

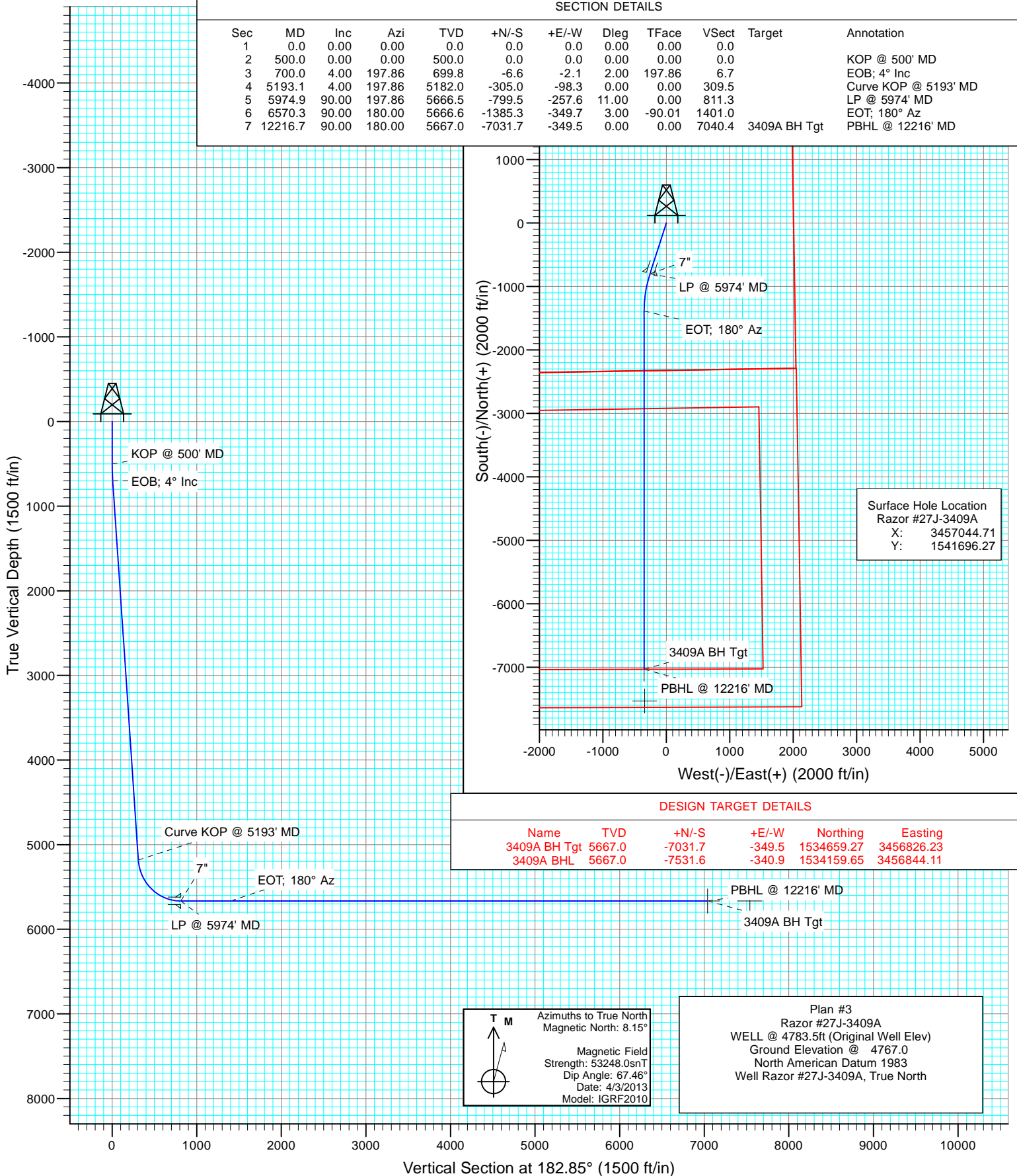


Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27J-3409A
Wellbore: Hz
Design: Plan #3



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0		KOP @ 500' MD
3	700.0	4.00	197.86	699.8	-6.6	-2.1	2.00	197.86	6.7		EOB; 4° Inc
4	5193.1	4.00	197.86	5182.0	-305.0	-98.3	0.00	0.00	309.5		Curve KOP @ 5193' MD
5	5974.9	90.00	197.86	5666.5	-799.5	-257.6	11.00	0.00	811.3		LP @ 5974' MD
6	6570.3	90.00	180.00	5666.6	-1385.3	-349.7	3.00	-90.01	1401.0		EOT; 180° Az
7	12216.7	90.00	180.00	5667.0	-7031.7	-349.5	0.00	0.00	7040.4	3409A BH Tgt	PBHL @ 12216' MD



Surface Hole Location
Razor #27J-3409A
X: 3457044.71
Y: 1541696.27

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
3409A BH Tgt	5667.0	-7031.7	-349.5	1534659.27	3456826.23
3409A BHL	5667.0	-7531.6	-340.9	1534159.65	3456844.11

PBHL @ 12216' MD
3409A BH Tgt

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #27J-3409A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

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		S27-T10N-R58W			
Site Position:		Northing:	1,541,650.73 ft	Latitude:	40.808594
From:	Lat/Long	Easting:	3,455,691.89 ft	Longitude:	-103.853833
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.06 °

Well	Razor #27J-3409A					
Well Position	+N/-S	0.0 ft	Northing:	1,541,696.27 ft	Latitude:	40.808650
	+E/-W	0.0 ft	Easting:	3,457,044.71 ft	Longitude:	-103.848944
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,767.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/3/2013	8.15	67.46	53,248

Design	Plan #3				
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	182.85	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	197.86	699.8	-6.6	-2.1	2.00	2.00	0.00	197.86	
5,193.1	4.00	197.86	5,182.0	-305.0	-98.3	0.00	0.00	0.00	0.00	
5,974.9	90.00	197.86	5,666.5	-799.5	-257.6	11.00	11.00	0.00	0.00	
6,570.3	90.00	180.00	5,666.6	-1,385.3	-349.7	3.00	0.00	-3.00	-90.01	
12,216.7	90.00	180.00	5,667.0	-7,031.7	-349.5	0.00	0.00	0.00	0.00	3409A BH Tgt

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #27J-3409A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500' MD
600.0	2.00	197.86	600.0	-1.7	-0.5	1.7	2.00	2.00	
700.0	4.00	197.86	699.8	-6.6	-2.1	6.7	2.00	2.00	EOB; 4° Inc
800.0	4.00	197.86	799.6	-13.3	-4.3	13.5	0.00	0.00	
900.0	4.00	197.86	899.4	-19.9	-6.4	20.2	0.00	0.00	
1,000.0	4.00	197.86	999.1	-26.6	-8.6	27.0	0.00	0.00	
1,100.0	4.00	197.86	1,098.9	-33.2	-10.7	33.7	0.00	0.00	
1,200.0	4.00	197.86	1,198.6	-39.8	-12.8	40.4	0.00	0.00	
1,300.0	4.00	197.86	1,298.4	-46.5	-15.0	47.2	0.00	0.00	
1,400.0	4.00	197.86	1,398.1	-53.1	-17.1	53.9	0.00	0.00	
1,500.0	4.00	197.86	1,497.9	-59.8	-19.3	60.6	0.00	0.00	
1,600.0	4.00	197.86	1,597.6	-66.4	-21.4	67.4	0.00	0.00	
1,700.0	4.00	197.86	1,697.4	-73.0	-23.5	74.1	0.00	0.00	
1,800.0	4.00	197.86	1,797.2	-79.7	-25.7	80.9	0.00	0.00	
1,900.0	4.00	197.86	1,896.9	-86.3	-27.8	87.6	0.00	0.00	
2,000.0	4.00	197.86	1,996.7	-93.0	-30.0	94.3	0.00	0.00	
2,100.0	4.00	197.86	2,096.4	-99.6	-32.1	101.1	0.00	0.00	
2,200.0	4.00	197.86	2,196.2	-106.2	-34.2	107.8	0.00	0.00	
2,300.0	4.00	197.86	2,295.9	-112.9	-36.4	114.5	0.00	0.00	
2,400.0	4.00	197.86	2,395.7	-119.5	-38.5	121.3	0.00	0.00	
2,500.0	4.00	197.86	2,495.5	-126.2	-40.6	128.0	0.00	0.00	
2,600.0	4.00	197.86	2,595.2	-132.8	-42.8	134.8	0.00	0.00	
2,700.0	4.00	197.86	2,695.0	-139.4	-44.9	141.5	0.00	0.00	
2,800.0	4.00	197.86	2,794.7	-146.1	-47.1	148.2	0.00	0.00	
2,900.0	4.00	197.86	2,894.5	-152.7	-49.2	155.0	0.00	0.00	
3,000.0	4.00	197.86	2,994.2	-159.4	-51.3	161.7	0.00	0.00	
3,100.0	4.00	197.86	3,094.0	-166.0	-53.5	168.4	0.00	0.00	
3,200.0	4.00	197.86	3,193.7	-172.6	-55.6	175.2	0.00	0.00	
3,300.0	4.00	197.86	3,293.5	-179.3	-57.8	181.9	0.00	0.00	
3,400.0	4.00	197.86	3,393.3	-185.9	-59.9	188.7	0.00	0.00	
3,500.0	4.00	197.86	3,493.0	-192.5	-62.0	195.4	0.00	0.00	
3,600.0	4.00	197.86	3,592.8	-199.2	-64.2	202.1	0.00	0.00	
3,700.0	4.00	197.86	3,692.5	-205.8	-66.3	208.9	0.00	0.00	
3,800.0	4.00	197.86	3,792.3	-212.5	-68.5	215.6	0.00	0.00	
3,900.0	4.00	197.86	3,892.0	-219.1	-70.6	222.3	0.00	0.00	
4,000.0	4.00	197.86	3,991.8	-225.7	-72.7	229.1	0.00	0.00	
4,100.0	4.00	197.86	4,091.6	-232.4	-74.9	235.8	0.00	0.00	
4,200.0	4.00	197.86	4,191.3	-239.0	-77.0	242.6	0.00	0.00	
4,300.0	4.00	197.86	4,291.1	-245.7	-79.2	249.3	0.00	0.00	
4,400.0	4.00	197.86	4,390.8	-252.3	-81.3	256.0	0.00	0.00	
4,500.0	4.00	197.86	4,490.6	-258.9	-83.4	262.8	0.00	0.00	
4,600.0	4.00	197.86	4,590.3	-265.6	-85.6	269.5	0.00	0.00	
4,700.0	4.00	197.86	4,690.1	-272.2	-87.7	276.2	0.00	0.00	
4,800.0	4.00	197.86	4,789.9	-278.9	-89.9	283.0	0.00	0.00	
4,900.0	4.00	197.86	4,889.6	-285.5	-92.0	289.7	0.00	0.00	
5,000.0	4.00	197.86	4,989.4	-292.1	-94.1	296.5	0.00	0.00	
5,100.0	4.00	197.86	5,089.1	-298.8	-96.3	303.2	0.00	0.00	

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Project:	Weld County, CO	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

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
5,193.1	4.00	197.86	5,182.0	-305.0	-98.3	309.5	0.00	0.00	Curve KOP @ 5193' MD
5,200.0	4.76	197.86	5,188.9	-305.5	-98.4	310.0	11.00	11.00	
5,300.0	15.76	197.86	5,287.1	-322.4	-103.9	327.1	11.00	11.00	
5,400.0	26.76	197.86	5,380.2	-356.8	-115.0	362.1	11.00	11.00	
5,500.0	37.76	197.86	5,464.6	-407.6	-131.3	413.6	11.00	11.00	
5,600.0	48.76	197.86	5,537.3	-472.7	-152.3	479.7	11.00	11.00	
5,700.0	59.76	197.86	5,595.7	-549.8	-177.2	557.9	11.00	11.00	
5,800.0	70.76	197.86	5,637.4	-636.1	-205.0	645.5	11.00	11.00	
5,900.0	81.76	197.86	5,661.2	-728.5	-234.7	739.2	11.00	11.00	
5,974.9	90.00	197.86	5,666.5	-799.5	-257.6	811.3	11.00	11.00	LP @ 5974' MD - 7"
6,000.0	90.00	197.11	5,666.5	-823.4	-265.2	835.6	3.00	0.01	
6,100.0	90.00	194.11	5,666.5	-919.7	-292.1	933.1	3.00	0.00	
6,200.0	90.00	191.11	5,666.5	-1,017.3	-313.9	1,031.6	3.00	0.00	
6,300.0	90.00	188.11	5,666.5	-1,115.9	-330.6	1,130.9	3.00	0.00	
6,400.0	90.00	185.11	5,666.5	-1,215.2	-342.1	1,230.7	3.00	0.00	
6,500.0	90.00	182.11	5,666.6	-1,315.0	-348.4	1,330.7	3.00	0.00	
6,570.3	90.00	180.00	5,666.6	-1,385.3	-349.7	1,401.0	3.00	0.00	EOT; 180° Az
6,600.0	90.00	180.00	5,666.6	-1,415.0	-349.7	1,430.6	0.00	0.00	
6,700.0	90.00	180.00	5,666.6	-1,515.0	-349.7	1,530.5	0.00	0.00	
6,800.0	90.00	180.00	5,666.6	-1,615.0	-349.7	1,630.4	0.00	0.00	
6,900.0	90.00	180.00	5,666.6	-1,715.0	-349.6	1,730.2	0.00	0.00	
7,000.0	90.00	180.00	5,666.6	-1,815.0	-349.6	1,830.1	0.00	0.00	
7,100.0	90.00	180.00	5,666.6	-1,915.0	-349.6	1,930.0	0.00	0.00	
7,200.0	90.00	180.00	5,666.6	-2,015.0	-349.6	2,029.9	0.00	0.00	
7,300.0	90.00	180.00	5,666.6	-2,115.0	-349.6	2,129.8	0.00	0.00	
7,400.0	90.00	180.00	5,666.6	-2,215.0	-349.6	2,229.6	0.00	0.00	
7,500.0	90.00	180.00	5,666.6	-2,315.0	-349.6	2,329.5	0.00	0.00	
7,600.0	90.00	180.00	5,666.6	-2,415.0	-349.6	2,429.4	0.00	0.00	
7,700.0	90.00	180.00	5,666.7	-2,515.0	-349.6	2,529.3	0.00	0.00	
7,800.0	90.00	180.00	5,666.7	-2,615.0	-349.6	2,629.1	0.00	0.00	
7,900.0	90.00	180.00	5,666.7	-2,715.0	-349.6	2,729.0	0.00	0.00	
8,000.0	90.00	180.00	5,666.7	-2,815.0	-349.6	2,828.9	0.00	0.00	
8,100.0	90.00	180.00	5,666.7	-2,915.0	-349.6	2,928.8	0.00	0.00	
8,200.0	90.00	180.00	5,666.7	-3,015.0	-349.6	3,028.6	0.00	0.00	
8,300.0	90.00	180.00	5,666.7	-3,115.0	-349.6	3,128.5	0.00	0.00	
8,400.0	90.00	180.00	5,666.7	-3,215.0	-349.6	3,228.4	0.00	0.00	
8,500.0	90.00	180.00	5,666.7	-3,315.0	-349.6	3,328.3	0.00	0.00	
8,600.0	90.00	180.00	5,666.7	-3,415.0	-349.6	3,428.1	0.00	0.00	
8,700.0	90.00	180.00	5,666.7	-3,515.0	-349.6	3,528.0	0.00	0.00	
8,800.0	90.00	180.00	5,666.7	-3,615.0	-349.6	3,627.9	0.00	0.00	
8,900.0	90.00	180.00	5,666.7	-3,715.0	-349.6	3,727.8	0.00	0.00	
9,000.0	90.00	180.00	5,666.8	-3,815.0	-349.6	3,827.7	0.00	0.00	
9,100.0	90.00	180.00	5,666.8	-3,915.0	-349.6	3,927.5	0.00	0.00	
9,200.0	90.00	180.00	5,666.8	-4,015.0	-349.6	4,027.4	0.00	0.00	
9,300.0	90.00	180.00	5,666.8	-4,115.0	-349.6	4,127.3	0.00	0.00	
9,400.0	90.00	180.00	5,666.8	-4,215.0	-349.6	4,227.2	0.00	0.00	
9,500.0	90.00	180.00	5,666.8	-4,315.0	-349.6	4,327.0	0.00	0.00	
9,600.0	90.00	180.00	5,666.8	-4,415.0	-349.6	4,426.9	0.00	0.00	
9,700.0	90.00	180.00	5,666.8	-4,515.0	-349.6	4,526.8	0.00	0.00	
9,800.0	90.00	180.00	5,666.8	-4,615.0	-349.5	4,626.7	0.00	0.00	
9,900.0	90.00	180.00	5,666.8	-4,715.0	-349.5	4,726.5	0.00	0.00	
10,000.0	90.00	180.00	5,666.8	-4,815.0	-349.5	4,826.4	0.00	0.00	

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Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

