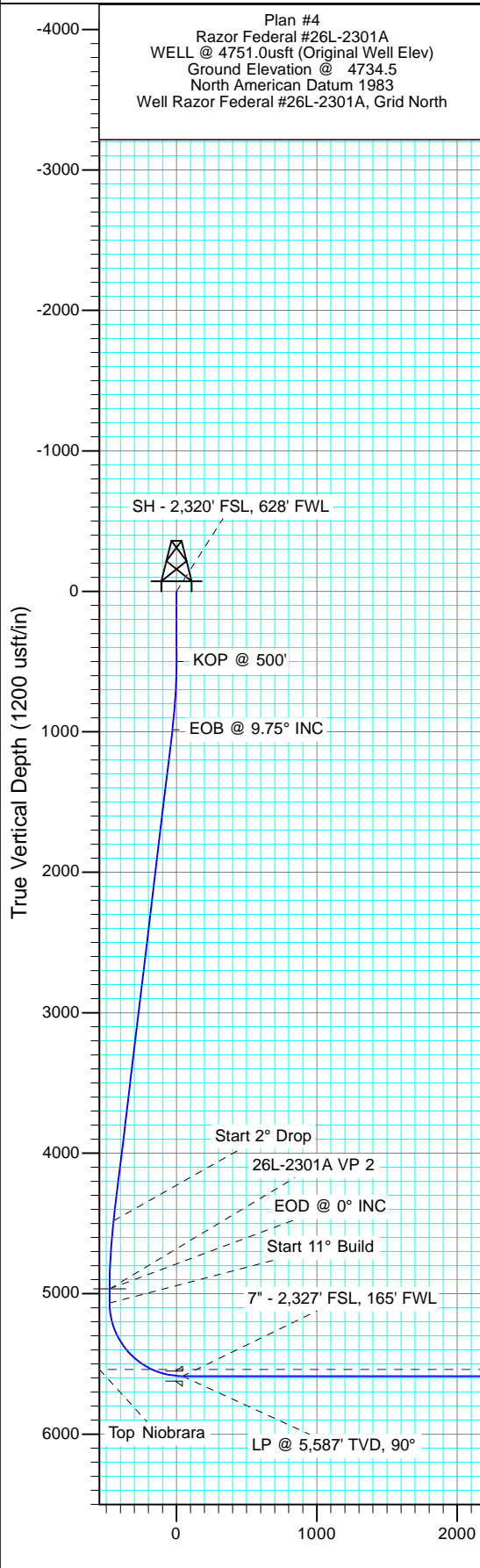
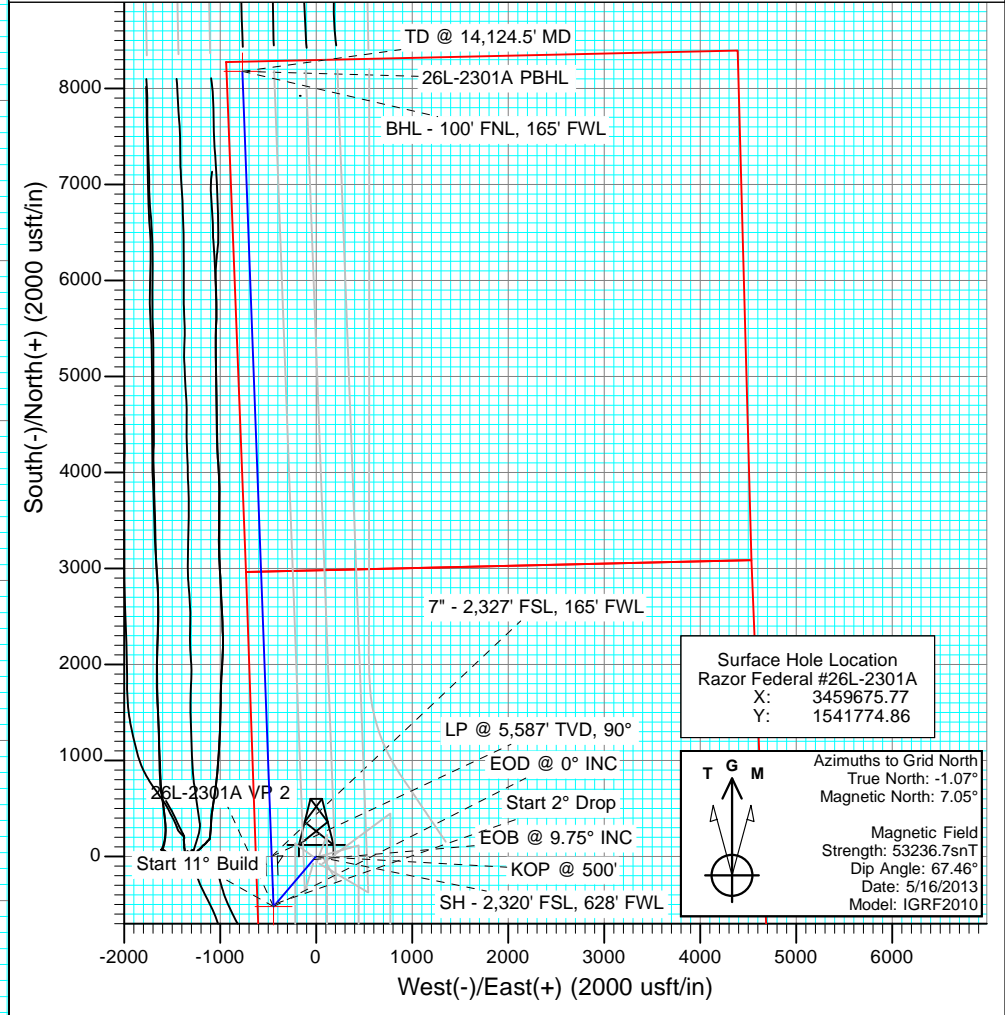




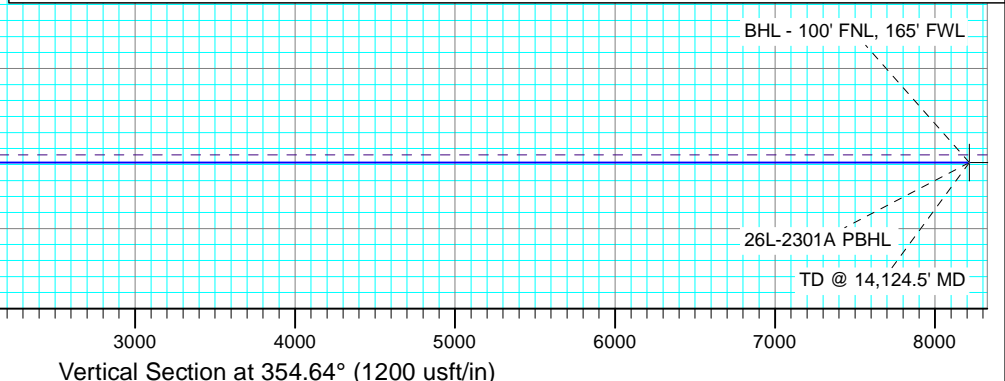
Project: Weld County, CO
 Site: S26-T10N-R58W
 Well: Razor Federal #26L-2301A
 Wellbore: HZ
 Design: Plan #4



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	987.7	9.75	220.42	985.3	-31.5	-26.9	2.00	220.42	-28.9	
4	4534.4	9.75	220.42	4480.8	-489.0	-416.4	0.00	0.00	-447.9	
5	5022.1	0.00	0.00	4966.1	-520.5	-443.3	2.00	180.00	-476.8	26L-2301A VP 2
6	5122.1	0.00	0.00	5066.1	-520.5	-443.3	0.00	0.00	-476.8	
7	5940.3	90.00	357.86	5587.0	0.0	-462.7	11.00	357.86	43.2	
8	14124.5	90.00	357.86	5587.0	8178.6	-767.6	0.00	0.00	8214.5	26L-2301A PBHL



DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
26L-2301A VP 2	4966.1	-520.5	-443.3	1541254.36	3459232.47
26L-2301A PBHL	5587.0	8178.6	-767.6	1549953.43	3458908.12



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26L-2301A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

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		S26-T10N-R58W			
Site Position:		Northing:	1,541,774.28 usft	Latitude:	40.808739
From:	Lat/Long	Easting:	3,459,642.55 usft	Longitude:	-103.839531
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.07 °

Well	Razor Federal #26L-2301A,					
Well Position	+N/-S	0.0 usft	Northing:	1,541,774.86 usft	Latitude:	40.808739
	+E/-W	0.0 usft	Easting:	3,459,675.77 usft	Longitude:	-103.839411
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,734.5 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/16/2013	8.13	67.46	53,237

