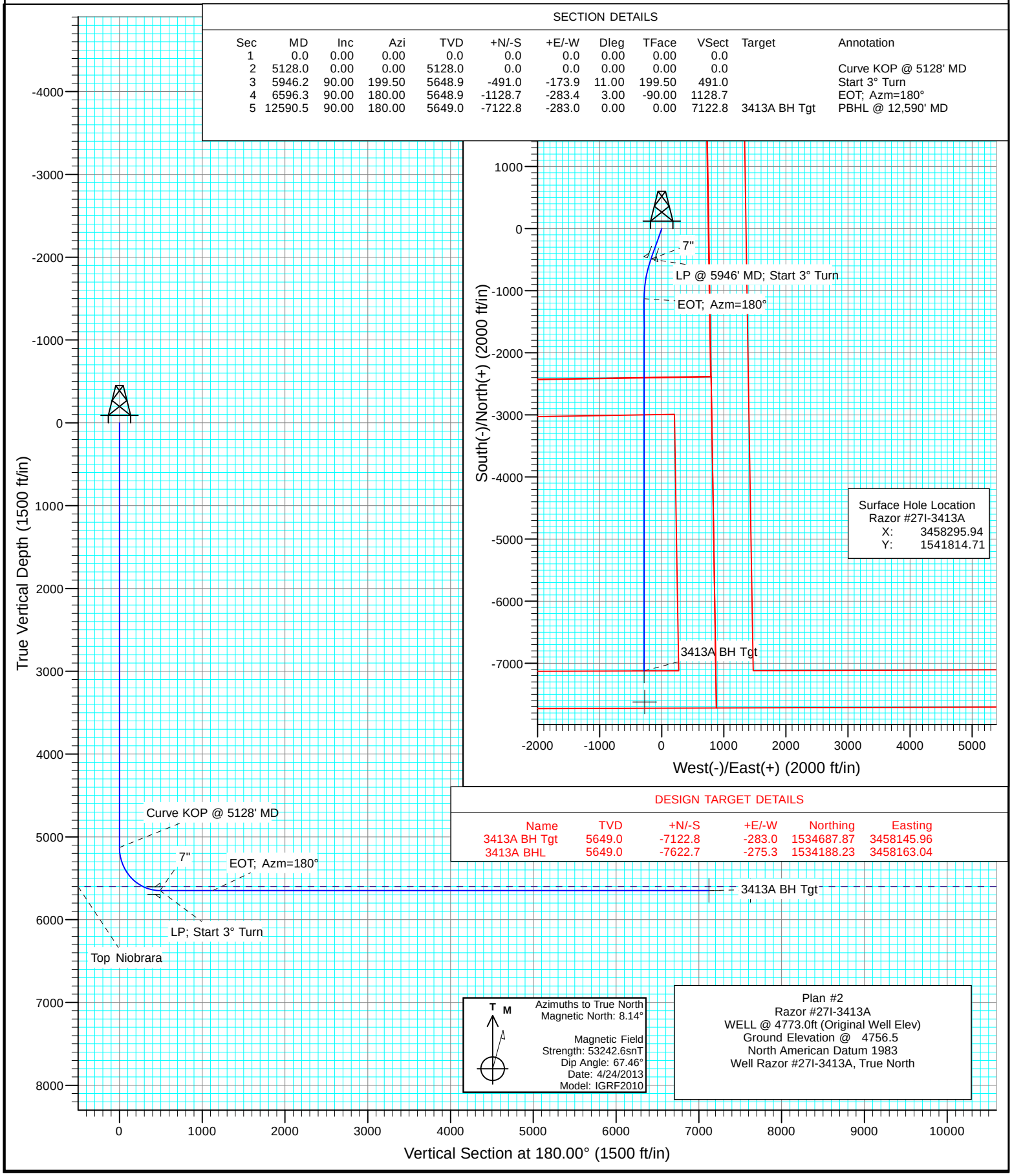
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27I-3413A
Wellbore: HZ
Design: Plan #2

CATHEDRAL

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	5128.0	0.00	0.00	5128.0	0.0	0.0	0.00	0.00	0.0		Curve KOP @ 5128' MD
3	5946.2	90.00	199.50	5648.9	-491.0	-173.9	11.00	199.50	491.0		Start 3° Turn
4	6596.3	90.00	180.00	5648.9	-1128.7	-283.4	3.00	-90.00	1128.7		EOT; Azm=180°
5	12590.5	90.00	180.00	5649.0	-7122.8	-283.0	0.00	0.00	7122.8	3413A BH Tgt	PBHL @ 12,590' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
3413A BH Tgt	5649.0	-7122.8	-283.0	1534687.87	3458145.96
3413A BHL	5649.0	-7622.7	-275.3	1534188.23	3458163.04

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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:**	1,541,647.64 usft	**Latitude:**	40° 48' 30.94 N
From:	Lat/Long	**Easting:**	3,455,684.98 usft	**Longitude:**	103° 51' 13.80 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.06 °

Well Razor #27I-3413A

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,541,811.63 usft	**Latitude:**	40° 48' 32.08 N
	+E/-W	0.0 usft	**Easting:**	3,458,289.02 usft	**Longitude:**	103° 50' 39.90 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,756.5 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/24/2013	8.14	67.46	53,243

Design Plan #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.00

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,128.0	0.00	0.00	5,128.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,946.2	90.00	199.50	5,648.9	-491.0	-173.9	11.00	11.00	0.00	199.50	
6,596.3	90.00	180.00	5,648.9	-1,128.7	-283.4	3.00	0.00	-3.00	-90.00	
12,590.4	90.00	180.00	5,649.0	-7,122.8	-283.0	0.00	0.00	0.00	0.00	3413A BH Tgt

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Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	

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Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
5,128.0	0.00	0.00	5,128.0	0.0	0.0	0.0	0.00	0.00	Curve KOP @ 5128' MD
5,200.0	7.92	199.50	5,199.8	-4.7	-1.7	4.7	11.00	11.00	
5,300.0	18.92	199.50	5,296.9	-26.5	-9.4	26.5	11.00	11.00	
5,400.0	29.92	199.50	5,387.8	-65.4	-23.2	65.4	11.00	11.00	
5,500.0	40.92	199.50	5,469.2	-120.0	-42.5	120.0	11.00	11.00	
5,600.0	51.92	199.50	5,538.0	-188.2	-66.6	188.2	11.00	11.00	
5,700.0	62.92	199.50	5,591.8	-267.5	-94.7	267.5	11.00	11.00	
5,718.7	64.98	199.50	5,600.0	-283.4	-100.3	283.4	11.00	11.00	Top Niobrara
5,800.0	73.92	199.50	5,628.5	-355.0	-125.7	355.0	11.00	11.00	
5,900.0	84.92	199.50	5,646.8	-447.5	-158.5	447.5	11.00	11.00	
5,946.2	90.00	199.50	5,648.9	-491.0	-173.9	491.0	11.00	11.00	Start 3° Turn - 7"
6,000.0	90.00	197.89	5,648.9	-542.0	-191.1	542.0	3.00	0.00	
6,100.0	90.00	194.89	5,648.9	-637.9	-219.3	637.9	3.00	0.00	
6,200.0	90.00	191.89	5,648.9	-735.2	-242.5	735.2	3.00	0.00	
6,300.0	90.00	188.89	5,648.9	-833.5	-260.5	833.5	3.00	0.00	
6,400.0	90.00	185.89	5,648.9	-932.7	-273.3	932.7	3.00	0.00	
6,500.0	90.00	182.89	5,648.9	-1,032.4	-281.0	1,032.4	3.00	0.00	
6,596.3	90.00	180.00	5,648.9	-1,128.6	-283.4	1,128.6	3.00	0.00	EOT; Azm=180°
6,600.0	90.00	180.00	5,648.9	-1,132.3	-283.4	1,132.3	0.01	0.00	
6,700.0	90.00	180.00	5,648.9	-1,232.3	-283.4	1,232.3	0.00	0.00	
6,800.0	90.00	180.00	5,648.9	-1,332.3	-283.4	1,332.3	0.00	0.00	
6,900.0	90.00	180.00	5,648.9	-1,432.3	-283.4	1,432.3	0.00	0.00	
7,000.0	90.00	180.00	5,648.9	-1,532.3	-283.4	1,532.3	0.00	0.00	
7,100.0	90.00	180.00	5,648.9	-1,632.3	-283.4	1,632.3	0.00	0.00	
7,200.0	90.00	180.00	5,648.9	-1,732.3	-283.4	1,732.3	0.00	0.00	
7,300.0	90.00	180.00	5,648.9	-1,832.3	-283.4	1,832.3	0.00	0.00	
7,400.0	90.00	180.00	5,648.9	-1,932.3	-283.4	1,932.3	0.00	0.00	
7,500.0	90.00	180.00	5,648.9	-2,032.3	-283.4	2,032.3	0.00	0.00	
7,600.0	90.00	180.00	5,648.9	-2,132.3	-283.3	2,132.3	0.00	0.00	
7,700.0	90.00	180.00	5,648.9	-2,232.3	-283.3	2,232.3	0.00	0.00	
7,800.0	90.00	180.00	5,648.9	-2,332.3	-283.3	2,332.3	0.00	0.00	
7,900.0	90.00	180.00	5,648.9	-2,432.3	-283.3	2,432.3	0.00	0.00	
8,000.0	90.00	180.00	5,648.9	-2,532.3	-283.3	2,532.3	0.00	0.00	
8,100.0	90.00	180.00	5,648.9	-2,632.3	-283.3	2,632.3	0.00	0.00	
8,200.0	90.00	180.00	5,648.9	-2,732.3	-283.3	2,732.3	0.00	0.00	
8,300.0	90.00	180.00	5,648.9	-2,832.3	-283.3	2,832.3	0.00	0.00	
8,400.0	90.00	180.00	5,648.9	-2,932.3	-283.3	2,932.3	0.00	0.00	
8,500.0	90.00	180.00	5,648.9	-3,032.3	-283.3	3,032.3	0.00	0.00	
8,600.0	90.00	180.00	5,648.9	-3,132.3	-283.3	3,132.3	0.00	0.00	
8,700.0	90.00	180.00	5,648.9	-3,232.3	-283.3	3,232.3	0.00	0.00	
8,800.0	90.00	180.00	5,648.9	-3,332.3	-283.3	3,332.3	0.00	0.00	
8,900.0	90.00	180.00	5,648.9	-3,432.3	-283.3	3,432.3	0.00	0.00	
9,000.0	90.00	180.00	5,648.9	-3,532.3	-283.3	3,532.3	0.00	0.00	
9,100.0	90.00	180.00	5,648.9	-3,632.3	-283.2	3,632.3	0.00	0.00	
9,200.0	90.00	180.00	5,648.9	-3,732.3	-283.2	3,732.3	0.00	0.00	
9,300.0	90.00	180.00	5,648.9	-3,832.3	-283.2	3,832.3	0.00	0.00	
9,400.0	90.00	180.00	5,648.9	-3,932.3	-283.2	3,932.3	0.00	0.00	
9,500.0	90.00	180.00	5,648.9	-4,032.3	-283.2	4,032.3	0.00	0.00	
9,600.0	90.00	180.00	5,648.9	-4,132.3	-283.2	4,132.3	0.00	0.00	
9,700.0	90.00	180.00	5,648.9	-4,232.3	-283.2	4,232.3	0.00	0.00	
9,800.0	90.00	180.00	5,648.9	-4,332.3	-283.2	4,332.3	0.00	0.00	
9,900.0	90.00	180.00	5,648.9	-4,432.3	-283.2	4,432.3	0.00	0.00	

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Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
10,000.0	90.00	180.00	5,648.9	-4,532.3	-283.2	4,532.3	0.00	0.00	
10,100.0	90.00	180.00	5,648.9	-4,632.3	-283.2	4,632.3	0.00	0.00	
10,200.0	90.00	180.00	5,649.0	-4,732.3	-283.2	4,732.3	0.00	0.00	
10,300.0	90.00	180.00	5,649.0	-4,832.3	-283.2	4,832.3	0.00	0.00	
10,400.0	90.00	180.00	5,649.0	-4,932.3	-283.2	4,932.3	0.00	0.00	
10,500.0	90.00	180.00	5,649.0	-5,032.3	-283.1	5,032.3	0.00	0.00	
10,600.0	90.00	180.00	5,649.0	-5,132.3	-283.1	5,132.3	0.00	0.00	
10,700.0	90.00	180.00	5,649.0	-5,232.3	-283.1	5,232.3	0.00	0.00	
10,800.0	90.00	180.00	5,649.0	-5,332.3	-283.1	5,332.3	0.00	0.00	
10,900.0	90.00	180.00	5,649.0	-5,432.3	-283.1	5,432.3	0.00	0.00	
11,000.0	90.00	180.00	5,649.0	-5,532.3	-283.1	5,532.3	0.00	0.00	
11,100.0	90.00	180.00	5,649.0	-5,632.3	-283.1	5,632.3	0.00	0.00	
11,200.0	90.00	180.00	5,649.0	-5,732.3	-283.1	5,732.3	0.00	0.00	
11,300.0	90.00	180.00	5,649.0	-5,832.3	-283.1	5,832.3	0.00	0.00	
11,400.0	90.00	180.00	5,649.0	-5,932.3	-283.1	5,932.3	0.00	0.00	
11,500.0	90.00	180.00	5,649.0	-6,032.3	-283.1	6,032.3	0.00	0.00	
11,600.0	90.00	180.00	5,649.0	-6,132.3	-283.1	6,132.3	0.00	0.00	
11,700.0	90.00	180.00	5,649.0	-6,232.3	-283.1	6,232.3	0.00	0.00	
11,800.0	90.00	180.00	5,649.0	-6,332.3	-283.1	6,332.3	0.00	0.00	
11,900.0	90.00	180.00	5,649.0	-6,432.3	-283.1	6,432.3	0.00	0.00	
12,000.0	90.00	180.00	5,649.0	-6,532.3	-283.0	6,532.3	0.00	0.00	
12,100.0	90.00	180.00	5,649.0	-6,632.3	-283.0	6,632.3	0.00	0.00	
12,200.0	90.00	180.00	5,649.0	-6,732.3	-283.0	6,732.3	0.00	0.00	
12,300.0	90.00	180.00	5,649.0	-6,832.3	-283.0	6,832.3	0.00	0.00	
12,400.0	90.00	180.00	5,649.0	-6,932.3	-283.0	6,932.3	0.00	0.00	
12,500.0	90.00	180.00	5,649.0	-7,032.3	-283.0	7,032.3	0.00	0.00	
12,590.4	90.00	180.00	5,649.0	-7,122.7	-283.0	7,122.7	0.00	0.00	PBHL @ 12,590' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
3413A BHL	0.00	0.00	5,649.0	-7,622.7	-275.3	1,534,185.17	3,458,156.12	40° 47' 16.76 N	103° 50' 43.48 W
- plan misses target center by 500.0usft at 12590.4usft MD (5649.0 TVD, -7122.7 N, -283.0 E)									
- Point									
3413A BH Tgt	0.00	0.00	5,649.0	-7,122.8	-283.0	1,534,684.80	3,458,139.04	40° 47' 21.70 N	103° 50' 43.58 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,946.2	5,648.9	7"	0	0

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,718.7	5,600.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,128.0	5,128.0	0.0	0.0	Curve KOP @ 5128' MD
5,946.2	5,648.9	-491.0	-173.9	Start 3° Turn
6,596.3	5,648.9	-1,128.6	-283.4	EOT; Azm=180°
12,590.4	5,649.0	-7,122.7	-283.0	PBHL @ 12,590' MD

Whiting Petroleum Corporation

Weld County, CO
S27-T10N-R58W
Razor #27I-3413A
HZ
Plan #2

Anticollision Report

18 June, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Plan #2

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 6/18/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,589.5	Plan #2 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S27-T10N-R58W						
Razor #27I-2213A - HZ - Plan #2	1,338.9	1,339.4	28.7	23.0	4.987	CC
Razor #27I-2213A - HZ - Plan #2	5,128.0	5,128.8	30.8	8.2	1.360	Level 3, ES, SF
Razor #27I-2214B - HZ - Plan #3	765.3	766.1	70.2	67.2	23.530	CC
Razor #27I-2214B - HZ - Plan #3	800.0	800.7	70.2	67.1	22.415	ES
Razor #27I-2214B - HZ - Plan #3	5,350.0	5,338.4	213.7	192.6	10.138	SF
Razor #27I-2215A - HZ - Plan #1	5,128.0	5,128.0	99.4	79.1	4.892	CC, ES
Razor #27I-2215A - HZ - Plan #1	5,150.0	5,149.9	99.6	79.1	4.869	SF
Razor #27I-2216B - HZ - Plan #2	685.9	686.0	99.6	97.0	38.458	CC
Razor #27I-2216B - HZ - Plan #2	800.0	799.9	99.9	96.9	32.628	ES
Razor #27I-2216B - HZ - Plan #2	5,200.0	5,210.3	320.6	299.6	15.285	SF
Razor #27I-3414B - HZ - Plan #1	5,358.8	5,341.5	67.0	43.7	2.872	CC, ES
Razor #27I-3414B - HZ - Plan #1	12,590.4	12,560.8	348.8	85.1	1.323	Level 3, SF
Razor #27I-3415A - HZ - Plan #1	5,128.0	5,128.0	66.2	43.4	2.903	CC, ES
Razor #27I-3415A - HZ - Plan #1	12,590.4	12,599.6	667.7	394.8	2.447	SF
Razor #27I-3416B - HZ - Plan #2	500.0	500.0	124.3	122.3	62.610	CC, ES
Razor #27I-3416B - HZ - Plan #2	12,590.4	12,442.8	997.1	726.6	3.686	SF
Razor #27J-2211A - HZ - Plan #2	5,744.7	5,418.4	1,110.4	1,085.3	44.134	CC
Razor #27J-2211A - HZ - Plan #2	5,750.0	5,418.1	1,110.4	1,085.2	44.070	ES
Razor #27J-2211A - HZ - Plan #2	6,300.0	5,350.0	1,228.9	1,198.3	40.212	SF
Razor #27J-2212B - HZ - Plan #2	5,722.0	5,600.0	1,003.5	977.4	38.336	CC, ES
Razor #27J-2212B - HZ - Plan #2	6,100.0	5,484.4	1,060.9	1,031.7	36.350	SF
Razor #27J-3409A - Hz - Plan #3	6,232.8	5,568.6	1,179.4	1,145.4	34.597	CC
Razor #27J-3409A - Hz - Plan #3	12,590.4	12,212.7	1,320.1	1,051.5	4.915	ES, SF
Razor #27J-3410B - HZ - Plan #3	6,517.8	6,370.2	978.6	935.8	22.909	CC
Razor #27J-3410B - HZ - Plan #3	12,590.4	12,483.1	994.6	727.8	3.727	ES, SF
Razor #27J-3411A - HZ - Plan #3	6,835.6	6,435.3	659.5	604.7	12.055	CC
Razor #27J-3411A - HZ - Plan #3	12,590.4	12,190.1	659.9	390.8	2.452	ES, SF
Razor #27J-3412B - HZ - Plan #3	7,231.8	6,917.5	343.0	278.0	5.275	CC
Razor #27J-3412B - HZ - Plan #3	12,590.4	12,276.2	343.9	85.6	1.331	Level 3, ES, SF
Razor #27K-3408B - HZ - Plan #3	7,157.4	7,001.6	1,686.1	1,621.5	26.108	CC
Razor #27K-3408B - HZ - Plan #3	12,590.4	12,434.7	1,687.3	1,420.5	6.324	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2213A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.12	1.1	33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	88.12	1.1	33.2	33.2	33.0	0.19	177.097	
200.0	200.0	200.0	200.0	0.3	0.3	88.12	1.1	33.2	33.2	32.6	0.64	52.161	
300.0	300.0	300.0	300.0	0.5	0.5	88.12	1.1	33.2	33.2	32.2	1.09	30.585	
400.0	400.0	400.0	400.0	0.8	0.8	88.12	1.1	33.2	33.2	31.7	1.54	21.635	
500.0	500.0	500.0	500.0	1.0	1.0	88.12	1.1	33.2	33.2	31.3	1.99	16.738	
600.0	600.0	600.0	600.0	1.2	1.2	88.12	1.1	33.2	33.2	30.8	2.44	13.648	
700.0	700.0	700.0	700.0	1.4	1.4	88.12	1.1	33.2	33.2	30.4	2.88	11.521	
800.0	800.0	800.0	800.0	1.7	1.7	88.12	1.1	33.2	33.2	29.9	3.33	9.968	
900.0	900.0	900.0	900.0	1.9	1.9	88.12	1.1	33.2	33.2	29.5	3.78	8.784	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	88.12	1.1	33.2	33.2	29.0	4.23	7.851	
1,100.0	1,100.0	1,100.5	1,100.5	2.3	2.3	85.42	2.6	32.3	32.4	27.7	4.68	6.919	
1,200.0	1,200.0	1,200.8	1,200.7	2.6	2.6	76.54	7.1	29.5	30.3	25.2	5.13	5.912	
1,300.0	1,300.0	1,300.6	1,300.2	2.8	2.8	63.33	13.0	25.8	28.9	23.3	5.58	5.169	
1,338.9	1,338.9	1,339.4	1,338.9	2.9	2.9	57.95	15.2	24.4	28.7	23.0	5.76	4.987	CC
1,400.0	1,400.0	1,400.4	1,399.7	3.0	3.0	49.53	18.9	22.1	29.1	23.0	6.04	4.808	
1,500.0	1,500.0	1,500.5	1,499.7	3.2	3.2	39.70	23.3	19.3	30.3	23.8	6.47	4.677	
1,600.0	1,600.0	1,600.8	1,600.0	3.5	3.4	36.65	24.7	18.4	30.8	24.0	6.87	4.489	
1,700.0	1,700.0	1,700.8	1,700.0	3.7	3.6	36.65	24.7	18.4	30.8	23.5	7.29	4.228	
1,800.0	1,800.0	1,800.8	1,800.0	3.9	3.8	36.65	24.7	18.4	30.8	23.1	7.74	3.984	
1,900.0	1,900.0	1,900.8	1,900.0	4.1	4.1	36.65	24.7	18.4	30.8	22.7	8.19	3.766	
2,000.0	2,000.0	2,000.8	2,000.0	4.4	4.3	36.65	24.7	18.4	30.8	22.2	8.64	3.571	
2,100.0	2,100.0	2,100.8	2,100.0	4.6	4.5	36.65	24.7	18.4	30.8	21.8	9.08	3.395	
2,200.0	2,200.0	2,200.8	2,200.0	4.8	4.7	36.65	24.7	18.4	30.8	21.3	9.53	3.236	
2,300.0	2,300.0	2,300.8	2,300.0	5.0	4.9	36.65	24.7	18.4	30.8	20.9	9.98	3.090	
2,400.0	2,400.0	2,400.8	2,400.0	5.3	5.2	36.65	24.7	18.4	30.8	20.4	10.43	2.958	
2,500.0	2,500.0	2,500.8	2,500.0	5.5	5.4	36.65	24.7	18.4	30.8	20.0	10.88	2.836	
2,600.0	2,600.0	2,600.8	2,600.0	5.7	5.6	36.65	24.7	18.4	30.8	19.5	11.33	2.723	
2,700.0	2,700.0	2,700.8	2,700.0	5.9	5.8	36.65	24.7	18.4	30.8	19.1	11.77	2.620	
2,800.0	2,800.0	2,800.8	2,800.0	6.2	6.1	36.65	24.7	18.4	30.8	18.6	12.22	2.524	
2,900.0	2,900.0	2,900.8	2,900.0	6.4	6.3	36.65	24.7	18.4	30.8	18.2	12.67	2.434	
3,000.0	3,000.0	3,000.8	3,000.0	6.6	6.5	36.65	24.7	18.4	30.8	17.7	13.12	2.351	
3,100.0	3,100.0	3,100.8	3,100.0	6.8	6.7	36.65	24.7	18.4	30.8	17.3	13.57	2.273	
3,200.0	3,200.0	3,200.8	3,200.0	7.1	7.0	36.65	24.7	18.4	30.8	16.8	14.02	2.200	
3,300.0	3,300.0	3,300.8	3,300.0	7.3	7.2	36.65	24.7	18.4	30.8	16.4	14.47	2.132	
3,400.0	3,400.0	3,400.8	3,400.0	7.5	7.4	36.65	24.7	18.4	30.8	15.9	14.92	2.068	
3,500.0	3,500.0	3,500.8	3,500.0	7.7	7.6	36.65	24.7	18.4	30.8	15.5	15.36	2.008	
3,600.0	3,600.0	3,600.8	3,600.0	8.0	7.9	36.65	24.7	18.4	30.8	15.0	15.81	1.951	
3,700.0	3,700.0	3,700.8	3,700.0	8.2	8.1	36.65	24.7	18.4	30.8	14.6	16.26	1.897	
3,800.0	3,800.0	3,800.8	3,800.0	8.4	8.3	36.65	24.7	18.4	30.8	14.1	16.71	1.846	
3,900.0	3,900.0	3,900.8	3,900.0	8.6	8.5	36.65	24.7	18.4	30.8	13.7	17.16	1.797	
4,000.0	4,000.0	4,000.8	4,000.0	8.9	8.7	36.65	24.7	18.4	30.8	13.2	17.61	1.752	
4,100.0	4,100.0	4,100.8	4,100.0	9.1	9.0	36.65	24.7	18.4	30.8	12.8	18.06	1.708	
4,200.0	4,200.0	4,200.8	4,200.0	9.3	9.2	36.65	24.7	18.4	30.8	12.3	18.51	1.667	
4,300.0	4,300.0	4,300.8	4,300.0	9.5	9.4	36.65	24.7	18.4	30.8	11.9	18.96	1.627	
4,400.0	4,400.0	4,400.8	4,400.0	9.8	9.6	36.65	24.7	18.4	30.8	11.4	19.41	1.589	
4,500.0	4,500.0	4,500.8	4,500.0	10.0	9.9	36.65	24.7	18.4	30.8	11.0	19.86	1.553	
4,600.0	4,600.0	4,600.8	4,600.0	10.2	10.1	36.65	24.7	18.4	30.8	10.5	20.30	1.519	
4,700.0	4,700.0	4,700.8	4,700.0	10.4	10.3	36.65	24.7	18.4	30.8	10.1	20.75	1.486	Level 3
4,800.0	4,800.0	4,800.8	4,800.0	10.7	10.5	36.65	24.7	18.4	30.8	9.6	21.20	1.455	Level 3
4,900.0	4,900.0	4,900.8	4,900.0	10.9	10.8	36.65	24.7	18.4	30.8	9.2	21.65	1.425	Level 3

