6,599.0	-623.4	344.8	102.4	242.38	1.423	Level 3	
12,200.0	6,013.0	12,186.4	5,912.0	128.1	127.1	72.97	-6,699.0	-623.4	344.8	98.8	246.05	1.401	Level 3	
12,300.0	6,013.0	12,286.4	5,912.0	130.0	129.0	72.97	-6,799.0	-623.4	344.8	95.1	249.73	1.381	Level 3	
12,400.0	6,013.0	12,386.4	5,912.0	131.9	130.9	72.97	-6,899.0	-623.4	344.8	91.4	253.40	1.361	Level 3	
12,500.0	6,013.0	12,486.4	5,912.0	133.8	132.8	72.97	-6,999.0	-623.4	344.8	87.8	257.07	1.341	Level 3	
12,600.0	6,013.0	12,586.4	5,912.0	135.7	134.7	72.97	-7,099.0	-623.4	344.8	84.1	260.75	1.322	Level 3	
12,700.0	6,013.0	12,686.4	5,912.0	137.6	136.6	72.97	-7,199.0	-623.4	344.8	80.4	264.42	1.304	Level 3	
12,800.0	6,013.0	12,786.4	5,912.0	139.5	138.5	72.97	-7,299.0	-623.4	344.8	76.7	268.10	1.286	Level 3	
12,900.0	6,013.0	12,886.4	5,912.0	141.4	140.4	72.97	-7,399.0	-623.4	344.8	73.1	271.78	1.269	Level 3	
13,000.0	6,013.0	12,986.4	5,912.0	143.3	142.3	72.97	-7,499.0	-623.4	344.9	69.4	275.45	1.252	Level 3	
13,100.0	6,013.0	13,086.4	5,912.0	145.3	144.2	72.97	-7,599.0	-623.4	344.9	65.7	279.13	1.235	Level 2	
13,200.0	6,013.0	13,186.4	5,912.0	147.2	146.1	72.97	-7,699.0	-623.4	344.9	62.1	282.81	1.219	Level 2	
13,300.0	6,013.0	13,286.4	5,912.0	149.1	148.0	72.97	-7,799.0	-623.4	344.9	58.4	286.49	1.204	Level 2	
13,400.0	6,013.0	13,386.4	5,912.0	151.0	149.9	72.97	-7,899.0	-623.4	344.9	54.7	290.17	1.189	Level 2	
13,500.0	6,013.0	13,486.4	5,912.0	152.9	151.8	72.98	-7,999.0	-623.4	344.9	51.0	293.85	1.174	Level 2	
13,593.4	6,013.0	13,579.9	5,912.0	154.7	153.6	72.98	-8,092.4	-623.4	344.9	47.6	297.29	1.160	Level 2	
13,594.1	6,013.0	13,579.9	5,912.0	154.7	153.6	72.98	-8,092.4	-623.4	344.9	47.6	297.30	1.160	Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1403A - 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		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	33.0	33.0					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	33.0	33.0	32.9	0.19	176.700		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	33.0	33.0	32.4	0.64	51.912		
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	33.0	33.0	32.0	1.09	30.425		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	33.0	33.0	31.5	1.54	21.518		
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	33.0	33.0	31.1	1.99	16.646		
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	33.0	33.0	30.6	2.43	13.572 CC, ES		
700.0	700.0	700.0	700.0	1.4	1.4	-108.15	0.0	33.0	33.5	30.7	2.86	11.744		
800.0	799.8	800.0	800.0	1.6	1.6	-113.38	-1.8	33.1	35.2	32.0	3.24	10.892		
900.0	899.6	900.2	900.0	1.8	1.8	-115.26	-7.0	33.1	37.3	33.7	3.62	10.318		
1,000.0	999.3	1,000.2	999.8	2.0	2.0	-114.43	-14.0	33.1	39.1	35.1	4.03	9.709		
1,100.0	1,099.1	1,100.2	1,099.5	2.2	2.2	-113.67	-20.9	33.1	40.9	36.5	4.47	9.166		
1,200.0	1,198.9	1,200.1	1,199.2	2.5	2.5	-112.97	-27.9	33.2	42.8	37.8	4.92	8.689		
1,300.0	1,298.6	1,300.1	1,299.0	2.7	2.7	-112.34	-34.9	33.2	44.6	39.2	5.39	8.273		
1,400.0	1,398.4	1,400.1	1,398.7	3.0	2.9	-111.75	-41.9	33.2	46.4	40.5	5.87	7.911		
1,500.0	1,498.1	1,500.1	1,498.5	3.2	3.2	-111.21	-48.8	33.3	48.2	41.9	6.35	7.595		
1,600.0	1,597.9	1,600.1	1,598.2	3.5	3.4	-110.71	-55.8	33.3	50.1	43.2	6.84	7.318		
1,700.0	1,697.6	1,700.1	1,697.9	3.7	3.6	-110.24	-62.8	33.3	51.9	44.6	7.34	7.073		
1,800.0	1,797.4	1,800.0	1,797.7	4.0	3.9	-109.80	-69.8	33.3	53.8	45.9	7.84	6.856		
1,900.0	1,897.2	1,900.0	1,897.4	4.2	4.2	-109.40	-76.7	33.4	55.6	47.3	8.35	6.663		
2,000.0	1,996.9	2,000.0	1,997.2	4.5	4.4	-109.02	-83.7	33.4	57.5	48.6	8.85	6.490		
2,100.0	2,096.7	2,100.0	2,096.9	4.7	4.7	-108.66	-90.7	33.4	59.3	50.0	9.36	6.335		
2,200.0	2,196.4	2,200.0	2,196.6	5.0	4.9	-108.33	-97.7	33.5	61.2	51.3	9.87	6.194		
2,300.0	2,296.2	2,299.9	2,296.4	5.3	5.2	-108.01	-104.6	33.5	63.0	52.6	10.39	6.067		