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	354.64

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
987.7	9.75	220.42	985.3	-31.5	-26.9	2.00	2.00	0.00	220.42	
4,534.4	9.75	220.42	4,480.8	-489.0	-416.4	0.00	0.00	0.00	0.00	
5,022.1	0.00	0.00	4,966.1	-520.5	-443.3	2.00	-2.00	0.00	180.00	26L-2301A VP 2
5,122.1	0.00	0.00	5,066.1	-520.5	-443.3	0.00	0.00	0.00	0.00	
5,940.3	90.00	357.86	5,587.0	0.0	-462.7	11.00	11.00	-0.26	357.86	
14,124.5	90.00	357.86	5,587.0	8,178.6	-767.6	0.00	0.00	0.00	0.00	26L-2301A PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26L-2301A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 2,320' FSL, 628' FWL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
600.0	2.00	220.42	600.0	-1.3	-1.1	-1.2	2.00	2.00	
700.0	4.00	220.42	699.8	-5.3	-4.5	-4.9	2.00	2.00	
800.0	6.00	220.42	799.5	-11.9	-10.2	-10.9	2.00	2.00	
900.0	8.00	220.42	898.7	-21.2	-18.1	-19.4	2.00	2.00	
987.7	9.75	220.42	985.3	-31.5	-26.9	-28.9	2.00	2.00	EOB @ 9.75° INC
1,000.0	9.75	220.42	997.5	-33.1	-28.2	-30.3	0.00	0.00	
1,100.0	9.75	220.42	1,096.0	-46.0	-39.2	-42.1	0.00	0.00	
1,200.0	9.75	220.42	1,194.6	-58.9	-50.2	-54.0	0.00	0.00	
1,300.0	9.75	220.42	1,293.1	-71.8	-61.2	-65.8	0.00	0.00	
1,400.0	9.75	220.42	1,391.7	-84.7	-72.1	-77.6	0.00	0.00	
1,500.0	9.75	220.42	1,490.2	-97.6	-83.1	-89.4	0.00	0.00	
1,600.0	9.75	220.42	1,588.8	-110.5	-94.1	-101.2	0.00	0.00	
1,700.0	9.75	220.42	1,687.4	-123.4	-105.1	-113.0	0.00	0.00	
1,800.0	9.75	220.42	1,785.9	-136.3	-116.1	-124.9	0.00	0.00	
1,900.0	9.75	220.42	1,884.5	-149.2	-127.1	-136.7	0.00	0.00	
2,000.0	9.75	220.42	1,983.0	-162.1	-138.1	-148.5	0.00	0.00	
2,100.0	9.75	220.42	2,081.6	-175.0	-149.0	-160.3	0.00	0.00	
2,200.0	9.75	220.42	2,180.1	-187.9	-160.0	-172.1	0.00	0.00	
2,300.0	9.75	220.42	2,278.7	-200.8	-171.0	-183.9	0.00	0.00	
2,400.0	9.75	220.42	2,377.2	-213.7	-182.0	-195.7	0.00	0.00	
2,500.0	9.75	220.42	2,475.8	-226.6	-193.0	-207.6	0.00	0.00	
2,600.0	9.75	220.42	2,574.3	-239.5	-204.0	-219.4	0.00	0.00	
2,700.0	9.75	220.42	2,672.9	-252.4	-214.9	-231.2	0.00	0.00	
2,800.0	9.75	220.42	2,771.4	-265.3	-225.9	-243.0	0.00	0.00	
2,900.0	9.75	220.42	2,870.0	-278.2	-236.9	-254.8	0.00	0.00	
3,000.0	9.75	220.42	2,968.6	-291.1	-247.9	-266.6	0.00	0.00	
3,100.0	9.75	220.42	3,067.1	-304.0	-258.9	-278.4	0.00	0.00	
3,200.0	9.75	220.42	3,165.7	-316.9	-269.9	-290.3	0.00	0.00	
3,300.0	9.75	220.42	3,264.2	-329.8	-280.9	-302.1	0.00	0.00	
3,400.0	9.75	220.42	3,362.8	-342.7	-291.8	-313.9	0.00	0.00	
3,500.0	9.75	220.42	3,461.3	-355.6	-302.8	-325.7	0.00	0.00	
3,600.0	9.75	220.42	3,559.9	-368.5	-313.8	-337.5	0.00	0.00	
3,700.0	9.75	220.42	3,658.4	-381.4	-324.8	-349.3	0.00	0.00	
3,800.0	9.75	220.42	3,757.0	-394.3	-335.8	-361.2	0.00	0.00	
3,900.0	9.75	220.42	3,855.5	-407.2	-346.8	-373.0	0.00	0.00	
4,000.0	9.75	220.42	3,954.1	-420.0	-357.7	-384.8	0.00	0.00	
4,100.0	9.75	220.42	4,052.7	-432.9	-368.7	-396.6	0.00	0.00	
4,200.0	9.75	220.42	4,151.2	-445.8	-379.7	-408.4	0.00	0.00	
4,300.0	9.75	220.42	4,249.8	-458.7	-390.7	-420.2	0.00	0.00	
4,400.0	9.75	220.42	4,348.3	-471.6	-401.7	-432.0	0.00	0.00	
4,500.0	9.75	220.42	4,446.9	-484.5	-412.7	-443.9	0.00	0.00	
4,534.4	9.75	220.42	4,480.8	-489.0	-416.5	-447.9	0.00	0.00	Start 2° Drop
4,600.0	8.44	220.42	4,545.6	-496.9	-423.2	-455.2	2.00	-2.00	
4,700.0	6.44	220.42	4,644.7	-506.7	-431.6	-464.2	2.00	-2.00	
4,800.0	4.44	220.42	4,744.2	-514.0	-437.7	-470.8	2.00	-2.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26L-2301A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,900.0	2.44	220.42	4,844.1	-518.5	-441.6	-475.0	2.00	-2.00	
5,000.0	0.44	220.42	4,944.0	-520.4	-443.2	-476.7	2.00	-2.00	
5,022.1	0.00	0.00	4,966.1	-520.5	-443.3	-476.8	2.00	-2.00	
5,022.1	0.00	0.00	4,966.2	-520.5	-443.3	-476.8	0.00	0.00	EOD @ 0° INC
5,100.0	0.00	0.00	5,044.0	-520.5	-443.3	-476.8	0.00	0.00	
5,122.1	0.00	0.00	5,066.1	-520.5	-443.3	-476.8	0.00	0.00	
5,122.1	0.00	357.86	5,066.2	-520.5	-443.3	-476.8	0.00	0.00	Start 11° Build
5,150.0	3.07	357.86	5,094.0	-519.8	-443.3	-476.1	11.02	11.02	
5,200.0	8.57	357.86	5,143.7	-514.7	-443.5	-471.0	11.00	11.00	
5,250.0	14.07	357.86	5,192.7	-504.9	-443.9	-461.2	11.00	11.00	
5,300.0	19.57	357.86	5,240.6	-490.4	-444.4	-446.8	11.00	11.00	
5,350.0	25.07	357.86	5,286.8	-471.5	-445.1	-427.8	11.00	11.00	
5,400.0	30.57	357.86	5,331.0	-448.1	-446.0	-404.5	11.00	11.00	
5,450.0	36.07	357.86	5,372.8	-420.7	-447.0	-377.1	11.00	11.00	
5,500.0	41.57	357.86	5,411.7	-389.4	-448.2	-345.8	11.00	11.00	
5,550.0	47.07	357.86	5,447.5	-354.5	-449.5	-310.9	11.00	11.00	
5,600.0	52.57	357.86	5,479.7	-316.3	-450.9	-272.8	11.00	11.00	
5,650.0	58.07	357.86	5,508.2	-275.3	-452.4	-231.8	11.00	11.00	
5,700.0	63.57	357.86	5,532.5	-231.7	-454.1	-188.2	11.00	11.00	
5,717.3	65.48	357.86	5,540.0	-216.0	-454.7	-172.6	11.00	11.00	Top Niobrara
5,750.0	69.07	357.86	5,552.6	-185.9	-455.8	-142.5	11.00	11.00	
5,800.0	74.57	357.86	5,568.2	-138.5	-457.5	-95.1	11.00	11.00	
5,850.0	80.07	357.86	5,579.2	-89.7	-459.4	-46.4	11.00	11.00	
5,900.0	85.57	357.86	5,585.4	-40.2	-461.2	3.1	11.00	11.00	
5,940.3	90.00	357.86	5,587.0	0.1	-462.7	43.3	10.99	10.99	7" - 2,327' FSL, 165' FWL
5,940.3	90.00	357.86	5,587.0	0.1	-462.7	43.3	0.01	0.00	LP @ 5,587' TVD, 90°
6,000.0	90.00	357.86	5,587.0	59.7	-464.9	102.9	0.00	0.00	
6,100.0	90.00	357.86	5,587.0	159.6	-468.7	202.7	0.00	0.00	
6,200.0	90.00	357.86	5,587.0	259.6	-472.4	302.6	0.00	0.00	
6,300.0	90.00	357.86	5,587.0	359.5	-476.1	402.4	0.00	0.00	
6,400.0	90.00	357.86	5,587.0	459.4	-479.8	502.3	0.00	0.00	
6,500.0	90.00	357.86	5,587.0	559.4	-483.6	602.1	0.00	0.00	
6,600.0	90.00	357.86	5,587.0	659.3	-487.3	701.9	0.00	0.00	
6,700.0	90.00	357.86	5,587.0	759.2	-491.0	801.8	0.00	0.00	
6,800.0	90.00	357.86	5,587.0	859.2	-494.7	901.6	0.00	0.00	
6,900.0	90.00	357.86	5,587.0	959.1	-498.5	1,001.5	0.00	0.00	
7,000.0	90.00	357.86	5,587.0	1,059.0	-502.2	1,101.3	0.00	0.00	
7,100.0	90.00	357.86	5,587.0	1,158.9	-505.9	1,201.2	0.00	0.00	
7,200.0	90.00	357.86	5,587.0	1,258.9	-509.6	1,301.0	0.00	0.00	
7,300.0	90.00	357.86	5,587.0	1,358.8	-513.4	1,400.8	0.00	0.00	
7,400.0	90.00	357.86	5,587.0	1,458.7	-517.1	1,500.7	0.00	0.00	
7,500.0	90.00	357.86	5,587.0	1,558.7	-520.8	1,600.5	0.00	0.00	
7,600.0	90.00	357.86	5,587.0	1,658.6	-524.5	1,700.4	0.00	0.00	
7,700.0	90.00	357.86	5,587.0	1,758.5	-528.3	1,800.2	0.00	0.00	
7,800.0	90.00	357.86	5,587.0	1,858.5	-532.0	1,900.0	0.00	0.00	
7,900.0	90.00	357.86	5,587.0	1,958.4	-535.7	1,999.9	0.00	0.00	
8,000.0	90.00	357.86	5,587.0	2,058.3	-539.5	2,099.7	0.00	0.00	
8,100.0	90.00	357.86	5,587.0	2,158.3	-543.2	2,199.6	0.00	0.00	
8,200.0	90.00	357.86	5,587.0	2,258.2	-546.9	2,299.4	0.00	0.00	
8,300.0	90.00	357.86	5,587.0	2,358.1	-550.6	2,399.3	0.00	0.00	
8,400.0	90.00	357.86	5,587.0	2,458.0	-554.4	2,499.1	0.00	0.00	
8,500.0	90.00	357.86	5,587.0	2,558.0	-558.1	2,598.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26L-2301A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,600.0	90.00	357.86	5,587.0	2,657.9	-561.8	2,698.8	0.00	0.00	
8,700.0	90.00	357.86	5,587.0	2,757.8	-565.5	2,798.6	0.00	0.00	
8,800.0	90.00	357.86	5,587.0	2,857.8	-569.3	2,898.5	0.00	0.00	
8,900.0	90.00	357.86	5,587.0	2,957.7	-573.0	2,998.3	0.00	0.00	
9,000.0	90.00	357.86	5,587.0	3,057.6	-576.7	3,098.1	0.00	0.00	
9,100.0	90.00	357.86	5,587.0	3,157.6	-580.4	3,198.0	0.00	0.00	
9,200.0	90.00	357.86	5,587.0	3,257.5	-584.2	3,297.8	0.00	0.00	
9,300.0	90.00	357.86	5,587.0	3,357.4	-587.9	3,397.7	0.00	0.00	
9,400.0	90.00	357.86	5,587.0	3,457.4	-591.6	3,497.5	0.00	0.00	
9,500.0	90.00	357.86	5,587.0	3,557.3	-595.3	3,597.3	0.00	0.00	
9,600.0	90.00	357.86	5,587.0	3,657.2	-599.1	3,697.2	0.00	0.00	
9,700.0	90.00	357.86	5,587.0	3,757.1	-602.8	3,797.0	0.00	0.00	
9,800.0	90.00	357.86	5,587.0	3,857.1	-606.5	3,896.9	0.00	0.00	
9,900.0	90.00	357.86	5,587.0	3,957.0	-610.2	3,996.7	0.00	0.00	
10,000.0	90.00	357.86	5,587.0	4,056.9	-614.0	4,096.6	0.00	0.00	
10,100.0	90.00	357.86	5,587.0	4,156.9	-617.7	4,196.4	0.00	0.00	
10,200.0	90.00	357.86	5,587.0	4,256.8	-621.4	4,296.2	0.00	0.00	
10,300.0	90.00	357.86	5,587.0	4,356.7	-625.1	4,396.1	0.00	0.00	
10,400.0	90.00	357.86	5,587.0	4,456.7	-628.9	4,495.9	0.00	0.00	
10,500.0	90.00	357.86	5,587.0	4,556.6	-632.6	4,595.8	0.00	0.00	
10,600.0	90.00	357.86	5,587.0	4,656.5	-636.3	4,695.6	0.00	0.00	
10,700.0	90.00	357.86	5,587.0	4,756.4	-640.1	4,795.4	0.00	0.00	
10,800.0	90.00	357.86	5,587.0	4,856.4	-643.8	4,895.3	0.00	0.00	
10,900.0	90.00	357.86	5,587.0	4,956.3	-647.5	4,995.1	0.00	0.00	
11,000.0	90.00	357.86	5,587.0	5,056.2	-651.2	5,095.0	0.00	0.00	
11,100.0	90.00	357.86	5,587.0	5,156.2	-655.0	5,194.8	0.00	0.00	
11,200.0	90.00	357.86	5,587.0	5,256.1	-658.7	5,294.7	0.00	0.00	
11,300.0	90.00	357.86	5,587.0	5,356.0	-662.4	5,394.5	0.00	0.00	
11,400.0	90.00	357.86	5,587.0	5,456.0	-666.1	5,494.3	0.00	0.00	
11,500.0	90.00	357.86	5,587.0	5,555.9	-669.9	5,594.2	0.00	0.00	
11,600.0	90.00	357.86	5,587.0	5,655.8	-673.6	5,694.0	0.00	0.00	
11,700.0	90.00	357.86	5,587.0	5,755.8	-677.3	5,793.9	0.00	0.00	
11,800.0	90.00	357.86	5,587.0	5,855.7	-681.0	5,893.7	0.00	0.00	
11,900.0	90.00	357.86	5,587.0	5,955.6	-684.8	5,993.5	0.00	0.00	
12,000.0	90.00	357.86	5,587.0	6,055.5	-688.5	6,093.4	0.00	0.00	
12,100.0	90.00	357.86	5,587.0	6,155.5	-692.2	6,193.2	0.00	0.00	
12,200.0	90.00	357.86	5,587.0	6,255.4	-695.9	6,293.1	0.00	0.00	
12,300.0	90.00	357.86	5,587.0	6,355.3	-699.7	6,392.9	0.00	0.00	
12,400.0	90.00	357.86	5,587.0	6,455.3	-703.4	6,492.8	0.00	0.00	
12,500.0	90.00	357.86	5,587.0	6,555.2	-707.1	6,592.6	0.00	0.00	
12,600.0	90.00	357.86	5,587.0	6,655.1	-710.8	6,692.4	0.00	0.00	
12,700.0	90.00	357.86	5,587.0	6,755.1	-714.6	6,792.3	0.00	0.00	
12,800.0	90.00	357.86	5,587.0	6,855.0	-718.3	6,892.1	0.00	0.00	
12,900.0	90.00	357.86	5,587.0	6,954.9	-722.0	6,992.0	0.00	0.00	
13,000.0	90.00	357.86	5,587.0	7,054.9	-725.7	7,091.8	0.00	0.00	
13,100.0	90.00	357.86	5,587.0	7,154.8	-729.5	7,191.6	0.00	0.00	
13,200.0	90.00	357.86	5,587.0	7,254.7	-733.2	7,291.5	0.00	0.00	
13,300.0	90.00	357.86	5,587.0	7,354.6	-736.9	7,391.3	0.00	0.00	
13,400.0	90.00	357.86	5,587.0	7,454.6	-740.6	7,491.2	0.00	0.00	
13,500.0	90.00	357.86	5,587.0	7,554.5	-744.4	7,591.0	0.00	0.00	
13,600.0	90.00	357.86	5,587.0	7,654.4	-748.1	7,690.8	0.00	0.00	
13,700.0	90.00	357.86	5,587.0	7,754.4	-751.8	7,790.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26L-2301A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
13,800.0	90.00	357.86	5,587.0	7,854.3	-755.6	7,890.5	0.00	0.00	
13,900.0	90.00	357.86	5,587.0	7,954.2	-759.3	7,990.4	0.00	0.00	
14,000.0	90.00	357.86	5,587.0	8,054.2	-763.0	8,090.2	0.00	0.00	
14,100.0	90.00	357.86	5,587.0	8,154.1	-766.7	8,190.1	0.00	0.00	
14,124.5	90.00	357.86	5,587.0	8,178.6	-767.6	8,214.5	0.00	0.00	BHL - 100' FNL, 165' FWL - TD @ 14,124.5' MC

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
26L-2301A VP 2 - plan hits target center - Point	0.00	0.00	4,966.1	-520.5	-443.3	1,541,254.36	3,459,232.47	40.807333	-103.841047
26L-2301A PBHL - plan hits target center - Point	0.00	0.00	5,587.0	8,178.6	-767.6	1,549,953.43	3,458,908.12	40.831222	-103.841631
26L-2301A VP - plan misses target center by 324.3usft at 5022.1usft MD (4966.1 TVD, -520.5 N, -443.3 E) - Point	0.00	0.00	4,966.1	-520.9	-767.6	1,541,253.96	3,458,908.12	40.807349	-103.842219
26L-2301A BHL Tgt (164 - plan misses target center by 1.0usft at 13625.6usft MD (5587.0 TVD, 7680.0 N, -749.1 E) - Point	0.00	0.00	5,587.0	7,680.1	-748.1	1,549,454.92	3,458,927.69	40.829853	-103.841594

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,940.3	5,587.0	7" - 2,327' FSL, 165' FWL	0	0	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,717.3	5,540.0	Top Niobrara		0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor Federal #26L-2301A
Wellbore: HZ
Design: Plan #4

Local Co-ordinate Reference: Well Razor Federal #26L-2301A
TVD Reference: WELL @ 4751.0usft (Original Well Elev)
MD Reference: WELL @ 4751.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.5	0.5	0.0	0.0	SH - 2,320' FSL, 628' FWL
500.0	500.0	0.0	0.0	KOP @ 500'
987.7	985.3	-31.5	-26.9	EOB @ 9.75° INC
4,534.4	4,480.8	-489.0	-416.5	Start 2° Drop
5,022.1	4,966.2	-520.5	-443.3	EOD @ 0° INC
5,122.1	5,066.2	-520.5	-443.3	Start 11° Build
5,940.3	5,587.0	0.1	-462.7	LP @ 5,587' TVD, 90°
14,124.5	5,587.0	8,178.6	-767.6	BHL - 100' FNL, 165' FWL
14,124.5	5,587.0	8,178.6	-767.6	TD @ 14,124.5' MD