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2213A - HZ - Plan #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-ISCWSA MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.0	5,000.0	5,000.8	5,000.0	11.1	11.0	36.65	24.7	18.4	30.8	8.7	22.10	1.396	Level 3
5,100.0	5,100.0	5,100.8	5,100.0	11.3	11.2	36.65	24.7	18.4	30.8	8.3	22.55	1.368	Level 3
5,128.0	5,128.0	5,128.8	5,128.0	11.4	11.3	36.65	24.7	18.4	30.8	8.2	22.68	1.360	Level 3, ES, SF
5,150.0	5,150.0	5,150.0	5,149.2	11.4	11.3	-163.77	25.1	18.2	31.5	8.7	22.75	1.383	Level 3
5,200.0	5,199.8	5,198.3	5,197.3	11.5	11.4	-171.41	28.6	16.0	37.8	15.0	22.76	1.659	
5,250.0	5,248.9	5,243.4	5,241.7	11.6	11.5	179.23	35.3	11.8	51.9	29.4	22.57	2.302	
5,300.0	5,296.9	5,284.2	5,281.1	11.7	11.6	172.02	44.1	6.3	74.1	51.9	22.19	3.337	
5,350.0	5,343.3	5,319.8	5,314.8	11.8	11.7	166.92	53.9	0.1	103.2	81.5	21.68	4.759	
5,400.0	5,387.8	5,350.0	5,342.6	11.9	11.8	162.96	63.8	-6.0	138.0	116.9	21.04	6.558	
5,450.0	5,429.9	5,374.6	5,364.8	12.0	11.9	159.33	72.8	-11.7	177.3	157.0	20.33	8.722	
5,500.0	5,469.2	5,400.0	5,387.2	12.2	12.0	155.24	83.0	-18.1	220.3	200.6	19.68	11.195	
5,550.0	5,505.3	5,409.1	5,395.0	12.4	12.0	149.90	86.9	-20.5	265.7	246.5	19.28	13.783	
5,600.0	5,538.0	5,419.9	5,404.3	12.6	12.0	141.49	91.7	-23.5	313.2	293.5	19.66	15.927	
5,650.0	5,566.9	5,427.0	5,410.3	12.9	12.1	126.37	94.9	-25.5	361.8	340.1	21.71	16.667	
5,700.0	5,591.8	5,430.9	5,413.5	13.2	12.1	97.88	96.7	-26.7	411.1	386.1	25.01	16.440	
5,750.0	5,612.4	5,432.0	5,414.4	13.6	12.1	60.62	97.2	-27.0	460.7	437.7	22.99	20.037	
5,800.0	5,628.5	5,430.4	5,413.1	14.1	12.1	35.61	96.5	-26.5	510.0	492.8	17.14	29.755	
5,850.0	5,640.0	5,426.7	5,410.0	14.6	12.1	22.65	94.8	-25.4	558.7	545.8	12.92	43.242	
5,900.0	5,646.8	5,420.8	5,405.0	15.1	12.0	15.49	92.1	-23.8	606.5	596.1	10.38	58.442	
5,946.2	5,648.9	5,413.8	5,399.1	15.6	12.0	11.38	89.0	-21.8	649.5	640.4	9.13	71.182	
6,000.0	5,648.9	5,400.0	5,387.2	16.3	12.0	5.95	83.0	-18.1	699.3	691.1	8.26	84.698	
6,100.0	5,648.9	5,400.0	5,387.2	17.4	12.0	-2.03	83.0	-18.1	792.9	784.6	8.38	94.669	
6,200.0	5,648.9	5,373.7	5,364.0	18.7	11.9	-11.84	72.5	-11.5	887.0	876.3	10.71	82.839	
6,300.0	5,648.9	5,350.0	5,342.6	20.1	11.8	-20.22	63.8	-6.0	981.7	967.6	14.10	69.628	
6,400.0	5,648.9	5,350.0	5,342.6	21.5	11.8	-28.13	63.8	-6.0	1,076.2	1,058.3	17.89	60.144	
6,500.0	5,648.9	5,333.6	5,327.6	23.0	11.8	-34.79	58.3	-2.6	1,170.6	1,149.2	21.41	54.672	
6,596.3	5,648.9	5,322.5	5,317.3	24.4	11.7	-40.49	54.8	-0.4	1,261.2	1,236.6	24.59	51.287	
6,600.0	5,648.9	5,322.1	5,316.9	24.5	11.7	-40.47	54.6	-0.3	1,264.6	1,240.0	24.62	51.362	
6,700.0	5,648.9	5,300.0	5,296.1	26.0	11.7	-39.16	48.2	3.7	1,358.9	1,333.8	25.18	53.966	
6,800.0	5,648.9	5,300.0	5,296.1	27.6	11.7	-39.16	48.2	3.7	1,453.6	1,427.2	26.32	55.216	
6,900.0	5,648.9	5,300.0	5,296.1	29.2	11.7	-39.16	48.2	3.7	1,548.9	1,521.4	27.49	56.336	
7,000.0	5,648.9	5,300.0	5,296.1	30.9	11.7	-39.16	48.2	3.7	1,644.7	1,616.0	28.68	57.343	
7,100.0	5,648.9	5,278.6	5,275.8	32.5	11.6	-37.92	42.8	7.1	1,740.6	1,711.3	29.26	59.483	
7,200.0	5,648.9	5,272.1	5,269.5	34.3	11.6	-37.55	41.2	8.1	1,837.0	1,806.7	30.27	60.692	
7,300.0	5,648.9	5,250.0	5,248.1	36.0	11.6	-36.31	36.5	11.0	1,933.9	1,903.1	30.80	62.796	
7,400.0	5,648.9	5,250.0	5,248.1	37.7	11.6	-36.31	36.5	11.0	2,030.7	1,998.7	31.99	63.479	
7,500.0	5,648.9	5,250.0	5,248.1	39.5	11.6	-36.31	36.5	11.0	2,127.8	2,094.6	33.19	64.106	
7,600.0	5,648.9	5,250.0	5,248.1	41.3	11.6	-36.31	36.5	11.0	2,225.2	2,190.8	34.40	64.683	
7,700.0	5,648.9	5,250.0	5,248.1	43.0	11.6	-36.31	36.5	11.0	2,322.7	2,287.1	35.62	65.214	
7,800.0	5,648.9	5,250.0	5,248.1	44.8	11.6	-36.31	36.5	11.0	2,420.5	2,383.7	36.84	65.706	
7,900.0	5,648.9	5,250.0	5,248.1	46.7	11.6	-36.31	36.5	11.0	2,518.5	2,480.4	38.06	66.163	
8,000.0	5,648.9	5,250.0	5,248.1	48.5	11.6	-36.31	36.5	11.0	2,616.6	2,577.3	39.30	66.587	
8,100.0	5,648.9	5,250.0	5,248.1	50.3	11.6	-36.31	36.5	11.0	2,714.8	2,674.3	40.53	66.982	
8,200.0	5,648.9	5,228.6	5,227.2	52.1	11.5	-35.15	32.7	13.4	2,812.7	2,771.8	40.93	68.718	
8,300.0	5,648.9	5,225.6	5,224.3	54.0	11.5	-34.99	32.3	13.7	2,911.1	2,869.1	42.03	69.256	
8,400.0	5,648.9	5,222.8	5,221.5	55.8	11.5	-34.84	31.8	14.0	3,009.6	2,966.4	43.14	69.764	
8,500.0	5,648.9	5,200.0	5,199.0	57.7	11.4	-33.64	28.8	15.9	3,108.5	3,065.0	43.41	71.599	
8,600.0	5,648.9	5,200.0	5,199.0	59.5	11.4	-33.64	28.8	15.9	3,207.0	3,162.4	44.61	71.887	
8,700.0	5,648.9	5,200.0	5,199.0	61.4	11.4	-33.64	28.8	15.9	3,305.6	3,259.8	45.81	72.159	
8,800.0	5,648.9	5,200.0	5,199.0	63.2	11.4	-33.64	28.8	15.9	3,404.3	3,357.3	47.01	72.416	
8,900.0	5,648.9	5,200.0	5,199.0	65.1	11.4	-33.64	28.8	15.9	3,503.1	3,454.9	48.21	72.659	
9,000.0	5,648.9	5,200.0	5,199.0	67.0	11.4	-33.64	28.8	15.9	3,601.9	3,552.5	49.42	72.890	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2213A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	5,648.9	5,200.0	5,199.0	68.8	11.4	-33.64	28.8	15.9	3,700.8	3,650.2	50.62	73.109	
9,200.0	5,648.9	5,200.0	5,199.0	70.7	11.4	-33.64	28.8	15.9	3,799.8	3,747.9	51.83	73.317	
9,300.0	5,648.9	5,200.0	5,199.0	72.6	11.4	-33.64	28.8	15.9	3,898.8	3,845.7	53.03	73.515	
9,400.0	5,648.9	5,200.0	5,199.0	74.5	11.4	-33.64	28.8	15.9	3,997.8	3,943.6	54.24	73.704	
9,500.0	5,648.9	5,200.0	5,199.0	76.3	11.4	-33.64	28.8	15.9	4,096.9	4,041.5	55.45	73.884	
9,600.0	5,648.9	5,200.0	5,199.0	78.2	11.4	-33.64	28.8	15.9	4,196.1	4,139.4	56.66	74.055	
9,700.0	5,648.9	5,200.0	5,199.0	80.1	11.4	-33.64	28.8	15.9	4,295.3	4,237.4	57.87	74.220	
9,800.0	5,648.9	5,200.0	5,199.0	82.0	11.4	-33.64	28.8	15.9	4,394.5	4,335.4	59.08	74.377	
9,900.0	5,648.9	5,200.0	5,199.0	83.9	11.4	-33.64	28.8	15.9	4,493.7	4,433.4	60.30	74.527	
10,000.0	5,648.9	5,200.0	5,199.0	85.8	11.4	-33.64	28.8	15.9	4,593.0	4,531.5	61.51	74.672	
10,100.0	5,648.9	5,200.0	5,199.0	87.7	11.4	-33.64	28.8	15.9	4,692.4	4,629.6	62.72	74.810	
10,200.0	5,649.0	5,200.0	5,199.0	89.6	11.4	-33.64	28.8	15.9	4,791.7	4,727.8	63.94	74.943	
10,300.0	5,649.0	5,200.0	5,199.0	91.4	11.4	-33.64	28.8	15.9	4,891.1	4,825.9	65.15	75.071	
10,400.0	5,649.0	5,200.0	5,199.0	93.3	11.4	-33.64	28.8	15.9	4,990.5	4,924.1	66.37	75.194	
10,500.0	5,649.0	5,200.0	5,199.0	95.2	11.4	-33.64	28.8	15.9	5,089.9	5,022.3	67.58	75.312	
10,600.0	5,649.0	5,200.0	5,199.0	97.1	11.4	-33.64	28.8	15.9	5,189.3	5,120.5	68.80	75.426	
10,700.0	5,649.0	5,200.0	5,199.0	99.0	11.4	-33.64	28.8	15.9	5,288.8	5,218.8	70.02	75.535	
10,800.0	5,649.0	5,200.0	5,199.0	100.9	11.4	-33.64	28.8	15.9	5,388.3	5,317.1	71.24	75.641	
10,900.0	5,649.0	5,200.0	5,199.0	102.8	11.4	-33.64	28.8	15.9	5,487.8	5,415.3	72.45	75.743	
11,000.0	5,649.0	5,200.0	5,199.0	104.7	11.4	-33.64	28.8	15.9	5,587.3	5,513.7	73.67	75.842	
11,100.0	5,649.0	5,200.0	5,199.0	106.6	11.4	-33.64	28.8	15.9	5,686.9	5,612.0	74.89	75.937	
11,200.0	5,649.0	5,200.0	5,199.0	108.5	11.4	-33.64	28.8	15.9	5,786.4	5,710.3	76.11	76.029	
11,300.0	5,649.0	5,200.0	5,199.0	110.4	11.4	-33.64	28.8	15.9	5,886.0	5,808.7	77.33	76.118	
11,400.0	5,649.0	5,200.0	5,199.0	112.3	11.4	-33.64	28.8	15.9	5,985.6	5,907.0	78.55	76.204	
11,500.0	5,649.0	5,200.0	5,199.0	114.2	11.4	-33.64	28.8	15.9	6,085.2	6,005.4	79.77	76.288	
11,600.0	5,649.0	5,200.0	5,199.0	116.1	11.4	-33.64	28.8	15.9	6,184.8	6,103.8	80.99	76.369	
11,700.0	5,649.0	5,177.0	5,176.2	118.0	11.4	-32.47	26.6	17.3	6,284.0	6,203.4	80.52	78.038	
11,800.0	5,649.0	5,176.3	5,175.5	119.9	11.4	-32.43	26.5	17.3	6,383.6	6,301.9	81.67	78.163	
11,900.0	5,649.0	5,175.7	5,174.8	121.9	11.4	-32.40	26.5	17.3	6,483.2	6,400.4	82.81	78.285	
12,000.0	5,649.0	5,175.0	5,174.1	123.8	11.4	-32.36	26.4	17.3	6,582.8	6,498.8	83.96	78.403	
12,100.0	5,649.0	5,174.4	5,173.5	125.7	11.4	-32.33	26.4	17.4	6,682.4	6,597.3	85.11	78.519	
12,200.0	5,649.0	5,173.7	5,172.9	127.6	11.4	-32.30	26.4	17.4	6,782.1	6,695.8	86.25	78.630	
12,300.0	5,649.0	5,173.1	5,172.3	129.5	11.4	-32.27	26.3	17.4	6,881.8	6,794.4	87.40	78.739	
12,400.0	5,649.0	5,150.0	5,149.2	131.4	11.3	-31.12	25.1	18.2	6,981.9	6,895.1	86.78	80.450	
12,500.0	5,649.0	5,150.0	5,149.2	133.3	11.3	-31.12	25.1	18.2	7,081.5	6,993.6	87.95	80.513	
12,590.4	5,649.0	5,150.0	5,149.2	134.7	11.3	-31.12	25.1	18.2	7,171.7	7,082.9	88.73	80.829	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2214B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-74.7	0.0	74.7				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-74.7	0.0	74.7	74.4	0.24	311.742	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-74.7	0.0	74.7	74.0	0.64	116.902	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-74.7	0.0	74.7	73.6	1.04	71.939	
400.0	400.0	400.9	400.8	0.8	0.7	-178.71	-74.1	-1.7	74.1	72.7	1.44	51.432	
500.0	500.0	501.5	501.3	1.0	0.9	-174.74	-72.3	-6.7	72.6	70.7	1.85	39.169	
600.0	600.0	601.2	600.8	1.2	1.1	-169.31	-69.9	-13.2	71.1	68.8	2.27	31.291	
700.0	700.0	701.0	700.3	1.4	1.3	-163.71	-67.5	-19.7	70.3	67.6	2.70	26.046	
765.3	765.3	766.1	765.3	1.6	1.4	-160.00	-65.9	-24.0	70.2	67.2	2.98	23.530	CC
800.0	800.0	800.7	799.8	1.7	1.5	-158.03	-65.1	-26.3	70.2	67.1	3.13	22.415	ES
900.0	900.0	900.5	899.3	1.9	1.7	-152.39	-62.7	-32.8	70.8	67.2	3.57	19.840	
1,000.0	1,000.0	1,000.2	998.9	2.1	1.9	-146.90	-60.4	-39.3	72.1	68.1	4.01	17.989	
1,100.0	1,100.0	1,100.0	1,098.4	2.3	2.1	-141.64	-58.0	-45.9	74.0	69.5	4.44	16.650	
1,200.0	1,200.0	1,199.8	1,197.9	2.6	2.3	-136.68	-55.6	-52.4	76.5	71.6	4.88	15.679	
1,300.0	1,300.0	1,299.5	1,297.4	2.8	2.5	-132.07	-53.2	-59.0	79.5	74.2	5.31	14.977	
1,400.0	1,400.0	1,399.3	1,396.9	3.0	2.7	-127.82	-50.8	-65.5	83.0	77.2	5.73	14.474	
1,500.0	1,500.0	1,499.0	1,496.4	3.2	2.9	-123.93	-48.5	-72.0	86.9	80.7	6.16	14.116	
1,600.0	1,600.0	1,598.8	1,595.9	3.5	3.2	-120.39	-46.1	-78.6	91.2	84.6	6.58	13.868	
1,700.0	1,700.0	1,698.5	1,695.5	3.7	3.4	-117.18	-43.7	-85.1	95.8	88.8	6.99	13.701	
1,800.0	1,800.0	1,798.3	1,795.0	3.9	3.6	-114.27	-41.3	-91.7	100.7	93.3	7.40	13.595	
1,900.0	1,900.0	1,898.0	1,894.5	4.1	3.8	-111.63	-38.9	-98.2	105.8	98.0	7.82	13.534	
2,000.0	2,000.0	1,997.8	1,994.0	4.4	4.0	-109.24	-36.6	-104.7	111.1	102.9	8.23	13.507	
2,100.0	2,100.0	2,097.6	2,093.5	4.6	4.2	-107.08	-34.2	-111.3	116.6	108.0	8.63	13.505	
2,200.0	2,200.0	2,197.3	2,193.0	4.8	4.4	-105.11	-31.8	-117.8	122.2	113.2	9.04	13.522	
2,300.0	2,300.0	2,297.1	2,292.5	5.0	4.6	-103.31	-29.4	-124.4	128.0	118.6	9.45	13.553	
2,400.0	2,400.0	2,396.8	2,392.0	5.3	4.8	-101.67	-27.0	-130.9	133.9	124.0	9.85	13.594	
2,500.0	2,500.0	2,496.6	2,491.6	5.5	5.1	-100.17	-24.7	-137.4	139.9	129.6	10.25	13.642	
2,600.0	2,600.0	2,596.3	2,591.1	5.7	5.3	-98.80	-22.3	-144.0	146.0	135.3	10.66	13.695	
2,700.0	2,700.0	2,696.1	2,690.6	5.9	5.5	-97.53	-19.9	-150.5	152.1	141.1	11.06	13.753	
2,800.0	2,800.0	2,795.9	2,790.1	6.2	5.7	-96.37	-17.5	-157.1	158.3	146.9	11.46	13.812	
2,900.0	2,900.0	2,895.6	2,889.6	6.4	5.9	-95.29	-15.1	-163.6	164.6	152.8	11.87	13.873	
3,000.0	3,000.0	2,995.4	2,989.1	6.6	6.1	-94.29	-12.8	-170.1	171.0	158.7	12.27	13.934	
3,100.0	3,100.0	3,095.1	3,088.6	6.8	6.3	-93.36	-10.4	-176.7	177.3	164.7	12.67	13.995	
3,200.0	3,200.0	3,194.9	3,188.2	7.1	6.5	-92.50	-8.0	-183.2	183.8	170.7	13.07	14.056	
3,300.0	3,300.0	3,294.6	3,287.7	7.3	6.8	-91.70	-5.6	-189.7	190.2	176.8	13.48	14.117	
3,400.0	3,400.0	3,394.4	3,387.2	7.5	7.0	-90.95	-3.2	-196.3	196.7	182.9	13.88	14.176	
3,500.0	3,500.0	3,494.1	3,486.7	7.7	7.2	-90.24	-0.9	-202.8	203.3	189.0	14.28	14.234	
3,600.0	3,600.0	3,593.9	3,586.2	8.0	7.4	-89.59	1.5	-209.4	209.8	195.1	14.68	14.291	
3,700.0	3,700.0	3,697.0	3,689.1	8.2	7.6	-88.98	3.8	-215.8	216.1	201.0	15.09	14.321	
3,800.0	3,800.0	3,804.7	3,796.7	8.4	7.8	-88.66	5.1	-219.3	219.3	203.9	15.49	14.162	
3,900.0	3,900.0	3,908.0	3,900.0	8.6	7.9	-88.63	5.2	-219.6	219.7	203.8	15.88	13.832	
4,000.0	4,000.0	4,008.0	4,000.0	8.9	8.1	-88.63	5.2	-219.6	219.7	203.4	16.27	13.501	
4,100.0	4,100.0	4,108.0	4,100.0	9.1	8.2	-88.63	5.2	-219.6	219.7	203.0	16.66	13.186	
4,200.0	4,200.0	4,208.0	4,200.0	9.3	8.4	-88.63	5.2	-219.6	219.7	202.6	17.05	12.885	
4,300.0	4,300.0	4,308.0	4,300.0	9.5	8.5	-88.63	5.2	-219.6	219.7	202.2	17.44	12.596	
4,400.0	4,400.0	4,408.0	4,400.0	9.8	8.7	-88.63	5.2	-219.6	219.7	201.8	17.83	12.321	
4,500.0	4,500.0	4,508.0	4,500.0	10.0	8.8	-88.63	5.2	-219.6	219.7	201.4	18.22	12.056	
4,600.0	4,600.0	4,608.0	4,600.0	10.2	9.0	-88.63	5.2	-219.6	219.7	201.0	18.61	11.803	
4,700.0	4,700.0	4,708.0	4,700.0	10.4	9.2	-88.63	5.2	-219.6	219.7	200.7	19.00	11.560	
4,800.0	4,800.0	4,808.0	4,800.0	10.7	9.3	-88.63	5.2	-219.6	219.7	200.3	19.39	11.326	
4,900.0	4,900.0	4,908.0	4,900.0	10.9	9.5	-88.63	5.2	-219.6	219.7	199.9	19.79	11.102	
5,000.0	5,000.0	5,008.0	5,000.0	11.1	9.6	-88.63	5.2	-219.6	219.7	199.5	20.18	10.886	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2214B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,108.0	5,100.0	11.3	9.8	-88.63	5.2	-219.6	219.7	199.1	20.57	10.679	
5,128.0	5,128.0	5,136.0	5,128.0	11.4	9.8	-88.63	5.2	-219.6	219.7	199.0	20.68	10.622	
5,150.0	5,150.0	5,158.0	5,150.0	11.4	9.9	72.00	5.2	-219.6	219.5	199.0	20.50	10.706	
5,200.0	5,199.8	5,207.8	5,199.8	11.5	9.9	73.26	5.2	-219.6	218.2	197.5	20.65	10.563	
5,250.0	5,248.9	5,255.7	5,247.7	11.6	10.0	76.03	6.3	-219.6	215.8	195.0	20.79	10.380	
5,300.0	5,296.9	5,300.0	5,291.7	11.7	10.1	80.65	10.9	-219.6	213.6	192.6	20.93	10.206	
5,325.1	5,320.4	5,319.8	5,311.2	11.8	10.2	83.31	14.2	-219.6	213.2	192.2	21.00	10.151	
5,350.0	5,343.3	5,338.4	5,329.4	11.8	10.2	86.06	17.9	-219.6	213.7	192.6	21.08	10.138	SF
5,400.0	5,387.8	5,371.1	5,361.1	11.9	10.3	91.23	26.1	-219.6	218.3	197.1	21.24	10.281	
5,450.0	5,429.9	5,400.0	5,388.6	12.0	10.4	95.69	35.0	-219.6	229.5	208.0	21.53	10.660	
5,500.0	5,469.2	5,418.3	5,405.7	12.2	10.4	97.41	41.4	-219.6	247.8	226.1	21.76	11.389	
5,550.0	5,505.3	5,433.6	5,419.9	12.4	10.5	97.62	47.2	-219.6	273.1	251.1	21.98	12.423	
5,600.0	5,538.0	5,450.0	5,434.9	12.6	10.5	97.11	53.9	-219.6	304.3	282.1	22.23	13.688	
5,650.0	5,566.9	5,450.0	5,434.9	12.9	10.5	91.55	53.9	-219.6	339.9	317.5	22.39	15.179	
5,700.0	5,591.8	5,450.0	5,434.9	13.2	10.5	84.73	53.9	-219.6	378.8	356.0	22.73	16.664	
5,750.0	5,612.4	5,450.0	5,434.9	13.6	10.5	76.94	53.9	-219.6	419.8	397.0	22.82	18.397	
5,800.0	5,628.5	5,450.0	5,434.9	14.1	10.5	68.65	53.9	-219.6	462.0	439.5	22.52	20.521	
5,850.0	5,640.0	5,450.0	5,434.9	14.6	10.5	60.42	53.9	-219.6	504.8	483.1	21.80	23.163	
5,900.0	5,646.8	5,450.0	5,434.9	15.1	10.5	52.75	53.9	-219.6	547.8	527.0	20.78	26.363	
5,946.2	5,648.9	5,433.1	5,419.5	15.6	10.5	44.15	47.0	-219.6	586.6	567.5	19.17	30.607	
6,000.0	5,648.9	5,424.1	5,411.1	16.3	10.4	41.03	43.5	-219.6	632.6	613.7	18.85	33.561	
6,100.0	5,648.9	5,400.0	5,388.6	17.4	10.4	33.63	35.0	-219.6	721.5	703.8	17.65	40.886	
6,200.0	5,648.9	5,400.0	5,388.6	18.7	10.4	27.63	35.0	-219.6	813.3	796.5	16.74	48.580	
6,300.0	5,648.9	5,384.0	5,373.4	20.1	10.3	18.65	29.9	-219.6	907.2	892.3	14.90	60.898	
6,400.0	5,648.9	5,373.7	5,363.6	21.5	10.3	8.95	26.8	-219.6	1,002.5	989.2	13.28	75.481	
6,500.0	5,648.9	5,350.0	5,340.8	23.0	10.2	-1.55	20.6	-219.6	1,098.9	1,085.9	12.96	84.776	
6,596.3	5,648.9	5,350.0	5,340.8	24.4	10.2	-11.72	20.6	-219.6	1,191.6	1,176.8	14.80	80.504	
6,600.0	5,648.9	5,350.0	5,340.8	24.5	10.2	-11.72	20.6	-219.6	1,195.1	1,180.3	14.83	80.595	
6,700.0	5,648.9	5,350.0	5,340.8	26.0	10.2	-11.72	20.6	-219.6	1,291.9	1,276.3	15.57	82.949	
6,800.0	5,648.9	5,350.0	5,340.8	27.6	10.2	-11.72	20.6	-219.6	1,389.1	1,372.7	16.33	85.061	
6,900.0	5,648.9	5,350.0	5,340.8	29.2	10.2	-11.72	20.6	-219.6	1,486.6	1,469.5	17.09	86.966	
7,000.0	5,648.9	5,350.0	5,340.8	30.9	10.2	-11.72	20.6	-219.6	1,584.5	1,566.6	17.87	88.691	
7,100.0	5,648.9	5,326.4	5,317.8	32.5	10.2	-10.92	15.5	-219.6	1,681.9	1,663.5	18.42	91.318	
7,200.0	5,648.9	5,322.0	5,313.4	34.3	10.2	-10.78	14.6	-219.6	1,780.0	1,760.8	19.15	92.942	
7,300.0	5,648.9	5,300.0	5,291.7	36.0	10.1	-10.14	10.9	-219.6	1,878.6	1,858.9	19.74	95.161	
7,400.0	5,648.9	5,300.0	5,291.7	37.7	10.1	-10.14	10.9	-219.6	1,976.8	1,956.3	20.51	96.368	
7,500.0	5,648.9	5,300.0	5,291.7	39.5	10.1	-10.14	10.9	-219.6	2,075.2	2,053.9	21.29	97.484	
7,600.0	5,648.9	5,300.0	5,291.7	41.3	10.1	-10.14	10.9	-219.6	2,173.7	2,151.7	22.06	98.519	
7,700.0	5,648.9	5,300.0	5,291.7	43.0	10.1	-10.14	10.9	-219.6	2,272.4	2,249.5	22.84	99.480	
7,800.0	5,648.9	5,300.0	5,291.7	44.8	10.1	-10.14	10.9	-219.6	2,371.2	2,347.5	23.62	100.376	
7,900.0	5,648.9	5,300.0	5,291.7	46.7	10.1	-10.14	10.9	-219.6	2,470.0	2,445.6	24.40	101.212	
8,000.0	5,648.9	5,300.0	5,291.7	48.5	10.1	-10.14	10.9	-219.6	2,569.0	2,543.8	25.19	101.995	
8,100.0	5,648.9	5,300.0	5,291.7	50.3	10.1	-10.14	10.9	-219.6	2,668.0	2,642.1	25.97	102.729	
8,200.0	5,648.9	5,300.0	5,291.7	52.1	10.1	-10.14	10.9	-219.6	2,767.1	2,740.4	26.76	103.419	
8,300.0	5,648.9	5,300.0	5,291.7	54.0	10.1	-10.14	10.9	-219.6	2,866.3	2,838.8	27.54	104.068	
8,400.0	5,648.9	5,300.0	5,291.7	55.8	10.1	-10.14	10.9	-219.6	2,965.5	2,937.2	28.33	104.680	
8,500.0	5,648.9	5,300.0	5,291.7	57.7	10.1	-10.14	10.9	-219.6	3,064.8	3,035.7	29.12	105.258	
8,600.0	5,648.9	5,300.0	5,291.7	59.5	10.1	-10.14	10.9	-219.6	3,164.1	3,134.2	29.91	105.805	
8,700.0	5,648.9	5,300.0	5,291.7	61.4	10.1	-10.14	10.9	-219.6	3,263.5	3,232.8	30.69	106.323	
8,800.0	5,648.9	5,300.0	5,291.7	63.2	10.1	-10.14	10.9	-219.6	3,362.9	3,331.4	31.48	106.815	
8,900.0	5,648.9	5,300.0	5,291.7	65.1	10.1	-10.14	10.9	-219.6	3,462.3	3,430.0	32.27	107.281	
9,000.0	5,648.9	5,300.0	5,291.7	67.0	10.1	-10.14	10.9	-219.6	3,561.8	3,528.7	33.06	107.725	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2214B - HZ - Plan #3