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
10,100.0	90.00	180.00	5,666.8	-4,915.0	-349.5	4,926.3	0.00	0.00	
10,200.0	90.00	180.00	5,666.9	-5,015.0	-349.5	5,026.2	0.00	0.00	
10,300.0	90.00	180.00	5,666.9	-5,115.0	-349.5	5,126.0	0.00	0.00	
10,400.0	90.00	180.00	5,666.9	-5,215.0	-349.5	5,225.9	0.00	0.00	
10,500.0	90.00	180.00	5,666.9	-5,315.0	-349.5	5,325.8	0.00	0.00	
10,600.0	90.00	180.00	5,666.9	-5,415.0	-349.5	5,425.7	0.00	0.00	
10,700.0	90.00	180.00	5,666.9	-5,515.0	-349.5	5,525.6	0.00	0.00	
10,800.0	90.00	180.00	5,666.9	-5,615.0	-349.5	5,625.4	0.00	0.00	
10,900.0	90.00	180.00	5,666.9	-5,715.0	-349.5	5,725.3	0.00	0.00	
11,000.0	90.00	180.00	5,666.9	-5,815.0	-349.5	5,825.2	0.00	0.00	
11,100.0	90.00	180.00	5,666.9	-5,915.0	-349.5	5,925.1	0.00	0.00	
11,200.0	90.00	180.00	5,666.9	-6,015.0	-349.5	6,024.9	0.00	0.00	
11,300.0	90.00	180.00	5,666.9	-6,115.0	-349.5	6,124.8	0.00	0.00	
11,400.0	90.00	180.00	5,666.9	-6,215.0	-349.5	6,224.7	0.00	0.00	
11,500.0	90.00	180.00	5,667.0	-6,315.0	-349.5	6,324.6	0.00	0.00	
11,600.0	90.00	180.00	5,667.0	-6,415.0	-349.5	6,424.4	0.00	0.00	
11,700.0	90.00	180.00	5,667.0	-6,515.0	-349.5	6,524.3	0.00	0.00	
11,800.0	90.00	180.00	5,667.0	-6,615.0	-349.5	6,624.2	0.00	0.00	
11,900.0	90.00	180.00	5,667.0	-6,715.0	-349.5	6,724.1	0.00	0.00	
12,000.0	90.00	180.00	5,667.0	-6,815.0	-349.5	6,823.9	0.00	0.00	
12,100.0	90.00	180.00	5,667.0	-6,915.0	-349.5	6,923.8	0.00	0.00	
12,200.0	90.00	180.00	5,667.0	-7,015.0	-349.5	7,023.7	0.00	0.00	
12,216.7	90.00	180.00	5,667.0	-7,031.7	-349.5	7,040.4	0.00	0.00	PBHL @ 12216' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
3409A BH Tgt - hit/miss target - Shape - Point	0.00	1.07	5,667.0	-7,031.7	-349.5	1,534,659.27	3,456,826.23	40.789350	-103.850206
3409A BHL - plan misses target center by 499.9ft at 12216.7ft MD (5667.0 TVD, -7031.7 N, -349.5 E) - Point	0.00	1.07	5,667.0	-7,531.6	-340.9	1,534,159.65	3,456,844.11	40.787978	-103.850175

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,974.9	5,666.5	7"	0.000	0.000	

Database: USA EDM 5000 Multi Users DB
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27J-3409A
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Razor #27J-3409A
TVD Reference: WELL @ 4783.5ft (Original Well Elev)
MD Reference: WELL @ 4783.5ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500' MD
700.0	699.8	-6.6	-2.1	EOB; 4° Inc
5,193.1	5,182.0	-305.0	-98.3	Curve KOP @ 5193' MD
5,974.9	5,666.5	-799.5	-257.6	LP @ 5974' MD
6,570.3	5,666.6	-1,385.3	-349.7	EOT; 180° Az
12,216.7	5,667.0	-7,031.7	-349.5	PBHL @ 12216' MD



WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO

S27-T10N-R58W

Razor #27J-3409A

Hz

Plan #3

Anticollision Report

17 June, 2013

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3		
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 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	6/17/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,216.7	Plan #3 (Hz)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S27-T10N-R58W						
Razor #27I-3413A - HZ - Plan #1						Out of range
Razor #27I-3414B - HZ - Plan #1						Out of range
Razor #27J-2209A - HZ - Plan #2	616.4	616.9	31.8	29.3	12.858	CC, ES
Razor #27J-2209A - HZ - Plan #2	700.0	700.4	32.9	30.1	11.670	SF
Razor #27J-2210B - HZ - Plan #2	1,624.0	1,618.6	23.0	15.9	3.235	CC, ES
Razor #27J-2210B - HZ - Plan #2	1,700.0	1,694.4	23.6	16.2	3.166	SF
Razor #27J-2211A - HZ - Plan #2	500.0	500.0	98.3	96.3	49.489	CC, ES
Razor #27J-2211A - HZ - Plan #2	5,100.0	5,089.1	356.5	333.9	15.715	SF
Razor #27J-2212B - HZ - Plan #2	1,336.8	1,332.0	85.2	79.5	14.846	CC
Razor #27J-2212B - HZ - Plan #2	1,400.0	1,395.1	85.3	79.3	14.129	ES
Razor #27J-2212B - HZ - Plan #2	1,700.0	1,689.6	93.9	86.5	12.650	SF
Razor #27J-3410B - HZ - Plan #2	1,479.2	1,474.1	54.4	48.0	8.471	CC
Razor #27J-3410B - HZ - Plan #2	1,500.0	1,494.9	54.4	47.9	8.345	ES
Razor #27J-3410B - HZ - Plan #2	12,216.7	12,486.8	350.2	89.4	1.343	Level 3, SF
Razor #27J-3411A - HZ - Plan #2	466.7	466.7	65.3	63.5	35.585	CC
Razor #27J-3411A - HZ - Plan #2	500.0	500.0	65.3	63.3	32.900	ES
Razor #27J-3411A - HZ - Plan #2	12,216.7	12,195.7	668.4	398.1	2.472	SF
Razor #27J-3412B - HZ - Plan #2	500.0	497.0	123.7	121.7	62.481	CC, ES
Razor #27J-3412B - HZ - Plan #2	5,300.0	5,280.0	346.3	320.2	13.285	SF
Razor #27K-3405A - HZ - Plan #3						Out of range
Razor #27K-3406B - HZ - Plan #4						Out of range
Razor #27K-3407A - HZ - Plan #3	6,659.9	6,920.4	693.4	633.2	11.531	CC
Razor #27K-3407A - HZ - Plan #3	12,216.7	12,477.2	693.8	425.9	2.589	ES, SF
Razor #27K-3408B - HZ - Plan #3	6,791.9	7,014.1	377.5	315.7	6.116	CC
Razor #27K-3408B - HZ - Plan #3	12,216.7	12,438.9	378.2	120.3	1.467	Level 3, ES, SF
Razor #27L-3401B - HZ - Plan #3						Out of range
Razor #27L-3404B - HZ - Plan #4						Out of range

