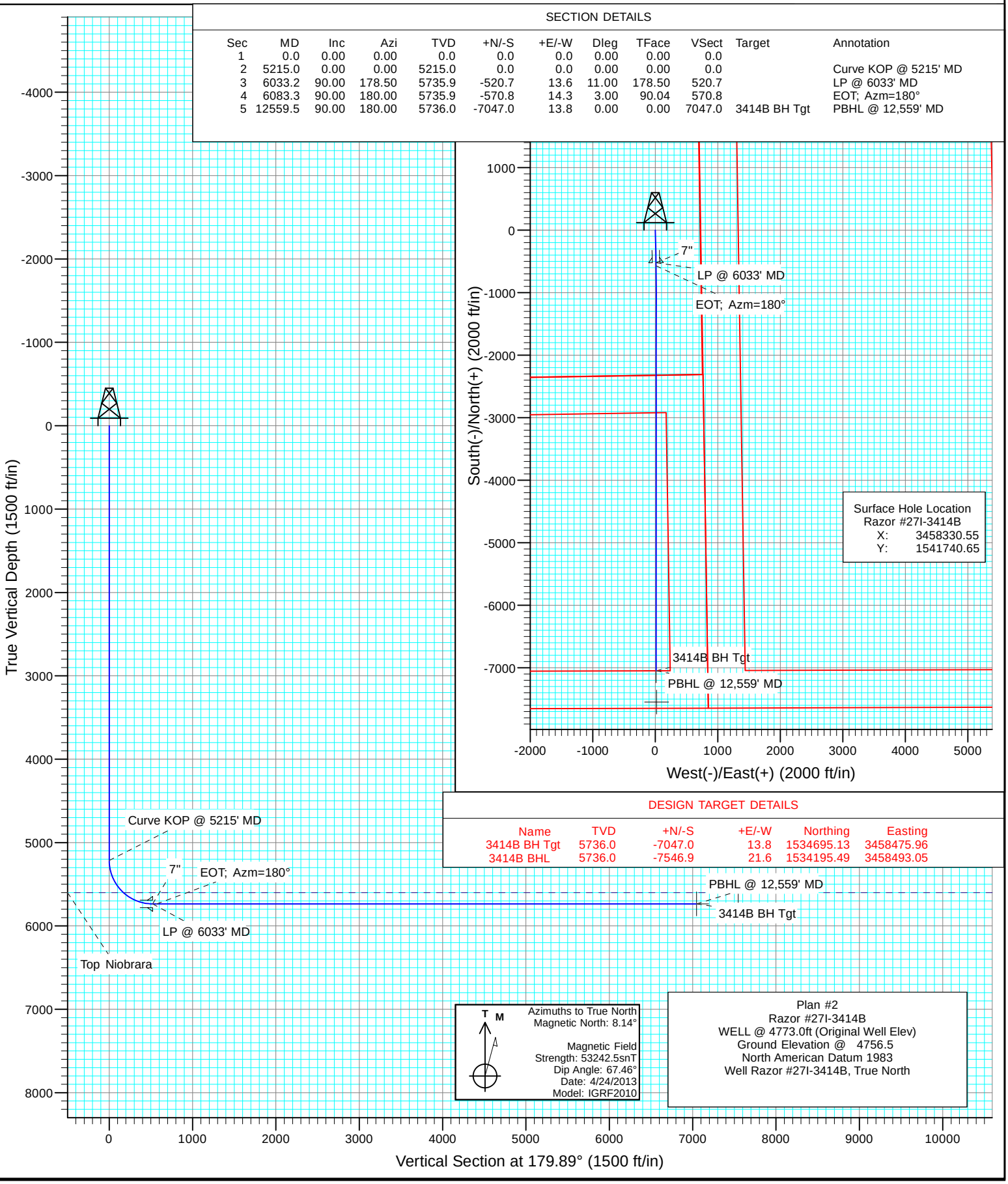
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27I-3414B
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	5215.0	0.00	0.00	5215.0	0.0	0.0	0.00	0.00	0.0		Curve KOP @ 5215' MD
3	6033.2	90.00	178.50	5735.9	-520.7	13.6	11.00	178.50	520.7		LP @ 6033' MD
4	6083.3	90.00	180.00	5735.9	-570.8	14.3	3.00	90.04	570.8		EOT; Azm=180°
5	12559.5	90.00	180.00	5736.0	-7047.0	13.8	0.00	0.00	7047.0	3414B BH Tgt	PBHL @ 12,559' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
3414B BH Tgt	5736.0	-7047.0	13.8	1534695.13	3458475.96
3414B BHL	5736.0	-7546.9	21.6	1534195.49	3458493.05

Azimuths to True North
Magnetic North: 8.14°

Magnetic Field
Strength: 53242.5snT
Dip Angle: 67.46°
Date: 4/24/2013
Model: IGRF2010

Plan #2
Razor #27I-3414B
WELL @ 4773.0ft (Original Well Elev)
Ground Elevation @ 4756.5
North American Datum 1983
Well Razor #27I-3414B, True North

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4773.0ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4773.0ft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3414B	**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:**	1,541,650.73 ft	**Latitude:**	40.808594
From:	Lat/Long	**Easting:**	3,455,691.89 ft	**Longitude:**	-103.853833
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.06 °

Well Razor #27I-3414B

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,541,740.65 ft	**Latitude:**	40.808706
	+E/-W	0.0 ft	**Easting:**	3,458,330.55 ft	**Longitude:**	-103.844297
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,756.5 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/24/2013	8.14	67.46	53,242

Design Plan #2

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	179.89

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,215.0	0.00	0.00	5,215.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,033.2	90.00	178.50	5,735.9	-520.7	13.6	11.00	11.00	0.00	178.50	
6,083.3	90.00	180.00	5,735.9	-570.8	14.3	3.00	0.00	3.00	90.04	
12,559.5	90.00	180.00	5,736.0	-7,047.0	13.8	0.00	0.00	0.00	0.00	3414B BH Tgt

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Project:	Weld County, CO	**MD Reference:**	WELL @ 4773.0ft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3414B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
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-3414B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	
5,215.0	0.00	0.00	5,215.0	0.0	0.0	0.0	0.00	0.00	Curve KOP @ 5215' MD
5,300.0	9.35	178.50	5,299.6	-6.9	0.2	6.9	11.00	11.00	
5,400.0	20.35	178.50	5,396.1	-32.5	0.9	32.5	11.00	11.00	
5,500.0	31.35	178.50	5,486.0	-76.0	2.0	76.0	11.00	11.00	
5,600.0	42.35	178.50	5,565.9	-135.9	3.6	135.9	11.00	11.00	
5,648.3	47.66	178.50	5,600.0	-170.0	4.5	170.0	11.00	11.00	Top Niobrara
5,700.0	53.35	178.50	5,632.9	-209.9	5.5	209.9	11.00	11.00	
5,800.0	64.35	178.50	5,684.5	-295.3	7.7	295.3	11.00	11.00	
5,900.0	75.35	178.50	5,718.9	-389.0	10.2	389.0	11.00	11.00	
6,000.0	86.35	178.50	5,734.8	-487.5	12.8	487.6	11.00	11.00	
6,033.2	90.00	178.50	5,735.9	-520.7	13.6	520.7	11.00	11.00	LP @ 6033' MD - 7"
6,083.3	90.00	180.00	5,735.9	-570.8	14.3	570.8	3.00	0.00	EOT; Azm=180°
6,100.0	90.00	180.00	5,735.9	-587.5	14.3	587.5	0.00	0.00	
6,200.0	90.00	180.00	5,735.9	-687.5	14.3	687.5	0.00	0.00	
6,300.0	90.00	180.00	5,735.9	-787.5	14.3	787.5	0.00	0.00	
6,400.0	90.00	180.00	5,735.9	-887.5	14.3	887.5	0.00	0.00	
6,500.0	90.00	180.00	5,735.9	-987.5	14.3	987.5	0.00	0.00	
6,600.0	90.00	180.00	5,735.9	-1,087.5	14.3	1,087.5	0.00	0.00	
6,700.0	90.00	180.00	5,735.9	-1,187.5	14.2	1,187.5	0.00	0.00	
6,800.0	90.00	180.00	5,735.9	-1,287.5	14.2	1,287.5	0.00	0.00	
6,900.0	90.00	180.00	5,735.9	-1,387.5	14.2	1,387.5	0.00	0.00	
7,000.0	90.00	180.00	5,735.9	-1,487.5	14.2	1,487.5	0.00	0.00	
7,100.0	90.00	180.00	5,735.9	-1,587.5	14.2	1,587.5	0.00	0.00	
7,200.0	90.00	180.00	5,735.9	-1,687.5	14.2	1,687.5	0.00	0.00	
7,300.0	90.00	180.00	5,735.9	-1,787.5	14.2	1,787.5	0.00	0.00	
7,400.0	90.00	180.00	5,735.9	-1,887.5	14.2	1,887.5	0.00	0.00	
7,500.0	90.00	180.00	5,735.9	-1,987.5	14.2	1,987.5	0.00	0.00	
7,600.0	90.00	180.00	5,735.9	-2,087.5	14.2	2,087.5	0.00	0.00	
7,700.0	90.00	180.00	5,735.9	-2,187.5	14.2	2,187.5	0.00	0.00	
7,800.0	90.00	180.00	5,735.9	-2,287.5	14.2	2,287.5	0.00	0.00	
7,900.0	90.00	180.00	5,735.9	-2,387.5	14.2	2,387.5	0.00	0.00	
8,000.0	90.00	180.00	5,735.9	-2,487.5	14.2	2,487.5	0.00	0.00	
8,100.0	90.00	180.00	5,735.9	-2,587.5	14.2	2,587.5	0.00	0.00	
8,200.0	90.00	180.00	5,735.9	-2,687.5	14.1	2,687.5	0.00	0.00	
8,300.0	90.00	180.00	5,735.9	-2,787.5	14.1	2,787.5	0.00	0.00	
8,400.0	90.00	180.00	5,735.9	-2,887.5	14.1	2,887.5	0.00	0.00	
8,500.0	90.00	180.00	5,735.9	-2,987.5	14.1	2,987.5	0.00	0.00	
8,600.0	90.00	180.00	5,735.9	-3,087.5	14.1	3,087.5	0.00	0.00	
8,700.0	90.00	180.00	5,735.9	-3,187.5	14.1	3,187.5	0.00	0.00	
8,800.0	90.00	180.00	5,735.9	-3,287.5	14.1	3,287.5	0.00	0.00	
8,900.0	90.00	180.00	5,735.9	-3,387.5	14.1	3,387.5	0.00	0.00	
9,000.0	90.00	180.00	5,735.9	-3,487.5	14.1	3,487.5	0.00	0.00	
9,100.0	90.00	180.00	5,735.9	-3,587.5	14.1	3,587.5	0.00	0.00	
9,200.0	90.00	180.00	5,735.9	-3,687.5	14.1	3,687.5	0.00	0.00	
9,300.0	90.00	180.00	5,735.9	-3,787.5	14.1	3,787.5	0.00	0.00	
9,400.0	90.00	180.00	5,735.9	-3,887.5	14.1	3,887.5	0.00	0.00	
9,500.0	90.00	180.00	5,736.0	-3,987.5	14.1	3,987.5	0.00	0.00	
9,600.0	90.00	180.00	5,736.0	-4,087.5	14.0	4,087.5	0.00	0.00	
9,700.0	90.00	180.00	5,736.0	-4,187.5	14.0	4,187.5	0.00	0.00	
9,800.0	90.00	180.00	5,736.0	-4,287.5	14.0	4,287.5	0.00	0.00	
9,900.0	90.00	180.00	5,736.0	-4,387.5	14.0	4,387.5	0.00	0.00	

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Well:	Razor #27I-3414B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,000.0	90.00	180.00	5,736.0	-4,487.5	14.0	4,487.5	0.00	0.00	
10,100.0	90.00	180.00	5,736.0	-4,587.5	14.0	4,587.5	0.00	0.00	
10,200.0	90.00	180.00	5,736.0	-4,687.5	14.0	4,687.5	0.00	0.00	
10,300.0	90.00	180.00	5,736.0	-4,787.5	14.0	4,787.5	0.00	0.00	
10,400.0	90.00	180.00	5,736.0	-4,887.5	14.0	4,887.5	0.00	0.00	
10,500.0	90.00	180.00	5,736.0	-4,987.5	14.0	4,987.5	0.00	0.00	
10,600.0	90.00	180.00	5,736.0	-5,087.5	14.0	5,087.5	0.00	0.00	
10,700.0	90.00	180.00	5,736.0	-5,187.5	14.0	5,187.5	0.00	0.00	
10,800.0	90.00	180.00	5,736.0	-5,287.5	14.0	5,287.5	0.00	0.00	
10,900.0	90.00	180.00	5,736.0	-5,387.5	14.0	5,387.5	0.00	0.00	
11,000.0	90.00	180.00	5,736.0	-5,487.5	14.0	5,487.5	0.00	0.00	
11,100.0	90.00	180.00	5,736.0	-5,587.5	13.9	5,587.5	0.00	0.00	
11,200.0	90.00	180.00	5,736.0	-5,687.5	13.9	5,687.5	0.00	0.00	
11,300.0	90.00	180.00	5,736.0	-5,787.5	13.9	5,787.5	0.00	0.00	
11,400.0	90.00	180.00	5,736.0	-5,887.5	13.9	5,887.5	0.00	0.00	
11,500.0	90.00	180.00	5,736.0	-5,987.5	13.9	5,987.5	0.00	0.00	
11,600.0	90.00	180.00	5,736.0	-6,087.5	13.9	6,087.5	0.00	0.00	
11,700.0	90.00	180.00	5,736.0	-6,187.5	13.9	6,187.5	0.00	0.00	
11,800.0	90.00	180.00	5,736.0	-6,287.5	13.9	6,287.5	0.00	0.00	
11,900.0	90.00	180.00	5,736.0	-6,387.5	13.9	6,387.5	0.00	0.00	
12,000.0	90.00	180.00	5,736.0	-6,487.5	13.9	6,487.5	0.00	0.00	
12,100.0	90.00	180.00	5,736.0	-6,587.5	13.9	6,587.5	0.00	0.00	
12,200.0	90.00	180.00	5,736.0	-6,687.5	13.9	6,687.5	0.00	0.00	
12,300.0	90.00	180.00	5,736.0	-6,787.5	13.9	6,787.5	0.00	0.00	
12,400.0	90.00	180.00	5,736.0	-6,887.5	13.9	6,887.5	0.00	0.00	
12,500.0	90.00	180.00	5,736.0	-6,987.5	13.8	6,987.5	0.00	0.00	
12,559.5	90.00	180.00	5,736.0	-7,047.0	13.8	7,047.0	0.00	0.00	PBHL @ 12,559' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
3414B BHL	0.00	0.00	5,736.0	-7,546.9	21.6	1,534,195.49	3,458,493.05	40.787992	-103.844219
- plan misses target center by 499.9ft at 12559.5ft MD (5736.0 TVD, -7047.0 N, 13.8 E)									
- Point									
3414B BH Tgt	0.00	0.00	5,736.0	-7,047.0	13.8	1,534,695.13	3,458,475.96	40.789364	-103.844247
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,033.2	5,735.9	7"	0.000	0.000

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4773.0ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4773.0ft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27I-3414B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,648.3	5,600.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
5,215.0	5,215.0	0.0	0.0	Curve KOP @ 5215' MD
6,033.2	5,735.9	-520.7	13.6	LP @ 6033' MD
6,083.3	5,735.9	-570.8	14.3	EOT; Azm=180°
12,559.5	5,736.0	-7,047.0	13.8	PBHL @ 12,559' MD