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	5,648.9	5,277.3	5,269.2	68.8	10.1	-9.55	8.1	-219.6	3,660.7	3,627.1	33.57	109.032	
9,200.0	5,648.9	5,276.0	5,267.9	70.7	10.1	-9.52	7.9	-219.6	3,760.2	3,725.8	34.34	109.484	
9,300.0	5,648.9	5,274.8	5,266.7	72.6	10.1	-9.49	7.8	-219.6	3,859.6	3,824.5	35.11	109.916	
9,400.0	5,648.9	5,273.6	5,265.6	74.5	10.1	-9.47	7.7	-219.6	3,959.1	3,923.3	35.89	110.328	
9,500.0	5,648.9	5,272.5	5,264.5	76.3	10.1	-9.44	7.6	-219.6	4,058.7	4,022.0	36.66	110.723	
9,600.0	5,648.9	5,250.0	5,242.0	78.2	10.0	-8.93	5.9	-219.6	4,158.7	4,121.5	37.18	111.851	
9,700.0	5,648.9	5,250.0	5,242.0	80.1	10.0	-8.93	5.9	-219.6	4,258.2	4,220.3	37.96	112.177	
9,800.0	5,648.9	5,250.0	5,242.0	82.0	10.0	-8.93	5.9	-219.6	4,357.8	4,319.0	38.74	112.489	
9,900.0	5,648.9	5,250.0	5,242.0	83.9	10.0	-8.93	5.9	-219.6	4,457.3	4,417.8	39.52	112.790	
10,000.0	5,648.9	5,250.0	5,242.0	85.8	10.0	-8.93	5.9	-219.6	4,556.9	4,516.6	40.30	113.078	
10,100.0	5,648.9	5,250.0	5,242.0	87.7	10.0	-8.93	5.9	-219.6	4,656.5	4,615.4	41.08	113.356	
10,200.0	5,649.0	5,250.0	5,242.0	89.6	10.0	-8.93	5.9	-219.6	4,756.1	4,714.3	41.86	113.623	
10,300.0	5,649.0	5,250.0	5,242.0	91.4	10.0	-8.93	5.9	-219.6	4,855.8	4,813.1	42.64	113.881	
10,400.0	5,649.0	5,250.0	5,242.0	93.3	10.0	-8.93	5.9	-219.6	4,955.4	4,912.0	43.42	114.129	
10,500.0	5,649.0	5,250.0	5,242.0	95.2	10.0	-8.93	5.9	-219.6	5,055.1	5,010.9	44.20	114.368	
10,600.0	5,649.0	5,250.0	5,242.0	97.1	10.0	-8.93	5.9	-219.6	5,154.8	5,109.8	44.98	114.599	
10,700.0	5,649.0	5,250.0	5,242.0	99.0	10.0	-8.93	5.9	-219.6	5,254.4	5,208.7	45.76	114.822	
10,800.0	5,649.0	5,250.0	5,242.0	100.9	10.0	-8.93	5.9	-219.6	5,354.1	5,307.6	46.54	115.037	
10,900.0	5,649.0	5,250.0	5,242.0	102.8	10.0	-8.93	5.9	-219.6	5,453.8	5,406.5	47.32	115.246	
11,000.0	5,649.0	5,250.0	5,242.0	104.7	10.0	-8.93	5.9	-219.6	5,553.6	5,505.5	48.10	115.447	
11,100.0	5,649.0	5,250.0	5,242.0	106.6	10.0	-8.93	5.9	-219.6	5,653.3	5,604.4	48.89	115.642	
11,200.0	5,649.0	5,250.0	5,242.0	108.5	10.0	-8.93	5.9	-219.6	5,753.0	5,703.4	49.67	115.831	
11,300.0	5,649.0	5,250.0	5,242.0	110.4	10.0	-8.93	5.9	-219.6	5,852.8	5,802.3	50.45	116.014	
11,400.0	5,649.0	5,250.0	5,242.0	112.3	10.0	-8.93	5.9	-219.6	5,952.5	5,901.3	51.23	116.192	
11,500.0	5,649.0	5,250.0	5,242.0	114.2	10.0	-8.93	5.9	-219.6	6,052.3	6,000.3	52.01	116.364	
11,600.0	5,649.0	5,250.0	5,242.0	116.1	10.0	-8.93	5.9	-219.6	6,152.1	6,099.3	52.79	116.531	
11,700.0	5,649.0	5,250.0	5,242.0	118.0	10.0	-8.93	5.9	-219.6	6,251.9	6,198.3	53.58	116.693	
11,800.0	5,649.0	5,250.0	5,242.0	119.9	10.0	-8.93	5.9	-219.6	6,351.6	6,297.3	54.36	116.850	
11,900.0	5,649.0	5,250.0	5,242.0	121.9	10.0	-8.93	5.9	-219.6	6,451.4	6,396.3	55.14	117.003	
12,000.0	5,649.0	5,250.0	5,242.0	123.8	10.0	-8.93	5.9	-219.6	6,551.2	6,495.3	55.92	117.152	
12,100.0	5,649.0	5,250.0	5,242.0	125.7	10.0	-8.93	5.9	-219.6	6,651.0	6,594.3	56.70	117.296	
12,200.0	5,649.0	5,250.0	5,242.0	127.6	10.0	-8.93	5.9	-219.6	6,750.8	6,693.4	57.49	117.437	
12,300.0	5,649.0	5,250.0	5,242.0	129.5	10.0	-8.93	5.9	-219.6	6,850.7	6,792.4	58.27	117.573	
12,400.0	5,649.0	5,250.0	5,242.0	131.4	10.0	-8.93	5.9	-219.6	6,950.5	6,891.4	59.05	117.706	
12,500.0	5,649.0	5,250.0	5,242.0	133.3	10.0	-8.93	5.9	-219.6	7,050.3	6,990.5	59.83	117.836	
12,590.4	5,649.0	5,250.0	5,242.0	134.7	10.0	-8.93	5.9	-219.6	7,140.6	7,080.4	60.22	118.578	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2215A - HZ - Plan #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	99.4	99.4				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	99.4	99.4	99.1	0.24	414.827	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	99.4	99.4	98.7	0.64	155.558	
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	99.4	99.4	98.3	1.04	95.728	
400.0	400.0	400.0	400.0	0.8	0.7	90.01	0.0	99.4	99.4	97.9	1.44	69.137	
500.0	500.0	500.0	500.0	1.0	0.8	90.01	0.0	99.4	99.4	97.5	1.84	54.107	
600.0	600.0	600.0	600.0	1.2	1.0	90.01	0.0	99.4	99.4	97.1	2.24	44.445	
700.0	700.0	700.0	700.0	1.4	1.2	90.01	0.0	99.4	99.4	96.7	2.64	37.711	
800.0	800.0	800.0	800.0	1.7	1.4	90.01	0.0	99.4	99.4	96.3	3.03	32.749	
900.0	900.0	900.0	900.0	1.9	1.5	90.01	0.0	99.4	99.4	95.9	3.43	28.941	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	1.7	90.01	0.0	99.4	99.4	95.5	3.83	25.926	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	1.9	90.01	0.0	99.4	99.4	95.1	4.23	23.480	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.1	90.01	0.0	99.4	99.4	94.8	4.63	21.456	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.2	90.01	0.0	99.4	99.4	94.4	5.03	19.753	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	2.4	90.01	0.0	99.4	99.4	94.0	5.43	18.301	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	2.6	90.01	0.0	99.4	99.4	93.6	5.83	17.047	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	2.8	90.01	0.0	99.4	99.4	93.2	6.23	15.955	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	2.9	90.01	0.0	99.4	99.4	92.8	6.63	14.993	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.1	90.01	0.0	99.4	99.4	92.4	7.03	14.142	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	3.3	90.01	0.0	99.4	99.4	92.0	7.43	13.381	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	3.5	90.01	0.0	99.4	99.4	91.6	7.83	12.699	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	3.6	90.01	0.0	99.4	99.4	91.2	8.23	12.082	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	3.8	90.01	0.0	99.4	99.4	90.8	8.62	11.523	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	4.0	90.01	0.0	99.4	99.4	90.4	9.02	11.013	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	4.2	90.01	0.0	99.4	99.4	90.0	9.42	10.546	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	4.3	90.01	0.0	99.4	99.4	89.6	9.82	10.118	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	4.5	90.01	0.0	99.4	99.4	89.2	10.22	9.722	
2,700.0	2,700.0	2,700.0	2,700.0	5.9	4.7	90.01	0.0	99.4	99.4	88.8	10.62	9.357	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	4.9	90.01	0.0	99.4	99.4	88.4	11.02	9.018	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	5.0	90.01	0.0	99.4	99.4	88.0	11.42	8.703	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	5.2	90.01	0.0	99.4	99.4	87.6	11.82	8.408	
3,100.0	3,100.0	3,100.0	3,100.0	6.8	5.4	90.01	0.0	99.4	99.4	87.2	12.22	8.134	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	5.6	90.01	0.0	99.4	99.4	86.8	12.62	7.876	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	5.7	90.01	0.0	99.4	99.4	86.4	13.02	7.635	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	5.9	90.01	0.0	99.4	99.4	86.0	13.42	7.407	
3,500.0	3,500.0	3,500.0	3,500.0	7.7	6.1	90.01	0.0	99.4	99.4	85.6	13.82	7.193	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	6.3	90.01	0.0	99.4	99.4	85.2	14.22	6.991	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	6.4	90.01	0.0	99.4	99.4	84.8	14.61	6.800	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	6.6	90.01	0.0	99.4	99.4	84.4	15.01	6.619	
3,900.0	3,900.0	3,900.0	3,900.0	8.6	6.8	90.01	0.0	99.4	99.4	84.0	15.41	6.448	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	7.0	90.01	0.0	99.4	99.4	83.6	15.81	6.285	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	7.1	90.01	0.0	99.4	99.4	83.2	16.21	6.130	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	7.3	90.01	0.0	99.4	99.4	82.8	16.61	5.983	
4,300.0	4,300.0	4,300.0	4,300.0	9.5	7.5	90.01	0.0	99.4	99.4	82.4	17.01	5.843	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	7.7	90.01	0.0	99.4	99.4	82.0	17.41	5.709	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	7.8	90.01	0.0	99.4	99.4	81.6	17.81	5.581	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	8.0	90.01	0.0	99.4	99.4	81.2	18.21	5.458	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	8.2	90.01	0.0	99.4	99.4	80.8	18.61	5.341	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	8.3	90.01	0.0	99.4	99.4	80.4	19.01	5.229	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	8.5	90.01	0.0	99.4	99.4	80.0	19.41	5.121	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	8.7	90.01	0.0	99.4	99.4	79.6	19.81	5.018	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	8.9	90.01	0.0	99.4	99.4	79.2	20.20	4.919	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2215A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,128.0	5,128.0	11.4	8.9	90.01	0.0	99.4	99.4	79.1	20.32	4.892	CC, ES
5,150.0	5,150.0	5,149.9	5,149.9	11.4	9.0	-109.98	0.4	99.4	99.6	79.1	20.45	4.869	SF
5,200.0	5,199.8	5,198.4	5,198.2	11.5	9.0	-114.49	4.7	99.5	101.6	80.8	20.74	4.898	
5,250.0	5,248.9	5,243.5	5,242.5	11.6	9.1	-122.14	12.7	99.6	107.8	86.8	21.05	5.122	
5,300.0	5,296.9	5,283.3	5,281.0	11.7	9.2	-130.34	22.9	99.9	121.0	99.7	21.28	5.686	
5,350.0	5,343.3	5,317.0	5,312.9	11.8	9.3	-137.09	33.9	100.1	142.7	121.3	21.36	6.679	
5,400.0	5,387.8	5,344.5	5,338.3	11.9	9.3	-141.60	44.3	100.3	172.4	151.1	21.29	8.100	
5,450.0	5,429.9	5,365.9	5,357.7	12.0	9.4	-143.78	53.3	100.5	208.8	187.7	21.12	9.887	
5,500.0	5,469.2	5,381.9	5,371.9	12.2	9.5	-143.54	60.6	100.7	250.1	229.1	20.95	11.940	
5,550.0	5,505.3	5,400.0	5,387.8	12.4	9.5	-142.78	69.3	100.8	295.0	274.2	20.79	14.188	
5,600.0	5,538.0	5,400.0	5,387.8	12.6	9.5	-132.53	69.3	100.8	341.9	320.5	21.42	15.960	
5,650.0	5,566.9	5,400.0	5,387.8	12.9	9.5	-113.89	69.3	100.8	390.4	367.7	22.74	17.172	
5,700.0	5,591.8	5,400.0	5,387.8	13.2	9.5	-84.16	69.3	100.8	439.6	417.0	22.63	19.428	
5,750.0	5,612.4	5,400.0	5,387.8	13.6	9.5	-54.51	69.3	100.8	488.9	468.9	20.07	24.363	
5,800.0	5,628.5	5,400.0	5,387.8	14.1	9.5	-35.85	69.3	100.8	537.9	521.4	16.49	32.619	
5,850.0	5,640.0	5,400.0	5,387.8	14.6	9.5	-25.37	69.3	100.8	586.2	572.2	13.95	42.029	
5,900.0	5,646.8	5,383.1	5,373.0	15.1	9.5	-18.50	61.1	100.7	633.1	620.9	12.19	51.959	
5,946.2	5,648.9	5,374.5	5,365.4	15.6	9.4	-14.96	57.2	100.6	675.4	664.0	11.39	59.287	
6,000.0	5,648.9	5,364.3	5,356.3	16.3	9.4	-17.97	52.6	100.5	724.0	711.6	12.38	58.477	
6,100.0	5,648.9	5,350.0	5,343.3	17.4	9.4	-23.55	46.5	100.4	814.8	800.4	14.43	56.458	
6,200.0	5,648.9	5,331.8	5,326.7	18.7	9.3	-28.62	39.3	100.2	906.1	889.5	16.58	54.661	
6,300.0	5,648.9	5,318.4	5,314.2	20.1	9.3	-33.58	34.3	100.1	997.6	978.8	18.87	52.881	
6,400.0	5,648.9	5,300.0	5,296.9	21.5	9.2	-37.78	28.1	100.0	1,089.2	1,068.2	21.03	51.782	
6,500.0	5,648.9	5,300.0	5,296.9	23.0	9.2	-42.90	28.1	100.0	1,180.5	1,156.9	23.60	50.015	
6,596.3	5,648.9	5,300.0	5,296.9	24.4	9.2	-47.45	28.1	100.0	1,268.4	1,242.4	26.00	48.783	
6,600.0	5,648.9	5,300.0	5,296.9	24.5	9.2	-47.45	28.1	100.0	1,271.8	1,245.7	26.05	48.828	
6,700.0	5,648.9	5,277.9	5,275.8	26.0	9.2	-45.78	21.4	99.8	1,363.0	1,336.3	26.70	51.044	
6,800.0	5,648.9	5,270.2	5,268.5	27.6	9.2	-45.22	19.2	99.8	1,455.4	1,427.7	27.74	52.464	
6,900.0	5,648.9	5,250.0	5,248.9	29.2	9.1	-43.77	14.2	99.7	1,548.9	1,520.5	28.45	54.443	
7,000.0	5,648.9	5,250.0	5,248.9	30.9	9.1	-43.77	14.2	99.7	1,642.7	1,613.0	29.71	55.283	
7,100.0	5,648.9	5,250.0	5,248.9	32.5	9.1	-43.77	14.2	99.7	1,737.2	1,706.2	31.00	56.043	
7,200.0	5,648.9	5,250.0	5,248.9	34.3	9.1	-43.77	14.2	99.7	1,832.2	1,799.9	32.30	56.731	
7,300.0	5,648.9	5,250.0	5,248.9	36.0	9.1	-43.77	14.2	99.7	1,927.8	1,894.2	33.61	57.358	
7,400.0	5,648.9	5,250.0	5,248.9	37.7	9.1	-43.77	14.2	99.7	2,023.8	1,988.8	34.93	57.931	
7,500.0	5,648.9	5,250.0	5,248.9	39.5	9.1	-43.77	14.2	99.7	2,120.1	2,083.9	36.27	58.456	
7,600.0	5,648.9	5,228.8	5,228.2	41.3	9.1	-42.32	9.7	99.6	2,216.3	2,179.4	36.88	60.097	
7,700.0	5,648.9	5,225.2	5,224.7	43.0	9.1	-42.08	9.0	99.6	2,313.1	2,275.0	38.08	60.744	
7,800.0	5,648.9	5,221.9	5,221.4	44.8	9.1	-41.86	8.4	99.6	2,410.1	2,370.8	39.29	61.346	
7,900.0	5,648.9	5,200.0	5,199.8	46.7	9.0	-40.46	4.9	99.5	2,507.7	2,467.9	39.81	62.985	
8,000.0	5,648.9	5,200.0	5,199.8	48.5	9.0	-40.46	4.9	99.5	2,605.0	2,563.9	41.12	63.346	
8,100.0	5,648.9	5,200.0	5,199.8	50.3	9.0	-40.46	4.9	99.5	2,702.5	2,660.1	42.44	63.683	
8,200.0	5,648.9	5,200.0	5,199.8	52.1	9.0	-40.46	4.9	99.5	2,800.2	2,756.4	43.75	63.998	
8,300.0	5,648.9	5,200.0	5,199.8	54.0	9.0	-40.46	4.9	99.5	2,898.0	2,852.9	45.07	64.294	
8,400.0	5,648.9	5,200.0	5,199.8	55.8	9.0	-40.46	4.9	99.5	2,996.0	2,949.6	46.40	64.571	
8,500.0	5,648.9	5,200.0	5,199.8	57.7	9.0	-40.46	4.9	99.5	3,094.1	3,046.3	47.72	64.832	
8,600.0	5,648.9	5,200.0	5,199.8	59.5	9.0	-40.46	4.9	99.5	3,192.3	3,143.2	49.05	65.077	
8,700.0	5,648.9	5,200.0	5,199.8	61.4	9.0	-40.46	4.9	99.5	3,290.6	3,240.2	50.39	65.309	
8,800.0	5,648.9	5,200.0	5,199.8	63.2	9.0	-40.46	4.9	99.5	3,389.0	3,337.3	51.72	65.528	
8,900.0	5,648.9	5,200.0	5,199.8	65.1	9.0	-40.46	4.9	99.5	3,487.6	3,434.5	53.05	65.735	
9,000.0	5,648.9	5,200.0	5,199.8	67.0	9.0	-40.46	4.9	99.5	3,586.2	3,531.8	54.39	65.932	
9,100.0	5,648.9	5,200.0	5,199.8	68.8	9.0	-40.46	4.9	99.5	3,684.8	3,629.1	55.73	66.118	
9,200.0	5,648.9	5,200.0	5,199.8	70.7	9.0	-40.46	4.9	99.5	3,783.6	3,726.5	57.07	66.296	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2215A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,648.9	5,200.0	5,199.8	72.6	9.0	-40.46	4.9	99.5	3,882.4	3,824.0	58.41	66.464	
9,400.0	5,648.9	5,200.0	5,199.8	74.5	9.0	-40.46	4.9	99.5	3,981.2	3,921.5	59.76	66.625	
9,500.0	5,648.9	5,200.0	5,199.8	76.3	9.0	-40.46	4.9	99.5	4,080.2	4,019.1	61.10	66.778	
9,600.0	5,648.9	5,200.0	5,199.8	78.2	9.0	-40.46	4.9	99.5	4,179.1	4,116.7	62.45	66.924	
9,700.0	5,648.9	5,200.0	5,199.8	80.1	9.0	-40.46	4.9	99.5	4,278.2	4,214.4	63.79	67.064	
9,800.0	5,648.9	5,200.0	5,199.8	82.0	9.0	-40.46	4.9	99.5	4,377.2	4,312.1	65.14	67.198	
9,900.0	5,648.9	5,200.0	5,199.8	83.9	9.0	-40.46	4.9	99.5	4,476.3	4,409.8	66.49	67.326	
10,000.0	5,648.9	5,200.0	5,199.8	85.8	9.0	-40.46	4.9	99.5	4,575.5	4,507.6	67.84	67.448	
10,100.0	5,648.9	5,200.0	5,199.8	87.7	9.0	-40.46	4.9	99.5	4,674.7	4,605.5	69.19	67.566	
10,200.0	5,649.0	5,200.0	5,199.8	89.6	9.0	-40.46	4.9	99.5	4,773.9	4,703.3	70.54	67.679	
10,300.0	5,649.0	5,200.0	5,199.8	91.4	9.0	-40.46	4.9	99.5	4,873.1	4,801.2	71.89	67.788	
10,400.0	5,649.0	5,200.0	5,199.8	93.3	9.0	-40.46	4.9	99.5	4,972.4	4,899.2	73.24	67.892	
10,500.0	5,649.0	5,176.8	5,176.7	95.2	9.0	-39.04	2.3	99.4	5,071.1	4,998.1	73.07	69.405	
10,600.0	5,649.0	5,175.9	5,175.8	97.1	9.0	-38.99	2.2	99.4	5,170.4	5,096.1	74.33	69.556	
10,700.0	5,649.0	5,175.1	5,175.0	99.0	9.0	-38.94	2.1	99.4	5,269.8	5,194.1	75.60	69.702	
10,800.0	5,649.0	5,174.3	5,174.2	100.9	9.0	-38.90	2.0	99.4	5,369.1	5,292.2	76.87	69.842	
10,900.0	5,649.0	5,173.5	5,173.4	102.8	9.0	-38.85	2.0	99.4	5,468.5	5,390.3	78.15	69.978	
11,000.0	5,649.0	5,150.0	5,150.0	104.7	9.0	-37.51	0.4	99.4	5,568.4	5,490.5	77.87	71.510	
11,100.0	5,649.0	5,150.0	5,150.0	106.6	9.0	-37.51	0.4	99.4	5,667.8	5,588.6	79.17	71.594	
11,200.0	5,649.0	5,150.0	5,150.0	108.5	9.0	-37.51	0.4	99.4	5,767.2	5,686.7	80.46	71.675	
11,300.0	5,649.0	5,150.0	5,150.0	110.4	9.0	-37.51	0.4	99.4	5,866.6	5,784.8	81.76	71.753	
11,400.0	5,649.0	5,150.0	5,150.0	112.3	9.0	-37.51	0.4	99.4	5,966.0	5,882.9	83.06	71.829	
11,500.0	5,649.0	5,150.0	5,150.0	114.2	9.0	-37.51	0.4	99.4	6,065.4	5,981.1	84.36	71.903	
11,600.0	5,649.0	5,150.0	5,150.0	116.1	9.0	-37.51	0.4	99.4	6,164.9	6,079.3	85.65	71.974	
11,700.0	5,649.0	5,150.0	5,150.0	118.0	9.0	-37.51	0.4	99.4	6,264.4	6,177.5	86.95	72.043	
11,800.0	5,649.0	5,150.0	5,150.0	119.9	9.0	-37.51	0.4	99.4	6,363.9	6,275.7	88.25	72.111	
11,900.0	5,649.0	5,150.0	5,150.0	121.9	9.0	-37.51	0.4	99.4	6,463.4	6,373.9	89.55	72.176	
12,000.0	5,649.0	5,150.0	5,150.0	123.8	9.0	-37.51	0.4	99.4	6,563.0	6,472.1	90.85	72.239	
12,100.0	5,649.0	5,150.0	5,150.0	125.7	9.0	-37.51	0.4	99.4	6,662.5	6,570.4	92.15	72.300	
12,200.0	5,649.0	5,150.0	5,150.0	127.6	9.0	-37.51	0.4	99.4	6,762.1	6,668.6	93.45	72.360	
12,300.0	5,649.0	5,150.0	5,150.0	129.5	9.0	-37.51	0.4	99.4	6,861.6	6,766.9	94.75	72.418	
12,400.0	5,649.0	5,150.0	5,150.0	131.4	9.0	-37.51	0.4	99.4	6,961.2	6,865.2	96.05	72.474	
12,500.0	5,649.0	5,150.0	5,150.0	133.3	9.0	-37.51	0.4	99.4	7,060.8	6,963.5	97.35	72.529	
12,590.4	5,649.0	5,150.0	5,150.0	134.7	9.0	-37.51	0.4	99.4	7,150.9	7,052.7	98.24	72.789	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2216B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	138.47	-74.7	66.2	99.8				
100.0	100.0	100.0	100.0	0.1	0.1	138.47	-74.7	66.2	99.8	99.5	0.24	416.523	
200.0	200.0	200.0	200.0	0.3	0.3	138.47	-74.7	66.2	99.8	99.1	0.64	156.195	
300.0	300.0	300.0	300.0	0.5	0.5	138.47	-74.7	66.2	99.8	98.8	1.04	96.119	
400.0	400.0	400.0	400.0	0.8	0.7	138.47	-74.7	66.2	99.8	98.4	1.44	69.420	
500.0	500.0	500.0	500.0	1.0	0.8	138.47	-74.7	66.2	99.8	98.0	1.84	54.328	
600.0	600.0	600.2	600.1	1.2	1.0	137.46	-73.5	67.4	99.7	97.5	2.24	44.547	
685.9	685.9	686.0	685.9	1.4	1.2	135.00	-70.4	70.4	99.6	97.0	2.59	38.458	CC
700.0	700.0	700.1	699.9	1.4	1.2	134.45	-69.8	71.1	99.6	97.0	2.65	37.619	
800.0	800.0	799.9	799.4	1.7	1.4	130.46	-64.8	76.0	99.9	96.9	3.06	32.628	ES
900.0	900.0	899.6	899.0	1.9	1.6	126.51	-59.9	80.9	100.7	97.2	3.48	28.953	
1,000.0	1,000.0	999.4	998.5	2.1	1.8	122.64	-55.0	85.9	102.0	98.1	3.89	26.188	
1,100.0	1,100.0	1,099.1	1,098.0	2.3	2.0	118.88	-50.1	90.8	103.7	99.4	4.31	24.073	
1,200.0	1,200.0	1,198.9	1,197.5	2.6	2.2	115.26	-45.2	95.7	105.9	101.1	4.72	22.433	
1,300.0	1,300.0	1,298.6	1,297.0	2.8	2.4	111.80	-40.2	100.6	108.4	103.3	5.13	21.146	
1,400.0	1,400.0	1,398.4	1,396.5	3.0	2.6	108.50	-35.3	105.5	111.4	105.8	5.53	20.129	
1,500.0	1,500.0	1,498.1	1,496.0	3.2	2.8	105.39	-30.4	110.5	114.6	108.7	5.93	19.318	
1,600.0	1,600.0	1,597.9	1,595.6	3.5	3.0	102.45	-25.5	115.4	118.2	111.9	6.33	18.668	
1,700.0	1,700.0	1,697.7	1,695.1	3.7	3.3	99.70	-20.6	120.3	122.2	115.4	6.73	18.144	
1,800.0	1,800.0	1,797.4	1,794.6	3.9	3.5	97.12	-15.6	125.2	126.3	119.2	7.13	17.720	
1,900.0	1,900.0	1,897.2	1,894.1	4.1	3.7	94.71	-10.7	130.1	130.7	123.2	7.52	17.375	
2,000.0	2,000.0	1,996.9	1,993.6	4.4	3.9	92.46	-5.8	135.1	135.3	127.4	7.92	17.095	
2,100.0	2,100.0	2,096.7	2,093.1	4.6	4.1	90.36	-0.9	140.0	140.2	131.9	8.31	16.866	
2,200.0	2,200.0	2,196.4	2,192.6	4.8	4.3	88.40	4.0	144.9	145.2	136.4	8.70	16.679	
2,300.0	2,300.0	2,296.2	2,292.1	5.0	4.5	86.58	9.0	149.8	150.3	141.2	9.10	16.525	
2,400.0	2,400.0	2,396.0	2,391.7	5.3	4.7	84.87	13.9	154.8	155.6	146.1	9.49	16.400	
2,500.0	2,500.0	2,495.7	2,491.2	5.5	4.9	83.28	18.8	159.7	161.0	151.1	9.88	16.297	
2,600.0	2,600.0	2,595.5	2,590.7	5.7	5.1	81.80	23.7	164.6	166.6	156.3	10.27	16.214	
2,700.0	2,700.0	2,695.2	2,690.2	5.9	5.4	80.41	28.6	169.5	172.2	161.5	10.67	16.146	
2,800.0	2,800.0	2,795.0	2,789.7	6.2	5.6	79.11	33.6	174.4	177.9	166.9	11.06	16.091	
2,900.0	2,900.0	2,894.7	2,889.2	6.4	5.8	77.89	38.5	179.4	183.8	172.3	11.45	16.046	
3,000.0	3,000.0	2,994.5	2,988.7	6.6	6.0	76.74	43.4	184.3	189.7	177.8	11.84	16.011	
3,100.0	3,100.0	3,094.3	3,088.3	6.8	6.2	75.67	48.3	189.2	195.6	183.4	12.24	15.984	
3,200.0	3,200.0	3,194.0	3,187.8	7.1	6.4	74.66	53.3	194.1	201.7	189.0	12.63	15.963	
3,300.0	3,300.0	3,293.8	3,287.3	7.3	6.6	73.71	58.2	199.0	207.8	194.7	13.03	15.947	
3,400.0	3,400.0	3,393.5	3,386.8	7.5	6.8	72.81	63.1	204.0	213.9	200.5	13.42	15.936	
3,500.0	3,500.0	3,493.3	3,486.3	7.7	7.0	71.96	68.0	208.9	220.1	206.3	13.82	15.928	
3,600.0	3,600.0	3,593.0	3,585.8	8.0	7.3	71.16	72.9	213.8	226.3	212.1	14.21	15.924	
3,700.0	3,700.0	3,692.8	3,685.3	8.2	7.5	70.41	77.9	218.7	232.6	218.0	14.61	15.923	
3,800.0	3,800.0	3,792.5	3,784.8	8.4	7.7	69.69	82.8	223.6	238.9	223.9	15.01	15.924	
3,900.0	3,900.0	3,892.3	3,884.4	8.6	7.9	69.01	87.7	228.6	245.3	229.9	15.40	15.926	
4,000.0	4,000.0	3,992.1	3,983.9	8.9	8.1	68.36	92.6	233.5	251.7	235.9	15.80	15.931	
4,100.0	4,100.0	4,091.8	4,083.4	9.1	8.3	67.75	97.5	238.4	258.1	241.9	16.20	15.937	
4,200.0	4,200.0	4,191.6	4,182.9	9.3	8.5	67.17	102.5	243.3	264.6	248.0	16.59	15.944	
4,300.0	4,300.0	4,291.3	4,282.4	9.5	8.7	66.61	107.4	248.2	271.0	254.0	16.99	15.952	
4,400.0	4,400.0	4,391.1	4,381.9	9.8	9.0	66.08	112.3	253.2	277.5	260.1	17.39	15.960	
4,500.0	4,500.0	4,490.8	4,481.4	10.0	9.2	65.57	117.2	258.1	284.1	266.3	17.79	15.970	
4,600.0	4,600.0	4,590.6	4,581.0	10.2	9.4	65.09	122.1	263.0	290.6	272.4	18.19	15.980	
4,700.0	4,700.0	4,690.4	4,680.5	10.4	9.6	64.63	127.1	267.9	297.2	278.6	18.58	15.990	
4,800.0	4,800.0	4,790.1	4,780.0	10.7	9.8	64.19	132.0	272.8	303.7	284.8	18.98	16.001	
4,900.0	4,900.0	4,889.9	4,879.5	10.9	10.0	63.76	136.9	277.8	310.3	291.0	19.38	16.012	
5,000.0	5,000.0	5,000.1	4,989.6	11.1	10.2	63.42	141.1	282.0	315.5	295.7	19.80	15.934	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2216B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,110.6	5,100.0	11.3	10.4	63.32	142.3	283.2	317.0	296.7	20.22	15.678	
5,128.0	5,128.0	5,138.6	5,128.0	11.4	10.4	63.32	142.3	283.2	317.0	296.6	20.33	15.591	
5,150.0	5,150.0	5,160.5	5,150.0	11.4	10.5	-136.22	142.3	283.2	317.3	296.6	20.66	15.360	
5,200.0	5,199.8	5,210.3	5,199.8	11.5	10.5	-136.52	142.3	283.2	320.6	299.6	20.97	15.285	SF
5,250.0	5,248.9	5,250.0	5,239.4	11.6	10.6	-136.93	142.9	283.3	327.8	306.6	21.20	15.466	
5,300.0	5,296.9	5,284.3	5,273.6	11.7	10.7	-137.47	145.6	283.6	340.6	319.3	21.34	15.960	
5,350.0	5,343.3	5,314.9	5,303.9	11.8	10.8	-137.91	149.9	284.1	359.1	337.6	21.41	16.769	
5,400.0	5,387.8	5,341.5	5,330.0	11.9	10.9	-137.97	155.1	284.7	383.1	361.7	21.43	17.879	
5,450.0	5,429.9	5,363.9	5,351.7	12.0	10.9	-137.38	160.4	285.4	412.4	391.0	21.43	19.246	
5,500.0	5,469.2	5,382.1	5,369.2	12.2	11.0	-135.84	165.5	286.0	446.5	425.0	21.49	20.781	
5,550.0	5,505.3	5,400.0	5,386.2	12.4	11.1	-133.51	171.0	286.7	484.7	463.0	21.67	22.368	
5,600.0	5,538.0	5,400.0	5,386.2	12.6	11.1	-127.25	171.0	286.7	526.2	503.9	22.30	23.600	
5,650.0	5,566.9	5,413.9	5,399.3	12.9	11.1	-121.32	175.7	287.2	570.1	547.0	23.11	24.670	
5,700.0	5,591.8	5,418.1	5,403.2	13.2	11.2	-110.92	177.2	287.4	615.9	591.6	24.28	25.367	
5,750.0	5,612.4	5,419.6	5,404.6	13.6	11.2	-96.68	177.7	287.5	662.9	637.8	25.08	26.434	
5,800.0	5,628.5	5,418.8	5,403.8	14.1	11.2	-79.65	177.5	287.4	710.4	685.6	24.78	28.671	
5,850.0	5,640.0	5,415.9	5,401.2	14.6	11.2	-62.88	176.4	287.3	758.0	734.7	23.34	32.480	
5,900.0	5,646.8	5,400.0	5,386.2	15.1	11.1	-47.57	171.0	286.7	805.4	784.9	20.45	39.379	
5,946.2	5,648.9	5,400.0	5,386.2	15.6	11.1	-39.06	171.0	286.7	848.1	829.7	18.47	45.923	
6,000.0	5,648.9	5,400.0	5,386.2	16.3	11.1	-41.90	171.0	286.7	897.6	877.9	19.69	45.586	
6,100.0	5,648.9	5,400.0	5,386.2	17.4	11.1	-46.95	171.0	286.7	989.6	967.7	21.91	45.162	
6,200.0	5,648.9	5,376.6	5,363.9	18.7	11.0	-49.34	163.9	285.8	1,081.0	1,057.6	23.42	46.157	
6,300.0	5,648.9	5,367.4	5,355.1	20.1	11.0	-52.71	161.4	285.5	1,172.3	1,147.0	25.29	46.351	
6,400.0	5,648.9	5,350.0	5,338.3	21.5	10.9	-55.00	157.0	285.0	1,263.2	1,236.3	26.89	46.975	
6,500.0	5,648.9	5,350.0	5,338.3	23.0	10.9	-58.43	157.0	285.0	1,353.3	1,324.4	28.85	46.904	
6,596.3	5,648.9	5,350.0	5,338.3	24.4	10.9	-61.35	157.0	285.0	1,439.6	1,408.9	30.64	46.984	
6,600.0	5,648.9	5,350.0	5,338.3	24.5	10.9	-61.35	157.0	285.0	1,442.9	1,412.2	30.69	47.013	
6,700.0	5,648.9	5,350.0	5,338.3	26.0	10.9	-61.35	157.0	285.0	1,532.9	1,500.8	32.09	47.765	
6,800.0	5,648.9	5,350.0	5,338.3	27.6	10.9	-61.35	157.0	285.0	1,624.1	1,590.5	33.54	48.429	
6,900.0	5,648.9	5,329.3	5,318.0	29.2	10.8	-59.78	152.5	284.4	1,715.7	1,681.2	34.53	49.691	
7,000.0	5,648.9	5,324.8	5,313.7	30.9	10.8	-59.45	151.7	284.3	1,808.5	1,772.6	35.91	50.366	
7,100.0	5,648.9	5,320.7	5,309.7	32.5	10.8	-59.14	150.9	284.2	1,901.9	1,864.6	37.31	50.975	
7,200.0	5,648.9	5,300.0	5,289.2	34.3	10.7	-57.63	147.6	283.8	1,996.3	1,958.0	38.29	52.143	
7,300.0	5,648.9	5,300.0	5,289.2	36.0	10.7	-57.63	147.6	283.8	2,090.7	2,050.9	39.81	52.521	
7,400.0	5,648.9	5,300.0	5,289.2	37.7	10.7	-57.63	147.6	283.8	2,185.7	2,144.3	41.35	52.864	
7,500.0	5,648.9	5,300.0	5,289.2	39.5	10.7	-57.63	147.6	283.8	2,281.0	2,238.1	42.89	53.178	
7,600.0	5,648.9	5,300.0	5,289.2	41.3	10.7	-57.63	147.6	283.8	2,376.8	2,332.3	44.46	53.465	
7,700.0	5,648.9	5,300.0	5,289.2	43.0	10.7	-57.63	147.6	283.8	2,472.9	2,426.8	46.03	53.728	
7,800.0	5,648.9	5,300.0	5,289.2	44.8	10.7	-57.63	147.6	283.8	2,569.3	2,521.7	47.60	53.971	
7,900.0	5,648.9	5,300.0	5,289.2	46.7	10.7	-57.63	147.6	283.8	2,665.9	2,616.7	49.19	54.196	
8,000.0	5,648.9	5,300.0	5,289.2	48.5	10.7	-57.63	147.6	283.8	2,762.8	2,712.0	50.78	54.404	
8,100.0	5,648.9	5,300.0	5,289.2	50.3	10.7	-57.63	147.6	283.8	2,859.9	2,807.5	52.38	54.598	
8,200.0	5,648.9	5,300.0	5,289.2	52.1	10.7	-57.63	147.6	283.8	2,957.2	2,903.2	53.98	54.778	
8,300.0	5,648.9	5,300.0	5,289.2	54.0	10.7	-57.63	147.6	283.8	3,054.7	2,999.1	55.59	54.947	
8,400.0	5,648.9	5,300.0	5,289.2	55.8	10.7	-57.63	147.6	283.8	3,152.3	3,095.1	57.21	55.105	
8,500.0	5,648.9	5,300.0	5,289.2	57.7	10.7	-57.63	147.6	283.8	3,250.1	3,191.2	58.82	55.253	
8,600.0	5,648.9	5,300.0	5,289.2	59.5	10.7	-57.63	147.6	283.8	3,348.0	3,287.5	60.44	55.392	
8,700.0	5,648.9	5,300.0	5,289.2	61.4	10.7	-57.63	147.6	283.8	3,446.0	3,383.9	62.06	55.523	
8,800.0	5,648.9	5,300.0	5,289.2	63.2	10.7	-57.63	147.6	283.8	3,544.1	3,480.4	63.69	55.647	
8,900.0	5,648.9	5,300.0	5,289.2	65.1	10.7	-57.63	147.6	283.8	3,642.4	3,577.1	65.32	55.764	
9,000.0	5,648.9	5,300.0	5,289.2	67.0	10.7	-57.63	147.6	283.8	3,740.7	3,673.8	66.95	55.874	
9,100.0	5,648.9	5,277.6	5,267.0	68.8	10.7	-56.04	144.9	283.5	3,838.6	3,771.0	67.57	56.811	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2216B - HZ - Plan #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	5,276.5	5,265.8	70.7	10.7	-55.96	144.8	283.5	3,937.0	3,867.9	69.13	56.955	
9,300.0	5,648.9	5,275.4	5,264.7	72.6	10.7	-55.88	144.7	283.5	4,035.5	3,964.8	70.68	57.092	
9,400.0	5,648.9	5,274.3	5,263.7	74.5	10.7	-55.81	144.6	283.5	4,134.1	4,061.9	72.25	57.223	
9,500.0	5,648.9	5,273.3	5,262.7	76.3	10.7	-55.74	144.5	283.5	4,232.8	4,158.9	73.81	57.348	
9,600.0	5,648.9	5,272.3	5,261.7	78.2	10.7	-55.67	144.4	283.4	4,331.5	4,256.1	75.37	57.467	
9,700.0	5,648.9	5,250.0	5,239.4	80.1	10.6	-54.16	142.9	283.3	4,430.7	4,354.9	75.83	58.426	
9,800.0	5,648.9	5,250.0	5,239.4	82.0	10.6	-54.16	142.9	283.3	4,529.5	4,452.1	77.43	58.501	
9,900.0	5,648.9	5,250.0	5,239.4	83.9	10.6	-54.16	142.9	283.3	4,628.3	4,549.3	79.02	58.573	
10,000.0	5,648.9	5,250.0	5,239.4	85.8	10.6	-54.16	142.9	283.3	4,727.2	4,646.6	80.61	58.642	
10,100.0	5,648.9	5,250.0	5,239.4	87.7	10.6	-54.16	142.9	283.3	4,826.1	4,743.9	82.21	58.708	
10,200.0	5,649.0	5,250.0	5,239.4	89.6	10.6	-54.16	142.9	283.3	4,925.1	4,841.3	83.80	58.771	
10,300.0	5,649.0	5,250.0	5,239.4	91.4	10.6	-54.16	142.9	283.3	5,024.1	4,938.7	85.40	58.832	
10,400.0	5,649.0	5,250.0	5,239.4	93.3	10.6	-54.16	142.9	283.3	5,123.1	5,036.1	86.99	58.890	
10,500.0	5,649.0	5,250.0	5,239.4	95.2	10.6	-54.16	142.9	283.3	5,222.2	5,133.6	88.59	58.947	
10,600.0	5,649.0	5,250.0	5,239.4	97.1	10.6	-54.16	142.9	283.3	5,321.3	5,231.1	90.19	59.001	
10,700.0	5,649.0	5,250.0	5,239.4	99.0	10.6	-54.16	142.9	283.3	5,420.5	5,328.7	91.79	59.053	