2,400.0	2,395.9	2,399.9	2,396.1	5.5	5.4	-107.72	-111.6	33.5	64.9	54.0	10.90	5.951		
2,500.0	2,495.7	2,499.9	2,495.8	5.8	5.7	-107.44	-118.6	33.6	66.7	55.3	11.42	5.844		
2,600.0	2,595.4	2,599.9	2,595.6	6.0	5.9	-107.17	-125.6	33.6	68.6	56.7	11.94	5.747		
2,700.0	2,695.2	2,699.9	2,695.3	6.3	6.2	-106.92	-132.5	33.6	70.5	58.0	12.46	5.657		
2,800.0	2,795.0	2,799.9	2,795.1	6.6	6.5	-106.68	-139.5	33.7	72.3	59.4	12.98	5.575		
2,900.0	2,894.7	2,899.8	2,894.8	6.8	6.7	-106.46	-146.5	33.7	74.2	60.7	13.50	5.498		
3,000.0	2,994.5	2,999.8	2,994.5	7.1	7.0	-106.24	-153.5	33.7	76.1	62.0	14.02	5.427		
3,100.0	3,094.2	3,099.8	3,094.3	7.3	7.2	-106.04	-160.4	33.7	77.9	63.4	14.54	5.361		
3,200.0	3,194.0	3,199.8	3,194.0	7.6	7.5	-105.84	-167.4	33.8	79.8	64.7	15.06	5.299		
3,300.0	3,293.7	3,299.8	3,293.8	7.9	7.8	-105.66	-174.4	33.8	81.7	66.1	15.58	5.241		
3,400.0	3,393.5	3,399.7	3,393.5	8.1	8.0	-105.48	-181.4	33.8	83.5	67.4	16.10	5.187		
3,500.0	3,493.3	3,499.7	3,493.2	8.4	8.3	-105.31	-188.3	33.9	85.4	68.8	16.63	5.136		
3,600.0	3,593.0	3,599.7	3,593.0	8.7	8.5	-105.14	-195.3	33.9	87.3	70.1	17.15	5.089		
3,700.0	3,692.8	3,699.7	3,692.7	8.9	8.8	-104.99	-202.3	33.9	89.1	71.5	17.68	5.044		
3,800.0	3,792.5	3,799.7	3,792.4	9.2	9.1	-104.84	-209.3	34.0	91.0	72.8	18.20	5.001		
3,900.0	3,892.3	3,899.7	3,892.2	9.4	9.3	-104.70	-216.2	34.0	92.9	74.2	18.72	4.961		
4,000.0	3,992.0	3,999.6	3,991.9	9.7	9.6	-104.56	-223.2	34.0	94.8	75.5	19.25	4.923		
4,100.0	4,091.8	4,099.6	4,091.7	10.0	9.9	-104.43	-230.2	34.0	96.6	76.9	19.77	4.888		
4,200.0	4,191.5	4,199.6	4,191.4	10.2	10.1	-104.30	-237.2	34.1	98.5	78.2	20.30	4.853		
4,300.0	4,291.3	4,299.6	4,291.1	10.5	10.4	-104.17	-244.1	34.1	100.4	79.6	20.82	4.821		
4,400.0	4,391.1	4,399.6	4,390.9	10.8	10.6	-104.06	-251.1	34.1	102.3	80.9	21.35	4.790		
4,500.0	4,490.8	4,499.5	4,490.6	11.0	10.9	-103.94	-258.1	34.2	104.1	82.3	21.87	4.761		
4,600.0	4,590.6	4,599.5	4,590.4	11.3	11.2	-103.83	-265.0	34.2	106.0	83.6	22.40	4.733		
4,700.0	4,690.3	4,699.5	4,690.1	11.6	11.4	-103.73	-272.0	34.2	107.9	85.0	22.93	4.706		
4,800.0	4,790.1	4,799.5	4,789.8	11.8	11.7	-103.62	-279.0	34.3	109.8	86.3	23.45	4.681		
4,900.0	4,889.8	4,899.5	4,889.6	12.1	12.0	-103.53	-286.0	34.3	111.7	87.7	23.98	4.656		
5,000.0	4,989.6	4,999.5	4,989.3	12.3	12.2	-103.43	-292.9	34.3	113.5	89.0	24.51	4.633		
5,100.0	5,089.4	5,099.4	5,089.0	12.6	12.5	-103.34	-299.9	34.4	115.4	90.4	25.03	4.610		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1403A - 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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,199.4	5,188.8	12.9	12.8	-103.25	-306.9	34.4	117.3	91.7	25.56	4.589		
5,300.0	5,288.9	5,299.4	5,288.5	13.1	13.0	-103.16	-313.9	34.4	119.2	93.1	26.09	4.568		
5,400.0	5,388.6	5,399.4	5,388.3	13.4	13.3	-103.08	-320.8	34.4	121.0	94.4	26.61	4.549		
5,500.0	5,488.4	5,498.5	5,486.8	13.7	13.6	-101.42	-331.1	34.5	123.1	95.9	27.18	4.530		
5,540.0	5,528.3	5,537.1	5,524.5	13.8	13.7	-98.72	-339.6	34.5	124.5	97.0	27.45	4.533		
5,550.0	5,538.2	5,546.7	5,533.6	13.8	13.8	-97.86	-342.1	34.5	124.9	97.4	27.52	4.539		
5,600.0	5,587.8	5,593.8	5,578.3	14.0	14.0	-93.63	-357.0	34.6	128.3	100.4	27.90	4.600		
5,650.0	5,636.4	5,640.1	5,620.7	14.2	14.3	-89.67	-375.5	34.7	133.5	105.2	28.32	4.715		
5,700.0	5,683.7	5,685.5	5,660.6	14.4	14.6	-86.07	-397.3	34.8	140.3	111.5	28.79	4.874		
5,750.0	5,729.2	5,730.3	5,697.9	14.7	14.9	-82.88	-422.0	34.9	148.4	119.1	29.29	5.067		
5,800.0	5,772.6	5,774.3	5,732.4	15.1	15.3	-80.11	-449.4	35.0	157.7	127.8	29.83	5.286		
5,850.0	5,813.3	5,817.7	5,763.9	15.4	15.7	-77.74	-479.1	35.1	167.8	137.4	30.40	5.521		
5,900.0	5,851.1	5,860.4	5,792.5	15.9	16.1	-75.74	-510.9	35.3	178.8	147.7	31.01	5.764		