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #2														Offset Site Error:	0.0 ft
Survey Program: O-ISCWSA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.1	32.1						
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.1	32.1	31.9	0.19	171.111			
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.1	32.1	31.5	0.64	50.397			
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.1	32.1	31.0	1.09	29.550			
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.1	32.1	30.6	1.54	20.903			
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.1	32.1	30.1	1.99	16.171			
600.0	600.0	600.5	600.5	1.2	1.2	-113.53	1.5	31.2	31.8	29.4	2.41	13.229			
616.4	616.4	616.9	616.9	1.2	1.3	-115.55	2.0	30.8	31.8	29.3	2.48	12.858 CC, ES			
700.0	699.8	700.4	700.3	1.4	1.4	-130.19	5.9	28.3	32.9	30.1	2.82	11.670 SF			
800.0	799.6	799.6	799.2	1.6	1.7	-148.69	11.7	24.5	38.1	34.8	3.26	11.703			
900.0	899.4	898.8	898.2	1.8	1.9	-161.80	17.5	20.7	46.2	42.5	3.70	12.499			
1,000.0	999.1	998.0	997.2	2.0	2.2	-170.70	23.3	17.0	56.0	51.9	4.14	13.518			
1,100.0	1,098.9	1,097.2	1,096.1	2.3	2.4	-176.86	29.1	13.2	66.7	62.2	4.59	14.536			
1,200.0	1,198.6	1,196.5	1,195.1	2.5	2.6	178.71	34.9	9.4	78.0	73.0	5.04	15.475			
1,300.0	1,298.4	1,295.7	1,294.0	2.8	2.9	175.41	40.7	5.6	89.6	84.2	5.49	16.315			
1,400.0	1,398.1	1,394.9	1,393.0	3.0	3.1	172.88	46.5	1.8	101.5	95.5	5.95	17.059			
1,500.0	1,497.9	1,494.1	1,492.0	3.3	3.4	170.88	52.3	-1.9	113.5	107.1	6.41	17.716			
1,600.0	1,597.6	1,593.3	1,590.9	3.5	3.7	169.26	58.1	-5.7	125.6	118.8	6.87	18.297			
1,700.0	1,697.4	1,692.5	1,689.9	3.8	3.9	167.92	63.9	-9.5	137.8	130.5	7.33	18.813			
1,800.0	1,797.2	1,791.7	1,788.9	4.1	4.2	166.81	69.7	-13.3	150.1	142.3	7.79	19.274			
1,900.0	1,896.9	1,890.9	1,887.8	4.3	4.4	165.86	75.5	-17.0	162.4	154.1	8.25	19.686			
2,000.0	1,996.7	1,990.1	1,986.8	4.6	4.7	165.05	81.3	-20.8	174.7	166.0	8.71	20.057			
2,100.0	2,096.4	2,089.3	2,085.8	4.8	4.9	164.34	87.0	-24.6	187.1	177.9	9.18	20.392			
2,200.0	2,196.2	2,188.5	2,184.7	5.1	5.2	163.72	92.8	-28.4	199.5	189.9	9.64	20.696			
2,300.0	2,295.9	2,287.7	2,283.7	5.4	5.4	163.18	98.6	-32.2	211.9	201.8	10.10	20.974			
2,400.0	2,395.7	2,386.9	2,382.7	5.6	5.7	162.69	104.4	-35.9	224.4	213.8	10.57	21.227			
2,500.0	2,495.5	2,486.1	2,481.6	5.9	5.9	162.26	110.2	-39.7	236.8	225.8	11.03	21.460			
2,600.0	2,595.2	2,585.3	2,580.6	6.1	6.2	161.87	116.0	-43.5	249.3	237.8	11.50	21.674			
2,700.0	2,695.0	2,684.6	2,679.6	6.4	6.4	161.51	121.8	-47.3	261.7	249.8	11.97	21.872			
2,800.0	2,794.7	2,783.8	2,778.5	6.7	6.7	161.19	127.6	-51.0	274.2	261.8	12.43	22.055			
2,900.0	2,894.5	2,883.0	2,877.5	6.9	6.9	160.90	133.4	-54.8	286.7	273.8	12.90	22.225			
3,000.0	2,994.2	2,982.2	2,976.5	7.2	7.2	160.63	139.2	-58.6	299.2	285.8	13.37	22.384			
3,100.0	3,094.0	3,081.4	3,075.4	7.5	7.5	160.38	145.0	-62.4	311.7	297.9	13.83	22.531			
3,200.0	3,193.7	3,180.6	3,174.4	7.7	7.7	160.15	150.8	-66.2	324.2	309.9	14.30	22.670			
3,300.0	3,293.5	3,279.8	3,273.3	8.0	8.0	159.94	156.6	-69.9	336.7	322.0	14.77	22.799			
3,400.0	3,393.3	3,379.0	3,372.3	8.2	8.2	159.74	162.4	-73.7	349.2	334.0	15.24	22.921			
3,500.0	3,493.0	3,478.2	3,471.3	8.5	8.5	159.56	168.2	-77.5	361.8	346.1	15.70	23.036			
3,600.0	3,592.8	3,577.4	3,570.2	8.8	8.7	159.39	174.0	-81.3	374.3	358.1	16.17	23.143			
3,700.0	3,692.5	3,676.6	3,669.2	9.0	9.0	159.23	179.8	-85.0	386.8	370.2	16.64	23.245			
3,800.0	3,792.3	3,775.8	3,768.2	9.3	9.2	159.08	185.6	-88.8	399.3	382.2	17.11	23.342			
3,900.0	3,892.0	3,875.0	3,867.1	9.6	9.5	158.94	191.4	-92.6	411.9	394.3	17.58	23.433			
4,000.0	3,991.8	3,974.2	3,966.1	9.8	9.8	158.81	197.2	-96.4	424.4	406.4	18.04	23.519			
4,100.0	4,091.6	4,073.5	4,065.1	10.1	10.0	158.68	203.0	-100.1	436.9	418.4	18.51	23.601			
4,200.0	4,191.3	4,172.7	4,164.0	10.3	10.3	158.57	208.8	-103.9	449.5	430.5	18.98	23.680			
4,300.0	4,291.1	4,271.9	4,263.0	10.6	10.5	158.45	214.6	-107.7	462.0	442.6	19.45	23.754			
4,400.0	4,390.8	4,371.1	4,362.0	10.9	10.8	158.35	220.4	-111.5	474.6	454.6	19.92	23.825			
4,500.0	4,490.6	4,470.3	4,460.9	11.1	11.0	158.25	226.2	-115.3	487.1	466.7	20.39	23.892			
4,600.0	4,590.3	4,569.5	4,559.9	11.4	11.3	158.15	232.0	-119.0	499.6	478.8	20.86	23.957			
4,700.0	4,690.1	4,668.7	4,658.9	11.7	11.5	158.06	237.8	-122.8	512.2	490.9	21.32	24.019			
4,800.0	4,789.9	4,767.9	4,757.8	11.9	11.8	157.98	243.6	-126.6	524.7	502.9	21.79	24.078			
4,900.0	4,889.6	4,867.1	4,856.8	12.2	12.1	157.90	249.4	-130.4	537.3	515.0	22.26	24.134			
5,000.0	4,989.4	4,966.3	4,955.8	12.5	12.3	157.82	255.2	-134.1	549.8	527.1	22.73	24.188			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
5,100.0	5,089.1	5,065.5	5,054.7	12.7	12.6	157.74	261.0	-137.9	562.4	539.2	23.20	24.241	
5,193.1	5,182.0	5,157.9	5,146.9	13.0	12.8	157.68	266.4	-141.4	574.1	550.4	23.64	24.287	
5,200.0	5,188.9	5,164.7	5,153.7	13.0	12.8	157.64	266.8	-141.7	575.0	551.3	23.65	24.311	
5,250.0	5,238.4	5,200.0	5,188.9	13.1	12.9	157.28	268.9	-143.1	584.2	560.6	23.63	24.728	
5,300.0	5,287.1	5,226.7	5,215.4	13.4	13.0	156.69	271.4	-144.6	599.5	576.0	23.43	25.580	
5,350.0	5,334.5	5,250.0	5,238.4	13.6	13.1	155.79	274.5	-146.4	620.6	597.5	23.09	26.873	
5,400.0	5,380.2	5,268.5	5,256.6	13.9	13.1	154.51	277.6	-148.2	647.3	624.6	22.64	28.587	
5,450.0	5,423.7	5,286.4	5,274.0	14.2	13.2	152.76	281.2	-150.2	678.8	656.6	22.13	30.666	
5,500.0	5,464.6	5,300.0	5,287.1	14.6	13.3	150.33	284.3	-152.0	714.5	692.9	21.66	32.989	
5,550.0	5,502.6	5,315.2	5,301.7	15.1	13.3	147.09	288.1	-154.1	753.9	732.5	21.37	35.275	
5,600.0	5,537.3	5,326.1	5,312.1	15.6	13.4	142.47	291.0	-155.7	796.2	774.7	21.52	36.997	
5,650.0	5,568.4	5,334.7	5,320.2	16.1	13.4	135.82	293.5	-157.1	840.9	818.4	22.48	37.415	
5,700.0	5,595.7	5,350.0	5,334.5	16.7	13.5	127.03	298.1	-159.7	887.4	863.0	24.42	36.346	
5,750.0	5,618.7	5,350.0	5,334.5	17.3	13.5	112.43	298.1	-159.7	934.9	907.2	27.73	33.719	
5,800.0	5,637.4	5,350.0	5,334.5	18.0	13.5	92.74	298.1	-159.7	983.2	952.7	30.51	32.222	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2210B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-75.0	0.0	75.1					
100.0	100.0	97.0	97.0	0.1	0.1	-180.00	-75.0	0.0	75.0	74.9	0.18	405.992		
200.0	200.0	197.0	197.0	0.3	0.3	-180.00	-75.0	0.0	75.0	74.4	0.63	119.042		
300.0	300.0	297.0	297.0	0.5	0.5	-180.00	-75.0	0.0	75.0	74.0	1.08	69.492		
400.0	400.0	397.0	397.0	0.8	0.8	-180.00	-75.0	0.0	75.0	73.5	1.53	49.068		
500.0	500.0	497.0	497.0	1.0	1.0	-180.00	-75.0	0.0	75.0	73.1	1.98	37.922		
600.0	600.0	597.0	597.0	1.2	1.2	-18.29	-75.0	0.0	73.4	71.0	2.40	30.519		
700.0	699.8	696.8	696.8	1.4	1.4	-19.70	-75.0	0.0	68.4	65.6	2.82	24.286		
800.0	799.6	796.6	796.6	1.6	1.7	-21.87	-75.0	0.0	61.9	58.7	3.24	19.109		
900.0	899.4	896.3	896.3	1.8	1.9	-24.55	-75.0	0.0	55.5	51.8	3.67	15.111		
1,000.0	999.1	996.1	996.1	2.0	2.1	-27.93	-75.0	0.0	49.2	45.1	4.11	11.966		
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	-32.26	-75.0	0.0	43.2	38.6	4.57	9.461		
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	-37.96	-75.0	0.0	37.5	32.5	5.03	7.456		
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	-45.59	-75.0	0.0	32.3	26.8	5.50	5.863		
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	-55.89	-75.0	0.0	27.8	21.8	5.99	4.642		
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	-69.45	-75.0	0.0	24.6	18.1	6.50	3.783		
1,600.0	1,597.6	1,594.6	1,594.6	3.5	3.5	-85.85	-75.0	0.0	23.1	16.1	7.00	3.298		
1,624.0	1,621.6	1,618.6	1,618.6	3.6	3.5	-90.00	-75.0	0.0	23.0	15.9	7.11	3.235 CC, ES		
1,700.0	1,697.4	1,694.4	1,694.4	3.8	3.7	-102.94	-75.0	0.0	23.6	16.2	7.46	3.166 SF		
1,800.0	1,797.2	1,794.1	1,794.1	4.1	3.9	-118.02	-75.0	0.0	26.1	18.2	7.89	3.306		
1,900.0	1,896.9	1,893.9	1,893.9	4.3	4.1	-129.84	-75.0	0.0	30.0	21.7	8.30	3.615		
2,000.0	1,996.7	1,993.7	1,993.7	4.6	4.4	-138.66	-75.0	0.0	34.9	26.2	8.71	4.005		
2,100.0	2,096.4	2,093.4	2,093.4	4.8	4.6	-145.20	-75.0	0.0	40.4	31.3	9.13	4.423		
2,200.0	2,196.2	2,193.2	2,193.2	5.1	4.8	-150.13	-75.0	0.0	46.3	36.7	9.56	4.843		
2,300.0	2,295.9	2,292.9	2,292.9	5.4	5.0	-153.93	-75.0	0.0	52.5	42.5	9.99	5.251		
2,400.0	2,395.7	2,392.7	2,392.7	5.6	5.2	-156.91	-75.0	0.0	58.8	48.4	10.43	5.639		
2,500.0	2,495.5	2,492.4	2,492.4	5.9	5.5	-159.31	-75.0	0.0	65.3	54.4	10.87	6.007		
2,600.0	2,595.2	2,592.2	2,592.2	6.1	5.7	-161.28	-75.0	0.0	71.9	60.6	11.31	6.352		
2,700.0	2,695.0	2,692.0	2,692.0	6.4	5.9	-162.91	-75.0	0.0	78.5	66.7	11.76	6.676		
2,800.0	2,794.7	2,791.7	2,791.7	6.7	6.1	-164.29	-75.0	0.0	85.2	73.0	12.21	6.981		
2,900.0	2,894.5	2,891.5	2,891.5	6.9	6.4	-165.47	-75.0	0.0	91.9	79.3	12.65	7.266		
3,000.0	2,994.2	2,991.2	2,991.2	7.2	6.6	-166.48	-75.0	0.0	98.7	85.6	13.10	7.534		
3,100.0	3,094.0	3,091.0	3,091.0	7.5	6.8	-167.37	-75.0	0.0	105.5	92.0	13.55	7.786		
3,200.0	3,193.7	3,190.7	3,190.7	7.7	7.0	-168.15	-75.0	0.0	112.3	98.3	14.00	8.023		
3,300.0	3,293.5	3,290.5	3,290.5	8.0	7.3	-168.84	-75.0	0.0	119.2	104.7	14.45	8.247		
3,400.0	3,393.3	3,390.3	3,390.3	8.2	7.5	-169.45	-75.0	0.0	126.0	111.1	14.90	8.457		
3,500.0	3,493.0	3,490.0	3,490.0	8.5	7.7	-170.00	-75.0	0.0	132.9	117.5	15.35	8.656		
3,600.0	3,592.8	3,589.8	3,589.8	8.8	7.9	-170.50	-75.0	0.0	139.7	123.9	15.80	8.844		
3,700.0	3,692.5	3,689.5	3,689.5	9.0	8.2	-170.95	-75.0	0.0	146.6	130.4	16.25	9.022		
3,800.0	3,792.3	3,789.3	3,789.3	9.3	8.4	-171.36	-75.0	0.0	153.5	136.8	16.70	9.191		
3,900.0	3,892.0	3,889.0	3,889.0	9.6	8.6	-171.73	-75.0	0.0	160.4	143.3	17.16	9.351		
4,000.0	3,991.8	3,988.8	3,988.8	9.8	8.8	-172.07	-75.0	0.0	167.3	149.7	17.61	9.504		
4,100.0	4,091.6	4,088.5	4,088.5	10.1	9.1	-172.39	-75.0	0.0	174.2	156.2	18.06	9.648		
4,200.0	4,191.3	4,188.3	4,188.3	10.3	9.3	-172.68	-75.0	0.0	181.2	162.6	18.51	9.786		
4,300.0	4,291.1	4,288.1	4,288.1	10.6	9.5	-172.95	-75.0	0.0	188.1	169.1	18.96	9.918		
4,400.0	4,390.8	4,387.8	4,387.8	10.9	9.7	-173.21	-75.0	0.0	195.0	175.6	19.42	10.044		
4,500.0	4,490.6	4,487.6	4,487.6	11.1	10.0	-173.44	-75.0	0.0	201.9	182.1	19.87	10.164		
4,600.0	4,590.3	4,587.3	4,587.3	11.4	10.2	-173.66	-75.0	0.0	208.9	188.5	20.32	10.278		
4,700.0	4,690.1	4,687.1	4,687.1	11.7	10.4	-173.86	-75.0	0.0	215.8	195.0	20.77	10.388		
4,800.0	4,789.9	4,786.8	4,786.8	11.9	10.6	-174.05	-75.0	0.0	222.7	201.5	21.23	10.494		
4,900.0	4,889.6	4,886.6	4,886.6	12.2	10.9	-174.23	-75.0	0.0	229.7	208.0	21.68	10.595		
5,000.0	4,989.4	4,986.4	4,986.4	12.5	11.1	-174.40	-75.0	0.0	236.6	214.5	22.13	10.691		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2210B - HZ - Plan #2													Offset Site Error: 0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,100.0	5,089.1	5,086.1	5,086.1	12.7	11.3	-174.56	-75.0	0.0	243.6	221.0	22.58	10.785	
5,193.1	5,182.0	5,179.0	5,179.0	13.0	11.5	-174.71	-75.0	0.0	250.0	227.0	23.01	10.868	
5,200.0	5,188.9	5,185.9	5,185.9	13.0	11.5	-174.71	-75.0	0.0	250.6	227.5	23.03	10.882	
5,250.0	5,238.4	5,234.4	5,234.4	13.1	11.6	-174.78	-75.0	0.0	257.1	234.0	23.05	11.152	
5,300.0	5,287.1	5,269.5	5,269.5	13.4	11.7	-175.02	-73.7	-0.5	269.7	246.8	22.86	11.798	
5,350.0	5,334.5	5,300.0	5,299.8	13.6	11.8	-175.47	-70.8	-1.5	289.2	266.7	22.46	12.874	
5,400.0	5,380.2	5,331.7	5,331.1	13.9	11.9	-176.18	-66.0	-3.2	315.0	293.1	21.88	14.397	
5,450.0	5,423.7	5,350.0	5,349.0	14.2	11.9	-176.58	-62.4	-4.5	346.6	325.5	21.08	16.437	
5,500.0	5,464.6	5,379.1	5,377.1	14.6	12.0	-177.56	-55.5	-7.0	382.8	362.7	20.13	19.019	
5,550.0	5,502.6	5,400.0	5,397.1	15.1	12.0	-178.35	-49.6	-9.1	423.3	404.3	19.00	22.282	
5,600.0	5,537.3	5,410.9	5,407.3	15.6	12.0	-178.74	-46.2	-10.3	467.1	449.4	17.71	26.374	
5,650.0	5,568.4	5,421.3	5,417.1	16.1	12.1	-179.24	-42.8	-11.5	513.4	497.1	16.30	31.496	
5,700.0	5,595.7	5,428.5	5,423.9	16.7	12.1	-179.71	-40.4	-12.4	561.4	546.6	14.80	37.947	
5,750.0	5,618.7	5,432.9	5,427.9	17.3	12.1	179.72	-38.8	-12.9	610.7	597.4	13.24	46.122	
5,800.0	5,637.4	5,434.6	5,429.5	18.0	12.1	176.79	-38.2	-13.1	660.5	648.8	11.79	56.015	
5,850.0	5,651.6	5,433.9	5,428.9	18.7	12.1	0.66	-38.5	-13.0	710.5	700.3	10.22	69.489	
5,900.0	5,661.2	5,431.2	5,426.4	19.4	12.1	-0.01	-39.4	-12.7	760.1	751.2	8.96	84.857	
5,950.0	5,665.9	5,426.6	5,422.1	20.2	12.1	-0.29	-41.0	-12.1	809.0	800.9	8.07	100.273	