10,800.0	5,649.0	5,250.0	5,239.4	100.9	10.6	-54.16	142.9	283.3	5,519.7	5,426.3	93.39	59.103	
10,900.0	5,649.0	5,250.0	5,239.4	102.8	10.6	-54.16	142.9	283.3	5,618.9	5,523.9	94.99	59.152	
11,000.0	5,649.0	5,250.0	5,239.4	104.7	10.6	-54.16	142.9	283.3	5,718.1	5,621.5	96.59	59.199	
11,100.0	5,649.0	5,250.0	5,239.4	106.6	10.6	-54.16	142.9	283.3	5,817.4	5,719.2	98.19	59.244	
11,200.0	5,649.0	5,250.0	5,239.4	108.5	10.6	-54.16	142.9	283.3	5,916.7	5,816.9	99.80	59.288	
11,300.0	5,649.0	5,250.0	5,239.4	110.4	10.6	-54.16	142.9	283.3	6,016.0	5,914.6	101.40	59.331	
11,400.0	5,649.0	5,250.0	5,239.4	112.3	10.6	-54.16	142.9	283.3	6,115.3	6,012.3	103.00	59.372	
11,500.0	5,649.0	5,250.0	5,239.4	114.2	10.6	-54.16	142.9	283.3	6,214.7	6,110.1	104.60	59.411	
11,600.0	5,649.0	5,250.0	5,239.4	116.1	10.6	-54.16	142.9	283.3	6,314.0	6,207.8	106.21	59.450	
11,700.0	5,649.0	5,250.0	5,239.4	118.0	10.6	-54.16	142.9	283.3	6,413.4	6,305.6	107.81	59.487	
11,800.0	5,649.0	5,250.0	5,239.4	119.9	10.6	-54.16	142.9	283.3	6,512.8	6,403.4	109.42	59.523	
11,900.0	5,649.0	5,250.0	5,239.4	121.9	10.6	-54.16	142.9	283.3	6,612.3	6,501.3	111.02	59.558	
12,000.0	5,649.0	5,250.0	5,239.4	123.8	10.6	-54.16	142.9	283.3	6,711.7	6,599.1	112.63	59.592	
12,100.0	5,649.0	5,250.0	5,239.4	125.7	10.6	-54.16	142.9	283.3	6,811.2	6,697.0	114.23	59.626	
12,200.0	5,649.0	5,250.0	5,239.4	127.6	10.6	-54.16	142.9	283.3	6,910.7	6,794.8	115.84	59.658	
12,300.0	5,649.0	5,250.0	5,239.4	129.5	10.6	-54.16	142.9	283.3	7,010.2	6,892.7	117.44	59.689	
12,400.0	5,649.0	5,250.0	5,239.4	131.4	10.6	-54.16	142.9	283.3	7,109.7	6,990.6	119.05	59.719	
12,500.0	5,649.0	5,250.0	5,239.4	133.3	10.6	-54.16	142.9	283.3	7,209.2	7,088.5	120.66	59.749	
12,590.4	5,649.0	5,250.0	5,239.4	134.7	10.6	-54.16	142.9	283.3	7,299.2	7,177.4	121.82	59.919	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3414B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	156.02	-74.7	33.2	81.7				
100.0	100.0	100.0	100.0	0.1	0.1	156.02	-74.7	33.2	81.7	81.6	0.19	435.549	
200.0	200.0	200.0	200.0	0.3	0.3	156.02	-74.7	33.2	81.7	81.1	0.64	128.284	
300.0	300.0	300.0	300.0	0.5	0.5	156.02	-74.7	33.2	81.7	80.7	1.09	75.219	
400.0	400.0	400.0	400.0	0.8	0.8	156.02	-74.7	33.2	81.7	80.2	1.54	53.209	
500.0	500.0	500.0	500.0	1.0	1.0	156.02	-74.7	33.2	81.7	79.8	1.99	41.164	
600.0	600.0	600.0	600.0	1.2	1.2	156.02	-74.7	33.2	81.7	79.3	2.44	33.566	
700.0	700.0	700.0	700.0	1.4	1.4	156.02	-74.7	33.2	81.7	78.9	2.88	28.335	
800.0	800.0	800.0	800.0	1.7	1.7	156.02	-74.7	33.2	81.7	78.4	3.33	24.515	
900.0	900.0	900.0	900.0	1.9	1.9	156.02	-74.7	33.2	81.7	78.0	3.78	21.603	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	156.02	-74.7	33.2	81.7	77.5	4.23	19.309	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	156.02	-74.7	33.2	81.7	77.1	4.68	17.455	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	156.02	-74.7	33.2	81.7	76.6	5.13	15.927	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	156.02	-74.7	33.2	81.7	76.2	5.58	14.644	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	156.02	-74.7	33.2	81.7	75.7	6.03	13.553	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	156.02	-74.7	33.2	81.7	75.3	6.48	12.613	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	156.02	-74.7	33.2	81.7	74.8	6.93	11.795	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	156.02	-74.7	33.2	81.7	74.4	7.38	11.076	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	156.02	-74.7	33.2	81.7	73.9	7.83	10.440	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	156.02	-74.7	33.2	81.7	73.5	8.28	9.873	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	156.02	-74.7	33.2	81.7	73.0	8.73	9.365	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	156.02	-74.7	33.2	81.7	72.6	9.18	8.906	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	156.02	-74.7	33.2	81.7	72.1	9.63	8.490	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	156.02	-74.7	33.2	81.7	71.7	10.08	8.112	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	156.02	-74.7	33.2	81.7	71.2	10.53	7.765	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	156.02	-74.7	33.2	81.7	70.8	10.98	7.447	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	156.02	-74.7	33.2	81.7	70.3	11.43	7.154	
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	156.02	-74.7	33.2	81.7	69.9	11.88	6.883	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	156.02	-74.7	33.2	81.7	69.4	12.33	6.632	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	156.02	-74.7	33.2	81.7	69.0	12.77	6.399	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	156.02	-74.7	33.2	81.7	68.5	13.22	6.181	
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	156.02	-74.7	33.2	81.7	68.1	13.67	5.978	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	156.02	-74.7	33.2	81.7	67.6	14.12	5.788	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	156.02	-74.7	33.2	81.7	67.2	14.57	5.609	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	156.02	-74.7	33.2	81.7	66.7	15.02	5.442	
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	156.02	-74.7	33.2	81.7	66.3	15.47	5.283	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	156.02	-74.7	33.2	81.7	65.8	15.92	5.134	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	156.02	-74.7	33.2	81.7	65.4	16.37	4.993	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	156.02	-74.7	33.2	81.7	64.9	16.82	4.860	
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	156.02	-74.7	33.2	81.7	64.5	17.27	4.733	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	156.02	-74.7	33.2	81.7	64.0	17.72	4.613	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	156.02	-74.7	33.2	81.7	63.6	18.17	4.499	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	156.02	-74.7	33.2	81.7	63.1	18.62	4.390	
4,300.0	4,300.0	4,300.0	4,300.0	9.5	9.5	156.02	-74.7	33.2	81.7	62.7	19.07	4.287	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	156.02	-74.7	33.2	81.7	62.2	19.52	4.188	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	156.02	-74.7	33.2	81.7	61.8	19.97	4.094	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	156.02	-74.7	33.2	81.7	61.3	20.42	4.004	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	10.4	156.02	-74.7	33.2	81.7	60.9	20.87	3.918	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	156.02	-74.7	33.2	81.7	60.4	21.32	3.835	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	156.02	-74.7	33.2	81.7	60.0	21.77	3.756	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	156.02	-74.7	33.2	81.7	59.5	22.21	3.680	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	11.3	156.02	-74.7	33.2	81.7	59.1	22.66	3.607	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3414B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,128.0	5,128.0	11.4	11.4	156.02	-74.7	33.2	81.7	59.0	22.79	3.587	
5,150.0	5,150.0	5,150.0	5,150.0	11.4	11.4	-43.73	-74.7	33.2	81.4	58.5	22.87	3.559	
5,200.0	5,199.8	5,199.8	5,199.8	11.5	11.6	-46.26	-74.7	33.2	78.2	55.2	22.99	3.403	
5,250.0	5,248.9	5,245.2	5,245.2	11.6	11.6	-51.18	-75.6	33.3	72.9	49.9	23.04	3.167	
5,300.0	5,296.9	5,289.2	5,289.0	11.7	11.7	-57.77	-80.0	33.4	68.9	45.8	23.10	2.984	
5,350.0	5,343.3	5,333.7	5,332.7	11.8	11.8	-65.90	-88.1	33.7	67.1	43.8	23.28	2.881	
5,358.8	5,351.3	5,341.5	5,340.3	11.8	11.8	-67.44	-90.0	33.8	67.0	43.7	23.34	2.872	CC, ES
5,400.0	5,387.8	5,378.5	5,375.8	11.9	11.9	-74.90	-100.1	34.2	68.1	44.5	23.59	2.887	
5,450.0	5,429.9	5,423.7	5,418.2	12.0	12.0	-83.77	-115.9	34.8	72.5	48.5	23.94	3.027	
5,500.0	5,469.2	5,469.3	5,459.3	12.2	12.1	-91.59	-135.5	35.6	80.2	55.9	24.23	3.308	
5,550.0	5,505.3	5,515.3	5,499.0	12.4	12.1	-97.88	-158.8	36.5	90.9	66.5	24.44	3.720	
5,600.0	5,538.0	5,561.8	5,536.7	12.6	12.3	-102.60	-185.8	37.5	104.2	79.6	24.59	4.237	
5,650.0	5,566.9	5,608.6	5,572.2	12.9	12.4	-105.94	-216.4	38.7	119.5	94.7	24.76	4.826	
5,700.0	5,591.8	5,656.1	5,605.2	13.2	12.6	-108.15	-250.4	40.0	136.4	111.4	25.02	5.454	
5,750.0	5,612.4	5,704.1	5,635.3	13.6	12.8	-109.48	-287.8	41.4	154.7	129.3	25.41	6.089	
5,800.0	5,628.5	5,752.8	5,662.2	14.1	13.1	-110.11	-328.4	43.0	174.1	148.1	25.98	6.701	
5,850.0	5,640.0	5,802.4	5,685.6	14.6	13.5	-110.21	-372.0	44.6	194.2	167.5	26.72	7.270	
5,900.0	5,646.8	5,853.0	5,705.0	15.1	13.9	-109.89	-418.7	46.4	215.0	187.3	27.63	7.779	
5,946.2	5,648.9	5,900.7	5,719.1	15.6	14.3	-109.32	-464.2	48.2	234.4	205.8	28.62	8.191	
6,000.0	5,648.9	5,958.6	5,730.5	16.3	14.9	-110.09	-520.9	50.4	255.8	226.1	29.69	8.616	
6,100.0	5,648.9	6,070.8	5,735.9	17.4	16.2	-108.30	-632.8	54.3	287.2	254.7	32.46	8.847	
6,200.0	5,648.9	6,173.2	5,735.9	18.7	17.4	-106.66	-735.2	54.6	309.6	274.3	35.31	8.767	
6,300.0	5,648.9	6,271.5	5,735.9	20.1	18.8	-105.61	-833.5	54.6	326.9	288.7	38.21	8.555	
6,400.0	5,648.9	6,370.7	5,735.9	21.5	20.2	-104.93	-932.7	54.6	339.3	298.1	41.18	8.240	
6,500.0	5,648.9	6,470.4	5,735.9	23.0	21.8	-104.55	-1,032.4	54.6	346.7	302.6	44.16	7.852	
6,596.3	5,648.9	6,566.7	5,735.9	24.4	23.3	-104.43	-1,128.6	54.6	349.1	302.1	46.99	7.428	
6,600.0	5,648.9	6,570.3	5,735.9	24.5	23.4	-104.43	-1,132.3	54.6	349.1	302.0	47.10	7.410	
6,700.0	5,648.9	6,670.3	5,735.9	26.0	25.0	-104.43	-1,232.3	54.6	349.1	298.9	50.22	6.951	
6,800.0	5,648.9	6,770.3	5,735.9	27.6	26.7	-104.43	-1,332.3	54.6	349.1	295.7	53.41	6.536	
6,900.0	5,648.9	6,870.3	5,735.9	29.2	28.4	-104.43	-1,432.3	54.6	349.1	292.4	56.67	6.160	
7,000.0	5,648.9	6,970.3	5,735.9	30.9	30.1	-104.43	-1,532.3	54.6	349.1	289.1	59.99	5.819	
7,100.0	5,648.9	7,070.3	5,735.9	32.5	31.9	-104.43	-1,632.3	54.7	349.1	285.7	63.35	5.510	
7,200.0	5,648.9	7,170.3	5,735.9	34.3	33.7	-104.43	-1,732.3	54.7	349.0	282.3	66.76	5.229	
7,300.0	5,648.9	7,270.3	5,735.9	36.0	35.4	-104.43	-1,832.3	54.7	349.0	278.8	70.20	4.972	
7,400.0	5,648.9	7,370.3	5,735.9	37.7	37.2	-104.43	-1,932.3	54.7	349.0	275.4	73.67	4.738	
7,500.0	5,648.9	7,470.3	5,735.9	39.5	39.1	-104.43	-2,032.3	54.7	349.0	271.9	77.16	4.523	
7,600.0	5,648.9	7,570.3	5,735.9	41.3	40.9	-104.43	-2,132.3	54.7	349.0	268.4	80.68	4.326	
7,700.0	5,648.9	7,670.3	5,735.9	43.0	42.7	-104.43	-2,232.3	54.7	349.0	264.8	84.21	4.145	
7,800.0	5,648.9	7,770.3	5,735.9	44.8	44.6	-104.43	-2,332.3	54.7	349.0	261.3	87.77	3.977	
7,900.0	5,648.9	7,870.3	5,735.9	46.7	46.4	-104.43	-2,432.3	54.7	349.0	257.7	91.33	3.821	
8,000.0	5,648.9	7,970.3	5,735.9	48.5	48.3	-104.43	-2,532.3	54.7	349.0	254.1	94.92	3.677	
8,100.0	5,648.9	8,070.3	5,735.9	50.3	50.1	-104.43	-2,632.3	54.7	349.0	250.5	98.51	3.543	
8,200.0	5,648.9	8,170.3	5,735.9	52.1	52.0	-104.43	-2,732.3	54.7	349.0	246.9	102.11	3.418	
8,300.0	5,648.9	8,270.3	5,735.9	54.0	53.8	-104.43	-2,832.3	54.7	349.0	243.3	105.72	3.301	
8,400.0	5,648.9	8,370.3	5,735.9	55.8	55.7	-104.43	-2,932.3	54.7	349.0	239.7	109.35	3.192	
8,500.0	5,648.9	8,470.3	5,735.9	57.7	57.6	-104.44	-3,032.3	54.7	349.0	236.0	112.97	3.089	
8,600.0	5,648.9	8,570.3	5,735.9	59.5	59.5	-104.44	-3,132.3	54.7	349.0	232.4	116.61	2.993	
8,700.0	5,648.9	8,670.3	5,735.9	61.4	61.3	-104.44	-3,232.3	54.7	349.0	228.7	120.25	2.902	
8,800.0	5,648.9	8,770.3	5,735.9	63.2	63.2	-104.44	-3,332.3	54.7	349.0	225.1	123.90	2.817	
8,900.0	5,648.9	8,870.3	5,735.9	65.1	65.1	-104.44	-3,432.3	54.7	349.0	221.4	127.55	2.736	
9,000.0	5,648.9	8,970.3	5,735.9	67.0	67.0	-104.44	-3,532.3	54.7	349.0	217.8	131.21	2.660	
9,100.0	5,648.9	9,070.3	5,735.9	68.8	68.9	-104.44	-3,632.3	54.7	349.0	214.1	134.87	2.587	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3414B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	9,170.3	5,735.9	70.7	70.8	-104.44	-3,732.3	54.7	349.0	210.4	138.54	2.519	
9,300.0	5,648.9	9,270.3	5,735.9	72.6	72.7	-104.44	-3,832.3	54.7	349.0	206.8	142.21	2.454	
9,400.0	5,648.9	9,370.3	5,735.9	74.5	74.5	-104.44	-3,932.3	54.7	349.0	203.1	145.89	2.392	
9,500.0	5,648.9	9,470.3	5,735.9	76.3	76.4	-104.44	-4,032.3	54.7	349.0	199.4	149.56	2.333	
9,600.0	5,648.9	9,570.3	5,735.9	78.2	78.3	-104.44	-4,132.3	54.7	349.0	195.7	153.24	2.277	
9,700.0	5,648.9	9,670.3	5,735.9	80.1	80.2	-104.44	-4,232.3	54.7	348.9	192.0	156.92	2.224	
9,800.0	5,648.9	9,770.3	5,735.9	82.0	82.1	-104.44	-4,332.3	54.7	348.9	188.3	160.61	2.173	
9,900.0	5,648.9	9,870.3	5,735.9	83.9	84.0	-104.44	-4,432.3	54.7	348.9	184.6	164.30	2.124	
10,000.0	5,648.9	9,970.3	5,735.9	85.8	85.9	-104.44	-4,532.3	54.7	348.9	181.0	167.99	2.077	
10,100.0	5,648.9	10,070.3	5,735.9	87.7	87.8	-104.44	-4,632.3	54.7	348.9	177.3	171.68	2.032	
10,200.0	5,649.0	10,170.3	5,735.9	89.6	89.7	-104.44	-4,732.3	54.7	348.9	173.6	175.37	1.990	
10,300.0	5,649.0	10,270.3	5,735.9	91.4	91.6	-104.44	-4,832.3	54.7	348.9	169.9	179.07	1.949	
10,400.0	5,649.0	10,370.3	5,736.0	93.3	93.5	-104.44	-4,932.3	54.7	348.9	166.2	182.77	1.909	
10,500.0	5,649.0	10,470.3	5,736.0	95.2	95.4	-104.44	-5,032.3	54.8	348.9	162.5	186.47	1.871	
10,600.0	5,649.0	10,570.3	5,736.0	97.1	97.3	-104.44	-5,132.3	54.8	348.9	158.7	190.17	1.835	
10,700.0	5,649.0	10,670.3	5,736.0	99.0	99.3	-104.44	-5,232.3	54.8	348.9	155.0	193.87	1.800	
10,800.0	5,649.0	10,770.3	5,736.0	100.9	101.2	-104.44	-5,332.3	54.8	348.9	151.3	197.57	1.766	
10,900.0	5,649.0	10,870.3	5,736.0	102.8	103.1	-104.44	-5,432.3	54.8	348.9	147.6	201.28	1.733	
11,000.0	5,649.0	10,970.3	5,736.0	104.7	105.0	-104.44	-5,532.3	54.8	348.9	143.9	204.98	1.702	
11,100.0	5,649.0	11,070.3	5,736.0	106.6	106.9	-104.44	-5,632.3	54.8	348.9	140.2	208.69	1.672	
11,200.0	5,649.0	11,170.3	5,736.0	108.5	108.8	-104.44	-5,732.3	54.8	348.9	136.5	212.40	1.643	
11,300.0	5,649.0	11,270.3	5,736.0	110.4	110.7	-104.44	-5,832.3	54.8	348.9	132.8	216.11	1.614	
11,400.0	5,649.0	11,370.3	5,736.0	112.3	112.6	-104.44	-5,932.3	54.8	348.9	129.1	219.82	1.587	
11,500.0	5,649.0	11,470.3	5,736.0	114.2	114.5	-104.44	-6,032.3	54.8	348.9	125.4	223.53	1.561	
11,600.0	5,649.0	11,570.3	5,736.0	116.1	116.4	-104.44	-6,132.3	54.8	348.9	121.6	227.24	1.535	
11,700.0	5,649.0	11,670.3	5,736.0	118.0	118.3	-104.44	-6,232.3	54.8	348.9	117.9	230.95	1.511	
11,800.0	5,649.0	11,770.3	5,736.0	119.9	120.2	-104.44	-6,332.3	54.8	348.9	114.2	234.67	1.487	Level 3
11,900.0	5,649.0	11,870.3	5,736.0	121.9	122.2	-104.44	-6,432.3	54.8	348.9	110.5	238.38	1.463	Level 3
12,000.0	5,649.0	11,970.3	5,736.0	123.8	124.1	-104.44	-6,532.3	54.8	348.9	106.8	242.10	1.441	Level 3
12,100.0	5,649.0	12,070.3	5,736.0	125.7	126.0	-104.44	-6,632.3	54.8	348.9	103.0	245.81	1.419	Level 3
12,200.0	5,649.0	12,170.3	5,736.0	127.6	127.9	-104.44	-6,732.3	54.8	348.9	99.3	249.53	1.398	Level 3
12,300.0	5,649.0	12,270.3	5,736.0	129.5	129.8	-104.44	-6,832.3	54.8	348.8	95.6	253.24	1.378	Level 3
12,400.0	5,649.0	12,370.3	5,736.0	131.4	131.7	-104.44	-6,932.3	54.8	348.8	91.9	256.96	1.358	Level 3
12,500.0	5,649.0	12,470.3	5,736.0	133.3	133.6	-104.44	-7,032.3	54.8	348.8	88.2	260.68	1.338	Level 3
12,590.4	5,649.0	12,560.8	5,736.0	134.7	135.4	-104.44	-7,122.8	54.8	348.8	85.1	263.74	1.323	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3415A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	66.2	66.2				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	66.2	66.2	66.0	0.19	352.528	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	66.2	66.2	65.5	0.64	103.831	
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	66.2	66.2	65.1	1.09	60.881	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	66.2	66.2	64.6	1.54	43.067	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	66.2	66.2	64.2	1.99	33.318	
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	66.2	66.2	63.7	2.44	27.168	
700.0	700.0	700.0	700.0	1.4	1.4	90.01	0.0	66.2	66.2	63.3	2.88	22.934	
800.0	800.0	800.0	800.0	1.7	1.7	90.01	0.0	66.2	66.2	62.8	3.33	19.842	
900.0	900.0	900.0	900.0	1.9	1.9	90.01	0.0	66.2	66.2	62.4	3.78	17.485	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	0.0	66.2	66.2	61.9	4.23	15.628	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	90.01	0.0	66.2	66.2	61.5	4.68	14.128	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.01	0.0	66.2	66.2	61.0	5.13	12.891	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.01	0.0	66.2	66.2	60.6	5.58	11.853	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.01	0.0	66.2	66.2	60.1	6.03	10.969	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	90.01	0.0	66.2	66.2	59.7	6.48	10.208	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.01	0.0	66.2	66.2	59.2	6.93	9.546	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.01	0.0	66.2	66.2	58.8	7.38	8.965	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.01	0.0	66.2	66.2	58.3	7.83	8.450	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	90.01	0.0	66.2	66.2	57.9	8.28	7.991	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.01	0.0	66.2	66.2	57.4	8.73	7.580	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.01	0.0	66.2	66.2	57.0	9.18	7.209	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.01	0.0	66.2	66.2	56.5	9.63	6.872	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	90.01	0.0	66.2	66.2	56.1	10.08	6.565	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.01	0.0	66.2	66.2	55.6	10.53	6.285	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.01	0.0	66.2	66.2	55.2	10.98	6.028	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.01	0.0	66.2	66.2	54.7	11.43	5.791	
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	90.01	0.0	66.2	66.2	54.3	11.88	5.571	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.01	0.0	66.2	66.2	53.8	12.33	5.368	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.01	0.0	66.2	66.2	53.4	12.77	5.179	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.01	0.0	66.2	66.2	52.9	13.22	5.003	
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	90.01	0.0	66.2	66.2	52.5	13.67	4.839	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.01	0.0	66.2	66.2	52.0	14.12	4.685	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.01	0.0	66.2	66.2	51.6	14.57	4.540	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.01	0.0	66.2	66.2	51.1	15.02	4.404	
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	90.01	0.0	66.2	66.2	50.7	15.47	4.276	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	90.01	0.0	66.2	66.2	50.2	15.92	4.156	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	90.01	0.0	66.2	66.2	49.8	16.37	4.041	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	90.01	0.0	66.2	66.2	49.3	16.82	3.933	
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	90.01	0.0	66.2	66.2	48.9	17.27	3.831	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	90.01	0.0	66.2	66.2	48.4	17.72	3.734	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	90.01	0.0	66.2	66.2	48.0	18.17	3.642	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	90.01	0.0	66.2	66.2	47.5	18.62	3.554	
4,300.0	4,300.0	4,300.0	4,300.0	9.5	9.5	90.01	0.0	66.2	66.2	47.1	19.07	3.470	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	90.01	0.0	66.2	66.2	46.6	19.52	3.390	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	90.01	0.0	66.2	66.2	46.2	19.97	3.314	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	90.01	0.0	66.2	66.2	45.7	20.42	3.241	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	10.4	90.01	0.0	66.2	66.2	45.3	20.87	3.171	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	90.01	0.0	66.2	66.2	44.8	21.32	3.104	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	90.01	0.0	66.2	66.2	44.4	21.77	3.040	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	90.01	0.0	66.2	66.2	43.9	22.21	2.978	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	11.3	90.01	0.0	66.2	66.2	43.5	22.66	2.919	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3415A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,128.0	5,128.0	11.4	11.4	90.01	0.0	66.2	66.2	43.4	22.79	2.903	CC, ES
5,150.0	5,150.0	5,149.0	5,149.0	11.4	11.4	-109.48	-0.4	66.3	66.5	43.6	22.87	2.907	
5,200.0	5,199.8	5,196.7	5,196.5	11.5	11.5	-109.35	-4.2	67.8	69.5	46.5	23.01	3.022	
5,250.0	5,248.9	5,243.9	5,243.0	11.6	11.6	-109.07	-12.0	70.8	75.8	52.7	23.13	3.278	
5,300.0	5,296.9	5,290.5	5,287.9	11.7	11.7	-108.63	-23.5	75.3	85.2	62.0	23.24	3.667	
5,350.0	5,343.3	5,336.3	5,330.8	11.8	11.8	-108.00	-38.3	81.1	97.6	74.2	23.35	4.180	
5,400.0	5,387.8	5,380.9	5,371.1	11.9	11.9	-107.18	-56.1	88.0	112.8	89.3	23.49	4.801	
5,450.0	5,429.9	5,424.5	5,408.7	12.0	12.0	-106.15	-76.5	95.9	130.6	106.9	23.68	5.516	
5,500.0	5,469.2	5,466.8	5,443.4	12.2	12.1	-104.91	-99.1	104.7	150.9	126.9	23.94	6.302	
5,550.0	5,505.3	5,507.8	5,475.1	12.4	12.2	-103.47	-123.5	114.2	173.3	149.1	24.28	7.138	
5,600.0	5,538.0	5,547.7	5,503.7	12.6	12.4	-101.82	-149.3	124.2	197.8	173.0	24.72	8.001	
5,650.0	5,566.9	5,586.4	5,529.5	12.9	12.6	-99.98	-176.2	134.7	223.9	198.7	25.25	8.867	
5,700.0	5,591.8	5,624.1	5,552.4	13.2	12.8	-97.96	-204.1	145.5	251.6	225.7	25.88	9.721	
5,750.0	5,612.4	5,660.9	5,572.7	13.6	13.1	-95.77	-232.7	156.7	280.5	253.9	26.58	10.553	
5,800.0	5,628.5	5,697.0	5,590.4	14.1	13.3	-93.45	-262.0	168.0	310.5	283.1	27.34	11.355	
5,850.0	5,640.0	5,732.5	5,605.6	14.6	13.6	-91.03	-291.8	179.6	341.3	313.1	28.16	12.119	
5,900.0	5,646.8	5,767.6	5,618.6	15.1	14.0	-88.54	-322.3	191.5	372.8	343.8	29.01	12.850	
5,946.2	5,648.9	5,800.0	5,628.5	15.6	14.3	-86.22	-351.0	202.7	402.2	372.4	29.81	13.495	
6,000.0	5,648.9	5,838.7	5,637.8	16.3	14.7	-88.14	-386.0	216.3	436.4	405.5	30.91	14.119	
6,100.0	5,648.9	5,916.4	5,648.0	17.4	15.7	-89.88	-457.7	244.2	497.3	464.2	33.06	15.041	
6,200.0	5,648.9	6,020.0	5,648.9	18.7	17.0	-90.00	-554.8	280.4	553.1	517.3	35.74	15.476	
6,300.0	5,648.9	6,147.0	5,648.9	20.1	18.7	-90.00	-676.1	317.8	599.3	560.3	38.96	15.382	
6,400.0	5,648.9	6,285.4	5,648.9	21.5	20.7	-90.00	-810.8	349.2	634.4	591.8	42.63	14.883	
6,500.0	5,648.9	6,432.5	5,648.9	23.0	22.9	-90.00	-956.1	371.9	657.3	610.7	46.63	14.098	
6,596.3	5,648.9	6,579.1	5,648.9	24.4	25.2	-90.00	-1,102.3	383.3	667.3	616.6	50.62	13.182	
6,600.0	5,648.9	6,584.8	5,648.9	24.5	25.3	-90.00	-1,108.0	383.5	667.4	616.6	50.77	13.146	
6,700.0	5,648.9	6,709.2	5,648.9	26.0	27.2	-90.00	-1,232.4	384.8	668.2	613.9	54.34	12.297	
6,800.0	5,648.9	6,809.2	5,648.9	27.6	28.8	-90.00	-1,332.4	384.8	668.2	610.7	57.55	11.611	
6,900.0	5,648.9	6,909.2	5,648.9	29.2	30.4	-90.00	-1,432.4	384.8	668.2	607.4	60.84	10.983	
7,000.0	5,648.9	7,009.2	5,648.9	30.9	32.1	-90.00	-1,532.4	384.8	668.2	604.0	64.19	10.410	
7,100.0	5,648.9	7,109.2	5,648.9	32.5	33.7	-90.00	-1,632.4	384.8	668.2	600.6	67.59	9.886	
7,200.0	5,648.9	7,209.2	5,648.9	34.3	35.4	-90.00	-1,732.4	384.8	668.2	597.1	71.04	9.405	
7,300.0	5,648.9	7,309.2	5,648.9	36.0	37.2	-90.00	-1,832.4	384.8	668.2	593.6	74.53	8.965	
7,400.0	5,648.9	7,409.2	5,648.9	37.7	38.9	-90.00	-1,932.4	384.8	668.1	590.1	78.06	8.560	
7,500.0	5,648.9	7,509.2	5,648.9	39.5	40.7	-90.00	-2,032.4	384.8	668.1	586.5	81.61	8.187	
7,600.0	5,648.9	7,609.2	5,648.9	41.3	42.4	-90.00	-2,132.4	384.8	668.1	582.9	85.19	7.843	
7,700.0	5,648.9	7,709.2	5,648.9	43.0	44.2	-90.00	-2,232.4	384.8	668.1	579.3	88.79	7.525	
7,800.0	5,648.9	7,809.2	5,648.9	44.8	46.0	-90.00	-2,332.4	384.8	668.1	575.7	92.41	7.230	
7,900.0	5,648.9	7,909.2	5,648.9	46.7	47.8	-90.00	-2,432.4	384.8	668.1	572.0	96.05	6.956	
8,000.0	5,648.9	8,009.2	5,648.9	48.5	49.6	-90.00	-2,532.4	384.8	668.1	568.4	99.71	6.700	
8,100.0	5,648.9	8,109.2	5,648.9	50.3	51.4	-90.00	-2,632.4	384.8	668.1	564.7	103.38	6.463	
8,200.0	5,648.9	8,209.2	5,648.9	52.1	53.3	-90.00	-2,732.4	384.8	668.1	561.0	107.06	6.240	
8,300.0	5,648.9	8,309.2	5,648.9	54.0	55.1	-90.00	-2,832.4	384.8	668.1	557.3	110.75	6.032	
8,400.0	5,648.9	8,409.2	5,648.9	55.8	56.9	-90.00	-2,932.4	384.8	668.1	553.6	114.45	5.837	
8,500.0	5,648.9	8,509.2	5,648.9	57.7	58.8	-90.00	-3,032.4	384.8	668.0	549.9	118.16	5.654	
8,600.0	5,648.9	8,609.2	5,648.9	59.5	60.6	-90.00	-3,132.4	384.8	668.0	546.1	121.88	5.481	
8,700.0	5,648.9	8,709.2	5,648.9	61.4	62.5	-90.00	-3,232.4	384.8	668.0	542.4	125.61	5.318	
8,800.0	5,648.9	8,809.2	5,648.9	63.2	64.4	-90.00	-3,332.4	384.7	668.0	538.7	129.34	5.165	
8,900.0	5,648.9	8,909.2	5,648.9	65.1	66.2	-90.00	-3,432.4	384.7	668.0	534.9	133.09	5.019	
9,000.0	5,648.9	9,009.2	5,648.9	67.0	68.1	-90.00	-3,532.4	384.7	668.0	531.2	136.83	4.882	
9,100.0	5,648.9	9,109.2	5,648.9	68.8	69.9	-90.00	-3,632.4	384.7	668.0	527.4	140.58	4.752	
9,200.0	5,648.9	9,209.2	5,648.9	70.7	71.8	-90.00	-3,732.4	384.7	668.0	523.6	144.34	4.628	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3415A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,648.9	9,309.2	5,648.9	72.6	73.7	-90.00	-3,832.4	384.7	668.0	519.9	148.10	4.510	
9,400.0	5,648.9	9,409.2	5,648.9	74.5	75.6	-90.00	-3,932.4	384.7	668.0	516.1	151.86	4.398	
9,500.0	5,648.9	9,509.2	5,648.9	76.3	77.4	-90.00	-4,032.4	384.7	667.9	512.3	155.63	4.292	
9,600.0	5,648.9	9,609.2	5,648.9	78.2	79.3	-90.00	-4,132.4	384.7	667.9	508.5	159.40	4.190	
9,700.0	5,648.9	9,709.2	5,648.9	80.1	81.2	-90.00	-4,232.4	384.7	667.9	504.7	163.18	4.093	
9,800.0	5,648.9	9,809.2	5,648.9	82.0	83.1	-90.00	-4,332.4	384.7	667.9	501.0	166.96	4.000	
9,900.0	5,648.9	9,909.2	5,648.9	83.9	85.0	-90.00	-4,432.4	384.7	667.9	497.2	170.74	3.912	
10,000.0	5,648.9	10,009.2	5,648.9	85.8	86.9	-90.00	-4,532.4	384.7	667.9	493.4	174.52	3.827	
10,100.0	5,648.9	10,109.2	5,648.9	87.7	88.8	-90.00	-4,632.4	384.7	667.9	489.6	178.31	3.746	
10,200.0	5,649.0	10,209.2	5,648.9	89.6	90.6	-90.00	-4,732.4	384.7	667.9	485.8	182.10	3.668	
10,300.0	5,649.0	10,309.2	5,648.9	91.4	92.5	-90.00	-4,832.4	384.7	667.9	482.0	185.89	3.593	
10,400.0	5,649.0	10,409.2	5,648.9	93.3	94.4	-90.00	-4,932.4	384.7	667.9	478.2	189.68	3.521	
10,500.0	5,649.0	10,509.2	5,649.0	95.2	96.3	-90.00	-5,032.4	384.7	667.9	474.4	193.48	3.452	
10,600.0	5,649.0	10,609.2	5,649.0	97.1	98.2	-90.00	-5,132.4	384.7	667.8	470.6	197.28	3.385	
10,700.0	5,649.0	10,709.2	5,649.0	99.0	100.1	-90.00	-5,232.4	384.7	667.8	466.8	201.07	3.321	
10,800.0	5,649.0	10,809.2	5,649.0	100.9	102.0	-90.00	-5,332.4	384.7	667.8	462.9	204.88	3.260	
10,900.0	5,649.0	10,909.2	5,649.0	102.8	103.9	-90.00	-5,432.4	384.7	667.8	459.1	208.68	3.200	
11,000.0	5,649.0	11,009.2	5,649.0	104.7	105.8	-90.00	-5,532.4	384.7	667.8	455.3	212.48	3.143	
11,100.0	5,649.0	11,109.2	5,649.0	106.6	107.7	-90.00	-5,632.4	384.7	667.8	451.5	216.29	3.088	
11,200.0	5,649.0	11,209.2	5,649.0	108.5	109.6	-90.00	-5,732.4	384.7	667.8	447.7	220.09	3.034	
11,300.0	5,649.0	11,309.2	5,649.0	110.4	111.5	-90.00	-5,832.4	384.7	667.8	443.9	223.90	2.982	
11,400.0	5,649.0	11,409.2	5,649.0	112.3	113.4	-90.00	-5,932.4	384.7	667.8	440.1	227.71	2.933	
11,500.0	5,649.0	11,509.2	5,649.0	114.2	115.3	-90.00	-6,032.4	384.7	667.8	436.2	231.52	2.884	
11,600.0	5,649.0	11,609.2	5,649.0	116.1	117.2	-90.00	-6,132.4	384.7	667.7	432.4	235.33	2.838	
11,700.0	5,649.0	11,709.2	5,649.0	118.0	119.1	-90.00	-6,232.4	384.7	667.7	428.6	239.14	2.792	
11,800.0	5,649.0	11,809.2	5,649.0	119.9	121.0	-90.00	-6,332.4	384.7	667.7	424.8	242.95	2.748	