5,950.0	5,885.6	5,900.0	5,816.6	16.4	16.5	-74.07	-542.3	35.4	190.2	158.6	31.66	6.009		
6,000.0	5,916.5	5,944.4	5,840.7	16.9	17.0	-72.67	-579.5	35.6	202.1	169.7	32.42	6.234		
6,050.0	5,943.5	5,985.7	5,860.1	17.5	17.5	-71.52	-616.0	35.7	214.3	181.1	33.23	6.448		
6,100.0	5,966.3	6,026.6	5,876.5	18.1	18.1	-70.58	-653.5	35.9	226.7	192.5	34.12	6.643		
6,150.0	5,984.7	6,067.3	5,889.9	18.8	18.6	-69.83	-691.9	36.1	239.1	204.0	35.10	6.813		
6,200.0	5,998.6	6,107.8	5,900.1	19.5	19.2	-69.24	-731.1	36.2	251.6	215.4	36.16	6.957		
6,250.0	6,007.9	6,150.0	5,907.5	20.2	19.8	-68.83	-772.6	36.4	264.0	226.6	37.35	7.068		
6,300.0	6,012.4	6,188.5	5,911.3	20.9	20.4	-68.47	-810.9	36.6	276.2	237.7	38.57	7.162		
6,321.8	6,012.8	6,206.1	5,912.1	21.2	20.6	-68.37	-828.5	36.7	281.5	242.4	39.14	7.192		
6,400.0	6,012.8	6,280.3	5,912.3	22.3	21.7	-69.91	-902.6	36.7	299.4	257.7	41.67	7.185		
6,500.0	6,012.8	6,378.3	5,912.3	23.7	23.2	-71.32	-1,000.6	36.7	318.2	273.3	44.83	7.097		
6,600.0	6,012.8	6,477.2	5,912.3	25.1	24.8	-72.26	-1,099.5	36.7	332.2	284.2	47.98	6.923		
6,700.0	6,012.8	6,576.7	5,912.3	26.5	26.5	-72.83	-1,199.1	36.7	341.2	290.2	51.05	6.685		
6,800.0	6,012.8	6,676.6	5,912.3	28.0	28.2	-73.07	-1,299.0	36.8	345.3	291.3	54.01	6.394		
6,831.9	6,012.8	6,708.5	5,912.3	28.5	28.7	-73.09	-1,330.9	36.8	345.6	290.7	54.92	6.292		
6,900.0	6,012.8	6,776.6	5,912.3	29.6	29.9	-73.09	-1,399.0	36.8	345.6	288.5	57.11	6.051		
7,000.0	6,012.8	6,876.6	5,912.3	31.2	31.6	-73.09	-1,499.0	36.8	345.6	285.2	60.42	5.720		
7,100.0	6,012.8	6,976.6	5,912.3	32.9	33.4	-73.09	-1,599.0	36.8	345.6	281.8	63.77	5.420		
7,200.0	6,012.8	7,076.6	5,912.3	34.6	35.2	-73.08	-1,699.0	36.8	345.6	278.4	67.15	5.146		
7,300.0	6,012.8	7,176.6	5,912.3	36.4	37.0	-73.08	-1,799.0	36.8	345.6	275.0	70.57	4.897		
7,400.0	6,012.8	7,276.6	5,912.3	38.1	38.8	-73.08	-1,899.0	36.8	345.6	271.6	74.02	4.669		
7,500.0	6,012.8	7,376.6	5,912.3	39.9	40.6	-73.08	-1,999.0	36.8	345.6	268.1	77.49	4.460		
7,600.0	6,012.8	7,476.6	5,912.3	41.7	42.4	-73.08	-2,099.0	36.8	345.6	264.6	80.98	4.267		
7,700.0	6,012.8	7,576.6	5,912.3	43.5	44.3	-73.08	-2,199.0	36.8	345.6	261.1	84.49	4.090		
7,800.0	6,012.8	7,676.6	5,912.3	45.3	46.1	-73.08	-2,299.0	36.8	345.6	257.6	88.02	3.926		
7,900.0	6,012.9	7,776.6	5,912.2	47.1	48.0	-73.08	-2,399.0	36.8	345.6	254.0	91.56	3.775		
8,000.0	6,012.9	7,876.6	5,912.2	48.9	49.8	-73.08	-2,499.0	36.8	345.6	250.5	95.11	3.634		
8,100.0	6,012.9	7,976.6	5,912.2	50.7	51.7	-73.07	-2,599.0	36.8	345.6	246.9	98.67	3.502		
8,200.0	6,012.9	8,076.6	5,912.2	52.6	53.5	-73.07	-2,699.0	36.8	345.6	243.3	102.25	3.380		
8,300.0	6,012.9	8,176.6	5,912.2	54.4	55.4	-73.07	-2,799.0	36.8	345.6	239.8	105.83	3.266		
8,400.0	6,012.9	8,276.6	5,912.2	56.2	57.3	-73.07	-2,899.0	36.8	345.6	236.2	109.42	3.158		
8,500.0	6,012.9	8,376.6	5,912.2	58.1	59.1	-73.07	-2,999.0	36.8	345.6	232.6	113.02	3.058		
8,600.0	6,012.9	8,476.6	5,912.2	60.0	61.0	-73.07	-3,099.0	36.8	345.6	229.0	116.62	2.963		
8,700.0	6,012.9	8,576.6	5,912.2	61.8	62.9	-73.07	-3,199.0	36.8	345.6	225.4	120.23	2.875		
8,800.0	6,012.9	8,676.6	5,912.2	63.7	64.8	-73.07	-3,299.0	36.8	345.6	221.8	123.84	2.791		
8,900.0	6,012.9	8,776.6	5,912.2	65.5	66.7	-73.06	-3,399.0	36.8	345.6	218.1	127.46	2.711		
9,000.0	6,012.9	8,876.6	5,912.2	67.4	68.6	-73.06	-3,499.0	36.8	345.6	214.5	131.09	2.636		
9,100.0	6,012.9	8,976.6	5,912.2	69.3	70.4	-73.06	-3,599.0	36.8	345.6	210.9	134.72	2.565		
9,200.0	6,012.9	9,076.6	5,912.2	71.2	72.3	-73.06	-3,699.0	36.8	345.6	207.3	138.35	2.498		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1403A - 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
9,300.0	6,012.9	9,176.6	5,912.2	73.0	74.2	-73.06	-3,799.0	36.8	345.6	203.6	141.99	2.434	
9,400.0	6,012.9	9,276.6	5,912.2	74.9	76.1	-73.06	-3,899.0	36.8	345.6	200.0	145.62	2.373	