Whiting Petroleum Corporation

Weld County, CO

S26-T10N-R58W

Razor Federal #26L-2301A

HZ

Plan #4

Anticollision Report

28 March, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/27/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,124.5	Plan #4 (HZ)	ISCWSA MWD	MWD - ISCWSA

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design			Between Centres (usft)	Between Ellipses (usft)		
S10-T10N-R58W						
Razor #10H-1513A - Hz - Plan #1						Out of range
Razor #10H-1514B - Hz - Plan #1						Out of range
Razor #10H-1515A - Hz - Plan #1						Out of range
Razor #10H-1516B - Hz - Plan #1	14,125.0	13,970.2	403.7	99.3	1.326	Level 3, CC, ES, SF
RAZOR 23-2612H (EXISTING) - WHITING WELL - NO S						Out of range
S11-T10N-R58W						
Razor #11E-1401A - HZ - FINAL	14,125.0	13,465.0	259.1	120.4	1.868	CC, ES, SF
Razor #11E-1402B - HZ - FINAL	14,125.0	13,470.0	455.9	177.8	1.639	CC, ES, SF
Razor #11E-1403A - HZ - FINAL						Out of range
Razor #11E-1404B - HZ - FINAL						Out of range
Razor #11F-1405A - HZ - Plan #1						Out of range
S26-T10N-R58W						
Razor #26K-2305A - HZ - Plan #1						Out of range
Razor #26L-3501A - HZ - Plan #4	834.5	833.4	25.2	21.8	7.343	CC, ES
Razor #26L-3501A - HZ - Plan #4	900.0	897.8	27.2	23.4	7.261	SF
Razor #26L-3502B - HZ - Plan #3	1,075.2	1,071.5	49.7	45.0	10.550	CC, ES
Razor #26L-3502B - HZ - Plan #3	1,200.0	1,194.5	54.2	48.8	10.107	SF
Razor #26L-3503A - HZ - Plan #3	500.0	500.0	32.9	31.0	16.589	CC, ES
Razor #26L-3503A - HZ - Plan #3	600.0	598.8	35.8	33.4	14.904	SF
Razor #26L-3504B - HZ - Plan #3	766.6	766.2	99.3	96.2	31.757	CC
Razor #26L-3504B - HZ - Plan #3	800.0	799.5	99.4	96.1	30.325	ES
Razor #26L-3504B - HZ - Plan #3	1,100.0	1,093.7	111.3	106.5	23.265	SF
Razor Federal #26L-2302B - HZ - Plan #4	1,198.9	1,192.5	28.4	23.1	5.326	CC
Razor Federal #26L-2302B - HZ - Plan #4	14,125.0	14,008.3	336.4	18.9	1.060	Level 2, ES, SF
Razor Federal #26L-2303A - HZ - Plan #3	500.0	500.0	66.2	64.2	33.318	CC, ES
Razor Federal #26L-2303A - HZ - Plan #3	900.0	898.7	87.2	83.5	23.532	SF
Razor Federal #26L-2304B - HZ - Plan #2	675.0	673.1	80.7	78.0	29.803	CC
Razor Federal #26L-2304B - HZ - Plan #2	700.0	697.5	80.8	78.0	28.792	ES
Razor Federal #26L-2304B - HZ - Plan #2	1,000.0	985.0	101.7	97.5	24.293	SF
S27-T10N-R58W						
Razor #27I-2213A - HZ - HZ						Out of range
Razor #27I-2213A - STK - FINAL						Out of range
Razor #27I-2214B - Gyro Surveys - Gyro Surveys						Out of range
Razor #27I-2214B - HZ - FINAL						Out of range
Razor #27I-2215A - HZ - FINAL						Out of range
Razor #27I-2216B - HZ - ORIGINAL HOLE	13,090.7	12,432.0	358.7	89.9	1.334	Level 3, CC
Razor #27I-2216B - HZ - ORIGINAL HOLE	13,100.0	12,432.0	358.9	89.8	1.334	Level 3, ES, SF
Razor #27I-2216B - Stk #1 - SURVEYS	13,012.8	12,352.0	328.7	77.0	1.306	Level 3, CC
Razor #27I-2216B - Stk #1 - SURVEYS	13,900.0	13,226.3	335.2	54.8	1.196	Level 2, ES, SF
Razor #27I-3415A - HZ - FINAL						Out of range
Razor #27I-3416B - HZ - FINAL						Out of range

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S10-T10N-R58W - Razor #10H-1516B - 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
14,000.0	5,587.0	13,970.2	6,013.0	158.7	157.6	-109.44	8,369.8	-1,103.9	478.9	176.9	301.99	1.586	
14,100.0	5,587.0	13,970.2	6,013.0	160.7	157.6	-109.44	8,369.8	-1,103.9	416.8	112.9	303.91	1.371	Level 3
14,125.0	5,587.0	13,970.2	6,013.0	161.1	157.6	-109.44	8,369.8	-1,103.9	403.7	99.3	304.38	1.326	Level 3, CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1401A - HZ - FINAL												Offset Site Error:	0.0 usft
Survey Program: 348-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
13,900.0	5,587.0	13,465.0	5,910.5	156.8	144.2	166.34	8,432.0	-763.5	481.1	344.2	136.82	3.516	
14,000.0	5,587.0	13,465.0	5,910.5	158.7	144.2	166.34	8,432.0	-763.5	382.0	244.3	137.67	2.775	
14,100.0	5,587.0	13,465.0	5,910.5	160.7	144.2	166.34	8,432.0	-763.5	283.5	145.0	138.51	2.047	
14,125.0	5,587.0	13,465.0	5,910.5	161.1	144.2	166.34	8,432.0	-763.5	259.1	120.4	138.72	1.868	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1402B - HZ - FINAL													Offset Site Error:	0.0 usft
Survey Program: 440-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	
14,100.0	5,587.0	13,470.0	6,023.0	160.7	143.7	116.63	8,449.6	-441.6	470.5	192.8	277.69	1.694		
14,125.0	5,587.0	13,470.0	6,023.0	161.1	143.7	116.63	8,449.6	-441.6	455.9	177.8	278.13	1.639	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor #26L-3501A - HZ - Plan #4													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	-91.05	-0.6	-33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	-91.05	-0.6	-33.2	33.2	33.0	0.19	177.002		
200.0	200.0	200.0	200.0	0.3	0.3	-91.05	-0.6	-33.2	33.2	32.6	0.64	52.133		
300.0	300.0	300.0	300.0	0.5	0.5	-91.05	-0.6	-33.2	33.2	32.1	1.09	30.568		
400.0	400.0	400.0	400.0	0.8	0.8	-91.05	-0.6	-33.2	33.2	31.7	1.54	21.624		
500.0	500.0	500.0	500.0	1.0	1.0	-91.05	-0.6	-33.2	33.2	31.2	1.99	16.729		
600.0	600.0	600.0	600.0	1.2	1.2	50.88	-0.6	-33.2	32.1	29.7	2.41	13.304		
700.0	699.8	699.8	699.8	1.4	1.4	58.95	-0.6	-33.2	29.1	26.2	2.83	10.279		
800.0	799.5	799.5	799.5	1.6	1.7	75.86	-0.6	-33.2	25.7	22.4	3.27	7.851		
834.5	833.7	833.4	833.4	1.7	1.7	84.24	-0.5	-33.4	25.2	21.8	3.43	7.343 CC, ES		
900.0	898.7	897.8	897.8	1.9	1.9	101.86	0.4	-34.6	27.2	23.4	3.74	7.261 SF		
1,000.0	997.5	995.9	995.8	2.2	2.1	123.07	3.2	-38.5	37.8	33.6	4.23	8.941		
1,100.0	1,096.0	1,094.4	1,094.1	2.5	2.3	134.79	6.6	-43.0	52.7	48.0	4.70	11.228		
1,200.0	1,194.6	1,192.8	1,192.4	2.8	2.5	141.21	9.9	-47.5	68.9	63.7	5.17	13.327		
1,300.0	1,293.1	1,291.3	1,290.7	3.2	2.8	145.18	13.2	-52.0	85.5	79.9	5.64	15.154		
1,400.0	1,391.7	1,389.8	1,389.0	3.6	3.0	147.85	16.5	-56.5	102.4	96.3	6.13	16.725		
1,500.0	1,490.2	1,488.2	1,487.3	4.0	3.2	149.76	19.8	-61.0	119.5	112.9	6.61	18.079		
1,600.0	1,588.8	1,586.7	1,585.6	4.3	3.5	151.19	23.1	-65.5	136.7	129.6	7.10	19.250		
1,700.0	1,687.4	1,685.2	1,683.9	4.7	3.7	152.30	26.4	-70.1	153.9	146.3	7.59	20.272		
1,800.0	1,785.9	1,783.6	1,782.2	5.1	3.9	153.19	29.8	-74.6	171.2	163.1	8.09	21.167		
1,900.0	1,884.5	1,882.1	1,880.5	5.5	4.2	153.91	33.1	-79.1	188.5	179.9	8.59	21.959		
2,000.0	1,983.0	1,980.6	1,978.8	5.9	4.4	154.51	36.4	-83.6	205.9	196.8	9.08	22.662		
2,100.0	2,081.6	2,079.0	2,077.1	6.3	4.7	155.02	39.7	-88.1	223.2	213.6	9.58	23.290		
2,200.0	2,180.1	2,177.5	2,175.4	6.7	4.9	155.46	43.0	-92.6	240.6	230.5	10.09	23.854		
2,300.0	2,278.7	2,275.9	2,273.7	7.1	5.1	155.84	46.3	-97.1	258.0	247.4	10.59	24.364		
2,400.0	2,377.2	2,374.4	2,372.0	7.5	5.4	156.16	49.7	-101.7	275.4	264.3	11.09	24.827		
2,500.0	2,475.8	2,472.9	2,470.3	7.9	5.6	156.45	53.0	-106.2	292.8	281.2	11.60	25.248		
2,600.0	2,574.3	2,571.3	2,568.6	8.2	5.9	156.71	56.3	-110.7	310.2	298.1	12.10	25.633		
2,700.0	2,672.9	2,669.8	2,667.0	8.6	6.1	156.94	59.6	-115.2	327.6	315.0	12.61	25.987		
2,800.0	2,771.4	2,768.3	2,765.3	9.0	6.3	157.15	62.9	-119.7	345.0	331.9	13.11	26.313		
2,900.0	2,870.0	2,866.7	2,863.6	9.4	6.6	157.34	66.2	-124.2	362.4	348.8	13.62	26.613		
3,000.0	2,968.6	2,965.2	2,961.9	9.8	6.8	157.51	69.5	-128.7	379.9	365.7	14.13	26.892		
3,100.0	3,067.1	3,063.7	3,060.2	10.2	7.1	157.66	72.9	-133.2	397.3	382.7	14.63	27.151		
3,200.0	3,165.7	3,162.1	3,158.5	10.6	7.3	157.80	76.2	-137.8	414.7	399.6	15.14	27.392		
3,300.0	3,264.2	3,260.6	3,256.8	11.0	7.6	157.93	79.5	-142.3	432.1	416.5	15.65	27.617		
3,400.0	3,362.8	3,359.1	3,355.1	11.4	7.8	158.05	82.8	-146.8	449.6	433.4	16.16	27.828		
3,500.0	3,461.3	3,457.5	3,453.4	11.8	8.0	158.17	86.1	-151.3	467.0	450.4	16.66	28.025		
3,600.0	3,559.9	3,556.0	3,551.7	12.2	8.3	158.27	89.4	-155.8	484.5	467.3	17.17	28.211		
5,200.0	5,143.7	6,018.9	5,587.0	17.1	16.1	108.20	-514.7	-217.0	497.8	464.9	32.90	15.127		
5,300.0	5,240.6	5,994.6	5,587.0	17.1	15.8	118.62	-490.4	-217.0	414.4	381.8	32.52	12.743		
5,400.0	5,331.0	5,952.3	5,587.0	16.9	15.3	121.01	-448.1	-217.0	343.4	312.2	31.20	11.006		
5,500.0	5,411.7	5,893.6	5,587.0	16.6	14.7	117.98	-389.4	-217.0	290.1	260.4	29.67	9.778		
5,600.0	5,479.7	5,803.2	5,579.6	16.3	13.8	107.60	-299.4	-217.0	254.9	226.6	28.29	9.009		
5,700.0	5,532.5	5,723.8	5,560.4	15.9	13.2	95.97	-222.4	-217.0	238.9	211.7	27.15	8.798		
5,725.3	5,543.2	5,705.0	5,554.2	15.8	13.1	92.88	-204.7	-217.0	238.2	211.4	26.80	8.886		
5,800.0	5,568.2	5,650.0	5,532.3	15.6	12.8	83.34	-154.3	-217.0	243.7	217.9	25.79	9.448		
5,900.0	5,585.4	5,584.3	5,499.5	15.3	12.6	71.58	-97.5	-217.0	265.2	241.0	24.19	10.961		
6,000.0	5,587.0	5,521.7	5,461.7	15.0	12.4	62.80	-47.6	-217.0	297.8	275.1	22.71	13.116		
6,100.0	5,587.0	5,469.3	5,425.6	15.1	12.3	56.65	-9.6	-217.0	343.5	321.8	21.72	15.817		
6,200.0	5,587.0	5,425.9	5,393.0	16.1	12.3	51.77	19.0	-217.0	400.9	379.8	21.11	18.989		
6,300.0	5,587.0	5,400.0	5,372.4	17.3	12.3	49.00	34.8	-217.0	467.5	446.4	21.17	22.083		