5,974.9	5,666.5	5,423.7	5,419.4	20.5	12.1	-0.40	-42.0	-11.8	833.0	825.2	7.82	106.560	
6,000.0	5,666.5	5,420.6	5,416.5	20.9	12.1	-3.00	-43.1	-11.4	857.0	848.9	8.13	105.468	
6,100.0	5,666.5	5,400.0	5,397.1	22.2	12.0	-13.17	-49.6	-9.1	953.0	941.7	11.35	83.984	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	98.3	98.3					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	98.3	98.3	98.1	0.19	523.658		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	98.3	98.3	97.6	0.64	154.232		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	98.3	98.3	97.2	1.09	90.433		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	98.3	98.3	96.7	1.54	63.971		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	98.3	98.3	96.3	1.99	49.489 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-108.81	0.0	98.3	98.8	96.4	2.41	41.033		
700.0	699.8	699.8	699.8	1.4	1.4	-111.60	0.0	98.3	100.6	97.8	2.82	35.685		
800.0	799.6	799.6	799.6	1.6	1.7	-115.19	0.0	98.3	103.4	100.2	3.25	31.814		
900.0	899.4	899.3	899.3	1.8	1.9	-118.58	0.0	98.3	106.6	102.9	3.69	28.859		
1,000.0	999.1	999.1	999.1	2.0	2.1	-121.76	0.0	98.3	110.1	105.9	4.14	26.577		
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	-124.74	0.0	98.3	113.9	109.3	4.60	24.791		
1,200.0	1,198.6	1,198.6	1,198.6	2.5	2.6	-127.52	0.0	98.3	118.0	113.0	5.05	23.374		
1,300.0	1,298.4	1,298.4	1,298.4	2.8	2.8	-130.11	0.0	98.3	122.4	116.9	5.51	22.235		
1,400.0	1,398.1	1,398.1	1,398.1	3.0	3.0	-132.51	0.0	98.3	127.0	121.1	5.96	21.308		
1,500.0	1,497.9	1,497.9	1,497.9	3.3	3.2	-134.74	0.0	98.3	131.9	125.4	6.42	20.547		
1,600.0	1,597.6	1,597.6	1,597.6	3.5	3.5	-136.81	0.0	98.3	136.9	130.0	6.87	19.914		
1,700.0	1,697.4	1,697.4	1,697.4	3.8	3.7	-138.74	0.0	98.3	142.0	134.7	7.33	19.385		
1,800.0	1,797.2	1,797.1	1,797.1	4.1	3.9	-140.53	0.0	98.3	147.4	139.6	7.78	18.937		
1,900.0	1,896.9	1,896.9	1,896.9	4.3	4.1	-142.19	0.0	98.3	152.8	144.6	8.23	18.556		
2,000.0	1,996.7	1,996.7	1,996.7	4.6	4.4	-143.73	0.0	98.3	158.4	149.7	8.69	18.230		
2,100.0	2,096.4	2,096.4	2,096.4	4.8	4.6	-145.17	0.0	98.3	164.1	154.9	9.14	17.948		
2,200.0	2,196.2	2,196.2	2,196.2	5.1	4.8	-146.52	0.0	98.3	169.8	160.2	9.59	17.704		
2,300.0	2,295.9	2,295.9	2,295.9	5.4	5.0	-147.77	0.0	98.3	175.7	165.7	10.05	17.491		
2,400.0	2,395.7	2,395.7	2,395.7	5.6	5.3	-148.94	0.0	98.3	181.6	171.1	10.50	17.304		
2,500.0	2,495.5	2,495.4	2,495.4	5.9	5.5	-150.04	0.0	98.3	187.7	176.7	10.95	17.140		
2,600.0	2,595.2	2,595.2	2,595.2	6.1	5.7	-151.07	0.0	98.3	193.7	182.3	11.40	16.994		
2,700.0	2,695.0	2,695.0	2,695.0	6.4	5.9	-152.04	0.0	98.3	199.9	188.0	11.85	16.864		
2,800.0	2,794.7	2,794.7	2,794.7	6.7	6.2	-152.95	0.0	98.3	206.1	193.8	12.30	16.749		
2,900.0	2,894.5	2,894.5	2,894.5	6.9	6.4	-153.80	0.0	98.3	212.3	199.5	12.75	16.645		
3,000.0	2,994.2	2,994.2	2,994.2	7.2	6.6	-154.61	0.0	98.3	218.6	205.4	13.21	16.552		
3,100.0	3,094.0	3,094.0	3,094.0	7.5	6.8	-155.37	0.0	98.3	224.9	211.3	13.66	16.469		
3,200.0	3,193.7	3,193.7	3,193.7	7.7	7.0	-156.09	0.0	98.3	231.3	217.2	14.11	16.393		
3,300.0	3,293.5	3,293.5	3,293.5	8.0	7.3	-156.77	0.0	98.3	237.7	223.1	14.56	16.324		
3,400.0	3,393.3	3,393.3	3,393.3	8.2	7.5	-157.42	0.0	98.3	244.1	229.1	15.01	16.262		
3,500.0	3,493.0	3,493.0	3,493.0	8.5	7.7	-158.03	0.0	98.3	250.6	235.1	15.46	16.205		
3,600.0	3,592.8	3,592.8	3,592.8	8.8	7.9	-158.61	0.0	98.3	257.0	241.1	15.91	16.153		
3,700.0	3,692.5	3,692.5	3,692.5	9.0	8.2	-159.17	0.0	98.3	263.5	247.2	16.36	16.105		
3,800.0	3,792.3	3,792.3	3,792.3	9.3	8.4	-159.69	0.0	98.3	270.1	253.3	16.82	16.061		
3,900.0	3,892.0	3,892.0	3,892.0	9.6	8.6	-160.19	0.0	98.3	276.6	259.4	17.27	16.021		
4,000.0	3,991.8	3,991.8	3,991.8	9.8	8.8	-160.67	0.0	98.3	283.2	265.5	17.72	15.984		
4,100.0	4,091.6	4,091.5	4,091.5	10.1	9.1	-161.13	0.0	98.3	289.8	271.6	18.17	15.949		
4,200.0	4,191.3	4,191.3	4,191.3	10.3	9.3	-161.56	0.0	98.3	296.4	277.8	18.62	15.918		
4,300.0	4,291.1	4,291.1	4,291.1	10.6	9.5	-161.98	0.0	98.3	303.0	284.0	19.07	15.888		
4,400.0	4,390.8	4,390.8	4,390.8	10.9	9.7	-162.38	0.0	98.3	309.7	290.2	19.52	15.861		
4,500.0	4,490.6	4,490.6	4,490.6	11.1	10.0	-162.76	0.0	98.3	316.3	296.4	19.98	15.836		
4,600.0	4,590.3	4,590.3	4,590.3	11.4	10.2	-163.13	0.0	98.3	323.0	302.6	20.43	15.812		
4,700.0	4,690.1	4,690.1	4,690.1	11.7	10.4	-163.48	0.0	98.3	329.7	308.8	20.88	15.790		
4,800.0	4,789.9	4,789.8	4,789.8	11.9	10.6	-163.82	0.0	98.3	336.4	315.1	21.33	15.769		
4,900.0	4,889.6	4,889.6	4,889.6	12.2	10.9	-164.14	0.0	98.3	343.1	321.3	21.78	15.750		
5,000.0	4,989.4	4,989.4	4,989.4	12.5	11.1	-164.45	0.0	98.3	349.8	327.6	22.24	15.732		
5,100.0	5,089.1	5,089.1	5,089.1	12.7	11.3	-164.76	0.0	98.3	356.5	333.9	22.69	15.715 SF		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,193.1	5,182.0	5,169.2	5,169.2	13.0	11.5	-165.04	0.5	98.2	363.4	340.4	23.08	15.747		
5,200.0	5,188.9	5,173.6	5,173.6	13.0	11.5	-165.05	0.7	98.2	364.2	341.1	23.09	15.771		
5,250.0	5,238.4	5,200.0	5,199.9	13.1	11.6	-165.11	2.8	98.0	373.8	350.8	23.09	16.191		
5,300.0	5,287.1	5,234.3	5,233.9	13.4	11.6	-165.37	7.4	97.6	390.2	367.2	22.92	17.019		
5,350.0	5,334.5	5,261.2	5,260.2	13.6	11.7	-165.50	12.6	97.1	412.9	390.3	22.57	18.294		
5,400.0	5,380.2	5,284.9	5,283.2	13.9	11.8	-165.47	18.3	96.6	441.5	419.5	22.04	20.030		
5,450.0	5,423.7	5,300.0	5,297.8	14.2	11.8	-164.89	22.5	96.3	475.4	454.0	21.36	22.251		
5,500.0	5,464.6	5,322.1	5,318.7	14.6	11.8	-164.43	29.4	95.7	513.5	493.0	20.56	24.980		
5,550.0	5,502.6	5,335.5	5,331.4	15.1	11.9	-163.03	34.0	95.2	555.4	535.7	19.71	28.181		
5,600.0	5,537.3	5,350.0	5,344.8	15.6	11.9	-160.96	39.3	94.8	600.2	581.3	18.92	31.729		
5,650.0	5,568.4	5,350.0	5,344.8	16.1	11.9	-155.35	39.3	94.8	647.1	628.3	18.81	34.410		
5,700.0	5,595.7	5,350.0	5,344.8	16.7	11.9	-144.05	39.3	94.8	695.6	675.0	20.68	33.644		
5,750.0	5,618.7	5,350.0	5,344.8	17.3	11.9	-116.76	39.3	94.8	745.1	718.1	26.97	27.626		
5,800.0	5,637.4	5,350.0	5,344.8	18.0	11.9	-66.43	39.3	94.8	794.8	766.8	27.99	28.400		
5,850.0	5,651.6	5,350.0	5,344.8	18.7	11.9	-34.89	39.3	94.8	844.3	824.9	19.42	43.476		
5,900.0	5,661.2	5,350.0	5,344.8	19.4	11.9	-21.96	39.3	94.8	893.3	879.0	14.35	62.255		
5,950.0	5,665.9	5,350.0	5,344.8	20.2	11.9	-15.67	39.3	94.8	941.5	929.8	11.63	80.945		
5,974.9	5,666.5	5,350.0	5,344.8	20.5	11.9	-13.65	39.3	94.8	965.0	954.2	10.79	89.465		
6,000.0	5,666.5	5,350.0	5,344.8	20.9	11.9	-15.66	39.3	94.8	988.6	976.9	11.69	84.552		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	138.96	-75.0	65.3	99.5					
100.0	100.0	97.0	97.0	0.1	0.1	138.96	-75.0	65.3	99.5	99.3	0.18	538.247		
200.0	200.0	197.0	197.0	0.3	0.3	138.96	-75.0	65.3	99.5	98.9	0.63	157.824		
300.0	300.0	297.0	297.0	0.5	0.5	138.96	-75.0	65.3	99.5	98.4	1.08	92.132		
400.0	400.0	397.0	397.0	0.8	0.8	138.96	-75.0	65.3	99.5	98.0	1.53	65.054		
500.0	500.0	497.0	497.0	1.0	1.0	138.96	-75.0	65.3	99.5	97.5	1.98	50.278		
600.0	600.0	597.0	597.0	1.2	1.2	-59.78	-75.0	65.3	98.6	96.2	2.40	41.042		
700.0	699.8	696.8	696.8	1.4	1.4	-62.52	-75.0	65.3	96.1	93.3	2.82	34.124		
800.0	799.6	796.6	796.6	1.6	1.7	-66.33	-75.0	65.3	93.1	89.8	3.25	28.656		
900.0	899.4	896.4	896.4	1.8	1.9	-70.37	-75.0	65.3	90.5	86.8	3.69	24.489		
1,000.0	999.1	996.1	996.1	2.0	2.1	-74.62	-75.0	65.3	88.4	84.2	4.15	21.281		
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	-79.06	-75.0	65.3	86.8	82.2	4.62	18.790		
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	-83.63	-75.0	65.3	85.7	80.6	5.09	16.844		
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	-88.28	-75.0	65.3	85.2	79.7	5.56	15.320		
1,336.8	1,335.0	1,332.0	1,332.0	2.9	2.9	-90.00	-75.0	65.3	85.2	79.5	5.74	14.846 CC		
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	-92.96	-75.0	65.3	85.3	79.3	6.04	14.129 ES		
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	-97.59	-75.0	65.3	86.0	79.4	6.51	13.200		
1,600.0	1,597.6	1,592.6	1,592.6	3.5	3.4	-102.72	-74.1	66.5	88.3	81.3	6.97	12.658		
1,700.0	1,697.4	1,689.6	1,689.5	3.8	3.7	-108.80	-71.1	70.2	93.9	86.5	7.42	12.650 SF		
1,800.0	1,797.2	1,788.5	1,788.1	4.1	3.9	-114.85	-66.8	75.6	102.2	94.4	7.87	12.990		
1,900.0	1,896.9	1,887.6	1,886.9	4.3	4.1	-119.96	-62.4	80.9	111.6	103.2	8.31	13.418		
2,000.0	1,996.7	1,986.7	1,985.8	4.6	4.3	-124.27	-58.1	86.3	121.6	112.9	8.76	13.890		
2,100.0	2,096.4	2,085.8	2,084.7	4.8	4.6	-127.90	-53.8	91.7	132.3	123.1	9.20	14.381		
2,200.0	2,196.2	2,184.9	2,183.5	5.1	4.8	-130.99	-49.4	97.1	143.4	133.8	9.64	14.872		
2,300.0	2,295.9	2,284.0	2,282.4	5.4	5.0	-133.63	-45.1	102.4	154.9	144.8	10.09	15.355		
2,400.0	2,395.7	2,383.1	2,381.3	5.6	5.3	-135.90	-40.7	107.8	166.6	156.1	10.53	15.822		
2,500.0	2,495.5	2,482.2	2,480.1	5.9	5.5	-137.87	-36.4	113.2	178.6	167.6	10.97	16.270		
2,600.0	2,595.2	2,581.3	2,579.0	6.1	5.7	-139.59	-32.0	118.6	190.7	179.3	11.42	16.697		
2,700.0	2,695.0	2,680.4	2,677.9	6.4	6.0	-141.11	-27.7	124.0	203.0	191.1	11.87	17.104		
2,800.0	2,794.7	2,779.5	2,776.7	6.7	6.2	-142.45	-23.3	129.3	215.4	203.1	12.32	17.489		
2,900.0	2,894.5	2,878.6	2,875.6	6.9	6.5	-143.65	-19.0	134.7	227.9	215.2	12.77	17.855		
3,000.0	2,994.2	2,977.7	2,974.5	7.2	6.7	-144.72	-14.7	140.1	240.6	227.3	13.22	18.201		
3,100.0	3,094.0	3,076.8	3,073.3	7.5	7.0	-145.68	-10.3	145.5	253.2	239.6	13.67	18.528		
3,200.0	3,193.7	3,176.0	3,172.2	7.7	7.2	-146.55	-6.0	150.8	266.0	251.9	14.12	18.838		
3,300.0	3,293.5	3,275.1	3,271.1	8.0	7.5	-147.34	-1.6	156.2	278.8	264.2	14.57	19.132		
3,400.0	3,393.3	3,374.2	3,369.9	8.2	7.7	-148.07	2.7	161.6	291.7	276.6	15.03	19.410		
3,500.0	3,493.0	3,482.0	3,477.5	8.5	7.9	-148.79	6.7	166.5	303.5	288.0	15.48	19.611		
3,600.0	3,592.8	3,593.5	3,589.1	8.8	8.1	-149.52	8.2	168.4	311.7	295.8	15.90	19.597		
3,700.0	3,692.5	3,694.0	3,689.5	9.0	8.3	-150.16	8.2	168.4	317.7	301.4	16.33	19.456		
3,800.0	3,792.3	3,793.8	3,789.3	9.3	8.5	-150.77	8.2	168.4	323.8	307.0	16.78	19.299		
3,900.0	3,892.0	3,893.5	3,889.0	9.6	8.8	-151.37	8.2	168.4	329.9	312.7	17.23	19.151		
4,000.0	3,991.8	3,993.3	3,988.8	9.8	9.0	-151.94	8.2	168.4	336.0	318.4	17.67	19.012		
4,100.0	4,091.6	4,093.0	4,088.6	10.1	9.2	-152.48	8.2	168.4	342.2	324.1	18.12	18.881		
4,200.0	4,191.3	4,192.8	4,188.3	10.3	9.4	-153.01	8.2	168.4	348.4	329.8	18.57	18.759		
4,300.0	4,291.1	4,292.5	4,288.1	10.6	9.6	-153.53	8.2	168.4	354.6	335.6	19.02	18.643		
4,400.0	4,390.8	4,392.3	4,387.8	10.9	9.8	-154.02	8.2	168.4	360.9	341.4	19.47	18.534		
4,500.0	4,490.6	4,492.0	4,487.6	11.1	10.0	-154.50	8.2	168.4	367.2	347.3	19.92	18.432		
4,600.0	4,590.3	4,591.8	4,587.3	11.4	10.3	-154.96	8.2	168.4	373.5	353.1	20.37	18.335		
4,700.0	4,690.1	4,691.6	4,687.1	11.7	10.5	-155.40	8.2	168.4	379.8	359.0	20.82	18.243		
4,800.0	4,789.9	4,791.3	4,786.9	11.9	10.7	-155.83	8.2	168.4	386.2	364.9	21.27	18.156		
4,900.0	4,889.6	4,891.1	4,886.6	12.2	10.9	-156.25	8.2	168.4	392.6	370.8	21.72	18.074		
5,000.0	4,989.4	4,990.8	4,986.4	12.5	11.1	-156.65	8.2	168.4	399.0	376.8	22.17	17.995		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,089.1	5,090.6	5,086.1	12.7	11.3	-157.04	8.2	168.4	405.4	382.8	22.62	17.921		
5,193.1	5,182.0	5,183.5	5,179.0	13.0	11.5	-157.40	8.2	168.4	411.4	388.3	23.04	17.855		
5,200.0	5,188.9	5,190.3	5,185.9	13.0	11.6	-157.40	8.2	168.4	411.9	388.8	23.06	17.862		
5,250.0	5,238.4	5,237.0	5,232.5	13.1	11.7	-157.46	8.2	168.4	417.9	394.8	23.09	18.099		
5,300.0	5,287.1	5,266.4	5,261.9	13.4	11.7	-157.35	9.0	168.7	429.7	406.7	22.94	18.730		
5,350.0	5,334.5	5,300.0	5,295.4	13.6	11.8	-157.28	11.9	169.4	448.1	425.4	22.65	19.782		
5,400.0	5,380.2	5,315.9	5,311.1	13.9	11.9	-156.57	14.0	170.0	472.3	450.1	22.21	21.262		
5,450.0	5,423.7	5,336.5	5,331.5	14.2	11.9	-155.70	17.4	170.9	502.2	480.5	21.70	23.148		
5,500.0	5,464.6	5,350.0	5,344.7	14.6	11.9	-154.09	20.0	171.7	536.9	515.8	21.16	25.377		
5,550.0	5,502.6	5,368.7	5,362.8	15.1	12.0	-152.14	24.2	172.8	575.7	555.0	20.68	27.846		
5,600.0	5,537.3	5,380.2	5,374.0	15.6	12.0	-148.79	27.1	173.6	617.9	597.4	20.49	30.157		
5,650.0	5,568.4	5,400.0	5,392.9	16.1	12.1	-144.84	32.7	175.1	662.9	642.2	20.68	32.048		
5,700.0	5,595.7	5,400.0	5,392.9	16.7	12.1	-135.80	32.7	175.1	709.4	687.0	22.41	31.660		