9,500.0	6,012.9	9,376.6	5,912.2	76.8	78.0	-73.06	-3,999.0	36.8	345.6	196.3	149.27	2.315	
9,600.0	6,012.9	9,476.6	5,912.2	78.7	79.9	-73.06	-4,099.0	36.8	345.6	192.7	152.91	2.260	
9,700.0	6,012.9	9,576.6	5,912.2	80.6	81.8	-73.06	-4,199.0	36.8	345.6	189.0	156.56	2.207	
9,800.0	6,012.9	9,676.6	5,912.2	82.5	83.7	-73.05	-4,299.0	36.8	345.6	185.4	160.21	2.157	
9,900.0	6,012.9	9,776.6	5,912.2	84.4	85.6	-73.05	-4,399.0	36.8	345.6	181.7	163.86	2.109	
10,000.0	6,012.9	9,876.6	5,912.2	86.2	87.5	-73.05	-4,499.0	36.8	345.6	178.1	167.52	2.063	
10,100.0	6,012.9	9,976.6	5,912.2	88.1	89.4	-73.05	-4,599.0	36.8	345.6	174.4	171.17	2.019	
10,200.0	6,012.9	10,076.6	5,912.1	90.0	91.3	-73.05	-4,699.0	36.8	345.6	170.8	174.83	1.977	
10,300.0	6,012.9	10,176.6	5,912.1	91.9	93.2	-73.05	-4,799.0	36.8	345.6	167.1	178.49	1.936	
10,400.0	6,012.9	10,276.6	5,912.1	93.8	95.1	-73.05	-4,899.0	36.8	345.6	163.5	182.15	1.897	
10,500.0	6,012.9	10,376.6	5,912.1	95.7	97.0	-73.05	-4,999.0	36.8	345.6	159.8	185.82	1.860	
10,600.0	6,012.9	10,476.6	5,912.1	97.6	98.9	-73.05	-5,099.0	36.8	345.6	156.1	189.48	1.824	
10,700.0	6,012.9	10,576.6	5,912.1	99.5	100.8	-73.04	-5,199.0	36.8	345.6	152.5	193.15	1.789	
10,800.0	6,012.9	10,676.6	5,912.1	101.4	102.7	-73.04	-5,299.0	36.8	345.6	148.8	196.82	1.756	
10,900.0	6,012.9	10,776.6	5,912.1	103.3	104.6	-73.04	-5,399.0	36.8	345.6	145.1	200.48	1.724	
11,000.0	6,012.9	10,876.6	5,912.1	105.2	106.6	-73.04	-5,499.0	36.8	345.6	141.5	204.15	1.693	
11,100.0	6,012.9	10,976.6	5,912.1	107.1	108.5	-73.04	-5,599.0	36.8	345.6	137.8	207.82	1.663	
11,200.0	6,012.9	11,076.6	5,912.1	109.0	110.4	-73.04	-5,699.0	36.8	345.6	134.1	211.50	1.634	
11,300.0	6,012.9	11,176.6	5,912.1	110.9	112.3	-73.04	-5,799.0	36.8	345.6	130.4	215.17	1.606	
11,400.0	6,012.9	11,276.6	5,912.1	112.8	114.2	-73.04	-5,899.0	36.9	345.6	126.8	218.84	1.579	
11,500.0	6,012.9	11,376.6	5,912.1	114.7	116.1	-73.04	-5,999.0	36.9	345.6	123.1	222.52	1.553	
11,600.0	6,012.9	11,476.6	5,912.1	116.6	118.0	-73.03	-6,099.0	36.9	345.6	119.4	226.19	1.528	
11,700.0	6,012.9	11,576.6	5,912.1	118.5	119.9	-73.03	-6,199.0	36.9	345.6	115.7	229.87	1.504	
11,800.0	6,012.9	11,676.6	5,912.1	120.4	121.8	-73.03	-6,299.0	36.9	345.6	112.1	233.54	1.480	Level 3
11,900.0	6,012.9	11,776.6	5,912.1	122.3	123.7	-73.03	-6,399.0	36.9	345.6	108.4	237.22	1.457	Level 3
12,000.0	6,012.9	11,876.6	5,912.1	124.3	125.6	-73.03	-6,499.0	36.9	345.6	104.7	240.90	1.435	Level 3
12,100.0	6,013.0	11,976.6	5,912.1	126.2	127.6	-73.03	-6,599.0	36.9	345.6	101.0	244.58	1.413	Level 3
12,200.0	6,013.0	12,076.6	5,912.1	128.1	129.5	-73.03	-6,699.0	36.9	345.6	97.4	248.26	1.392	Level 3
12,300.0	6,013.0	12,176.6	5,912.1	130.0	131.4	-73.03	-6,799.0	36.9	345.6	93.7	251.94	1.372	Level 3
12,400.0	6,013.0	12,276.6	5,912.1	131.9	133.3	-73.02	-6,899.0	36.9	345.6	90.0	255.62	1.352	Level 3
12,500.0	6,013.0	12,376.6	5,912.0	133.8	135.2	-73.02	-6,999.0	36.9	345.6	86.3	259.30	1.333	Level 3
12,600.0	6,013.0	12,476.6	5,912.0	135.7	137.1	-73.02	-7,099.0	36.9	345.6	82.6	262.98	1.314	Level 3
12,700.0	6,013.0	12,576.6	5,912.0	137.6	139.0	-73.02	-7,199.0	36.9	345.6	79.0	266.66	1.296	Level 3
12,800.0	6,013.0	12,676.6	5,912.0	139.5	141.0	-73.02	-7,299.0	36.9	345.6	75.3	270.35	1.278	Level 3
12,900.0	6,013.0	12,776.6	5,912.0	141.4	142.9	-73.02	-7,399.0	36.9	345.6	71.6	274.03	1.261	Level 3
13,000.0	6,013.0	12,876.6	5,912.0	143.3	144.8	-73.02	-7,499.0	36.9	345.6	67.9	277.71	1.245	Level 2
13,100.0	6,013.0	12,976.6	5,912.0	145.3	146.7	-73.02	-7,599.0	36.9	345.6	64.2	281.40	1.228	Level 2
13,200.0	6,013.0	13,076.6	5,912.0	147.2	148.6	-73.02	-7,699.0	36.9	345.6	60.5	285.08	1.212	Level 2
13,300.0	6,013.0	13,176.6	5,912.0	149.1	150.5	-73.01	-7,799.0	36.9	345.6	56.9	288.76	1.197	Level 2