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 Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor #26L-3502B - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							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	178.93	-75.1	1.4	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	178.93	-75.1	1.4	75.1	74.9	0.19	399.993		
200.0	200.0	200.0	200.0	0.3	0.3	178.93	-75.1	1.4	75.1	74.4	0.64	117.811		
300.0	300.0	300.0	300.0	0.5	0.5	178.93	-75.1	1.4	75.1	74.0	1.09	69.079		
400.0	400.0	400.0	400.0	0.8	0.8	178.93	-75.1	1.4	75.1	73.5	1.54	48.865		
500.0	500.0	500.0	500.0	1.0	1.0	178.93	-75.1	1.4	75.1	73.1	1.99	37.804		
600.0	600.0	600.0	600.0	1.2	1.2	-42.41	-75.1	1.4	73.8	71.4	2.41	30.563		
700.0	699.8	699.8	699.8	1.4	1.4	-45.35	-75.1	1.4	70.0	67.2	2.83	24.708		
800.0	799.5	799.5	799.5	1.6	1.7	-50.97	-75.1	1.4	64.2	60.9	3.27	19.604		
900.0	898.7	898.7	898.7	1.9	1.9	-60.56	-75.1	1.4	57.2	53.5	3.75	15.274		
1,000.0	997.5	997.5	997.5	2.2	2.1	-75.84	-75.1	1.4	51.3	47.1	4.28	11.986		
1,075.2	1,071.5	1,071.5	1,071.5	2.4	2.3	-90.00	-75.1	1.4	49.7	45.0	4.71	10.550 CC, ES		
1,100.0	1,096.0	1,096.0	1,096.0	2.5	2.3	-94.77	-75.1	1.4	49.9	45.1	4.85	10.292		
1,200.0	1,194.6	1,194.5	1,194.4	2.8	2.6	-114.34	-73.6	1.9	54.2	48.8	5.36	10.107 SF		
1,300.0	1,293.1	1,291.6	1,291.5	3.2	2.8	-132.25	-69.1	3.6	64.9	59.1	5.77	11.244		
1,400.0	1,391.7	1,387.9	1,387.5	3.6	3.0	-146.04	-61.8	6.3	81.9	75.7	6.14	13.334		
1,500.0	1,490.2	1,484.8	1,483.9	4.0	3.2	-155.14	-54.0	9.2	102.3	95.8	6.53	15.660		
1,600.0	1,588.8	1,581.6	1,580.4	4.3	3.4	-161.15	-46.2	12.1	124.5	117.5	6.95	17.910		
1,700.0	1,687.4	1,678.4	1,676.9	4.7	3.7	-165.34	-38.4	15.0	147.5	140.2	7.38	19.991		
1,800.0	1,785.9	1,775.2	1,773.3	5.1	3.9	-168.39	-30.6	17.9	171.2	163.3	7.82	21.884		
1,900.0	1,884.5	1,872.0	1,869.8	5.5	4.2	-170.70	-22.8	20.8	195.1	186.9	8.27	23.595		
2,000.0	1,983.0	1,968.9	1,966.2	5.9	4.4	-172.51	-14.9	23.7	219.3	210.6	8.72	25.145		
2,100.0	2,081.6	2,065.7	2,062.7	6.3	4.7	-173.95	-7.1	26.6	243.7	234.5	9.18	26.549		
2,200.0	2,180.1	2,162.5	2,159.2	6.7	4.9	-175.14	0.7	29.5	268.2	258.5	9.64	27.823		
2,300.0	2,278.7	2,259.3	2,255.6	7.1	5.2	-176.13	8.5	32.4	292.7	282.6	10.10	28.983		
2,400.0	2,377.2	2,356.1	2,352.1	7.5	5.4	-176.96	16.3	35.3	317.4	306.8	10.56	30.043		
2,500.0	2,475.8	2,453.0	2,448.6	7.9	5.7	-177.67	24.1	38.2	342.1	331.0	11.03	31.015		
2,600.0	2,574.3	2,549.8	2,545.0	8.2	5.9	-178.29	31.9	41.1	366.8	355.3	11.50	31.908		
2,700.0	2,672.9	2,646.6	2,641.5	8.6	6.2	-178.83	39.7	44.0	391.6	379.6	11.96	32.732		
2,800.0	2,771.4	2,743.4	2,737.9	9.0	6.4	-179.30	47.5	46.9	416.4	404.0	12.43	33.493		
2,900.0	2,870.0	2,840.2	2,834.4	9.4	6.7	-179.73	55.3	49.8	441.2	428.3	12.90	34.199		
3,000.0	2,968.6	2,937.1	2,930.9	9.8	6.9	179.90	63.1	52.7	466.1	452.7	13.37	34.855		
3,100.0	3,067.1	3,033.9	3,027.3	10.2	7.2	179.56	70.9	55.6	490.9	477.1	13.84	35.466		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor #26L-3503A - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	88.93	0.6	32.9	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	88.93	0.6	32.9	32.9	32.8	0.19	175.527		
200.0	200.0	200.0	200.0	0.3	0.3	88.93	0.6	32.9	32.9	32.3	0.64	51.698		
300.0	300.0	300.0	300.0	0.5	0.5	88.93	0.6	32.9	32.9	31.9	1.09	30.313		
400.0	400.0	400.0	400.0	0.8	0.8	88.93	0.6	32.9	32.9	31.4	1.54	21.443		
500.0	500.0	500.0	500.0	1.0	1.0	88.93	0.6	32.9	32.9	31.0	1.99	16.589 CC, ES		
600.0	600.0	598.8	598.8	1.2	1.2	-134.21	1.1	34.6	35.8	33.4	2.40	14.904 SF		
700.0	699.8	696.9	696.8	1.4	1.4	-140.18	2.4	39.5	44.8	41.9	2.81	15.905		
800.0	799.5	793.9	793.3	1.6	1.6	-146.04	4.7	47.4	60.3	57.0	3.25	18.535		
900.0	898.7	891.6	890.5	1.9	1.9	-150.64	7.4	57.0	80.7	77.0	3.69	21.864		
1,000.0	997.5	988.5	987.0	2.2	2.1	-154.17	10.0	66.4	104.5	100.4	4.13	25.286		
1,100.0	1,096.0	1,085.1	1,083.1	2.5	2.4	-156.76	12.7	75.9	129.8	125.2	4.58	28.324		
1,200.0	1,194.6	1,181.8	1,179.2	2.8	2.7	-158.50	15.3	85.3	155.2	150.2	5.04	30.801		
1,300.0	1,293.1	1,278.4	1,275.4	3.2	2.9	-159.75	18.0	94.7	180.8	175.3	5.50	32.845		
1,400.0	1,391.7	1,375.0	1,371.5	3.6	3.2	-160.69	20.6	104.2	206.4	200.4	5.97	34.552		
1,500.0	1,490.2	1,471.6	1,467.6	4.0	3.5	-161.43	23.3	113.6	232.0	225.6	6.45	35.989		
1,600.0	1,588.8	1,568.2	1,563.7	4.3	3.8	-162.02	25.9	123.1	257.7	250.8	6.92	37.225		
1,700.0	1,687.4	1,664.9	1,659.8	4.7	4.0	-162.50	28.6	132.5	283.4	276.0	7.40	38.288		
1,800.0	1,785.9	1,761.5	1,756.0	5.1	4.3	-162.90	31.2	141.9	309.1	301.2	7.88	39.214		
1,900.0	1,884.5	1,858.1	1,852.1	5.5	4.6	-163.24	33.8	151.4	334.8	326.4	8.36	40.026		
2,000.0	1,983.0	1,954.7	1,948.2	5.9	4.9	-163.53	36.5	160.8	360.5	351.6	8.85	40.744		
2,100.0	2,081.6	2,051.3	2,044.3	6.3	5.2	-163.79	39.1	170.2	386.2	376.9	9.33	41.382		
2,200.0	2,180.1	2,148.0	2,140.5	6.7	5.4	-164.01	41.8	179.7	412.0	402.1	9.82	41.953		
2,300.0	2,278.7	2,244.6	2,236.6	7.1	5.7	-164.20	44.4	189.1	437.7	427.4	10.31	42.468		
2,400.0	2,377.2	2,341.2	2,332.7	7.5	6.0	-164.38	47.1	198.5	463.4	452.7	10.79	42.933		
2,500.0	2,475.8	2,437.8	2,428.8	7.9	6.3	-164.53	49.7	208.0	489.2	477.9	11.28	43.355		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor #26L-3504B - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					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)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	137.54	-73.8	67.6	100.1					
100.0	100.0	100.0	100.0	0.1	0.1	137.54	-73.8	67.6	100.1	99.9	0.19	533.185		
200.0	200.0	200.0	200.0	0.3	0.3	137.54	-73.8	67.6	100.1	99.4	0.64	157.040		
300.0	300.0	300.0	300.0	0.5	0.5	137.54	-73.8	67.6	100.1	99.0	1.09	92.081		
400.0	400.0	400.0	400.0	0.8	0.8	137.54	-73.8	67.6	100.1	98.5	1.54	65.137		
500.0	500.0	500.0	500.0	1.0	1.0	137.54	-73.8	67.6	100.1	98.1	1.99	50.392		
600.0	600.0	600.0	600.0	1.2	1.2	-83.88	-73.8	67.6	99.9	97.5	2.41	41.405		
700.0	699.8	699.8	699.8	1.4	1.4	-86.88	-73.8	67.6	99.4	96.6	2.83	35.131		
766.6	766.2	766.2	766.2	1.5	1.6	-90.00	-73.8	67.6	99.3	96.2	3.13	31.757 CC		
800.0	799.5	799.5	799.5	1.6	1.7	-91.89	-73.8	67.6	99.4	96.1	3.28	30.325 ES		
900.0	898.7	898.7	898.7	1.9	1.9	-98.78	-73.8	67.6	100.5	96.7	3.76	26.756		
1,000.0	997.5	997.5	997.5	2.2	2.1	-107.15	-73.8	67.6	104.1	99.8	4.27	24.364		
1,100.0	1,096.0	1,093.7	1,093.7	2.5	2.3	-115.92	-72.9	68.8	111.3	106.5	4.78	23.265 SF		
1,200.0	1,194.6	1,188.6	1,188.5	2.8	2.5	-124.41	-70.1	72.6	123.4	118.1	5.27	23.392		
1,300.0	1,293.1	1,282.1	1,281.7	3.2	2.7	-131.96	-65.6	78.7	140.5	134.7	5.74	24.467		
1,400.0	1,391.7	1,373.9	1,372.9	3.6	3.0	-138.30	-59.3	87.2	162.4	156.2	6.19	26.237		
1,500.0	1,490.2	1,464.0	1,462.0	4.0	3.2	-143.43	-51.5	97.7	188.7	182.1	6.64	28.446		
1,600.0	1,588.8	1,552.2	1,548.8	4.3	3.5	-147.53	-42.3	110.2	219.1	212.0	7.08	30.964		
1,700.0	1,687.4	1,638.4	1,633.2	4.7	3.8	-150.79	-31.7	124.5	253.1	245.6	7.51	33.687		
1,800.0	1,785.9	1,722.6	1,714.9	5.1	4.1	-153.38	-20.0	140.5	290.5	282.5	7.95	36.532		
1,900.0	1,884.5	1,811.6	1,801.0	5.5	4.4	-155.60	-6.4	158.8	330.2	321.8	8.40	39.332		
2,000.0	1,983.0	1,902.7	1,889.0	5.9	4.8	-157.39	7.4	177.5	370.3	361.5	8.84	41.893		
2,100.0	2,081.6	1,993.7	1,977.0	6.3	5.2	-158.83	21.3	196.3	410.7	401.4	9.29	44.204		
2,200.0	2,180.1	2,084.7	2,065.0	6.7	5.7	-160.01	35.1	215.0	451.3	441.5	9.75	46.302		
2,300.0	2,278.7	2,175.8	2,153.0	7.1	6.1	-161.00	49.0	233.8	492.0	481.8	10.21	48.204		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26L-2302B - HZ - Plan #4													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	-157.20	-75.7	-31.8	82.1					
100.0	100.0	100.0	100.0	0.1	0.1	-157.20	-75.7	-31.8	82.1	81.9	0.19	437.387		
200.0	200.0	200.0	200.0	0.3	0.3	-157.20	-75.7	-31.8	82.1	81.5	0.64	128.825		
300.0	300.0	300.0	300.0	0.5	0.5	-157.20	-75.7	-31.8	82.1	81.0	1.09	75.536		
400.0	400.0	400.0	400.0	0.8	0.8	-157.20	-75.7	-31.8	82.1	80.6	1.54	53.434		
500.0	500.0	500.0	500.0	1.0	1.0	-157.20	-75.7	-31.8	82.1	80.1	1.99	41.338		
600.0	600.0	600.0	600.0	1.2	1.2	-18.01	-75.7	-31.8	80.4	78.0	2.41	33.311		
700.0	699.8	699.8	699.8	1.4	1.4	-19.27	-75.7	-31.8	75.5	72.6	2.83	26.642		
800.0	799.5	799.5	799.5	1.6	1.7	-21.78	-75.7	-31.8	67.3	64.0	3.26	20.622		
900.0	898.7	898.7	898.7	1.9	1.9	-26.49	-75.7	-31.8	56.2	52.4	3.71	15.137		
1,000.0	997.5	997.5	997.5	2.2	2.1	-35.97	-75.7	-31.8	42.7	38.5	4.19	10.185		
1,100.0	1,096.0	1,095.1	1,095.1	2.5	2.3	-53.15	-77.2	-32.2	32.0	27.2	4.74	6.749		
1,198.9	1,193.5	1,192.5	1,192.3	2.8	2.5	-75.68	-81.9	-33.6	28.4	23.1	5.33	5.326 CC		
1,200.0	1,194.6	1,193.5	1,193.4	2.8	2.5	-75.92	-82.0	-33.6	28.4	23.1	5.34	5.320		
1,300.0	1,293.1	1,292.8	1,292.3	3.2	2.7	-95.24	-89.5	-35.8	30.9	25.0	5.91	5.235		
1,400.0	1,391.7	1,392.3	1,391.5	3.6	2.9	-109.81	-97.3	-38.0	36.4	30.0	6.42	5.668		
1,500.0	1,490.2	1,491.7	1,490.6	4.0	3.1	-120.14	-105.2	-40.3	43.5	36.6	6.89	6.317		
1,600.0	1,588.8	1,591.2	1,589.8	4.3	3.3	-127.41	-113.0	-42.5	51.7	44.3	7.35	7.026		
1,700.0	1,687.4	1,690.7	1,688.9	4.7	3.5	-132.64	-120.8	-44.7	60.4	52.6	7.82	7.725		
1,800.0	1,785.9	1,790.2	1,788.1	5.1	3.8	-136.53	-128.7	-47.0	69.5	61.2	8.29	8.384		
1,900.0	1,884.5	1,889.7	1,887.2	5.5	4.0	-139.50	-136.5	-49.2	78.9	70.1	8.77	8.993		
2,000.0	1,983.0	1,989.2	1,986.4	5.9	4.3	-141.85	-144.3	-51.5	88.4	79.2	9.26	9.551		
2,100.0	2,081.6	2,088.7	2,085.5	6.3	4.5	-143.73	-152.2	-53.7	98.1	88.3	9.75	10.060		
2,200.0	2,180.1	2,188.2	2,184.7	6.7	4.8	-145.28	-160.0	-56.0	107.8	97.6	10.24	10.525		
2,300.0	2,278.7	2,287.6	2,283.8	7.1	5.0	-146.57	-167.8	-58.2	117.6	106.9	10.74	10.950		
2,400.0	2,377.2	2,387.1	2,383.0	7.5	5.3	-147.66	-175.7	-60.5	127.5	116.2	11.24	11.337		
2,500.0	2,475.8	2,486.6	2,482.1	7.9	5.5	-148.59	-183.5	-62.7	137.3	125.6	11.75	11.689		
2,600.0	2,574.3	2,586.1	2,581.3	8.2	5.8	-149.40	-191.3	-65.0	147.3	135.0	12.26	12.012		
2,700.0	2,672.9	2,685.6	2,680.4	8.6	6.1	-150.10	-199.2	-67.2	157.2	144.4	12.77	12.310		
2,800.0	2,771.4	2,785.1	2,779.6	9.0	6.3	-150.73	-207.0	-69.5	167.2	153.9	13.28	12.585		
2,900.0	2,870.0	2,884.6	2,878.8	9.4	6.6	-151.28	-214.8	-71.7	177.2	163.4	13.80	12.839		
3,000.0	2,968.6	2,984.0	2,977.9	9.8	6.9	-151.77	-222.7	-73.9	187.2	172.8	14.31	13.075		
3,100.0	3,067.1	3,083.5	3,077.1	10.2	7.1	-152.22	-230.5	-76.2	197.2	182.3	14.83	13.294		
3,200.0	3,165.7	3,183.0	3,176.2	10.6	7.4	-152.62	-238.3	-78.4	207.2	191.8	15.35	13.498		
3,300.0	3,264.2	3,282.5	3,275.4	11.0	7.7	-152.98	-246.2	-80.7	217.2	201.3	15.87	13.689		
3,400.0	3,362.8	3,382.0	3,374.5	11.4	7.9	-153.31	-254.0	-82.9	227.3	210.9	16.39	13.868		
3,500.0	3,461.3	3,481.5	3,473.7	11.8	8.2	-153.61	-261.8	-85.2	237.3	220.4	16.91	14.035		
3,600.0	3,559.9	3,581.0	3,572.8	12.2	8.5	-153.89	-269.7	-87.4	247.3	229.9	17.43	14.192		
3,700.0	3,658.4	3,680.5	3,672.0	12.6	8.7	-154.15	-277.5	-89.7	257.4	239.5	17.95	14.340		
3,800.0	3,757.0	3,779.9	3,771.1	13.0	9.0	-154.39	-285.3	-91.9	267.5	249.0	18.47	14.479		
3,900.0	3,855.5	3,879.4	3,870.3	13.4	9.3	-154.61	-293.2	-94.2	277.5	258.5	18.99	14.611		
4,000.0	3,954.1	3,978.9	3,969.4	13.8	9.5	-154.81	-301.0	-96.4	287.6	268.1	19.52	14.735		
4,100.0	4,052.7	4,078.4	4,068.6	14.2	9.8	-155.00	-308.8	-98.6	297.7	277.6	20.04	14.853		
4,200.0	4,151.2	4,177.9	4,167.7	14.6	10.1	-155.18	-316.7	-100.9	307.7	287.2	20.56	14.965		
4,300.0	4,249.8	4,277.4	4,266.9	15.0	10.4	-155.35	-324.5	-103.1	317.8	296.7	21.09	15.071		
4,400.0	4,348.3	4,376.9	4,366.0	15.4	10.6	-155.51	-332.3	-105.4	327.9	306.3	21.61	15.172		
4,500.0	4,446.9	4,476.3	4,465.2	15.8	10.9	-155.65	-340.2	-107.6	338.0	315.8	22.14	15.268		
4,600.0	4,545.6	4,575.9	4,564.4	16.2	11.2	-155.79	-348.0	-109.9	347.4	324.7	22.66	15.331		
4,700.0	4,644.7	4,675.7	4,663.9	16.4	11.5	-155.71	-355.9	-112.1	353.8	330.7	23.14	15.288		
4,800.0	4,744.2	4,775.6	4,763.4	16.6	11.7	-155.37	-363.7	-114.4	357.0	333.4	23.62	15.117		
4,900.0	4,844.1	4,870.6	4,858.2	16.8	12.0	-154.90	-370.6	-116.4	357.6	333.6	24.04	14.873		
5,000.0	4,944.0	4,963.1	4,950.6	16.9	12.1	-154.55	-374.6	-117.5	357.0	332.6	24.38	14.644		