5,750.0	5,618.7	5,400.0	5,392.9	17.3	12.1	-120.81	32.7	175.1	757.5	731.4	26.01	29.119		
5,800.0	5,637.4	5,400.0	5,392.9	18.0	12.1	-97.33	32.7	175.1	806.3	776.4	29.91	26.960		
5,850.0	5,651.6	5,400.0	5,392.9	18.7	12.1	-69.64	32.7	175.1	855.4	826.2	29.20	29.297		
5,900.0	5,661.2	5,400.0	5,392.9	19.4	12.1	-48.08	32.7	175.1	904.2	879.9	24.28	37.242		
5,950.0	5,665.9	5,400.0	5,392.9	20.2	12.1	-34.65	32.7	175.1	952.5	932.9	19.56	48.690		
5,974.9	5,666.5	5,400.0	5,392.9	20.5	12.1	-30.06	32.7	175.1	976.2	958.5	17.78	54.917		
6,000.0	5,666.5	5,400.0	5,392.9	20.9	12.1	-31.98	32.7	175.1	1,000.0	981.2	18.79	53.228		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	156.30	-75.0	32.9	82.0					
100.0	100.0	97.0	97.0	0.1	0.1	156.30	-75.0	32.9	82.0	81.8	0.18	443.362		
200.0	200.0	197.0	197.0	0.3	0.3	156.30	-75.0	32.9	82.0	81.3	0.63	130.001		
300.0	300.0	297.0	297.0	0.5	0.5	156.30	-75.0	32.9	82.0	80.9	1.08	75.891		
400.0	400.0	397.0	397.0	0.8	0.8	156.30	-75.0	32.9	82.0	80.4	1.53	53.586		
500.0	500.0	497.0	497.0	1.0	1.0	156.30	-75.0	32.9	82.0	80.0	1.98	41.414		
600.0	600.0	597.0	597.0	1.2	1.2	-42.40	-75.0	32.9	80.7	78.3	2.40	33.558		
700.0	699.8	696.8	696.8	1.4	1.4	-45.08	-75.0	32.9	76.9	74.1	2.82	27.291		
800.0	799.6	796.6	796.6	1.6	1.7	-49.00	-75.0	32.9	72.1	68.9	3.25	22.221		
900.0	899.4	896.4	896.4	1.8	1.9	-53.45	-75.0	32.9	67.7	64.1	3.69	18.366		
1,000.0	999.1	996.1	996.1	2.0	2.1	-58.48	-75.0	32.9	63.8	59.7	4.14	15.405		
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	-64.12	-75.0	32.9	60.5	55.9	4.61	13.121		
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	-70.34	-75.0	32.9	57.8	52.7	5.08	11.366		
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	-77.09	-75.0	32.9	55.8	50.2	5.56	10.035		
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	-84.22	-75.0	32.9	54.7	48.6	6.04	9.049		
1,479.2	1,477.1	1,474.1	1,474.1	3.2	3.2	-90.00	-75.0	32.9	54.4	48.0	6.42	8.471 CC		
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	-91.53	-75.0	32.9	54.4	47.9	6.52	8.345 ES		
1,600.0	1,597.6	1,594.6	1,594.6	3.5	3.5	-98.79	-75.0	32.9	55.0	48.0	6.99	7.872		
1,700.0	1,697.4	1,694.4	1,694.4	3.8	3.7	-105.78	-75.0	32.9	56.5	49.1	7.45	7.581		
1,800.0	1,797.2	1,794.2	1,794.2	4.1	3.9	-112.32	-75.0	32.9	58.8	50.9	7.91	7.431		
1,900.0	1,896.9	1,893.9	1,893.9	4.3	4.1	-118.31	-75.0	32.9	61.8	53.4	8.36	7.387		
2,000.0	1,996.7	1,993.7	1,993.7	4.6	4.4	-123.69	-75.0	32.9	65.4	56.6	8.81	7.423		
2,100.0	2,096.4	2,093.4	2,093.4	4.8	4.6	-128.47	-75.0	32.9	69.5	60.3	9.25	7.513		
2,200.0	2,196.2	2,193.2	2,193.2	5.1	4.8	-132.69	-75.0	32.9	74.1	64.4	9.69	7.641		
2,300.0	2,295.9	2,292.9	2,292.9	5.4	5.0	-136.41	-75.0	32.9	79.0	68.8	10.13	7.794		
2,400.0	2,395.7	2,392.7	2,392.7	5.6	5.2	-139.68	-75.0	32.9	84.2	73.6	10.57	7.962		
2,500.0	2,495.5	2,492.5	2,492.5	5.9	5.5	-142.57	-75.0	32.9	89.6	78.6	11.01	8.138		
2,600.0	2,595.2	2,592.2	2,592.2	6.1	5.7	-145.12	-75.0	32.9	95.2	83.8	11.45	8.318		
2,700.0	2,695.0	2,692.0	2,692.0	6.4	5.9	-147.38	-75.0	32.9	101.0	89.1	11.89	8.498		
2,800.0	2,794.7	2,791.7	2,791.7	6.7	6.1	-149.39	-75.0	32.9	107.0	94.7	12.33	8.675		
2,900.0	2,894.5	2,891.5	2,891.5	6.9	6.4	-151.19	-75.0	32.9	113.0	100.3	12.77	8.850		
3,000.0	2,994.2	2,991.2	2,991.2	7.2	6.6	-152.81	-75.0	32.9	119.2	106.0	13.22	9.019		
3,100.0	3,094.0	3,091.0	3,091.0	7.5	6.8	-154.26	-75.0	32.9	125.5	111.8	13.66	9.183		
3,200.0	3,193.7	3,190.7	3,190.7	7.7	7.0	-155.58	-75.0	32.9	131.8	117.7	14.11	9.341		
3,300.0	3,293.5	3,290.5	3,290.5	8.0	7.3	-156.77	-75.0	32.9	138.2	123.6	14.55	9.494		
3,400.0	3,393.3	3,390.3	3,390.3	8.2	7.5	-157.86	-75.0	32.9	144.6	129.6	15.00	9.641		
3,500.0	3,493.0	3,490.0	3,490.0	8.5	7.7	-158.86	-75.0	32.9	151.1	135.6	15.45	9.782		
3,600.0	3,592.8	3,589.8	3,589.8	8.8	7.9	-159.77	-75.0	32.9	157.6	141.7	15.89	9.917		
3,700.0	3,692.5	3,689.5	3,689.5	9.0	8.2	-160.62	-75.0	32.9	164.2	147.8	16.34	10.047		
3,800.0	3,792.3	3,789.3	3,789.3	9.3	8.4	-161.39	-75.0	32.9	170.8	154.0	16.79	10.172		
3,900.0	3,892.0	3,889.0	3,889.0	9.6	8.6	-162.11	-75.0	32.9	177.4	160.2	17.24	10.292		
4,000.0	3,991.8	3,988.8	3,988.8	9.8	8.8	-162.78	-75.0	32.9	184.1	166.4	17.69	10.406		
4,100.0	4,091.6	4,088.6	4,088.6	10.1	9.1	-163.40	-75.0	32.9	190.7	172.6	18.14	10.517		
4,200.0	4,191.3	4,188.3	4,188.3	10.3	9.3	-163.98	-75.0	32.9	197.4	178.8	18.59	10.623		
4,300.0	4,291.1	4,288.1	4,288.1	10.6	9.5	-164.52	-75.0	32.9	204.1	185.1	19.04	10.724		
4,400.0	4,390.8	4,387.8	4,387.8	10.9	9.7	-165.02	-75.0	32.9	210.9	191.4	19.49	10.822		
4,500.0	4,490.6	4,487.6	4,487.6	11.1	10.0	-165.50	-75.0	32.9	217.6	197.7	19.94	10.916		
4,600.0	4,590.3	4,587.3	4,587.3	11.4	10.2	-165.94	-75.0	32.9	224.4	204.0	20.39	11.006		
4,700.0	4,690.1	4,687.1	4,687.1	11.7	10.4	-166.36	-75.0	32.9	231.2	210.3	20.84	11.093		
4,800.0	4,789.9	4,786.9	4,786.9	11.9	10.6	-166.76	-75.0	32.9	237.9	216.7	21.29	11.177		
4,900.0	4,889.6	4,886.6	4,886.6	12.2	10.9	-167.13	-75.0	32.9	244.7	223.0	21.74	11.258		
5,000.0	4,989.4	4,986.4	4,986.4	12.5	11.1	-167.49	-75.0	32.9	251.5	229.4	22.19	11.336		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,089.1	5,086.1	5,086.1	12.7	11.3	-167.82	-75.0	32.9	258.4	235.7	22.64	11.411		
5,193.1	5,182.0	5,179.0	5,179.0	13.0	11.5	-168.12	-75.0	32.9	264.7	241.7	23.06	11.478		
5,200.0	5,188.9	5,185.9	5,185.9	13.0	11.5	-168.13	-75.0	32.9	265.2	242.1	23.08	11.491		
5,250.0	5,238.4	5,238.3	5,238.3	13.1	11.6	-168.29	-75.1	32.9	271.6	248.5	23.12	11.747		
5,300.0	5,287.1	5,331.6	5,331.0	13.4	11.8	-168.12	-84.5	32.6	278.2	255.2	23.02	12.088		
5,350.0	5,334.5	5,426.6	5,422.1	13.6	12.0	-166.81	-110.9	31.7	281.5	258.8	22.76	12.372		
5,400.0	5,380.2	5,521.0	5,506.4	13.9	12.1	-164.39	-153.1	30.3	281.6	259.2	22.40	12.576		
5,450.0	5,423.7	5,612.6	5,579.6	14.2	12.4	-160.94	-207.9	28.4	278.9	256.9	22.03	12.661		
5,500.0	5,464.6	5,699.7	5,639.4	14.6	12.8	-156.59	-271.1	26.3	274.0	252.1	21.82	12.556		
5,550.0	5,502.6	5,781.5	5,685.2	15.1	13.2	-151.48	-338.8	23.9	267.7	245.7	21.96	12.191		
5,600.0	5,537.3	5,857.7	5,717.8	15.6	13.8	-145.78	-407.5	21.6	261.1	238.4	22.62	11.540		
5,650.0	5,568.4	5,928.3	5,738.8	16.1	14.4	-139.66	-474.8	19.3	254.9	231.0	23.90	10.665		
5,700.0	5,595.7	5,993.9	5,749.9	16.7	15.1	-133.25	-539.3	17.1	250.2	224.4	25.81	9.692		
5,750.0	5,618.7	6,053.7	5,753.0	17.3	15.8	-126.82	-599.0	15.1	247.5	219.4	28.13	8.798		
5,762.1	5,623.7	6,064.3	5,753.0	17.5	15.9	-125.65	-609.7	14.7	247.3	218.7	28.62	8.642		
5,800.0	5,637.4	6,098.3	5,753.0	18.0	16.3	-122.05	-643.6	13.6	248.7	218.6	30.12	8.259		
5,850.0	5,651.6	6,144.4	5,753.0	18.7	16.9	-117.58	-689.6	12.0	254.2	222.0	32.21	7.891		
5,900.0	5,661.2	6,191.6	5,753.0	19.4	17.5	-113.69	-736.8	10.4	262.9	228.7	34.25	7.676		
5,950.0	5,665.9	6,239.4	5,753.0	20.2	18.2	-110.55	-784.6	8.7	274.1	237.9	36.19	7.573		
5,974.9	5,666.5	6,263.4	5,753.0	20.5	18.5	-109.29	-808.6	7.9	280.4	243.2	37.11	7.556		
6,000.0	5,666.5	6,287.5	5,753.0	20.9	18.8	-108.79	-832.7	7.1	286.7	248.8	37.93	7.560		
6,100.0	5,666.5	6,384.7	5,753.0	22.2	20.3	-107.18	-929.8	3.8	309.2	268.1	41.10	7.524		
6,200.0	5,666.5	6,482.9	5,753.0	23.6	21.8	-106.07	-1,028.0	0.4	327.0	282.7	44.27	7.385		
6,300.0	5,666.5	6,582.0	5,753.0	25.1	23.4	-105.35	-1,127.1	-2.9	339.8	292.4	47.42	7.166		
6,400.0	5,666.5	6,681.7	5,753.0	26.6	25.0	-104.93	-1,226.7	-6.3	347.6	297.1	50.51	6.882		
6,500.0	5,666.6	6,780.5	5,753.0	28.1	26.6	-104.79	-1,325.4	-9.7	350.4	297.0	53.48	6.552		
6,570.3	5,666.6	6,841.2	5,753.0	29.2	27.6	-104.79	-1,386.1	-10.8	350.5	295.2	55.27	6.341		
6,582.8	5,666.6	6,852.9	5,753.0	29.4	27.8	-104.79	-1,397.8	-10.8	350.5	294.8	55.63	6.299		
6,600.0	5,666.6	6,870.1	5,753.0	29.6	28.0	-104.79	-1,415.0	-10.8	350.5	294.3	56.19	6.237		
6,700.0	5,666.6	6,970.1	5,753.0	31.3	29.7	-104.79	-1,515.0	-10.8	350.5	291.0	59.49	5.891		
6,800.0	5,666.6	7,070.1	5,753.0	33.0	31.5	-104.79	-1,615.0	-10.8	350.4	287.6	62.86	5.575		
6,900.0	5,666.6	7,170.1	5,753.0	34.7	33.3	-104.78	-1,715.0	-10.8	350.4	284.2	66.27	5.288		
7,000.0	5,666.6	7,270.1	5,753.0	36.4	35.0	-104.78	-1,815.0	-10.8	350.4	280.7	69.72	5.026		
7,100.0	5,666.6	7,370.1	5,753.0	38.1	36.8	-104.78	-1,915.0	-10.8	350.4	277.2	73.19	4.788		
7,200.0	5,666.6	7,470.1	5,753.0	39.9	38.6	-104.78	-2,015.0	-10.8	350.4	273.7	76.69	4.569		
7,300.0	5,666.6	7,570.1	5,753.0	41.7	40.5	-104.78	-2,115.0	-10.8	350.4	270.2	80.21	4.369		
7,400.0	5,666.6	7,670.1	5,753.0	43.5	42.3	-104.78	-2,215.0	-10.8	350.4	266.7	83.75	4.184		
7,500.0	5,666.6	7,770.1	5,753.0	45.3	44.1	-104.78	-2,315.0	-10.8	350.4	263.1	87.30	4.014		
7,600.0	5,666.6	7,870.1	5,753.0	47.1	46.0	-104.78	-2,415.0	-10.8	350.4	259.5	90.87	3.856		
7,700.0	5,666.7	7,970.1	5,753.0	48.9	47.8	-104.78	-2,515.0	-10.8	350.4	255.9	94.45	3.710		
7,800.0	5,666.7	8,070.1	5,753.0	50.7	49.7	-104.77	-2,615.0	-10.8	350.4	252.4	98.04	3.574		
7,900.0	5,666.7	8,170.1	5,753.0	52.6	51.5	-104.77	-2,715.0	-10.8	350.4	248.7	101.65	3.447		
8,000.0	5,666.7	8,270.1	5,753.0	54.4	53.4	-104.77	-2,815.0	-10.8	350.4	245.1	105.26	3.329		
8,100.0	5,666.7	8,370.1	5,753.0	56.2	55.3	-104.77	-2,915.0	-10.8	350.4	241.5	108.88	3.218		
8,200.0	5,666.7	8,470.1	5,753.0	58.1	57.1	-104.77	-3,015.0	-10.8	350.4	237.9	112.51	3.114		
8,300.0	5,666.7	8,570.1	5,753.0	59.9	59.0	-104.77	-3,115.0	-10.8	350.4	234.2	116.15	3.017		
8,400.0	5,666.7	8,670.1	5,753.0	61.8	60.9	-104.77	-3,215.0	-10.8	350.4	230.6	119.79	2.925		
8,500.0	5,666.7	8,770.1	5,753.0	63.7	62.8	-104.77	-3,315.0	-10.8	350.4	226.9	123.43	2.838		
8,600.0	5,666.7	8,870.1	5,753.0	65.5	64.7	-104.76	-3,415.0	-10.8	350.4	223.3	127.09	2.757		
8,700.0	5,666.7	8,970.1	5,753.0	67.4	66.5	-104.76	-3,515.0	-10.8	350.3	219.6	130.74	2.680		
8,800.0	5,666.7	9,070.1	5,753.0	69.3	68.4	-104.76	-3,615.0	-10.8	350.3	215.9	134.40	2.607		
8,900.0	5,666.7	9,170.1	5,753.0	71.1	70.3	-104.76	-3,715.0	-10.8	350.3	212.3	138.07	2.537		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
9,000.0	5,666.8	9,270.1	5,753.0	73.0	72.2	-104.76	-3,815.0	-10.8	350.3	208.6	141.74	2.472		
9,100.0	5,666.8	9,370.1	5,753.0	74.9	74.1	-104.76	-3,915.0	-10.8	350.3	204.9	145.41	2.409		
9,200.0	5,666.8	9,470.1	5,753.0	76.8	76.0	-104.76	-4,015.0	-10.8	350.3	201.2	149.08	2.350		
9,300.0	5,666.8	9,570.1	5,753.0	78.6	77.9	-104.76	-4,115.0	-10.8	350.3	197.6	152.76	2.293		
9,400.0	5,666.8	9,670.1	5,753.0	80.5	79.8	-104.76	-4,215.0	-10.8	350.3	193.9	156.44	2.239		
9,500.0	5,666.8	9,770.1	5,753.0	82.4	81.7	-104.75	-4,315.0	-10.8	350.3	190.2	160.13	2.188		
9,600.0	5,666.8	9,870.1	5,753.0	84.3	83.6	-104.75	-4,415.0	-10.8	350.3	186.5	163.81	2.138		
9,700.0	5,666.8	9,970.1	5,753.0	86.2	85.5	-104.75	-4,515.0	-10.8	350.3	182.8	167.50	2.091		
9,800.0	5,666.8	10,070.1	5,753.0	88.1	87.4	-104.75	-4,615.0	-10.8	350.3	179.1	171.19	2.046		
9,900.0	5,666.8	10,170.1	5,753.0	90.0	89.3	-104.75	-4,715.0	-10.8	350.3	175.4	174.88	2.003		
10,000.0	5,666.8	10,270.1	5,753.0	91.9	91.2	-104.75	-4,815.0	-10.8	350.3	171.7	178.57	1.962		
10,100.0	5,666.8	10,370.1	5,753.0	93.8	93.1	-104.75	-4,915.0	-10.8	350.3	168.0	182.27	1.922		
10,200.0	5,666.9	10,470.1	5,753.0	95.7	95.0	-104.75	-5,015.0	-10.8	350.3	164.3	185.97	1.884		
10,300.0	5,666.9	10,570.1	5,753.0	97.6	96.9	-104.75	-5,115.0	-10.8	350.3	160.6	189.66	1.847		
10,400.0	5,666.9	10,670.1	5,753.0	99.5	98.8	-104.74	-5,215.0	-10.8	350.3	156.9	193.36	1.811		
10,500.0	5,666.9	10,770.1	5,753.0	101.3	100.7	-104.74	-5,315.0	-10.8	350.3	153.2	197.07	1.777		
10,600.0	5,666.9	10,870.1	5,753.0	103.2	102.6	-104.74	-5,415.0	-10.8	350.2	149.5	200.77	1.745		
10,700.0	5,666.9	10,970.1	5,753.0	105.1	104.5	-104.74	-5,515.0	-10.8	350.2	145.8	204.47	1.713		
10,800.0	5,666.9	11,070.1	5,753.0	107.0	106.4	-104.74	-5,615.0	-10.8	350.2	142.1	208.18	1.682		
10,900.0	5,666.9	11,170.1	5,753.0	108.9	108.3	-104.74	-5,715.0	-10.8	350.2	138.3	211.88	1.653		
11,000.0	5,666.9	11,270.1	5,753.0	110.9	110.2	-104.74	-5,815.0	-10.8	350.2	134.6	215.59	1.625		
11,100.0	5,666.9	11,370.1	5,753.0	112.8	112.2	-104.74	-5,915.0	-10.8	350.2	130.9	219.30	1.597		
11,200.0	5,666.9	11,470.1	5,753.0	114.7	114.1	-104.74	-6,015.0	-10.8	350.2	127.2	223.01	1.570		