13,400.0	6,013.0	13,276.6	5,912.0	151.0	152.4	-73.01	-7,899.0	36.9	345.6	53.2	292.45	1.182	Level 2
13,500.0	6,013.0	13,376.6	5,912.0	152.9	154.4	-73.01	-7,999.0	36.9	345.6	49.5	296.13	1.167	Level 2
13,593.4	6,013.0	13,470.0	5,912.0	154.7	156.1	-73.01	-8,092.4	36.9	345.6	46.1	299.58	1.154	Level 2
13,594.1	6,013.0	13,470.7	5,912.0	154.7	156.2	-73.01	-8,093.1	36.9	345.6	46.0	299.60	1.154	Level 2, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1404B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	66.1	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	66.1	66.1	65.9	0.19	353.399		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	66.1	66.1	65.5	0.64	103.824		
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	66.1	66.1	65.0	1.09	60.850		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	66.1	66.1	64.6	1.54	43.037		
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	66.1	66.1	64.1	1.99	33.291		
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	66.1	66.1	63.7	2.43	27.144	CC, ES	
700.0	700.0	700.0	700.0	1.4	1.4	-106.73	0.0	66.1	66.6	63.7	2.86	23.304		
800.0	799.8	799.8	799.8	1.6	1.7	-110.90	0.0	66.1	68.3	65.0	3.26	20.910		
900.0	899.6	899.3	899.3	1.8	1.9	-114.76	-1.7	66.6	71.2	67.6	3.66	19.453		
1,000.0	999.3	999.0	998.9	2.0	2.0	-115.65	-6.7	68.0	74.7	70.7	4.05	18.430		
1,100.0	1,099.1	1,099.0	1,098.6	2.2	2.2	-115.17	-13.4	69.9	78.4	73.9	4.47	17.523		
1,200.0	1,198.9	1,198.9	1,198.2	2.5	2.4	-114.73	-20.1	71.7	82.1	77.2	4.91	16.704		
1,300.0	1,298.6	1,298.8	1,297.9	2.7	2.7	-114.33	-26.8	73.6	85.8	80.4	5.37	15.975		
1,400.0	1,398.4	1,398.7	1,397.6	3.0	2.9	-113.96	-33.5	75.5	89.5	83.6	5.84	15.330		
1,500.0	1,498.1	1,498.7	1,497.3	3.2	3.1	-113.62	-40.2	77.4	93.2	86.8	6.31	14.760		
1,600.0	1,597.9	1,598.6	1,597.0	3.5	3.4	-113.31	-46.9	79.3	96.9	90.1	6.79	14.255		
1,700.0	1,697.6	1,698.5	1,696.7	3.7	3.6	-113.02	-53.6	81.2	100.6	93.3	7.28	13.806		
1,800.0	1,797.4	1,798.5	1,796.4	4.0	3.8	-112.75	-60.3	83.1	104.3	96.5	7.78	13.406		
1,900.0	1,897.2	1,898.4	1,896.0	4.2	4.1	-112.50	-67.0	85.0	108.0	99.7	8.27	13.048		
2,000.0	1,996.9	1,998.3	1,995.7	4.5	4.3	-112.27	-73.8	86.9	111.7	102.9	8.78	12.725		
2,100.0	2,096.7	2,098.3	2,095.4	4.7	4.6	-112.05	-80.5	88.8	115.4	106.1	9.28	12.434		
2,200.0	2,196.4	2,198.2	2,195.1	5.0	4.8	-111.84	-87.2	90.7	119.1	109.3	9.78	12.171		
2,300.0	2,296.2	2,298.1	2,294.8	5.3	5.1	-111.65	-93.9	92.6	122.8	112.5	10.29	11.931		
2,400.0	2,395.9	2,398.0	2,394.5	5.5	5.4	-111.47	-100.6	94.5	126.5	115.7	10.80	11.712		
2,500.0	2,495.7	2,498.0	2,494.2	5.8	5.6	-111.30	-107.3	96.3	130.2	118.9	11.31	11.511		
2,600.0	2,595.4	2,597.9	2,593.9	6.0	5.9	-111.14	-114.0	98.2	133.9	122.1	11.83	11.326		
2,700.0	2,695.2	2,697.8	2,693.5	6.3	6.1	-110.98	-120.7	100.1	137.7	125.3	12.34	11.156		
2,800.0	2,795.0	2,797.8	2,793.2	6.6	6.4	-110.84	-127.4	102.0	141.4	128.5	12.85	10.999		
2,900.0	2,894.7	2,897.7	2,892.9	6.8	6.6	-110.70	-134.1	103.9	145.1	131.7	13.37	10.853		
3,000.0	2,994.5	2,997.6	2,992.6	7.1	6.9	-110.57	-140.8	105.8	148.8	134.9	13.88	10.717		
3,100.0	3,094.2	3,097.6	3,092.3	7.3	7.2	-110.45	-147.6	107.7	152.5	138.1	14.40	10.591		
3,200.0	3,194.0	3,197.5	3,192.0	7.6	7.4	-110.33	-154.3	109.6	156.2	141.3	14.92	10.473		
3,300.0	3,293.7	3,297.4	3,291.7	7.9	7.7	-110.21	-161.0	111.5	160.0	144.5	15.44	10.363		
3,400.0	3,393.5	3,397.3	3,391.3	8.1	7.9	-110.11	-167.7	113.4	163.7	147.7	15.95	10.259		
3,500.0	3,493.3	3,497.3	3,491.0	8.4	8.2	-110.00	-174.4	115.3	167.4	150.9	16.47	10.162		
3,600.0	3,593.0	3,597.2	3,590.7	8.7	8.5	-109.91	-181.1	117.2	171.1	154.1	16.99	10.071		
3,700.0	3,692.8	3,697.1	3,690.4	8.9	8.7	-109.81	-187.8	119.1	174.9	157.3	17.51	9.984		
3,800.0	3,792.5	3,797.1	3,790.1	9.2	9.0	-109.72	-194.5	120.9	178.6	160.5	18.03	9.903		