Whiting Petroleum Corporation

Weld County, CO
S27-T10N-R58W
Razor #27I-3414B
HZ
Plan #2

Anticollision Report

18 June, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	12,559.5	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	1,000.0	1,000.0	75.8	71.5	17.901	CC, ES
Razor #27I-2213A - HZ - Plan #2	5,100.0	5,100.8	100.5	78.0	4.458	SF
Razor #27I-2214B - HZ - Plan #3	300.0	300.0	33.2	32.2	31.998	CC, ES
Razor #27I-2214B - HZ - Plan #3	5,250.0	5,250.0	265.9	245.0	12.744	SF
Razor #27I-2215A - HZ - Plan #1	5,100.0	5,100.0	99.8	79.6	4.938	CC, ES, SF
Razor #27I-2216B - HZ - Plan #2	500.0	500.0	32.9	31.1	17.935	CC, ES
Razor #27I-2216B - HZ - Plan #2	800.0	797.8	43.9	40.8	14.428	SF
Razor #27I-3413A - HZ - Plan #2	5,343.5	5,360.8	66.9	43.6	2.866	CC, ES
Razor #27I-3413A - HZ - Plan #2	12,559.5	12,589.4	341.4	77.9	1.296	Level 3, SF
Razor #27I-3415A - HZ - Plan #1	5,341.7	5,358.3	67.5	44.1	2.885	CC, ES
Razor #27I-3415A - HZ - Plan #1	12,559.5	12,598.5	348.6	83.3	1.314	Level 3, SF
Razor #27I-3416B - HZ - Plan #2	500.0	500.0	66.2	64.2	33.318	CC, ES
Razor #27I-3416B - HZ - Plan #2	12,559.5	12,444.6	663.3	392.0	2.445	SF
Razor #27J-3409A - Hz - Plan #3	462.8	473.3	1,286.6	1,284.8	698.484	CC
Razor #27J-3409A - Hz - Plan #3	500.0	509.2	1,286.6	1,284.6	642.032	ES
Razor #27J-3409A - Hz - Plan #3	12,559.5	12,211.6	1,652.0	1,381.8	6.115	SF
Razor #27J-3410B - HZ - Plan #3	5,236.0	5,241.0	1,257.1	1,233.8	54.005	CC
Razor #27J-3410B - HZ - Plan #3	12,559.5	12,482.0	1,320.1	1,050.9	4.905	ES, SF
Razor #27J-3411A - HZ - Plan #3	12,559.5	12,189.0	993.1	724.0	3.690	CC, ES, SF
Razor #27J-3412B - HZ - Plan #3	7,194.1	6,909.7	659.9	593.0	9.861	CC
Razor #27J-3412B - HZ - Plan #3	12,559.5	12,275.0	660.2	392.1	2.462	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	0.00	75.8	0.0	75.8				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	75.8	0.0	75.8	75.6	0.19	403.786	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	75.8	0.0	75.8	75.1	0.64	118.928	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	75.8	0.0	75.8	74.7	1.09	69.734	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	75.8	0.0	75.8	74.2	1.54	49.329	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	75.8	0.0	75.8	73.8	1.99	38.162	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	75.8	0.0	75.8	73.3	2.44	31.118	
700.0	700.0	700.0	700.0	1.4	1.4	0.00	75.8	0.0	75.8	72.9	2.88	26.269	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	75.8	0.0	75.8	72.4	3.33	22.727	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	75.8	0.0	75.8	72.0	3.78	20.027	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	75.8	0.0	75.8	71.5	4.23	17.901	CC, ES
1,100.0	1,100.0	1,097.8	1,097.8	2.3	2.3	-0.66	77.2	-0.9	77.2	72.6	4.68	16.514	
1,200.0	1,200.0	1,195.3	1,195.2	2.6	2.6	-2.48	81.4	-3.5	81.6	76.5	5.12	15.938	
1,300.0	1,300.0	1,295.0	1,294.6	2.8	2.8	-4.73	87.3	-7.2	87.8	82.2	5.57	15.747	
1,400.0	1,400.0	1,394.7	1,394.1	3.0	3.0	-6.68	93.2	-10.9	94.0	88.0	6.03	15.603	
1,500.0	1,500.0	1,497.6	1,496.8	3.2	3.2	-8.05	97.9	-13.8	98.9	92.5	6.46	15.316	
1,600.0	1,600.0	1,600.8	1,600.0	3.5	3.4	-8.47	99.4	-14.8	100.5	93.7	6.86	14.648	
1,700.0	1,700.0	1,700.8	1,700.0	3.7	3.6	-8.47	99.4	-14.8	100.5	93.2	7.29	13.794	
1,800.0	1,800.0	1,800.8	1,800.0	3.9	3.8	-8.47	99.4	-14.8	100.5	92.8	7.74	12.996	
1,900.0	1,900.0	1,900.8	1,900.0	4.1	4.1	-8.47	99.4	-14.8	100.5	92.4	8.18	12.284	
2,000.0	2,000.0	2,000.8	2,000.0	4.4	4.3	-8.47	99.4	-14.8	100.5	91.9	8.63	11.647	
2,100.0	2,100.0	2,100.8	2,100.0	4.6	4.5	-8.47	99.4	-14.8	100.5	91.5	9.08	11.072	
2,200.0	2,200.0	2,200.8	2,200.0	4.8	4.7	-8.47	99.4	-14.8	100.5	91.0	9.53	10.551	
2,300.0	2,300.0	2,300.8	2,300.0	5.0	4.9	-8.47	99.4	-14.8	100.5	90.6	9.98	10.077	
2,400.0	2,400.0	2,400.8	2,400.0	5.3	5.2	-8.47	99.4	-14.8	100.5	90.1	10.43	9.643	
2,500.0	2,500.0	2,500.8	2,500.0	5.5	5.4	-8.47	99.4	-14.8	100.5	89.7	10.87	9.245	
2,600.0	2,600.0	2,600.8	2,600.0	5.7	5.6	-8.47	99.4	-14.8	100.5	89.2	11.32	8.879	
2,700.0	2,700.0	2,700.8	2,700.0	5.9	5.8	-8.47	99.4	-14.8	100.5	88.8	11.77	8.540	
2,800.0	2,800.0	2,800.8	2,800.0	6.2	6.1	-8.47	99.4	-14.8	100.5	88.3	12.22	8.227	
2,900.0	2,900.0	2,900.8	2,900.0	6.4	6.3	-8.47	99.4	-14.8	100.5	87.9	12.67	7.935	
3,000.0	3,000.0	3,000.8	3,000.0	6.6	6.5	-8.47	99.4	-14.8	100.5	87.4	13.12	7.664	
3,100.0	3,100.0	3,100.8	3,100.0	6.8	6.7	-8.47	99.4	-14.8	100.5	87.0	13.57	7.410	
3,200.0	3,200.0	3,200.8	3,200.0	7.1	7.0	-8.47	99.4	-14.8	100.5	86.5	14.02	7.173	
3,300.0	3,300.0	3,300.8	3,300.0	7.3	7.2	-8.47	99.4	-14.8	100.5	86.1	14.47	6.950	
3,400.0	3,400.0	3,400.8	3,400.0	7.5	7.4	-8.47	99.4	-14.8	100.5	85.6	14.91	6.741	
3,500.0	3,500.0	3,500.8	3,500.0	7.7	7.6	-8.47	99.4	-14.8	100.5	85.2	15.36	6.544	
3,600.0	3,600.0	3,600.8	3,600.0	8.0	7.9	-8.47	99.4	-14.8	100.5	84.7	15.81	6.358	
3,700.0	3,700.0	3,700.8	3,700.0	8.2	8.1	-8.47	99.4	-14.8	100.5	84.3	16.26	6.182	
3,800.0	3,800.0	3,800.8	3,800.0	8.4	8.3	-8.47	99.4	-14.8	100.5	83.8	16.71	6.016	
3,900.0	3,900.0	3,900.8	3,900.0	8.6	8.5	-8.47	99.4	-14.8	100.5	83.4	17.16	5.859	
4,000.0	4,000.0	4,000.8	4,000.0	8.9	8.7	-8.47	99.4	-14.8	100.5	82.9	17.61	5.709	
4,100.0	4,100.0	4,100.8	4,100.0	9.1	9.0	-8.47	99.4	-14.8	100.5	82.5	18.06	5.567	
4,200.0	4,200.0	4,200.8	4,200.0	9.3	9.2	-8.47	99.4	-14.8	100.5	82.0	18.51	5.432	
4,300.0	4,300.0	4,300.8	4,300.0	9.5	9.4	-8.47	99.4	-14.8	100.5	81.6	18.96	5.303	
4,400.0	4,400.0	4,400.8	4,400.0	9.8	9.6	-8.47	99.4	-14.8	100.5	81.1	19.41	5.181	
4,500.0	4,500.0	4,500.8	4,500.0	10.0	9.9	-8.47	99.4	-14.8	100.5	80.7	19.86	5.063	
4,600.0	4,600.0	4,600.8	4,600.0	10.2	10.1	-8.47	99.4	-14.8	100.5	80.2	20.30	4.951	
4,700.0	4,700.0	4,700.8	4,700.0	10.4	10.3	-8.47	99.4	-14.8	100.5	79.8	20.75	4.844	
4,800.0	4,800.0	4,800.8	4,800.0	10.7	10.5	-8.47	99.4	-14.8	100.5	79.3	21.20	4.741	
4,900.0	4,900.0	4,900.8	4,900.0	10.9	10.8	-8.47	99.4	-14.8	100.5	78.9	21.65	4.643	
5,000.0	5,000.0	5,000.8	5,000.0	11.1	11.0	-8.47	99.4	-14.8	100.5	78.4	22.10	4.549	
5,100.0	5,100.0	5,100.8	5,100.0	11.3	11.2	-8.47	99.4	-14.8	100.5	78.0	22.55	4.458	SF

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,189.8	5,188.8	11.6	11.4	-9.25	102.4	-16.7	104.4	81.4	22.98	4.541	
5,215.0	5,215.0	5,200.0	5,199.0	11.6	11.4	-9.52	103.5	-17.4	106.2	83.1	23.04	4.608	
5,250.0	5,250.0	5,231.0	5,229.6	11.7	11.5	170.92	107.8	-20.1	112.7	89.6	23.12	4.875	
5,300.0	5,299.6	5,269.8	5,267.3	11.7	11.6	169.37	115.4	-24.8	129.0	105.9	23.07	5.591	
5,350.0	5,348.5	5,300.0	5,296.1	11.8	11.7	167.93	122.9	-29.5	152.7	129.9	22.80	6.698	
5,400.0	5,396.1	5,335.3	5,329.2	11.9	11.8	166.23	133.5	-36.1	182.8	160.4	22.38	8.169	
5,450.0	5,442.1	5,361.0	5,352.6	12.0	11.9	164.51	142.4	-41.7	218.4	196.6	21.77	10.032	
5,500.0	5,486.0	5,381.9	5,371.3	12.1	11.9	162.40	150.3	-46.7	258.4	237.3	21.03	12.286	
5,550.0	5,527.4	5,400.0	5,387.2	12.2	12.0	159.55	157.7	-51.3	301.8	281.6	20.24	14.913	
5,600.0	5,565.9	5,410.5	5,396.2	12.4	12.0	155.03	162.2	-54.1	347.8	328.2	19.58	17.768	
5,650.0	5,601.2	5,418.9	5,403.4	12.6	12.0	147.16	166.0	-56.5	395.6	376.1	19.51	20.274	
5,700.0	5,632.9	5,424.1	5,407.8	12.8	12.1	130.75	168.3	-57.9	444.6	423.3	21.32	20.851	
5,750.0	5,660.8	5,426.5	5,409.8	13.1	12.1	93.84	169.3	-58.6	494.2	469.1	25.08	19.707	
5,800.0	5,684.5	5,426.2	5,409.6	13.5	12.1	49.56	169.2	-58.5	543.9	522.8	21.03	25.861	
5,850.0	5,704.0	5,423.8	5,407.5	13.9	12.1	27.57	168.1	-57.8	593.2	577.8	15.40	38.529	
5,900.0	5,718.9	5,419.4	5,403.8	14.3	12.0	17.66	166.2	-56.6	641.8	629.8	12.04	53.296	
5,950.0	5,729.2	5,400.0	5,387.2	14.8	12.0	10.99	157.7	-51.3	689.7	680.1	9.62	71.711	
6,000.0	5,734.8	5,400.0	5,387.2	15.4	12.0	8.77	157.7	-51.3	735.8	727.2	8.59	85.643	
6,033.2	5,735.9	5,400.0	5,387.2	15.7	12.0	7.70	157.7	-51.3	765.5	757.3	8.28	92.414	
6,083.3	5,735.9	5,400.0	5,387.2	16.3	12.0	10.66	157.7	-51.3	810.4	801.1	9.22	87.866	
6,100.0	5,735.9	5,400.0	5,387.2	16.5	12.0	10.66	157.7	-51.3	825.4	816.1	9.32	88.570	
6,200.0	5,735.9	5,372.8	5,363.2	17.8	11.9	8.97	146.8	-44.5	915.6	906.1	9.53	96.113	
6,300.0	5,735.9	5,350.0	5,342.6	19.2	11.8	7.76	138.5	-39.3	1,007.4	997.5	9.91	101.632	
6,400.0	5,735.9	5,350.0	5,342.6	20.7	11.8	7.76	138.5	-39.3	1,100.1	1,089.5	10.58	104.000	
6,500.0	5,735.9	5,350.0	5,342.6	22.3	11.8	7.76	138.5	-39.3	1,193.9	1,182.6	11.26	106.004	
6,600.0	5,735.9	5,324.7	5,319.4	23.9	11.8	6.62	130.1	-34.0	1,287.8	1,276.1	11.73	109.759	
6,700.0	5,735.9	5,300.0	5,296.1	25.6	11.7	5.70	122.9	-29.5	1,382.9	1,370.7	12.27	112.682	
6,800.0	5,735.9	5,300.0	5,296.1	27.3	11.7	5.70	122.9	-29.5	1,478.0	1,465.1	12.98	113.865	
6,900.0	5,735.9	5,300.0	5,296.1	29.0	11.7	5.70	122.9	-29.5	1,573.8	1,560.1	13.69	114.914	
7,000.0	5,735.9	5,300.0	5,296.1	30.7	11.7	5.70	122.9	-29.5	1,670.0	1,655.6	14.41	115.851	
7,100.0	5,735.9	5,300.0	5,296.1	32.5	11.7	5.70	122.9	-29.5	1,766.6	1,751.5	15.14	116.694	
7,200.0	5,735.9	5,279.3	5,276.4	34.3	11.6	5.04	117.6	-26.2	1,863.1	1,847.4	15.75	118.323	
7,300.0	5,735.9	5,273.6	5,271.0	36.1	11.6	4.88	116.3	-25.4	1,960.1	1,943.7	16.44	119.194	
7,400.0	5,735.9	5,250.0	5,248.1	37.9	11.6	4.28	111.2	-22.2	2,057.7	2,040.6	17.07	120.512	
7,500.0	5,735.9	5,250.0	5,248.1	39.7	11.6	4.28	111.2	-22.2	2,155.0	2,137.2	17.80	121.052	
7,600.0	5,735.9	5,250.0	5,248.1	41.5	11.6	4.28	111.2	-22.2	2,252.5	2,234.0	18.53	121.551	
7,700.0	5,735.9	5,250.0	5,248.1	43.4	11.6	4.28	111.2	-22.2	2,350.2	2,330.9	19.26	122.014	
7,800.0	5,735.9	5,250.0	5,248.1	45.2	11.6	4.28	111.2	-22.2	2,448.1	2,428.1	19.99	122.444	
7,900.0	5,735.9	5,250.0	5,248.1	47.1	11.6	4.28	111.2	-22.2	2,546.2	2,525.4	20.73	122.845	
8,000.0	5,735.9	5,250.0	5,248.1	48.9	11.6	4.28	111.2	-22.2	2,644.4	2,622.9	21.46	123.220	
8,100.0	5,735.9	5,250.0	5,248.1	50.8	11.6	4.28	111.2	-22.2	2,742.7	2,720.5	22.20	123.571	
8,200.0	5,735.9	5,250.0	5,248.1	52.6	11.6	4.28	111.2	-22.2	2,841.2	2,818.2	22.93	123.900	
8,300.0	5,735.9	5,250.0	5,248.1	54.5	11.6	4.28	111.2	-22.2	2,939.7	2,916.1	23.67	124.209	
8,400.0	5,735.9	5,250.0	5,248.1	56.4	11.6	4.28	111.2	-22.2	3,038.4	3,014.0	24.40	124.501	
8,500.0	5,735.9	5,228.5	5,227.0	58.2	11.5	3.84	107.4	-19.8	3,136.7	3,111.6	25.05	125.217	
8,600.0	5,735.9	5,225.9	5,224.6	60.1	11.5	3.79	107.0	-19.6	3,235.4	3,209.6	25.78	125.517	
8,700.0	5,735.9	5,223.5	5,222.2	62.0	11.5	3.75	106.6	-19.3	3,334.1	3,307.6	26.50	125.799	
8,800.0	5,735.9	5,200.0	5,199.0	63.9	11.4	3.38	103.5	-17.4	3,433.4	3,406.2	27.17	126.370	
8,900.0	5,735.9	5,200.0	5,199.0	65.8	11.4	3.38	103.5	-17.4	3,532.2	3,504.3	27.90	126.582	
9,000.0	5,735.9	5,200.0	5,199.0	67.7	11.4	3.38	103.5	-17.4	3,631.1	3,602.4	28.64	126.784	
9,100.0	5,735.9	5,200.0	5,199.0	69.5	11.4	3.38	103.5	-17.4	3,730.0	3,700.6	29.38	126.977	
9,200.0	5,735.9	5,200.0	5,199.0	71.4	11.4	3.38	103.5	-17.4	3,829.0	3,798.9	30.11	127.161	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
9,300.0	5,735.9	5,200.0	5,199.0	73.3	11.4	3.38	103.5	-17.4	3,928.0	3,897.2	30.85	127.337	
9,400.0	5,735.9	5,200.0	5,199.0	75.2	11.4	3.38	103.5	-17.4	4,027.1	3,995.5	31.58	127.505	
9,500.0	5,735.9	5,200.0	5,199.0	77.1	11.4	3.38	103.5	-17.4	4,126.2	4,093.9	32.32	127.666	
9,600.0	5,735.9	5,200.0	5,199.0	79.0	11.4	3.38	103.5	-17.4	4,225.4	4,192.3	33.06	127.820	
9,700.0	5,735.9	5,200.0	5,199.0	80.9	11.4	3.38	103.5	-17.4	4,324.6	4,290.8	33.79	127.968	
9,800.0	5,735.9	5,200.0	5,199.0	82.8	11.4	3.38	103.5	-17.4	4,423.8	4,389.3	34.53	128.110	
9,900.0	5,735.9	5,200.0	5,199.0	84.7	11.4	3.38	103.5	-17.4	4,523.1	4,487.8	35.27	128.247	
10,000.0	5,735.9	5,200.0	5,199.0	86.6	11.4	3.38	103.5	-17.4	4,622.4	4,586.4	36.01	128.378	
10,100.0	5,736.0	5,200.0	5,199.0	88.5	11.4	3.38	103.5	-17.4	4,721.7	4,685.0	36.74	128.504	
10,200.0	5,736.0	5,200.0	5,199.0	90.4	11.4	3.38	103.5	-17.4	4,821.1	4,783.6	37.48	128.626	
10,300.0	5,736.0	5,200.0	5,199.0	92.3	11.4	3.38	103.5	-17.4	4,920.5	4,882.3	38.22	128.743	
10,400.0	5,736.0	5,200.0	5,199.0	94.2	11.4	3.38	103.5	-17.4	5,019.9	4,980.9	38.96	128.856	
10,500.0	5,736.0	5,200.0	5,199.0	96.1	11.4	3.38	103.5	-17.4	5,119.3	5,079.6	39.70	128.965	
10,600.0	5,736.0	5,200.0	5,199.0	98.0	11.4	3.38	103.5	-17.4	5,218.8	5,178.4	40.43	129.070	
10,700.0	5,736.0	5,200.0	5,199.0	99.9	11.4	3.38	103.5	-17.4	5,318.3	5,277.1	41.17	129.172	
10,800.0	5,736.0	5,200.0	5,199.0	101.8	11.4	3.38	103.5	-17.4	5,417.8	5,375.9	41.91	129.270	
10,900.0	5,736.0	5,200.0	5,199.0	103.7	11.4	3.38	103.5	-17.4	5,517.3	5,474.6	42.65	129.365	
11,000.0	5,736.0	5,200.0	5,199.0	105.7	11.4	3.38	103.5	-17.4	5,616.8	5,573.4	43.39	129.457	
11,100.0	5,736.0	5,200.0	5,199.0	107.6	11.4	3.38	103.5	-17.4	5,716.4	5,672.2	44.13	129.546	
11,200.0	5,736.0	5,200.0	5,199.0	109.5	11.4	3.38	103.5	-17.4	5,815.9	5,771.1	44.86	129.632	
11,300.0	5,736.0	5,200.0	5,199.0	111.4	11.4	3.38	103.5	-17.4	5,915.5	5,869.9	45.60	129.716	
11,400.0	5,736.0	5,200.0	5,199.0	113.3	11.4	3.38	103.5	-17.4	6,015.1	5,968.8	46.34	129.797	
11,500.0	5,736.0	5,200.0	5,199.0	115.2	11.4	3.38	103.5	-17.4	6,114.7	6,067.6	47.08	129.875	
11,600.0	5,736.0	5,200.0	5,199.0	117.1	11.4	3.38	103.5	-17.4	6,214.3	6,166.5	47.82	129.951	
11,700.0	5,736.0	5,200.0	5,199.0	119.0	11.4	3.38	103.5	-17.4	6,314.0	6,265.4	48.56	130.025	
11,800.0	5,736.0	5,200.0	5,199.0	120.9	11.4	3.38	103.5	-17.4	6,413.6	6,364.3	49.30	130.097	
11,900.0	5,736.0	5,200.0	5,199.0	122.8	11.4	3.38	103.5	-17.4	6,513.3	6,463.2	50.04	130.167	
12,000.0	5,736.0	5,200.0	5,199.0	124.7	11.4	3.38	103.5	-17.4	6,612.9	6,562.1	50.78	130.235	
12,100.0	5,736.0	5,200.0	5,199.0	126.7	11.4	3.38	103.5	-17.4	6,712.6	6,661.1	51.52	130.301	
12,200.0	5,736.0	5,200.0	5,199.0	128.6	11.4	3.38	103.5	-17.4	6,812.3	6,760.0	52.26	130.365	
12,300.0	5,736.0	5,200.0	5,199.0	130.5	11.4	3.38	103.5	-17.4	6,912.0	6,859.0	52.99	130.428	
12,400.0	5,736.0	5,200.0	5,199.0	132.4	11.4	3.38	103.5	-17.4	7,011.7	6,957.9	53.73	130.489	
12,500.0	5,736.0	5,200.0	5,199.0	134.3	11.4	3.38	103.5	-17.4	7,111.4	7,056.9	54.47	130.548	
12,559.5	5,736.0	5,200.0	5,199.0	135.4	11.4	3.38	103.5	-17.4	7,170.7	7,115.8	54.91	130.582	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	-89.99	0.0	-33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-33.2	33.2	33.0	0.24	138.661	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-33.2	33.2	32.6	0.64	51.997	
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-33.2	33.2	32.2	1.04	31.998	CC, ES
400.0	400.0	398.9	398.9	0.8	0.7	-89.03	0.6	-34.8	34.8	33.4	1.44	24.270	
500.0	500.0	497.5	497.4	1.0	0.9	-86.63	2.3	-39.6	39.8	37.9	1.83	21.688	
600.0	600.0	597.3	596.9	1.2	1.1	-84.17	4.7	-46.2	46.5	44.3	2.23	20.820	
700.0	700.0	697.0	696.4	1.4	1.3	-82.34	7.1	-52.7	53.3	50.7	2.63	20.242	
800.0	800.0	796.8	795.9	1.7	1.5	-80.92	9.5	-59.2	60.1	57.1	3.03	19.832	
900.0	900.0	896.5	895.4	1.9	1.7	-79.79	11.9	-65.8	67.0	63.6	3.43	19.527	
1,000.0	1,000.0	996.3	994.9	2.1	1.9	-78.87	14.2	-72.3	73.9	70.0	3.83	19.291	
1,100.0	1,100.0	1,096.0	1,094.4	2.3	2.1	-78.10	16.6	-78.8	80.8	76.5	4.23	19.104	
1,200.0	1,200.0	1,195.8	1,193.9	2.6	2.3	-77.46	19.0	-85.4	87.7	83.1	4.63	18.952	
1,300.0	1,300.0	1,295.5	1,293.4	2.8	2.5	-76.91	21.4	-91.9	94.6	89.6	5.03	18.826	
1,400.0	1,400.0	1,395.3	1,393.0	3.0	2.7	-76.44	23.8	-98.5	101.5	96.1	5.42	18.720	
1,500.0	1,500.0	1,495.1	1,492.5	3.2	2.9	-76.03	26.1	-105.0	108.5	102.6	5.82	18.630	
1,600.0	1,600.0	1,594.8	1,592.0	3.5	3.1	-75.66	28.5	-111.5	115.4	109.2	6.22	18.552	
1,700.0	1,700.0	1,694.6	1,691.5	3.7	3.4	-75.34	30.9	-118.1	122.4	115.7	6.62	18.484	
1,800.0	1,800.0	1,794.3	1,791.0	3.9	3.6	-75.05	33.3	-124.6	129.3	122.3	7.02	18.424	
1,900.0	1,900.0	1,894.1	1,890.5	4.1	3.8	-74.79	35.7	-131.2	136.2	128.8	7.42	18.371	
2,000.0	2,000.0	1,993.8	1,990.0	4.4	4.0	-74.56	38.0	-137.7	143.2	135.4	7.82	18.324	
2,100.0	2,100.0	2,093.6	2,089.6	4.6	4.2	-74.35	40.4	-144.2	150.2	141.9	8.21	18.281	
2,200.0	2,200.0	2,193.4	2,189.1	4.8	4.4	-74.16	42.8	-150.8	157.1	148.5	8.61	18.243	
2,300.0	2,300.0	2,293.1	2,288.6	5.0	4.6	-73.98	45.2	-157.3	164.1	155.1	9.01	18.208	
2,400.0	2,400.0	2,392.9	2,388.1	5.3	4.8	-73.82	47.6	-163.9	171.0	161.6	9.41	18.176	
2,500.0	2,500.0	2,492.6	2,487.6	5.5	5.1	-73.67	49.9	-170.4	178.0	168.2	9.81	18.147	
2,600.0	2,600.0	2,592.4	2,587.1	5.7	5.3	-73.53	52.3	-176.9	185.0	174.7	10.21	18.121	
2,700.0	2,700.0	2,692.1	2,686.6	5.9	5.5	-73.40	54.7	-183.5	191.9	181.3	10.61	18.096	
2,800.0	2,800.0	2,791.9	2,786.1	6.2	5.7	-73.28	57.1	-190.0	198.9	187.9	11.00	18.073	
2,900.0	2,900.0	2,891.7	2,885.7	6.4	5.9	-73.17	59.5	-196.5	205.8	194.4	11.40	18.052	
3,000.0	3,000.0	2,991.4	2,985.2	6.6	6.1	-73.07	61.8	-203.1	212.8	201.0	11.80	18.033	
3,100.0	3,100.0	3,091.2	3,084.7	6.8	6.3	-72.97	64.2	-209.6	219.8	207.6	12.20	18.015	
3,200.0	3,200.0	3,190.9	3,184.2	7.1	6.5	-72.88	66.6	-216.2	226.7	214.1	12.60	17.998	
3,300.0	3,300.0	3,290.7	3,283.7	7.3	6.7	-72.79	69.0	-222.7	233.7	220.7	13.00	17.982	
3,400.0	3,400.0	3,390.4	3,383.2	7.5	7.0	-72.71	71.4	-229.2	240.7	227.3	13.40	17.967	
3,500.0	3,500.0	3,490.2	3,482.7	7.7	7.2	-72.64	73.7	-235.8	247.6	233.9	13.79	17.953	
3,600.0	3,600.0	3,589.9	3,582.3	8.0	7.4	-72.56	76.1	-242.3	254.6	240.4	14.19	17.939	
3,700.0	3,700.0	3,693.7	3,685.8	8.2	7.6	-72.50	78.5	-248.8	261.3	246.7	14.60	17.898	
3,800.0	3,800.0	3,803.7	3,795.7	8.4	7.8	-72.46	79.8	-252.5	264.8	249.8	15.02	17.636	
3,900.0	3,900.0	3,908.0	3,900.0	8.6	7.9	-72.46	79.9	-252.8	265.2	249.7	15.42	17.193	
4,000.0	4,000.0	4,008.0	4,000.0	8.9	8.1	-72.46	79.9	-252.8	265.2	249.3	15.82	16.759	
4,100.0	4,100.0	4,108.0	4,100.0	9.1	8.2	-72.46	79.9	-252.8	265.2	248.9	16.22	16.346	
4,200.0	4,200.0	4,208.0	4,200.0	9.3	8.4	-72.46	79.9	-252.8	265.2	248.5	16.62	15.953	
4,300.0	4,300.0	4,308.0	4,300.0	9.5	8.5	-72.46	79.9	-252.8	265.2	248.1	17.02	15.579	
4,400.0	4,400.0	4,408.0	4,400.0	9.8	8.7	-72.46	79.9	-252.8	265.2	247.7	17.42	15.222	
4,500.0	4,500.0	4,508.0	4,500.0	10.0	8.8	-72.46	79.9	-252.8	265.2	247.3	17.82	14.881	
4,600.0	4,600.0	4,608.0	4,600.0	10.2	9.0	-72.46	79.9	-252.8	265.2	246.9	18.22	14.554	
4,700.0	4,700.0	4,708.0	4,700.0	10.4	9.2	-72.46	79.9	-252.8	265.2	246.5	18.62	14.242	
4,800.0	4,800.0	4,808.0	4,800.0	10.7	9.3	-72.46	79.9	-252.8	265.2	246.1	19.02	13.943	
4,900.0	4,900.0	4,908.0	4,900.0	10.9	9.5	-72.46	79.9	-252.8	265.2	245.7	19.42	13.656	
5,000.0	5,000.0	5,008.0	5,000.0	11.1	9.6	-72.46	79.9	-252.8	265.2	245.3	19.82	13.381	
5,100.0	5,100.0	5,108.0	5,100.0	11.3	9.8	-72.46	79.9	-252.8	265.2	244.9	20.21	13.117	