11,300.0	5,666.9	11,570.1	5,753.0	116.6	116.0	-104.73	-6,115.0	-10.8	350.2	123.5	226.72	1.545		
11,400.0	5,666.9	11,670.1	5,753.0	118.5	117.9	-104.73	-6,215.0	-10.8	350.2	119.8	230.43	1.520		
11,500.0	5,667.0	11,770.1	5,753.0	120.4	119.8	-104.73	-6,315.0	-10.8	350.2	116.1	234.14	1.496 Level 3		
11,600.0	5,667.0	11,870.1	5,753.0	122.3	121.7	-104.73	-6,415.0	-10.8	350.2	112.3	237.85	1.472 Level 3		
11,700.0	5,667.0	11,970.1	5,753.0	124.2	123.6	-104.73	-6,515.0	-10.8	350.2	108.6	241.56	1.450 Level 3		
11,800.0	5,667.0	12,070.1	5,753.0	126.1	125.5	-104.73	-6,615.0	-10.8	350.2	104.9	245.28	1.428 Level 3		
11,900.0	5,667.0	12,170.1	5,753.0	128.0	127.4	-104.73	-6,715.0	-10.8	350.2	101.2	248.99	1.406 Level 3		
12,000.0	5,667.0	12,270.1	5,753.0	129.9	129.3	-104.73	-6,815.0	-10.8	350.2	97.5	252.70	1.386 Level 3		
12,100.0	5,667.0	12,370.1	5,753.0	131.8	131.3	-104.73	-6,915.0	-10.8	350.2	93.7	256.42	1.366 Level 3		
12,200.0	5,667.0	12,470.1	5,753.0	133.7	133.2	-104.72	-7,015.0	-10.8	350.2	90.0	260.14	1.346 Level 3		
12,216.7	5,667.0	12,486.8	5,753.0	134.0	133.5	-104.72	-7,031.7	-10.8	350.2	89.4	260.76	1.343 Level 3, SF		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	65.3	65.3						
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	65.3	65.3	65.1	0.19	348.105			
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	65.3	65.3	64.7	0.64	102.529			
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	65.3	65.3	64.2	1.09	60.118			
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	65.3	65.3	63.8	1.54	42.526			
466.7	466.7	466.7	466.7	0.9	0.9	90.00	0.0	65.3	65.3	63.5	1.84	35.585 CC			
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	65.3	65.3	63.3	1.99	32.900 ES			
600.0	600.0	599.5	599.4	1.2	1.2	-107.82	-1.7	65.7	66.3	63.9	2.38	27.844			
700.0	699.8	698.9	698.7	1.4	1.4	-107.71	-6.7	67.0	69.1	66.4	2.75	25.089			
800.0	799.6	798.8	798.4	1.6	1.6	-107.61	-13.5	68.6	72.9	69.7	3.17	22.992			
900.0	899.4	898.7	898.1	1.8	1.8	-107.52	-20.2	70.3	76.7	73.1	3.62	21.215			
1,000.0	999.1	998.6	997.7	2.0	2.0	-107.43	-27.0	71.9	80.5	76.4	4.08	19.733			
1,100.0	1,098.9	1,098.6	1,097.4	2.3	2.3	-107.36	-33.8	73.6	84.3	79.7	4.56	18.500			
1,200.0	1,198.6	1,198.5	1,197.1	2.5	2.5	-107.29	-40.6	75.2	88.1	83.0	5.04	17.467			
1,300.0	1,298.4	1,298.4	1,296.8	2.8	2.8	-107.22	-47.3	76.9	91.9	86.3	5.54	16.594			
1,400.0	1,398.1	1,398.3	1,396.5	3.0	3.0	-107.16	-54.1	78.5	95.7	89.6	6.03	15.851			
1,500.0	1,497.9	1,498.3	1,496.2	3.3	3.3	-107.11	-60.9	80.2	99.4	92.9	6.54	15.212			
1,600.0	1,597.6	1,598.2	1,595.9	3.5	3.5	-107.06	-67.6	81.8	103.2	96.2	7.04	14.658			
1,700.0	1,697.4	1,698.1	1,695.5	3.8	3.8	-107.01	-74.4	83.5	107.0	99.5	7.55	14.173			
1,800.0	1,797.2	1,798.1	1,795.2	4.1	4.0	-106.97	-81.2	85.1	110.8	102.8	8.06	13.746			
1,900.0	1,896.9	1,898.0	1,894.9	4.3	4.3	-106.93	-88.0	86.8	114.6	106.0	8.57	13.367			
2,000.0	1,996.7	1,997.9	1,994.6	4.6	4.6	-106.89	-94.7	88.4	118.4	109.3	9.09	13.029			
2,100.0	2,096.4	2,097.8	2,094.3	4.8	4.8	-106.86	-101.5	90.1	122.2	112.6	9.60	12.726			
2,200.0	2,196.2	2,197.8	2,194.0	5.1	5.1	-106.82	-108.3	91.7	126.0	115.9	10.12	12.452			
2,300.0	2,295.9	2,297.7	2,293.6	5.4	5.3	-106.79	-115.1	93.4	129.8	119.2	10.64	12.204			
2,400.0	2,395.7	2,397.6	2,393.3	5.6	5.6	-106.76	-121.8	95.0	133.6	122.4	11.15	11.977			
2,500.0	2,495.5	2,497.6	2,493.0	5.9	5.9	-106.73	-128.6	96.7	137.4	125.7	11.67	11.770			
2,600.0	2,595.2	2,597.5	2,592.7	6.1	6.1	-106.71	-135.4	98.3	141.2	129.0	12.19	11.580			
2,700.0	2,695.0	2,697.4	2,692.4	6.4	6.4	-106.68	-142.1	100.0	145.0	132.3	12.71	11.405			
2,800.0	2,794.7	2,797.3	2,792.1	6.7	6.7	-106.66	-148.9	101.6	148.8	135.5	13.23	11.244			
2,900.0	2,894.5	2,897.3	2,891.8	6.9	6.9	-106.63	-155.7	103.3	152.5	138.8	13.75	11.094			
3,000.0	2,994.2	2,997.2	2,991.4	7.2	7.2	-106.61	-162.5	104.9	156.3	142.1	14.27	10.955			
3,100.0	3,094.0	3,097.1	3,091.1	7.5	7.4	-106.59	-169.2	106.6	160.1	145.3	14.79	10.825			
3,200.0	3,193.7	3,197.0	3,190.8	7.7	7.7	-106.57	-176.0	108.2	163.9	148.6	15.31	10.705			
3,300.0	3,293.5	3,297.0	3,290.5	8.0	8.0	-106.55	-182.8	109.9	167.7	151.9	15.84	10.592			
3,400.0	3,393.3	3,396.9	3,390.2	8.2	8.2	-106.54	-189.6	111.5	171.5	155.2	16.36	10.486			
3,500.0	3,493.0	3,496.8	3,489.9	8.5	8.5	-106.52	-196.3	113.2	175.3	158.4	16.88	10.386			
3,600.0	3,592.8	3,596.8	3,589.5	8.8	8.8	-106.50	-203.1	114.8	179.1	161.7	17.40	10.292			
3,700.0	3,692.5	3,696.7	3,689.2	9.0	9.0	-106.49	-209.9	116.5	182.9	165.0	17.92	10.204			
3,800.0	3,792.3	3,796.6	3,788.9	9.3	9.3	-106.47	-216.6	118.1	186.7	168.2	18.45	10.120			
3,900.0	3,892.0	3,896.5	3,888.6	9.6	9.5	-106.46	-223.4	119.8	190.5	171.5	18.97	10.042			
4,000.0	3,991.8	3,996.5	3,988.3	9.8	9.8	-106.44	-230.2	121.4	194.3	174.8	19.49	9.967			
4,100.0	4,091.6	4,096.4	4,088.0	10.1	10.1	-106.43	-237.0	123.1	198.1	178.0	20.01	9.896			
4,200.0	4,191.3	4,196.3	4,187.7	10.3	10.3	-106.42	-243.7	124.7	201.9	181.3	20.54	9.829			
4,300.0	4,291.1	4,296.3	4,287.3	10.6	10.6	-106.40	-250.5	126.4	205.6	184.6	21.06	9.765			
4,400.0	4,390.8	4,396.2	4,387.0	10.9	10.9	-106.39	-257.3	128.1	209.4	187.9	21.58	9.704			
4,500.0	4,490.6	4,496.1	4,486.7	11.1	11.1	-106.38	-264.0	129.7	213.2	191.1	22.11	9.645			
4,600.0	4,590.3	4,596.0	4,586.4	11.4	11.4	-106.37	-270.8	131.4	217.0	194.4	22.63	9.590			
4,700.0	4,690.1	4,696.0	4,686.1	11.7	11.7	-106.36	-277.6	133.0	220.8	197.7	23.15	9.537			
4,800.0	4,789.9	4,795.9	4,785.8	11.9	11.9	-106.35	-284.4	134.7	224.6	200.9	23.68	9.486			
4,900.0	4,889.6	4,895.8	4,885.4	12.2	12.2	-106.34	-291.1	136.3	228.4	204.2	24.20	9.438			
5,000.0	4,989.4	4,995.8	4,985.1	12.5	12.4	-106.33	-297.9	138.0	232.2	207.5	24.73	9.391			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,089.1	5,095.7	5,084.8	12.7	12.7	-106.32	-304.7	139.6	236.0	210.7	25.25	9.347		
5,193.1	5,182.0	5,188.7	5,177.6	13.0	13.0	-106.31	-311.0	141.1	239.5	213.8	25.74	9.307		
5,200.0	5,188.9	5,195.4	5,184.3	13.0	13.0	-106.29	-311.4	141.3	239.8	214.0	25.77	9.305		
5,250.0	5,238.4	5,239.9	5,228.5	13.1	13.1	-106.09	-316.4	142.5	243.1	217.1	26.04	9.336		
5,300.0	5,287.1	5,284.2	5,271.9	13.4	13.3	-105.73	-325.0	144.6	248.9	222.5	26.37	9.438		
5,350.0	5,334.5	5,328.2	5,314.1	13.6	13.5	-105.21	-337.0	147.5	257.0	230.3	26.77	9.604		
5,400.0	5,380.2	5,371.7	5,354.6	13.9	13.7	-104.53	-352.2	151.2	267.4	240.2	27.22	9.824		
5,450.0	5,423.7	5,414.7	5,393.3	14.2	14.0	-103.70	-370.5	155.7	280.0	252.3	27.75	10.089		
5,500.0	5,464.6	5,457.2	5,429.9	14.6	14.3	-102.72	-391.5	160.8	294.6	266.2	28.36	10.387		
5,550.0	5,502.6	5,500.0	5,464.8	15.1	14.6	-101.61	-415.6	166.6	311.1	282.0	29.07	10.702		
5,600.0	5,537.3	5,540.4	5,495.8	15.6	15.0	-100.32	-440.7	172.8	329.3	299.4	29.88	11.019		
5,650.0	5,568.4	5,581.2	5,525.0	16.1	15.4	-98.93	-468.4	179.5	349.0	318.3	30.79	11.335		
5,700.0	5,595.7	5,621.5	5,551.5	16.7	15.8	-97.41	-497.9	186.7	370.2	338.4	31.79	11.644		
5,750.0	5,618.7	5,661.4	5,575.4	17.3	16.3	-95.79	-528.9	194.3	392.6	359.7	32.87	11.944		
5,800.0	5,637.4	5,700.0	5,596.1	18.0	16.7	-94.05	-560.5	202.0	416.0	382.0	34.00	12.234		
5,850.0	5,651.6	5,740.4	5,615.1	18.7	17.2	-92.31	-595.1	210.4	440.2	405.0	35.22	12.499		
5,900.0	5,661.2	5,779.8	5,631.0	19.4	17.8	-90.50	-630.1	218.9	465.2	428.7	36.47	12.753		
5,950.0	5,665.9	5,819.2	5,644.1	20.2	18.3	-88.66	-666.3	227.8	490.6	452.9	37.76	12.992		
5,974.9	5,666.5	5,839.0	5,649.6	20.5	18.6	-87.75	-684.8	232.3	503.4	465.0	38.42	13.104		
6,000.0	5,666.5	5,859.3	5,654.4	20.9	18.9	-88.44	-703.9	236.9	516.3	477.1	39.13	13.195		
6,100.0	5,666.5	5,944.7	5,666.5	22.2	20.2	-90.00	-785.9	256.9	565.1	523.1	41.96	13.468		
6,200.0	5,666.5	6,061.7	5,667.4	23.6	21.9	-90.09	-900.0	282.7	608.1	562.8	45.24	13.439		
6,300.0	5,666.5	6,202.4	5,667.4	25.1	23.9	-90.08	-1,039.0	304.8	640.0	591.1	48.93	13.080		
6,400.0	5,666.5	6,351.1	5,667.4	26.6	26.1	-90.08	-1,187.1	316.9	659.6	606.7	52.88	12.474		
6,500.0	5,666.6	6,479.0	5,667.4	28.1	28.1	-90.07	-1,315.0	318.6	667.0	610.5	56.54	11.798		
6,570.3	5,666.6	6,549.3	5,667.4	29.2	29.3	-90.07	-1,385.3	318.6	668.3	609.5	58.82	11.362		
6,600.0	5,666.6	6,579.0	5,667.4	29.6	29.8	-90.07	-1,415.0	318.6	668.3	608.5	59.81	11.174		
6,700.0	5,666.6	6,679.0	5,667.4	31.3	31.5	-90.07	-1,515.0	318.6	668.3	605.1	63.24	10.567		
6,800.0	5,666.6	6,779.0	5,667.4	33.0	33.2	-90.07	-1,615.0	318.7	668.3	601.6	66.72	10.017		
6,900.0	5,666.6	6,879.0	5,667.4	34.7	35.0	-90.07	-1,715.0	318.7	668.3	598.1	70.24	9.515		
7,000.0	5,666.6	6,979.0	5,667.4	36.4	36.8	-90.07	-1,815.0	318.7	668.3	594.5	73.79	9.057		
7,100.0	5,666.6	7,079.0	5,667.4	38.1	38.6	-90.07	-1,915.0	318.7	668.3	591.0	77.36	8.639		
7,200.0	5,666.6	7,179.0	5,667.4	39.9	40.4	-90.06	-2,015.0	318.7	668.3	587.4	80.97	8.254		
7,300.0	5,666.6	7,279.0	5,667.4	41.7	42.2	-90.06	-2,115.0	318.7	668.3	583.7	84.59	7.901		
7,400.0	5,666.6	7,379.0	5,667.4	43.5	44.0	-90.06	-2,215.0	318.7	668.3	580.1	88.23	7.574		
7,500.0	5,666.6	7,479.0	5,667.3	45.3	45.8	-90.06	-2,315.0	318.7	668.3	576.4	91.89	7.273		
7,600.0	5,666.6	7,579.0	5,667.3	47.1	47.7	-90.06	-2,415.0	318.7	668.3	572.8	95.57	6.993		
7,700.0	5,666.7	7,679.0	5,667.3	48.9	49.5	-90.06	-2,515.0	318.7	668.3	569.1	99.25	6.734		
7,800.0	5,666.7	7,779.0	5,667.3	50.7	51.3	-90.06	-2,615.0	318.7	668.3	565.4	102.95	6.492		
7,900.0	5,666.7	7,879.0	5,667.3	52.6	53.2	-90.06	-2,715.0	318.7	668.3	561.7	106.66	6.266		
8,000.0	5,666.7	7,979.0	5,667.3	54.4	55.1	-90.05	-2,815.0	318.7	668.3	558.0	110.38	6.055		
8,100.0	5,666.7	8,079.0	5,667.3	56.2	56.9	-90.05	-2,915.0	318.7	668.3	554.2	114.11	5.857		
8,200.0	5,666.7	8,179.0	5,667.3	58.1	58.8	-90.05	-3,015.0	318.7	668.3	550.5	117.84	5.672		
8,300.0	5,666.7	8,279.0	5,667.3	59.9	60.7	-90.05	-3,115.0	318.7	668.3	546.8	121.58	5.497		
8,400.0	5,666.7	8,379.0	5,667.3	61.8	62.5	-90.05	-3,215.0	318.7	668.3	543.0	125.33	5.333		
8,500.0	5,666.7	8,479.0	5,667.3	63.7	64.4	-90.05	-3,315.0	318.8	668.3	539.3	129.08	5.178		
8,600.0	5,666.7	8,579.0	5,667.3	65.5	66.3	-90.05	-3,415.0	318.8	668.4	535.5	132.84	5.031		
8,700.0	5,666.7	8,679.0	5,667.3	67.4	68.2	-90.05	-3,515.0	318.8	668.4	531.8	136.60	4.893		
8,800.0	5,666.7	8,779.0	5,667.3	69.3	70.0	-90.04	-3,615.0	318.8	668.4	528.0	140.37	4.761		
8,900.0	5,666.7	8,879.0	5,667.3	71.1	71.9	-90.04	-3,715.0	318.8	668.4	524.2	144.14	4.637		
9,000.0	5,666.8	8,979.0	5,667.2	73.0	73.8	-90.04	-3,815.0	318.8	668.4	520.4	147.91	4.519		
9,100.0	5,666.8	9,079.0	5,667.2	74.9	75.7	-90.04	-3,915.0	318.8	668.4	516.7	151.69	4.406		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
9,200.0	5,666.8	9,179.0	5,667.2	76.8	77.6	-90.04	-4,015.0	318.8	668.4	512.9	155.47	4.299		
9,300.0	5,666.8	9,279.0	5,667.2	78.6	79.5	-90.04	-4,115.0	318.8	668.4	509.1	159.26	4.197		
9,400.0	5,666.8	9,379.0	5,667.2	80.5	81.4	-90.04	-4,215.0	318.8	668.4	505.3	163.04	4.099		
9,500.0	5,666.8	9,479.0	5,667.2	82.4	83.3	-90.04	-4,315.0	318.8	668.4	501.5	166.83	4.006		
9,600.0	5,666.8	9,579.0	5,667.2	84.3	85.2	-90.04	-4,415.0	318.8	668.4	497.8	170.63	3.917		
9,700.0	5,666.8	9,679.0	5,667.2	86.2	87.1	-90.03	-4,515.0	318.8	668.4	494.0	174.42	3.832		
9,800.0	5,666.8	9,779.0	5,667.2	88.1	89.0	-90.03	-4,615.0	318.8	668.4	490.2	178.22	3.750		
9,900.0	5,666.8	9,879.0	5,667.2	90.0	90.9	-90.03	-4,715.0	318.8	668.4	486.4	182.01	3.672		
10,000.0	5,666.8	9,979.0	5,667.2	91.9	92.8	-90.03	-4,815.0	318.8	668.4	482.6	185.81	3.597		
10,100.0	5,666.8	10,079.0	5,667.2	93.8	94.7	-90.03	-4,915.0	318.9	668.4	478.8	189.62	3.525		
10,200.0	5,666.9	10,179.0	5,667.2	95.7	96.6	-90.03	-5,015.0	318.9	668.4	475.0	193.42	3.456		
10,300.0	5,666.9	10,279.0	5,667.2	97.6	98.5	-90.03	-5,115.0	318.9	668.4	471.2	197.22	3.389		
10,400.0	5,666.9	10,379.0	5,667.2	99.5	100.4	-90.03	-5,215.0	318.9	668.4	467.4	201.03	3.325		
10,500.0	5,666.9	10,479.0	5,667.2	101.3	102.3	-90.02	-5,315.0	318.9	668.4	463.6	204.84	3.263		
10,600.0	5,666.9	10,579.0	5,667.1	103.2	104.2	-90.02	-5,415.0	318.9	668.4	459.8	208.65	3.204		
10,700.0	5,666.9	10,679.0	5,667.1	105.1	106.1	-90.02	-5,515.0	318.9	668.4	455.9	212.46	3.146		
10,800.0	5,666.9	10,779.0	5,667.1	107.0	108.0	-90.02	-5,615.0	318.9	668.4	452.1	216.27	3.091		