11,900.0	5,649.0	11,909.2	5,649.0	121.9	122.9	-90.00	-6,432.4	384.7	667.7	421.0	246.76	2.706	
12,000.0	5,649.0	12,009.2	5,649.0	123.8	124.8	-90.00	-6,532.4	384.7	667.7	417.1	250.58	2.665	
12,100.0	5,649.0	12,109.2	5,649.0	125.7	126.7	-90.00	-6,632.4	384.7	667.7	413.3	254.39	2.625	
12,200.0	5,649.0	12,209.2	5,649.0	127.6	128.6	-90.00	-6,732.4	384.7	667.7	409.5	258.21	2.586	
12,300.0	5,649.0	12,309.2	5,649.0	129.5	130.5	-90.00	-6,832.4	384.7	667.7	405.7	262.03	2.548	
12,400.0	5,649.0	12,409.2	5,649.0	131.4	132.4	-90.00	-6,932.4	384.7	667.7	401.8	265.84	2.512	
12,500.0	5,649.0	12,509.2	5,649.0	133.3	134.4	-90.00	-7,032.4	384.7	667.7	398.0	269.66	2.476	
12,590.4	5,649.0	12,599.6	5,649.0	134.7	136.1	-90.00	-7,122.8	384.6	667.7	394.8	272.81	2.447	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3416B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	126.93	-74.7	99.4	124.3				
100.0	100.0	100.0	100.0	0.1	0.1	126.93	-74.7	99.4	124.3	124.1	0.19	662.465	
200.0	200.0	200.0	200.0	0.3	0.3	126.93	-74.7	99.4	124.3	123.7	0.64	195.118	
300.0	300.0	300.0	300.0	0.5	0.5	126.93	-74.7	99.4	124.3	123.2	1.09	114.407	
400.0	400.0	400.0	400.0	0.8	0.8	126.93	-74.7	99.4	124.3	122.8	1.54	80.930	
500.0	500.0	500.0	500.0	1.0	1.0	126.93	-74.7	99.4	124.3	122.3	1.99	62.610	CC, ES
600.0	600.0	595.8	595.8	1.2	1.2	126.85	-75.5	100.8	126.0	123.6	2.41	52.329	
700.0	700.0	691.5	691.3	1.4	1.4	126.60	-77.9	104.9	131.0	128.1	2.82	46.373	
800.0	800.0	790.8	790.4	1.7	1.6	126.27	-81.4	110.9	137.9	134.6	3.25	42.367	
900.0	900.0	890.6	890.0	1.9	1.8	125.98	-84.9	116.9	144.8	141.1	3.69	39.261	
1,000.0	1,000.0	990.3	989.5	2.1	2.1	125.71	-88.4	122.9	151.8	147.6	4.13	36.763	
1,100.0	1,100.0	1,090.1	1,089.0	2.3	2.3	125.46	-91.9	129.0	158.7	154.1	4.57	34.715	
1,200.0	1,200.0	1,189.8	1,188.5	2.6	2.6	125.24	-95.3	135.0	165.7	160.6	5.02	33.011	
1,300.0	1,300.0	1,289.6	1,288.0	2.8	2.8	125.03	-98.8	141.0	172.6	167.1	5.47	31.572	
1,400.0	1,400.0	1,389.4	1,387.5	3.0	3.1	124.84	-102.3	147.0	179.6	173.6	5.92	30.342	
1,500.0	1,500.0	1,489.1	1,487.0	3.2	3.3	124.66	-105.8	153.0	186.5	180.1	6.37	29.279	
1,600.0	1,600.0	1,588.9	1,586.5	3.5	3.6	124.50	-109.3	159.1	193.5	186.6	6.82	28.353	
1,700.0	1,700.0	1,688.6	1,686.1	3.7	3.8	124.34	-112.8	165.1	200.4	193.1	7.28	27.538	
1,800.0	1,800.0	1,788.4	1,785.6	3.9	4.1	124.20	-116.3	171.1	207.4	199.6	7.73	26.816	
1,900.0	1,900.0	1,888.1	1,885.1	4.1	4.3	124.07	-119.8	177.1	214.3	206.1	8.19	26.171	
2,000.0	2,000.0	1,987.9	1,984.6	4.4	4.6	123.94	-123.3	183.1	221.3	212.7	8.65	25.593	
2,100.0	2,100.0	2,087.7	2,084.1	4.6	4.8	123.82	-126.8	189.2	228.3	219.2	9.10	25.072	
2,200.0	2,200.0	2,187.4	2,183.6	4.8	5.1	123.71	-130.2	195.2	235.2	225.7	9.56	24.598	
2,300.0	2,300.0	2,287.2	2,283.1	5.0	5.4	123.61	-133.7	201.2	242.2	232.2	10.02	24.167	
2,400.0	2,400.0	2,386.9	2,382.7	5.3	5.6	123.51	-137.2	207.2	249.1	238.7	10.48	23.773	
2,500.0	2,500.0	2,486.7	2,482.2	5.5	5.9	123.42	-140.7	213.2	256.1	245.2	10.94	23.411	
2,600.0	2,600.0	2,586.4	2,581.7	5.7	6.1	123.33	-144.2	219.3	263.1	251.7	11.40	23.078	
2,700.0	2,700.0	2,686.2	2,681.2	5.9	6.4	123.25	-147.7	225.3	270.0	258.2	11.86	22.769	
2,800.0	2,800.0	2,785.9	2,780.7	6.2	6.7	123.17	-151.2	231.3	277.0	264.7	12.32	22.483	
2,900.0	2,900.0	2,885.7	2,880.2	6.4	6.9	123.09	-154.7	237.3	284.0	271.2	12.78	22.217	
3,000.0	3,000.0	2,985.5	2,979.7	6.6	7.2	123.02	-158.2	243.3	290.9	277.7	13.24	21.969	
3,100.0	3,100.0	3,085.2	3,079.2	6.8	7.4	122.95	-161.7	249.4	297.9	284.2	13.70	21.738	
3,200.0	3,200.0	3,185.0	3,178.8	7.1	7.7	122.89	-165.1	255.4	304.9	290.7	14.17	21.521	
3,300.0	3,300.0	3,284.7	3,278.3	7.3	8.0	122.83	-168.6	261.4	311.8	297.2	14.63	21.317	
3,400.0	3,400.0	3,384.5	3,377.8	7.5	8.2	122.77	-172.1	267.4	318.8	303.7	15.09	21.125	
3,500.0	3,500.0	3,484.2	3,477.3	7.7	8.5	122.71	-175.6	273.4	325.8	310.2	15.55	20.945	
3,600.0	3,600.0	3,584.0	3,576.8	8.0	8.7	122.65	-179.1	279.5	332.7	316.7	16.02	20.774	
3,700.0	3,700.0	3,683.8	3,676.3	8.2	9.0	122.60	-182.6	285.5	339.7	323.2	16.48	20.613	
3,800.0	3,800.0	3,783.5	3,775.8	8.4	9.3	122.55	-186.1	291.5	346.7	329.7	16.94	20.461	
3,900.0	3,900.0	3,883.3	3,875.4	8.6	9.5	122.50	-189.6	297.5	353.7	336.2	17.41	20.316	
4,000.0	4,000.0	3,983.0	3,974.9	8.9	9.8	122.46	-193.1	303.6	360.6	342.7	17.87	20.178	
4,100.0	4,100.0	4,082.8	4,074.4	9.1	10.1	122.41	-196.5	309.6	367.6	349.3	18.34	20.048	
4,200.0	4,200.0	4,182.5	4,173.9	9.3	10.3	122.37	-200.0	315.6	374.6	355.8	18.80	19.923	
4,300.0	4,300.0	4,282.3	4,273.4	9.5	10.6	122.33	-203.5	321.6	381.5	362.3	19.26	19.804	
4,400.0	4,400.0	4,382.1	4,372.9	9.8	10.8	122.29	-207.0	327.6	388.5	368.8	19.73	19.691	
4,500.0	4,500.0	4,481.8	4,472.4	10.0	11.1	122.25	-210.5	333.7	395.5	375.3	20.19	19.583	
4,600.0	4,600.0	4,581.6	4,571.9	10.2	11.4	122.21	-214.0	339.7	402.4	381.8	20.66	19.479	
4,700.0	4,700.0	4,681.3	4,671.5	10.4	11.6	122.18	-217.5	345.7	409.4	388.3	21.13	19.380	
4,800.0	4,800.0	4,781.1	4,771.0	10.7	11.9	122.14	-221.0	351.7	416.4	394.8	21.59	19.284	
4,900.0	4,900.0	4,880.8	4,870.5	10.9	12.1	122.11	-224.5	357.7	423.4	401.3	22.06	19.193	
5,000.0	5,000.0	4,994.8	4,984.3	11.1	12.4	122.08	-227.7	363.3	429.0	406.5	22.53	19.044	
5,100.0	5,100.0	5,110.6	5,100.0	11.3	12.6	122.07	-228.6	364.9	430.6	407.7	22.97	18.745	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3416B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,138.6	5,128.0	11.4	12.7	122.07	-228.6	364.9	430.6	407.5	23.09	18.650	
5,150.0	5,150.0	5,160.5	5,150.0	11.4	12.7	-77.50	-228.6	364.9	430.5	407.7	22.82	18.864	
5,200.0	5,199.8	5,210.3	5,199.8	11.5	12.8	-78.19	-228.6	364.9	429.6	406.6	23.01	18.672	
5,250.0	5,248.9	5,250.0	5,239.4	11.6	12.9	-79.24	-229.2	365.1	428.3	405.1	23.17	18.486	
5,276.7	5,274.7	5,263.6	5,253.0	11.7	12.9	-79.65	-230.0	365.3	428.1	404.8	23.24	18.418	
5,300.0	5,296.9	5,278.1	5,267.4	11.7	12.9	-80.10	-231.2	365.6	428.2	404.9	23.31	18.369	
5,350.0	5,343.3	5,309.0	5,298.0	11.8	13.0	-81.07	-235.1	366.6	429.7	406.2	23.47	18.306	
5,400.0	5,387.8	5,339.7	5,328.2	11.9	13.1	-82.05	-240.7	368.0	432.8	409.1	23.66	18.296	
5,450.0	5,429.9	5,370.2	5,357.8	12.0	13.2	-82.99	-247.9	369.9	437.7	413.8	23.87	18.337	
5,500.0	5,469.2	5,400.0	5,386.2	12.2	13.3	-83.85	-256.6	372.2	444.4	420.3	24.11	18.430	
5,550.0	5,505.3	5,430.5	5,414.7	12.4	13.5	-84.65	-267.1	374.9	453.1	428.7	24.41	18.562	
5,600.0	5,538.0	5,460.1	5,441.7	12.6	13.6	-85.29	-278.8	377.9	463.8	439.1	24.75	18.738	
5,650.0	5,566.9	5,489.4	5,467.7	12.9	13.8	-85.77	-291.9	381.3	476.6	451.4	25.15	18.949	
5,700.0	5,591.8	5,518.2	5,492.5	13.2	13.9	-86.06	-306.1	385.0	491.4	465.8	25.61	19.189	
5,750.0	5,612.4	5,550.0	5,518.9	13.6	14.1	-86.38	-323.2	389.4	508.2	482.0	26.18	19.414	
5,800.0	5,628.5	5,574.7	5,538.6	14.1	14.3	-85.99	-337.7	393.2	526.9	500.1	26.79	19.669	
5,850.0	5,640.0	5,600.0	5,558.0	14.6	14.5	-85.44	-353.3	397.2	547.5	520.0	27.45	19.941	
5,900.0	5,646.8	5,629.6	5,579.8	15.1	14.7	-85.01	-372.8	402.3	569.7	541.5	28.21	20.192	
5,946.2	5,648.9	5,654.5	5,597.1	15.6	14.9	-84.25	-390.1	406.8	591.6	562.7	28.93	20.450	
6,000.0	5,648.9	5,685.1	5,617.3	16.3	15.2	-86.62	-412.4	412.6	618.2	588.3	29.91	20.671	
6,100.0	5,648.9	5,752.7	5,656.7	17.4	15.8	-90.78	-465.5	426.3	668.3	636.5	31.76	21.041	
6,200.0	5,648.9	5,836.0	5,695.1	18.7	16.7	-94.18	-536.9	444.8	716.8	682.9	33.88	21.159	
6,300.0	5,648.9	5,934.7	5,724.6	20.1	18.0	-96.28	-628.0	468.4	761.1	724.7	36.41	20.903	
6,400.0	5,648.9	6,044.3	5,736.0	21.5	19.5	-96.67	-733.2	495.7	799.3	759.8	39.46	20.253	
6,500.0	5,648.9	6,138.9	5,736.0	23.0	21.0	-96.30	-824.8	519.5	831.5	788.9	42.56	19.538	
6,596.3	5,648.9	6,231.4	5,736.0	24.4	22.4	-96.02	-914.4	542.7	857.9	812.2	45.67	18.783	
6,600.0	5,648.9	6,235.0	5,736.0	24.5	22.5	-96.01	-917.9	543.6	858.8	813.0	45.79	18.756	
6,700.0	5,648.9	6,331.8	5,736.0	26.0	24.0	-95.84	-1,011.6	567.9	883.8	834.8	48.96	18.052	
6,800.0	5,648.9	6,466.4	5,736.0	27.6	26.1	-95.64	-1,142.5	599.2	907.0	854.3	52.70	17.210	
6,900.0	5,648.9	6,610.6	5,736.0	29.2	28.2	-95.47	-1,284.1	626.0	925.5	868.9	56.63	16.344	
7,000.0	5,648.9	6,757.2	5,736.0	30.9	30.5	-95.36	-1,429.3	645.9	939.0	878.3	60.70	15.470	
7,100.0	5,648.9	6,905.4	5,736.0	32.5	32.8	-95.28	-1,577.0	658.4	947.4	882.6	64.86	14.607	
7,200.0	5,648.9	7,052.6	5,736.0	34.3	35.1	-95.26	-1,724.1	663.2	950.7	881.6	69.04	13.770	
7,300.0	5,648.9	7,152.6	5,736.0	36.0	36.8	-95.25	-1,824.1	664.1	951.5	879.0	72.50	13.125	
7,400.0	5,648.9	7,252.6	5,736.0	37.7	38.5	-95.25	-1,924.1	665.0	952.4	876.4	76.01	12.529	
7,500.0	5,648.9	7,352.5	5,736.0	39.5	40.2	-95.24	-2,024.0	665.9	953.2	873.7	79.56	11.981	
7,600.0	5,648.9	7,452.5	5,736.0	41.3	41.9	-95.24	-2,124.0	666.7	954.1	871.0	83.13	11.477	
7,700.0	5,648.9	7,552.5	5,736.0	43.0	43.7	-95.23	-2,224.0	667.6	955.0	868.2	86.73	11.011	
7,800.0	5,648.9	7,652.5	5,736.0	44.8	45.5	-95.23	-2,324.0	668.5	955.8	865.5	90.34	10.580	
7,900.0	5,648.9	7,752.5	5,736.0	46.7	47.2	-95.22	-2,424.0	669.4	956.7	862.7	93.98	10.180	
8,000.0	5,648.9	7,852.5	5,736.0	48.5	49.0	-95.22	-2,524.0	670.2	957.6	859.9	97.62	9.809	
8,100.0	5,648.9	7,952.5	5,736.0	50.3	50.8	-95.21	-2,624.0	671.1	958.4	857.1	101.29	9.462	
8,200.0	5,648.9	8,052.5	5,736.0	52.1	52.6	-95.21	-2,724.0	672.0	959.3	854.3	104.96	9.139	
8,300.0	5,648.9	8,152.5	5,736.0	54.0	54.4	-95.20	-2,824.0	672.8	960.1	851.5	108.65	8.837	
8,400.0	5,648.9	8,252.5	5,736.0	55.8	56.3	-95.20	-2,924.0	673.7	961.0	848.7	112.35	8.554	
8,500.0	5,648.9	8,352.5	5,736.0	57.7	58.1	-95.19	-3,024.0	674.6	961.9	845.8	116.05	8.288	
8,600.0	5,648.9	8,452.5	5,736.0	59.5	59.9	-95.19	-3,124.0	675.5	962.7	843.0	119.77	8.038	
8,700.0	5,648.9	8,552.5	5,736.0	61.4	61.8	-95.19	-3,224.0	676.3	963.6	840.1	123.49	7.803	
8,800.0	5,648.9	8,652.5	5,736.0	63.2	63.6	-95.18	-3,324.0	677.2	964.5	837.2	127.22	7.581	
8,900.0	5,648.9	8,752.5	5,736.0	65.1	65.5	-95.18	-3,423.9	678.1	965.3	834.4	130.95	7.371	
9,000.0	5,648.9	8,852.5	5,736.0	67.0	67.3	-95.17	-3,523.9	679.0	966.2	831.5	134.69	7.173	
9,100.0	5,648.9	8,952.5	5,736.0	68.8	69.2	-95.17	-3,623.9	679.8	967.0	828.6	138.44	6.985	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3416B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	9,052.5	5,736.0	70.7	71.0	-95.16	-3,723.9	680.7	967.9	825.7	142.19	6.807	
9,300.0	5,648.9	9,152.5	5,736.0	72.6	72.9	-95.16	-3,823.9	681.6	968.8	822.8	145.95	6.638	
9,400.0	5,648.9	9,252.5	5,736.0	74.5	74.8	-95.15	-3,923.9	682.5	969.6	819.9	149.71	6.477	
9,500.0	5,648.9	9,352.5	5,736.0	76.3	76.6	-95.15	-4,023.9	683.3	970.5	817.0	153.47	6.324	
9,600.0	5,648.9	9,452.5	5,736.0	78.2	78.5	-95.14	-4,123.9	684.2	971.4	814.1	157.24	6.178	
9,700.0	5,648.9	9,552.5	5,736.0	80.1	80.4	-95.14	-4,223.9	685.1	972.2	811.2	161.01	6.038	
9,800.0	5,648.9	9,652.5	5,736.0	82.0	82.3	-95.13	-4,323.9	685.9	973.1	808.3	164.78	5.905	
9,900.0	5,648.9	9,752.5	5,736.0	83.9	84.1	-95.13	-4,423.9	686.8	973.9	805.4	168.56	5.778	
10,000.0	5,648.9	9,852.5	5,736.0	85.8	86.0	-95.12	-4,523.9	687.7	974.8	802.5	172.34	5.656	
10,100.0	5,648.9	9,952.5	5,736.0	87.7	87.9	-95.12	-4,623.9	688.6	975.7	799.5	176.12	5.540	
10,200.0	5,649.0	10,052.4	5,736.0	89.6	89.8	-95.11	-4,723.8	689.4	976.5	796.6	179.90	5.428	
10,300.0	5,649.0	10,152.4	5,736.0	91.4	91.7	-95.11	-4,823.8	690.3	977.4	793.7	183.69	5.321	
10,400.0	5,649.0	10,252.4	5,736.0	93.3	93.6	-95.11	-4,923.8	691.2	978.3	790.8	187.48	5.218	
10,500.0	5,649.0	10,352.4	5,736.0	95.2	95.5	-95.10	-5,023.8	692.1	979.1	787.8	191.27	5.119	
10,600.0	5,649.0	10,452.4	5,736.0	97.1	97.3	-95.10	-5,123.8	692.9	980.0	784.9	195.06	5.024	
10,700.0	5,649.0	10,552.4	5,736.0	99.0	99.2	-95.09	-5,223.8	693.8	980.8	782.0	198.85	4.932	
10,800.0	5,649.0	10,652.4	5,736.0	100.9	101.1	-95.09	-5,323.8	694.7	981.7	779.1	202.65	4.844	
10,900.0	5,649.0	10,752.4	5,736.0	102.8	103.0	-95.08	-5,423.8	695.5	982.6	776.1	206.45	4.759	
11,000.0	5,649.0	10,852.4	5,736.0	104.7	104.9	-95.08	-5,523.8	696.4	983.4	773.2	210.25	4.678	
11,100.0	5,649.0	10,952.4	5,736.0	106.6	106.8	-95.07	-5,623.8	697.3	984.3	770.2	214.05	4.599	
11,200.0	5,649.0	11,052.4	5,736.0	108.5	108.7	-95.07	-5,723.8	698.2	985.2	767.3	217.85	4.522	
11,300.0	5,649.0	11,152.4	5,736.0	110.4	110.6	-95.06	-5,823.8	699.0	986.0	764.4	221.65	4.449	
11,400.0	5,649.0	11,252.4	5,736.0	112.3	112.5	-95.06	-5,923.8	699.9	986.9	761.4	225.45	4.377	
11,500.0	5,649.0	11,352.4	5,736.0	114.2	114.4	-95.05	-6,023.7	700.8	987.7	758.5	229.26	4.308	
11,600.0	5,649.0	11,452.4	5,736.0	116.1	116.3	-95.05	-6,123.7	701.7	988.6	755.5	233.07	4.242	
11,700.0	5,649.0	11,552.4	5,736.0	118.0	118.2	-95.05	-6,223.7	702.5	989.5	752.6	236.87	4.177	
11,800.0	5,649.0	11,652.4	5,736.0	119.9	120.1	-95.04	-6,323.7	703.4	990.3	749.7	240.68	4.115	
11,900.0	5,649.0	11,752.4	5,736.0	121.9	122.0	-95.04	-6,423.7	704.3	991.2	746.7	244.49	4.054	
12,000.0	5,649.0	11,852.4	5,736.0	123.8	123.9	-95.03	-6,523.7	705.2	992.1	743.8	248.30	3.995	
12,100.0	5,649.0	11,952.4	5,736.0	125.7	125.8	-95.03	-6,623.7	706.0	992.9	740.8	252.11	3.938	
12,200.0	5,649.0	12,052.4	5,736.0	127.6	127.7	-95.02	-6,723.7	706.9	993.8	737.9	255.92	3.883	
12,300.0	5,649.0	12,152.4	5,736.0	129.5	129.6	-95.02	-6,823.7	707.8	994.6	734.9	259.73	3.829	
12,400.0	5,649.0	12,252.4	5,736.0	131.4	131.5	-95.01	-6,923.7	708.6	995.5	732.0	263.55	3.777	
12,500.0	5,649.0	12,352.4	5,736.0	133.3	133.4	-95.01	-7,023.7	709.5	996.4	729.0	267.36	3.727	
12,590.4	5,649.0	12,442.8	5,736.0	134.7	135.2	-95.01	-7,114.1	710.3	997.1	726.6	270.50	3.686	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	10.5	10.5	0.0	0.0	-94.71	-95.1	-1,154.9	1,158.8				
100.0	100.0	110.5	110.5	0.1	0.1	-94.71	-95.1	-1,154.9	1,158.8	1,158.6	0.21	5,485.434	
200.0	200.0	210.5	210.5	0.3	0.3	-94.71	-95.1	-1,154.9	1,158.8	1,158.2	0.66	1,753.726	
300.0	300.0	310.5	310.5	0.5	0.6	-94.71	-95.1	-1,154.9	1,158.8	1,157.7	1.11	1,043.702	
400.0	400.0	410.5	410.5	0.8	0.8	-94.71	-95.1	-1,154.9	1,158.8	1,157.3	1.56	742.919	
500.0	500.0	510.5	510.5	1.0	1.0	-94.71	-95.1	-1,154.9	1,158.8	1,156.8	2.01	576.716	
600.0	600.0	610.5	610.5	1.2	1.2	-94.71	-95.1	-1,154.9	1,158.8	1,156.4	2.46	471.283	
700.0	700.0	710.5	710.5	1.4	1.5	-94.71	-95.1	-1,154.9	1,158.8	1,155.9	2.91	398.441	
800.0	800.0	810.5	810.5	1.7	1.7	-94.71	-95.1	-1,154.9	1,158.8	1,155.5	3.36	345.102	
900.0	900.0	910.5	910.5	1.9	1.9	-94.71	-95.1	-1,154.9	1,158.8	1,155.0	3.81	304.358	
1,000.0	1,000.0	1,010.5	1,010.5	2.1	2.1	-94.71	-95.1	-1,154.9	1,158.8	1,154.6	4.26	272.218	
1,100.0	1,100.0	1,110.5	1,110.5	2.3	2.4	-94.71	-95.1	-1,154.9	1,158.8	1,154.1	4.71	246.218	
1,200.0	1,200.0	1,210.5	1,210.5	2.6	2.6	-94.71	-95.1	-1,154.9	1,158.8	1,153.7	5.16	224.752	
1,300.0	1,300.0	1,310.5	1,310.5	2.8	2.8	-94.71	-95.1	-1,154.9	1,158.8	1,153.2	5.61	206.729	
1,400.0	1,400.0	1,410.5	1,410.5	3.0	3.0	-94.71	-95.1	-1,154.9	1,158.8	1,152.8	6.06	191.381	
1,500.0	1,500.0	1,510.5	1,510.5	3.2	3.3	-94.71	-95.1	-1,154.9	1,158.8	1,152.3	6.50	178.155	
1,600.0	1,600.0	1,610.5	1,610.5	3.5	3.5	-94.71	-95.1	-1,154.9	1,158.8	1,151.9	6.95	166.639	
1,700.0	1,700.0	1,710.5	1,710.5	3.7	3.7	-94.71	-95.1	-1,154.9	1,158.8	1,151.4	7.40	156.521	
1,800.0	1,800.0	1,810.5	1,810.5	3.9	3.9	-94.71	-95.1	-1,154.9	1,158.8	1,151.0	7.85	147.562	
1,900.0	1,900.0	1,910.5	1,910.5	4.1	4.2	-94.71	-95.1	-1,154.9	1,158.8	1,150.5	8.30	139.572	
2,000.0	2,000.0	2,010.5	2,010.5	4.4	4.4	-94.71	-95.1	-1,154.9	1,158.8	1,150.1	8.75	132.404	
2,100.0	2,100.0	2,110.5	2,110.5	4.6	4.6	-94.71	-95.1	-1,154.9	1,158.8	1,149.6	9.20	125.936	
2,200.0	2,200.0	2,210.5	2,210.5	4.8	4.8	-94.71	-95.1	-1,154.9	1,158.8	1,149.2	9.65	120.070	
2,300.0	2,300.0	2,310.5	2,310.5	5.0	5.1	-94.71	-95.1	-1,154.9	1,158.8	1,148.7	10.10	114.726	
2,400.0	2,400.0	2,410.5	2,410.5	5.3	5.3	-94.71	-95.1	-1,154.9	1,158.8	1,148.3	10.55	109.838	
2,500.0	2,500.0	2,510.5	2,510.5	5.5	5.5	-94.71	-95.1	-1,154.9	1,158.8	1,147.8	11.00	105.349	
2,600.0	2,600.0	2,610.5	2,610.5	5.7	5.7	-94.71	-95.1	-1,154.9	1,158.8	1,147.4	11.45	101.213	
2,700.0	2,700.0	2,710.5	2,710.5	5.9	6.0	-94.71	-95.1	-1,154.9	1,158.8	1,146.9	11.90	97.389	
2,800.0	2,800.0	2,810.5	2,810.5	6.2	6.2	-94.71	-95.1	-1,154.9	1,158.8	1,146.5	12.35	93.844	
2,900.0	2,900.0	2,910.5	2,910.5	6.4	6.4	-94.71	-95.1	-1,154.9	1,158.8	1,146.0	12.80	90.548	
3,000.0	3,000.0	3,010.5	3,010.5	6.6	6.6	-94.71	-95.1	-1,154.9	1,158.8	1,145.6	13.25	87.475	
3,100.0	3,100.0	3,110.5	3,110.5	6.8	6.9	-94.71	-95.1	-1,154.9	1,158.8	1,145.1	13.70	84.604	
3,200.0	3,200.0	3,210.5	3,210.5	7.1	7.1	-94.71	-95.1	-1,154.9	1,158.8	1,144.7	14.15	81.916	
3,300.0	3,300.0	3,310.5	3,310.5	7.3	7.3	-94.71	-95.1	-1,154.9	1,158.8	1,144.3	14.60	79.393	
3,400.0	3,400.0	3,410.5	3,410.5	7.5	7.5	-94.71	-95.1	-1,154.9	1,158.8	1,143.8	15.05	77.021	
3,500.0	3,500.0	3,510.5	3,510.5	7.7	7.8	-94.71	-95.1	-1,154.9	1,158.8	1,143.4	15.50	74.787	
3,600.0	3,600.0	3,610.5	3,610.5	8.0	8.0	-94.71	-95.1	-1,154.9	1,158.8	1,142.9	15.94	72.678	
3,700.0	3,700.0	3,710.5	3,710.5	8.2	8.2	-94.71	-95.1	-1,154.9	1,158.8	1,142.5	16.39	70.685	
3,800.0	3,800.0	3,810.5	3,810.5	8.4	8.4	-94.71	-95.1	-1,154.9	1,158.8	1,142.0	16.84	68.799	
3,900.0	3,900.0	3,910.5	3,910.5	8.6	8.7	-94.71	-95.1	-1,154.9	1,158.8	1,141.6	17.29	67.011	
4,000.0	4,000.0	4,010.5	4,010.5	8.9	8.9	-94.71	-95.1	-1,154.9	1,158.8	1,141.1	17.74	65.313	
4,100.0	4,100.0	4,110.5	4,110.5	9.1	9.1	-94.71	-95.1	-1,154.9	1,158.8	1,140.7	18.19	63.699	
4,200.0	4,200.0	4,210.5	4,210.5	9.3	9.3	-94.71	-95.1	-1,154.9	1,158.8	1,140.2	18.64	62.163	
4,300.0	4,300.0	4,310.5	4,310.5	9.5	9.6	-94.71	-95.1	-1,154.9	1,158.8	1,139.8	19.09	60.699	
4,400.0	4,400.0	4,410.5	4,410.5	9.8	9.8	-94.71	-95.1	-1,154.9	1,158.8	1,139.3	19.54	59.303	
4,500.0	4,500.0	4,510.5	4,510.5	10.0	10.0	-94.71	-95.1	-1,154.9	1,158.8	1,138.9	19.99	57.969	
4,600.0	4,600.0	4,610.5	4,610.5	10.2	10.2	-94.71	-95.1	-1,154.9	1,158.8	1,138.4	20.44	56.694	
4,700.0	4,700.0	4,710.5	4,710.5	10.4	10.5	-94.71	-95.1	-1,154.9	1,158.8	1,138.0	20.89	55.474	
4,800.0	4,800.0	4,810.5	4,810.5	10.7	10.7	-94.71	-95.1	-1,154.9	1,158.8	1,137.5	21.34	54.306	
4,900.0	4,900.0	4,910.5	4,910.5	10.9	10.9	-94.71	-95.1	-1,154.9	1,158.8	1,137.1	21.79	53.185	
5,000.0	5,000.0	5,010.5	5,010.5	11.1	11.1	-94.71	-95.1	-1,154.9	1,158.8	1,136.6	22.24	52.110	
5,100.0	5,100.0	5,110.5	5,110.5	11.3	11.4	-94.71	-95.1	-1,154.9	1,158.8	1,136.2	22.69	51.078	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,138.5	5,138.5	11.4	11.4	-94.71	-95.1	-1,154.9	1,158.8	1,136.0	22.81	50.796	
5,150.0	5,150.0	5,160.3	5,160.2	11.4	11.5	65.84	-94.9	-1,155.0	1,158.7	1,135.8	22.90	50.591	
5,200.0	5,199.8	5,208.5	5,208.3	11.5	11.6	66.39	-91.3	-1,155.3	1,156.9	1,133.8	23.06	50.165	
5,250.0	5,248.9	5,253.5	5,252.7	11.6	11.7	67.48	-84.1	-1,155.9	1,153.4	1,130.2	23.19	49.746	
5,300.0	5,296.9	5,293.5	5,291.6	11.7	11.8	68.95	-74.4	-1,156.8	1,148.5	1,125.2	23.29	49.320	
5,350.0	5,343.3	5,327.8	5,324.1	11.8	11.9	70.62	-63.8	-1,157.7	1,142.7	1,119.3	23.39	48.855	
5,400.0	5,387.8	5,355.9	5,350.2	11.9	11.9	72.31	-53.5	-1,158.6	1,136.6	1,113.0	23.51	48.349	
5,450.0	5,429.9	5,378.0	5,370.4	12.0	12.0	73.88	-44.4	-1,159.5	1,130.4	1,106.8	23.65	47.799	
5,500.0	5,469.2	5,400.0	5,390.1	12.2	12.0	75.50	-34.6	-1,160.3	1,124.7	1,100.8	23.84	47.174	
5,550.0	5,505.3	5,400.0	5,390.1	12.4	12.0	76.04	-34.6	-1,160.3	1,119.7	1,095.7	23.99	46.676	
5,600.0	5,538.0	5,414.5	5,402.8	12.6	12.1	77.19	-27.6	-1,161.0	1,115.6	1,091.3	24.26	45.981	
5,650.0	5,566.9	5,418.7	5,406.4	12.9	12.1	77.72	-25.6	-1,161.1	1,112.6	1,088.1	24.54	45.345	
5,700.0	5,591.8	5,419.7	5,407.3	13.2	12.1	77.96	-25.1	-1,161.2	1,110.9	1,086.1	24.85	44.706	
5,744.7	5,610.4	5,418.4	5,406.1	13.6	12.1	77.95	-25.7	-1,161.1	1,110.4	1,085.3	25.16	44.134	CC
5,750.0	5,612.4	5,418.1	5,405.9	13.6	12.1	77.93	-25.9	-1,161.1	1,110.4	1,085.2	25.20	44.070	ES
5,800.0	5,628.5	5,414.2	5,402.5	14.1	12.1	77.65	-27.8	-1,160.9	1,111.2	1,085.6	25.58	43.444	
5,850.0	5,640.0	5,400.0	5,390.1	14.6	12.0	76.74	-34.6	-1,160.3	1,113.1	1,087.2	25.93	42.937	
5,900.0	5,646.8	5,400.0	5,390.1	15.1	12.0	76.42	-34.6	-1,160.3	1,116.1	1,089.7	26.41	42.258	
5,946.2	5,648.9	5,400.0	5,390.1	15.6	12.0	76.03	-34.6	-1,160.3	1,119.8	1,092.9	26.89	41.647	
6,000.0	5,648.9	5,382.5	5,374.5	16.3	12.0	75.16	-42.5	-1,159.6	1,126.4	1,099.0	27.35	41.177	
6,100.0	5,648.9	5,365.6	5,359.1	17.4	11.9	74.18	-49.6	-1,159.0	1,148.6	1,120.2	28.33	40.549	
6,200.0	5,648.9	5,350.0	5,344.8	18.7	11.9	73.12	-55.8	-1,158.4	1,183.0	1,153.7	29.36	40.293	
6,300.0	5,648.9	5,350.0	5,344.8	20.1	11.9	72.66	-55.8	-1,158.4	1,228.9	1,198.3	30.56	40.212	SF
6,400.0	5,648.9	5,325.1	5,321.6	21.5	11.8	70.78	-64.7	-1,157.7	1,284.3	1,252.8	31.51	40.765	
6,500.0	5,648.9	5,300.0	5,297.8	23.0	11.8	68.61	-72.5	-1,156.9	1,348.8	1,316.5	32.36	41.679	
6,596.3	5,648.9	5,300.0	5,297.8	24.4	11.8	67.51	-72.5	-1,156.9	1,417.5	1,384.1	33.38	42.459	
6,600.0	5,648.9	5,300.0	5,297.8	24.5	11.8	67.51	-72.5	-1,156.9	1,420.2	1,386.8	33.44	42.473	
6,700.0	5,648.9	5,300.0	5,297.8	26.0	11.8	67.51	-72.5	-1,156.9	1,496.3	1,461.4	34.90	42.878	
6,800.0	5,648.9	5,300.0	5,297.8	27.6	11.8	67.51	-72.5	-1,156.9	1,575.1	1,538.7	36.40	43.273	
6,900.0	5,648.9	5,281.4	5,279.9	29.2	11.7	66.51	-77.6	-1,156.5	1,655.8	1,618.1	37.66	43.964	
7,000.0	5,648.9	5,275.0	5,273.7	30.9	11.7	66.16	-79.2	-1,156.4	1,738.5	1,699.4	39.12	44.438	
7,100.0	5,648.9	5,269.2	5,268.1	32.5	11.7	65.85	-80.6	-1,156.2	1,822.9	1,782.3	40.61	44.889	
7,200.0	5,648.9	5,250.0	5,249.3	34.3	11.7	64.83	-84.8	-1,155.9	1,908.9	1,867.0	41.88	45.579	
7,300.0	5,648.9	5,250.0	5,249.3	36.0	11.7	64.83	-84.8	-1,155.9	1,995.9	1,952.3	43.56	45.821	
7,400.0	5,648.9	5,250.0	5,249.3	37.7	11.7	64.83	-84.8	-1,155.9	2,084.0	2,038.7	45.25	46.051	
7,500.0	5,648.9	5,250.0	5,249.3	39.5	11.7	64.83	-84.8	-1,155.9	2,173.1	2,126.2	46.96	46.273	
7,600.0	5,648.9	5,250.0	5,249.3	41.3	11.7	64.83	-84.8	-1,155.9	2,263.2	2,214.5	48.68	46.487	
7,700.0	5,648.9	5,250.0	5,249.3	43.0	11.7	64.83	-84.8	-1,155.9	2,354.1	2,303.6	50.42	46.692	
7,800.0	5,648.9	5,250.0	5,249.3	44.8	11.7	64.83	-84.8	-1,155.9	2,445.6	2,393.5	52.16	46.890	
7,900.0	5,648.9	5,250.0	5,249.3	46.7	11.7	64.83	-84.8	-1,155.9	2,537.8	2,483.9	53.91	47.080	
8,000.0	5,648.9	5,250.0	5,249.3	48.5	11.7	64.83	-84.8	-1,155.9	2,630.6	2,575.0	55.66	47.261	
8,100.0	5,648.9	5,250.0	5,249.3	50.3	11.7	64.83	-84.8	-1,155.9	2,723.9	2,666.5	57.42	47.436	
8,200.0	5,648.9	5,228.2	5,227.9	52.1	11.6	63.67	-88.6	-1,155.5	2,817.1	2,758.5	58.65	48.033	
8,300.0	5,648.9	5,225.8	5,225.5	54.0	11.6	63.55	-89.0	-1,155.5	2,911.2	2,850.8	60.35	48.242	
8,400.0	5,648.9	5,223.5	5,223.2	55.8	11.6	63.43	-89.3	-1,155.5	3,005.6	2,943.6	62.05	48.441	
8,500.0	5,648.9	5,221.3	5,221.1	57.7	11.6	63.31	-89.6	-1,155.4	3,100.4	3,036.6	63.75	48.632	
8,600.0	5,648.9	5,200.0	5,199.9	59.5	11.6	62.21	-92.3	-1,155.2	3,195.8	3,130.9	64.92	49.230	
8,700.0	5,648.9	5,200.0	5,199.9	61.4	11.6	62.21	-92.3	-1,155.2	3,291.1	3,224.4	66.67	49.364	
8,800.0	5,648.9	5,200.0	5,199.9	63.2	11.6	62.21	-92.3	-1,155.2	3,386.7	3,318.2	68.43	49.492	
8,900.0	5,648.9	5,200.0	5,199.9	65.1	11.6	62.21	-92.3	-1,155.2	3,482.4	3,412.3	70.19	49.615	
9,000.0	5,648.9	5,200.0	5,199.9	67.0	11.6	62.21	-92.3	-1,155.2	3,578.5	3,506.5	71.95	49.734	
9,100.0	5,648.9	5,200.0	5,199.9	68.8	11.6	62.21	-92.3	-1,155.2	3,674.7	3,601.0	73.72	49.848	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	5,200.0	5,199.9	70.7	11.6	62.21	-92.3	-1,155.2	3,771.1	3,695.7	75.49	49.958	
9,300.0	5,648.9	5,200.0	5,199.9	72.6	11.6	62.21	-92.3	-1,155.2	3,867.8	3,790.5	77.26	50.064	
9,400.0	5,648.9	5,200.0	5,199.9	74.5	11.6	62.21	-92.3	-1,155.2	3,964.5	3,885.5	79.03	50.167	
9,500.0	5,648.9	5,200.0	5,199.9	76.3	11.6	62.21	-92.3	-1,155.2	4,061.5	3,980.7	80.80	50.266	
9,600.0	5,648.9	5,200.0	5,199.9	78.2	11.6	62.21	-92.3	-1,155.2	4,158.6	4,076.0	82.57	50.361	
9,700.0	5,648.9	5,200.0	5,199.9	80.1	11.6	62.21	-92.3	-1,155.2	4,255.8	4,171.4	84.35	50.453	
9,800.0	5,648.9	5,200.0	5,199.9	82.0	11.6	62.21	-92.3	-1,155.2	4,353.1	4,267.0	86.13	50.542	
9,900.0	5,648.9	5,200.0	5,199.9	83.9	11.6	62.21	-92.3	-1,155.2	4,450.6	4,362.7	87.91	50.628	
10,000.0	5,648.9	5,200.0	5,199.9	85.8	11.6	62.21	-92.3	-1,155.2	4,548.2	4,458.5	89.69	50.711	
10,100.0	5,648.9	5,200.0	5,199.9	87.7	11.6	62.21	-92.3	-1,155.2	4,645.8	4,554.4	91.47	50.792	
10,200.0	5,649.0	5,200.0	5,199.9	89.6	11.6	62.21	-92.3	-1,155.2	4,743.6	4,650.4	93.25	50.870	
10,300.0	5,649.0	5,200.0	5,199.9	91.4	11.6	62.21	-92.3	-1,155.2	4,841.5	4,746.4	95.03	50.945	
10,400.0	5,649.0	5,200.0	5,199.9	93.3	11.6	62.21	-92.3	-1,155.2	4,939.4	4,842.6	96.82	51.018	
10,500.0	5,649.0	5,200.0	5,199.9	95.2	11.6	62.21	-92.3	-1,155.2	5,037.4	4,938.8	98.60	51.089	
10,600.0	5,649.0	5,200.0	5,199.9	97.1	11.6	62.21	-92.3	-1,155.2	5,135.6	5,035.2	100.39	51.157	
10,700.0	5,649.0	5,200.0	5,199.9	99.0	11.6	62.21	-92.3	-1,155.2	5,233.7	5,131.6	102.17	51.224	
10,800.0	5,649.0	5,200.0	5,199.9	100.9	11.6	62.21	-92.3	-1,155.2	5,332.0	5,228.0	103.96	51.288	
10,900.0	5,649.0	5,200.0	5,199.9	102.8	11.6	62.21	-92.3	-1,155.2	5,430.3	5,324.5	105.75	51.351	
11,000.0	5,649.0	5,200.0	5,199.9	104.7	11.6	62.21	-92.3	-1,155.2	5,528.7	5,421.1	107.54	51.412	
11,100.0	5,649.0	5,200.0	5,199.9	106.6	11.6	62.21	-92.3	-1,155.2	5,627.1	5,517.8	109.33	51.471	
11,200.0	5,649.0	5,200.0	5,199.9	108.5	11.6	62.21	-92.3	-1,155.2	5,725.6	5,614.4	111.11	51.528	
11,300.0	5,649.0	5,200.0	5,199.9	110.4	11.6	62.21	-92.3	-1,155.2	5,824.1	5,711.2	112.90	51.584	
11,400.0	5,649.0	5,200.0	5,199.9	112.3	11.6	62.21	-92.3	-1,155.2	5,922.7	5,808.0	114.70	51.638	
11,500.0	5,649.0	5,200.0	5,199.9	114.2	11.6	62.21	-92.3	-1,155.2	6,021.3	5,904.8	116.49	51.691	
11,600.0	5,649.0	5,200.0	5,199.9	116.1	11.6	62.21	-92.3	-1,155.2	6,120.0	6,001.7	118.28	51.742	
11,700.0	5,649.0	5,200.0	5,199.9	118.0	11.6	62.21	-92.3	-1,155.2	6,218.7	6,098.6	120.07	51.792	
11,800.0	5,649.0	5,200.0	5,199.9	119.9	11.6	62.21	-92.3	-1,155.2	6,317.5	6,195.6	121.86	51.841	
11,900.0	5,649.0	5,200.0	5,199.9	121.9	11.6	62.21	-92.3	-1,155.2	6,416.2	6,292.6	123.66	51.888	
12,000.0	5,649.0	5,200.0	5,199.9	123.8	11.6	62.21	-92.3	-1,155.2	6,515.1	6,389.6	125.45	51.934	
12,100.0	5,649.0	5,200.0	5,199.9	125.7	11.6	62.21	-92.3	-1,155.2	6,613.9	6,486.7	127.24	51.979	
12,200.0	5,649.0	5,200.0	5,199.9	127.6	11.6	62.21	-92.3	-1,155.2	6,712.8	6,583.8	129.04	52.023	
12,300.0	5,649.0	5,200.0	5,199.9	129.5	11.6	62.21	-92.3	-1,155.2	6,811.8	6,680.9	130.83	52.066	
12,400.0	5,649.0	5,200.0	5,199.9	131.4	11.6	62.21	-92.3	-1,155.2	6,910.7	6,778.1	132.62	52.108	
12,500.0	5,649.0	5,200.0	5,199.9	133.3	11.6	62.21	-92.3	-1,155.2	7,009.7	6,875.3	134.42	52.148	
12,590.4	5,649.0	5,200.0	5,199.9	134.7	11.6	62.21	-92.3	-1,155.2	7,099.3	6,963.6	135.74	52.300	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	7.5	7.5	0.0	0.0	-98.15	-170.1	-1,187.9	1,200.0				