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 Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26L-2302B - HZ - Plan #4													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,044.0	5,056.6	5,044.0	17.0	12.3	66.01	-375.7	-117.8	356.3	331.3	24.95	14.280		
5,200.0	5,143.7	5,150.0	5,137.5	17.1	12.5	69.09	-375.6	-117.8	354.2	329.2	25.00	14.171		
5,300.0	5,240.6	5,234.4	5,221.4	17.1	12.6	71.56	-368.0	-118.1	349.1	323.8	25.23	13.834		
5,400.0	5,331.0	5,316.5	5,300.8	16.9	12.6	74.55	-347.6	-118.9	343.6	318.2	25.41	13.520		
5,500.0	5,411.7	5,400.0	5,377.4	16.6	12.6	78.09	-314.4	-120.1	338.3	312.7	25.59	13.219		
5,600.0	5,479.7	5,487.7	5,450.9	16.3	12.5	82.16	-266.8	-121.9	334.0	308.2	25.81	12.942		
5,700.0	5,532.5	5,578.3	5,517.3	15.9	12.5	86.58	-205.5	-124.2	331.3	305.2	26.06	12.714		
5,774.3	5,560.8	5,648.3	5,560.9	15.7	12.5	90.02	-150.7	-126.2	330.6	304.3	26.30	12.569		
5,800.0	5,568.2	5,673.1	5,574.4	15.6	12.5	91.22	-130.0	-127.0	330.7	304.3	26.39	12.534		
5,900.0	5,585.4	5,773.1	5,618.8	15.3	12.8	95.92	-40.5	-130.3	332.6	305.7	26.90	12.363		
6,000.0	5,587.0	5,880.1	5,646.4	15.0	13.4	100.19	62.6	-134.2	336.1	308.3	27.78	12.098		
6,100.0	5,587.0	5,990.0	5,653.0	15.1	14.2	101.29	172.0	-138.3	337.1	307.9	29.23	11.535		
6,200.0	5,587.0	6,090.0	5,653.0	16.1	15.2	101.29	271.9	-142.0	337.1	306.1	31.06	10.854		
6,300.0	5,587.0	6,190.0	5,653.0	17.3	16.4	101.29	371.9	-145.8	337.1	303.9	33.22	10.149		
6,400.0	5,587.0	6,290.0	5,653.0	18.5	17.7	101.29	471.8	-149.5	337.1	301.5	35.65	9.456		
6,500.0	5,587.0	6,390.0	5,653.0	19.8	19.1	101.29	571.7	-153.2	337.1	298.8	38.30	8.802		
6,600.0	5,587.0	6,490.0	5,653.0	21.3	20.5	101.29	671.6	-157.0	337.1	296.0	41.13	8.196		
6,700.0	5,587.0	6,590.0	5,653.0	22.7	22.1	101.29	771.6	-160.7	337.1	293.0	44.10	7.643		
6,800.0	5,587.0	6,690.0	5,653.0	24.3	23.7	101.29	871.5	-164.4	337.1	289.9	47.19	7.143		
6,900.0	5,587.0	6,790.0	5,653.0	25.9	25.4	101.29	971.4	-168.2	337.1	286.7	50.37	6.691		
7,000.0	5,587.0	6,890.0	5,653.0	27.5	27.0	101.29	1,071.4	-171.9	337.0	283.4	53.64	6.284		
7,100.0	5,587.0	6,990.0	5,653.0	29.2	28.8	101.29	1,171.3	-175.6	337.0	280.1	56.96	5.917		
7,200.0	5,587.0	7,090.0	5,653.0	30.9	30.5	101.29	1,271.2	-179.4	337.0	276.7	60.35	5.585		
7,300.0	5,587.0	7,190.0	5,653.0	32.6	32.3	101.29	1,371.2	-183.1	337.0	273.2	63.77	5.285		
7,400.0	5,587.0	7,290.0	5,653.0	34.3	34.0	101.29	1,471.1	-186.8	337.0	269.8	67.24	5.012		
7,500.0	5,587.0	7,390.0	5,653.0	36.1	35.8	101.29	1,571.0	-190.6	337.0	266.3	70.74	4.764		
7,600.0	5,587.0	7,490.0	5,653.0	37.8	37.7	101.29	1,670.9	-194.3	337.0	262.7	74.27	4.538		
7,700.0	5,587.0	7,590.0	5,653.0	39.6	39.5	101.30	1,770.9	-198.1	337.0	259.2	77.82	4.330		
7,800.0	5,587.0	7,690.0	5,653.0	41.4	41.3	101.30	1,870.8	-201.8	337.0	255.6	81.39	4.140		
7,900.0	5,587.0	7,790.0	5,653.0	43.2	43.1	101.30	1,970.7	-205.5	337.0	252.0	84.98	3.965		
8,000.0	5,587.0	7,890.0	5,653.0	45.0	45.0	101.30	2,070.7	-209.3	336.9	248.4	88.59	3.804		
8,100.0	5,587.0	7,990.0	5,653.0	46.9	46.8	101.30	2,170.6	-213.0	336.9	244.7	92.21	3.654		
8,200.0	5,587.0	8,090.0	5,653.0	48.7	48.7	101.30	2,270.5	-216.7	336.9	241.1	95.84	3.515		
8,300.0	5,587.0	8,190.0	5,653.0	50.5	50.6	101.30	2,370.5	-220.5	336.9	237.4	99.49	3.386		
8,400.0	5,587.0	8,290.0	5,653.0	52.4	52.4	101.30	2,470.4	-224.2	336.9	233.8	103.15	3.266		
8,500.0	5,587.0	8,390.0	5,653.0	54.2	54.3	101.30	2,570.3	-227.9	336.9	230.1	106.81	3.154		
8,600.0	5,587.0	8,490.0	5,653.0	56.1	56.2	101.30	2,670.2	-231.7	336.9	226.4	110.49	3.049		
8,700.0	5,587.0	8,590.0	5,653.0	57.9	58.0	101.30	2,770.2	-235.4	336.9	222.7	114.17	2.951		
8,800.0	5,587.0	8,690.0	5,653.0	59.8	59.9	101.30	2,870.1	-239.1	336.9	219.0	117.85	2.858		
8,900.0	5,587.0	8,790.0	5,653.0	61.7	61.8	101.30	2,970.0	-242.9	336.9	215.3	121.55	2.771		
9,000.0	5,587.0	8,890.0	5,653.0	63.5	63.7	101.30	3,070.0	-246.6	336.9	211.6	125.25	2.689		
9,100.0	5,587.0	8,990.0	5,653.0	65.4	65.6	101.30	3,169.9	-250.4	336.8	207.9	128.95	2.612		
9,200.0	5,587.0	9,090.0	5,653.0	67.3	67.5	101.30	3,269.8	-254.1	336.8	204.2	132.66	2.539		
9,300.0	5,587.0	9,190.0	5,653.0	69.2	69.4	101.30	3,369.8	-257.8	336.8	200.4	136.37	2.470		
9,400.0	5,587.0	9,290.0	5,653.0	71.1	71.3	101.30	3,469.7	-261.6	336.8	196.7	140.09	2.404		
9,500.0	5,587.0	9,390.0	5,653.0	72.9	73.2	101.30	3,569.6	-265.3	336.8	193.0	143.81	2.342		
9,600.0	5,587.0	9,490.0	5,653.0	74.8	75.1	101.30	3,669.5	-269.0	336.8	189.3	147.54	2.283		
9,700.0	5,587.0	9,590.0	5,653.0	76.7	77.0	101.30	3,769.5	-272.8	336.8	185.5	151.26	2.226		
9,800.0	5,587.0	9,690.0	5,653.0	78.6	78.9	101.30	3,869.4	-276.5	336.8	181.8	154.99	2.173		
9,900.0	5,587.0	9,790.0	5,653.0	80.5	80.8	101.30	3,969.3	-280.2	336.8	178.0	158.73	2.122		
10,000.0	5,587.0	9,890.0	5,653.0	82.4	82.7	101.30	4,069.3	-284.0	336.8	174.3	162.46	2.073		
10,100.0	5,587.0	9,990.0	5,653.0	84.3	84.6	101.30	4,169.2	-287.7	336.7	170.5	166.20	2.026		