3,900.0	3,892.3	3,897.0	3,889.8	9.4	9.2	-109.63	-201.2	122.8	182.3	163.7	18.55	9.826		
4,000.0	3,992.0	3,996.9	3,989.5	9.7	9.5	-109.55	-207.9	124.7	186.0	167.0	19.07	9.753		
4,100.0	4,091.8	4,096.9	4,089.1	10.0	9.8	-109.47	-214.6	126.6	189.7	170.2	19.59	9.684		
4,200.0	4,191.5	4,196.8	4,188.8	10.2	10.0	-109.39	-221.4	128.5	193.5	173.4	20.12	9.618		
4,300.0	4,291.3	4,296.7	4,288.5	10.5	10.3	-109.32	-228.1	130.4	197.2	176.6	20.64	9.556		
4,400.0	4,391.1	4,396.6	4,388.2	10.8	10.5	-109.25	-234.8	132.3	200.9	179.8	21.16	9.496		
4,500.0	4,490.8	4,496.6	4,487.9	11.0	10.8	-109.18	-241.5	134.2	204.6	183.0	21.68	9.440		
4,600.0	4,590.6	4,596.5	4,587.6	11.3	11.1	-109.12	-248.2	136.1	208.4	186.2	22.20	9.386		
4,700.0	4,690.3	4,696.4	4,687.3	11.6	11.3	-109.05	-254.9	138.0	212.1	189.4	22.72	9.334		
4,800.0	4,790.1	4,796.4	4,787.0	11.8	11.6	-108.99	-261.6	139.9	215.8	192.6	23.25	9.285		
4,900.0	4,889.8	4,896.3	4,886.6	12.1	11.9	-108.93	-268.3	141.8	219.6	195.8	23.77	9.237		
5,000.0	4,989.6	4,996.2	4,986.3	12.3	12.1	-108.87	-275.0	143.6	223.3	199.0	24.29	9.192		
5,100.0	5,089.4	5,096.2	5,086.0	12.6	12.4	-108.82	-281.7	145.5	227.0	202.2	24.81	9.149		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1404B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,196.1	5,185.7	12.9	12.6	-108.76	-288.4	147.4	230.7	205.4	25.34	9.107		
5,300.0	5,288.9	5,296.0	5,285.4	13.1	12.9	-108.71	-295.2	149.3	234.5	208.6	25.86	9.067		
5,400.0	5,388.6	5,395.9	5,385.1	13.4	13.2	-108.66	-301.9	151.2	238.2	211.8	26.38	9.029		
5,500.0	5,488.4	5,495.9	5,484.8	13.7	13.4	-108.61	-308.6	153.1	241.9	215.0	26.90	8.992		
5,540.0	5,528.3	5,535.9	5,524.6	13.8	13.5	-108.59	-311.3	153.9	243.4	216.3	27.11	8.977		
5,550.0	5,538.2	5,545.3	5,534.1	13.8	13.6	-108.56	-311.9	154.1	243.8	216.7	27.16	8.976		
5,600.0	5,587.8	5,590.6	5,579.0	14.0	13.7	-108.29	-317.3	155.6	247.3	219.9	27.44	9.015		
5,650.0	5,636.4	5,635.7	5,623.1	14.2	13.9	-107.83	-326.3	158.1	253.2	225.5	27.76	9.122		
5,700.0	5,683.7	5,680.4	5,665.8	14.4	14.1	-107.19	-338.9	161.7	261.5	233.4	28.15	9.290		
5,750.0	5,729.2	5,724.7	5,706.9	14.7	14.3	-106.37	-354.8	166.1	272.0	243.4	28.60	9.511		
5,800.0	5,772.6	5,768.4	5,746.0	15.1	14.6	-105.38	-373.7	171.5	284.7	255.6	29.13	9.774		
5,850.0	5,813.3	5,811.6	5,782.8	15.4	14.9	-104.23	-395.4	177.6	299.4	269.7	29.74	10.067		
5,900.0	5,851.1	5,854.2	5,817.1	15.9	15.3	-102.93	-419.6	184.4	315.9	285.5	30.44	10.381		
5,950.0	5,885.6	5,896.2	5,848.9	16.4	15.6	-101.50	-446.1	191.9	334.2	303.0	31.24	10.697		
6,000.0	5,916.5	5,937.6	5,877.9	16.9	16.0	-99.95	-474.5	199.9	354.0	321.8	32.16	11.005		
6,050.0	5,943.5	5,978.6	5,904.3	17.5	16.5	-98.28	-504.7	208.4	375.1	341.9	33.17	11.308		
6,100.0	5,966.3	6,019.2	5,927.8	18.1	16.9	-96.52	-536.5	217.4	397.4	363.2	34.26	11.600		
6,150.0	5,984.7	6,059.4	5,948.6	18.8	17.4	-94.68	-569.6	226.7	420.8	385.3	35.41	11.881		
6,200.0	5,998.6	6,100.0	5,966.8	19.5	17.9	-92.81	-604.5	236.6	444.9	408.3	36.63	12.146		
6,250.0	6,007.9	6,139.5	5,981.7	20.2	18.4	-90.87	-639.7	246.5	469.6	431.8	37.88	12.398		
6,300.0	6,012.4	6,179.7	5,994.0	20.9	19.0	-88.95	-676.5	256.9	494.9	455.7	39.17	12.634		
6,321.8	6,012.8	6,197.3	5,998.5	21.2	19.3	-88.11	-692.9	261.5	506.0	466.2	39.74	12.732		
6,400.0	6,012.8	6,263.0	6,010.0	22.3	20.2	-89.66	-755.1	279.0	544.7	502.7	41.97	12.978		
6,500.0	6,012.8	6,365.1	6,013.3	23.7	21.8	-90.05	-853.4	306.3	590.1	545.0	45.04	13.099		
6,600.0	6,012.8	6,502.1	6,013.3	25.1	23.7	-90.05	-987.2	335.7	625.7	577.1	48.61	12.870		
6,700.0	6,012.8	6,648.1	6,013.3	26.5	25.9	-90.04	-1,131.6	356.4	649.2	596.8	52.45	12.377		
6,800.0	6,012.8	6,799.3	6,013.3	28.0	28.1	-90.04	-1,282.6	366.1	659.9	603.5	56.44	11.693		
6,831.9	6,012.8	6,847.6	6,013.3	28.5	28.9	-90.04	-1,330.9	366.7	660.6	602.9	57.71	11.448		