100.0	100.0	107.5	107.5	0.1	0.1	-98.15	-170.1	-1,187.9	1,200.0	1,199.8	0.20	5,866.931	
200.0	200.0	207.5	207.5	0.3	0.3	-98.15	-170.1	-1,187.9	1,200.0	1,199.4	0.65	1,834.677	
300.0	300.0	307.5	307.5	0.5	0.6	-98.15	-170.1	-1,187.9	1,200.0	1,198.9	1.10	1,087.355	
400.0	400.0	407.5	407.5	0.8	0.8	-98.15	-170.1	-1,187.9	1,200.0	1,198.5	1.55	772.636	
500.0	500.0	507.5	507.5	1.0	1.0	-98.15	-170.1	-1,187.9	1,200.0	1,198.0	2.00	599.205	
600.0	600.0	607.5	607.5	1.2	1.2	-98.15	-170.1	-1,187.9	1,200.0	1,197.6	2.45	489.360	
700.0	700.0	707.5	707.5	1.4	1.5	-98.15	-170.1	-1,187.9	1,200.0	1,197.1	2.90	413.549	
800.0	800.0	807.5	807.5	1.7	1.7	-98.15	-170.1	-1,187.9	1,200.0	1,196.7	3.35	358.076	
900.0	900.0	907.5	907.5	1.9	1.9	-98.15	-170.1	-1,187.9	1,200.0	1,196.2	3.80	315.725	
1,000.0	1,000.0	1,007.5	1,007.5	2.1	2.1	-98.15	-170.1	-1,187.9	1,200.0	1,195.8	4.25	282.333	
1,100.0	1,100.0	1,107.5	1,107.5	2.3	2.4	-98.15	-170.1	-1,187.9	1,200.0	1,195.3	4.70	255.328	
1,200.0	1,200.0	1,207.5	1,207.5	2.6	2.6	-98.15	-170.1	-1,187.9	1,200.0	1,194.9	5.15	233.039	
1,300.0	1,300.0	1,307.5	1,307.5	2.8	2.8	-98.15	-170.1	-1,187.9	1,200.0	1,194.4	5.60	214.328	
1,400.0	1,400.0	1,407.5	1,407.5	3.0	3.0	-98.15	-170.1	-1,187.9	1,200.0	1,194.0	6.05	198.399	
1,500.0	1,500.0	1,511.7	1,511.7	3.2	3.3	-98.15	-170.1	-1,187.9	1,200.0	1,193.5	6.51	184.420	
1,600.0	1,600.0	1,667.7	1,667.6	3.5	3.6	-98.03	-167.0	-1,184.1	1,197.3	1,190.2	7.07	169.297	
1,700.0	1,700.0	1,779.1	1,778.7	3.7	3.9	-97.84	-162.3	-1,178.2	1,191.4	1,183.9	7.54	158.045	
1,800.0	1,800.0	1,878.8	1,878.2	3.9	4.1	-97.67	-157.9	-1,172.8	1,185.4	1,177.5	7.98	148.560	
1,900.0	1,900.0	1,978.6	1,977.7	4.1	4.3	-97.49	-153.5	-1,167.3	1,179.5	1,171.1	8.42	140.055	
2,000.0	2,000.0	2,078.3	2,077.3	4.4	4.5	-97.31	-149.1	-1,161.9	1,173.5	1,164.7	8.86	132.380	
2,100.0	2,100.0	2,178.1	2,176.8	4.6	4.8	-97.14	-144.8	-1,156.5	1,167.6	1,158.3	9.31	125.422	
2,200.0	2,200.0	2,277.9	2,276.3	4.8	5.0	-96.95	-140.4	-1,151.1	1,161.7	1,151.9	9.75	119.089	
2,300.0	2,300.0	2,377.6	2,375.8	5.0	5.2	-96.77	-136.0	-1,145.7	1,155.8	1,145.6	10.20	113.300	
2,400.0	2,400.0	2,477.4	2,475.3	5.3	5.5	-96.59	-131.7	-1,140.3	1,149.9	1,139.2	10.65	107.990	
2,500.0	2,500.0	2,577.1	2,574.8	5.5	5.7	-96.40	-127.3	-1,134.9	1,144.0	1,132.9	11.10	103.103	
2,600.0	2,600.0	2,676.9	2,674.3	5.7	6.0	-96.21	-122.9	-1,129.4	1,138.1	1,126.5	11.54	98.591	
2,700.0	2,700.0	2,776.6	2,773.9	5.9	6.2	-96.02	-118.5	-1,124.0	1,132.2	1,120.2	11.99	94.413	
2,800.0	2,800.0	2,876.4	2,873.4	6.2	6.5	-95.83	-114.2	-1,118.6	1,126.4	1,113.9	12.44	90.534	
2,900.0	2,900.0	2,976.2	2,972.9	6.4	6.7	-95.63	-109.8	-1,113.2	1,120.5	1,107.6	12.89	86.923	
3,000.0	3,000.0	3,075.9	3,072.4	6.6	7.0	-95.44	-105.4	-1,107.8	1,114.7	1,101.3	13.34	83.554	
3,100.0	3,100.0	3,175.7	3,171.9	6.8	7.2	-95.24	-101.0	-1,102.4	1,108.9	1,095.1	13.79	80.404	
3,200.0	3,200.0	3,275.4	3,271.4	7.1	7.5	-95.04	-96.7	-1,097.0	1,103.1	1,088.8	14.24	77.451	
3,300.0	3,300.0	3,375.2	3,370.9	7.3	7.7	-94.83	-92.3	-1,091.6	1,097.3	1,082.6	14.69	74.680	
3,400.0	3,400.0	3,457.0	3,452.6	7.5	7.9	-94.68	-89.1	-1,087.6	1,092.1	1,077.0	15.09	72.378	
3,500.0	3,500.0	3,533.0	3,528.5	7.7	8.0	-94.60	-87.3	-1,085.4	1,089.1	1,073.6	15.46	70.451	
3,600.0	3,600.0	3,612.0	3,607.5	8.0	8.2	-94.58	-86.8	-1,084.8	1,088.3	1,072.4	15.83	68.765	
3,700.0	3,700.0	3,712.0	3,707.5	8.2	8.4	-94.58	-86.8	-1,084.8	1,088.3	1,072.0	16.25	66.965	
3,800.0	3,800.0	3,812.0	3,807.5	8.4	8.6	-94.58	-86.8	-1,084.8	1,088.3	1,071.6	16.69	65.185	
3,900.0	3,900.0	3,912.0	3,907.5	8.6	8.8	-94.58	-86.8	-1,084.8	1,088.3	1,071.1	17.14	63.496	
4,000.0	4,000.0	4,012.0	4,007.5	8.9	9.0	-94.58	-86.8	-1,084.8	1,088.3	1,070.7	17.58	61.891	
4,100.0	4,100.0	4,112.0	4,107.5	9.1	9.2	-94.58	-86.8	-1,084.8	1,088.3	1,070.2	18.03	60.364	
4,200.0	4,200.0	4,212.0	4,207.5	9.3	9.4	-94.58	-86.8	-1,084.8	1,088.3	1,069.8	18.47	58.911	
4,300.0	4,300.0	4,312.0	4,307.5	9.5	9.7	-94.58	-86.8	-1,084.8	1,088.3	1,069.3	18.92	57.525	
4,400.0	4,400.0	4,412.0	4,407.5	9.8	9.9	-94.58	-86.8	-1,084.8	1,088.3	1,068.9	19.36	56.202	
4,500.0	4,500.0	4,512.0	4,507.5	10.0	10.1	-94.58	-86.8	-1,084.8	1,088.3	1,068.4	19.81	54.938	
4,600.0	4,600.0	4,612.0	4,607.5	10.2	10.3	-94.58	-86.8	-1,084.8	1,088.3	1,068.0	20.25	53.729	
4,700.0	4,700.0	4,712.0	4,707.5	10.4	10.5	-94.58	-86.8	-1,084.8	1,088.3	1,067.5	20.70	52.571	
4,800.0	4,800.0	4,812.0	4,807.5	10.7	10.7	-94.58	-86.8	-1,084.8	1,088.3	1,067.1	21.15	51.463	
4,900.0	4,900.0	4,912.0	4,907.5	10.9	11.0	-94.58	-86.8	-1,084.8	1,088.3	1,066.7	21.59	50.399	
5,000.0	5,000.0	5,012.0	5,007.5	11.1	11.2	-94.58	-86.8	-1,084.8	1,088.3	1,066.2	22.04	49.379	
5,100.0	5,100.0	5,112.0	5,107.5	11.3	11.4	-94.58	-86.8	-1,084.8	1,088.3	1,065.8	22.49	48.398	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,140.0	5,135.5	11.4	11.5	-94.58	-86.8	-1,084.8	1,088.3	1,065.6	22.61	48.131	
5,150.0	5,150.0	5,162.0	5,157.5	11.4	11.5	65.97	-86.8	-1,084.8	1,088.1	1,065.2	22.83	47.655	
5,200.0	5,199.8	5,211.7	5,207.3	11.5	11.6	66.37	-86.8	-1,084.8	1,086.2	1,063.2	22.99	47.250	
5,250.0	5,248.9	5,311.9	5,307.1	11.6	11.8	68.03	-81.6	-1,083.4	1,082.0	1,058.7	23.26	46.506	
5,300.0	5,296.9	5,436.0	5,426.7	11.7	12.2	72.29	-50.6	-1,074.9	1,072.7	1,049.0	23.71	45.239	
5,350.0	5,343.3	5,518.4	5,500.4	11.8	12.5	76.89	-15.3	-1,065.2	1,060.6	1,036.5	24.15	43.923	
5,400.0	5,387.8	5,568.7	5,542.3	11.9	12.7	80.75	11.7	-1,057.8	1,047.9	1,023.4	24.52	42.733	
5,450.0	5,429.9	5,597.7	5,565.1	12.0	12.9	83.64	28.9	-1,053.1	1,035.8	1,011.0	24.82	41.737	
5,500.0	5,469.2	5,612.6	5,576.4	12.2	13.0	85.65	38.2	-1,050.6	1,025.3	1,000.2	25.06	40.907	
5,550.0	5,505.3	5,618.1	5,580.5	12.4	13.0	86.93	41.8	-1,049.6	1,016.6	991.3	25.28	40.222	
5,600.0	5,538.0	5,617.1	5,579.8	12.6	13.0	87.60	41.1	-1,049.8	1,010.1	984.6	25.48	39.642	
5,650.0	5,566.9	5,611.5	5,575.6	12.9	13.0	87.75	37.6	-1,050.7	1,005.8	980.1	25.74	39.079	
5,700.0	5,591.8	5,602.5	5,568.8	13.2	12.9	87.48	31.9	-1,052.3	1,003.7	977.7	26.02	38.574	
5,722.0	5,601.3	5,600.0	5,566.8	13.4	12.9	87.36	30.3	-1,052.7	1,003.5	977.4	26.18	38.336	CC, ES
5,750.0	5,612.4	5,591.0	5,559.9	13.6	12.8	86.83	24.9	-1,054.2	1,003.8	977.5	26.34	38.108	
5,800.0	5,628.5	5,577.6	5,549.4	14.1	12.8	85.88	16.8	-1,056.4	1,006.0	979.3	26.70	37.683	
5,850.0	5,640.0	5,562.6	5,537.4	14.6	12.7	84.65	8.2	-1,058.8	1,010.0	982.9	27.07	37.306	
5,900.0	5,646.8	5,550.0	5,527.0	15.1	12.6	83.38	1.2	-1,060.7	1,015.7	988.2	27.49	36.944	
5,946.2	5,648.9	5,530.7	5,510.9	15.6	12.6	81.72	-9.0	-1,063.5	1,022.2	994.3	27.84	36.712	
6,000.0	5,648.9	5,512.8	5,495.7	16.3	12.5	80.81	-18.0	-1,065.9	1,032.3	1,004.0	28.30	36.476	
6,100.0	5,648.9	5,484.4	5,470.8	17.4	12.4	79.25	-31.2	-1,069.6	1,060.9	1,031.7	29.19	36.350	SF
6,200.0	5,648.9	5,450.0	5,439.6	18.7	12.3	77.22	-45.4	-1,073.4	1,101.5	1,071.4	30.07	36.634	
6,300.0	5,648.9	5,450.0	5,439.6	20.1	12.3	76.81	-45.4	-1,073.4	1,152.8	1,121.5	31.28	36.850	
6,400.0	5,648.9	5,425.0	5,416.5	21.5	12.2	74.89	-54.4	-1,075.9	1,213.7	1,181.4	32.26	37.624	
6,500.0	5,648.9	5,400.0	5,392.9	23.0	12.1	72.68	-62.4	-1,078.1	1,282.8	1,249.7	33.16	38.691	
6,596.3	5,648.9	5,400.0	5,392.9	24.4	12.1	71.66	-62.4	-1,078.1	1,355.7	1,321.4	34.23	39.603	
6,600.0	5,648.9	5,400.0	5,392.9	24.5	12.1	71.66	-62.4	-1,078.1	1,358.6	1,324.3	34.29	39.624	
6,700.0	5,648.9	5,400.0	5,392.9	26.0	12.1	71.66	-62.4	-1,078.1	1,438.6	1,402.9	35.78	40.212	
6,800.0	5,648.9	5,379.4	5,373.2	27.6	12.0	70.42	-68.1	-1,079.7	1,520.7	1,483.6	37.02	41.078	
6,900.0	5,648.9	5,371.3	5,365.3	29.2	12.0	69.93	-70.2	-1,080.2	1,604.7	1,566.2	38.46	41.727	
7,000.0	5,648.9	5,350.0	5,344.6	30.9	11.9	68.67	-75.0	-1,081.6	1,690.6	1,650.8	39.73	42.551	
7,100.0	5,648.9	5,350.0	5,344.6	32.5	11.9	68.67	-75.0	-1,081.6	1,777.5	1,736.1	41.41	42.924	
7,200.0	5,648.9	5,350.0	5,344.6	34.3	11.9	68.67	-75.0	-1,081.6	1,865.7	1,822.6	43.11	43.276	
7,300.0	5,648.9	5,350.0	5,344.6	36.0	11.9	68.67	-75.0	-1,081.6	1,955.1	1,910.3	44.83	43.609	
7,400.0	5,648.9	5,350.0	5,344.6	37.7	11.9	68.67	-75.0	-1,081.6	2,045.4	1,998.9	46.57	43.923	
7,500.0	5,648.9	5,350.0	5,344.6	39.5	11.9	68.67	-75.0	-1,081.6	2,136.7	2,088.3	48.32	44.219	
7,600.0	5,648.9	5,350.0	5,344.6	41.3	11.9	68.67	-75.0	-1,081.6	2,228.6	2,178.5	50.08	44.499	
7,700.0	5,648.9	5,328.8	5,323.9	43.0	11.9	67.41	-79.0	-1,082.6	2,320.8	2,269.4	51.40	45.156	
7,800.0	5,648.9	5,325.3	5,320.4	44.8	11.9	67.20	-79.6	-1,082.8	2,413.9	2,360.8	53.08	45.472	
7,900.0	5,648.9	5,322.0	5,317.2	46.7	11.9	67.01	-80.1	-1,083.0	2,507.4	2,452.7	54.78	45.770	
8,000.0	5,648.9	5,300.0	5,295.4	48.5	11.8	65.72	-83.2	-1,083.8	2,601.8	2,545.8	56.02	46.446	
8,100.0	5,648.9	5,300.0	5,295.4	50.3	11.8	65.72	-83.2	-1,083.8	2,696.2	2,638.4	57.79	46.654	
8,200.0	5,648.9	5,300.0	5,295.4	52.1	11.8	65.72	-83.2	-1,083.8	2,790.9	2,731.4	59.57	46.852	
8,300.0	5,648.9	5,300.0	5,295.4	54.0	11.8	65.72	-83.2	-1,083.8	2,886.0	2,824.7	61.35	47.040	
8,400.0	5,648.9	5,300.0	5,295.4	55.8	11.8	65.72	-83.2	-1,083.8	2,981.4	2,918.3	63.14	47.220	
8,500.0	5,648.9	5,300.0	5,295.4	57.7	11.8	65.72	-83.2	-1,083.8	3,077.1	3,012.2	64.93	47.390	
8,600.0	5,648.9	5,300.0	5,295.4	59.5	11.8	65.72	-83.2	-1,083.8	3,173.1	3,106.4	66.73	47.553	
8,700.0	5,648.9	5,300.0	5,295.4	61.4	11.8	65.72	-83.2	-1,083.8	3,269.3	3,200.8	68.53	47.709	
8,800.0	5,648.9	5,300.0	5,295.4	63.2	11.8	65.72	-83.2	-1,083.8	3,365.8	3,295.4	70.33	47.858	
8,900.0	5,648.9	5,300.0	5,295.4	65.1	11.8	65.72	-83.2	-1,083.8	3,462.4	3,390.3	72.13	48.000	
9,000.0	5,648.9	5,300.0	5,295.4	67.0	11.8	65.72	-83.2	-1,083.8	3,559.2	3,485.3	73.94	48.136	
9,100.0	5,648.9	5,300.0	5,295.4	68.8	11.8	65.72	-83.2	-1,083.8	3,656.2	3,580.5	75.75	48.266	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	5,300.0	5,295.4	70.7	11.8	65.72	-83.2	-1,083.8	3,753.4	3,675.8	77.56	48.391	
9,300.0	5,648.9	5,300.0	5,295.4	72.6	11.8	65.72	-83.2	-1,083.8	3,850.7	3,771.3	79.38	48.511	
9,400.0	5,648.9	5,300.0	5,295.4	74.5	11.8	65.72	-83.2	-1,083.8	3,948.1	3,866.9	81.19	48.626	
9,500.0	5,648.9	5,300.0	5,295.4	76.3	11.8	65.72	-83.2	-1,083.8	4,045.7	3,962.6	83.01	48.736	
9,600.0	5,648.9	5,300.0	5,295.4	78.2	11.8	65.72	-83.2	-1,083.8	4,143.3	4,058.5	84.83	48.842	
9,700.0	5,648.9	5,300.0	5,295.4	80.1	11.8	65.72	-83.2	-1,083.8	4,241.1	4,154.5	86.65	48.945	
9,800.0	5,648.9	5,300.0	5,295.4	82.0	11.8	65.72	-83.2	-1,083.8	4,339.0	4,250.5	88.47	49.043	
9,900.0	5,648.9	5,300.0	5,295.4	83.9	11.8	65.72	-83.2	-1,083.8	4,437.0	4,346.7	90.30	49.137	
10,000.0	5,648.9	5,300.0	5,295.4	85.8	11.8	65.72	-83.2	-1,083.8	4,535.0	4,442.9	92.12	49.229	
10,100.0	5,648.9	5,300.0	5,295.4	87.7	11.8	65.72	-83.2	-1,083.8	4,633.2	4,539.2	93.95	49.317	
10,200.0	5,649.0	5,300.0	5,295.4	89.6	11.8	65.72	-83.2	-1,083.8	4,731.4	4,635.6	95.77	49.401	
10,300.0	5,649.0	5,300.0	5,295.4	91.4	11.8	65.72	-83.2	-1,083.8	4,829.7	4,732.1	97.60	49.483	
10,400.0	5,649.0	5,300.0	5,295.4	93.3	11.8	65.72	-83.2	-1,083.8	4,928.1	4,828.6	99.43	49.562	
10,500.0	5,649.0	5,300.0	5,295.4	95.2	11.8	65.72	-83.2	-1,083.8	5,026.5	4,925.2	101.26	49.639	
10,600.0	5,649.0	5,300.0	5,295.4	97.1	11.8	65.72	-83.2	-1,083.8	5,125.0	5,021.9	103.09	49.713	
10,700.0	5,649.0	5,300.0	5,295.4	99.0	11.8	65.72	-83.2	-1,083.8	5,223.6	5,118.6	104.92	49.784	
10,800.0	5,649.0	5,300.0	5,295.4	100.9	11.8	65.72	-83.2	-1,083.8	5,322.2	5,215.4	106.76	49.854	
10,900.0	5,649.0	5,277.3	5,272.8	102.8	11.8	64.41	-85.3	-1,084.4	5,420.3	5,312.8	107.55	50.399	
11,000.0	5,649.0	5,276.6	5,272.1	104.7	11.8	64.37	-85.4	-1,084.4	5,519.0	5,409.7	109.33	50.479	
11,100.0	5,649.0	5,275.9	5,271.4	106.6	11.8	64.33	-85.4	-1,084.4	5,617.7	5,506.6	111.12	50.556	
11,200.0	5,649.0	5,275.3	5,270.8	108.5	11.8	64.29	-85.5	-1,084.4	5,716.5	5,603.6	112.90	50.631	
11,300.0	5,649.0	5,274.6	5,270.1	110.4	11.8	64.26	-85.5	-1,084.4	5,815.3	5,700.6	114.69	50.704	
11,400.0	5,649.0	5,274.0	5,269.5	112.3	11.7	64.22	-85.6	-1,084.4	5,914.1	5,797.6	116.48	50.775	
11,500.0	5,649.0	5,273.4	5,268.9	114.2	11.7	64.19	-85.6	-1,084.4	6,013.0	5,894.7	118.26	50.844	
11,600.0	5,649.0	5,250.0	5,245.5	116.1	11.7	62.85	-86.7	-1,084.7	6,112.4	5,993.6	118.85	51.430	
11,700.0	5,649.0	5,250.0	5,245.5	118.0	11.7	62.85	-86.7	-1,084.7	6,211.3	6,090.7	120.65	51.482	
11,800.0	5,649.0	5,250.0	5,245.5	119.9	11.7	62.85	-86.7	-1,084.7	6,310.3	6,187.9	122.45	51.533	
11,900.0	5,649.0	5,250.0	5,245.5	121.9	11.7	62.85	-86.7	-1,084.7	6,409.3	6,285.0	124.25	51.583	
12,000.0	5,649.0	5,250.0	5,245.5	123.8	11.7	62.85	-86.7	-1,084.7	6,508.3	6,382.3	126.05	51.631	
12,100.0	5,649.0	5,250.0	5,245.5	125.7	11.7	62.85	-86.7	-1,084.7	6,607.4	6,479.5	127.86	51.678	
12,200.0	5,649.0	5,250.0	5,245.5	127.6	11.7	62.85	-86.7	-1,084.7	6,706.5	6,576.8	129.66	51.724	
12,300.0	5,649.0	5,250.0	5,245.5	129.5	11.7	62.85	-86.7	-1,084.7	6,805.6	6,674.1	131.46	51.768	
12,400.0	5,649.0	5,250.0	5,245.5	131.4	11.7	62.85	-86.7	-1,084.7	6,904.7	6,771.4	133.27	51.811	
12,500.0	5,649.0	5,250.0	5,245.5	133.3	11.7	62.85	-86.7	-1,084.7	7,003.9	6,868.8	135.07	51.854	
12,590.4	5,649.0	5,250.0	5,245.5	134.7	11.7	62.85	-86.7	-1,084.7	7,093.6	6,957.2	136.40	52.005	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	10.5	10.5	0.0	0.0	-94.34	-95.1	-1,253.2	1,256.8				
100.0	100.0	110.5	110.5	0.1	0.1	-94.34	-95.1	-1,253.2	1,256.8	1,256.6	0.21	5,948.566	
200.0	200.0	210.5	210.5	0.3	0.3	-94.34	-95.1	-1,253.2	1,256.8	1,256.2	0.66	1,901.925	
300.0	300.0	310.5	310.5	0.5	0.6	-94.34	-95.1	-1,253.2	1,256.8	1,255.7	1.11	1,131.915	
400.0	400.0	410.5	410.5	0.8	0.8	-94.34	-95.1	-1,253.2	1,256.8	1,255.3	1.56	805.715	
462.8	462.8	473.3	473.3	0.9	0.9	-94.34	-95.1	-1,253.2	1,256.8	1,255.0	1.84	682.316	
500.0	500.0	509.0	509.0	1.0	1.0	-94.34	-95.1	-1,253.2	1,256.8	1,254.8	2.00	627.263	
600.0	600.0	600.0	600.0	1.2	1.2	-94.41	-96.7	-1,253.8	1,257.5	1,255.1	2.41	522.010	
700.0	700.0	680.3	680.2	1.4	1.3	-94.58	-100.5	-1,255.0	1,259.3	1,256.5	2.79	452.140	
800.0	800.0	776.8	776.4	1.7	1.5	-94.86	-106.8	-1,257.0	1,262.0	1,258.8	3.20	393.785	
900.0	900.0	876.5	875.9	1.9	1.8	-95.15	-113.4	-1,259.1	1,264.7	1,261.1	3.64	347.360	
1,000.0	1,000.0	976.3	975.5	2.1	2.0	-95.44	-120.0	-1,261.3	1,267.5	1,263.4	4.09	310.207	
1,100.0	1,100.0	1,076.0	1,075.0	2.3	2.2	-95.73	-126.7	-1,263.4	1,270.2	1,265.7	4.54	279.968	
1,200.0	1,200.0	1,175.8	1,174.5	2.6	2.5	-96.01	-133.3	-1,265.5	1,273.0	1,268.1	4.99	254.981	
1,300.0	1,300.0	1,275.6	1,274.0	2.8	2.7	-96.30	-139.9	-1,267.7	1,275.9	1,270.4	5.45	234.040	
1,400.0	1,400.0	1,375.3	1,373.5	3.0	3.0	-96.58	-146.5	-1,269.8	1,278.8	1,272.9	5.91	216.270	
1,500.0	1,500.0	1,475.1	1,473.0	3.2	3.2	-96.87	-153.2	-1,271.9	1,281.7	1,275.3	6.38	201.019	
1,600.0	1,600.0	1,574.8	1,572.5	3.5	3.5	-97.15	-159.8	-1,274.1	1,284.6	1,277.8	6.84	187.801	
1,700.0	1,700.0	1,674.6	1,672.1	3.7	3.7	-97.43	-166.4	-1,276.2	1,287.6	1,280.3	7.31	176.242	
1,800.0	1,800.0	1,774.3	1,771.6	3.9	4.0	-97.71	-173.0	-1,278.3	1,290.6	1,282.8	7.77	166.054	
1,900.0	1,900.0	1,874.1	1,871.1	4.1	4.2	-97.99	-179.7	-1,280.5	1,293.6	1,285.4	8.24	157.010	
2,000.0	2,000.0	1,973.9	1,970.6	4.4	4.5	-98.26	-186.3	-1,282.6	1,296.7	1,288.0	8.71	148.931	
2,100.0	2,100.0	2,073.6	2,070.1	4.6	4.8	-98.54	-192.9	-1,284.7	1,299.8	1,290.6	9.17	141.673	
2,200.0	2,200.0	2,173.4	2,169.6	4.8	5.0	-98.81	-199.5	-1,286.9	1,302.9	1,293.3	9.64	135.117	
2,300.0	2,300.0	2,273.1	2,269.1	5.0	5.3	-99.09	-206.1	-1,289.0	1,306.1	1,295.9	10.11	129.169	
2,400.0	2,400.0	2,372.9	2,368.6	5.3	5.5	-99.36	-212.8	-1,291.2	1,309.2	1,298.7	10.58	123.747	
2,500.0	2,500.0	2,472.6	2,468.2	5.5	5.8	-99.63	-219.4	-1,293.3	1,312.4	1,301.4	11.05	118.787	
2,600.0	2,600.0	2,572.4	2,567.7	5.7	6.1	-99.90	-226.0	-1,295.4	1,315.7	1,304.2	11.52	114.231	
2,700.0	2,700.0	2,672.2	2,667.2	5.9	6.3	-100.16	-232.6	-1,297.6	1,319.0	1,307.0	11.99	110.034	
2,800.0	2,800.0	2,771.9	2,766.7	6.2	6.6	-100.43	-239.3	-1,299.7	1,322.3	1,309.8	12.46	106.155	
2,900.0	2,900.0	2,871.7	2,866.2	6.4	6.9	-100.70	-245.9	-1,301.8	1,325.6	1,312.7	12.93	102.559	
3,000.0	3,000.0	2,971.4	2,965.7	6.6	7.1	-100.96	-252.5	-1,304.0	1,328.9	1,315.5	13.39	99.216	
3,100.0	3,100.0	3,071.2	3,065.2	6.8	7.4	-101.22	-259.1	-1,306.1	1,332.3	1,318.5	13.86	96.102	
3,200.0	3,200.0	3,170.9	3,164.8	7.1	7.6	-101.48	-265.8	-1,308.2	1,335.7	1,321.4	14.33	93.194	
3,300.0	3,300.0	3,270.7	3,264.3	7.3	7.9	-101.74	-272.4	-1,310.4	1,339.2	1,324.4	14.80	90.472	
3,400.0	3,400.0	3,370.4	3,363.8	7.5	8.2	-102.00	-279.0	-1,312.5	1,342.6	1,327.4	15.27	87.919	
3,500.0	3,500.0	3,470.2	3,463.3	7.7	8.4	-102.26	-285.6	-1,314.6	1,346.1	1,330.4	15.74	85.520	
3,600.0	3,600.0	3,570.0	3,562.8	8.0	8.7	-102.51	-292.2	-1,316.8	1,349.7	1,333.4	16.21	83.262	
3,700.0	3,700.0	3,669.7	3,662.3	8.2	9.0	-102.77	-298.9	-1,318.9	1,353.2	1,336.5	16.68	81.132	
3,800.0	3,800.0	3,769.5	3,761.8	8.4	9.2	-103.02	-305.5	-1,321.0	1,356.8	1,339.6	17.15	79.121	
3,900.0	3,900.0	3,869.2	3,861.3	8.6	9.5	-103.27	-312.1	-1,323.2	1,360.4	1,342.8	17.62	77.218	
4,000.0	4,000.0	3,969.0	3,960.9	8.9	9.7	-103.52	-318.7	-1,325.3	1,364.0	1,345.9	18.09	75.416	
4,100.0	4,100.0	4,068.7	4,060.4	9.1	10.0	-103.77	-325.4	-1,327.4	1,367.7	1,349.1	18.56	73.707	
4,200.0	4,200.0	4,168.5	4,159.9	9.3	10.3	-104.02	-332.0	-1,329.6	1,371.3	1,352.3	19.02	72.083	
4,300.0	4,300.0	4,268.3	4,259.4	9.5	10.5	-104.27	-338.6	-1,331.7	1,375.0	1,355.5	19.49	70.538	
4,400.0	4,400.0	4,368.0	4,358.9	9.8	10.8	-104.51	-345.2	-1,333.8	1,378.8	1,358.8	19.96	69.068	
4,500.0	4,500.0	4,467.8	4,458.4	10.0	11.1	-104.76	-351.9	-1,336.0	1,382.5	1,362.1	20.43	67.667	
4,600.0	4,600.0	4,567.5	4,557.9	10.2	11.3	-105.00	-358.5	-1,338.1	1,386.3	1,365.4	20.90	66.329	
4,700.0	4,700.0	4,667.3	4,657.5	10.4	11.6	-105.24	-365.1	-1,340.2	1,390.1	1,368.7	21.37	65.052	
4,800.0	4,800.0	4,767.0	4,757.0	10.7	11.8	-105.48	-371.7	-1,342.4	1,393.9	1,372.1	21.84	63.831	
4,900.0	4,900.0	4,866.8	4,856.5	10.9	12.1	-105.72	-378.4	-1,344.5	1,397.8	1,375.5	22.31	62.662	
5,000.0	5,000.0	4,966.5	4,956.0	11.1	12.4	-105.95	-385.0	-1,346.6	1,401.7	1,378.9	22.78	61.542	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,066.3	5,055.5	11.3	12.6	-106.19	-391.6	-1,348.8	1,405.6	1,382.3	23.24	60.469	
5,128.0	5,128.0	5,094.2	5,083.4	11.4	12.7	-106.26	-393.5	-1,349.4	1,406.7	1,383.3	23.38	60.176	
5,150.0	5,150.0	5,116.2	5,105.3	11.4	12.8	54.16	-394.9	-1,349.9	1,407.2	1,383.5	23.78	59.187	
5,200.0	5,199.8	5,166.2	5,155.1	11.5	12.9	54.25	-398.2	-1,350.9	1,406.6	1,382.6	23.95	58.740	
5,250.0	5,248.9	5,200.0	5,188.9	11.6	13.0	54.66	-400.5	-1,351.7	1,403.2	1,379.2	24.02	58.420	
5,300.0	5,296.9	5,221.9	5,210.6	11.7	13.1	55.26	-402.7	-1,352.4	1,398.0	1,374.0	24.02	58.191	
5,350.0	5,343.3	5,250.0	5,238.4	11.8	13.1	56.11	-406.7	-1,353.7	1,391.2	1,367.2	24.02	57.915	
5,400.0	5,387.8	5,250.0	5,238.4	11.9	13.1	56.89	-406.7	-1,353.7	1,382.8	1,358.9	23.92	57.818	
5,450.0	5,429.9	5,280.3	5,268.1	12.0	13.3	58.19	-412.7	-1,355.6	1,372.8	1,348.9	23.96	57.286	
5,500.0	5,469.2	5,300.0	5,287.1	12.2	13.4	59.57	-417.4	-1,357.1	1,361.5	1,337.5	24.02	56.682	
5,550.0	5,505.3	5,318.5	5,304.9	12.4	13.4	61.13	-422.5	-1,358.8	1,349.0	1,324.8	24.17	55.813	
5,600.0	5,538.0	5,350.0	5,334.5	12.6	13.6	63.14	-432.5	-1,362.0	1,335.5	1,310.9	24.52	54.467	
5,650.0	5,566.9	5,350.0	5,334.5	12.9	13.6	64.66	-432.5	-1,362.0	1,320.7	1,295.9	24.77	53.316	
5,700.0	5,591.8	5,373.8	5,356.5	13.2	13.7	66.88	-441.3	-1,364.8	1,305.2	1,279.9	25.35	51.488	
5,750.0	5,612.4	5,400.0	5,380.2	13.6	13.9	69.35	-451.9	-1,368.2	1,289.3	1,263.2	26.08	49.426	
5,800.0	5,628.5	5,400.0	5,380.2	14.1	13.9	71.15	-451.9	-1,368.2	1,272.9	1,246.2	26.68	47.717	
5,850.0	5,640.0	5,425.5	5,402.7	14.6	14.1	73.84	-463.4	-1,371.9	1,256.2	1,228.6	27.62	45.477	
5,900.0	5,646.8	5,450.0	5,423.7	15.1	14.2	76.61	-475.3	-1,375.8	1,239.8	1,211.2	28.61	43.330	
5,946.2	5,648.9	5,450.0	5,423.7	15.6	14.2	78.30	-475.3	-1,375.8	1,224.9	1,195.6	29.31	41.796	
6,000.0	5,648.9	5,472.7	5,442.6	16.3	14.4	79.30	-487.2	-1,379.6	1,209.3	1,179.2	30.19	40.059	
6,100.0	5,648.9	5,500.0	5,464.6	17.4	14.6	80.48	-502.6	-1,384.6	1,189.1	1,157.5	31.65	37.575	
6,200.0	5,648.9	5,550.0	5,502.6	18.7	15.1	82.36	-533.5	-1,394.5	1,180.0	1,146.6	33.45	35.280	
6,232.8	5,648.9	5,568.6	5,515.9	19.2	15.3	83.02	-545.9	-1,398.5	1,179.4	1,145.4	34.09	34.597	CC
6,300.0	5,648.9	5,600.0	5,537.3	20.1	15.6	84.06	-567.7	-1,405.6	1,181.8	1,146.5	35.30	33.479	
6,400.0	5,648.9	5,668.0	5,578.7	21.5	16.3	86.07	-619.1	-1,422.1	1,193.5	1,156.1	37.40	31.910	
6,500.0	5,648.9	5,742.2	5,615.4	23.0	17.2	87.86	-680.4	-1,441.9	1,213.8	1,174.3	39.58	30.665	
6,596.3	5,648.9	5,823.5	5,644.7	24.4	18.3	89.29	-752.5	-1,465.1	1,240.2	1,198.4	41.81	29.661	
6,600.0	5,648.9	5,826.7	5,645.6	24.5	18.4	89.33	-755.4	-1,466.0	1,241.3	1,199.4	41.91	29.618	
6,700.0	5,648.9	5,919.3	5,663.6	26.0	19.7	90.20	-841.8	-1,493.9	1,271.9	1,227.2	44.72	28.445	
6,800.0	5,648.9	6,101.0	5,666.5	27.6	22.2	90.32	-1,015.8	-1,545.6	1,301.3	1,252.5	48.81	26.662	
6,900.0	5,648.9	6,415.2	5,666.5	29.2	26.8	90.31	-1,325.4	-1,596.6	1,317.6	1,262.6	54.97	23.969	
7,000.0	5,648.9	6,622.3	5,666.6	30.9	30.0	90.31	-1,532.3	-1,602.9	1,319.6	1,259.7	59.85	22.047	
7,100.0	5,648.9	6,722.3	5,666.6	32.5	31.7	90.31	-1,632.3	-1,602.9	1,319.6	1,256.3	63.25	20.863	
7,200.0	5,648.9	6,822.3	5,666.6	34.3	33.3	90.31	-1,732.3	-1,603.0	1,319.6	1,252.9	66.70	19.785	
7,300.0	5,648.9	6,922.3	5,666.6	36.0	35.1	90.31	-1,832.3	-1,603.0	1,319.6	1,249.4	70.19	18.801	
7,400.0	5,648.9	7,022.3	5,666.6	37.7	36.8	90.31	-1,932.3	-1,603.0	1,319.6	1,245.9	73.71	17.903	
7,500.0	5,648.9	7,122.3	5,666.6	39.5	38.5	90.31	-2,032.3	-1,603.0	1,319.6	1,242.4	77.26	17.079	
7,600.0	5,648.9	7,222.3	5,666.6	41.3	40.3	90.31	-2,132.3	-1,603.0	1,319.6	1,238.8	80.84	16.323	
7,700.0	5,648.9	7,322.3	5,666.6	43.0	42.1	90.31	-2,232.3	-1,603.0	1,319.6	1,235.2	84.45	15.627	
7,800.0	5,648.9	7,422.3	5,666.6	44.8	43.9	90.31	-2,332.3	-1,603.0	1,319.6	1,231.6	88.07	14.984	
7,900.0	5,648.9	7,522.3	5,666.6	46.7	45.7	90.31	-2,432.3	-1,603.0	1,319.7	1,227.9	91.71	14.389	
8,000.0	5,648.9	7,622.3	5,666.6	48.5	47.5	90.31	-2,532.3	-1,603.0	1,319.7	1,224.3	95.37	13.837	
8,100.0	5,648.9	7,722.3	5,666.6	50.3	49.3	90.31	-2,632.3	-1,603.0	1,319.7	1,220.6	99.04	13.324	
8,200.0	5,648.9	7,822.3	5,666.6	52.1	51.1	90.31	-2,732.3	-1,603.0	1,319.7	1,217.0	102.72	12.847	
8,300.0	5,648.9	7,922.3	5,666.7	54.0	53.0	90.31	-2,832.3	-1,603.0	1,319.7	1,213.3	106.42	12.401	
8,400.0	5,648.9	8,022.3	5,666.7	55.8	54.8	90.31	-2,932.3	-1,603.0	1,319.7	1,209.6	110.12	11.984	
8,500.0	5,648.9	8,122.3	5,666.7	57.7	56.6	90.32	-3,032.3	-1,603.0	1,319.7	1,205.9	113.84	11.593	
8,600.0	5,648.9	8,222.3	5,666.7	59.5	58.5	90.32	-3,132.3	-1,603.0	1,319.7	1,202.2	117.56	11.226	
8,700.0	5,648.9	8,322.3	5,666.7	61.4	60.3	90.32	-3,232.3	-1,603.0	1,319.7	1,198.4	121.29	10.881	
8,800.0	5,648.9	8,422.3	5,666.7	63.2	62.2	90.32	-3,332.3	-1,603.0	1,319.7	1,194.7	125.03	10.556	
8,900.0	5,648.9	8,522.3	5,666.7	65.1	64.1	90.32	-3,432.3	-1,603.0	1,319.7	1,191.0	128.77	10.249	
9,000.0	5,648.9	8,622.3	5,666.7	67.0	65.9	90.32	-3,532.3	-1,603.0	1,319.7	1,187.2	132.52	9.959	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	5,648.9	8,722.3	5,666.7	68.8	67.8	90.32	-3,632.3	-1,603.0	1,319.8	1,183.5	136.27	9.685	
9,200.0	5,648.9	8,822.3	5,666.7	70.7	69.7	90.32	-3,732.3	-1,603.0	1,319.8	1,179.7	140.03	9.425	
9,300.0	5,648.9	8,922.3	5,666.7	72.6	71.5	90.32	-3,832.3	-1,603.0	1,319.8	1,176.0	143.79	9.178	
9,400.0	5,648.9	9,022.3	5,666.7	74.5	73.4	90.32	-3,932.3	-1,603.0	1,319.8	1,172.2	147.56	8.944	
9,500.0	5,648.9	9,122.3	5,666.8	76.3	75.3	90.32	-4,032.3	-1,603.0	1,319.8	1,168.5	151.33	8.721	
9,600.0	5,648.9	9,222.3	5,666.8	78.2	77.2	90.32	-4,132.3	-1,603.0	1,319.8	1,164.7	155.11	8.509	
9,700.0	5,648.9	9,322.3	5,666.8	80.1	79.1	90.32	-4,232.3	-1,603.0	1,319.8	1,160.9	158.88	8.307	
9,800.0	5,648.9	9,422.3	5,666.8	82.0	81.0	90.32	-4,332.3	-1,603.0	1,319.8	1,157.2	162.66	8.114	
9,900.0	5,648.9	9,522.3	5,666.8	83.9	82.8	90.32	-4,432.3	-1,603.0	1,319.8	1,153.4	166.45	7.929	
10,000.0	5,648.9	9,622.3	5,666.8	85.8	84.7	90.32	-4,532.3	-1,603.0	1,319.8	1,149.6	170.23	7.753	
10,100.0	5,648.9	9,722.3	5,666.8	87.7	86.6	90.32	-4,632.3	-1,603.0	1,319.8	1,145.8	174.02	7.584	
10,200.0	5,649.0	9,822.3	5,666.8	89.6	88.5	90.32	-4,732.3	-1,603.0	1,319.9	1,142.0	177.81	7.423	
10,300.0	5,649.0	9,922.3	5,666.8	91.4	90.4	90.32	-4,832.3	-1,603.0	1,319.9	1,138.3	181.61	7.268	
10,400.0	5,649.0	10,022.3	5,666.8	93.3	92.3	90.32	-4,932.3	-1,603.0	1,319.9	1,134.5	185.40	7.119	
10,500.0	5,649.0	10,122.3	5,666.8	95.2	94.2	90.32	-5,032.3	-1,603.0	1,319.9	1,130.7	189.20	6.976	
10,600.0	5,649.0	10,222.3	5,666.8	97.1	96.1	90.32	-5,132.3	-1,603.0	1,319.9	1,126.9	193.00	6.839	
10,700.0	5,649.0	10,322.3	5,666.8	99.0	98.0	90.32	-5,232.3	-1,603.0	1,319.9	1,123.1	196.80	6.707	
10,800.0	5,649.0	10,422.3	5,666.9	100.9	99.9	90.32	-5,332.3	-1,603.0	1,319.9	1,119.3	200.60	6.580	
10,900.0	5,649.0	10,522.3	5,666.9	102.8	101.8	90.32	-5,432.3	-1,603.0	1,319.9	1,115.5	204.40	6.457	
11,000.0	5,649.0	10,622.3	5,666.9	104.7	103.7	90.32	-5,532.3	-1,603.0	1,319.9	1,111.7	208.21	6.339	
11,100.0	5,649.0	10,722.3	5,666.9	106.6	105.6	90.32	-5,632.3	-1,603.0	1,319.9	1,107.9	212.01	6.226	
11,200.0	5,649.0	10,822.3	5,666.9	108.5	107.5	90.32	-5,732.3	-1,603.0	1,319.9	1,104.1	215.82	6.116	
11,300.0	5,649.0	10,922.3	5,666.9	110.4	109.4	90.32	-5,832.3	-1,603.0	1,319.9	1,100.3	219.63	6.010	
11,400.0	5,649.0	11,022.3	5,666.9	112.3	111.3	90.32	-5,932.3	-1,603.0	1,320.0	1,096.5	223.44	5.907	
11,500.0	5,649.0	11,122.3	5,666.9	114.2	113.2	90.32	-6,032.3	-1,603.0	1,320.0	1,092.7	227.25	5.808	
11,600.0	5,649.0	11,222.3	5,666.9	116.1	115.1	90.32	-6,132.3	-1,603.0	1,320.0	1,088.9	231.06	5.713	
11,700.0	5,649.0	11,322.3	5,666.9	118.0	117.0	90.32	-6,232.3	-1,603.0	1,320.0	1,085.1	234.87	5.620	
11,800.0	5,649.0	11,422.3	5,666.9	119.9	118.9	90.32	-6,332.3	-1,603.0	1,320.0	1,081.3	238.69	5.530	
11,900.0	5,649.0	11,522.3	5,666.9	121.9	120.8	90.32	-6,432.3	-1,603.0	1,320.0	1,077.5	242.50	5.443	
12,000.0	5,649.0	11,622.3	5,667.0	123.8	122.7	90.32	-6,532.3	-1,603.0	1,320.0	1,073.7	246.32	5.359	
12,100.0	5,649.0	11,722.3	5,667.0	125.7	124.6	90.32	-6,632.3	-1,603.0	1,320.0	1,069.9	250.13	5.277	
12,200.0	5,649.0	11,822.3	5,667.0	127.6	126.5	90.32	-6,732.3	-1,603.0	1,320.0	1,066.1	253.95	5.198	
12,300.0	5,649.0	11,922.3	5,667.0	129.5	128.4	90.32	-6,832.3	-1,603.0	1,320.0	1,062.3	257.77	5.121	
12,400.0	5,649.0	12,022.3	5,667.0	131.4	130.3	90.33	-6,932.3	-1,603.0	1,320.0	1,058.5	261.59	5.046	
12,500.0	5,649.0	12,122.3	5,667.0	133.3	132.2	90.33	-7,032.3	-1,603.0	1,320.0	1,054.6	265.41	4.974	
12,590.4	5,649.0	12,212.7	5,667.0	134.7	134.0	90.33	-7,122.8	-1,603.0	1,320.1	1,051.5	268.55	4.915	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	7.5	7.5	0.0	0.0	-97.94	-170.1	-1,220.3	1,232.1				