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,208.0	5,200.0	11.6	9.9	-72.46	79.9	-252.8	265.2	244.5	20.61	12.863	
5,215.0	5,215.0	5,223.0	5,215.0	11.6	10.0	-72.46	79.9	-252.8	265.2	244.5	20.67	12.825	
5,250.0	5,250.0	5,250.0	5,242.0	11.7	10.0	109.28	80.6	-252.8	265.9	245.0	20.86	12.744	SF
5,300.0	5,299.6	5,295.1	5,286.9	11.7	10.1	110.77	84.9	-252.8	269.4	248.3	21.12	12.758	
5,350.0	5,348.5	5,333.8	5,325.0	11.8	10.2	112.90	91.6	-252.8	276.7	255.4	21.36	12.957	
5,400.0	5,396.1	5,368.1	5,358.3	11.9	10.3	115.11	100.0	-252.8	288.7	267.1	21.57	13.381	
5,450.0	5,442.1	5,400.0	5,388.6	12.0	10.4	117.16	109.7	-252.8	306.0	284.2	21.75	14.067	
5,500.0	5,486.0	5,421.4	5,408.7	12.1	10.4	117.59	117.2	-252.8	329.0	307.1	21.90	15.021	
5,550.0	5,527.4	5,440.4	5,426.1	12.2	10.5	117.07	124.6	-252.8	357.5	335.4	22.06	16.205	
5,600.0	5,565.9	5,450.0	5,434.9	12.4	10.5	114.20	128.6	-252.8	390.9	368.6	22.29	17.537	
5,650.0	5,601.2	5,464.6	5,448.1	12.6	10.6	111.15	134.9	-252.8	428.2	405.6	22.61	18.937	
5,700.0	5,632.9	5,471.0	5,453.7	12.8	10.6	105.22	137.8	-252.8	468.7	445.7	23.04	20.346	
5,750.0	5,660.8	5,474.1	5,456.5	13.1	10.6	97.02	139.2	-252.8	511.4	488.0	23.40	21.858	
5,800.0	5,684.5	5,474.5	5,456.8	13.5	10.6	86.73	139.4	-252.8	555.6	532.2	23.39	23.756	
5,850.0	5,704.0	5,472.4	5,455.0	13.9	10.6	75.13	138.5	-252.8	600.6	577.2	23.33	25.742	
5,900.0	5,718.9	5,468.4	5,451.4	14.3	10.6	63.50	136.6	-252.8	645.8	623.3	22.45	28.770	
5,950.0	5,729.2	5,450.0	5,434.9	14.8	10.5	51.34	128.6	-252.8	690.9	670.4	20.56	33.610	
6,000.0	5,734.8	5,450.0	5,434.9	15.4	10.5	43.84	128.6	-252.8	734.9	715.8	19.11	38.448	
6,033.2	5,735.9	5,450.0	5,434.9	15.7	10.5	39.64	128.6	-252.8	763.6	745.4	18.24	41.871	
6,083.3	5,735.9	5,450.0	5,434.9	16.3	10.5	41.59	128.6	-252.8	806.9	787.7	19.14	42.156	
6,100.0	5,735.9	5,450.0	5,434.9	16.5	10.5	41.59	128.6	-252.8	821.4	802.1	19.29	42.590	
6,200.0	5,735.9	5,423.2	5,410.3	17.8	10.4	39.37	117.9	-252.8	908.8	889.3	19.57	46.449	
6,300.0	5,735.9	5,400.0	5,388.6	19.2	10.4	37.57	109.7	-252.8	998.4	978.4	19.98	49.961	
6,400.0	5,735.9	5,400.0	5,388.6	20.7	10.4	37.57	109.7	-252.8	1,089.2	1,068.1	21.02	51.816	
6,500.0	5,735.9	5,400.0	5,388.6	22.3	10.4	37.57	109.7	-252.8	1,181.4	1,159.3	22.10	53.459	
6,600.0	5,735.9	5,379.0	5,368.7	23.9	10.3	36.04	103.1	-252.8	1,274.2	1,251.6	22.64	56.287	
6,700.0	5,735.9	5,370.7	5,360.8	25.6	10.3	35.46	100.7	-252.8	1,368.0	1,344.5	23.53	58.150	
6,800.0	5,735.9	5,350.0	5,340.8	27.3	10.2	34.06	95.3	-252.8	1,462.7	1,438.7	24.08	60.752	
6,900.0	5,735.9	5,350.0	5,340.8	29.0	10.2	34.06	95.3	-252.8	1,557.6	1,532.4	25.20	61.818	
7,000.0	5,735.9	5,350.0	5,340.8	30.7	10.2	34.06	95.3	-252.8	1,653.1	1,626.8	26.33	62.783	
7,100.0	5,735.9	5,350.0	5,340.8	32.5	10.2	34.06	95.3	-252.8	1,749.1	1,721.6	27.48	63.660	
7,200.0	5,735.9	5,350.0	5,340.8	34.3	10.2	34.06	95.3	-252.8	1,845.5	1,816.9	28.63	64.458	
7,300.0	5,735.9	5,350.0	5,340.8	36.1	10.2	34.06	95.3	-252.8	1,942.3	1,912.5	29.79	65.189	
7,400.0	5,735.9	5,350.0	5,340.8	37.9	10.2	34.06	95.3	-252.8	2,039.4	2,008.4	30.97	65.860	
7,500.0	5,735.9	5,326.5	5,317.9	39.7	10.2	32.58	90.2	-252.8	2,136.1	2,104.7	31.34	68.160	
7,600.0	5,735.9	5,322.8	5,314.2	41.5	10.2	32.36	89.4	-252.8	2,233.4	2,201.1	32.36	69.009	
7,700.0	5,735.9	5,300.0	5,291.7	43.4	10.1	31.03	85.6	-252.8	2,331.4	2,298.7	32.74	71.205	
7,800.0	5,735.9	5,300.0	5,291.7	45.2	10.1	31.03	85.6	-252.8	2,429.0	2,395.2	33.87	71.708	
7,900.0	5,735.9	5,300.0	5,291.7	47.1	10.1	31.03	85.6	-252.8	2,526.8	2,491.8	35.01	72.177	
8,000.0	5,735.9	5,300.0	5,291.7	48.9	10.1	31.03	85.6	-252.8	2,624.8	2,588.6	36.15	72.615	
8,100.0	5,735.9	5,300.0	5,291.7	50.8	10.1	31.03	85.6	-252.8	2,722.9	2,685.6	37.29	73.025	
8,200.0	5,735.9	5,300.0	5,291.7	52.6	10.1	31.03	85.6	-252.8	2,821.1	2,782.7	38.43	73.411	
8,300.0	5,735.9	5,300.0	5,291.7	54.5	10.1	31.03	85.6	-252.8	2,919.5	2,879.9	39.57	73.773	
8,400.0	5,735.9	5,300.0	5,291.7	56.4	10.1	31.03	85.6	-252.8	3,017.9	2,977.2	40.72	74.114	
8,500.0	5,735.9	5,300.0	5,291.7	58.2	10.1	31.03	85.6	-252.8	3,116.5	3,074.6	41.87	74.435	
8,600.0	5,735.9	5,300.0	5,291.7	60.1	10.1	31.03	85.6	-252.8	3,215.1	3,172.1	43.02	74.739	
8,700.0	5,735.9	5,300.0	5,291.7	62.0	10.1	31.03	85.6	-252.8	3,313.9	3,269.7	44.17	75.027	
8,800.0	5,735.9	5,300.0	5,291.7	63.9	10.1	31.03	85.6	-252.8	3,412.7	3,367.4	45.32	75.299	
8,900.0	5,735.9	5,300.0	5,291.7	65.8	10.1	31.03	85.6	-252.8	3,511.5	3,465.1	46.48	75.558	
9,000.0	5,735.9	5,300.0	5,291.7	67.7	10.1	31.03	85.6	-252.8	3,610.5	3,562.9	47.63	75.803	
9,100.0	5,735.9	5,300.0	5,291.7	69.5	10.1	31.03	85.6	-252.8	3,709.5	3,660.7	48.79	76.037	
9,200.0	5,735.9	5,300.0	5,291.7	71.4	10.1	31.03	85.6	-252.8	3,808.5	3,758.6	49.94	76.260	