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 Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26L-2302B - HZ - Plan #4												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,200.0	5,587.0	10,090.0	5,653.0	86.2	86.5	101.30	4,269.1	-291.4	336.7	166.8	169.94	1.981	
10,300.0	5,587.0	10,190.0	5,653.0	88.1	88.4	101.30	4,369.1	-295.2	336.7	163.0	173.68	1.939	
10,400.0	5,587.0	10,290.0	5,653.0	90.0	90.3	101.30	4,469.0	-298.9	336.7	159.3	177.43	1.898	
10,500.0	5,587.0	10,390.0	5,653.0	91.9	92.2	101.31	4,568.9	-302.7	336.7	155.5	181.17	1.858	
10,600.0	5,587.0	10,490.0	5,653.0	93.8	94.1	101.31	4,668.9	-306.4	336.7	151.8	184.92	1.821	
10,700.0	5,587.0	10,590.0	5,653.0	95.7	96.0	101.31	4,768.8	-310.1	336.7	148.0	188.67	1.785	
10,800.0	5,587.0	10,690.0	5,653.0	97.6	97.9	101.31	4,868.7	-313.9	336.7	144.3	192.42	1.750	
10,900.0	5,587.0	10,790.0	5,653.0	99.5	99.8	101.31	4,968.6	-317.6	336.7	140.5	196.17	1.716	
11,000.0	5,587.0	10,890.0	5,653.0	101.4	101.7	101.31	5,068.6	-321.3	336.7	136.7	199.92	1.684	
11,100.0	5,587.0	10,990.0	5,653.0	103.3	103.6	101.31	5,168.5	-325.1	336.6	133.0	203.68	1.653	
11,200.0	5,587.0	11,090.0	5,653.0	105.2	105.6	101.31	5,268.4	-328.8	336.6	129.2	207.43	1.623	
11,300.0	5,587.0	11,190.0	5,653.0	107.1	107.5	101.31	5,368.4	-332.5	336.6	125.4	211.19	1.594	
11,400.0	5,587.0	11,290.0	5,653.0	109.0	109.4	101.31	5,468.3	-336.3	336.6	121.7	214.95	1.566	
11,500.0	5,587.0	11,390.0	5,653.0	110.9	111.3	101.31	5,568.2	-340.0	336.6	117.9	218.70	1.539	
11,600.0	5,587.0	11,490.0	5,653.0	112.8	113.2	101.31	5,668.2	-343.7	336.6	114.1	222.46	1.513	
11,700.0	5,587.0	11,590.0	5,653.0	114.7	115.1	101.31	5,768.1	-347.5	336.6	110.4	226.22	1.488	Level 3
11,800.0	5,587.0	11,690.0	5,653.0	116.6	117.0	101.31	5,868.0	-351.2	336.6	106.6	229.99	1.463	Level 3
11,900.0	5,587.0	11,790.0	5,653.0	118.5	118.9	101.31	5,967.9	-355.0	336.6	102.8	233.75	1.440	Level 3
12,000.0	5,587.0	11,890.0	5,653.0	120.5	120.9	101.31	6,067.9	-358.7	336.6	99.1	237.51	1.417	Level 3
12,100.0	5,587.0	11,990.0	5,653.0	122.4	122.8	101.31	6,167.8	-362.4	336.6	95.3	241.27	1.395	Level 3
12,200.0	5,587.0	12,090.0	5,653.0	124.3	124.7	101.31	6,267.7	-366.2	336.5	91.5	245.04	1.373	Level 3
12,300.0	5,587.0	12,190.0	5,653.0	126.2	126.6	101.31	6,367.7	-369.9	336.5	87.7	248.80	1.353	Level 3
12,400.0	5,587.0	12,290.0	5,653.0	128.1	128.5	101.31	6,467.6	-373.6	336.5	84.0	252.57	1.332	Level 3
12,500.0	5,587.0	12,390.0	5,653.0	130.0	130.4	101.31	6,567.5	-377.4	336.5	80.2	256.34	1.313	Level 3
12,600.0	5,587.0	12,490.0	5,653.0	131.9	132.4	101.31	6,667.5	-381.1	336.5	76.4	260.10	1.294	Level 3
12,700.0	5,587.0	12,590.0	5,653.0	133.8	134.3	101.31	6,767.4	-384.8	336.5	72.6	263.87	1.275	Level 3
12,800.0	5,587.0	12,690.0	5,653.0	135.8	136.2	101.31	6,867.3	-388.6	336.5	68.8	267.64	1.257	Level 3
12,900.0	5,587.0	12,790.0	5,653.0	137.7	138.1	101.31	6,967.2	-392.3	336.5	65.1	271.41	1.240	Level 2
13,000.0	5,587.0	12,890.0	5,653.0	139.6	140.0	101.31	7,067.2	-396.0	336.5	61.3	275.17	1.223	Level 2
13,100.0	5,587.0	12,990.0	5,653.0	141.5	141.9	101.31	7,167.1	-399.8	336.5	57.5	278.94	1.206	Level 2
13,200.0	5,587.0	13,090.0	5,653.0	143.4	143.9	101.31	7,267.0	-403.5	336.4	53.7	282.71	1.190	Level 2
13,300.0	5,587.0	13,190.0	5,653.0	145.3	145.8	101.32	7,367.0	-407.3	336.4	50.0	286.48	1.174	Level 2
13,400.0	5,587.0	13,290.0	5,653.0	147.2	147.7	101.32	7,466.9	-411.0	336.4	46.2	290.26	1.159	Level 2
13,500.0	5,587.0	13,390.0	5,653.0	149.2	149.6	101.32	7,566.8	-414.7	336.4	42.4	294.03	1.144	Level 2
13,600.0	5,587.0	13,490.0	5,653.0	151.1	151.5	101.32	7,666.8	-418.5	336.4	38.6	297.80	1.130	Level 2
13,700.0	5,587.0	13,590.0	5,653.0	153.0	153.5	101.32	7,766.7	-422.2	336.4	34.8	301.57	1.115	Level 2
13,800.0	5,587.0	13,690.0	5,653.0	154.9	155.4	101.32	7,866.6	-425.9	336.4	31.0	305.34	1.102	Level 2
13,900.0	5,587.0	13,790.0	5,653.0	156.8	157.3	101.32	7,966.5	-429.7	336.4	27.3	309.11	1.088	Level 2
14,000.0	5,587.0	13,890.0	5,653.0	158.7	159.2	101.32	8,066.5	-433.4	336.4	23.5	312.89	1.075	Level 2
14,100.0	5,587.0	13,990.0	5,653.0	160.7	161.1	101.32	8,166.4	-437.1	336.4	19.7	316.66	1.062	Level 2
14,118.1	5,587.0	14,008.1	5,653.0	161.0	161.5	101.32	8,184.5	-437.8	336.4	19.0	317.34	1.060	Level 2
14,125.0	5,587.0	14,008.3	5,653.0	161.1	161.5	101.32	8,184.7	-437.8	336.4	18.9	317.48	1.060	Level 2, ES, SF

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26L-2303A - HZ - Plan #3													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.94	1.2	66.2	66.2					
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.2	66.2	66.2	66.0	0.19	352.529		
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.2	66.2	66.2	65.5	0.64	103.831		
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.2	66.2	66.2	65.1	1.09	60.882		
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.2	66.2	66.2	64.6	1.54	43.067		
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.2	66.2	66.2	64.2	1.99	33.318 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-132.57	1.2	66.2	67.3	64.9	2.41	27.913		
700.0	699.8	699.8	699.8	1.4	1.4	-135.63	1.2	66.2	71.0	68.1	2.83	25.096		
800.0	799.5	799.5	799.5	1.6	1.7	-140.06	1.2	66.2	77.5	74.2	3.26	23.758		
900.0	898.7	898.7	898.7	1.9	1.9	-145.08	1.2	66.2	87.2	83.5	3.70	23.532 SF		
1,000.0	997.5	997.5	997.5	2.2	2.1	-150.06	1.2	66.2	100.4	96.3	4.16	24.163		
1,100.0	1,096.0	1,095.6	1,095.6	2.5	2.3	-153.44	-0.2	66.9	115.6	111.0	4.59	25.190		
1,200.0	1,194.6	1,193.9	1,193.8	2.8	2.5	-154.55	-4.5	69.4	131.4	126.3	5.02	26.182		
1,300.0	1,293.1	1,292.6	1,292.1	3.2	2.7	-154.46	-11.0	73.0	147.4	141.9	5.47	26.945		
1,400.0	1,391.7	1,391.3	1,390.5	3.6	2.9	-154.35	-17.5	76.8	163.4	157.4	5.94	27.512		
1,500.0	1,490.2	1,490.0	1,489.0	4.0	3.1	-154.26	-24.1	80.5	179.4	172.9	6.42	27.937		
1,600.0	1,588.8	1,588.7	1,587.4	4.3	3.3	-154.19	-30.7	84.2	195.4	188.5	6.91	28.259		
1,700.0	1,687.4	1,687.4	1,685.8	4.7	3.5	-154.12	-37.2	87.9	211.4	204.0	7.42	28.503		
1,800.0	1,785.9	1,786.1	1,784.2	5.1	3.8	-154.07	-43.8	91.6	227.4	219.5	7.93	28.691		
1,900.0	1,884.5	1,884.8	1,882.7	5.5	4.0	-154.02	-50.4	95.3	243.4	235.0	8.44	28.836		
2,000.0	1,983.0	1,983.5	1,981.1	5.9	4.3	-153.98	-56.9	99.1	259.4	250.4	8.96	28.947		
2,100.0	2,081.6	2,082.2	2,079.5	6.3	4.5	-153.94	-63.5	102.8	275.4	265.9	9.49	29.034		
2,200.0	2,180.1	2,180.9	2,177.9	6.7	4.7	-153.91	-70.1	106.5	291.4	281.4	10.01	29.102		
2,300.0	2,278.7	2,279.7	2,276.3	7.1	5.0	-153.88	-76.6	110.2	307.4	296.9	10.54	29.154		
2,400.0	2,377.2	2,378.4	2,374.8	7.5	5.2	-153.86	-83.2	113.9	323.4	312.3	11.08	29.195		
2,500.0	2,475.8	2,477.1	2,473.2	7.9	5.5	-153.83	-89.8	117.6	339.4	327.8	11.61	29.227		
2,600.0	2,574.3	2,575.8	2,571.6	8.2	5.8	-153.81	-96.3	121.4	355.4	343.3	12.15	29.251		
2,700.0	2,672.9	2,674.5	2,670.0	8.6	6.0	-153.79	-102.9	125.1	371.4	358.8	12.69	29.269		
2,800.0	2,771.4	2,773.2	2,768.5	9.0	6.3	-153.77	-109.5	128.8	387.5	374.2	13.23	29.282		
2,900.0	2,870.0	2,871.9	2,866.9	9.4	6.5	-153.75	-116.0	132.5	403.5	389.7	13.77	29.292		
3,000.0	2,968.6	2,970.6	2,965.3	9.8	6.8	-153.74	-122.6	136.2	419.5	405.1	14.32	29.299		
3,100.0	3,067.1	3,069.3	3,063.7	10.2	7.0	-153.73	-129.2	139.9	435.5	420.6	14.86	29.303		
3,200.0	3,165.7	3,168.1	3,162.1	10.6	7.3	-153.71	-135.7	143.7	451.5	436.1	15.41	29.305		
3,300.0	3,264.2	3,266.8	3,260.6	11.0	7.6	-153.70	-142.3	147.4	467.5	451.5	15.95	29.305		
3,400.0	3,362.8	3,365.5	3,359.0	11.4	7.8	-153.69	-148.9	151.1	483.5	467.0	16.50	29.304		
3,500.0	3,461.3	3,464.2	3,457.4	11.8	8.1	-153.68	-155.4	154.8	499.5	482.5	17.05	29.302		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26L-2304B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total 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	155.24	-74.5	34.3	82.0					
100.0	100.0	100.0	100.0	0.1	0.1	155.24	-74.5	34.3	82.0	81.8	0.19	436.888		
200.0	200.0	200.0	200.0	0.3	0.3	155.24	-74.5	34.3	82.0	81.4	0.64	128.678		
300.0	300.0	300.0	300.0	0.5	0.5	155.24	-74.5	34.3	82.0	80.9	1.09	75.450		
400.0	400.0	400.0	400.0	0.8	0.8	155.24	-74.5	34.3	82.0	80.5	1.54	53.373		
500.0	500.0	500.0	500.0	1.0	1.0	155.24	-74.5	34.3	82.0	80.0	1.99	41.291		
600.0	600.0	600.0	600.0	1.2	1.2	-66.31	-74.5	34.3	81.3	78.9	2.41	33.688		
675.0	674.9	673.1	673.1	1.3	1.4	-68.97	-74.9	35.1	80.7	78.0	2.71	29.803 CC		
700.0	699.8	697.5	697.4	1.4	1.4	-70.29	-75.3	35.8	80.8	78.0	2.81	28.792 ES		
800.0	799.5	794.4	794.2	1.6	1.6	-77.43	-77.8	40.0	83.0	79.8	3.22	25.799		
900.0	898.7	890.4	889.9	1.9	1.8	-86.65	-81.9	47.0	89.4	85.8	3.67	24.337		
1,000.0	997.5	985.0	983.9	2.2	2.1	-96.29	-87.6	56.6	101.7	97.5	4.19	24.293 SF		
1,100.0	1,096.0	1,081.0	1,078.9	2.5	2.3	-104.55	-94.6	68.4	119.3	114.6	4.73	25.225		
1,200.0	1,194.6	1,178.1	1,174.9	2.8	2.6	-110.70	-101.7	80.5	138.9	133.6	5.27	26.346		
1,300.0	1,293.1	1,275.2	1,271.0	3.2	2.9	-115.32	-108.8	92.6	159.7	153.9	5.82	27.420		
1,400.0	1,391.7	1,372.3	1,367.1	3.6	3.2	-118.86	-116.0	104.7	181.3	174.9	6.38	28.394		
1,500.0	1,490.2	1,469.4	1,463.2	4.0	3.6	-121.65	-123.1	116.8	203.4	196.4	6.95	29.258		
1,600.0	1,588.8	1,566.5	1,559.2	4.3	3.9	-123.90	-130.3	128.9	225.8	218.3	7.53	30.011		
1,700.0	1,687.4	1,663.6	1,655.3	4.7	4.2	-125.74	-137.4	141.0	248.6	240.5	8.10	30.681		
1,800.0	1,785.9	1,760.7	1,751.4	5.1	4.5	-127.27	-144.5	153.1	271.5	262.8	8.68	31.269		
1,900.0	1,884.5	1,857.8	1,847.5	5.5	4.9	-128.56	-151.7	165.2	294.6	285.4	9.27	31.788		
2,000.0	1,983.0	1,954.9	1,943.5	5.9	5.2	-129.66	-158.8	177.3	317.8	308.0	9.86	32.250		
2,100.0	2,081.6	2,052.0	2,039.6	6.3	5.6	-130.62	-165.9	189.4	341.2	330.7	10.45	32.662		
2,200.0	2,180.1	2,149.1	2,135.7	6.7	5.9	-131.45	-173.1	201.5	364.6	353.5	11.04	33.032		
2,300.0	2,278.7	2,246.2	2,231.8	7.1	6.2	-132.18	-180.2	213.6	388.0	376.4	11.63	33.366		
2,400.0	2,377.2	2,343.3	2,327.8	7.5	6.6	-132.83	-187.4	225.7	411.5	399.3	12.22	33.669		
2,500.0	2,475.8	2,440.4	2,423.9	7.9	6.9	-133.41	-194.5	237.8	435.1	422.3	12.82	33.945		
2,600.0	2,574.3	2,537.5	2,520.0	8.2	7.3	-133.93	-201.6	249.9	458.7	445.3	13.41	34.197		
2,700.0	2,672.9	2,634.6	2,616.1	8.6	7.6	-134.40	-208.8	262.0	482.3	468.3	14.01	34.430		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #271-2216B - HZ - ORIGINAL HOLE												Offset Site Error:	0.0 usft
Survey Program: 138-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
7,200.0	5,587.0	6,567.1	5,684.4	30.9	26.8	-98.67	1,277.0	-1,003.4	499.7	442.2	57.49	8.693	
7,300.0	5,587.0	6,662.8	5,687.4	32.6	28.3	-99.13	1,372.5	-1,000.3	493.4	432.7	60.66	8.133	
7,400.0	5,587.0	6,764.9	5,689.5	34.3	30.0	-99.51	1,474.6	-996.7	486.6	422.5	64.02	7.600	
7,500.0	5,587.0	6,860.2	5,690.9	36.1	31.6	-99.81	1,569.8	-993.7	480.0	412.7	67.30	7.132	
7,600.0	5,587.0	6,948.7	5,692.4	37.8	33.0	-100.09	1,658.3	-992.3	475.1	404.6	70.50	6.739	
7,700.0	5,587.0	7,064.6	5,692.7	39.6	34.9	-100.24	1,774.1	-991.2	470.6	396.5	74.16	6.346	
7,800.0	5,587.0	7,170.1	5,692.8	41.4	36.6	-100.42	1,879.6	-986.9	463.0	385.4	77.61	5.966	
7,900.0	5,587.0	7,280.4	5,693.7	43.2	38.4	-100.79	1,989.7	-980.1	453.4	372.3	81.13	5.589	
8,000.0	5,587.0	7,373.9	5,693.5	45.0	40.0	-101.01	2,082.9	-973.5	442.9	358.4	84.49	5.241	
8,100.0	5,587.0	7,447.0	5,694.3	46.9	41.2	-101.24	2,156.0	-971.5	436.7	349.2	87.52	4.990	
8,200.0	5,587.0	7,542.0	5,697.1	48.7	42.8	-101.68	2,250.9	-971.6	433.8	343.0	90.79	4.778	
8,300.0	5,587.0	7,637.0	5,699.7	50.5	44.4	-102.07	2,345.9	-973.0	432.1	338.0	94.09	4.592	
8,381.5	5,587.0	7,716.9	5,700.3	52.0	45.8	-102.17	2,425.8	-975.4	431.7	334.7	96.95	4.452	
8,400.0	5,587.0	7,731.0	5,700.2	52.4	46.0	-102.16	2,439.8	-975.9	431.6	334.1	97.52	4.426	
8,500.0	5,587.0	7,826.0	5,699.7	54.2	47.6	-102.08	2,534.7	-980.1	432.3	331.3	101.02	4.279	
8,600.0	5,587.0	7,924.0	5,700.3	56.1	49.3	-102.10	2,632.6	-985.7	434.2	329.8	104.48	4.156	
8,700.0	5,587.0	8,032.5	5,700.2	57.9	51.1	-102.05	2,741.0	-991.1	435.5	327.4	108.14	4.027	
8,800.0	5,587.0	8,135.7	5,698.8	59.8	52.9	-101.89	2,844.1	-994.3	434.6	322.8	111.79	3.888	
8,812.0	5,587.0	8,145.6	5,698.8	60.0	53.1	-101.88	2,854.0	-994.7	434.6	322.3	112.26	3.871	
8,900.0	5,587.0	8,221.5	5,699.0	61.7	54.4	-101.88	2,929.8	-998.9	436.1	321.0	115.11	3.789	
9,000.0	5,587.0	8,326.7	5,698.3	63.5	56.2	-101.72	3,034.8	-1,005.1	438.2	319.4	118.81	3.688	
9,100.0	5,587.0	8,435.4	5,697.9	65.4	58.0	-101.64	3,143.3	-1,010.5	439.3	316.8	122.51	3.586	
9,200.0	5,587.0	8,546.8	5,698.1	67.3	59.9	-101.74	3,254.7	-1,012.0	437.0	310.8	126.18	3.463	
9,300.0	5,587.0	8,650.6	5,699.5	69.2	61.7	-102.02	3,358.5	-1,012.0	433.6	303.9	129.68	3.344	
9,400.0	5,587.0	8,748.5	5,701.4	71.1	63.4	-102.38	3,456.4	-1,011.4	429.8	296.7	133.06	3.230	
9,500.0	5,587.0	8,854.4	5,701.9	72.9	65.2	-102.58	3,562.3	-1,011.0	425.9	289.2	136.67	3.116	
9,600.0	5,587.0	8,955.7	5,700.6	74.8	67.0	-102.55	3,663.5	-1,009.9	420.9	280.6	140.30	3.000	
9,700.0	5,587.0	9,058.0	5,699.2	76.7	68.8	-102.54	3,765.8	-1,007.7	414.8	270.9	143.92	2.882	
9,800.0	5,587.0	9,138.7	5,699.8	78.6	70.2	-102.70	3,846.5	-1,007.9	411.6	264.5	147.12	2.798	
9,864.2	5,587.0	9,198.5	5,701.6	79.8	71.2	-102.97	3,906.3	-1,009.4	411.2	262.0	149.23	2.756	
9,900.0	5,587.0	9,231.4	5,703.0	80.5	71.8	-103.17	3,939.2	-1,010.4	411.3	261.0	150.33	2.736	
10,000.0	5,587.0	9,321.1	5,705.6	82.4	73.3	-103.49	4,028.7	-1,014.9	413.3	259.8	153.57	2.692	
10,100.0	5,587.0	9,417.2	5,707.4	84.3	75.0	-103.60	4,124.5	-1,022.1	417.4	260.4	157.02	2.658	
10,200.0	5,587.0	9,536.6	5,706.2	86.2	77.1	-103.41	4,243.8	-1,028.1	418.2	257.2	161.03	2.597	
10,300.0	5,587.0	9,637.6	5,705.1	88.1	78.9	-103.26	4,344.7	-1,031.6	417.7	253.0	164.70	2.536	
10,400.0	5,587.0	9,740.9	5,705.7	90.0	80.7	-103.39	4,447.9	-1,034.1	416.6	248.4	168.24	2.476	
10,500.0	5,587.0	9,847.1	5,708.9	91.9	82.5	-103.91	4,554.0	-1,034.9	414.4	242.8	171.60	2.415	
10,600.0	5,587.0	9,946.1	5,711.5	93.8	84.3	-104.38	4,653.1	-1,034.8	411.4	236.6	174.87	2.353	
10,700.0	5,587.0	10,038.9	5,710.6	95.7	85.9	-104.32	4,745.8	-1,036.7	409.5	231.1	178.40	2.295	
10,800.0	5,587.0	10,144.0	5,709.0	97.6	87.8	-104.15	4,850.8	-1,039.3	408.0	225.8	182.20	2.239	
10,900.0	5,587.0	10,245.7	5,707.3	99.5	89.6	-103.99	4,952.5	-1,040.9	405.4	219.5	185.93	2.181	
11,000.0	5,587.0	10,347.6	5,705.3	101.4	91.4	-103.82	5,054.4	-1,042.1	402.5	212.8	189.69	2.122	
11,100.0	5,587.0	10,446.2	5,703.4	103.3	93.1	-103.63	5,153.0	-1,043.2	399.5	206.1	193.42	2.065	
11,200.0	5,587.0	10,547.3	5,701.0	105.2	95.0	-103.38	5,254.0	-1,044.6	396.7	199.5	197.25	2.011	
11,300.0	5,587.0	10,649.0	5,700.0	107.1	96.8	-103.36	5,355.8	-1,044.8	393.0	192.1	200.91	1.956	
11,400.0	5,587.0	10,756.7	5,700.9	109.0	98.6	-103.62	5,463.4	-1,044.7	389.5	185.1	204.45	1.905	
11,500.0	5,587.0	10,862.0	5,701.6	110.9	100.5	-104.00	5,568.6	-1,040.7	382.3	174.5	207.86	1.839	
11,600.0	5,587.0	10,952.8	5,702.4	112.8	102.1	-104.34	5,659.4	-1,038.3	376.4	165.4	211.05	1.784	
11,700.0	5,587.0	11,039.6	5,704.0	114.7	103.6	-104.70	5,746.2	-1,038.5	373.5	159.4	214.15	1.744	
11,727.1	5,587.0	11,062.8	5,704.8	115.2	104.0	-104.83	5,769.4	-1,039.0	373.4	158.4	215.01	1.737	
11,800.0	5,587.0	11,134.8	5,707.6	116.6	105.3	-105.25	5,841.3	-1,041.2	373.6	156.4	217.18	1.720	
11,900.0	5,587.0	11,234.3	5,711.2	118.5	107.0	-105.82	5,940.7	-1,044.2	373.9	153.7	220.24	1.698	