10,900.0	5,666.9	10,879.0	5,667.1	108.9	109.9	-90.02	-5,715.0	318.9	668.4	448.3	220.08	3.037		
11,000.0	5,666.9	10,979.0	5,667.1	110.9	111.8	-90.02	-5,815.0	318.9	668.4	444.5	223.89	2.985		
11,100.0	5,666.9	11,079.0	5,667.1	112.8	113.7	-90.02	-5,915.0	318.9	668.4	440.7	227.71	2.935		
11,200.0	5,666.9	11,179.0	5,667.1	114.7	115.6	-90.02	-6,015.0	318.9	668.4	436.9	231.52	2.887		
11,300.0	5,666.9	11,279.0	5,667.1	116.6	117.5	-90.01	-6,115.0	318.9	668.4	433.1	235.34	2.840		
11,400.0	5,666.9	11,379.0	5,667.1	118.5	119.4	-90.01	-6,215.0	318.9	668.4	429.3	239.15	2.795		
11,500.0	5,667.0	11,479.0	5,667.1	120.4	121.3	-90.01	-6,315.0	318.9	668.4	425.5	242.97	2.751		
11,600.0	5,667.0	11,579.0	5,667.1	122.3	123.2	-90.01	-6,415.0	318.9	668.4	421.6	246.79	2.708		
11,700.0	5,667.0	11,679.0	5,667.1	124.2	125.1	-90.01	-6,515.0	318.9	668.4	417.8	250.61	2.667		
11,800.0	5,667.0	11,779.0	5,667.1	126.1	127.1	-90.01	-6,615.0	319.0	668.4	414.0	254.43	2.627		
11,900.0	5,667.0	11,879.0	5,667.1	128.0	129.0	-90.01	-6,715.0	319.0	668.4	410.2	258.25	2.588		
12,000.0	5,667.0	11,979.0	5,667.1	129.9	130.9	-90.01	-6,815.0	319.0	668.4	406.4	262.07	2.551		
12,100.0	5,667.0	12,079.0	5,667.1	131.8	132.8	-90.00	-6,915.0	319.0	668.4	402.5	265.89	2.514		
12,200.0	5,667.0	12,179.0	5,667.0	133.7	134.7	-90.00	-7,015.0	319.0	668.4	398.7	269.72	2.478		
12,216.7	5,667.0	12,195.7	5,667.0	134.0	135.0	-90.00	-7,031.7	319.0	668.4	398.1	270.35	2.472 SF		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	127.37	-75.0	98.3	123.7					
100.0	100.0	97.0	97.0	0.1	0.1	127.37	-75.0	98.3	123.7	123.5	0.18	668.895		
200.0	200.0	197.0	197.0	0.3	0.3	127.37	-75.0	98.3	123.7	123.0	0.63	196.132		
300.0	300.0	297.0	297.0	0.5	0.5	127.37	-75.0	98.3	123.7	122.6	1.08	114.495		
400.0	400.0	397.0	397.0	0.8	0.8	127.37	-75.0	98.3	123.7	122.1	1.53	80.845		
500.0	500.0	497.0	497.0	1.0	1.0	127.37	-75.0	98.3	123.7	121.7	1.98	62.481	CC, ES	
600.0	600.0	593.4	593.4	1.2	1.2	-70.89	-76.4	98.9	124.5	122.1	2.37	52.529		
700.0	699.8	689.6	689.5	1.4	1.4	-71.99	-80.7	101.0	127.2	124.4	2.74	46.434		
800.0	799.6	789.1	788.7	1.6	1.6	-73.42	-87.0	104.0	131.2	128.0	3.15	41.678		
900.0	899.4	888.9	888.3	1.8	1.8	-74.77	-93.2	107.0	135.3	131.7	3.58	37.795		
1,000.0	999.1	988.8	987.9	2.0	2.0	-76.04	-99.5	110.0	139.4	135.4	4.03	34.608		
1,100.0	1,098.9	1,088.7	1,087.6	2.3	2.3	-77.24	-105.8	113.0	143.6	139.1	4.49	31.982		
1,200.0	1,198.6	1,188.5	1,187.2	2.5	2.5	-78.37	-112.1	116.0	147.9	143.0	4.96	29.799		
1,300.0	1,298.4	1,288.4	1,286.8	2.8	2.8	-79.43	-118.4	119.0	152.3	146.8	5.44	27.966		
1,400.0	1,398.1	1,388.3	1,386.4	3.0	3.0	-80.43	-124.7	121.9	156.6	150.7	5.93	26.412		
1,500.0	1,497.9	1,488.1	1,486.1	3.3	3.3	-81.38	-131.0	124.9	161.1	154.6	6.42	25.082		
1,600.0	1,597.6	1,588.0	1,585.7	3.5	3.5	-82.28	-137.3	127.9	165.5	158.6	6.92	23.933		
1,700.0	1,697.4	1,687.9	1,685.3	3.8	3.8	-83.13	-143.5	130.9	170.1	162.6	7.42	22.933		
1,800.0	1,797.2	1,787.7	1,784.9	4.1	4.0	-83.94	-149.8	133.9	174.6	166.7	7.92	22.057		
1,900.0	1,896.9	1,887.6	1,884.5	4.3	4.3	-84.70	-156.1	136.9	179.2	170.8	8.42	21.281		
2,000.0	1,996.7	1,987.5	1,984.2	4.6	4.5	-85.43	-162.4	139.9	183.8	174.9	8.93	20.591		
2,100.0	2,096.4	2,087.3	2,083.8	4.8	4.8	-86.12	-168.7	142.9	188.4	179.0	9.43	19.975		
2,200.0	2,196.2	2,187.2	2,183.4	5.1	5.1	-86.78	-175.0	145.9	193.1	183.1	9.94	19.421		
2,300.0	2,295.9	2,287.1	2,283.0	5.4	5.3	-87.41	-181.3	148.9	197.8	187.3	10.45	18.921		
2,400.0	2,395.7	2,386.9	2,382.7	5.6	5.6	-88.00	-187.6	151.9	202.5	191.5	10.96	18.468		
2,500.0	2,495.5	2,486.8	2,482.3	5.9	5.9	-88.58	-193.8	154.9	207.2	195.7	11.48	18.056		
2,600.0	2,595.2	2,586.7	2,581.9	6.1	6.1	-89.12	-200.1	157.9	212.0	200.0	11.99	17.679		
2,700.0	2,695.0	2,686.5	2,681.5	6.4	6.4	-89.64	-206.4	160.9	216.7	204.2	12.50	17.333		
2,800.0	2,794.7	2,786.4	2,781.2	6.7	6.6	-90.14	-212.7	163.9	221.5	208.5	13.02	17.015		
2,900.0	2,894.5	2,886.3	2,880.8	6.9	6.9	-90.62	-219.0	166.9	226.3	212.8	13.53	16.722		
3,000.0	2,994.2	2,986.1	2,980.4	7.2	7.2	-91.08	-225.3	169.9	231.1	217.1	14.05	16.451		
3,100.0	3,094.0	3,086.0	3,080.0	7.5	7.4	-91.52	-231.6	172.9	236.0	221.4	14.57	16.199		
3,200.0	3,193.7	3,185.9	3,179.7	7.7	7.7	-91.94	-237.9	175.9	240.8	225.7	15.08	15.965		
3,300.0	3,293.5	3,285.7	3,279.3	8.0	7.9	-92.34	-244.1	178.9	245.7	230.1	15.60	15.741		
3,400.0	3,393.3	3,385.6	3,378.9	8.2	8.2	-92.73	-250.4	181.9	250.6	234.4	16.12	15.543		
3,500.0	3,493.0	3,485.5	3,478.5	8.5	8.5	-93.11	-256.7	184.9	255.4	238.8	16.64	15.353		
3,600.0	3,592.8	3,585.3	3,578.2	8.8	8.7	-93.47	-263.0	187.9	260.3	243.2	17.16	15.174		
3,700.0	3,692.5	3,685.2	3,677.8	9.0	9.0	-93.81	-269.3	190.9	265.2	247.6	17.67	15.006		
3,800.0	3,792.3	3,785.1	3,777.4	9.3	9.3	-94.15	-275.6	193.9	270.1	251.9	18.19	14.848		
3,900.0	3,892.0	3,884.9	3,877.0	9.6	9.5	-94.47	-281.9	196.9	275.1	256.3	18.71	14.699		
4,000.0	3,991.8	3,984.8	3,976.7	9.8	9.8	-94.78	-288.2	199.9	280.0	260.8	19.23	14.558		
4,100.0	4,091.6	4,084.7	4,076.3	10.1	10.1	-95.08	-294.5	202.9	284.9	265.2	19.75	14.425		
4,200.0	4,191.3	4,184.5	4,175.9	10.3	10.3	-95.37	-300.7	205.9	289.9	269.6	20.27	14.300		
4,300.0	4,291.1	4,284.4	4,275.5	10.6	10.6	-95.65	-307.0	208.9	294.8	274.0	20.79	14.180		
4,400.0	4,390.8	4,384.3	4,375.1	10.9	10.8	-95.92	-313.3	211.9	299.8	278.5	21.31	14.067		
4,500.0	4,490.6	4,484.2	4,474.8	11.1	11.1	-96.19	-319.6	214.9	304.7	282.9	21.83	13.959		
4,600.0	4,590.3	4,584.0	4,574.4	11.4	11.4	-96.44	-325.9	217.9	309.7	287.4	22.35	13.857		
4,700.0	4,690.1	4,683.9	4,674.0	11.7	11.6	-96.68	-332.2	220.9	314.7	291.8	22.87	13.759		
4,800.0	4,789.9	4,783.8	4,773.6	11.9	11.9	-96.92	-338.5	223.9	319.7	296.3	23.39	13.666		
4,900.0	4,889.6	4,883.6	4,873.3	12.2	12.2	-97.15	-344.8	226.9	324.6	300.7	23.91	13.577		
5,000.0	4,989.4	4,983.5	4,972.9	12.5	12.4	-97.38	-351.0	229.9	329.6	305.2	24.43	13.492		
5,100.0	5,089.1	5,083.4	5,072.5	12.7	12.7	-97.59	-357.3	232.9	334.6	309.7	24.95	13.411		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
5,193.1	5,182.0	5,176.3	5,165.3	13.0	12.9	-97.79	-363.2	235.7	339.3	313.9	25.44	13.338		
5,200.0	5,188.9	5,183.2	5,172.1	13.0	13.0	-97.78	-363.6	235.9	339.6	314.2	25.47	13.334		
5,250.0	5,238.4	5,233.0	5,221.8	13.1	13.1	-98.06	-366.7	237.4	342.6	316.8	25.75	13.303		
5,300.0	5,287.1	5,280.0	5,268.7	13.4	13.2	-98.94	-369.7	238.8	346.3	320.2	26.07	13.285 SF		
5,350.0	5,334.5	5,317.1	5,305.6	13.6	13.3	-99.70	-373.2	240.5	352.0	325.6	26.40	13.335		
5,400.0	5,380.2	5,350.0	5,338.0	13.9	13.4	-100.14	-378.3	242.9	360.7	333.9	26.76	13.479		
5,450.0	5,423.7	5,387.3	5,374.1	14.2	13.6	-100.59	-386.3	246.7	372.2	345.1	27.19	13.690		
5,500.0	5,464.6	5,421.6	5,406.8	14.6	13.8	-100.70	-395.7	251.2	386.6	359.0	27.67	13.975		
5,550.0	5,502.6	5,450.0	5,433.4	15.1	13.9	-100.25	-405.0	255.6	403.8	375.6	28.18	14.331		
5,600.0	5,537.3	5,488.3	5,468.1	15.6	14.2	-100.10	-419.5	262.6	423.5	394.7	28.80	14.705		
5,650.0	5,568.4	5,520.5	5,496.3	16.1	14.4	-99.35	-433.4	269.2	445.6	416.1	29.48	15.118		
5,700.0	5,595.7	5,550.0	5,521.4	16.7	14.6	-98.17	-447.6	276.0	470.0	439.7	30.26	15.533		
5,750.0	5,618.7	5,582.4	5,547.7	17.3	14.9	-96.90	-464.5	284.1	496.3	465.2	31.14	15.941		
5,800.0	5,637.4	5,612.1	5,570.9	18.0	15.1	-95.20	-481.4	292.1	524.5	492.4	32.07	16.352		
5,850.0	5,651.6	5,641.1	5,592.3	18.7	15.4	-93.20	-498.9	300.4	554.2	521.1	33.06	16.762		
5,900.0	5,661.2	5,669.2	5,612.1	19.4	15.7	-90.91	-516.9	309.1	585.3	551.2	34.08	17.172		
5,950.0	5,665.9	5,696.6	5,630.4	20.2	15.9	-88.37	-535.4	317.9	617.5	582.4	35.10	17.592		
5,974.9	5,666.5	5,710.0	5,638.9	20.5	16.1	-87.02	-544.8	322.3	633.9	598.3	35.60	17.804		
6,000.0	5,666.5	5,723.8	5,647.4	20.9	16.3	-88.10	-554.6	327.0	650.5	614.4	36.15	17.994		
6,100.0	5,666.5	5,786.6	5,682.2	22.2	17.0	-91.96	-601.7	349.5	716.3	678.0	38.25	18.728		
6,200.0	5,666.5	5,863.0	5,715.8	23.6	18.0	-94.88	-663.6	379.0	779.7	739.2	40.53	19.239		
6,300.0	5,666.5	5,953.2	5,741.9	25.1	19.4	-96.52	-741.4	416.1	839.0	795.8	43.16	19.439		
6,400.0	5,666.5	6,053.9	5,753.2	26.6	21.0	-96.69	-831.6	459.1	892.8	846.6	46.24	19.310		
6,500.0	5,666.6	6,220.1	5,753.2	28.1	23.5	-95.95	-984.2	524.7	937.9	887.5	50.39	18.613		
6,570.3	5,666.6	6,351.2	5,753.2	29.2	25.5	-95.59	-1,108.3	566.9	961.7	908.0	53.68	17.916		
6,600.0	5,666.6	6,408.6	5,753.2	29.6	26.4	-95.49	-1,163.5	582.7	969.8	914.7	55.11	17.599		
6,700.0	5,666.6	6,608.7	5,753.2	31.3	29.6	-95.26	-1,359.1	624.6	990.7	930.5	60.19	16.461		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3407A - HZ - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,700.0	5,595.7	6,175.4	5,667.0	16.7	18.7	79.21	-738.8	-1,148.3	993.2	959.1	34.03	29.185		
5,750.0	5,618.7	6,214.2	5,667.0	17.3	19.3	80.80	-776.9	-1,140.8	970.0	934.9	35.13	27.613		
5,800.0	5,637.4	6,254.8	5,667.0	18.0	19.9	82.60	-816.8	-1,133.1	946.6	910.3	36.33	26.057		
5,850.0	5,651.6	6,296.7	5,667.0	18.7	20.6	84.67	-858.0	-1,125.1	922.9	885.3	37.59	24.550		
5,900.0	5,661.2	6,339.7	5,667.0	19.4	21.3	87.05	-900.2	-1,116.9	899.0	860.0	38.93	23.091		
5,950.0	5,665.9	6,383.3	5,667.0	20.2	22.0	89.76	-942.9	-1,108.5	874.8	834.5	40.29	21.712		
5,974.9	5,666.5	6,405.1	5,667.0	20.5	22.3	91.25	-964.3	-1,104.4	862.8	821.8	40.97	21.058		
6,000.0	5,666.5	6,427.1	5,667.0	20.9	22.7	91.26	-986.0	-1,100.2	850.8	809.1	41.73	20.389		
6,100.0	5,666.5	6,516.5	5,667.0	22.2	24.2	91.29	-1,073.7	-1,083.1	806.0	761.3	44.71	18.027		
6,200.0	5,666.5	6,589.5	5,667.0	23.6	25.4	91.31	-1,145.4	-1,069.7	766.8	719.3	47.51	16.140		
6,300.0	5,666.5	6,657.7	5,667.0	25.1	26.5	91.33	-1,212.8	-1,059.5	735.5	685.3	50.20	14.651		
6,400.0	5,666.5	6,728.3	5,667.0	26.6	27.6	91.35	-1,283.0	-1,051.5	712.8	659.9	52.92	13.469		
6,500.0	5,666.6	6,800.0	5,667.0	28.1	28.7	91.35	-1,354.5	-1,046.0	699.0	643.3	55.63	12.563		
6,570.3	5,666.6	6,852.0	5,667.0	29.2	29.5	91.36	-1,406.5	-1,043.7	694.6	637.0	57.53	12.072		
6,600.0	5,666.6	6,873.8	5,667.0	29.6	29.9	91.36	-1,428.2	-1,043.2	693.8	635.5	58.37	11.888		
6,659.9	5,666.6	6,920.4	5,667.0	30.6	30.6	91.36	-1,474.9	-1,042.8	693.4	633.2	60.13	11.531 CC		
6,700.0	5,666.6	6,960.5	5,667.0	31.3	31.3	91.36	-1,515.0	-1,042.8	693.4	631.9	61.48	11.278		
6,800.0	5,666.6	7,060.5	5,667.0	33.0	33.0	91.36	-1,615.0	-1,042.8	693.4	628.5	64.91	10.682		
6,900.0	5,666.6	7,160.5	5,667.0	34.7	34.7	91.36	-1,715.0	-1,042.8	693.4	625.0	68.41	10.136		
7,000.0	5,666.6	7,260.5	5,667.0	36.4	36.5	91.36	-1,815.0	-1,042.9	693.4	621.5	71.94	9.639		
7,100.0	5,666.6	7,360.5	5,667.0	38.1	38.2	91.36	-1,915.0	-1,042.9	693.4	617.9	75.49	9.185		
7,200.0	5,666.6	7,460.5	5,667.0	39.9	40.0	91.36	-2,015.0	-1,042.9	693.4	614.3	79.08	8.768		
7,300.0	5,666.6	7,560.5	5,667.0	41.7	41.8	91.35	-2,115.0	-1,042.9	693.4	610.7	82.69	8.386		
7,400.0	5,666.6	7,660.5	5,667.0	43.5	43.6	91.35	-2,215.0	-1,042.9	693.4	607.1	86.32	8.033		
7,500.0	5,666.6	7,760.5	5,667.0	45.3	45.5	91.35	-2,315.0	-1,042.9	693.4	603.5	89.97	7.708		
7,600.0	5,666.6	7,860.5	5,667.0	47.1	47.3	91.35	-2,415.0	-1,042.9	693.5	599.8	93.63	7.406		
7,700.0	5,666.7	7,960.5	5,667.0	48.9	49.1	91.35	-2,515.0	-1,042.9	693.5	596.2	97.31	7.127		
7,800.0	5,666.7	8,060.5	5,667.0	50.7	50.9	91.35	-2,615.0	-1,042.9	693.5	592.5	100.99	6.866		
7,900.0	5,666.7	8,160.5	5,667.0	52.6	52.8	91.35	-2,715.0	-1,042.9	693.5	588.8	104.69	6.624		
8,000.0	5,666.7	8,260.5	5,667.0	54.4	54.6	91.35	-2,815.0	-1,042.9	693.5	585.1	108.40	6.397		
8,100.0	5,666.7	8,360.5	5,667.0	56.2	56.5	91.35	-2,915.0	-1,042.9	693.5	581.4	112.12	6.185		
8,200.0	5,666.7	8,460.5	5,667.0	58.1	58.4	91.35	-3,015.0	-1,042.9	693.5	577.7	115.85	5.986		
8,300.0	5,666.7	8,560.5	5,667.0	59.9	60.2	91.35	-3,115.0	-1,042.9	693.5	573.9	119.58	5.800		
8,400.0	5,666.7	8,660.5	5,667.0	61.8	62.1	91.35	-3,215.0	-1,042.9	693.5	570.2	123.32	5.624		
8,500.0	5,666.7	8,760.5	5,667.0	63.7	64.0	91.35	-3,315.0	-1,042.9	693.5	566.5	127.07	5.458		
8,600.0	5,666.7	8,860.5	5,667.0	65.5	65.8	91.35	-3,415.0	-1,042.9	693.5	562.7	130.82	5.301		
8,700.0	5,666.7	8,960.5	5,667.0	67.4	67.7	91.35	-3,515.0	-1,042.9	693.5	559.0	134.58	5.154		