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-3414B
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-3414B	**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
9,300.0	5,735.9	5,300.0	5,291.7	73.3	10.1	31.03	85.6	-252.8	3,907.6	3,856.5	51.10	76.472	
9,400.0	5,735.9	5,300.0	5,291.7	75.2	10.1	31.03	85.6	-252.8	4,006.8	3,954.5	52.26	76.674	
9,500.0	5,735.9	5,300.0	5,291.7	77.1	10.1	31.03	85.6	-252.8	4,105.9	4,052.5	53.42	76.868	
9,600.0	5,735.9	5,300.0	5,291.7	79.0	10.1	31.03	85.6	-252.8	4,205.2	4,150.6	54.57	77.053	
9,700.0	5,735.9	5,300.0	5,291.7	80.9	10.1	31.03	85.6	-252.8	4,304.4	4,248.7	55.73	77.230	
9,800.0	5,735.9	5,300.0	5,291.7	82.8	10.1	31.03	85.6	-252.8	4,403.7	4,346.8	56.90	77.400	
9,900.0	5,735.9	5,277.3	5,269.2	84.7	10.1	29.79	82.7	-252.8	4,502.5	4,445.7	56.79	79.281	
10,000.0	5,735.9	5,276.3	5,268.2	86.6	10.1	29.74	82.6	-252.8	4,601.8	4,543.9	57.87	79.520	
10,100.0	5,736.0	5,275.2	5,267.2	88.5	10.1	29.68	82.5	-252.8	4,701.1	4,642.1	58.95	79.749	
10,200.0	5,736.0	5,274.3	5,266.2	90.4	10.1	29.63	82.4	-252.8	4,800.4	4,740.4	60.03	79.970	
10,300.0	5,736.0	5,273.3	5,265.2	92.3	10.1	29.58	82.3	-252.8	4,899.8	4,838.7	61.11	80.183	
10,400.0	5,736.0	5,250.0	5,242.0	94.2	10.0	28.41	80.6	-252.8	4,999.7	4,938.8	60.93	82.062	
10,500.0	5,736.0	5,250.0	5,242.0	96.1	10.0	28.41	80.6	-252.8	5,099.1	5,037.1	62.04	82.195	
10,600.0	5,736.0	5,250.0	5,242.0	98.0	10.0	28.41	80.6	-252.8	5,198.5	5,135.4	63.15	82.324	
10,700.0	5,736.0	5,250.0	5,242.0	99.9	10.0	28.41	80.6	-252.8	5,298.0	5,233.7	64.26	82.449	
10,800.0	5,736.0	5,250.0	5,242.0	101.8	10.0	28.41	80.6	-252.8	5,397.4	5,332.0	65.37	82.569	
10,900.0	5,736.0	5,250.0	5,242.0	103.7	10.0	28.41	80.6	-252.8	5,496.9	5,430.4	66.48	82.685	
11,000.0	5,736.0	5,250.0	5,242.0	105.7	10.0	28.41	80.6	-252.8	5,596.4	5,528.8	67.59	82.797	
11,100.0	5,736.0	5,250.0	5,242.0	107.6	10.0	28.41	80.6	-252.8	5,695.9	5,627.2	68.70	82.906	
11,200.0	5,736.0	5,250.0	5,242.0	109.5	10.0	28.41	80.6	-252.8	5,795.4	5,725.6	69.81	83.011	
11,300.0	5,736.0	5,250.0	5,242.0	111.4	10.0	28.41	80.6	-252.8	5,894.9	5,824.0	70.93	83.113	
11,400.0	5,736.0	5,250.0	5,242.0	113.3	10.0	28.41	80.6	-252.8	5,994.5	5,922.4	72.04	83.211	
11,500.0	5,736.0	5,250.0	5,242.0	115.2	10.0	28.41	80.6	-252.8	6,094.0	6,020.9	73.15	83.307	
11,600.0	5,736.0	5,250.0	5,242.0	117.1	10.0	28.41	80.6	-252.8	6,193.6	6,119.4	74.26	83.400	
11,700.0	5,736.0	5,250.0	5,242.0	119.0	10.0	28.41	80.6	-252.8	6,293.2	6,217.8	75.38	83.490	
11,800.0	5,736.0	5,250.0	5,242.0	120.9	10.0	28.41	80.6	-252.8	6,392.8	6,316.3	76.49	83.577	
11,900.0	5,736.0	5,250.0	5,242.0	122.8	10.0	28.41	80.6	-252.8	6,492.4	6,414.8	77.60	83.662	
12,000.0	5,736.0	5,250.0	5,242.0	124.7	10.0	28.41	80.6	-252.8	6,592.1	6,513.4	78.72	83.745	
12,100.0	5,736.0	5,250.0	5,242.0	126.7	10.0	28.41	80.6	-252.8	6,691.7	6,611.9	79.83	83.825	
12,200.0	5,736.0	5,250.0	5,242.0	128.6	10.0	28.41	80.6	-252.8	6,791.4	6,710.4	80.94	83.903	
12,300.0	5,736.0	5,250.0	5,242.0	130.5	10.0	28.41	80.6	-252.8	6,891.0	6,809.0	82.06	83.979	
12,400.0	5,736.0	5,250.0	5,242.0	132.4	10.0	28.41	80.6	-252.8	6,990.7	6,907.5	83.17	84.052	
12,500.0	5,736.0	5,250.0	5,242.0	134.3	10.0	28.41	80.6	-252.8	7,090.4	7,006.1	84.28	84.124	
12,559.5	5,736.0	5,250.0	5,242.0	135.4	10.0	28.41	80.6	-252.8	7,149.7	7,064.8	84.95	84.166	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
0.0	0.0	0.0	0.0	0.0	0.0	41.54	74.7	66.2	99.8				
100.0	100.0	100.0	100.0	0.1	0.1	41.54	74.7	66.2	99.8	99.5	0.24	416.425	
200.0	200.0	200.0	200.0	0.3	0.3	41.54	74.7	66.2	99.8	99.1	0.64	156.158	
300.0	300.0	300.0	300.0	0.5	0.5	41.54	74.7	66.2	99.8	98.7	1.04	96.097	
400.0	400.0	400.0	400.0	0.8	0.7	41.54	74.7	66.2	99.8	98.3	1.44	69.403	
500.0	500.0	500.0	500.0	1.0	0.8	41.54	74.7	66.2	99.8	97.9	1.84	54.315	
600.0	600.0	600.0	600.0	1.2	1.0	41.54	74.7	66.2	99.8	97.5	2.24	44.616	
700.0	700.0	700.0	700.0	1.4	1.2	41.54	74.7	66.2	99.8	97.1	2.64	37.856	
800.0	800.0	800.0	800.0	1.7	1.4	41.54	74.7	66.2	99.8	96.7	3.03	32.875	
900.0	900.0	900.0	900.0	1.9	1.5	41.54	74.7	66.2	99.8	96.3	3.43	29.052	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	1.7	41.54	74.7	66.2	99.8	95.9	3.83	26.026	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	1.9	41.54	74.7	66.2	99.8	95.5	4.23	23.571	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.1	41.54	74.7	66.2	99.8	95.1	4.63	21.539	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.2	41.54	74.7	66.2	99.8	94.7	5.03	19.829	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	2.4	41.54	74.7	66.2	99.8	94.3	5.43	18.371	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	2.6	41.54	74.7	66.2	99.8	93.9	5.83	17.113	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	2.8	41.54	74.7	66.2	99.8	93.5	6.23	16.016	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	2.9	41.54	74.7	66.2	99.8	93.1	6.63	15.051	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.1	41.54	74.7	66.2	99.8	92.7	7.03	14.196	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	3.3	41.54	74.7	66.2	99.8	92.3	7.43	13.433	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	3.5	41.54	74.7	66.2	99.8	91.9	7.83	12.747	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	3.6	41.54	74.7	66.2	99.8	91.5	8.23	12.129	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	3.8	41.54	74.7	66.2	99.8	91.1	8.62	11.567	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	4.0	41.54	74.7	66.2	99.8	90.7	9.02	11.055	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	4.2	41.54	74.7	66.2	99.8	90.3	9.42	10.587	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	4.3	41.54	74.7	66.2	99.8	89.9	9.82	10.157	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	4.5	41.54	74.7	66.2	99.8	89.5	10.22	9.760	
2,700.0	2,700.0	2,700.0	2,700.0	5.9	4.7	41.54	74.7	66.2	99.8	89.1	10.62	9.393	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	4.9	41.54	74.7	66.2	99.8	88.7	11.02	9.053	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	5.0	41.54	74.7	66.2	99.8	88.3	11.42	8.736	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	5.2	41.54	74.7	66.2	99.8	87.9	11.82	8.441	
3,100.0	3,100.0	3,100.0	3,100.0	6.8	5.4	41.54	74.7	66.2	99.8	87.5	12.22	8.165	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	5.6	41.54	74.7	66.2	99.8	87.1	12.62	7.907	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	5.7	41.54	74.7	66.2	99.8	86.7	13.02	7.664	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	5.9	41.54	74.7	66.2	99.8	86.3	13.42	7.436	
3,500.0	3,500.0	3,500.0	3,500.0	7.7	6.1	41.54	74.7	66.2	99.8	85.9	13.82	7.221	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	6.3	41.54	74.7	66.2	99.8	85.5	14.22	7.018	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	6.4	41.54	74.7	66.2	99.8	85.2	14.61	6.827	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	6.6	41.54	74.7	66.2	99.8	84.8	15.01	6.645	
3,900.0	3,900.0	3,900.0	3,900.0	8.6	6.8	41.54	74.7	66.2	99.8	84.4	15.41	6.473	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	7.0	41.54	74.7	66.2	99.8	84.0	15.81	6.309	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	7.1	41.54	74.7	66.2	99.8	83.6	16.21	6.154	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	7.3	41.54	74.7	66.2	99.8	83.2	16.61	6.006	
4,300.0	4,300.0	4,300.0	4,300.0	9.5	7.5	41.54	74.7	66.2	99.8	82.8	17.01	5.865	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	7.7	41.54	74.7	66.2	99.8	82.4	17.41	5.731	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	7.8	41.54	74.7	66.2	99.8	82.0	17.81	5.602	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	8.0	41.54	74.7	66.2	99.8	81.6	18.21	5.479	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	8.2	41.54	74.7	66.2	99.8	81.2	18.61	5.362	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	8.3	41.54	74.7	66.2	99.8	80.8	19.01	5.249	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	8.5	41.54	74.7	66.2	99.8	80.4	19.41	5.141	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	8.7	41.54	74.7	66.2	99.8	80.0	19.81	5.037	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	8.9	41.54	74.7	66.2	99.8	79.6	20.20	4.938	CC, ES, SF

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,190.5	5,190.4	11.6	9.0	40.19	78.4	66.2	103.1	82.5	20.59	5.007	
5,215.0	5,215.0	5,200.0	5,199.8	11.6	9.0	39.77	79.6	66.3	104.7	84.1	20.64	5.073	
5,250.0	5,250.0	5,232.8	5,232.1	11.7	9.1	-140.49	85.2	66.4	110.3	89.4	20.93	5.272	
5,300.0	5,299.6	5,272.3	5,270.4	11.7	9.2	-143.58	94.5	66.6	124.7	103.4	21.25	5.866	
5,350.0	5,348.5	5,307.5	5,304.0	11.8	9.3	-146.59	105.3	66.8	146.4	124.9	21.46	6.821	
5,400.0	5,396.1	5,337.8	5,332.2	11.9	9.3	-148.79	116.3	67.0	175.0	153.4	21.53	8.126	
5,450.0	5,442.1	5,362.8	5,355.0	12.0	9.4	-149.81	126.7	67.3	209.5	188.0	21.48	9.755	
5,500.0	5,486.0	5,382.7	5,372.7	12.1	9.5	-149.46	135.7	67.4	248.9	227.5	21.33	11.669	
5,550.0	5,527.4	5,400.0	5,387.8	12.2	9.5	-147.81	144.0	67.6	291.9	270.8	21.14	13.809	
5,600.0	5,565.9	5,400.0	5,387.8	12.4	9.5	-140.18	144.0	67.6	337.9	316.6	21.23	15.918	
5,650.0	5,601.2	5,415.6	5,401.3	12.6	9.6	-133.28	152.0	67.8	385.3	363.8	21.51	17.918	
5,700.0	5,632.9	5,419.4	5,404.4	12.8	9.6	-114.57	154.0	67.8	434.1	411.6	22.54	19.259	
5,750.0	5,660.8	5,420.2	5,405.1	13.1	9.6	-82.26	154.4	67.8	483.5	460.9	22.56	21.429	
5,800.0	5,684.5	5,418.6	5,403.8	13.5	9.6	-50.35	153.6	67.8	532.9	513.3	19.56	27.247	
5,850.0	5,704.0	5,414.9	5,400.6	13.9	9.6	-31.82	151.6	67.8	581.8	565.9	15.95	36.477	
5,900.0	5,718.9	5,400.0	5,387.8	14.3	9.5	-20.99	144.0	67.6	630.1	616.8	13.31	47.359	
5,950.0	5,729.2	5,400.0	5,387.8	14.8	9.5	-16.25	144.0	67.6	677.0	665.1	11.95	56.674	
6,000.0	5,734.8	5,400.0	5,387.8	15.4	9.5	-13.12	144.0	67.6	722.7	711.6	11.10	65.128	
6,033.2	5,735.9	5,400.0	5,387.8	15.7	9.5	-11.59	144.0	67.6	752.3	741.5	10.80	69.671	
6,083.3	5,735.9	5,378.1	5,368.6	16.3	9.4	-8.22	133.5	67.4	796.1	785.6	10.48	75.977	
6,100.0	5,735.9	5,375.1	5,366.0	16.5	9.4	-8.16	132.1	67.4	810.9	800.3	10.56	76.789	
6,200.0	5,735.9	5,350.0	5,343.3	17.8	9.4	-7.66	121.2	67.1	900.5	889.4	11.06	81.452	
6,300.0	5,735.9	5,350.0	5,343.3	19.2	9.4	-7.66	121.2	67.1	991.3	979.6	11.69	84.774	
6,400.0	5,735.9	5,330.6	5,325.5	20.7	9.3	-7.31	113.5	67.0	1,083.2	1,070.9	12.28	88.192	
6,500.0	5,735.9	5,318.9	5,314.7	22.3	9.3	-7.11	109.2	66.9	1,176.0	1,163.1	12.92	91.018	
6,600.0	5,735.9	5,300.0	5,296.9	23.9	9.2	-6.81	102.8	66.8	1,269.7	1,256.2	13.55	93.719	
6,700.0	5,735.9	5,300.0	5,296.9	25.6	9.2	-6.81	102.8	66.8	1,363.9	1,349.7	14.25	95.685	
6,800.0	5,735.9	5,300.0	5,296.9	27.3	9.2	-6.81	102.8	66.8	1,458.9	1,443.9	14.97	97.460	
6,900.0	5,735.9	5,300.0	5,296.9	29.0	9.2	-6.81	102.8	66.8	1,554.5	1,538.8	15.69	99.069	
7,000.0	5,735.9	5,275.9	5,273.9	30.7	9.2	-6.46	95.5	66.6	1,649.9	1,633.5	16.33	101.031	
7,100.0	5,735.9	5,269.5	5,267.8	32.5	9.2	-6.37	93.7	66.6	1,746.0	1,728.9	17.04	102.482	
7,200.0	5,735.9	5,250.0	5,248.9	34.3	9.1	-6.11	88.9	66.5	1,842.7	1,825.0	17.70	104.090	
7,300.0	5,735.9	5,250.0	5,248.9	36.1	9.1	-6.11	88.9	66.5	1,939.2	1,920.8	18.44	105.186	
7,400.0	5,735.9	5,250.0	5,248.9	37.9	9.1	-6.11	88.9	66.5	2,036.2	2,017.0	19.17	106.201	
7,500.0	5,735.9	5,250.0	5,248.9	39.7	9.1	-6.11	88.9	66.5	2,133.4	2,113.4	19.91	107.143	
7,600.0	5,735.9	5,250.0	5,248.9	41.5	9.1	-6.11	88.9	66.5	2,230.8	2,210.2	20.65	108.020	
7,700.0	5,735.9	5,250.0	5,248.9	43.4	9.1	-6.11	88.9	66.5	2,328.5	2,307.1	21.39	108.838	
7,800.0	5,735.9	5,250.0	5,248.9	45.2	9.1	-6.11	88.9	66.5	2,426.3	2,404.2	22.14	109.604	
7,900.0	5,735.9	5,250.0	5,248.9	47.1	9.1	-6.11	88.9	66.5	2,524.3	2,501.5	22.88	110.320	
8,000.0	5,735.9	5,250.0	5,248.9	48.9	9.1	-6.11	88.9	66.5	2,622.5	2,598.9	23.63	110.994	
8,100.0	5,735.9	5,226.4	5,225.8	50.8	9.1	-5.82	83.9	66.4	2,720.2	2,695.9	24.28	112.020	
8,200.0	5,735.9	5,223.4	5,222.9	52.6	9.1	-5.79	83.4	66.3	2,818.4	2,793.4	25.02	112.659	
8,300.0	5,735.9	5,200.0	5,199.8	54.5	9.0	-5.53	79.6	66.3	2,917.3	2,891.6	25.68	113.608	
8,400.0	5,735.9	5,200.0	5,199.8	56.4	9.0	-5.53	79.6	66.3	3,015.6	2,989.2	26.42	114.127	
8,500.0	5,735.9	5,200.0	5,199.8	58.2	9.0	-5.53	79.6	66.3	3,114.1	3,086.9	27.17	114.619	
8,600.0	5,735.9	5,200.0	5,199.8	60.1	9.0	-5.53	79.6	66.3	3,212.6	3,184.7	27.91	115.086	
8,700.0	5,735.9	5,200.0	5,199.8	62.0	9.0	-5.53	79.6	66.3	3,311.2	3,282.6	28.66	115.530	
8,800.0	5,735.9	5,200.0	5,199.8	63.9	9.0	-5.53	79.6	66.3	3,409.9	3,380.5	29.41	115.953	
8,900.0	5,735.9	5,200.0	5,199.8	65.8	9.0	-5.53	79.6	66.3	3,508.7	3,478.6	30.16	116.355	
9,000.0	5,735.9	5,200.0	5,199.8	67.7	9.0	-5.53	79.6	66.3	3,607.6	3,576.7	30.90	116.738	
9,100.0	5,735.9	5,200.0	5,199.8	69.5	9.0	-5.53	79.6	66.3	3,706.5	3,674.8	31.65	117.105	
9,200.0	5,735.9	5,200.0	5,199.8	71.4	9.0	-5.53	79.6	66.3	3,805.4	3,773.1	32.40	117.455	