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 Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2216B - HZ - ORIGINAL HOLE													Offset Site Error:	0.0 usft
Survey Program: 138-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					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)	Total Uncertainty Axis			
12,000.0	5,587.0	11,332.2	5,714.1	120.5	108.8	-106.24	6,038.5	-1,047.7	374.6	151.2	223.38	1.677		
12,100.0	5,587.0	11,429.5	5,712.5	122.4	110.5	-105.94	6,135.5	-1,053.1	375.9	148.7	227.20	1.655		
12,200.0	5,587.0	11,526.5	5,711.4	124.3	112.2	-105.67	6,232.3	-1,059.2	378.0	147.1	230.98	1.637		
12,300.0	5,587.0	11,626.7	5,710.8	126.2	114.0	-105.48	6,332.3	-1,065.7	380.6	145.8	234.73	1.621		
12,400.0	5,587.0	11,731.8	5,710.1	128.1	115.9	-105.27	6,437.3	-1,072.1	382.7	144.1	238.58	1.604		
12,500.0	5,587.0	11,844.1	5,707.9	130.0	117.9	-104.99	6,549.5	-1,075.5	381.4	138.8	242.63	1.572		
12,585.9	5,587.0	11,922.1	5,706.2	131.7	119.2	-104.77	6,627.4	-1,077.6	380.1	134.3	245.82	1.546		
12,600.0	5,587.0	11,933.4	5,706.0	131.9	119.4	-104.74	6,638.7	-1,078.1	380.1	133.9	246.29	1.544		
12,700.0	5,587.0	12,025.0	5,706.1	133.8	121.1	-104.65	6,730.1	-1,084.2	382.9	133.1	249.83	1.533		
12,800.0	5,587.0	12,129.0	5,705.6	135.8	122.9	-104.49	6,834.0	-1,090.2	384.8	131.1	253.64	1.517		
12,900.0	5,587.0	12,246.4	5,699.8	137.7	125.0	-103.59	6,951.0	-1,096.8	385.5	127.2	258.39	1.492	Level 3	
13,000.0	5,587.0	12,412.8	5,669.3	139.6	127.9	-99.53	7,113.7	-1,085.6	369.5	103.2	266.34	1.387	Level 3	
13,090.7	5,587.0	12,432.0	5,665.0	141.3	128.2	-98.93	7,132.3	-1,083.3	358.7	89.9	268.86	1.334	Level 3, CC	
13,100.0	5,587.0	12,432.0	5,665.0	141.5	128.2	-98.93	7,132.3	-1,083.3	358.9	89.8	269.04	1.334	Level 3, ES, SF	
13,200.0	5,587.0	12,432.0	5,665.0	143.4	128.2	-98.93	7,132.3	-1,083.3	375.0	104.0	271.02	1.384	Level 3	
13,300.0	5,587.0	12,432.0	5,665.0	145.3	128.2	-98.93	7,132.3	-1,083.3	415.3	142.3	273.01	1.521		
13,400.0	5,587.0	12,432.0	5,665.0	147.2	128.2	-98.93	7,132.3	-1,083.3	473.7	198.7	275.00	1.722		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #271-2216B - Stk #1 - SURVEYS											Offset Site Error:	0.0 usft
Survey Program: 138-ISCWSA MWD, 11318-ISCWSA MWD											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				
7,200.0	5,587.0	6,567.1	5,684.4	30.9	26.8	-98.67	1,277.0	-1,003.4	499.7	442.2	57.49	8.692
7,300.0	5,587.0	6,662.8	5,687.4	32.6	28.3	-99.13	1,372.5	-1,000.3	493.4	432.7	60.67	8.132
7,400.0	5,587.0	6,764.9	5,689.5	34.3	30.0	-99.51	1,474.6	-996.7	486.6	422.5	64.03	7.599
7,500.0	5,587.0	6,860.2	5,690.9	36.1	31.6	-99.81	1,569.8	-993.7	480.0	412.7	67.31	7.131
7,600.0	5,587.0	6,948.7	5,692.4	37.8	33.0	-100.09	1,658.3	-992.3	475.1	404.6	70.50	6.738
7,700.0	5,587.0	7,064.6	5,692.7	39.6	34.9	-100.24	1,774.1	-991.2	470.6	396.4	74.17	6.345
7,800.0	5,587.0	7,170.1	5,692.8	41.4	36.6	-100.42	1,879.6	-986.9	463.0	385.4	77.62	5.965
7,900.0	5,587.0	7,280.4	5,693.7	43.2	38.4	-100.79	1,989.7	-980.1	453.4	372.3	81.15	5.588
8,000.0	5,587.0	7,373.9	5,693.5	45.0	40.0	-101.01	2,082.9	-973.5	442.9	358.4	84.50	5.241
8,100.0	5,587.0	7,447.0	5,694.3	46.9	41.2	-101.24	2,156.0	-971.5	436.7	349.2	87.54	4.989
8,200.0	5,587.0	7,542.0	5,697.1	48.7	42.8	-101.68	2,250.9	-971.6	433.8	343.0	90.80	4.777
8,300.0	5,587.0	7,637.0	5,699.7	50.5	44.4	-102.07	2,345.9	-973.0	432.1	338.0	94.10	4.592
8,381.5	5,587.0	7,716.9	5,700.3	52.0	45.8	-102.17	2,425.8	-975.4	431.7	334.7	96.96	4.452
8,400.0	5,587.0	7,731.0	5,700.2	52.4	46.0	-102.16	2,439.8	-975.9	431.6	334.1	97.54	4.425
8,500.0	5,587.0	7,826.0	5,699.7	54.2	47.6	-102.08	2,534.7	-980.1	432.3	331.2	101.03	4.279
8,600.0	5,587.0	7,924.0	5,700.3	56.1	49.3	-102.10	2,632.6	-985.7	434.2	329.7	104.49	4.156
8,700.0	5,587.0	8,032.5	5,700.2	57.9	51.1	-102.05	2,741.0	-991.1	435.5	327.4	108.16	4.027
8,800.0	5,587.0	8,135.7	5,698.8	59.8	52.9	-101.89	2,844.1	-994.3	434.6	322.8	111.81	3.887
8,812.0	5,587.0	8,145.6	5,698.8	60.0	53.1	-101.88	2,854.0	-994.7	434.6	322.3	112.28	3.871
8,900.0	5,587.0	8,221.5	5,699.0	61.7	54.4	-101.88	2,929.8	-998.9	436.1	321.0	115.12	3.788
9,000.0	5,587.0	8,326.7	5,698.3	63.5	56.2	-101.72	3,034.8	-1,005.1	438.2	319.3	118.82	3.688
9,100.0	5,587.0	8,435.4	5,697.9	65.4	58.0	-101.64	3,143.3	-1,010.5	439.3	316.8	122.53	3.586
9,200.0	5,587.0	8,546.8	5,698.1	67.3	59.9	-101.74	3,254.7	-1,012.0	437.0	310.8	126.20	3.462
9,300.0	5,587.0	8,650.6	5,699.5	69.2	61.7	-102.02	3,358.5	-1,012.0	433.6	303.9	129.69	3.343
9,400.0	5,587.0	8,748.5	5,701.4	71.1	63.4	-102.38	3,456.4	-1,011.4	429.8	296.7	133.08	3.230
9,500.0	5,587.0	8,854.4	5,701.9	72.9	65.2	-102.58	3,562.3	-1,011.0	425.9	289.2	136.69	3.115
9,600.0	5,587.0	8,955.7	5,700.6	74.8	67.0	-102.55	3,663.5	-1,009.9	420.9	280.6	140.32	3.000
9,700.0	5,587.0	9,058.0	5,699.2	76.7	68.8	-102.54	3,765.8	-1,007.7	414.8	270.9	143.94	2.882
9,800.0	5,587.0	9,138.7	5,699.8	78.6	70.2	-102.70	3,846.5	-1,007.9	411.6	264.4	147.14	2.797
9,864.2	5,587.0	9,198.5	5,701.6	79.8	71.2	-102.97	3,906.3	-1,009.4	411.2	262.0	149.25	2.755
9,900.0	5,587.0	9,231.4	5,703.0	80.5	71.8	-103.17	3,939.2	-1,010.4	411.3	261.0	150.35	2.736
10,000.0	5,587.0	9,321.1	5,705.6	82.4	73.3	-103.49	4,028.7	-1,014.9	413.3	259.8	153.59	2.691
10,100.0	5,587.0	9,417.2	5,707.4	84.3	75.0	-103.60	4,124.5	-1,022.1	417.4	260.4	157.04	2.658
10,200.0	5,587.0	9,536.6	5,706.2	86.2	77.1	-103.41	4,243.8	-1,028.1	418.2	257.2	161.05	2.597
10,300.0	5,587.0	9,637.6	5,705.1	88.1	78.9	-103.26	4,344.7	-1,031.6	417.7	253.0	164.72	2.536
10,400.0	5,587.0	9,740.9	5,705.7	90.0	80.7	-103.39	4,447.9	-1,034.1	416.6	248.3	168.27	2.476
10,500.0	5,587.0	9,847.1	5,708.9	91.9	82.5	-103.91	4,554.0	-1,034.9	414.4	242.8	171.62	2.415
10,600.0	5,587.0	9,946.1	5,711.5	93.8	84.3	-104.38	4,653.1	-1,034.8	411.4	236.5	174.90	2.352
10,700.0	5,587.0	10,038.9	5,710.6	95.7	85.9	-104.32	4,745.8	-1,036.7	409.5	231.1	178.42	2.295
10,800.0	5,587.0	10,144.0	5,709.0	97.6	87.8	-104.15	4,850.8	-1,039.3	408.0	225.8	182.22	2.239
10,900.0	5,587.0	10,245.7	5,707.3	99.5	89.6	-103.99	4,952.5	-1,040.9	405.4	219.5	185.96	2.180
11,000.0	5,587.0	10,347.6	5,705.3	101.4	91.4	-103.82	5,054.4	-1,042.1	402.5	212.8	189.72	2.122
11,100.0	5,587.0	10,446.2	5,703.4	103.3	93.1	-103.63	5,153.0	-1,043.2	399.5	206.1	193.45	2.065
11,200.0	5,587.0	10,547.3	5,701.0	105.2	94.9	-103.38	5,254.0	-1,044.6	396.7	199.4	197.28	2.011
11,300.0	5,587.0	10,649.0	5,700.0	107.1	96.7	-103.36	5,355.8	-1,044.8	393.0	192.0	200.94	1.956
11,400.0	5,587.0	10,756.7	5,700.9	109.0	98.6	-103.62	5,463.4	-1,044.7	389.5	185.1	204.47	1.905
11,500.0	5,587.0	10,862.0	5,701.6	110.9	100.5	-104.00	5,568.6	-1,040.7	382.3	174.4	207.88	1.839
11,600.0	5,587.0	10,952.8	5,702.4	112.8	102.1	-104.34	5,659.4	-1,038.3	376.4	165.4	211.08	1.783
11,700.0	5,587.0	11,039.6	5,704.0	114.7	103.6	-104.70	5,746.2	-1,038.5	373.5	159.3	214.17	1.744
11,727.1	5,587.0	11,062.8	5,704.8	115.2	104.0	-104.83	5,769.4	-1,039.0	373.4	158.3	215.04	1.736
11,800.0	5,587.0	11,134.8	5,707.6	116.6	105.3	-105.25	5,841.3	-1,041.2	373.6	156.4	217.21	1.720
11,900.0	5,587.0	11,234.3	5,711.2	118.5	107.0	-105.82	5,940.7	-1,044.2	373.9	153.6	220.27	1.697