6,900.0	6,012.8	6,915.8	6,013.3	29.6	30.0	-90.04	-1,399.0	366.7	660.6	600.7	59.92	11.024		
7,000.0	6,012.8	7,015.8	6,013.3	31.2	31.7	-90.04	-1,499.0	366.7	660.6	597.3	63.33	10.431		
7,100.0	6,012.8	7,115.8	6,013.3	32.9	33.4	-90.04	-1,599.0	366.7	660.6	593.8	66.78	9.892		
7,200.0	6,012.8	7,215.7	6,013.3	34.6	35.1	-90.04	-1,699.0	366.7	660.6	590.3	70.27	9.400		
7,300.0	6,012.8	7,315.7	6,013.3	36.4	36.8	-90.04	-1,799.0	366.7	660.6	586.8	73.80	8.951		
7,400.0	6,012.8	7,415.7	6,013.3	38.1	38.6	-90.04	-1,899.0	366.7	660.6	583.2	77.36	8.539		
7,500.0	6,012.8	7,515.7	6,013.3	39.9	40.4	-90.04	-1,999.0	366.7	660.6	579.6	80.95	8.160		
7,600.0	6,012.8	7,615.7	6,013.3	41.7	42.2	-90.04	-2,099.0	366.7	660.6	576.0	84.56	7.812		
7,700.0	6,012.8	7,715.7	6,013.3	43.5	44.0	-90.04	-2,199.0	366.7	660.6	572.4	88.19	7.490		
7,800.0	6,012.8	7,815.7	6,013.3	45.3	45.8	-90.03	-2,299.0	366.7	660.5	568.7	91.83	7.193		
7,900.0	6,012.9	7,915.7	6,013.2	47.1	47.6	-90.03	-2,399.0	366.7	660.5	565.0	95.50	6.917		
8,000.0	6,012.9	8,015.7	6,013.2	48.9	49.5	-90.03	-2,499.0	366.7	660.5	561.4	99.17	6.660		
8,100.0	6,012.9	8,115.7	6,013.2	50.7	51.3	-90.03	-2,599.0	366.7	660.5	557.7	102.86	6.422		
8,200.0	6,012.9	8,215.7	6,013.2	52.6	53.1	-90.03	-2,699.0	366.7	660.5	554.0	106.56	6.199		
8,300.0	6,012.9	8,315.7	6,013.2	54.4	55.0	-90.03	-2,799.0	366.7	660.5	550.3	110.27	5.990		
8,400.0	6,012.9	8,415.7	6,013.2	56.2	56.8	-90.03	-2,899.0	366.7	660.5	546.5	113.99	5.794		
8,500.0	6,012.9	8,515.7	6,013.2	58.1	58.7	-90.03	-2,999.0	366.7	660.5	542.8	117.72	5.611		
8,600.0	6,012.9	8,615.7	6,013.2	60.0	60.6	-90.03	-3,099.0	366.7	660.5	539.1	121.45	5.438		
8,700.0	6,012.9	8,715.7	6,013.2	61.8	62.4	-90.03	-3,199.0	366.7	660.5	535.3	125.19	5.276		
8,800.0	6,012.9	8,815.7	6,013.2	63.7	64.3	-90.03	-3,299.0	366.7	660.5	531.6	128.94	5.123		
8,900.0	6,012.9	8,915.7	6,013.2	65.5	66.2	-90.03	-3,399.0	366.7	660.5	527.8	132.69	4.978		
9,000.0	6,012.9	9,015.7	6,013.2	67.4	68.0	-90.03	-3,499.0	366.7	660.5	524.0	136.45	4.841		
9,100.0	6,012.9	9,115.7	6,013.2	69.3	69.9	-90.03	-3,599.0	366.7	660.5	520.3	140.22	4.711		
9,200.0	6,012.9	9,215.7	6,013.2	71.2	71.8	-90.03	-3,699.0	366.7	660.5	516.5	143.98	4.587		

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 #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 S11-T10N-R58W - Razor #11E-1404B - 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
9,300.0	6,012.9	9,315.7	6,013.2	73.0	73.7	-90.03	-3,799.0	366.7	660.5	512.7	147.75	4.470	
9,400.0	6,012.9	9,415.7	6,013.2	74.9	75.6	-90.03	-3,899.0	366.7	660.5	509.0	151.53	4.359	
9,500.0	6,012.9	9,515.7	6,013.2	76.8	77.4	-90.02	-3,999.0	366.7	660.5	505.2	155.31	4.253	
9,600.0	6,012.9	9,615.7	6,013.2	78.7	79.3	-90.02	-4,099.0	366.7	660.5	501.4	159.09	4.152	
9,700.0	6,012.9	9,715.7	6,013.2	80.6	81.2	-90.02	-4,199.0	366.7	660.5	497.6	162.87	4.055	
9,800.0	6,012.9	9,815.7	6,013.2	82.5	83.1	-90.02	-4,299.0	366.7	660.5	493.8	166.66	3.963	
9,900.0	6,012.9	9,915.7	6,013.2	84.4	85.0	-90.02	-4,399.0	366.7	660.5	490.0	170.45	3.875	
10,000.0	6,012.9	10,015.7	6,013.2	86.2	86.9	-90.02	-4,499.0	366.7	660.5	486.2	174.24	3.791	
10,100.0	6,012.9	10,115.7	6,013.1	88.1	88.8	-90.02	-4,599.0	366.7	660.5	482.4	178.03	3.710	
10,200.0	6,012.9	10,215.7	6,013.1	90.0	90.7	-90.02	-4,699.0	366.7	660.5	478.6	181.83	3.632	
10,300.0	6,012.9	10,315.7	6,013.1	91.9	92.6	-90.02	-4,799.0	366.7	660.5	474.8	185.63	3.558	
10,400.0	6,012.9	10,415.7	6,013.1	93.8	94.5	-90.02	-4,899.0	366.7	660.4	471.0	189.43	3.487	
10,500.0	6,012.9	10,515.7	6,013.1	95.7	96.4	-90.02	-4,999.0	366.7	660.4	467.2	193.23	3.418	
10,600.0	6,012.9	10,615.7	6,013.1	97.6	98.3	-90.02	-5,099.0	366.7	660.4	463.4	197.03	3.352	