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-3414B
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-3414B	**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
9,300.0	5,735.9	5,200.0	5,199.8	73.3	9.0	-5.53	79.6	66.3	3,904.5	3,871.3	33.15	117.790	
9,400.0	5,735.9	5,200.0	5,199.8	75.2	9.0	-5.53	79.6	66.3	4,003.5	3,969.6	33.90	118.110	
9,500.0	5,735.9	5,200.0	5,199.8	77.1	9.0	-5.53	79.6	66.3	4,102.6	4,068.0	34.65	118.417	
9,600.0	5,735.9	5,200.0	5,199.8	79.0	9.0	-5.53	79.6	66.3	4,201.8	4,166.4	35.39	118.712	
9,700.0	5,735.9	5,200.0	5,199.8	80.9	9.0	-5.53	79.6	66.3	4,301.0	4,264.9	36.14	118.995	
9,800.0	5,735.9	5,200.0	5,199.8	82.8	9.0	-5.53	79.6	66.3	4,400.2	4,363.3	36.89	119.267	
9,900.0	5,735.9	5,200.0	5,199.8	84.7	9.0	-5.53	79.6	66.3	4,499.5	4,461.8	37.64	119.528	
10,000.0	5,735.9	5,200.0	5,199.8	86.6	9.0	-5.53	79.6	66.3	4,598.8	4,560.4	38.39	119.779	
10,100.0	5,736.0	5,200.0	5,199.8	88.5	9.0	-5.53	79.6	66.3	4,698.1	4,659.0	39.14	120.022	
10,200.0	5,736.0	5,200.0	5,199.8	90.4	9.0	-5.53	79.6	66.3	4,797.5	4,757.6	39.89	120.255	
10,300.0	5,736.0	5,200.0	5,199.8	92.3	9.0	-5.53	79.6	66.3	4,896.9	4,856.2	40.64	120.480	
10,400.0	5,736.0	5,200.0	5,199.8	94.2	9.0	-5.53	79.6	66.3	4,996.3	4,954.9	41.40	120.697	
10,500.0	5,736.0	5,200.0	5,199.8	96.1	9.0	-5.53	79.6	66.3	5,095.7	5,053.5	42.15	120.906	
10,600.0	5,736.0	5,200.0	5,199.8	98.0	9.0	-5.53	79.6	66.3	5,195.1	5,152.2	42.90	121.108	
10,700.0	5,736.0	5,200.0	5,199.8	99.9	9.0	-5.53	79.6	66.3	5,294.6	5,251.0	43.65	121.304	
10,800.0	5,736.0	5,200.0	5,199.8	101.8	9.0	-5.53	79.6	66.3	5,394.1	5,349.7	44.40	121.493	
10,900.0	5,736.0	5,200.0	5,199.8	103.7	9.0	-5.53	79.6	66.3	5,493.6	5,448.5	45.15	121.676	
11,000.0	5,736.0	5,200.0	5,199.8	105.7	9.0	-5.53	79.6	66.3	5,593.1	5,547.2	45.90	121.853	
11,100.0	5,736.0	5,200.0	5,199.8	107.6	9.0	-5.53	79.6	66.3	5,692.7	5,646.0	46.65	122.025	
11,200.0	5,736.0	5,200.0	5,199.8	109.5	9.0	-5.53	79.6	66.3	5,792.2	5,744.8	47.40	122.191	
11,300.0	5,736.0	5,200.0	5,199.8	111.4	9.0	-5.53	79.6	66.3	5,891.8	5,843.7	48.15	122.352	
11,400.0	5,736.0	5,176.8	5,176.7	113.3	9.0	-5.30	76.9	66.2	5,990.8	5,942.1	48.78	122.810	
11,500.0	5,736.0	5,176.1	5,176.0	115.2	9.0	-5.29	76.9	66.2	6,090.4	6,040.9	49.53	122.970	
11,600.0	5,736.0	5,175.3	5,175.3	117.1	9.0	-5.29	76.8	66.2	6,190.0	6,139.7	50.27	123.126	
11,700.0	5,736.0	5,174.7	5,174.6	119.0	9.0	-5.28	76.7	66.2	6,289.6	6,238.6	51.02	123.277	
11,800.0	5,736.0	5,174.0	5,173.9	120.9	9.0	-5.27	76.7	66.2	6,389.2	6,337.4	51.77	123.423	
11,900.0	5,736.0	5,173.3	5,173.3	122.8	9.0	-5.27	76.6	66.2	6,488.8	6,436.3	52.51	123.566	
12,000.0	5,736.0	5,150.0	5,150.0	124.7	9.0	-5.06	75.1	66.2	6,589.0	6,535.8	53.14	123.986	
12,100.0	5,736.0	5,150.0	5,150.0	126.7	9.0	-5.06	75.1	66.2	6,688.6	6,634.7	53.89	124.112	
12,200.0	5,736.0	5,150.0	5,150.0	128.6	9.0	-5.06	75.1	66.2	6,788.2	6,733.5	54.64	124.234	
12,300.0	5,736.0	5,150.0	5,150.0	130.5	9.0	-5.06	75.1	66.2	6,887.8	6,832.4	55.39	124.353	
12,400.0	5,736.0	5,150.0	5,150.0	132.4	9.0	-5.06	75.1	66.2	6,987.4	6,931.3	56.14	124.470	
12,500.0	5,736.0	5,150.0	5,150.0	134.3	9.0	-5.06	75.1	66.2	7,087.1	7,030.2	56.89	124.583	
12,559.5	5,736.0	5,150.0	5,150.0	135.4	9.0	-5.06	75.1	66.2	7,146.4	7,089.1	57.33	124.649	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	90.02	0.0	32.9	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	32.9	32.9	32.7	0.24	137.506	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	32.9	32.9	32.3	0.64	51.564	
300.0	300.0	300.0	300.0	0.5	0.5	90.02	0.0	32.9	32.9	31.9	1.04	31.732	
400.0	400.0	400.0	400.0	0.8	0.7	90.02	0.0	32.9	32.9	31.5	1.44	22.917	
500.0	500.0	500.0	500.0	1.0	0.8	90.02	0.0	32.9	32.9	31.1	1.84	17.935	CC, ES
600.0	600.0	599.2	599.1	1.2	1.0	87.99	1.2	34.2	34.2	32.0	2.24	15.293	
700.0	700.0	698.1	697.9	1.4	1.2	82.72	4.8	37.8	38.1	35.5	2.64	14.463	
800.0	800.0	797.8	797.4	1.7	1.4	77.14	9.7	42.7	43.9	40.8	3.04	14.428	SF
900.0	900.0	897.6	896.9	1.9	1.6	72.88	14.7	47.6	49.9	46.5	3.44	14.498	
1,000.0	1,000.0	997.3	996.4	2.1	1.8	69.55	19.6	52.5	56.2	52.3	3.85	14.613	
1,100.0	1,100.0	1,097.1	1,095.9	2.3	2.0	66.90	24.5	57.5	62.6	58.4	4.25	14.745	
1,200.0	1,200.0	1,196.8	1,195.5	2.6	2.2	64.74	29.4	62.4	69.1	64.5	4.65	14.880	
1,300.0	1,300.0	1,296.6	1,295.0	2.8	2.4	62.96	34.3	67.3	75.7	70.7	5.05	15.010	
1,400.0	1,400.0	1,396.3	1,394.5	3.0	2.6	61.47	39.3	72.2	82.4	77.0	5.44	15.134	
1,500.0	1,500.0	1,496.1	1,494.0	3.2	2.8	60.19	44.2	77.1	89.1	83.3	5.84	15.249	
1,600.0	1,600.0	1,595.9	1,593.5	3.5	3.0	59.10	49.1	82.1	95.9	89.6	6.24	15.357	
1,700.0	1,700.0	1,695.6	1,693.0	3.7	3.2	58.15	54.0	87.0	102.6	96.0	6.64	15.456	
1,800.0	1,800.0	1,795.4	1,792.5	3.9	3.5	57.32	59.0	91.9	109.4	102.4	7.04	15.547	
1,900.0	1,900.0	1,895.1	1,892.1	4.1	3.7	56.59	63.9	96.8	116.3	108.8	7.44	15.632	
2,000.0	2,000.0	1,994.9	1,991.6	4.4	3.9	55.94	68.8	101.7	123.1	115.3	7.84	15.710	
2,100.0	2,100.0	2,094.6	2,091.1	4.6	4.1	55.35	73.7	106.7	130.0	121.7	8.24	15.782	
2,200.0	2,200.0	2,194.4	2,190.6	4.8	4.3	54.83	78.6	111.6	136.8	128.2	8.63	15.849	
2,300.0	2,300.0	2,294.2	2,290.1	5.0	4.5	54.35	83.6	116.5	143.7	134.7	9.03	15.912	
2,400.0	2,400.0	2,393.9	2,389.6	5.3	4.7	53.92	88.5	121.4	150.6	141.2	9.43	15.970	
2,500.0	2,500.0	2,493.7	2,489.1	5.5	4.9	53.53	93.4	126.4	157.5	147.7	9.83	16.024	
2,600.0	2,600.0	2,593.4	2,588.6	5.7	5.1	53.17	98.3	131.3	164.4	154.2	10.23	16.074	
2,700.0	2,700.0	2,693.2	2,688.2	5.9	5.4	52.84	103.2	136.2	171.3	160.7	10.63	16.122	
2,800.0	2,800.0	2,792.9	2,787.7	6.2	5.6	52.53	108.2	141.1	178.2	167.2	11.02	16.166	
2,900.0	2,900.0	2,892.7	2,887.2	6.4	5.8	52.25	113.1	146.0	185.1	173.7	11.42	16.208	
3,000.0	3,000.0	2,992.4	2,986.7	6.6	6.0	51.99	118.0	151.0	192.1	180.2	11.82	16.247	
3,100.0	3,100.0	3,092.2	3,086.2	6.8	6.2	51.74	122.9	155.9	199.0	186.8	12.22	16.284	
3,200.0	3,200.0	3,192.0	3,185.7	7.1	6.4	51.51	127.8	160.8	205.9	193.3	12.62	16.319	
3,300.0	3,300.0	3,291.7	3,285.2	7.3	6.6	51.30	132.8	165.7	212.8	199.8	13.02	16.352	
3,400.0	3,400.0	3,391.5	3,384.8	7.5	6.8	51.10	137.7	170.6	219.8	206.4	13.42	16.383	
3,500.0	3,500.0	3,491.2	3,484.3	7.7	7.0	50.91	142.6	175.6	226.7	212.9	13.81	16.412	
3,600.0	3,600.0	3,591.0	3,583.8	8.0	7.3	50.74	147.5	180.5	233.7	219.4	14.21	16.440	
3,700.0	3,700.0	3,690.7	3,683.3	8.2	7.5	50.57	152.4	185.4	240.6	226.0	14.61	16.467	
3,800.0	3,800.0	3,790.5	3,782.8	8.4	7.7	50.41	157.4	190.3	247.5	232.5	15.01	16.492	
3,900.0	3,900.0	3,890.3	3,882.3	8.6	7.9	50.27	162.3	195.2	254.5	239.1	15.41	16.517	
4,000.0	4,000.0	3,990.0	3,981.8	8.9	8.1	50.13	167.2	200.2	261.4	245.6	15.81	16.540	
4,100.0	4,100.0	4,089.8	4,081.3	9.1	8.3	49.99	172.1	205.1	268.4	252.2	16.21	16.562	
4,200.0	4,200.0	4,189.5	4,180.9	9.3	8.5	49.87	177.0	210.0	275.3	258.7	16.60	16.583	
4,300.0	4,300.0	4,289.3	4,280.4	9.5	8.7	49.75	182.0	214.9	282.3	265.3	17.00	16.603	
4,400.0	4,400.0	4,389.0	4,379.9	9.8	9.0	49.63	186.9	219.8	289.2	271.8	17.40	16.622	
4,500.0	4,500.0	4,488.8	4,479.4	10.0	9.2	49.52	191.8	224.8	296.2	278.4	17.80	16.640	
4,600.0	4,600.0	4,588.6	4,578.9	10.2	9.4	49.42	196.7	229.7	303.1	285.0	18.20	16.658	
4,700.0	4,700.0	4,688.3	4,678.4	10.4	9.6	49.32	201.6	234.6	310.1	291.5	18.60	16.675	
4,800.0	4,800.0	4,788.1	4,777.9	10.7	9.8	49.22	206.6	239.5	317.1	298.1	19.00	16.691	
4,900.0	4,900.0	4,887.8	4,877.5	10.9	10.0	49.13	211.5	244.4	324.0	304.6	19.39	16.707	
5,000.0	5,000.0	4,998.9	4,988.4	11.1	10.2	49.06	215.8	248.7	329.5	309.7	19.81	16.630	
5,100.0	5,100.0	5,110.6	5,100.0	11.3	10.4	49.04	217.0	250.0	331.0	310.8	20.23	16.363	

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,210.6	5,200.0	11.6	10.5	49.04	217.0	250.0	331.0	310.4	20.63	16.046	
5,215.0	5,215.0	5,225.6	5,215.0	11.6	10.6	49.04	217.0	250.0	331.0	310.4	20.69	16.000	
5,250.0	5,250.0	5,250.0	5,239.4	11.7	10.6	-129.53	217.6	250.0	332.4	311.5	20.92	15.888	
5,300.0	5,299.6	5,282.4	5,271.7	11.7	10.7	-129.75	220.1	250.3	339.0	317.8	21.19	15.996	
5,350.0	5,348.5	5,313.5	5,302.5	11.8	10.8	-130.02	224.4	250.9	351.1	329.7	21.39	16.409	
5,400.0	5,396.1	5,350.0	5,338.3	11.9	10.9	-130.65	231.7	251.7	368.9	347.4	21.55	17.120	
5,450.0	5,442.1	5,366.7	5,354.4	12.0	11.0	-129.76	235.9	252.2	391.9	370.2	21.63	18.115	
5,500.0	5,486.0	5,387.9	5,374.7	12.1	11.0	-128.73	241.9	253.0	420.1	398.3	21.71	19.351	
5,550.0	5,527.4	5,400.0	5,386.2	12.2	11.1	-126.16	245.7	253.4	452.9	431.1	21.83	20.745	
5,600.0	5,565.9	5,419.1	5,404.1	12.4	11.2	-123.56	252.3	254.2	489.5	467.5	22.04	22.210	
5,650.0	5,601.2	5,429.5	5,413.8	12.6	11.2	-118.75	256.1	254.7	529.5	507.1	22.44	23.593	
5,700.0	5,632.9	5,436.7	5,420.5	12.8	11.3	-111.93	258.9	255.0	572.0	548.9	23.03	24.831	
5,750.0	5,660.8	5,450.0	5,432.6	13.1	11.3	-104.51	264.2	255.7	616.4	592.7	23.65	26.060	
5,800.0	5,684.5	5,450.0	5,432.6	13.5	11.3	-92.65	264.2	255.7	661.8	637.9	23.97	27.608	
5,850.0	5,704.0	5,450.0	5,432.6	13.9	11.3	-79.53	264.2	255.7	708.0	683.7	24.28	29.159	
5,900.0	5,718.9	5,450.0	5,432.6	14.3	11.3	-66.61	264.2	255.7	754.3	730.8	23.53	32.060	
5,950.0	5,729.2	5,450.0	5,432.6	14.8	11.3	-55.22	264.2	255.7	800.4	778.4	21.97	36.435	
6,000.0	5,734.8	5,431.1	5,415.3	15.4	11.2	-43.87	256.7	254.8	845.3	825.8	19.56	43.227	
6,033.2	5,735.9	5,426.7	5,411.2	15.7	11.2	-38.81	255.1	254.6	874.8	856.4	18.36	47.642	
6,083.3	5,735.9	5,419.9	5,404.9	16.3	11.2	-35.94	252.6	254.3	919.3	901.3	17.96	51.186	
6,100.0	5,735.9	5,417.7	5,402.8	16.5	11.2	-35.76	251.8	254.2	934.3	916.2	18.04	51.795	
6,200.0	5,735.9	5,400.0	5,386.2	17.8	11.1	-34.36	245.7	253.4	1,024.9	1,006.4	18.45	55.536	
6,300.0	5,735.9	5,400.0	5,386.2	19.2	11.1	-34.36	245.7	253.4	1,116.7	1,097.3	19.39	57.587	
6,400.0	5,735.9	5,400.0	5,386.2	20.7	11.1	-34.36	245.7	253.4	1,209.8	1,189.4	20.38	59.361	
6,500.0	5,735.9	5,376.7	5,364.1	22.3	11.0	-32.65	238.6	252.6	1,303.2	1,282.5	20.76	62.779	
6,600.0	5,735.9	5,369.0	5,356.7	23.9	11.0	-32.11	236.5	252.3	1,397.6	1,376.1	21.58	64.772	
6,700.0	5,735.9	5,350.0	5,338.3	25.6	10.9	-30.84	231.7	251.7	1,492.8	1,470.7	22.10	67.555	
6,800.0	5,735.9	5,350.0	5,338.3	27.3	10.9	-30.84	231.7	251.7	1,588.2	1,565.1	23.15	68.618	
6,900.0	5,735.9	5,350.0	5,338.3	29.0	10.9	-30.84	231.7	251.7	1,684.1	1,659.9	24.21	69.566	
7,000.0	5,735.9	5,350.0	5,338.3	30.7	10.9	-30.84	231.7	251.7	1,780.5	1,755.2	25.29	70.415	
7,100.0	5,735.9	5,350.0	5,338.3	32.5	10.9	-30.84	231.7	251.7	1,877.2	1,850.8	26.37	71.180	
7,200.0	5,735.9	5,350.0	5,338.3	34.3	10.9	-30.84	231.7	251.7	1,974.3	1,946.8	27.47	71.872	
7,300.0	5,735.9	5,350.0	5,338.3	36.1	10.9	-30.84	231.7	251.7	2,071.6	2,043.1	28.57	72.501	
7,400.0	5,735.9	5,327.2	5,316.0	37.9	10.8	-29.42	226.8	251.2	2,168.6	2,139.7	28.92	74.989	
7,500.0	5,735.9	5,323.6	5,312.5	39.7	10.8	-29.21	226.1	251.1	2,266.2	2,236.3	29.89	75.820	
7,600.0	5,735.9	5,300.0	5,289.2	41.5	10.7	-27.88	222.3	250.6	2,364.4	2,334.2	30.21	78.271	
7,700.0	5,735.9	5,300.0	5,289.2	43.4	10.7	-27.88	222.3	250.6	2,462.2	2,430.9	31.28	78.724	
7,800.0	5,735.9	5,300.0	5,289.2	45.2	10.7	-27.88	222.3	250.6	2,560.2	2,527.8	32.35	79.144	
7,900.0	5,735.9	5,300.0	5,289.2	47.1	10.7	-27.88	222.3	250.6	2,658.3	2,624.9	33.42	79.535	
8,000.0	5,735.9	5,300.0	5,289.2	48.9	10.7	-27.88	222.3	250.6	2,756.5	2,722.0	34.50	79.899	
8,100.0	5,735.9	5,300.0	5,289.2	50.8	10.7	-27.88	222.3	250.6	2,854.9	2,819.3	35.58	80.239	
8,200.0	5,735.9	5,300.0	5,289.2	52.6	10.7	-27.88	222.3	250.6	2,953.4	2,916.7	36.66	80.557	
8,300.0	5,735.9	5,300.0	5,289.2	54.5	10.7	-27.88	222.3	250.6	3,051.9	3,014.2	37.75	80.856	
8,400.0	5,735.9	5,300.0	5,289.2	56.4	10.7	-27.88	222.3	250.6	3,150.6	3,111.8	38.83	81.137	
8,500.0	5,735.9	5,300.0	5,289.2	58.2	10.7	-27.88	222.3	250.6	3,249.3	3,209.4	39.92	81.401	
8,600.0	5,735.9	5,300.0	5,289.2	60.1	10.7	-27.88	222.3	250.6	3,348.2	3,307.2	41.01	81.651	
8,700.0	5,735.9	5,300.0	5,289.2	62.0	10.7	-27.88	222.3	250.6	3,447.0	3,404.9	42.10	81.886	
8,800.0	5,735.9	5,300.0	5,289.2	63.9	10.7	-27.88	222.3	250.6	3,546.0	3,502.8	43.19	82.109	
8,900.0	5,735.9	5,300.0	5,289.2	65.8	10.7	-27.88	222.3	250.6	3,645.0	3,600.7	44.28	82.321	
9,000.0	5,735.9	5,300.0	5,289.2	67.7	10.7	-27.88	222.3	250.6	3,744.1	3,698.7	45.37	82.521	
9,100.0	5,735.9	5,300.0	5,289.2	69.5	10.7	-27.88	222.3	250.6	3,843.2	3,796.7	46.46	82.712	
9,200.0	5,735.9	5,300.0	5,289.2	71.4	10.7	-27.88	222.3	250.6	3,942.3	3,894.8	47.56	82.894	