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 Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2216B - Stk #1 - SURVEYS												Offset Site Error:	0.0 usft
Survey Program: 138-ISCWSA MWD, 11318-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
12,000.0	5,587.0	11,350.4	5,719.5	120.5	108.8	-107.16	6,056.4	-1,045.8	373.9	151.4	222.50	1.680	
12,100.0	5,587.0	11,476.3	5,728.1	122.4	110.4	-108.90	6,181.8	-1,040.5	369.0	144.9	224.06	1.647	
12,200.0	5,587.0	11,582.0	5,727.0	124.3	111.8	-109.45	6,287.0	-1,030.8	356.4	129.7	226.63	1.572	
12,300.0	5,587.0	11,676.5	5,726.2	126.2	113.1	-109.99	6,381.2	-1,022.2	344.0	115.0	229.04	1.502	
12,400.0	5,587.0	11,757.1	5,724.9	128.1	114.2	-110.19	6,461.6	-1,018.3	335.5	103.9	231.66	1.448 Level 3	
12,500.0	5,587.0	11,845.0	5,724.9	130.0	115.4	-110.33	6,549.5	-1,019.2	332.8	98.4	234.44	1.420 Level 3	
12,600.0	5,587.0	11,943.6	5,724.9	131.9	116.7	-110.45	6,648.2	-1,020.9	331.0	93.6	237.36	1.394 Level 3	
12,700.0	5,587.0	12,040.2	5,723.8	133.8	118.0	-110.29	6,744.7	-1,024.1	330.2	89.6	240.64	1.372 Level 3	
12,800.0	5,587.0	12,140.2	5,721.5	135.8	119.4	-109.88	6,844.5	-1,028.4	330.0	85.7	244.29	1.351 Level 3	
12,900.0	5,587.0	12,242.4	5,718.2	137.7	120.9	-109.30	6,946.6	-1,032.8	329.4	81.2	248.20	1.327 Level 3	
13,000.0	5,587.0	12,339.7	5,718.0	139.6	122.2	-109.31	7,043.8	-1,035.7	328.7	77.4	251.31	1.308 Level 3	
13,012.8	5,587.0	12,352.0	5,718.3	139.8	122.4	-109.38	7,056.1	-1,036.0	328.7	77.0	251.69	1.306 Level 3, CC	
13,100.0	5,587.0	12,432.9	5,718.9	141.5	123.5	-109.43	7,136.9	-1,039.7	329.5	75.3	254.22	1.296 Level 3	
13,200.0	5,587.0	12,529.6	5,715.7	143.4	124.9	-108.70	7,233.3	-1,046.9	332.0	73.7	258.31	1.285 Level 3	
13,300.0	5,587.0	12,636.4	5,712.5	145.3	126.5	-108.01	7,339.8	-1,054.0	333.7	71.3	262.47	1.272 Level 3	
13,400.0	5,587.0	12,731.6	5,710.2	147.2	127.8	-107.50	7,434.8	-1,060.1	335.6	69.4	266.26	1.261 Level 3	
13,500.0	5,587.0	12,842.9	5,709.0	149.2	129.5	-107.24	7,545.9	-1,065.7	336.5	66.6	269.97	1.247 Level 2	
13,600.0	5,587.0	12,947.3	5,710.2	151.1	131.0	-107.59	7,650.3	-1,066.5	334.0	61.2	272.84	1.224 Level 2	
13,700.0	5,587.0	13,041.4	5,712.1	153.0	132.4	-108.00	7,744.4	-1,068.0	332.7	57.2	275.47	1.208 Level 2	
13,736.0	5,587.0	13,075.7	5,712.9	153.7	132.9	-108.16	7,778.6	-1,068.9	332.6	56.1	276.45	1.203 Level 2	
13,800.0	5,587.0	13,136.1	5,714.8	154.9	133.8	-108.47	7,839.0	-1,070.9	332.9	54.9	277.98	1.198 Level 2	
13,900.0	5,587.0	13,226.3	5,718.3	156.8	135.1	-109.00	7,929.0	-1,075.2	335.2	54.8	280.34	1.196 Level 2, ES, SF	
14,000.0	5,587.0	13,314.6	5,722.7	158.7	136.4	-109.48	8,016.9	-1,082.4	341.0	58.3	282.69	1.206 Level 2	
14,100.0	5,587.0	13,406.0	5,725.5	160.7	137.8	-109.52	8,107.6	-1,093.1	349.5	63.8	285.72	1.223 Level 2	
14,125.0	5,587.0	13,406.0	5,725.5	161.1	137.8	-109.52	8,107.6	-1,093.1	352.8	66.6	286.20	1.233 Level 2	

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

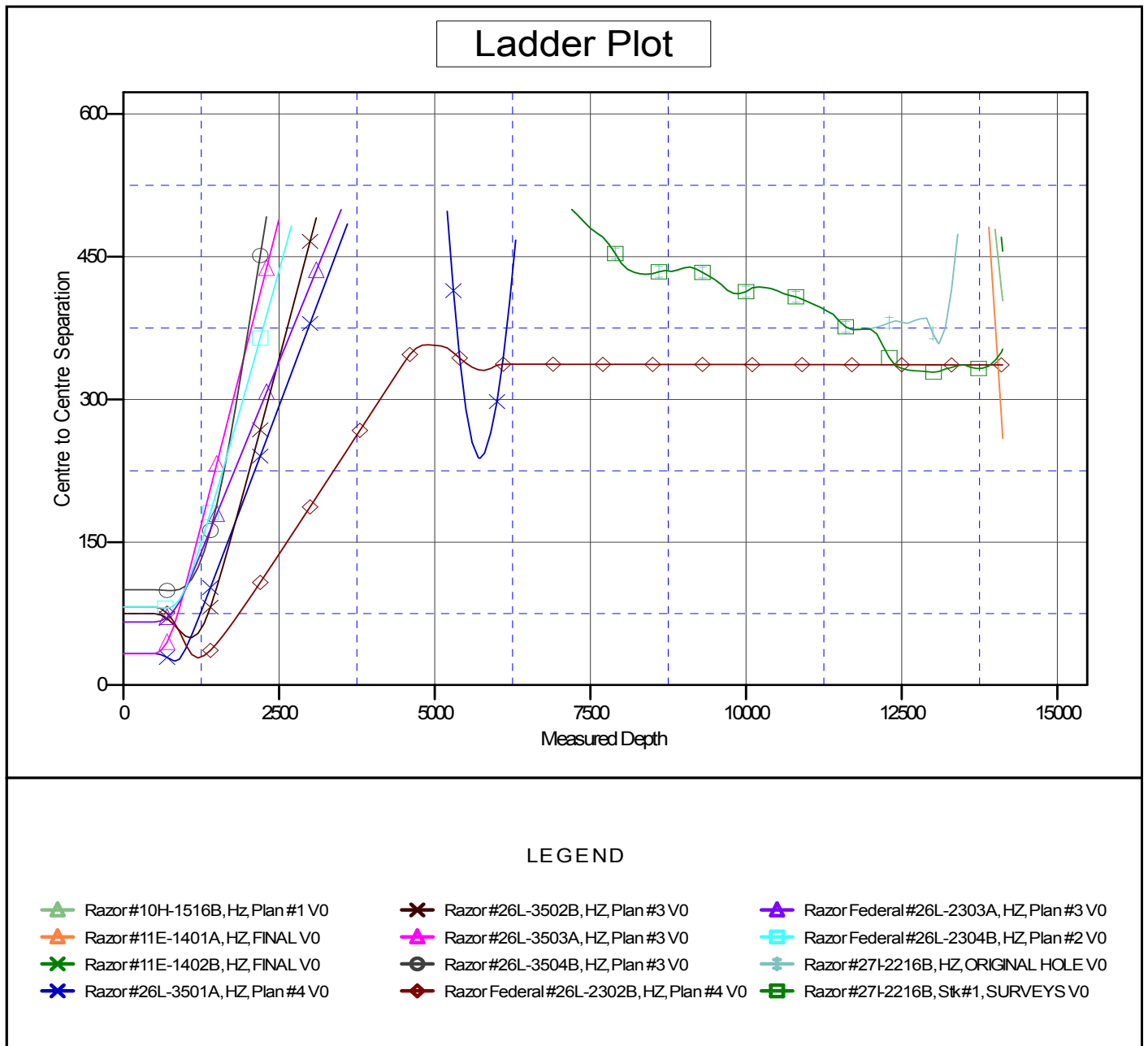
Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26L-2301A
Project:	Weld County, CO	TVD Reference:	WELL @ 4751.0usft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4751.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	Grid
Reference Well:	Razor Federal #26L-2301A	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 #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4751.0usft (Original Well Ele)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor Federal #26L-2301A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°



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