100.0	100.0	107.5	107.5	0.1	0.1	-97.94	-170.1	-1,220.3	1,232.1	1,231.9	0.20	6,023.720	
200.0	200.0	207.5	207.5	0.3	0.3	-97.94	-170.1	-1,220.3	1,232.1	1,231.4	0.65	1,883.709	
300.0	300.0	307.5	307.5	0.5	0.6	-97.94	-170.1	-1,220.3	1,232.1	1,231.0	1.10	1,116.414	
400.0	400.0	407.5	407.5	0.8	0.8	-97.94	-170.1	-1,220.3	1,232.1	1,230.5	1.55	793.284	
500.0	500.0	507.5	507.5	1.0	1.0	-97.94	-170.1	-1,220.3	1,232.1	1,230.1	2.00	615.218	
600.0	600.0	607.5	607.5	1.2	1.2	-97.94	-170.1	-1,220.3	1,232.1	1,229.6	2.45	502.438	
700.0	700.0	707.5	707.5	1.4	1.5	-97.94	-170.1	-1,220.3	1,232.1	1,229.2	2.90	424.601	
800.0	800.0	807.5	807.5	1.7	1.7	-97.94	-170.1	-1,220.3	1,232.1	1,228.7	3.35	367.646	
900.0	900.0	907.5	907.5	1.9	1.9	-97.94	-170.1	-1,220.3	1,232.1	1,228.3	3.80	324.163	
1,000.0	1,000.0	1,007.5	1,007.5	2.1	2.1	-97.94	-170.1	-1,220.3	1,232.1	1,227.8	4.25	289.878	
1,100.0	1,100.0	1,107.5	1,107.5	2.3	2.4	-97.94	-170.1	-1,220.3	1,232.1	1,227.4	4.70	262.152	
1,200.0	1,200.0	1,207.5	1,207.5	2.6	2.6	-97.94	-170.1	-1,220.3	1,232.1	1,226.9	5.15	239.267	
1,300.0	1,300.0	1,307.5	1,307.5	2.8	2.8	-97.94	-170.1	-1,220.3	1,232.1	1,226.5	5.60	220.056	
1,400.0	1,400.0	1,407.5	1,407.5	3.0	3.0	-97.94	-170.1	-1,220.3	1,232.1	1,226.0	6.05	203.701	
1,500.0	1,500.0	1,507.5	1,507.5	3.2	3.3	-97.94	-170.1	-1,220.3	1,232.1	1,225.6	6.50	189.609	
1,600.0	1,600.0	1,607.5	1,607.5	3.5	3.5	-97.94	-170.1	-1,220.3	1,232.1	1,225.1	6.95	177.341	
1,700.0	1,700.0	1,707.5	1,707.5	3.7	3.7	-97.94	-170.1	-1,220.3	1,232.1	1,224.7	7.40	166.563	
1,800.0	1,800.0	1,807.5	1,807.5	3.9	3.9	-97.94	-170.1	-1,220.3	1,232.1	1,224.2	7.85	157.021	
1,900.0	1,900.0	1,907.5	1,907.5	4.1	4.2	-97.94	-170.1	-1,220.3	1,232.1	1,223.8	8.30	148.513	
2,000.0	2,000.0	2,007.5	2,007.5	4.4	4.4	-97.94	-170.1	-1,220.3	1,232.1	1,223.3	8.75	140.879	
2,100.0	2,100.0	2,107.5	2,107.5	4.6	4.6	-97.94	-170.1	-1,220.3	1,232.1	1,222.9	9.20	133.992	
2,200.0	2,200.0	2,207.5	2,207.5	4.8	4.8	-97.94	-170.1	-1,220.3	1,232.1	1,222.4	9.64	127.746	
2,300.0	2,300.0	2,307.5	2,307.5	5.0	5.1	-97.94	-170.1	-1,220.3	1,232.1	1,222.0	10.09	122.057	
2,400.0	2,400.0	2,407.5	2,407.5	5.3	5.3	-97.94	-170.1	-1,220.3	1,232.1	1,221.5	10.54	116.853	
2,500.0	2,500.0	2,507.5	2,507.5	5.5	5.5	-97.94	-170.1	-1,220.3	1,232.1	1,221.1	10.99	112.075	
2,600.0	2,600.0	2,607.5	2,607.5	5.7	5.7	-97.94	-170.1	-1,220.3	1,232.1	1,220.6	11.44	107.672	
2,700.0	2,700.0	2,707.5	2,707.5	5.9	6.0	-97.94	-170.1	-1,220.3	1,232.1	1,220.2	11.89	103.602	
2,800.0	2,800.0	2,807.5	2,807.5	6.2	6.2	-97.94	-170.1	-1,220.3	1,232.1	1,219.7	12.34	99.829	
2,900.0	2,900.0	2,907.5	2,907.5	6.4	6.4	-97.94	-170.1	-1,220.3	1,232.1	1,219.3	12.79	96.320	
3,000.0	3,000.0	3,007.5	3,007.5	6.6	6.6	-97.94	-170.1	-1,220.3	1,232.1	1,218.8	13.24	93.050	
3,100.0	3,100.0	3,107.5	3,107.5	6.8	6.9	-97.94	-170.1	-1,220.3	1,232.1	1,218.4	13.69	89.995	
3,200.0	3,200.0	3,207.5	3,207.5	7.1	7.1	-97.94	-170.1	-1,220.3	1,232.1	1,217.9	14.14	87.134	
3,300.0	3,300.0	3,307.5	3,307.5	7.3	7.3	-97.94	-170.1	-1,220.3	1,232.1	1,217.5	14.59	84.449	
3,400.0	3,400.0	3,407.5	3,407.5	7.5	7.5	-97.94	-170.1	-1,220.3	1,232.1	1,217.0	15.04	81.925	
3,500.0	3,500.0	3,507.5	3,507.5	7.7	7.8	-97.94	-170.1	-1,220.3	1,232.1	1,216.6	15.49	79.547	
3,600.0	3,600.0	3,607.5	3,607.5	8.0	8.0	-97.94	-170.1	-1,220.3	1,232.1	1,216.1	15.94	77.304	
3,700.0	3,700.0	3,707.5	3,707.5	8.2	8.2	-97.94	-170.1	-1,220.3	1,232.1	1,215.7	16.39	75.183	
3,800.0	3,800.0	3,807.5	3,807.5	8.4	8.4	-97.94	-170.1	-1,220.3	1,232.1	1,215.2	16.84	73.176	
3,900.0	3,900.0	3,907.5	3,907.5	8.6	8.7	-97.94	-170.1	-1,220.3	1,232.1	1,214.8	17.29	71.273	
4,000.0	4,000.0	4,007.5	4,007.5	8.9	8.9	-97.94	-170.1	-1,220.3	1,232.1	1,214.3	17.74	69.466	
4,100.0	4,100.0	4,107.5	4,107.5	9.1	9.1	-97.94	-170.1	-1,220.3	1,232.1	1,213.9	18.19	67.749	
4,200.0	4,200.0	4,207.5	4,207.5	9.3	9.3	-97.94	-170.1	-1,220.3	1,232.1	1,213.4	18.64	66.115	
4,300.0	4,300.0	4,307.5	4,307.5	9.5	9.6	-97.94	-170.1	-1,220.3	1,232.1	1,213.0	19.08	64.558	
4,400.0	4,400.0	4,407.5	4,407.5	9.8	9.8	-97.94	-170.1	-1,220.3	1,232.1	1,212.5	19.53	63.072	
4,500.0	4,500.0	4,507.5	4,507.5	10.0	10.0	-97.94	-170.1	-1,220.3	1,232.1	1,212.1	19.98	61.653	
4,600.0	4,600.0	4,607.5	4,607.5	10.2	10.2	-97.94	-170.1	-1,220.3	1,232.1	1,211.6	20.43	60.297	
4,700.0	4,700.0	4,707.5	4,707.5	10.4	10.4	-97.94	-170.1	-1,220.3	1,232.1	1,211.2	20.88	58.999	
4,800.0	4,800.0	4,807.5	4,807.5	10.7	10.7	-97.94	-170.1	-1,220.3	1,232.1	1,210.7	21.33	57.756	
4,900.0	4,900.0	4,907.5	4,907.5	10.9	10.9	-97.94	-170.1	-1,220.3	1,232.1	1,210.3	21.78	56.564	
5,000.0	5,000.0	5,007.5	5,007.5	11.1	11.1	-97.94	-170.1	-1,220.3	1,232.1	1,209.8	22.23	55.420	
5,100.0	5,100.0	5,107.5	5,107.5	11.3	11.3	-97.94	-170.1	-1,220.3	1,232.1	1,209.4	22.68	54.322	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,135.5	5,135.5	11.4	11.4	-97.94	-170.1	-1,220.3	1,232.1	1,209.3	22.81	54.022	
5,150.0	5,150.0	5,157.5	5,157.5	11.4	11.5	62.60	-170.1	-1,220.3	1,231.9	1,209.0	22.90	53.803	
5,200.0	5,199.8	5,207.3	5,207.3	11.5	11.6	62.99	-170.1	-1,220.3	1,229.8	1,206.7	23.05	53.345	
5,250.0	5,248.9	5,250.0	5,250.0	11.6	11.7	63.71	-170.4	-1,220.3	1,225.7	1,202.5	23.15	52.933	
5,300.0	5,296.9	5,284.7	5,284.6	11.7	11.7	64.58	-172.8	-1,220.4	1,219.9	1,196.8	23.20	52.595	
5,350.0	5,343.3	5,320.1	5,319.6	11.8	11.8	65.65	-177.5	-1,220.6	1,212.8	1,189.6	23.23	52.212	
5,400.0	5,387.8	5,350.0	5,349.0	11.9	11.8	66.85	-183.4	-1,220.8	1,204.3	1,181.1	23.27	51.764	
5,450.0	5,429.9	5,391.7	5,389.2	12.0	11.9	68.37	-194.4	-1,221.3	1,194.6	1,171.2	23.37	51.113	
5,500.0	5,469.2	5,428.0	5,423.4	12.2	12.0	70.01	-206.5	-1,221.8	1,183.6	1,160.1	23.53	50.304	
5,550.0	5,505.3	5,464.7	5,457.0	12.4	12.0	71.83	-221.1	-1,222.4	1,171.7	1,147.9	23.77	49.287	
5,600.0	5,538.0	5,500.0	5,488.3	12.6	12.1	73.81	-237.4	-1,223.0	1,158.9	1,134.8	24.11	48.071	
5,650.0	5,566.9	5,539.4	5,521.9	12.9	12.2	76.02	-258.1	-1,223.9	1,145.3	1,120.7	24.56	46.628	
5,700.0	5,591.8	5,577.7	5,552.9	13.2	12.3	78.36	-280.5	-1,224.8	1,131.1	1,106.0	25.11	45.044	
5,750.0	5,612.4	5,616.6	5,582.6	13.6	12.4	80.83	-305.6	-1,225.8	1,116.5	1,090.8	25.75	43.358	
5,800.0	5,628.5	5,656.4	5,611.0	14.1	12.6	83.44	-333.4	-1,227.0	1,101.8	1,075.3	26.46	41.634	
5,850.0	5,640.0	5,697.1	5,637.8	14.6	12.7	86.15	-364.1	-1,228.2	1,087.0	1,059.7	27.23	39.917	
5,900.0	5,646.8	5,739.1	5,662.7	15.1	13.0	88.93	-397.8	-1,229.6	1,072.3	1,044.3	28.04	38.246	
5,946.2	5,648.9	5,779.2	5,684.0	15.6	13.2	91.56	-431.8	-1,231.0	1,059.2	1,030.4	28.80	36.772	
6,000.0	5,648.9	5,829.4	5,706.8	16.3	13.6	92.86	-476.4	-1,232.9	1,045.0	1,015.3	29.74	35.137	
6,100.0	5,648.9	5,936.1	5,740.5	17.4	14.5	94.81	-577.4	-1,237.0	1,022.9	991.2	31.74	32.225	
6,200.0	5,648.9	6,053.9	5,753.0	18.7	15.8	95.59	-694.1	-1,241.8	1,004.8	970.6	34.21	29.374	
6,300.0	5,648.9	6,152.9	5,753.0	20.1	17.0	95.63	-793.1	-1,245.9	990.9	954.2	36.75	26.965	
6,400.0	5,648.9	6,252.5	5,753.0	21.5	18.4	95.65	-892.6	-1,249.9	982.2	942.7	39.43	24.909	
6,500.0	5,648.9	6,352.4	5,753.0	23.0	19.8	95.66	-992.4	-1,254.0	978.6	936.4	42.21	23.184	
6,517.8	5,648.9	6,370.2	5,753.0	23.3	20.1	95.67	-1,010.2	-1,254.8	978.6	935.8	42.72	22.909	CC
6,596.3	5,648.9	6,448.7	5,753.0	24.4	21.3	95.66	-1,088.6	-1,258.0	980.2	935.2	44.94	21.813	
6,600.0	5,648.9	6,452.4	5,753.0	24.5	21.3	95.66	-1,092.3	-1,258.1	980.3	935.3	45.05	21.761	
6,700.0	5,648.9	6,552.3	5,753.0	26.0	22.9	95.64	-1,192.1	-1,262.2	984.4	936.2	48.16	20.439	
6,800.0	5,648.9	6,652.2	5,753.0	27.6	24.5	95.61	-1,292.0	-1,266.3	988.5	937.1	51.37	19.242	
6,900.0	5,648.9	6,752.1	5,753.0	29.2	26.2	95.59	-1,391.8	-1,270.4	992.6	937.9	54.66	18.161	
7,000.0	5,648.9	6,892.6	5,753.0	30.9	28.4	95.58	-1,532.3	-1,272.7	994.0	935.5	58.54	16.980	
7,100.0	5,648.9	6,992.6	5,753.0	32.5	30.1	95.58	-1,632.3	-1,272.7	994.0	932.1	61.95	16.045	
7,200.0	5,648.9	7,092.6	5,753.0	34.3	31.9	95.58	-1,732.3	-1,272.7	994.0	928.6	65.42	15.196	
7,300.0	5,648.9	7,192.6	5,753.0	36.0	33.6	95.58	-1,832.3	-1,272.7	994.0	925.1	68.92	14.424	
7,400.0	5,648.9	7,292.6	5,753.0	37.7	35.4	95.58	-1,932.3	-1,272.7	994.0	921.6	72.45	13.720	
7,500.0	5,648.9	7,392.6	5,753.0	39.5	37.2	95.58	-2,032.3	-1,272.7	994.1	918.0	76.02	13.077	
7,600.0	5,648.9	7,492.6	5,753.0	41.3	39.0	95.58	-2,132.3	-1,272.7	994.1	914.5	79.60	12.488	
7,700.0	5,648.9	7,592.6	5,753.0	43.0	40.8	95.58	-2,232.3	-1,272.7	994.1	910.9	83.21	11.946	
7,800.0	5,648.9	7,692.6	5,753.0	44.8	42.7	95.58	-2,332.3	-1,272.7	994.1	907.3	86.84	11.447	
7,900.0	5,648.9	7,792.6	5,753.0	46.7	44.5	95.58	-2,432.3	-1,272.7	994.1	903.6	90.48	10.987	
8,000.0	5,648.9	7,892.6	5,753.0	48.5	46.4	95.58	-2,532.3	-1,272.7	994.1	900.0	94.14	10.560	
8,100.0	5,648.9	7,992.6	5,753.0	50.3	48.2	95.58	-2,632.3	-1,272.7	994.1	896.3	97.81	10.164	
8,200.0	5,648.9	8,092.6	5,753.0	52.1	50.1	95.58	-2,732.3	-1,272.7	994.1	892.6	101.50	9.795	
8,300.0	5,648.9	8,192.6	5,753.0	54.0	51.9	95.58	-2,832.3	-1,272.7	994.1	889.0	105.19	9.451	
8,400.0	5,648.9	8,292.6	5,753.0	55.8	53.8	95.58	-2,932.3	-1,272.8	994.2	885.3	108.89	9.130	
8,500.0	5,648.9	8,392.6	5,753.0	57.7	55.7	95.58	-3,032.3	-1,272.8	994.2	881.6	112.60	8.829	
8,600.0	5,648.9	8,492.6	5,753.0	59.5	57.5	95.57	-3,132.3	-1,272.8	994.2	877.9	116.32	8.547	
8,700.0	5,648.9	8,592.6	5,753.0	61.4	59.4	95.57	-3,232.3	-1,272.8	994.2	874.2	120.04	8.282	
8,800.0	5,648.9	8,692.6	5,753.0	63.2	61.3	95.57	-3,332.3	-1,272.8	994.2	870.4	123.78	8.032	
8,900.0	5,648.9	8,792.6	5,753.0	65.1	63.2	95.57	-3,432.3	-1,272.8	994.2	866.7	127.51	7.797	
9,000.0	5,648.9	8,892.6	5,753.0	67.0	65.1	95.57	-3,532.3	-1,272.8	994.2	863.0	131.25	7.575	
9,100.0	5,648.9	8,992.6	5,753.0	68.8	66.9	95.57	-3,632.3	-1,272.8	994.2	859.2	135.00	7.365	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	9,092.6	5,753.0	70.7	68.8	95.57	-3,732.3	-1,272.8	994.3	855.5	138.75	7.166	
9,300.0	5,648.9	9,192.6	5,753.0	72.6	70.7	95.57	-3,832.3	-1,272.8	994.3	851.8	142.51	6.977	
9,400.0	5,648.9	9,292.6	5,753.0	74.5	72.6	95.57	-3,932.3	-1,272.8	994.3	848.0	146.27	6.798	
9,500.0	5,648.9	9,392.6	5,753.0	76.3	74.5	95.57	-4,032.3	-1,272.8	994.3	844.3	150.03	6.627	
9,600.0	5,648.9	9,492.6	5,753.0	78.2	76.4	95.57	-4,132.3	-1,272.8	994.3	840.5	153.79	6.465	
9,700.0	5,648.9	9,592.6	5,753.0	80.1	78.3	95.57	-4,232.3	-1,272.8	994.3	836.8	157.56	6.311	
9,800.0	5,648.9	9,692.6	5,753.0	82.0	80.2	95.57	-4,332.3	-1,272.8	994.3	833.0	161.33	6.163	
9,900.0	5,648.9	9,792.6	5,753.0	83.9	82.1	95.57	-4,432.3	-1,272.8	994.3	829.2	165.11	6.022	
10,000.0	5,648.9	9,892.6	5,753.0	85.8	84.0	95.57	-4,532.3	-1,272.8	994.3	825.5	168.88	5.888	
10,100.0	5,648.9	9,992.6	5,753.0	87.7	85.9	95.57	-4,632.3	-1,272.8	994.4	821.7	172.66	5.759	
10,200.0	5,649.0	10,092.6	5,753.0	89.6	87.8	95.57	-4,732.3	-1,272.8	994.4	817.9	176.44	5.636	
10,300.0	5,649.0	10,192.6	5,753.0	91.4	89.7	95.57	-4,832.3	-1,272.8	994.4	814.2	180.22	5.517	
10,400.0	5,649.0	10,292.6	5,753.0	93.3	91.6	95.57	-4,932.3	-1,272.8	994.4	810.4	184.01	5.404	
10,500.0	5,649.0	10,392.6	5,753.0	95.2	93.5	95.57	-5,032.3	-1,272.9	994.4	806.6	187.79	5.295	
10,600.0	5,649.0	10,492.6	5,753.0	97.1	95.4	95.57	-5,132.3	-1,272.9	994.4	802.8	191.58	5.191	
10,700.0	5,649.0	10,592.6	5,753.0	99.0	97.3	95.57	-5,232.3	-1,272.9	994.4	799.1	195.37	5.090	
10,800.0	5,649.0	10,692.6	5,753.0	100.9	99.2	95.57	-5,332.3	-1,272.9	994.4	795.3	199.16	4.993	
10,900.0	5,649.0	10,792.6	5,753.0	102.8	101.1	95.57	-5,432.3	-1,272.9	994.5	791.5	202.95	4.900	
11,000.0	5,649.0	10,892.6	5,753.0	104.7	103.0	95.57	-5,532.3	-1,272.9	994.5	787.7	206.75	4.810	
11,100.0	5,649.0	10,992.6	5,753.0	106.6	104.9	95.57	-5,632.3	-1,272.9	994.5	783.9	210.54	4.723	
11,200.0	5,649.0	11,092.6	5,753.0	108.5	106.8	95.57	-5,732.3	-1,272.9	994.5	780.2	214.34	4.640	
11,300.0	5,649.0	11,192.6	5,753.0	110.4	108.7	95.57	-5,832.3	-1,272.9	994.5	776.4	218.13	4.559	
11,400.0	5,649.0	11,292.6	5,753.0	112.3	110.6	95.57	-5,932.3	-1,272.9	994.5	772.6	221.93	4.481	
11,500.0	5,649.0	11,392.6	5,753.0	114.2	112.5	95.57	-6,032.3	-1,272.9	994.5	768.8	225.73	4.406	
11,600.0	5,649.0	11,492.6	5,753.0	116.1	114.5	95.57	-6,132.3	-1,272.9	994.5	765.0	229.53	4.333	
11,700.0	5,649.0	11,592.6	5,753.0	118.0	116.4	95.57	-6,232.3	-1,272.9	994.5	761.2	233.33	4.262	
11,800.0	5,649.0	11,692.6	5,753.0	119.9	118.3	95.57	-6,332.3	-1,272.9	994.6	757.4	237.13	4.194	
11,900.0	5,649.0	11,792.6	5,753.0	121.9	120.2	95.57	-6,432.3	-1,272.9	994.6	753.6	240.93	4.128	
12,000.0	5,649.0	11,892.6	5,753.0	123.8	122.1	95.57	-6,532.3	-1,272.9	994.6	749.8	244.74	4.064	
12,100.0	5,649.0	11,992.6	5,753.0	125.7	124.0	95.57	-6,632.3	-1,272.9	994.6	746.1	248.54	4.002	
12,200.0	5,649.0	12,092.6	5,753.0	127.6	125.9	95.57	-6,732.3	-1,272.9	994.6	742.3	252.34	3.941	
12,300.0	5,649.0	12,192.6	5,753.0	129.5	127.8	95.57	-6,832.3	-1,272.9	994.6	738.5	256.15	3.883	
12,400.0	5,649.0	12,292.6	5,753.0	131.4	129.7	95.57	-6,932.3	-1,272.9	994.6	734.7	259.95	3.826	
12,500.0	5,649.0	12,392.6	5,753.0	133.3	131.6	95.57	-7,032.3	-1,273.0	994.6	730.9	263.76	3.771	
12,590.4	5,649.0	12,483.1	5,753.0	134.7	133.4	95.57	-7,122.7	-1,273.0	994.6	727.8	266.89	3.727	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	10.5	10.5	0.0	0.0	-94.58	-95.1	-1,187.9	1,191.7				
100.0	100.0	110.5	110.5	0.1	0.1	-94.58	-95.1	-1,187.9	1,191.7	1,191.5	0.21	5,640.286	
200.0	200.0	210.5	210.5	0.3	0.3	-94.58	-95.1	-1,187.9	1,191.7	1,191.0	0.66	1,803.358	
300.0	300.0	310.5	310.5	0.5	0.6	-94.58	-95.1	-1,187.9	1,191.7	1,190.6	1.11	1,073.254	
400.0	400.0	410.5	410.5	0.8	0.8	-94.58	-95.1	-1,187.9	1,191.7	1,190.1	1.56	763.959	
500.0	500.0	511.2	511.2	1.0	1.0	-94.58	-95.1	-1,187.9	1,191.7	1,189.7	2.01	593.466	
600.0	600.0	617.9	617.9	1.2	1.2	-94.69	-97.4	-1,187.3	1,191.3	1,188.9	2.44	487.820	
700.0	700.0	722.8	722.6	1.4	1.4	-94.98	-103.4	-1,185.9	1,190.5	1,187.6	2.87	414.926	
800.0	800.0	822.6	822.1	1.7	1.6	-95.31	-110.2	-1,184.3	1,189.5	1,186.2	3.31	359.698	
900.0	900.0	922.3	921.6	1.9	1.9	-95.65	-116.9	-1,182.7	1,188.5	1,184.8	3.76	316.306	
1,000.0	1,000.0	1,022.1	1,021.1	2.1	2.1	-95.98	-123.7	-1,181.1	1,187.6	1,183.4	4.22	281.627	
1,100.0	1,100.0	1,121.8	1,120.6	2.3	2.3	-96.31	-130.5	-1,179.5	1,186.7	1,182.0	4.68	253.439	
1,200.0	1,200.0	1,221.6	1,220.1	2.6	2.6	-96.65	-137.3	-1,177.9	1,185.9	1,180.7	5.15	230.161	
1,300.0	1,300.0	1,321.3	1,319.7	2.8	2.8	-96.98	-144.0	-1,176.3	1,185.1	1,179.5	5.63	210.662	
1,400.0	1,400.0	1,421.1	1,419.2	3.0	3.1	-97.32	-150.8	-1,174.7	1,184.4	1,178.3	6.10	194.119	
1,500.0	1,500.0	1,520.8	1,518.7	3.2	3.3	-97.65	-157.6	-1,173.1	1,183.6	1,177.1	6.58	179.925	
1,600.0	1,600.0	1,620.6	1,618.2	3.5	3.6	-97.99	-164.3	-1,171.5	1,183.0	1,175.9	7.06	167.623	
1,700.0	1,700.0	1,720.4	1,717.7	3.7	3.8	-98.32	-171.1	-1,169.9	1,182.3	1,174.8	7.54	156.868	
1,800.0	1,800.0	1,820.1	1,817.2	3.9	4.1	-98.66	-177.9	-1,168.3	1,181.7	1,173.7	8.02	147.389	
1,900.0	1,900.0	1,919.9	1,916.7	4.1	4.4	-98.99	-184.7	-1,166.7	1,181.2	1,172.7	8.50	138.976	
2,000.0	2,000.0	2,019.6	2,016.3	4.4	4.6	-99.33	-191.4	-1,165.1	1,180.7	1,171.7	8.98	131.462	
2,100.0	2,100.0	2,119.4	2,115.8	4.6	4.9	-99.67	-198.2	-1,163.5	1,180.2	1,170.8	9.46	124.712	
2,200.0	2,200.0	2,219.1	2,215.3	4.8	5.1	-100.00	-205.0	-1,161.8	1,179.8	1,169.9	9.95	118.617	
2,300.0	2,300.0	2,318.9	2,314.8	5.0	5.4	-100.34	-211.7	-1,160.2	1,179.4	1,169.0	10.43	113.087	
2,400.0	2,400.0	2,418.7	2,414.3	5.3	5.7	-100.68	-218.5	-1,158.6	1,179.1	1,168.2	10.91	108.048	
2,500.0	2,500.0	2,518.4	2,513.8	5.5	5.9	-101.02	-225.3	-1,157.0	1,178.8	1,167.4	11.40	103.439	
2,600.0	2,600.0	2,618.2	2,613.3	5.7	6.2	-101.36	-232.1	-1,155.4	1,178.5	1,166.6	11.88	99.208	
2,700.0	2,700.0	2,717.9	2,712.8	5.9	6.4	-101.69	-238.8	-1,153.8	1,178.3	1,165.9	12.36	95.310	
2,800.0	2,800.0	2,817.7	2,812.4	6.2	6.7	-102.03	-245.6	-1,152.2	1,178.1	1,165.3	12.85	91.709	
2,900.0	2,900.0	2,917.4	2,911.9	6.4	7.0	-102.37	-252.4	-1,150.6	1,178.0	1,164.6	13.33	88.371	
3,000.0	3,000.0	3,017.2	3,011.4	6.6	7.2	-102.71	-259.1	-1,149.0	1,177.9	1,164.1	13.81	85.271	
3,100.0	3,100.0	3,117.0	3,110.9	6.8	7.5	-103.05	-265.9	-1,147.4	1,177.8	1,163.5	14.30	82.383	
3,182.6	3,182.6	3,199.3	3,193.1	7.0	7.7	-103.33	-271.5	-1,146.1	1,177.8	1,163.1	14.70	80.144	
3,200.0	3,200.0	3,216.7	3,210.4	7.1	7.8	-103.39	-272.7	-1,145.8	1,177.8	1,163.0	14.78	79.687	
3,300.0	3,300.0	3,316.5	3,309.9	7.3	8.0	-103.72	-279.5	-1,144.2	1,177.8	1,162.6	15.26	77.165	
3,400.0	3,400.0	3,416.2	3,409.4	7.5	8.3	-104.06	-286.2	-1,142.6	1,177.9	1,162.2	15.75	74.801	
3,500.0	3,500.0	3,516.0	3,509.0	7.7	8.5	-104.40	-293.0	-1,141.0	1,178.0	1,161.8	16.23	72.581	
3,600.0	3,600.0	3,615.7	3,608.5	8.0	8.8	-104.74	-299.8	-1,139.4	1,178.2	1,161.5	16.71	70.492	
3,700.0	3,700.0	3,715.5	3,708.0	8.2	9.1	-105.08	-306.5	-1,137.8	1,178.4	1,161.2	17.20	68.523	
3,800.0	3,800.0	3,815.2	3,807.5	8.4	9.3	-105.42	-313.3	-1,136.2	1,178.6	1,160.9	17.68	66.664	
3,900.0	3,900.0	3,915.0	3,907.0	8.6	9.6	-105.75	-320.1	-1,134.6	1,178.9	1,160.7	18.16	64.907	
4,000.0	4,000.0	4,014.8	4,006.5	8.9	9.9	-106.09	-326.8	-1,133.0	1,179.2	1,160.5	18.65	63.244	
4,100.0	4,100.0	4,114.5	4,106.0	9.1	10.1	-106.43	-333.6	-1,131.4	1,179.5	1,160.4	19.13	61.667	
4,200.0	4,200.0	4,214.3	4,205.5	9.3	10.4	-106.77	-340.4	-1,129.8	1,179.9	1,160.3	19.61	60.170	
4,300.0	4,300.0	4,314.0	4,305.1	9.5	10.6	-107.10	-347.2	-1,128.2	1,180.4	1,160.3	20.09	58.748	
4,400.0	4,400.0	4,413.8	4,404.6	9.8	10.9	-107.44	-353.9	-1,126.6	1,180.9	1,160.3	20.57	57.394	
4,500.0	4,500.0	4,513.5	4,504.1	10.0	11.2	-107.78	-360.7	-1,125.0	1,181.4	1,160.3	21.06	56.105	
4,600.0	4,600.0	4,613.3	4,603.6	10.2	11.4	-108.11	-367.5	-1,123.4	1,181.9	1,160.4	21.54	54.876	
4,700.0	4,700.0	4,713.1	4,703.1	10.4	11.7	-108.45	-374.2	-1,121.7	1,182.6	1,160.5	22.02	53.704	
4,800.0	4,800.0	4,812.8	4,802.6	10.7	12.0	-108.79	-381.0	-1,120.1	1,183.2	1,160.7	22.50	52.583	
4,900.0	4,900.0	4,912.6	4,902.1	10.9	12.2	-109.12	-387.8	-1,118.5	1,183.9	1,160.9	22.98	51.512	
5,000.0	5,000.0	5,012.3	5,001.7	11.1	12.5	-109.46	-394.6	-1,116.9	1,184.6	1,161.1	23.46	50.486	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,112.1	5,101.2	11.3	12.8	-109.79	-401.3	-1,115.3	1,185.4	1,161.4	23.94	49.504	
5,128.0	5,128.0	5,140.0	5,129.0	11.4	12.8	-109.88	-403.2	-1,114.9	1,185.6	1,161.5	24.08	49.237	
5,150.0	5,150.0	5,162.0	5,150.9	11.4	12.9	50.57	-404.7	-1,114.5	1,185.5	1,161.2	24.29	48.799	
5,200.0	5,199.8	5,208.2	5,197.0	11.5	13.0	50.76	-408.0	-1,113.7	1,183.0	1,158.6	24.43	48.429	
5,250.0	5,248.9	5,250.0	5,238.4	11.6	13.1	51.22	-413.6	-1,112.4	1,177.9	1,153.4	24.49	48.095	
5,300.0	5,296.9	5,286.8	5,274.4	11.7	13.3	51.91	-421.2	-1,110.6	1,170.3	1,145.8	24.50	47.759	
5,350.0	5,343.3	5,325.8	5,311.8	11.8	13.5	52.84	-431.8	-1,108.1	1,160.1	1,135.6	24.50	47.351	
5,400.0	5,387.8	5,364.4	5,348.0	11.9	13.7	54.02	-445.1	-1,105.0	1,147.6	1,123.1	24.50	46.838	
5,450.0	5,429.9	5,400.0	5,380.3	12.0	13.9	55.47	-459.5	-1,101.5	1,132.7	1,108.2	24.52	46.195	
5,500.0	5,469.2	5,440.5	5,415.8	12.2	14.2	57.21	-478.6	-1,097.0	1,115.7	1,091.0	24.66	45.246	
5,550.0	5,505.3	5,478.0	5,447.1	12.4	14.5	59.25	-498.5	-1,092.3	1,096.6	1,071.7	24.89	44.051	
5,600.0	5,538.0	5,514.9	5,476.5	12.6	14.8	61.62	-520.3	-1,087.1	1,075.6	1,050.3	25.28	42.552	
5,650.0	5,566.9	5,550.0	5,502.8	12.9	15.1	64.31	-542.8	-1,081.8	1,052.9	1,027.1	25.82	40.780	
5,700.0	5,591.8	5,587.8	5,529.4	13.2	15.4	67.39	-568.9	-1,075.6	1,028.8	1,002.2	26.58	38.703	
5,750.0	5,612.4	5,623.7	5,552.9	13.6	15.8	70.81	-595.4	-1,069.4	1,003.3	975.8	27.50	36.486	
5,800.0	5,628.5	5,659.4	5,574.2	14.1	16.2	74.58	-623.2	-1,062.8	976.8	948.3	28.55	34.212	
5,850.0	5,640.0	5,695.1	5,593.6	14.6	16.7	78.69	-652.3	-1,055.9	949.6	919.9	29.70	31.977	
5,900.0	5,646.8	5,730.7	5,610.8	15.1	17.1	83.08	-682.7	-1,048.7	921.9	891.0	30.88	29.859	
5,946.2	5,648.9	5,763.8	5,624.9	15.6	17.5	87.35	-711.9	-1,041.8	896.2	864.3	31.94	28.062	
6,000.0	5,648.9	5,804.1	5,639.4	16.3	18.1	88.45	-748.5	-1,033.1	867.2	834.0	33.14	26.168	
6,100.0	5,648.9	5,886.7	5,659.8	17.4	19.3	90.04	-826.2	-1,014.7	817.3	781.8	35.54	22.997	
6,200.0	5,648.9	5,975.8	5,667.4	18.7	20.7	90.66	-912.5	-994.2	772.4	734.2	38.21	20.214	
6,300.0	5,648.9	6,042.5	5,667.4	20.1	21.6	90.67	-977.6	-980.0	733.8	693.2	40.60	18.076	
6,400.0	5,648.9	6,100.0	5,667.4	21.5	22.4	90.68	-1,034.2	-969.6	703.6	660.7	42.90	16.401	
6,500.0	5,648.9	6,183.3	5,667.4	23.0	23.6	90.69	-1,116.6	-957.5	681.7	636.1	45.63	14.940	
6,596.3	5,648.9	6,253.9	5,667.4	24.4	24.6	90.69	-1,186.8	-950.0	669.2	621.0	48.15	13.897	
6,600.0	5,648.9	6,256.6	5,667.4	24.5	24.7	90.69	-1,189.5	-949.8	668.9	620.6	48.25	13.862	
6,700.0	5,648.9	6,330.6	5,667.4	26.0	25.8	90.70	-1,263.3	-944.9	662.3	611.4	50.91	13.009	
6,800.0	5,648.9	6,404.9	5,667.4	27.6	26.9	90.70	-1,337.6	-942.9	659.5	605.9	53.64	12.296	
6,835.6	5,648.9	6,435.3	5,667.4	28.2	27.4	90.70	-1,368.0	-942.8	659.5	604.7	54.71	12.055	CC
6,900.0	5,648.9	6,499.6	5,667.4	29.2	28.4	90.70	-1,432.3	-942.8	659.5	602.6	56.81	11.608	
7,000.0	5,648.9	6,599.6	5,667.4	30.9	30.1	90.70	-1,532.3	-942.8	659.5	599.3	60.20	10.954	
7,100.0	5,648.9	6,699.6	5,667.4	32.5	31.8	90.69	-1,632.3	-942.8	659.5	595.8	63.65	10.361	
7,200.0	5,648.9	6,799.6	5,667.4	34.3	33.6	90.69	-1,732.3	-942.8	659.5	592.3	67.14	9.823	
7,300.0	5,648.9	6,899.6	5,667.4	36.0	35.4	90.69	-1,832.3	-942.8	659.5	588.8	70.66	9.333	
7,400.0	5,648.9	6,999.6	5,667.4	37.7	37.1	90.69	-1,932.3	-942.8	659.5	585.3	74.22	8.886	
7,500.0	5,648.9	7,099.6	5,667.4	39.5	38.9	90.69	-2,032.3	-942.8	659.5	581.7	77.80	8.477	
7,600.0	5,648.9	7,199.6	5,667.3	41.3	40.7	90.69	-2,132.3	-942.8	659.5	578.1	81.41	8.101	
7,700.0	5,648.9	7,299.6	5,667.3	43.0	42.6	90.69	-2,232.3	-942.8	659.5	574.5	85.03	7.756	
7,800.0	5,648.9	7,399.6	5,667.3	44.8	44.4	90.69	-2,332.3	-942.8	659.5	570.9	88.68	7.437	
7,900.0	5,648.9	7,499.6	5,667.3	46.7	46.2	90.69	-2,432.3	-942.8	659.5	567.2	92.34	7.142	
8,000.0	5,648.9	7,599.6	5,667.3	48.5	48.0	90.69	-2,532.3	-942.8	659.5	563.5	96.02	6.869	
8,100.0	5,648.9	7,699.6	5,667.3	50.3	49.9	90.69	-2,632.3	-942.8	659.6	559.9	99.70	6.615	
8,200.0	5,648.9	7,799.6	5,667.3	52.1	51.7	90.69	-2,732.3	-942.8	659.6	556.2	103.40	6.379	
8,300.0	5,648.9	7,899.6	5,667.3	54.0	53.6	90.69	-2,832.3	-942.8	659.6	552.5	107.11	6.158	
8,400.0	5,648.9	7,999.6	5,667.3	55.8	55.5	90.68	-2,932.3	-942.8	659.6	548.7	110.83	5.951	
8,500.0	5,648.9	8,099.6	5,667.3	57.7	57.3	90.68	-3,032.3	-942.8	659.6	545.0	114.56	5.758	
8,600.0	5,648.9	8,199.6	5,667.3	59.5	59.2	90.68	-3,132.3	-942.8	659.6	541.3	118.29	5.576	
8,700.0	5,648.9	8,299.6	5,667.3	61.4	61.1	90.68	-3,232.3	-942.8	659.6	537.6	122.03	5.405	
8,800.0	5,648.9	8,399.6	5,667.3	63.2	62.9	90.68	-3,332.3	-942.8	659.6	533.8	125.78	5.244	
8,900.0	5,648.9	8,499.6	5,667.3	65.1	64.8	90.68	-3,432.3	-942.8	659.6	530.1	129.53	5.092	
9,000.0	5,648.9	8,599.6	5,667.2	67.0	66.7	90.68	-3,532.3	-942.8	659.6	526.3	133.29	4.949	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	5,648.9	8,699.6	5,667.2	68.8	68.6	90.68	-3,632.3	-942.8	659.6	522.6	137.05	4.813	
9,200.0	5,648.9	8,799.6	5,667.2	70.7	70.5	90.68	-3,732.3	-942.8	659.6	518.8	140.82	4.684	
9,300.0	5,648.9	8,899.6	5,667.2	72.6	72.3	90.68	-3,832.3	-942.8	659.7	515.1	144.59	4.562	
9,400.0	5,648.9	8,999.6	5,667.2	74.5	74.2	90.68	-3,932.3	-942.8	659.7	511.3	148.36	4.446	
9,500.0	5,648.9	9,099.6	5,667.2	76.3	76.1	90.68	-4,032.3	-942.8	659.7	507.5	152.14	4.336	
9,600.0	5,648.9	9,199.6	5,667.2	78.2	78.0	90.67	-4,132.3	-942.8	659.7	503.8	155.92	4.231	
9,700.0	5,648.9	9,299.6	5,667.2	80.1	79.9	90.67	-4,232.3	-942.8	659.7	500.0	159.70	4.131	
9,800.0	5,648.9	9,399.6	5,667.2	82.0	81.8	90.67	-4,332.3	-942.8	659.7	496.2	163.49	4.035	
9,900.0	5,648.9	9,499.6	5,667.2	83.9	83.7	90.67	-4,432.3	-942.8	659.7	492.4	167.28	3.944	
10,000.0	5,648.9	9,599.6	5,667.2	85.8	85.6	90.67	-4,532.3	-942.8	659.7	488.6	171.07	3.856	
10,100.0	5,648.9	9,699.6	5,667.2	87.7	87.5	90.67	-4,632.3	-942.8	659.7	484.9	174.86	3.773	
10,200.0	5,649.0	9,799.6	5,667.2	89.6	89.4	90.67	-4,732.3	-942.8	659.7	481.1	178.66	3.693	
10,300.0	5,649.0	9,899.6	5,667.2	91.4	91.3	90.67	-4,832.3	-942.9	659.7	477.3	182.45	3.616	
10,400.0	5,649.0	9,999.6	5,667.2	93.3	93.2	90.67	-4,932.3	-942.9	659.7	473.5	186.25	3.542	
10,500.0	5,649.0	10,099.6	5,667.1	95.2	95.1	90.67	-5,032.3	-942.9	659.8	469.7	190.05	3.471	
10,600.0	5,649.0	10,199.6	5,667.1	97.1	97.0	90.67	-5,132.3	-942.9	659.8	465.9	193.86	3.403	
10,700.0	5,649.0	10,299.6	5,667.1	99.0	98.9	90.67	-5,232.3	-942.9	659.8	462.1	197.66	3.338	
10,800.0	5,649.0	10,399.6	5,667.1	100.9	100.8	90.67	-5,332.3	-942.9	659.8	458.3	201.47	3.275	
10,900.0	5,649.0	10,499.6	5,667.1	102.8	102.7	90.66	-5,432.3	-942.9	659.8	454.5	205.27	3.214	
11,000.0	5,649.0	10,599.6	5,667.1	104.7	104.6	90.66	-5,532.3	-942.9	659.8	450.7	209.08	3.156	
11,100.0	5,649.0	10,699.6	5,667.1	106.6	106.5	90.66	-5,632.3	-942.9	659.8	446.9	212.89	3.099	
11,200.0	5,649.0	10,799.6	5,667.1	108.5	108.4	90.66	-5,732.3	-942.9	659.8	443.1	216.70	3.045	
11,300.0	5,649.0	10,899.6	5,667.1	110.4	110.3	90.66	-5,832.3	-942.9	659.8	439.3	220.51	2.992	
11,400.0	5,649.0	10,999.6	5,667.1	112.3	112.2	90.66	-5,932.3	-942.9	659.8	435.5	224.32	2.941	
11,500.0	5,649.0	11,099.6	5,667.1	114.2	114.1	90.66	-6,032.3	-942.9	659.8	431.7	228.14	2.892	
11,600.0	5,649.0	11,199.6	5,667.1	116.1	116.0	90.66	-6,132.3	-942.9	659.8	427.9	231.95	2.845	
11,700.0	5,649.0	11,299.6	5,667.1	118.0	117.9	90.66	-6,232.3	-942.9	659.8	424.1	235.77	2.799	
11,800.0	5,649.0	11,399.6	5,667.1	119.9	119.8	90.66	-6,332.3	-942.9	659.9	420.3	239.58	2.754	
11,900.0	5,649.0	11,499.6	5,667.0	121.9	121.8	90.66	-6,432.3	-942.9	659.9	416.5	243.40	2.711	
12,000.0	5,649.0	11,599.6	5,667.0	123.8	123.7	90.66	-6,532.3	-942.9	659.9	412.7	247.22	2.669	
12,100.0	5,649.0	11,699.6	5,667.0	125.7	125.6	90.66	-6,632.3	-942.9	659.9	408.8	251.04	2.629	
12,200.0	5,649.0	11,799.6	5,667.0	127.6	127.5	90.65	-6,732.3	-942.9	659.9	405.0	254.86	2.589	
12,300.0	5,649.0	11,899.6	5,667.0	129.5	129.4	90.65	-6,832.3	-942.9	659.9	401.2	258.68	2.551	
12,400.0	5,649.0	11,999.6	5,667.0	131.4	131.3	90.65	-6,932.3	-942.9	659.9	397.4	262.50	2.514	
12,500.0	5,649.0	12,099.6	5,667.0	133.3	133.2	90.65	-7,032.3	-942.9	659.9	393.6	266.32	2.478	
12,590.4	5,649.0	12,190.1	5,667.0	134.7	134.6	90.65	-7,122.8	-942.9	659.9	390.8	269.15	2.452	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	7.5	7.5	0.0	0.0	-98.38	-170.1	-1,154.9	1,167.4				
100.0	100.0	107.5	107.5	0.1	0.1	-98.38	-170.1	-1,154.9	1,167.4	1,167.2	0.20	5,707.543	
200.0	200.0	207.5	207.5	0.3	0.3	-98.38	-170.1	-1,154.9	1,167.4	1,166.8	0.65	1,784.834	
300.0	300.0	307.5	307.5	0.5	0.6	-98.38	-170.1	-1,154.9	1,167.4	1,166.3	1.10	1,057.814	
400.0	400.0	407.5	407.5	0.8	0.8	-98.38	-170.1	-1,154.9	1,167.4	1,165.9	1.55	751.645	