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-3414B
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-3414B	**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
9,300.0	5,735.9	5,300.0	5,289.2	73.3	10.7	-27.88	222.3	250.6	4,041.5	3,992.9	48.65	83.067	
9,400.0	5,735.9	5,300.0	5,289.2	75.2	10.7	-27.88	222.3	250.6	4,140.8	4,091.0	49.75	83.232	
9,500.0	5,735.9	5,300.0	5,289.2	77.1	10.7	-27.88	222.3	250.6	4,240.0	4,189.2	50.85	83.389	
9,600.0	5,735.9	5,300.0	5,289.2	79.0	10.7	-27.88	222.3	250.6	4,339.3	4,287.4	51.94	83.540	
9,700.0	5,735.9	5,300.0	5,289.2	80.9	10.7	-27.88	222.3	250.6	4,438.7	4,385.6	53.04	83.684	
9,800.0	5,735.9	5,300.0	5,289.2	82.8	10.7	-27.88	222.3	250.6	4,538.0	4,483.9	54.14	83.822	
9,900.0	5,735.9	5,300.0	5,289.2	84.7	10.7	-27.88	222.3	250.6	4,637.4	4,582.2	55.24	83.954	
10,000.0	5,735.9	5,300.0	5,289.2	86.6	10.7	-27.88	222.3	250.6	4,736.8	4,680.5	56.34	84.081	
10,100.0	5,736.0	5,276.5	5,265.9	88.5	10.7	-26.66	219.5	250.3	4,835.7	4,779.6	56.14	86.143	
10,200.0	5,736.0	5,275.6	5,265.0	90.4	10.7	-26.61	219.4	250.3	4,935.1	4,877.9	57.16	86.336	
10,300.0	5,736.0	5,274.7	5,264.1	92.3	10.7	-26.57	219.3	250.3	5,034.5	4,976.4	58.19	86.523	
10,400.0	5,736.0	5,273.8	5,263.2	94.2	10.7	-26.52	219.2	250.2	5,134.0	5,074.8	59.21	86.703	
10,500.0	5,736.0	5,273.0	5,262.4	96.1	10.7	-26.48	219.2	250.2	5,233.5	5,173.2	60.24	86.877	
10,600.0	5,736.0	5,250.0	5,239.4	98.0	10.6	-25.40	217.6	250.0	5,333.5	5,273.4	60.06	88.810	
10,700.0	5,736.0	5,250.0	5,239.4	99.9	10.6	-25.40	217.6	250.0	5,433.0	5,371.9	61.11	88.909	
10,800.0	5,736.0	5,250.0	5,239.4	101.8	10.6	-25.40	217.6	250.0	5,532.5	5,470.3	62.16	89.005	
10,900.0	5,736.0	5,250.0	5,239.4	103.7	10.6	-25.40	217.6	250.0	5,632.0	5,568.8	63.21	89.098	
11,000.0	5,736.0	5,250.0	5,239.4	105.7	10.6	-25.40	217.6	250.0	5,731.5	5,667.3	64.26	89.188	
11,100.0	5,736.0	5,250.0	5,239.4	107.6	10.6	-25.40	217.6	250.0	5,831.1	5,765.8	65.32	89.275	
11,200.0	5,736.0	5,250.0	5,239.4	109.5	10.6	-25.40	217.6	250.0	5,930.6	5,864.3	66.37	89.359	
11,300.0	5,736.0	5,250.0	5,239.4	111.4	10.6	-25.40	217.6	250.0	6,030.2	5,962.8	67.42	89.441	
11,400.0	5,736.0	5,250.0	5,239.4	113.3	10.6	-25.40	217.6	250.0	6,129.8	6,061.3	68.47	89.520	
11,500.0	5,736.0	5,250.0	5,239.4	115.2	10.6	-25.40	217.6	250.0	6,229.4	6,159.9	69.53	89.596	
11,600.0	5,736.0	5,250.0	5,239.4	117.1	10.6	-25.40	217.6	250.0	6,329.0	6,258.4	70.58	89.671	
11,700.0	5,736.0	5,250.0	5,239.4	119.0	10.6	-25.40	217.6	250.0	6,428.6	6,357.0	71.63	89.743	
11,800.0	5,736.0	5,250.0	5,239.4	120.9	10.6	-25.40	217.6	250.0	6,528.3	6,455.6	72.69	89.812	
11,900.0	5,736.0	5,250.0	5,239.4	122.8	10.6	-25.40	217.6	250.0	6,627.9	6,554.2	73.74	89.880	
12,000.0	5,736.0	5,250.0	5,239.4	124.7	10.6	-25.40	217.6	250.0	6,727.6	6,652.8	74.80	89.946	
12,100.0	5,736.0	5,250.0	5,239.4	126.7	10.6	-25.40	217.6	250.0	6,827.3	6,751.4	75.85	90.010	
12,200.0	5,736.0	5,250.0	5,239.4	128.6	10.6	-25.40	217.6	250.0	6,926.9	6,850.0	76.90	90.073	
12,300.0	5,736.0	5,250.0	5,239.4	130.5	10.6	-25.40	217.6	250.0	7,026.6	6,948.7	77.96	90.133	
12,400.0	5,736.0	5,250.0	5,239.4	132.4	10.6	-25.40	217.6	250.0	7,126.3	7,047.3	79.01	90.192	
12,500.0	5,736.0	5,250.0	5,239.4	134.3	10.6	-25.40	217.6	250.0	7,226.0	7,146.0	80.07	90.250	
12,559.5	5,736.0	5,250.0	5,239.4	135.4	10.6	-25.40	217.6	250.0	7,285.4	7,204.7	80.69	90.283	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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-3413A - 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	-23.98	74.7	-33.2	81.7				
100.0	100.0	100.0	100.0	0.1	0.1	-23.98	74.7	-33.2	81.7	81.6	0.19	435.550	
200.0	200.0	200.0	200.0	0.3	0.3	-23.98	74.7	-33.2	81.7	81.1	0.64	128.284	
300.0	300.0	300.0	300.0	0.5	0.5	-23.98	74.7	-33.2	81.7	80.7	1.09	75.219	
400.0	400.0	400.0	400.0	0.8	0.8	-23.98	74.7	-33.2	81.7	80.2	1.54	53.209	
500.0	500.0	500.0	500.0	1.0	1.0	-23.98	74.7	-33.2	81.7	79.8	1.99	41.164	
600.0	600.0	600.0	600.0	1.2	1.2	-23.98	74.7	-33.2	81.7	79.3	2.44	33.566	
700.0	700.0	700.0	700.0	1.4	1.4	-23.98	74.7	-33.2	81.7	78.9	2.88	28.335	
800.0	800.0	800.0	800.0	1.7	1.7	-23.98	74.7	-33.2	81.7	78.4	3.33	24.515	
900.0	900.0	900.0	900.0	1.9	1.9	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	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	-23.98	74.7	-33.2	81.7	59.1	22.66	3.607	

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-3414B
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-3414B	**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-3413A - 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
5,200.0	5,200.0	5,208.6	5,208.3	11.6	11.5	-27.15	68.8	-35.3	77.8	54.7	23.09	3.368	
5,215.0	5,215.0	5,225.0	5,224.5	11.6	11.6	-28.69	66.2	-36.2	76.1	52.9	23.16	3.284	
5,250.0	5,250.0	5,262.9	5,261.4	11.7	11.6	148.49	58.3	-39.0	72.1	48.8	23.27	3.098	
5,300.0	5,299.6	5,315.8	5,311.8	11.7	11.7	140.50	43.1	-44.4	68.1	44.8	23.31	2.922	
5,343.5	5,342.2	5,360.8	5,353.1	11.8	11.8	132.15	26.5	-50.3	66.9	43.6	23.34	2.866	CC, ES
5,350.0	5,348.5	5,367.5	5,359.1	11.8	11.8	130.82	23.7	-51.3	66.9	43.6	23.35	2.866	
5,400.0	5,396.1	5,417.8	5,403.1	11.9	11.9	120.47	0.7	-59.4	69.1	45.6	23.50	2.942	
5,450.0	5,442.1	5,466.7	5,443.4	12.0	12.1	110.62	-25.5	-68.7	75.0	51.1	23.81	3.148	
5,500.0	5,486.0	5,514.4	5,480.0	12.1	12.2	102.06	-54.4	-78.9	84.0	59.8	24.20	3.469	
5,550.0	5,527.4	5,560.9	5,512.8	12.2	12.4	95.03	-85.4	-89.9	95.6	71.0	24.62	3.884	
5,600.0	5,565.9	5,606.3	5,541.8	12.4	12.6	89.41	-118.2	-101.5	109.2	84.2	25.02	4.366	
5,650.0	5,601.2	5,650.0	5,566.9	12.6	12.9	84.96	-151.9	-113.5	124.3	98.9	25.40	4.895	
5,700.0	5,632.9	5,694.0	5,589.0	12.8	13.2	81.34	-187.7	-126.2	140.5	114.7	25.80	5.447	
5,750.0	5,660.8	5,736.5	5,607.2	13.1	13.5	78.42	-224.0	-139.0	157.5	131.3	26.22	6.006	
5,800.0	5,684.5	5,778.4	5,622.1	13.5	13.9	76.00	-260.8	-152.0	175.0	148.3	26.69	6.556	
5,850.0	5,704.0	5,819.6	5,633.6	13.9	14.3	73.98	-298.2	-165.3	192.8	165.6	27.22	7.083	
5,900.0	5,718.9	5,860.4	5,641.8	14.3	14.7	72.26	-335.8	-178.6	210.7	182.9	27.83	7.573	
5,950.0	5,729.2	5,900.0	5,646.8	14.8	15.1	70.79	-372.8	-191.7	228.7	200.2	28.52	8.020	
6,000.0	5,734.8	5,940.8	5,648.8	15.4	15.6	69.54	-411.3	-205.3	246.5	217.2	29.32	8.406	
6,033.2	5,735.9	5,974.5	5,648.9	15.7	16.0	69.10	-443.1	-216.3	257.8	227.8	30.03	8.588	
6,083.3	5,735.9	6,029.2	5,648.9	16.3	16.6	70.62	-495.1	-233.1	272.9	241.4	31.52	8.659	
6,100.0	5,735.9	6,047.7	5,648.9	16.5	16.8	71.00	-512.9	-238.4	277.5	245.5	31.99	8.673	
6,200.0	5,735.9	6,160.8	5,648.9	17.8	18.2	72.83	-622.2	-267.2	301.8	266.8	34.97	8.630	
6,300.0	5,735.9	6,277.0	5,648.9	19.2	19.8	74.05	-736.2	-290.0	320.6	282.5	38.10	8.415	
6,400.0	5,735.9	6,395.7	5,648.9	20.7	21.5	74.81	-853.8	-306.1	333.7	292.3	41.37	8.067	
6,500.0	5,735.9	6,516.0	5,648.9	22.3	23.2	75.20	-973.7	-315.0	340.8	296.1	44.73	7.619	
6,600.0	5,735.9	6,629.9	5,648.9	23.9	25.0	75.27	-1,087.5	-316.6	342.1	294.1	48.02	7.124	
6,700.0	5,735.9	6,729.9	5,648.9	25.6	26.5	75.27	-1,187.5	-316.6	342.1	291.0	51.16	6.687	
6,800.0	5,735.9	6,829.9	5,648.9	27.3	28.1	75.27	-1,287.5	-316.6	342.1	287.7	54.38	6.292	
6,900.0	5,735.9	6,929.9	5,648.9	29.0	29.7	75.27	-1,387.5	-316.6	342.1	284.4	57.65	5.934	
7,000.0	5,735.9	7,029.9	5,648.9	30.7	31.4	75.27	-1,487.5	-316.6	342.1	281.1	60.98	5.609	
7,100.0	5,735.9	7,129.9	5,648.9	32.5	33.1	75.27	-1,587.5	-316.6	342.1	277.7	64.36	5.315	
7,200.0	5,735.9	7,229.9	5,648.9	34.3	34.8	75.26	-1,687.5	-316.6	342.1	274.3	67.77	5.047	
7,300.0	5,735.9	7,329.9	5,648.9	36.1	36.5	75.26	-1,787.5	-316.6	342.0	270.8	71.22	4.803	
7,400.0	5,735.9	7,429.9	5,648.9	37.9	38.2	75.26	-1,887.5	-316.6	342.0	267.3	74.69	4.579	
7,500.0	5,735.9	7,529.9	5,648.9	39.7	40.0	75.26	-1,987.5	-316.6	342.0	263.8	78.19	4.374	
7,600.0	5,735.9	7,629.9	5,648.9	41.5	41.8	75.26	-2,087.5	-316.6	342.0	260.3	81.71	4.186	
7,700.0	5,735.9	7,729.9	5,648.9	43.4	43.6	75.26	-2,187.5	-316.6	342.0	256.7	85.25	4.012	
7,800.0	5,735.9	7,829.9	5,648.9	45.2	45.4	75.26	-2,287.5	-316.6	342.0	253.2	88.80	3.851	
7,900.0	5,735.9	7,929.9	5,648.9	47.1	47.2	75.26	-2,387.5	-316.5	342.0	249.6	92.37	3.702	
8,000.0	5,735.9	8,029.9	5,648.9	48.9	49.0	75.26	-2,487.5	-316.5	342.0	246.0	95.95	3.564	
8,100.0	5,735.9	8,129.9	5,648.9	50.8	50.8	75.26	-2,587.5	-316.5	341.9	242.4	99.54	3.435	
8,200.0	5,735.9	8,229.9	5,648.9	52.6	52.7	75.26	-2,687.5	-316.5	341.9	238.8	103.15	3.315	
8,300.0	5,735.9	8,329.9	5,648.9	54.5	54.5	75.26	-2,787.5	-316.5	341.9	235.2	106.76	3.203	
8,400.0	5,735.9	8,429.9	5,648.9	56.4	56.4	75.26	-2,887.5	-316.5	341.9	231.5	110.38	3.098	
8,500.0	5,735.9	8,529.9	5,648.9	58.2	58.2	75.26	-2,987.5	-316.5	341.9	227.9	114.01	2.999	
8,600.0	5,735.9	8,629.9	5,648.9	60.1	60.1	75.26	-3,087.5	-316.5	341.9	224.2	117.64	2.906	
8,700.0	5,735.9	8,729.9	5,648.9	62.0	61.9	75.26	-3,187.5	-316.5	341.9	220.6	121.28	2.819	
8,800.0	5,735.9	8,829.9	5,648.9	63.9	63.8	75.26	-3,287.5	-316.5	341.8	216.9	124.92	2.736	
8,900.0	5,735.9	8,929.9	5,648.9	65.8	65.7	75.26	-3,387.5	-316.5	341.8	213.3	128.57	2.659	
9,000.0	5,735.9	9,029.9	5,648.9	67.7	67.5	75.25	-3,487.5	-316.5	341.8	209.6	132.23	2.585	
9,100.0	5,735.9	9,129.9	5,648.9	69.5	69.4	75.25	-3,587.5	-316.5	341.8	205.9	135.89	2.515	