8,800.0	5,666.7	9,060.5	5,667.0	69.3	69.6	91.34	-3,615.0	-1,042.9	693.6	555.2	138.34	5.014		
8,900.0	5,666.7	9,160.5	5,667.0	71.1	71.5	91.34	-3,715.0	-1,043.0	693.6	551.5	142.10	4.881		
9,000.0	5,666.8	9,260.5	5,667.0	73.0	73.4	91.34	-3,815.0	-1,043.0	693.6	547.7	145.87	4.755		
9,100.0	5,666.8	9,360.5	5,667.0	74.9	75.2	91.34	-3,915.0	-1,043.0	693.6	543.9	149.65	4.635		
9,200.0	5,666.8	9,460.5	5,667.0	76.8	77.1	91.34	-4,015.0	-1,043.0	693.6	540.2	153.42	4.521		
9,300.0	5,666.8	9,560.5	5,667.0	78.6	79.0	91.34	-4,115.0	-1,043.0	693.6	536.4	157.20	4.412		
9,400.0	5,666.8	9,660.5	5,667.0	80.5	80.9	91.34	-4,215.0	-1,043.0	693.6	532.6	160.99	4.309		
9,500.0	5,666.8	9,760.5	5,667.0	82.4	82.8	91.34	-4,315.0	-1,043.0	693.6	528.8	164.77	4.210		
9,600.0	5,666.8	9,860.5	5,667.0	84.3	84.7	91.34	-4,415.0	-1,043.0	693.6	525.1	168.56	4.115		
9,700.0	5,666.8	9,960.5	5,667.0	86.2	86.6	91.34	-4,515.0	-1,043.0	693.6	521.3	172.35	4.025		
9,800.0	5,666.8	10,060.5	5,667.0	88.1	88.5	91.34	-4,615.0	-1,043.0	693.6	517.5	176.14	3.938		
9,900.0	5,666.8	10,160.5	5,667.0	90.0	90.4	91.34	-4,715.0	-1,043.0	693.6	513.7	179.94	3.855		
10,000.0	5,666.8	10,260.5	5,667.0	91.9	92.3	91.34	-4,815.0	-1,043.0	693.7	509.9	183.73	3.775		
10,100.0	5,666.8	10,360.5	5,667.0	93.8	94.2	91.34	-4,915.0	-1,043.0	693.7	506.1	187.53	3.699		
10,200.0	5,666.9	10,460.5	5,667.0	95.7	96.1	91.33	-5,015.0	-1,043.0	693.7	502.3	191.33	3.626		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3407A - HZ - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,300.0	5,666.9	10,560.5	5,667.0	97.6	98.0	91.33	-5,115.0	-1,043.0	693.7	498.6	195.13	3.555		
10,400.0	5,666.9	10,660.5	5,667.0	99.5	99.9	91.33	-5,215.0	-1,043.0	693.7	494.8	198.94	3.487		
10,500.0	5,666.9	10,760.5	5,667.0	101.3	101.8	91.33	-5,315.0	-1,043.0	693.7	491.0	202.74	3.422		
10,600.0	5,666.9	10,860.5	5,667.0	103.2	103.7	91.33	-5,415.0	-1,043.0	693.7	487.2	206.55	3.359		
10,700.0	5,666.9	10,960.5	5,667.0	105.1	105.6	91.33	-5,515.0	-1,043.0	693.7	483.4	210.35	3.298		
10,800.0	5,666.9	11,060.5	5,667.0	107.0	107.5	91.33	-5,615.0	-1,043.1	693.7	479.6	214.16	3.239		
10,900.0	5,666.9	11,160.5	5,667.0	108.9	109.4	91.33	-5,715.0	-1,043.1	693.7	475.8	217.97	3.183		
11,000.0	5,666.9	11,260.5	5,667.0	110.9	111.3	91.33	-5,815.0	-1,043.1	693.7	472.0	221.78	3.128		
11,100.0	5,666.9	11,360.5	5,667.0	112.8	113.2	91.33	-5,915.0	-1,043.1	693.8	468.2	225.59	3.075		
11,200.0	5,666.9	11,460.5	5,667.0	114.7	115.1	91.33	-6,015.0	-1,043.1	693.8	464.4	229.41	3.024		
11,300.0	5,666.9	11,560.5	5,667.0	116.6	117.0	91.33	-6,115.0	-1,043.1	693.8	460.5	233.22	2.975		
11,400.0	5,666.9	11,660.5	5,667.0	118.5	118.9	91.33	-6,215.0	-1,043.1	693.8	456.7	237.04	2.927		
11,500.0	5,667.0	11,760.5	5,667.0	120.4	120.8	91.33	-6,315.0	-1,043.1	693.8	452.9	240.85	2.881		
11,600.0	5,667.0	11,860.5	5,667.0	122.3	122.7	91.33	-6,415.0	-1,043.1	693.8	449.1	244.67	2.836		
11,700.0	5,667.0	11,960.5	5,667.0	124.2	124.6	91.32	-6,515.0	-1,043.1	693.8	445.3	248.48	2.792		
11,800.0	5,667.0	12,060.5	5,667.0	126.1	126.5	91.32	-6,615.0	-1,043.1	693.8	441.5	252.30	2.750		
11,900.0	5,667.0	12,160.5	5,667.0	128.0	128.4	91.32	-6,715.0	-1,043.1	693.8	437.7	256.12	2.709		
12,000.0	5,667.0	12,260.5	5,667.0	129.9	130.4	91.32	-6,815.0	-1,043.1	693.8	433.9	259.94	2.669		
12,100.0	5,667.0	12,360.5	5,667.0	131.8	132.3	91.32	-6,915.0	-1,043.1	693.8	430.1	263.76	2.631		
12,200.0	5,667.0	12,460.5	5,667.0	133.7	134.0	91.32	-7,015.0	-1,043.1	693.8	426.5	267.37	2.595		
12,216.7	5,667.0	12,477.2	5,667.0	134.0	134.2	91.32	-7,031.7	-1,043.1	693.8	425.9	267.95	2.589	ES, SF	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3408B - HZ - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,350.0	5,334.5	6,100.0	5,752.7	13.6	19.1	57.37	-725.0	-917.7	997.4	966.0	31.38	31.787		
5,400.0	5,380.2	6,122.8	5,752.7	13.9	19.5	59.68	-745.4	-907.5	965.2	933.6	31.62	30.524		
5,450.0	5,423.7	6,135.0	5,752.7	14.2	19.6	62.97	-756.4	-902.2	932.6	900.8	31.77	29.357		
5,500.0	5,464.6	6,149.4	5,752.7	14.6	19.8	66.34	-769.4	-896.0	899.6	867.6	32.01	28.103		
5,550.0	5,502.6	6,165.9	5,752.7	15.1	20.1	69.78	-784.4	-889.0	866.3	834.0	32.37	26.765		
5,600.0	5,537.3	6,184.6	5,752.7	15.6	20.3	73.28	-801.3	-881.2	832.9	800.1	32.85	25.358		
5,650.0	5,568.4	6,200.0	5,752.7	16.1	20.6	77.14	-815.4	-874.9	799.5	766.1	33.39	23.944		
5,700.0	5,595.7	6,227.8	5,752.7	16.7	21.0	80.50	-840.9	-863.9	766.1	732.0	34.16	22.427		
5,750.0	5,618.7	6,252.2	5,752.7	17.3	21.4	84.24	-863.4	-854.5	733.0	698.1	34.96	20.969		
5,800.0	5,637.4	6,278.2	5,752.7	18.0	21.8	88.09	-887.6	-844.8	700.3	664.5	35.80	19.560		
5,850.0	5,651.6	6,300.0	5,752.7	18.7	22.1	92.16	-907.9	-837.0	668.1	631.5	36.60	18.255		
5,900.0	5,661.2	6,334.7	5,752.7	19.4	22.6	96.15	-940.5	-824.9	636.6	599.1	37.54	16.957		
5,950.0	5,665.9	6,364.8	5,752.7	20.2	23.1	100.37	-968.8	-815.0	606.2	567.8	38.37	15.797		
5,974.9	5,666.5	6,380.1	5,752.7	20.5	23.4	102.51	-983.3	-810.1	591.5	552.8	38.76	15.260		
6,000.0	5,666.5	6,400.0	5,752.7	20.9	23.7	102.70	-1,002.3	-803.9	577.2	537.7	39.43	14.639		
6,100.0	5,666.5	6,461.4	5,752.7	22.2	24.7	103.18	-1,061.0	-786.1	524.3	482.4	41.89	12.517		
6,200.0	5,666.5	6,532.0	5,752.7	23.6	25.8	103.80	-1,129.2	-768.0	479.1	434.6	44.53	10.758		
6,300.0	5,666.5	6,600.0	5,752.7	25.1	26.9	104.36	-1,195.6	-752.9	442.2	395.0	47.21	9.366		
6,400.0	5,666.5	6,685.4	5,752.7	26.6	28.3	105.03	-1,279.5	-737.3	413.7	363.5	50.16	8.248		
6,500.0	5,666.6	6,766.7	5,752.7	28.1	29.6	105.50	-1,360.0	-725.9	394.2	341.2	53.07	7.428		
6,570.3	5,666.6	6,825.1	5,752.7	29.2	30.5	105.71	-1,418.1	-719.9	386.0	330.8	55.14	7.000		
6,600.0	5,666.6	6,849.8	5,752.7	29.6	30.9	105.79	-1,442.7	-717.9	383.7	327.7	55.98	6.853		
6,700.0	5,666.6	6,933.6	5,752.7	31.3	32.2	105.98	-1,526.4	-713.4	378.5	319.6	58.91	6.426		
6,791.9	5,666.6	7,014.1	5,752.7	32.8	33.5	106.02	-1,606.8	-712.5	377.5	315.7	61.72	6.116 CC		
6,800.0	5,666.6	7,022.2	5,752.7	33.0	33.6	106.02	-1,615.0	-712.5	377.5	315.5	61.99	6.090		
6,900.0	5,666.6	7,122.2	5,752.7	34.7	35.2	106.01	-1,715.0	-712.5	377.5	312.2	65.30	5.781		
7,000.0	5,666.6	7,222.2	5,752.7	36.4	36.9	106.01	-1,815.0	-712.5	377.5	308.8	68.65	5.498		
7,100.0	5,666.6	7,322.2	5,752.7	38.1	38.5	106.01	-1,915.0	-712.5	377.5	305.5	72.05	5.240		
7,200.0	5,666.6	7,422.2	5,752.7	39.9	40.2	106.01	-2,015.0	-712.5	377.5	302.1	75.47	5.002		
7,300.0	5,666.6	7,522.2	5,752.7	41.7	41.9	106.01	-2,115.0	-712.5	377.5	298.6	78.91	4.784		
7,400.0	5,666.6	7,622.2	5,752.8	43.5	43.6	106.01	-2,215.0	-712.5	377.5	295.2	82.39	4.583		
7,500.0	5,666.6	7,722.2	5,752.8	45.3	45.4	106.01	-2,315.0	-712.5	377.6	291.7	85.88	4.396		
7,600.0	5,666.6	7,822.2	5,752.8	47.1	47.1	106.01	-2,415.0	-712.6	377.6	288.2	89.39	4.224		
7,700.0	5,666.7	7,922.2	5,752.8	48.9	48.9	106.01	-2,515.0	-712.6	377.6	284.7	92.91	4.064		
7,800.0	5,666.7	8,022.2	5,752.8	50.7	50.7	106.01	-2,615.0	-712.6	377.6	281.1	96.46	3.915		
7,900.0	5,666.7	8,122.2	5,752.8	52.6	52.4	106.00	-2,715.0	-712.6	377.6	277.6	100.01	3.776		
8,000.0	5,666.7	8,222.2	5,752.8	54.4	54.2	106.00	-2,815.0	-712.6	377.6	274.0	103.57	3.646		
8,100.0	5,666.7	8,322.2	5,752.8	56.2	56.0	106.00	-2,915.0	-712.6	377.6	270.5	107.15	3.524		
8,200.0	5,666.7	8,422.2	5,752.8	58.1	57.8	106.00	-3,015.0	-712.6	377.6	266.9	110.73	3.410		
8,300.0	5,666.7	8,522.2	5,752.8	59.9	59.7	106.00	-3,115.0	-712.6	377.7	263.3	114.33	3.303		
8,400.0	5,666.7	8,622.2	5,752.8	61.8	61.5	106.00	-3,215.0	-712.6	377.7	259.7	117.93	3.203		
8,500.0	5,666.7	8,722.2	5,752.8	63.7	63.3	106.00	-3,315.0	-712.7	377.7	256.2	121.53	3.108		
8,600.0	5,666.7	8,822.2	5,752.8	65.5	65.1	106.00	-3,415.0	-712.7	377.7	252.6	125.15	3.018		
8,700.0	5,666.7	8,922.2	5,752.8	67.4	67.0	106.00	-3,515.0	-712.7	377.7	248.9	128.77	2.933		
8,800.0	5,666.7	9,022.2	5,752.8	69.3	68.8	106.00	-3,615.0	-712.7	377.7	245.3	132.39	2.853		
8,900.0	5,666.7	9,122.2	5,752.8	71.1	70.7	105.99	-3,715.0	-712.7	377.7	241.7	136.02	2.777		
9,000.0	5,666.8	9,222.2	5,752.8	73.0	72.5	105.99	-3,815.0	-712.7	377.8	238.1	139.66	2.705		
9,100.0	5,666.8	9,322.2	5,752.8	74.9	74.4	105.99	-3,915.0	-712.7	377.8	234.5	143.30	2.636		
9,200.0	5,666.8	9,422.2	5,752.8	76.8	76.2	105.99	-4,015.0	-712.7	377.8	230.8	146.94	2.571		
9,300.0	5,666.8	9,522.2	5,752.9	78.6	78.1	105.99	-4,115.0	-712.7	377.8	227.2	150.59	2.509		
9,400.0	5,666.8	9,622.2	5,752.9	80.5	80.0	105.99	-4,215.0	-712.7	377.8	223.6	154.24	2.450		
9,500.0	5,666.8	9,722.2	5,752.9	82.4	81.8	105.99	-4,315.0	-712.8	377.8	219.9	157.89	2.393		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-3409A
Project:	Weld County, CO	TVD Reference:	WELL @ 4783.5ft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4783.5ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #27J-3409A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3408B - HZ - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
9,600.0	5,666.8	9,822.2	5,752.9	84.3	83.7	105.99	-4,415.0	-712.8	377.8	216.3	161.54	2.339		
9,700.0	5,666.8	9,922.2	5,752.9	86.2	85.6	105.99	-4,515.0	-712.8	377.8	212.6	165.20	2.287		
9,800.0	5,666.8	10,022.2	5,752.9	88.1	87.5	105.99	-4,615.0	-712.8	377.9	209.0	168.86	2.238		
9,900.0	5,666.8	10,122.2	5,752.9	90.0	89.3	105.99	-4,715.0	-712.8	377.9	205.3	172.53	2.190		
10,000.0	5,666.8	10,222.2	5,752.9	91.9	91.2	105.98	-4,815.0	-712.8	377.9	201.7	176.19	2.145		
10,100.0	5,666.8	10,322.2	5,752.9	93.8	93.1	105.98	-4,915.0	-712.8	377.9	198.0	179.86	2.101		
10,200.0	5,666.9	10,422.2	5,752.9	95.7	95.0	105.98	-5,015.0	-712.8	377.9	194.4	183.53	2.059		
10,300.0	5,666.9	10,522.2	5,752.9	97.6	96.8	105.98	-5,115.0	-712.8	377.9	190.7	187.20	2.019		
10,400.0	5,666.9	10,622.2	5,752.9	99.5	98.7	105.98	-5,215.0	-712.9	377.9	187.1	190.88	1.980		
10,500.0	5,666.9	10,722.2	5,752.9	101.3	100.6	105.98	-5,315.0	-712.9	377.9	183.4	194.55	1.943		
10,600.0	5,666.9	10,822.2	5,752.9	103.2	102.5	105.98	-5,415.0	-712.9	378.0	179.7	198.23	1.907		
10,700.0	5,666.9	10,922.2	5,752.9	105.1	104.4	105.98	-5,515.0	-712.9	378.0	176.1	201.91	1.872		
10,800.0	5,666.9	11,022.2	5,752.9	107.0	106.3	105.98	-5,615.0	-712.9	378.0	172.4	205.59	1.839		
10,900.0	5,666.9	11,122.2	5,752.9	108.9	108.2	105.98	-5,715.0	-712.9	378.0	168.7	209.27	1.806		
11,000.0	5,666.9	11,222.2	5,752.9	110.9	110.1	105.97	-5,815.0	-712.9	378.0	165.1	212.95	1.775		
11,100.0	5,666.9	11,322.2	5,753.0	112.8	112.0	105.97	-5,915.0	-712.9	378.0	161.4	216.64	1.745		
11,200.0	5,666.9	11,422.2	5,753.0	114.7	113.9	105.97	-6,015.0	-712.9	378.0	157.7	220.32	1.716		
11,300.0	5,666.9	11,522.2	5,753.0	116.6	115.7	105.97	-6,115.0	-712.9	378.0	154.0	224.01	1.688		
11,400.0	5,666.9	11,622.2	5,753.0	118.5	117.6	105.97	-6,215.0	-713.0	378.1	150.4	227.69	1.660		
11,500.0	5,667.0	11,722.2	5,753.0	120.4	119.5	105.97	-6,315.0	-713.0	378.1	146.7	231.38	1.634		
11,600.0	5,667.0	11,822.2	5,753.0	122.3	121.4	105.97	-6,415.0	-713.0	378.1	143.0	235.07	1.608		
11,700.0	5,667.0	11,922.2	5,753.0	124.2	123.3	105.97	-6,515.0	-713.0	378.1	139.3	238.76	1.584		
11,800.0	5,667.0	12,022.2	5,753.0	126.1	125.2	105.97	-6,615.0	-713.0	378.1	135.7	242.45	1.560		
11,900.0	5,667.0	12,122.2	5,753.0	128.0	127.1	105.97	-6,715.0	-713.0	378.1	132.0	246.14	1.536		
12,000.0	5,667.0	12,222.2	5,753.0	129.9	129.0	105.96	-6,815.0	-713.0	378.1	128.3	249.84	1.514		
12,100.0	5,667.0	12,322.2	5,753.0	131.8	130.9	105.96	-6,915.0	-713.0	378.2	124.6	253.53	1.492	Level 3	
12,200.0	5,667.0	12,422.2	5,753.0	133.7	132.8	105.96	-7,015.0	-713.0	378.2	120.9	257.22	1.470	Level 3	
12,216.7	5,667.0	12,438.9	5,753.0	134.0	133.1	105.96	-7,031.7	-713.0	378.2	120.3	257.84	1.467	Level 3, ES, SF	

Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S27-T10N-R58W
Site Error: 0.0ft
Reference Well: Razor #27J-3409A
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #3

Local Co-ordinate Reference: Well Razor #27J-3409A
TVD Reference: WELL @ 4783.5ft (Original Well Elev)
MD Reference: WELL @ 4783.5ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4783.5ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor #27J-3409A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.07°