10,700.0	6,012.9	10,715.7	6,013.1	99.5	100.2	-90.02	-5,199.0	366.7	660.4	459.6	200.84	3.288	
10,800.0	6,012.9	10,815.7	6,013.1	101.4	102.1	-90.02	-5,299.0	366.7	660.4	455.8	204.64	3.227	
10,900.0	6,012.9	10,915.7	6,013.1	103.3	104.0	-90.02	-5,399.0	366.7	660.4	452.0	208.45	3.168	
11,000.0	6,012.9	11,015.7	6,013.1	105.2	105.9	-90.02	-5,499.0	366.7	660.4	448.2	212.26	3.111	
11,100.0	6,012.9	11,115.7	6,013.1	107.1	107.8	-90.02	-5,599.0	366.7	660.4	444.4	216.07	3.057	
11,200.0	6,012.9	11,215.7	6,013.1	109.0	109.7	-90.01	-5,699.0	366.7	660.4	440.5	219.88	3.004	
11,300.0	6,012.9	11,315.7	6,013.1	110.9	111.6	-90.01	-5,799.0	366.7	660.4	436.7	223.69	2.952	
11,400.0	6,012.9	11,415.7	6,013.1	112.8	113.5	-90.01	-5,899.0	366.7	660.4	432.9	227.51	2.903	
11,500.0	6,012.9	11,515.7	6,013.1	114.7	115.4	-90.01	-5,999.0	366.7	660.4	429.1	231.32	2.855	
11,600.0	6,012.9	11,615.7	6,013.1	116.6	117.3	-90.01	-6,099.0	366.7	660.4	425.3	235.14	2.809	
11,700.0	6,012.9	11,715.7	6,013.1	118.5	119.2	-90.01	-6,199.0	366.7	660.4	421.4	238.95	2.764	
11,800.0	6,012.9	11,815.7	6,013.1	120.4	121.1	-90.01	-6,299.0	366.7	660.4	417.6	242.77	2.720	
11,900.0	6,012.9	11,915.7	6,013.1	122.3	123.0	-90.01	-6,399.0	366.7	660.4	413.8	246.59	2.678	
12,000.0	6,012.9	12,015.7	6,013.1	124.3	124.9	-90.01	-6,499.0	366.7	660.4	410.0	250.41	2.637	
12,100.0	6,013.0	12,115.7	6,013.1	126.2	126.8	-90.01	-6,599.0	366.7	660.4	406.2	254.22	2.598	
12,200.0	6,013.0	12,215.7	6,013.1	128.1	128.8	-90.01	-6,699.0	366.7	660.4	402.3	258.05	2.559	
12,300.0	6,013.0	12,315.7	6,013.0	130.0	130.7	-90.01	-6,799.0	366.7	660.4	398.5	261.87	2.522	
12,400.0	6,013.0	12,415.7	6,013.0	131.9	132.6	-90.01	-6,899.0	366.7	660.4	394.7	265.69	2.486	
12,500.0	6,013.0	12,515.7	6,013.0	133.8	134.5	-90.01	-6,999.0	366.7	660.4	390.9	269.51	2.450	
12,600.0	6,013.0	12,615.7	6,013.0	135.7	136.4	-90.01	-7,099.0	366.7	660.4	387.0	273.33	2.416	
12,700.0	6,013.0	12,715.7	6,013.0	137.6	138.3	-90.01	-7,199.0	366.7	660.4	383.2	277.16	2.383	
12,800.0	6,013.0	12,815.7	6,013.0	139.5	140.2	-90.00	-7,299.0	366.7	660.4	379.4	280.98	2.350	
12,900.0	6,013.0	12,915.7	6,013.0	141.4	142.1	-90.00	-7,399.0	366.7	660.4	375.5	284.80	2.319	
13,000.0	6,013.0	13,015.7	6,013.0	143.3	144.0	-90.00	-7,499.0	366.7	660.3	371.7	288.63	2.288	
13,100.0	6,013.0	13,115.7	6,013.0	145.3	146.0	-90.00	-7,599.0	366.7	660.3	367.9	292.45	2.258	
13,200.0	6,013.0	13,215.7	6,013.0	147.2	147.9	-90.00	-7,699.0	366.7	660.3	364.1	296.28	2.229	
13,300.0	6,013.0	13,315.7	6,013.0	149.1	149.8	-90.00	-7,799.0	366.7	660.3	360.2	300.11	2.200	
13,400.0	6,013.0	13,415.7	6,013.0	151.0	151.7	-90.00	-7,899.0	366.7	660.3	356.4	303.93	2.173	
13,500.0	6,013.0	13,515.7	6,013.0	152.9	153.6	-90.00	-7,999.0	366.7	660.3	352.6	307.76	2.146	
13,593.4	6,013.0	13,609.2	6,013.0	154.7	155.4	-90.00	-8,092.4	366.7	660.3	349.0	311.34	2.121	
13,593.5	6,013.0	13,609.2	6,013.0	154.7	155.4	-90.00	-8,092.4	366.7	660.3	349.0	311.34	2.121	
13,594.1	6,013.0	13,609.2	6,013.0	154.7	155.4	-90.00	-8,092.4	366.7	660.3	349.0	311.35	2.121 SF	

Cathedral Energy Services

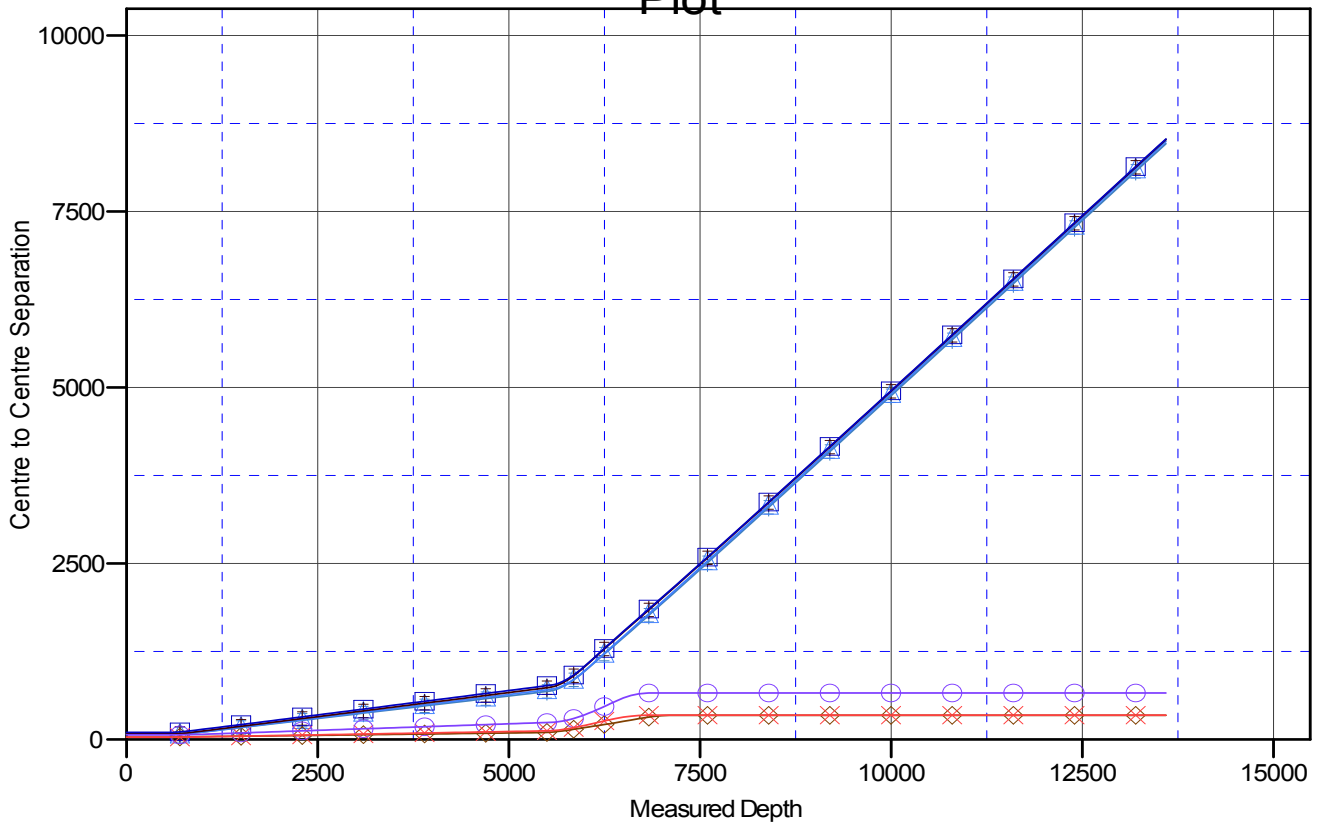
Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11E-1402B
Project:	Weld County, CO	TVD Reference:	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11E-1402B	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 Depths are relative to WELL @ 5018.6usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #11E-1402B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°

Ladder Plot



LEGEND

- Razor #11E-0201A, HZ, Plan #1 V0
- Razor #11E-0202B, HZ, Plan #1 V0
- Razor #11E-0203A, HZ, Plan #1 V0
- Razor #11E-0204B, HZ, Plan #1 V0
- Razor #11E-1401A, HZ, Plan #1 V0
- Razor #11E-1403A, HZ, Plan #1 V0
- Razor #11E-1404B, HZ, Plan #1 V0