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-3414B
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-3414B	**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-3413A - 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	5,735.9	9,229.9	5,648.9	71.4	71.3	75.25	-3,687.5	-316.5	341.8	202.2	139.55	2.449	
9,300.0	5,735.9	9,329.9	5,648.9	73.3	73.1	75.25	-3,787.5	-316.5	341.8	198.6	143.22	2.386	
9,400.0	5,735.9	9,429.9	5,648.9	75.2	75.0	75.25	-3,887.5	-316.4	341.8	194.9	146.89	2.327	
9,500.0	5,735.9	9,529.9	5,648.9	77.1	76.9	75.25	-3,987.5	-316.4	341.8	191.2	150.56	2.270	
9,600.0	5,735.9	9,629.9	5,648.9	79.0	78.8	75.25	-4,087.5	-316.4	341.7	187.5	154.24	2.216	
9,700.0	5,735.9	9,729.9	5,648.9	80.9	80.7	75.25	-4,187.5	-316.4	341.7	183.8	157.92	2.164	
9,800.0	5,735.9	9,829.9	5,648.9	82.8	82.6	75.25	-4,287.5	-316.4	341.7	180.1	161.60	2.115	
9,900.0	5,735.9	9,929.9	5,648.9	84.7	84.4	75.25	-4,387.5	-316.4	341.7	176.4	165.28	2.067	
10,000.0	5,735.9	10,029.9	5,648.9	86.6	86.3	75.25	-4,487.5	-316.4	341.7	172.7	168.97	2.022	
10,100.0	5,736.0	10,129.9	5,648.9	88.5	88.2	75.25	-4,587.5	-316.4	341.7	169.0	172.66	1.979	
10,200.0	5,736.0	10,229.9	5,649.0	90.4	90.1	75.25	-4,687.5	-316.4	341.7	165.3	176.35	1.937	
10,300.0	5,736.0	10,329.9	5,649.0	92.3	92.0	75.25	-4,787.5	-316.4	341.6	161.6	180.04	1.898	
10,400.0	5,736.0	10,429.9	5,649.0	94.2	93.9	75.25	-4,887.5	-316.4	341.6	157.9	183.73	1.859	
10,500.0	5,736.0	10,529.9	5,649.0	96.1	95.8	75.25	-4,987.5	-316.4	341.6	154.2	187.43	1.823	
10,600.0	5,736.0	10,629.9	5,649.0	98.0	97.7	75.25	-5,087.5	-316.4	341.6	150.5	191.12	1.787	
10,700.0	5,736.0	10,729.9	5,649.0	99.9	99.6	75.24	-5,187.5	-316.4	341.6	146.8	194.82	1.753	
10,800.0	5,736.0	10,829.9	5,649.0	101.8	101.5	75.24	-5,287.5	-316.4	341.6	143.1	198.52	1.721	
10,900.0	5,736.0	10,929.9	5,649.0	103.7	103.4	75.24	-5,387.5	-316.3	341.6	139.4	202.22	1.689	
11,000.0	5,736.0	11,029.9	5,649.0	105.7	105.3	75.24	-5,487.5	-316.3	341.6	135.6	205.92	1.659	
11,100.0	5,736.0	11,129.9	5,649.0	107.6	107.2	75.24	-5,587.5	-316.3	341.5	131.9	209.62	1.629	
11,200.0	5,736.0	11,229.9	5,649.0	109.5	109.1	75.24	-5,687.5	-316.3	341.5	128.2	213.33	1.601	
11,300.0	5,736.0	11,329.9	5,649.0	111.4	111.0	75.24	-5,787.5	-316.3	341.5	124.5	217.03	1.574	
11,400.0	5,736.0	11,429.9	5,649.0	113.3	112.9	75.24	-5,887.5	-316.3	341.5	120.8	220.74	1.547	
11,500.0	5,736.0	11,529.9	5,649.0	115.2	114.8	75.24	-5,987.5	-316.3	341.5	117.0	224.44	1.522	
11,600.0	5,736.0	11,629.9	5,649.0	117.1	116.7	75.24	-6,087.5	-316.3	341.5	113.3	228.15	1.497	Level 3
11,700.0	5,736.0	11,729.9	5,649.0	119.0	118.6	75.24	-6,187.5	-316.3	341.5	109.6	231.86	1.473	Level 3
11,800.0	5,736.0	11,829.9	5,649.0	120.9	120.5	75.24	-6,287.5	-316.3	341.5	105.9	235.57	1.449	Level 3
11,900.0	5,736.0	11,929.9	5,649.0	122.8	122.4	75.24	-6,387.5	-316.3	341.4	102.2	239.28	1.427	Level 3
12,000.0	5,736.0	12,029.9	5,649.0	124.7	124.3	75.24	-6,487.5	-316.3	341.4	98.4	242.99	1.405	Level 3
12,100.0	5,736.0	12,129.9	5,649.0	126.7	126.2	75.24	-6,587.5	-316.3	341.4	94.7	246.70	1.384	Level 3
12,200.0	5,736.0	12,229.9	5,649.0	128.6	128.1	75.24	-6,687.5	-316.3	341.4	91.0	250.41	1.363	Level 3
12,300.0	5,736.0	12,329.9	5,649.0	130.5	130.0	75.24	-6,787.5	-316.2	341.4	87.3	254.12	1.343	Level 3
12,400.0	5,736.0	12,429.9	5,649.0	132.4	132.0	75.24	-6,887.5	-316.2	341.4	83.5	257.83	1.324	Level 3
12,500.0	5,736.0	12,529.9	5,649.0	134.3	133.8	75.23	-6,987.5	-316.2	341.4	79.9	261.45	1.306	Level 3
12,559.5	5,736.0	12,589.4	5,649.0	135.4	134.7	75.23	-7,047.0	-316.2	341.4	77.9	263.45	1.296	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
0.0	0.0	0.0	0.0	0.0	0.0	23.80	74.7	32.9	81.6				
100.0	100.0	100.0	100.0	0.1	0.1	23.80	74.7	32.9	81.6	81.4	0.19	434.894	
200.0	200.0	200.0	200.0	0.3	0.3	23.80	74.7	32.9	81.6	81.0	0.64	128.091	
300.0	300.0	300.0	300.0	0.5	0.5	23.80	74.7	32.9	81.6	80.5	1.09	75.106	
400.0	400.0	400.0	400.0	0.8	0.8	23.80	74.7	32.9	81.6	80.1	1.54	53.129	
500.0	500.0	500.0	500.0	1.0	1.0	23.80	74.7	32.9	81.6	79.6	1.99	41.102	
600.0	600.0	600.0	600.0	1.2	1.2	23.80	74.7	32.9	81.6	79.2	2.44	33.515	
700.0	700.0	700.0	700.0	1.4	1.4	23.80	74.7	32.9	81.6	78.7	2.88	28.293	
800.0	800.0	800.0	800.0	1.7	1.7	23.80	74.7	32.9	81.6	78.3	3.33	24.478	
900.0	900.0	900.0	900.0	1.9	1.9	23.80	74.7	32.9	81.6	77.8	3.78	21.570	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	23.80	74.7	32.9	81.6	77.4	4.23	19.280	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	23.80	74.7	32.9	81.6	76.9	4.68	17.429	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	23.80	74.7	32.9	81.6	76.5	5.13	15.903	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	23.80	74.7	32.9	81.6	76.0	5.58	14.622	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	23.80	74.7	32.9	81.6	75.6	6.03	13.532	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	23.80	74.7	32.9	81.6	75.1	6.48	12.594	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	23.80	74.7	32.9	81.6	74.7	6.93	11.777	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	23.80	74.7	32.9	81.6	74.2	7.38	11.059	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	23.80	74.7	32.9	81.6	73.8	7.83	10.424	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	23.80	74.7	32.9	81.6	73.3	8.28	9.858	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	23.80	74.7	32.9	81.6	72.9	8.73	9.351	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	23.80	74.7	32.9	81.6	72.4	9.18	8.893	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	23.80	74.7	32.9	81.6	72.0	9.63	8.478	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	23.80	74.7	32.9	81.6	71.5	10.08	8.099	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	23.80	74.7	32.9	81.6	71.1	10.53	7.754	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	23.80	74.7	32.9	81.6	70.6	10.98	7.436	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	23.80	74.7	32.9	81.6	70.2	11.43	7.143	
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	23.80	74.7	32.9	81.6	69.7	11.88	6.873	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	23.80	74.7	32.9	81.6	69.3	12.33	6.622	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	23.80	74.7	32.9	81.6	68.8	12.77	6.389	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	23.80	74.7	32.9	81.6	68.4	13.22	6.172	
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	23.80	74.7	32.9	81.6	67.9	13.67	5.969	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	23.80	74.7	32.9	81.6	67.5	14.12	5.779	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	23.80	74.7	32.9	81.6	67.0	14.57	5.601	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	23.80	74.7	32.9	81.6	66.6	15.02	5.433	
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	23.80	74.7	32.9	81.6	66.1	15.47	5.275	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	23.80	74.7	32.9	81.6	65.7	15.92	5.127	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	23.80	74.7	32.9	81.6	65.3	16.37	4.986	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	23.80	74.7	32.9	81.6	64.8	16.82	4.853	
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	23.80	74.7	32.9	81.6	64.4	17.27	4.726	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	23.80	74.7	32.9	81.6	63.9	17.72	4.606	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	23.80	74.7	32.9	81.6	63.5	18.17	4.492	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	23.80	74.7	32.9	81.6	63.0	18.62	4.384	
4,300.0	4,300.0	4,300.0	4,300.0	9.5	9.5	23.80	74.7	32.9	81.6	62.6	19.07	4.281	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	23.80	74.7	32.9	81.6	62.1	19.52	4.182	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	23.80	74.7	32.9	81.6	61.7	19.97	4.088	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	23.80	74.7	32.9	81.6	61.2	20.42	3.998	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	10.4	23.80	74.7	32.9	81.6	60.8	20.87	3.912	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	23.80	74.7	32.9	81.6	60.3	21.32	3.829	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	23.80	74.7	32.9	81.6	59.9	21.77	3.750	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	23.80	74.7	32.9	81.6	59.4	22.21	3.674	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	11.3	23.80	74.7	32.9	81.6	59.0	22.66	3.601	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
5,200.0	5,200.0	5,208.3	5,208.0	11.6	11.5	27.04	68.9	35.2	77.8	54.7	23.09	3.368	
5,215.0	5,215.0	5,224.7	5,224.1	11.6	11.6	28.61	66.3	36.2	76.1	53.0	23.16	3.287	
5,250.0	5,250.0	5,262.4	5,260.9	11.7	11.6	-145.54	58.6	39.2	72.3	49.0	23.28	3.106	
5,300.0	5,299.6	5,315.2	5,311.2	11.7	11.7	-137.65	43.6	45.0	68.6	45.2	23.34	2.938	
5,341.7	5,340.4	5,358.3	5,350.9	11.8	11.8	-129.86	28.0	51.1	67.5	44.1	23.39	2.885	CC, ES
5,350.0	5,348.5	5,366.8	5,358.5	11.8	11.8	-128.22	24.6	52.4	67.5	44.1	23.41	2.885	
5,400.0	5,396.1	5,417.0	5,402.4	11.9	11.9	-118.22	1.8	61.3	69.8	46.2	23.60	2.956	
5,450.0	5,442.1	5,466.0	5,442.8	12.0	12.1	-108.71	-24.0	71.3	75.4	51.5	23.93	3.151	
5,500.0	5,486.0	5,513.7	5,479.4	12.1	12.3	-100.42	-52.5	82.4	84.0	59.7	24.33	3.455	
5,550.0	5,527.4	5,560.3	5,512.4	12.2	12.5	-93.59	-83.1	94.3	95.1	70.4	24.74	3.846	
5,600.0	5,565.9	5,605.8	5,541.6	12.4	12.7	-88.10	-115.7	107.0	108.1	83.0	25.13	4.303	
5,650.0	5,601.2	5,650.0	5,566.9	12.6	13.0	-83.74	-149.4	120.1	122.5	97.0	25.50	4.804	
5,700.0	5,632.9	5,693.9	5,589.0	12.8	13.3	-80.21	-184.8	133.8	138.0	112.1	25.90	5.327	
5,750.0	5,660.8	5,736.7	5,607.3	13.1	13.7	-77.36	-220.8	147.8	154.1	127.8	26.32	5.856	
5,800.0	5,684.5	5,778.9	5,622.2	13.5	14.1	-75.02	-257.5	162.1	170.7	143.9	26.79	6.374	
5,850.0	5,704.0	5,820.4	5,633.8	13.9	14.5	-73.07	-294.7	176.6	187.6	160.3	27.33	6.867	
5,900.0	5,718.9	5,861.5	5,642.0	14.3	15.0	-71.43	-332.2	191.2	204.7	176.7	27.95	7.322	
5,950.0	5,729.2	5,900.0	5,646.8	14.8	15.4	-70.01	-367.8	205.0	221.7	193.1	28.65	7.740	
6,000.0	5,734.8	5,942.6	5,648.9	15.4	16.0	-68.87	-407.4	220.4	238.6	209.1	29.51	8.084	
6,033.2	5,735.9	5,977.0	5,648.9	15.7	16.4	-68.52	-439.6	232.7	249.2	219.0	30.28	8.231	
6,083.3	5,735.9	6,031.3	5,648.9	16.3	17.1	-69.80	-490.8	250.8	264.4	232.7	31.69	8.344	
6,100.0	5,735.9	6,049.6	5,648.9	16.5	17.4	-70.25	-508.1	256.6	269.4	237.2	32.19	8.369	
6,200.0	5,735.9	6,161.2	5,648.9	17.8	18.9	-72.38	-615.1	288.2	296.4	261.1	35.34	8.387	
6,300.0	5,735.9	6,276.4	5,648.9	19.2	20.6	-73.83	-727.3	314.3	318.1	279.5	38.64	8.233	
6,400.0	5,735.9	6,394.4	5,648.9	20.7	22.3	-74.77	-843.7	333.9	334.1	292.1	42.06	7.944	
6,500.0	5,735.9	6,514.5	5,648.9	22.3	24.2	-75.32	-963.1	346.5	344.3	298.7	45.57	7.555	
6,600.0	5,735.9	6,635.7	5,648.9	23.9	26.1	-75.53	-1,084.2	351.5	348.3	299.2	49.10	7.094	
6,700.0	5,735.9	6,739.0	5,648.9	25.6	27.7	-75.54	-1,187.5	351.6	348.4	296.0	52.33	6.658	
6,800.0	5,735.9	6,839.0	5,648.9	27.3	29.3	-75.54	-1,287.5	351.6	348.4	292.8	55.55	6.271	
6,900.0	5,735.9	6,939.0	5,648.9	29.0	30.9	-75.54	-1,387.5	351.6	348.4	289.5	58.84	5.921	
7,000.0	5,735.9	7,039.0	5,648.9	30.7	32.6	-75.54	-1,487.5	351.6	348.4	286.2	62.18	5.603	
7,100.0	5,735.9	7,139.0	5,648.9	32.5	34.3	-75.54	-1,587.5	351.6	348.4	282.8	65.57	5.314	
7,200.0	5,735.9	7,239.0	5,648.9	34.3	36.0	-75.54	-1,687.5	351.6	348.4	279.4	68.99	5.050	
7,300.0	5,735.9	7,339.0	5,648.9	36.1	37.7	-75.54	-1,787.5	351.6	348.4	276.0	72.44	4.809	
7,400.0	5,735.9	7,439.0	5,648.9	37.9	39.4	-75.54	-1,887.5	351.6	348.4	272.5	75.92	4.589	
7,500.0	5,735.9	7,539.0	5,648.9	39.7	41.2	-75.54	-1,987.5	351.6	348.4	269.0	79.43	4.387	
7,600.0	5,735.9	7,639.0	5,648.9	41.5	43.0	-75.54	-2,087.5	351.6	348.4	265.5	82.95	4.200	
7,700.0	5,735.9	7,739.0	5,648.9	43.4	44.8	-75.54	-2,187.5	351.6	348.4	261.9	86.49	4.028	
7,800.0	5,735.9	7,839.0	5,648.9	45.2	46.5	-75.54	-2,287.5	351.6	348.4	258.4	90.05	3.869	
7,900.0	5,735.9	7,939.0	5,648.9	47.1	48.4	-75.54	-2,387.5	351.5	348.4	254.8	93.63	3.721	
8,000.0	5,735.9	8,039.0	5,648.9	48.9	50.2	-75.54	-2,487.5	351.5	348.4	251.2	97.21	3.584	
8,100.0	5,735.9	8,139.0	5,648.9	50.8	52.0	-75.54	-2,587.5	351.5	348.4	247.6	100.81	3.456	
8,200.0	5,735.9	8,239.0	5,648.9	52.6	53.8	-75.54	-2,687.5	351.5	348.4	244.0	104.42	3.337	
8,300.0	5,735.9	8,339.0	5,648.9	54.5	55.7	-75.54	-2,787.5	351.5	348.4	240.4	108.03	3.225	
8,400.0	5,735.9	8,439.0	5,648.9	56.4	57.5	-75.54	-2,887.5	351.5	348.4	236.8	111.66	3.121	
8,500.0	5,735.9	8,539.0	5,648.9	58.2	59.3	-75.54	-2,987.5	351.5	348.4	233.2	115.29	3.022	
8,600.0	5,735.9	8,639.0	5,648.9	60.1	61.2	-75.54	-3,087.5	351.5	348.4	229.5	118.93	2.930	
8,700.0	5,735.9	8,739.0	5,648.9	62.0	63.1	-75.54	-3,187.5	351.5	348.5	225.9	122.57	2.843	
8,800.0	5,735.9	8,839.0	5,648.9	63.9	64.9	-75.54	-3,287.5	351.5	348.5	222.2	126.22	2.761	
8,900.0	5,735.9	8,939.0	5,648.9	65.8	66.8	-75.54	-3,387.5	351.5	348.5	218.6	129.88	2.683	
9,000.0	5,735.9	9,039.0	5,648.9	67.7	68.6	-75.54	-3,487.5	351.5	348.5	214.9	133.54	2.610	
9,100.0	5,735.9	9,139.0	5,648.9	69.5	70.5	-75.54	-3,587.5	351.5	348.5	211.3	137.20	2.540	