500.0	500.0	508.5	508.5	1.0	1.0	-98.38	-170.1	-1,154.9	1,167.4	1,165.4	2.00	582.888	
600.0	600.0	622.1	622.0	1.2	1.2	-98.50	-172.5	-1,153.8	1,166.7	1,164.3	2.45	475.877	
700.0	700.0	731.1	730.9	1.4	1.4	-98.81	-178.4	-1,151.0	1,165.0	1,162.1	2.89	403.052	
800.0	800.0	830.9	830.4	1.7	1.7	-99.14	-184.7	-1,148.0	1,163.0	1,159.7	3.33	349.018	
900.0	900.0	930.6	929.9	1.9	1.9	-99.47	-190.9	-1,145.0	1,161.0	1,157.3	3.79	306.655	
1,000.0	1,000.0	1,030.4	1,029.4	2.1	2.1	-99.80	-197.2	-1,142.0	1,159.1	1,154.9	4.25	272.834	
1,100.0	1,100.0	1,130.2	1,128.9	2.3	2.4	-100.13	-203.5	-1,139.0	1,157.3	1,152.5	4.72	245.352	
1,200.0	1,200.0	1,229.9	1,228.5	2.6	2.6	-100.46	-209.8	-1,136.0	1,155.4	1,150.2	5.19	222.660	
1,300.0	1,300.0	1,329.7	1,328.0	2.8	2.9	-100.80	-216.1	-1,133.0	1,153.6	1,148.0	5.66	203.650	
1,400.0	1,400.0	1,429.4	1,427.5	3.0	3.1	-101.13	-222.3	-1,130.0	1,151.9	1,145.7	6.14	187.520	
1,500.0	1,500.0	1,529.2	1,527.0	3.2	3.4	-101.47	-228.6	-1,127.0	1,150.2	1,143.5	6.62	173.677	
1,600.0	1,600.0	1,628.9	1,626.5	3.5	3.6	-101.80	-234.9	-1,124.0	1,148.5	1,141.4	7.10	161.677	
1,700.0	1,700.0	1,728.7	1,726.0	3.7	3.9	-102.14	-241.2	-1,121.1	1,146.9	1,139.3	7.59	151.183	
1,800.0	1,800.0	1,828.4	1,825.5	3.9	4.1	-102.48	-247.5	-1,118.1	1,145.3	1,137.2	8.07	141.933	
1,900.0	1,900.0	1,928.2	1,925.0	4.1	4.4	-102.82	-253.7	-1,115.1	1,143.7	1,135.1	8.55	133.722	
2,000.0	2,000.0	2,028.0	2,024.6	4.4	4.7	-103.16	-260.0	-1,112.1	1,142.2	1,133.1	9.04	126.386	
2,100.0	2,100.0	2,127.7	2,124.1	4.6	4.9	-103.50	-266.3	-1,109.1	1,140.7	1,131.2	9.52	119.796	
2,200.0	2,200.0	2,227.5	2,223.6	4.8	5.2	-103.84	-272.6	-1,106.1	1,139.3	1,129.3	10.01	113.843	
2,300.0	2,300.0	2,327.2	2,323.1	5.0	5.4	-104.19	-278.9	-1,103.1	1,137.9	1,127.4	10.49	108.442	
2,400.0	2,400.0	2,427.0	2,422.6	5.3	5.7	-104.53	-285.1	-1,100.1	1,136.5	1,125.6	10.98	103.520	
2,500.0	2,500.0	2,526.7	2,522.1	5.5	6.0	-104.88	-291.4	-1,097.1	1,135.2	1,123.8	11.46	99.017	
2,600.0	2,600.0	2,626.5	2,621.6	5.7	6.2	-105.22	-297.7	-1,094.1	1,134.0	1,122.0	11.95	94.883	
2,700.0	2,700.0	2,726.3	2,721.2	5.9	6.5	-105.57	-304.0	-1,091.1	1,132.7	1,120.3	12.44	91.074	
2,800.0	2,800.0	2,826.0	2,820.7	6.2	6.7	-105.92	-310.3	-1,088.1	1,131.6	1,118.6	12.92	87.555	
2,900.0	2,900.0	2,925.8	2,920.2	6.4	7.0	-106.26	-316.6	-1,085.1	1,130.4	1,117.0	13.41	84.293	
3,000.0	3,000.0	3,025.5	3,019.7	6.6	7.3	-106.61	-322.8	-1,082.1	1,129.3	1,115.4	13.90	81.263	
3,100.0	3,100.0	3,125.3	3,119.2	6.8	7.5	-106.96	-329.1	-1,079.1	1,128.2	1,113.9	14.38	78.440	
3,200.0	3,200.0	3,225.0	3,218.7	7.1	7.8	-107.31	-335.4	-1,076.1	1,127.2	1,112.4	14.87	75.805	
3,300.0	3,300.0	3,324.8	3,318.2	7.3	8.1	-107.66	-341.7	-1,073.1	1,126.3	1,110.9	15.36	73.340	
3,400.0	3,400.0	3,424.5	3,417.8	7.5	8.3	-108.01	-348.0	-1,070.1	1,125.3	1,109.5	15.84	71.029	
3,500.0	3,500.0	3,524.3	3,517.3	7.7	8.6	-108.36	-354.2	-1,067.1	1,124.4	1,108.1	16.33	68.859	
3,600.0	3,600.0	3,624.1	3,616.8	8.0	8.8	-108.72	-360.5	-1,064.1	1,123.6	1,106.8	16.82	66.816	
3,700.0	3,700.0	3,723.8	3,716.3	8.2	9.1	-109.07	-366.8	-1,061.1	1,122.8	1,105.5	17.30	64.892	
3,800.0	3,800.0	3,823.6	3,815.8	8.4	9.4	-109.42	-373.1	-1,058.1	1,122.0	1,104.2	17.79	63.075	
3,900.0	3,900.0	3,923.3	3,915.3	8.6	9.6	-109.78	-379.4	-1,055.2	1,121.3	1,103.0	18.27	61.358	
4,000.0	4,000.0	4,023.1	4,014.8	8.9	9.9	-110.13	-385.6	-1,052.2	1,120.6	1,101.9	18.76	59.732	
4,100.0	4,100.0	4,122.8	4,114.3	9.1	10.2	-110.48	-391.9	-1,049.2	1,120.0	1,100.7	19.25	58.191	
4,200.0	4,200.0	4,222.6	4,213.9	9.3	10.4	-110.84	-398.2	-1,046.2	1,119.4	1,099.7	19.73	56.728	
4,300.0	4,300.0	4,322.4	4,313.4	9.5	10.7	-111.19	-404.5	-1,043.2	1,118.9	1,098.6	20.22	55.338	
4,400.0	4,400.0	4,422.1	4,412.9	9.8	10.9	-111.55	-410.8	-1,040.2	1,118.4	1,097.7	20.70	54.016	
4,500.0	4,500.0	4,521.9	4,512.4	10.0	11.2	-111.91	-417.0	-1,037.2	1,117.9	1,096.7	21.19	52.757	
4,600.0	4,600.0	4,621.6	4,611.9	10.2	11.5	-112.26	-423.3	-1,034.2	1,117.5	1,095.8	21.67	51.556	
4,700.0	4,700.0	4,721.4	4,711.4	10.4	11.7	-112.62	-429.6	-1,031.2	1,117.1	1,094.9	22.16	50.411	
4,800.0	4,800.0	4,821.1	4,810.9	10.7	12.0	-112.97	-435.9	-1,028.2	1,116.8	1,094.1	22.65	49.316	
4,900.0	4,900.0	4,920.9	4,910.5	10.9	12.3	-113.33	-442.2	-1,025.2	1,116.5	1,093.4	23.13	48.270	
5,000.0	5,000.0	5,020.7	5,010.0	11.1	12.5	-113.69	-448.5	-1,022.2	1,116.2	1,092.6	23.61	47.269	
5,100.0	5,100.0	5,120.4	5,109.5	11.3	12.8	-114.04	-454.7	-1,019.2	1,116.0	1,091.9	24.10	46.310	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	5,148.3	5,137.3	11.4	12.9	-114.14	-456.5	-1,018.4	1,116.0	1,091.8	24.24	46.049	
5,150.0	5,150.0	5,170.3	5,159.3	11.4	12.9	46.32	-457.9	-1,017.7	1,115.6	1,091.3	24.34	45.827	
5,200.0	5,199.8	5,220.2	5,209.0	11.5	13.0	46.57	-461.0	-1,016.2	1,112.5	1,088.0	24.46	45.475	
5,250.0	5,248.9	5,269.6	5,258.3	11.6	13.2	47.26	-464.1	-1,014.7	1,106.0	1,081.5	24.48	45.172	
5,300.0	5,296.9	5,320.3	5,308.7	11.7	13.3	48.35	-468.7	-1,012.5	1,096.3	1,071.8	24.45	44.839	
5,350.0	5,343.3	5,371.2	5,358.6	11.8	13.5	49.70	-477.7	-1,008.3	1,083.4	1,059.0	24.40	44.402	
5,400.0	5,387.8	5,421.5	5,406.8	11.9	13.8	51.32	-490.8	-1,002.1	1,067.4	1,043.1	24.37	43.798	
5,450.0	5,429.9	5,470.9	5,452.5	12.0	14.0	53.25	-507.8	-994.1	1,048.5	1,024.1	24.40	42.967	
5,500.0	5,469.2	5,519.2	5,495.2	12.2	14.4	55.53	-528.0	-984.6	1,026.9	1,002.3	24.52	41.875	
5,550.0	5,505.3	5,566.2	5,534.6	12.4	14.7	58.21	-551.1	-973.8	1,002.6	977.9	24.78	40.456	
5,600.0	5,538.0	5,611.8	5,570.6	12.6	15.1	61.34	-576.5	-961.8	976.1	950.9	25.23	38.693	
5,650.0	5,566.9	5,656.0	5,602.9	12.9	15.5	64.97	-603.8	-949.0	947.5	921.7	25.87	36.622	
5,700.0	5,591.8	5,698.9	5,631.8	13.2	16.0	69.15	-632.5	-935.5	917.2	890.5	26.72	34.323	
5,750.0	5,612.4	5,740.6	5,657.3	13.6	16.4	73.90	-662.4	-921.5	885.4	857.6	27.74	31.916	
5,800.0	5,628.5	5,781.3	5,679.5	14.1	16.9	79.22	-693.3	-907.0	852.4	823.6	28.85	29.545	
5,850.0	5,640.0	5,821.3	5,698.7	14.6	17.5	85.06	-725.0	-892.0	818.8	788.8	29.96	27.331	
5,900.0	5,646.8	5,860.9	5,714.9	15.1	18.0	91.32	-757.7	-876.7	784.7	753.7	30.94	25.358	
5,946.2	5,648.9	5,897.3	5,727.4	15.6	18.5	97.37	-788.6	-862.2	753.3	721.6	31.67	23.783	
6,000.0	5,648.9	5,941.4	5,739.4	16.3	19.2	98.83	-827.0	-844.1	717.3	684.6	32.76	21.895	
6,100.0	5,648.9	6,031.1	5,752.3	17.4	20.6	100.90	-907.3	-806.5	653.1	618.1	34.98	18.669	
6,200.0	5,648.9	6,100.0	5,753.2	18.7	21.7	101.52	-969.8	-777.5	592.2	555.0	37.24	15.903	
6,300.0	5,648.9	6,167.2	5,753.2	20.1	22.7	102.03	-1,031.7	-751.3	538.1	498.5	39.56	13.602	
6,400.0	5,648.9	6,236.8	5,753.2	21.5	23.7	102.58	-1,096.7	-726.4	491.5	449.4	42.01	11.700	
6,500.0	5,648.9	6,310.8	5,753.2	23.0	24.9	103.16	-1,166.7	-702.6	452.9	408.4	44.58	10.159	
6,596.3	5,648.9	6,385.7	5,753.2	24.4	26.0	103.68	-1,238.5	-681.2	423.9	376.7	47.18	8.985	
6,600.0	5,648.9	6,388.6	5,753.2	24.5	26.1	103.70	-1,241.3	-680.5	423.0	375.7	47.27	8.947	
6,700.0	5,648.9	6,468.8	5,753.2	26.0	27.4	104.39	-1,319.0	-660.9	399.2	349.4	49.85	8.008	
6,800.0	5,648.9	6,550.6	5,753.2	27.6	28.7	105.02	-1,399.1	-644.3	379.6	327.0	52.52	7.227	
6,900.0	5,648.9	6,633.7	5,753.2	29.2	30.0	105.57	-1,481.1	-630.9	364.1	308.8	55.28	6.586	
7,000.0	5,648.9	6,717.8	5,753.2	30.9	31.3	106.00	-1,564.7	-621.1	352.8	294.7	58.11	6.071	
7,100.0	5,648.9	6,800.0	5,753.2	32.5	32.6	106.27	-1,646.6	-615.0	345.8	284.8	60.98	5.671	
7,200.0	5,648.9	6,887.9	5,753.2	34.3	34.0	106.39	-1,734.4	-612.4	343.0	279.0	64.01	5.359	
7,231.8	5,648.9	6,917.5	5,753.2	34.8	34.5	106.39	-1,764.1	-612.4	343.0	278.0	65.02	5.275	CC
7,300.0	5,648.9	6,985.7	5,753.2	36.0	35.6	106.39	-1,832.3	-612.4	343.0	275.7	67.28	5.098	
7,400.0	5,648.9	7,085.7	5,753.2	37.7	37.2	106.39	-1,932.3	-612.4	343.0	272.4	70.65	4.855	
7,500.0	5,648.9	7,185.7	5,753.2	39.5	38.9	106.39	-2,032.3	-612.4	343.0	269.0	74.06	4.632	
7,600.0	5,648.9	7,285.7	5,753.2	41.3	40.6	106.39	-2,132.3	-612.5	343.0	265.5	77.50	4.427	
7,700.0	5,648.9	7,385.7	5,753.2	43.0	42.4	106.39	-2,232.3	-612.5	343.1	262.1	80.96	4.238	
7,800.0	5,648.9	7,485.7	5,753.2	44.8	44.1	106.38	-2,332.3	-612.5	343.1	258.6	84.44	4.063	
7,900.0	5,648.9	7,585.7	5,753.2	46.7	45.8	106.38	-2,432.3	-612.5	343.1	255.2	87.94	3.901	
8,000.0	5,648.9	7,685.7	5,753.2	48.5	47.6	106.38	-2,532.3	-612.5	343.1	251.7	91.46	3.752	
8,100.0	5,648.9	7,785.7	5,753.2	50.3	49.4	106.38	-2,632.3	-612.5	343.1	248.1	94.99	3.612	
8,200.0	5,648.9	7,885.7	5,753.2	52.1	51.2	106.38	-2,732.3	-612.5	343.1	244.6	98.53	3.483	
8,300.0	5,648.9	7,985.7	5,753.2	54.0	53.0	106.37	-2,832.3	-612.5	343.2	241.1	102.09	3.361	
8,400.0	5,648.9	8,085.7	5,753.2	55.8	54.8	106.37	-2,932.3	-612.6	343.2	237.5	105.66	3.248	
8,500.0	5,648.9	8,185.7	5,753.1	57.7	56.6	106.37	-3,032.3	-612.6	343.2	234.0	109.24	3.142	
8,600.0	5,648.9	8,285.7	5,753.1	59.5	58.4	106.37	-3,132.3	-612.6	343.2	230.4	112.82	3.042	
8,700.0	5,648.9	8,385.7	5,753.1	61.4	60.2	106.37	-3,232.3	-612.6	343.2	226.8	116.41	2.948	
8,800.0	5,648.9	8,485.7	5,753.1	63.2	62.1	106.37	-3,332.3	-612.6	343.2	223.2	120.02	2.860	
8,900.0	5,648.9	8,585.7	5,753.1	65.1	63.9	106.36	-3,432.3	-612.6	343.3	219.6	123.62	2.777	
9,000.0	5,648.9	8,685.7	5,753.1	67.0	65.8	106.36	-3,532.3	-612.6	343.3	216.0	127.24	2.698	
9,100.0	5,648.9	8,785.7	5,753.1	68.8	67.6	106.36	-3,632.3	-612.6	343.3	212.4	130.86	2.623	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	8,885.7	5,753.1	70.7	69.4	106.36	-3,732.3	-612.7	343.3	208.8	134.48	2.553	
9,300.0	5,648.9	8,985.7	5,753.1	72.6	71.3	106.36	-3,832.3	-612.7	343.3	205.2	138.11	2.486	
9,400.0	5,648.9	9,085.7	5,753.1	74.5	73.2	106.35	-3,932.3	-612.7	343.3	201.6	141.74	2.422	
9,500.0	5,648.9	9,185.7	5,753.1	76.3	75.0	106.35	-4,032.3	-612.7	343.4	198.0	145.38	2.362	
9,600.0	5,648.9	9,285.7	5,753.1	78.2	76.9	106.35	-4,132.3	-612.7	343.4	194.4	149.02	2.304	
9,700.0	5,648.9	9,385.7	5,753.1	80.1	78.8	106.35	-4,232.3	-612.7	343.4	190.7	152.67	2.249	
9,800.0	5,648.9	9,485.7	5,753.1	82.0	80.6	106.35	-4,332.3	-612.7	343.4	187.1	156.31	2.197	
9,900.0	5,648.9	9,585.7	5,753.1	83.9	82.5	106.35	-4,432.3	-612.7	343.4	183.5	159.96	2.147	
10,000.0	5,648.9	9,685.7	5,753.1	85.8	84.4	106.34	-4,532.3	-612.8	343.5	179.8	163.62	2.099	
10,100.0	5,648.9	9,785.7	5,753.1	87.7	86.2	106.34	-4,632.3	-612.8	343.5	176.2	167.27	2.053	
10,200.0	5,649.0	9,885.7	5,753.1	89.6	88.1	106.34	-4,732.3	-612.8	343.5	172.6	170.93	2.009	
10,300.0	5,649.0	9,985.7	5,753.1	91.4	90.0	106.34	-4,832.3	-612.8	343.5	168.9	174.59	1.967	
10,400.0	5,649.0	10,085.7	5,753.1	93.3	91.9	106.34	-4,932.3	-612.8	343.5	165.3	178.26	1.927	
10,500.0	5,649.0	10,185.7	5,753.1	95.2	93.8	106.33	-5,032.3	-612.8	343.5	161.6	181.92	1.888	
10,600.0	5,649.0	10,285.7	5,753.1	97.1	95.6	106.33	-5,132.3	-612.8	343.6	158.0	185.59	1.851	
10,700.0	5,649.0	10,385.7	5,753.1	99.0	97.5	106.33	-5,232.3	-612.8	343.6	154.3	189.26	1.815	
10,800.0	5,649.0	10,485.7	5,753.1	100.9	99.4	106.33	-5,332.3	-612.9	343.6	150.7	192.93	1.781	
10,900.0	5,649.0	10,585.7	5,753.1	102.8	101.3	106.33	-5,432.3	-612.9	343.6	147.0	196.60	1.748	
11,000.0	5,649.0	10,685.7	5,753.1	104.7	103.2	106.33	-5,532.3	-612.9	343.6	143.3	200.27	1.716	
11,100.0	5,649.0	10,785.7	5,753.1	106.6	105.1	106.32	-5,632.3	-612.9	343.6	139.7	203.95	1.685	
11,200.0	5,649.0	10,885.7	5,753.0	108.5	107.0	106.32	-5,732.3	-612.9	343.7	136.0	207.62	1.655	
11,300.0	5,649.0	10,985.7	5,753.0	110.4	108.9	106.32	-5,832.3	-612.9	343.7	132.4	211.30	1.626	
11,400.0	5,649.0	11,085.7	5,753.0	112.3	110.8	106.32	-5,932.3	-612.9	343.7	128.7	214.98	1.599	
11,500.0	5,649.0	11,185.7	5,753.0	114.2	112.7	106.32	-6,032.3	-612.9	343.7	125.0	218.66	1.572	
11,600.0	5,649.0	11,285.7	5,753.0	116.1	114.6	106.31	-6,132.3	-613.0	343.7	121.4	222.34	1.546	
11,700.0	5,649.0	11,385.7	5,753.0	118.0	116.5	106.31	-6,232.3	-613.0	343.7	117.7	226.03	1.521	
11,800.0	5,649.0	11,485.7	5,753.0	119.9	118.4	106.31	-6,332.3	-613.0	343.8	114.1	229.71	1.496	Level 3
11,900.0	5,649.0	11,585.7	5,753.0	121.9	120.3	106.31	-6,432.3	-613.0	343.8	110.4	233.39	1.473	Level 3
12,000.0	5,649.0	11,685.7	5,753.0	123.8	122.1	106.31	-6,532.3	-613.0	343.8	106.7	237.08	1.450	Level 3
12,100.0	5,649.0	11,785.7	5,753.0	125.7	124.0	106.31	-6,632.3	-613.0	343.8	103.0	240.76	1.428	Level 3
12,200.0	5,649.0	11,885.7	5,753.0	127.6	125.9	106.30	-6,732.3	-613.0	343.8	99.4	244.45	1.407	Level 3
12,300.0	5,649.0	11,985.7	5,753.0	129.5	127.9	106.30	-6,832.3	-613.0	343.8	95.7	248.14	1.386	Level 3
12,400.0	5,649.0	12,085.7	5,753.0	131.4	129.8	106.30	-6,932.3	-613.1	343.9	92.0	251.83	1.365	Level 3
12,500.0	5,649.0	12,185.7	5,753.0	133.3	131.7	106.30	-7,032.3	-613.1	343.9	88.4	255.52	1.346	Level 3
12,590.4	5,649.0	12,276.2	5,753.0	134.7	133.1	106.30	-7,122.7	-613.1	343.9	85.6	258.29	1.331	Level 3, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3408B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-94.33	-190.1	-2,508.4	2,515.6				
100.0	100.0	92.5	92.5	0.1	0.1	-94.33	-190.1	-2,508.4	2,515.6	2,515.4	0.18	N/A	
200.0	200.0	192.5	192.5	0.3	0.3	-94.33	-190.1	-2,508.4	2,515.6	2,514.9	0.62	4,055.050	
300.0	300.0	292.5	292.5	0.5	0.5	-94.33	-190.1	-2,508.4	2,515.6	2,514.5	1.07	2,351.248	
400.0	400.0	392.5	392.5	0.8	0.8	-94.33	-190.1	-2,508.4	2,515.6	2,514.0	1.52	1,655.613	
500.0	500.0	492.5	492.5	1.0	1.0	-94.33	-190.1	-2,508.4	2,515.6	2,513.6	1.97	1,277.619	
600.0	600.0	592.5	592.5	1.2	1.2	-94.33	-190.1	-2,508.4	2,515.6	2,513.2	2.42	1,040.143	
700.0	700.0	692.5	692.5	1.4	1.4	-94.33	-190.1	-2,508.4	2,515.6	2,512.7	2.87	877.112	
800.0	800.0	792.5	792.5	1.7	1.7	-94.33	-190.1	-2,508.4	2,515.6	2,512.3	3.32	758.262	
900.0	900.0	892.5	892.5	1.9	1.9	-94.33	-190.1	-2,508.4	2,515.6	2,511.8	3.77	667.777	
1,000.0	1,000.0	992.5	992.5	2.1	2.1	-94.33	-190.1	-2,508.4	2,515.6	2,511.4	4.22	596.585	
1,100.0	1,100.0	1,128.0	1,128.0	2.3	2.4	-94.39	-192.5	-2,507.1	2,514.7	2,510.0	4.71	534.327	
1,200.0	1,200.0	1,228.0	1,227.9	2.6	2.5	-94.46	-195.5	-2,505.4	2,513.3	2,508.2	5.11	491.597	
1,300.0	1,300.0	1,327.9	1,327.7	2.8	2.7	-94.54	-198.6	-2,503.8	2,511.9	2,506.4	5.53	454.456	
1,400.0	1,400.0	1,427.8	1,427.6	3.0	2.9	-94.61	-201.7	-2,502.1	2,510.5	2,504.6	5.95	422.019	
1,500.0	1,500.0	1,527.8	1,527.5	3.2	3.1	-94.68	-204.7	-2,500.5	2,509.1	2,502.7	6.38	393.536	
1,600.0	1,600.0	1,627.7	1,627.4	3.5	3.3	-94.75	-207.8	-2,498.8	2,507.7	2,500.9	6.81	368.384	
1,700.0	1,700.0	1,727.7	1,727.3	3.7	3.6	-94.83	-210.9	-2,497.2	2,506.3	2,499.1	7.24	346.055	
1,800.0	1,800.0	1,827.6	1,827.1	3.9	3.8	-94.90	-214.0	-2,495.5	2,504.9	2,497.3	7.68	326.125	
1,900.0	1,900.0	1,927.5	1,927.0	4.1	4.0	-94.97	-217.0	-2,493.9	2,503.6	2,495.4	8.12	308.250	
2,000.0	2,000.0	2,027.5	2,026.9	4.4	4.2	-95.05	-220.1	-2,492.2	2,502.2	2,493.6	8.56	292.141	
2,100.0	2,100.0	2,127.4	2,126.8	4.6	4.4	-95.12	-223.2	-2,490.6	2,500.8	2,491.8	9.01	277.560	
2,200.0	2,200.0	2,227.3	2,226.6	4.8	4.6	-95.19	-226.3	-2,488.9	2,499.4	2,490.0	9.46	264.307	
2,300.0	2,300.0	2,327.3	2,326.5	5.0	4.9	-95.27	-229.3	-2,487.3	2,498.1	2,488.2	9.90	252.214	
2,400.0	2,400.0	2,427.2	2,426.4	5.3	5.1	-95.34	-232.4	-2,485.6	2,496.7	2,486.4	10.35	241.141	
2,500.0	2,500.0	2,527.2	2,526.3	5.5	5.3	-95.42	-235.5	-2,484.0	2,495.4	2,484.6	10.80	230.966	
2,600.0	2,600.0	2,627.1	2,626.2	5.7	5.5	-95.49	-238.5	-2,482.3	2,494.0	2,482.8	11.26	221.587	
2,700.0	2,700.0	2,727.0	2,726.0	5.9	5.8	-95.56	-241.6	-2,480.7	2,492.7	2,481.0	11.71	212.917	
2,800.0	2,800.0	2,827.0	2,825.9	6.2	6.0	-95.64	-244.7	-2,479.1	2,491.3	2,479.2	12.16	204.880	
2,900.0	2,900.0	2,926.9	2,925.8	6.4	6.2	-95.71	-247.8	-2,477.4	2,490.0	2,477.4	12.61	197.410	
3,000.0	3,000.0	3,026.9	3,025.7	6.6	6.4	-95.79	-250.8	-2,475.8	2,488.6	2,475.6	13.07	190.450	
3,100.0	3,100.0	3,126.8	3,125.5	6.8	6.7	-95.86	-253.9	-2,474.1	2,487.3	2,473.8	13.52	183.951	
3,200.0	3,200.0	3,226.7	3,225.4	7.1	6.9	-95.93	-257.0	-2,472.5	2,486.0	2,472.0	13.98	177.869	
3,300.0	3,300.0	3,326.7	3,325.3	7.3	7.1	-96.01	-260.1	-2,470.8	2,484.7	2,470.2	14.43	172.166	
3,400.0	3,400.0	3,426.6	3,425.2	7.5	7.4	-96.08	-263.1	-2,469.2	2,483.4	2,468.5	14.89	166.807	
3,500.0	3,500.0	3,526.6	3,525.1	7.7	7.6	-96.16	-266.2	-2,467.5	2,482.0	2,466.7	15.34	161.764	
3,600.0	3,600.0	3,626.5	3,624.9	8.0	7.8	-96.23	-269.3	-2,465.9	2,480.7	2,464.9	15.80	157.008	
3,700.0	3,700.0	3,726.4	3,724.8	8.2	8.1	-96.31	-272.4	-2,464.2	2,479.4	2,463.2	16.26	152.518	
3,800.0	3,800.0	3,826.4	3,824.7	8.4	8.3	-96.38	-275.4	-2,462.6	2,478.1	2,461.4	16.71	148.270	
3,900.0	3,900.0	3,926.3	3,924.6	8.6	8.5	-96.46	-278.5	-2,460.9	2,476.8	2,459.7	17.17	144.247	
4,000.0	4,000.0	4,026.3	4,024.5	8.9	8.8	-96.53	-281.6	-2,459.3	2,475.5	2,457.9	17.63	140.431	
4,100.0	4,100.0	4,126.2	4,124.3	9.1	9.0	-96.61	-284.6	-2,457.6	2,474.2	2,456.2	18.09	136.806	
4,200.0	4,200.0	4,226.1	4,224.2	9.3	9.2	-96.68	-287.7	-2,456.0	2,473.0	2,454.4	18.54	133.360	
4,300.0	4,300.0	4,326.1	4,324.1	9.5	9.5	-96.76	-290.8	-2,454.3	2,471.7	2,452.7	19.00	130.078	
4,400.0	4,400.0	4,426.0	4,424.0	9.8	9.7	-96.83	-293.9	-2,452.7	2,470.4	2,450.9	19.46	126.950	
4,500.0	4,500.0	4,525.9	4,523.8	10.0	9.9	-96.91	-296.9	-2,451.0	2,469.1	2,449.2	19.92	123.965	
4,600.0	4,600.0	4,625.9	4,623.7	10.2	10.2	-96.98	-300.0	-2,449.4	2,467.9	2,447.5	20.38	121.114	
4,700.0	4,700.0	4,725.8	4,723.6	10.4	10.4	-97.06	-303.1	-2,447.7	2,466.6	2,445.8	20.84	118.387	
4,800.0	4,800.0	4,825.8	4,823.5	10.7	10.6	-97.13	-306.2	-2,446.1	2,465.3	2,444.0	21.29	115.778	
4,900.0	4,900.0	4,925.7	4,923.4	10.9	10.9	-97.21	-309.2	-2,444.4	2,464.1	2,442.3	21.75	113.278	
5,000.0	5,000.0	6,200.0	5,752.7	11.1	20.6	-113.16	-910.4	-2,128.2	2,436.4	2,403.1	33.29	73.185	
5,100.0	5,100.0	6,200.0	5,752.7	11.3	20.6	-113.16	-910.4	-2,128.2	2,407.0	2,373.5	33.52	71.819	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3408B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,128.0	5,128.0	6,200.0	5,752.7	11.4	20.6	-113.16	-910.4	-2,128.2	2,399.5	2,365.9	33.58	71.461	
5,150.0	5,150.0	6,200.0	5,752.7	11.4	20.6	47.85	-910.4	-2,128.2	2,393.5	2,361.6	31.94	74.928	
5,200.0	5,199.8	6,200.0	5,752.7	11.5	20.6	49.16	-910.4	-2,128.2	2,378.3	2,346.5	31.87	74.629	
5,250.0	5,248.9	6,200.0	5,752.7	11.6	20.6	50.70	-910.4	-2,128.2	2,361.2	2,329.5	31.67	74.556	
5,300.0	5,296.9	6,200.0	5,752.7	11.7	20.6	52.48	-910.4	-2,128.2	2,342.0	2,310.7	31.37	74.660	
5,350.0	5,343.3	6,200.0	5,752.7	11.8	20.6	54.51	-910.4	-2,128.2	2,321.2	2,290.2	31.00	74.871	
5,400.0	5,387.8	6,234.9	5,752.7	11.9	21.1	55.91	-942.5	-2,114.4	2,298.1	2,267.0	31.10	73.889	
5,450.0	5,429.9	6,244.1	5,752.7	12.0	21.2	58.25	-951.0	-2,110.9	2,273.7	2,242.9	30.82	73.766	
5,500.0	5,469.2	6,254.7	5,752.7	12.2	21.4	60.85	-960.8	-2,106.8	2,247.9	2,217.3	30.61	73.433	
5,550.0	5,505.3	6,266.6	5,752.7	12.4	21.6	63.70	-971.9	-2,102.4	2,220.8	2,190.3	30.51	72.799	
5,600.0	5,538.0	6,300.0	5,752.7	12.6	22.1	66.37	-1,002.9	-2,090.2	2,192.8	2,162.0	30.76	71.287	
5,650.0	5,566.9	6,300.0	5,752.7	12.9	22.1	70.09	-1,002.9	-2,090.2	2,163.4	2,132.6	30.78	70.275	
5,700.0	5,591.8	6,300.0	5,752.7	13.2	22.1	74.00	-1,002.9	-2,090.2	2,133.4	2,102.4	30.97	68.878	
5,750.0	5,612.4	6,326.6	5,752.7	13.6	22.5	77.69	-1,027.9	-2,081.0	2,102.8	2,071.2	31.59	66.556	
5,800.0	5,628.5	6,344.1	5,752.7	14.1	22.8	81.73	-1,044.4	-2,075.0	2,071.8	2,039.6	32.22	64.298	
5,850.0	5,640.0	6,362.4	5,752.7	14.6	23.1	85.90	-1,061.7	-2,069.0	2,040.8	2,007.8	32.93	61.966	
5,900.0	5,646.8	6,400.0	5,752.7	15.1	23.7	90.09	-1,097.3	-2,057.2	2,010.0	1,976.1	33.89	59.311	
5,946.2	5,648.9	6,400.0	5,752.7	15.6	23.7	94.05	-1,097.3	-2,057.2	1,981.6	1,947.2	34.42	57.568	
6,000.0	5,648.9	6,400.0	5,752.7	16.3	23.7	93.97	-1,097.3	-2,057.2	1,950.1	1,914.8	35.33	55.199	
6,100.0	5,648.9	6,462.5	5,752.7	17.4	24.7	93.92	-1,157.1	-2,039.1	1,895.6	1,857.8	37.80	50.155	
6,200.0	5,648.9	6,500.0	5,752.7	18.7	25.3	93.85	-1,193.3	-2,029.1	1,847.8	1,807.7	40.08	46.106	
6,300.0	5,648.9	6,553.5	5,752.7	20.1	26.1	93.81	-1,245.2	-2,016.2	1,806.7	1,764.1	42.69	42.325	
6,400.0	5,648.9	6,600.0	5,752.7	21.5	26.9	93.78	-1,290.6	-2,006.1	1,772.9	1,727.6	45.24	39.187	
6,500.0	5,648.9	6,652.3	5,752.7	23.0	27.7	93.75	-1,341.9	-1,996.1	1,746.4	1,698.5	47.92	36.445	
6,596.3	5,648.9	6,700.0	5,752.7	24.4	28.5	93.74	-1,389.0	-1,988.2	1,728.2	1,677.7	50.44	34.263	
6,600.0	5,648.9	6,700.0	5,752.7	24.5	28.5	93.74	-1,389.0	-1,988.2	1,727.6	1,677.1	50.50	34.214	
6,700.0	5,648.9	6,755.9	5,752.7	26.0	29.4	93.75	-1,444.4	-1,980.5	1,713.9	1,660.9	52.96	32.365	
6,800.0	5,648.9	6,800.0	5,752.7	27.6	30.1	93.76	-1,488.1	-1,975.5	1,702.9	1,647.7	55.27	30.811	
6,900.0	5,648.9	6,861.3	5,752.7	29.2	31.1	93.78	-1,549.2	-1,970.3	1,694.6	1,636.7	57.91	29.261	
7,000.0	5,648.9	6,900.0	5,752.7	30.9	31.7	93.78	-1,587.8	-1,968.0	1,689.2	1,629.0	60.22	28.051	
7,100.0	5,648.9	6,967.4	5,752.7	32.5	32.8	93.79	-1,655.2	-1,965.9	1,686.4	1,623.4	63.03	26.756	
7,157.4	5,648.9	7,001.6	5,752.7	33.5	33.3	93.79	-1,689.4	-1,965.8	1,686.1	1,621.5	64.58	26.108	CC
7,200.0	5,648.9	7,044.3	5,752.7	34.3	34.0	93.79	-1,732.1	-1,965.8	1,686.1	1,620.0	66.03	25.535	
7,300.0	5,648.9	7,144.3	5,752.7	36.0	35.6	93.79	-1,832.1	-1,965.8	1,686.1	1,616.6	69.46	24.275	
7,400.0	5,648.9	7,244.3	5,752.7	37.7	37.2	93.79	-1,932.1	-1,965.8	1,686.1	1,613.2	72.93	23.120	
7,500.0	5,648.9	7,344.3	5,752.7	39.5	38.9	93.79	-2,032.1	-1,965.8	1,686.1	1,609.7	76.43	22.061	
7,600.0	5,648.9	7,444.3	5,752.7	41.3	40.6	93.79	-2,132.1	-1,965.8	1,686.2	1,606.2	79.97	21.086	
7,700.0	5,648.9	7,544.3	5,752.7	43.0	42.3	93.79	-2,232.1	-1,965.8	1,686.2	1,602.7	83.53	20.187	
7,800.0	5,648.9	7,644.3	5,752.7	44.8	44.0	93.79	-2,332.1	-1,965.9	1,686.2	1,599.1	87.11	19.357	
7,900.0	5,648.9	7,744.3	5,752.7	46.7	45.8	93.79	-2,432.1	-1,965.9	1,686.2	1,595.5	90.72	18.588	
8,000.0	5,648.9	7,844.3	5,752.8	48.5	47.5	93.79	-2,532.1	-1,965.9	1,686.3	1,591.9	94.34	17.874	
8,100.0	5,648.9	7,944.3	5,752.8	50.3	49.3	93.79	-2,632.1	-1,965.9	1,686.3	1,588.3	97.98	17.210	
8,200.0	5,648.9	8,044.3	5,752.8	52.1	51.0	93.79	-2,732.1	-1,965.9	1,686.3	1,584.7	101.63	16.592	
8,300.0	5,648.9	8,144.3	5,752.8	54.0	52.8	93.79	-2,832.1	-1,965.9	1,686.3	1,581.0	105.30	16.014	
8,400.0	5,648.9	8,244.3	5,752.8	55.8	54.6	93.79	-2,932.1	-1,966.0	1,686.3	1,577.4	108.98	15.474	
8,500.0	5,648.9	8,344.3	5,752.8	57.7	56.4	93.79	-3,032.1	-1,966.0	1,686.4	1,573.7	112.67	14.967	
8,600.0	5,648.9	8,444.3	5,752.8	59.5	58.2	93.79	-3,132.1	-1,966.0	1,686.4	1,570.0	116.37	14.492	
8,700.0	5,648.9	8,544.3	5,752.8	61.4	60.1	93.79	-3,232.1	-1,966.0	1,686.4	1,566.3	120.07	14.045	
8,800.0	5,648.9	8,644.3	5,752.8	63.2	61.9	93.79	-3,332.1	-1,966.0	1,686.4	1,562.7	123.79	13.623	
8,900.0	5,648.9	8,744.3	5,752.8	65.1	63.7	93.79	-3,432.1	-1,966.0	1,686.5	1,559.0	127.51	13.226	
9,000.0	5,648.9	8,844.3	5,752.8	67.0	65.6	93.79	-3,532.1	-1,966.1	1,686.5	1,555.2	131.24	12.850	
9,100.0	5,648.9	8,944.3	5,752.8	68.8	67.4	93.79	-3,632.1	-1,966.1	1,686.5	1,551.5	134.97	12.495	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27K-3408B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,648.9	9,044.3	5,752.8	70.7	69.2	93.79	-3,732.1	-1,966.1	1,686.5	1,547.8	138.71	12.158	
9,300.0	5,648.9	9,144.3	5,752.8	72.6	71.1	93.79	-3,832.1	-1,966.1	1,686.6	1,544.1	142.46	11.839	
9,400.0	5,648.9	9,244.3	5,752.8	74.5	72.9	93.79	-3,932.1	-1,966.1	1,686.6	1,540.4	146.21	11.535	
9,500.0	5,648.9	9,344.3	5,752.8	76.3	74.8	93.79	-4,032.1	-1,966.1	1,686.6	1,536.6	149.96	11.247	
9,600.0	5,648.9	9,444.3	5,752.8	78.2	76.7	93.79	-4,132.1	-1,966.1	1,686.6	1,532.9	153.72	10.972	
9,700.0	5,648.9	9,544.3	5,752.8	80.1	78.5	93.79	-4,232.1	-1,966.2	1,686.6	1,529.2	157.48	10.710	
9,800.0	5,648.9	9,644.3	5,752.8	82.0	80.4	93.79	-4,332.1	-1,966.2	1,686.7	1,525.4	161.25	10.460	
9,900.0	5,648.9	9,744.3	5,752.9	83.9	82.2	93.79	-4,432.1	-1,966.2	1,686.7	1,521.7	165.02	10.221	
10,000.0	5,648.9	9,844.3	5,752.9	85.8	84.1	93.79	-4,532.1	-1,966.2	1,686.7	1,517.9	168.79	9.993	
10,100.0	5,648.9	9,944.3	5,752.9	87.7	86.0	93.79	-4,632.1	-1,966.2	1,686.7	1,514.2	172.56	9.775	
10,200.0	5,649.0	10,044.3	5,752.9	89.6	87.9	93.79	-4,732.1	-1,966.2	1,686.8	1,510.4	176.34	9.565	
10,300.0	5,649.0	10,144.3	5,752.9	91.4	89.7	93.79	-4,832.1	-1,966.3	1,686.8	1,506.7	180.12	9.365	
10,400.0	5,649.0	10,244.3	5,752.9	93.3	91.6	93.79	-4,932.1	-1,966.3	1,686.8	1,502.9	183.90	9.172	
10,500.0	5,649.0	10,344.3	5,752.9	95.2	93.5	93.79	-5,032.1	-1,966.3	1,686.8	1,499.1	187.68	8.988	
10,600.0	5,649.0	10,444.3	5,752.9	97.1	95.4	93.79	-5,132.1	-1,966.3	1,686.9	1,495.4	191.47	8.810	
10,700.0	5,649.0	10,544.3	5,752.9	99.0	97.3	93.79	-5,232.1	-1,966.3	1,686.9	1,491.6	195.26	8.639	
10,800.0	5,649.0	10,644.3	5,752.9	100.9	99.1	93.79	-5,332.1	-1,966.3	1,686.9	1,487.8	199.05	8.475	
10,900.0	5,649.0	10,744.3	5,752.9	102.8	101.0	93.79	-5,432.1	-1,966.4	1,686.9	1,484.1	202.84	8.317	
11,000.0	5,649.0	10,844.3	5,752.9	104.7	102.9	93.79	-5,532.1	-1,966.4	1,686.9	1,480.3	206.63	8.164	
11,100.0	5,649.0	10,944.3	5,752.9	106.6	104.8	93.79	-5,632.1	-1,966.4	1,687.0	1,476.5	210.43	8.017	
11,200.0	5,649.0	11,044.3	5,752.9	108.5	106.7	93.79	-5,732.1	-1,966.4	1,687.0	1,472.8	214.22	7.875	
11,300.0	5,649.0	11,144.3	5,752.9	110.4	108.6	93.79	-5,832.1	-1,966.4	1,687.0	1,469.0	218.02	7.738	
11,400.0	5,649.0	11,244.3	5,752.9	112.3	110.5	93.79	-5,932.1	-1,966.4	1,687.0	1,465.2	221.82	7.606	
11,500.0	5,649.0	11,344.3	5,752.9	114.2	112.4	93.79	-6,032.1	-1,966.4	1,687.1	1,461.4	225.62	7.478	
11,600.0	5,649.0	11,444.3	5,752.9	116.1	114.3	93.79	-6,132.1	-1,966.5	1,687.1	1,457.7	229.42	7.354	
11,700.0	5,649.0	11,544.3	5,753.0	118.0	116.2	93.79	-6,232.1	-1,966.5	1,687.1	1,453.9	233.22	7.234	
11,800.0	5,649.0	11,644.3	5,753.0	119.9	118.1	93.79	-6,332.1	-1,966.5	1,687.1	1,450.1	237.02	7.118	
11,900.0	5,649.0	11,744.3	5,753.0	121.9	120.0	93.79	-6,432.1	-1,966.5	1,687.1	1,446.3	240.83	7.006	
12,000.0	5,649.0	11,844.3	5,753.0	123.8	121.9	93.79	-6,532.1	-1,966.5	1,687.2	1,442.5	244.63	6.897	
12,100.0	5,649.0	11,944.3	5,753.0	125.7	123.8	93.79	-6,632.1	-1,966.5	1,687.2	1,438.8	248.44	6.791	
12,200.0	5,649.0	12,044.3	5,753.0	127.6	125.7	93.79	-6,732.1	-1,966.6	1,687.2	1,435.0	252.24	6.689	
12,300.0	5,649.0	12,144.3	5,753.0	129.5	127.5	93.79	-6,832.1	-1,966.6	1,687.2	1,431.2	256.05	6.589	
12,400.0	5,649.0	12,244.3	5,753.0	131.4	129.4	93.79	-6,932.1	-1,966.6	1,687.3	1,427.4	259.86	6.493	
12,500.0	5,649.0	12,344.3	5,753.0	133.3	131.4	93.79	-7,032.1	-1,966.6	1,687.3	1,423.6	263.67	6.399	
12,590.4	5,649.0	12,434.7	5,753.0	134.7	133.1	93.79	-7,122.5	-1,966.6	1,687.3	1,420.5	266.81	6.324	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3413A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4773.0usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27I-3413A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4773.0usft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #27I-3413A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°