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-3414B
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-3414B	**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
9,200.0	5,735.9	9,239.0	5,648.9	71.4	72.4	-75.54	-3,687.5	351.5	348.5	207.6	140.87	2.474	
9,300.0	5,735.9	9,339.0	5,648.9	73.3	74.3	-75.54	-3,787.5	351.5	348.5	203.9	144.54	2.411	
9,400.0	5,735.9	9,439.0	5,648.9	75.2	76.1	-75.54	-3,887.5	351.5	348.5	200.3	148.22	2.351	
9,500.0	5,735.9	9,539.0	5,648.9	77.1	78.0	-75.54	-3,987.5	351.5	348.5	196.6	151.89	2.294	
9,600.0	5,735.9	9,639.0	5,648.9	79.0	79.9	-75.54	-4,087.5	351.5	348.5	192.9	155.58	2.240	
9,700.0	5,735.9	9,739.0	5,648.9	80.9	81.8	-75.54	-4,187.5	351.5	348.5	189.2	159.26	2.188	
9,800.0	5,735.9	9,839.0	5,648.9	82.8	83.7	-75.54	-4,287.5	351.5	348.5	185.6	162.95	2.139	
9,900.0	5,735.9	9,939.0	5,648.9	84.7	85.5	-75.54	-4,387.5	351.5	348.5	181.9	166.63	2.091	
10,000.0	5,735.9	10,039.0	5,648.9	86.6	87.4	-75.54	-4,487.5	351.5	348.5	178.2	170.33	2.046	
10,100.0	5,736.0	10,139.0	5,648.9	88.5	89.3	-75.54	-4,587.5	351.5	348.5	174.5	174.02	2.003	
10,200.0	5,736.0	10,239.0	5,648.9	90.4	91.2	-75.54	-4,687.5	351.5	348.5	170.8	177.71	1.961	
10,300.0	5,736.0	10,339.0	5,648.9	92.3	93.1	-75.54	-4,787.5	351.5	348.5	167.1	181.41	1.921	
10,400.0	5,736.0	10,439.0	5,648.9	94.2	95.0	-75.54	-4,887.5	351.5	348.5	163.4	185.11	1.883	
10,500.0	5,736.0	10,539.0	5,649.0	96.1	96.9	-75.54	-4,987.5	351.5	348.5	159.7	188.81	1.846	
10,600.0	5,736.0	10,639.0	5,649.0	98.0	98.8	-75.54	-5,087.5	351.5	348.5	156.0	192.51	1.810	
10,700.0	5,736.0	10,739.0	5,649.0	99.9	100.7	-75.54	-5,187.5	351.5	348.5	152.3	196.21	1.776	
10,800.0	5,736.0	10,839.0	5,649.0	101.8	102.6	-75.54	-5,287.5	351.5	348.5	148.6	199.92	1.743	
10,900.0	5,736.0	10,939.0	5,649.0	103.7	104.5	-75.54	-5,387.5	351.5	348.5	144.9	203.62	1.712	
11,000.0	5,736.0	11,039.0	5,649.0	105.7	106.4	-75.54	-5,487.5	351.5	348.5	141.2	207.33	1.681	
11,100.0	5,736.0	11,139.0	5,649.0	107.6	108.3	-75.54	-5,587.5	351.5	348.5	137.5	211.04	1.652	
11,200.0	5,736.0	11,239.0	5,649.0	109.5	110.2	-75.54	-5,687.5	351.5	348.6	133.8	214.75	1.623	
11,300.0	5,736.0	11,339.0	5,649.0	111.4	112.1	-75.54	-5,787.5	351.5	348.6	130.1	218.46	1.596	
11,400.0	5,736.0	11,439.0	5,649.0	113.3	114.0	-75.54	-5,887.5	351.5	348.6	126.4	222.17	1.569	
11,500.0	5,736.0	11,539.0	5,649.0	115.2	115.9	-75.55	-5,987.5	351.4	348.6	122.7	225.88	1.543	
11,600.0	5,736.0	11,639.0	5,649.0	117.1	117.8	-75.55	-6,087.5	351.4	348.6	119.0	229.59	1.518	
11,700.0	5,736.0	11,739.0	5,649.0	119.0	119.7	-75.55	-6,187.5	351.4	348.6	115.3	233.31	1.494	Level 3
11,800.0	5,736.0	11,839.0	5,649.0	120.9	121.6	-75.55	-6,287.5	351.4	348.6	111.6	237.02	1.471	Level 3
11,900.0	5,736.0	11,939.0	5,649.0	122.8	123.5	-75.55	-6,387.5	351.4	348.6	107.8	240.74	1.448	Level 3
12,000.0	5,736.0	12,039.0	5,649.0	124.7	125.4	-75.55	-6,487.5	351.4	348.6	104.1	244.45	1.426	Level 3
12,100.0	5,736.0	12,139.0	5,649.0	126.7	127.3	-75.55	-6,587.5	351.4	348.6	100.4	248.17	1.405	Level 3
12,200.0	5,736.0	12,239.0	5,649.0	128.6	129.2	-75.55	-6,687.5	351.4	348.6	96.7	251.89	1.384	Level 3
12,300.0	5,736.0	12,339.0	5,649.0	130.5	131.1	-75.55	-6,787.5	351.4	348.6	93.0	255.61	1.364	Level 3
12,400.0	5,736.0	12,439.0	5,649.0	132.4	133.0	-75.55	-6,887.5	351.4	348.6	89.3	259.33	1.344	Level 3
12,500.0	5,736.0	12,539.0	5,649.0	134.3	134.9	-75.55	-6,987.5	351.4	348.6	85.6	263.05	1.325	Level 3
12,559.5	5,736.0	12,598.5	5,649.0	135.4	136.1	-75.55	-7,047.0	351.4	348.6	83.3	265.26	1.314	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	90.02	0.0	66.2	66.2				
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	66.2	66.2	66.0	0.19	352.529	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	66.2	66.2	65.5	0.64	103.831	
300.0	300.0	300.0	300.0	0.5	0.5	90.02	0.0	66.2	66.2	65.1	1.09	60.882	
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	66.2	66.2	64.6	1.54	43.067	
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	66.2	66.2	64.2	1.99	33.318	CC, ES
600.0	600.0	598.0	598.0	1.2	1.2	90.73	-0.9	67.6	67.6	65.2	2.41	28.048	
700.0	700.0	695.8	695.6	1.4	1.4	92.68	-3.4	71.9	72.2	69.3	2.83	25.478	
800.0	800.0	795.4	795.0	1.7	1.6	95.03	-6.9	78.0	78.4	75.2	3.26	24.023	
900.0	900.0	895.2	894.6	1.9	1.8	97.02	-10.3	84.0	84.8	81.1	3.70	22.915	
1,000.0	1,000.0	995.0	994.1	2.1	2.1	98.74	-13.8	90.0	91.3	87.1	4.14	22.037	
1,100.0	1,100.0	1,094.7	1,093.6	2.3	2.3	100.23	-17.3	96.0	97.8	93.2	4.58	21.328	
1,200.0	1,200.0	1,194.5	1,193.1	2.6	2.6	101.53	-20.8	102.0	104.4	99.3	5.03	20.746	
1,300.0	1,300.0	1,294.2	1,292.6	2.8	2.8	102.68	-24.3	108.1	111.0	105.5	5.48	20.260	
1,400.0	1,400.0	1,394.0	1,392.1	3.0	3.1	103.69	-27.8	114.1	117.7	111.8	5.93	19.850	
1,500.0	1,500.0	1,493.7	1,491.6	3.2	3.3	104.60	-31.3	120.1	124.4	118.0	6.38	19.500	
1,600.0	1,600.0	1,593.5	1,591.2	3.5	3.6	105.42	-34.8	126.1	131.1	124.3	6.83	19.197	
1,700.0	1,700.0	1,693.2	1,690.7	3.7	3.8	106.15	-38.3	132.1	137.9	130.6	7.28	18.933	
1,800.0	1,800.0	1,793.0	1,790.2	3.9	4.1	106.82	-41.8	138.2	144.7	136.9	7.74	18.701	
1,900.0	1,900.0	1,892.8	1,889.7	4.1	4.3	107.42	-45.2	144.2	151.5	143.3	8.19	18.495	
2,000.0	2,000.0	1,992.5	1,989.2	4.4	4.6	107.98	-48.7	150.2	158.3	149.6	8.64	18.312	
2,100.0	2,100.0	2,092.3	2,088.7	4.6	4.9	108.48	-52.2	156.2	165.1	156.0	9.10	18.147	
2,200.0	2,200.0	2,192.0	2,188.2	4.8	5.1	108.95	-55.7	162.2	171.9	162.4	9.55	17.999	
2,300.0	2,300.0	2,291.8	2,287.7	5.0	5.4	109.38	-59.2	168.3	178.8	168.8	10.01	17.864	
2,400.0	2,400.0	2,391.5	2,387.3	5.3	5.6	109.79	-62.7	174.3	185.7	175.2	10.46	17.741	
2,500.0	2,500.0	2,491.3	2,486.8	5.5	5.9	110.16	-66.2	180.3	192.5	181.6	10.92	17.629	
2,600.0	2,600.0	2,591.1	2,586.3	5.7	6.2	110.50	-69.7	186.3	199.4	188.0	11.38	17.526	
2,700.0	2,700.0	2,690.8	2,685.8	5.9	6.4	110.83	-73.2	192.3	206.3	194.4	11.83	17.431	
2,800.0	2,800.0	2,790.6	2,785.3	6.2	6.7	111.13	-76.7	198.4	213.2	200.9	12.29	17.343	
2,900.0	2,900.0	2,890.3	2,884.8	6.4	6.9	111.41	-80.1	204.4	220.1	207.3	12.75	17.261	
3,000.0	3,000.0	2,990.1	2,984.3	6.6	7.2	111.68	-83.6	210.4	227.0	213.8	13.21	17.185	
3,100.0	3,100.0	3,089.8	3,083.9	6.8	7.5	111.93	-87.1	216.4	233.9	220.2	13.66	17.115	
3,200.0	3,200.0	3,189.6	3,183.4	7.1	7.7	112.16	-90.6	222.4	240.8	226.6	14.12	17.048	
3,300.0	3,300.0	3,289.3	3,282.9	7.3	8.0	112.39	-94.1	228.5	247.7	233.1	14.58	16.986	
3,400.0	3,400.0	3,389.1	3,382.4	7.5	8.2	112.60	-97.6	234.5	254.6	239.6	15.04	16.928	
3,500.0	3,500.0	3,488.9	3,481.9	7.7	8.5	112.80	-101.1	240.5	261.5	246.0	15.50	16.873	
3,600.0	3,600.0	3,588.6	3,581.4	8.0	8.8	112.99	-104.6	246.5	268.4	252.5	15.96	16.821	
3,700.0	3,700.0	3,688.4	3,680.9	8.2	9.0	113.17	-108.1	252.5	275.4	258.9	16.42	16.772	
3,800.0	3,800.0	3,788.1	3,780.4	8.4	9.3	113.34	-111.6	258.6	282.3	265.4	16.88	16.725	
3,900.0	3,900.0	3,887.9	3,880.0	8.6	9.5	113.50	-115.0	264.6	289.2	271.9	17.34	16.681	
4,000.0	4,000.0	3,987.6	3,979.5	8.9	9.8	113.65	-118.5	270.6	296.1	278.3	17.80	16.639	
4,100.0	4,100.0	4,087.4	4,079.0	9.1	10.1	113.80	-122.0	276.6	303.1	284.8	18.26	16.599	
4,200.0	4,200.0	4,187.2	4,178.5	9.3	10.3	113.94	-125.5	282.6	310.0	291.3	18.72	16.561	
4,300.0	4,300.0	4,286.9	4,278.0	9.5	10.6	114.08	-129.0	288.7	316.9	297.8	19.18	16.525	
4,400.0	4,400.0	4,386.7	4,377.5	9.8	10.8	114.21	-132.5	294.7	323.9	304.2	19.64	16.490	
4,500.0	4,500.0	4,486.4	4,477.0	10.0	11.1	114.33	-136.0	300.7	330.8	310.7	20.10	16.457	
4,600.0	4,600.0	4,586.2	4,576.6	10.2	11.4	114.45	-139.5	306.7	337.8	317.2	20.56	16.425	
4,700.0	4,700.0	4,685.9	4,676.1	10.4	11.6	114.57	-143.0	312.8	344.7	323.7	21.03	16.394	
4,800.0	4,800.0	4,785.7	4,775.6	10.7	11.9	114.68	-146.5	318.8	351.7	330.2	21.49	16.365	
4,900.0	4,900.0	4,885.5	4,875.1	10.9	12.2	114.78	-149.9	324.8	358.6	336.6	21.95	16.337	
5,000.0	5,000.0	4,997.6	4,987.0	11.1	12.4	114.87	-153.0	330.1	364.1	341.7	22.41	16.245	
5,100.0	5,100.0	5,110.6	5,100.0	11.3	12.6	114.90	-153.9	331.7	365.7	342.8	22.86	16.000	

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,210.6	5,200.0	11.6	12.8	114.90	-153.9	331.7	365.7	342.4	23.27	15.712	
5,215.0	5,215.0	5,225.6	5,215.0	11.6	12.8	114.90	-153.9	331.7	365.7	342.4	23.34	15.670	
5,250.0	5,250.0	5,250.0	5,239.4	11.7	12.9	-63.65	-154.5	331.8	365.7	342.4	23.25	15.727	
5,300.0	5,299.6	5,284.4	5,273.7	11.7	12.9	-63.88	-157.1	332.5	365.7	342.3	23.39	15.630	
5,350.0	5,348.5	5,319.0	5,308.0	11.8	13.0	-64.30	-162.0	333.8	365.6	342.1	23.51	15.552	
5,374.9	5,372.4	5,336.3	5,324.9	11.9	13.1	-64.57	-165.3	334.6	365.6	342.1	23.56	15.518	
5,400.0	5,396.1	5,350.0	5,338.3	11.9	13.1	-64.82	-168.2	335.4	365.7	342.1	23.60	15.496	
5,450.0	5,442.1	5,388.5	5,375.3	12.0	13.3	-65.67	-178.4	338.0	365.7	342.0	23.71	15.423	
5,500.0	5,486.0	5,423.4	5,408.1	12.1	13.4	-66.62	-189.8	341.0	366.0	342.1	23.85	15.348	
5,550.0	5,527.4	5,458.4	5,440.2	12.2	13.6	-67.71	-203.4	344.5	366.5	342.5	24.03	15.252	
5,600.0	5,565.9	5,500.0	5,476.9	12.4	13.8	-69.20	-222.3	349.4	367.4	343.1	24.33	15.099	
5,650.0	5,601.2	5,529.0	5,501.6	12.6	14.0	-70.32	-237.1	353.2	368.6	344.0	24.65	14.953	
5,700.0	5,632.9	5,564.7	5,530.7	12.8	14.2	-71.79	-257.0	358.4	370.4	345.3	25.12	14.744	
5,750.0	5,660.8	5,600.0	5,558.0	13.1	14.5	-73.32	-278.6	364.0	372.9	347.2	25.70	14.508	
5,800.0	5,684.5	5,637.1	5,585.1	13.5	14.8	-74.98	-303.2	370.4	376.1	349.7	26.43	14.232	
5,850.0	5,704.0	5,673.9	5,610.0	13.9	15.1	-76.65	-329.4	377.2	380.2	353.0	27.26	13.950	
5,900.0	5,718.9	5,711.2	5,633.4	14.3	15.4	-78.35	-357.6	384.5	385.2	357.1	28.18	13.671	
5,950.0	5,729.2	5,750.0	5,655.3	14.8	15.8	-80.09	-388.5	392.5	391.3	362.1	29.20	13.402	
6,000.0	5,734.8	5,788.0	5,674.4	15.4	16.2	-81.73	-420.4	400.8	398.4	368.1	30.27	13.162	
6,033.2	5,735.9	5,814.3	5,686.2	15.7	16.5	-82.83	-443.0	406.6	403.7	372.7	31.01	13.017	
6,083.3	5,735.9	5,855.5	5,702.3	16.3	17.0	-85.23	-479.8	416.2	413.4	381.4	32.04	12.902	
6,100.0	5,735.9	5,869.8	5,707.2	16.5	17.2	-85.95	-492.8	419.5	417.1	384.7	32.42	12.865	
6,200.0	5,735.9	5,960.5	5,729.4	17.8	18.4	-89.13	-577.8	441.6	441.2	406.3	34.87	12.651	
6,300.0	5,735.9	6,056.6	5,736.0	19.2	19.7	-90.02	-670.5	465.6	466.2	428.7	37.57	12.409	
6,400.0	5,735.9	6,153.4	5,736.0	20.7	21.2	-90.02	-764.2	489.9	491.3	450.8	40.55	12.117	
6,500.0	5,735.9	6,250.2	5,736.0	22.3	22.7	-90.01	-857.9	514.2	516.5	472.8	43.67	11.825	
6,600.0	5,735.9	6,347.1	5,736.0	23.9	24.3	-90.01	-951.7	538.5	541.6	494.6	46.91	11.544	
6,700.0	5,735.9	6,467.7	5,736.0	25.6	26.1	-90.01	-1,069.0	566.3	564.6	514.2	50.46	11.189	
6,800.0	5,735.9	6,590.5	5,736.0	27.3	27.9	-90.01	-1,189.6	589.5	583.5	529.4	54.08	10.790	
6,900.0	5,735.9	6,715.1	5,736.0	29.0	29.8	-90.01	-1,312.9	607.7	598.2	540.3	57.82	10.345	
7,000.0	5,735.9	6,841.1	5,736.0	30.7	31.8	-90.01	-1,438.2	620.7	608.5	546.8	61.64	9.870	
7,100.0	5,735.9	6,968.1	5,736.0	32.5	33.8	-90.01	-1,564.9	628.2	614.4	548.8	65.52	9.377	
7,200.0	5,735.9	7,085.3	5,736.0	34.3	35.6	-90.01	-1,682.1	630.3	616.1	546.9	69.27	8.895	
7,300.0	5,735.9	7,185.3	5,736.0	36.1	37.3	-90.01	-1,782.1	631.2	617.0	544.2	72.81	8.474	
7,400.0	5,735.9	7,285.3	5,736.0	37.9	39.0	-90.01	-1,882.1	632.1	617.9	541.5	76.39	8.089	
7,500.0	5,735.9	7,385.3	5,736.0	39.7	40.8	-90.01	-1,982.1	632.9	618.8	538.8	79.99	7.735	
7,600.0	5,735.9	7,485.3	5,736.0	41.5	42.5	-90.01	-2,082.1	633.8	619.6	536.0	83.62	7.410	
7,700.0	5,735.9	7,585.3	5,736.0	43.4	44.3	-90.01	-2,182.1	634.7	620.5	533.3	87.26	7.111	
7,800.0	5,735.9	7,685.3	5,736.0	45.2	46.0	-90.01	-2,282.1	635.5	621.4	530.5	90.93	6.834	
7,900.0	5,735.9	7,785.3	5,736.0	47.1	47.8	-90.01	-2,382.1	636.4	622.3	527.7	94.60	6.578	
8,000.0	5,735.9	7,885.3	5,736.0	48.9	49.6	-90.01	-2,482.1	637.3	623.2	524.9	98.29	6.340	
8,100.0	5,735.9	7,985.3	5,736.0	50.8	51.4	-90.01	-2,582.1	638.2	624.0	522.0	102.00	6.118	
8,200.0	5,735.9	8,085.3	5,736.0	52.6	53.2	-90.01	-2,682.0	639.0	624.9	519.2	105.71	5.912	
8,300.0	5,735.9	8,185.3	5,736.0	54.5	55.0	-90.01	-2,782.0	639.9	625.8	516.4	109.43	5.719	
8,400.0	5,735.9	8,285.3	5,736.0	56.4	56.9	-90.01	-2,882.0	640.8	626.7	513.5	113.16	5.538	
8,500.0	5,735.9	8,385.3	5,736.0	58.2	58.7	-90.01	-2,982.0	641.7	627.6	510.7	116.90	5.368	
8,600.0	5,735.9	8,485.3	5,736.0	60.1	60.5	-90.01	-3,082.0	642.5	628.4	507.8	120.65	5.209	
8,700.0	5,735.9	8,585.2	5,736.0	62.0	62.4	-90.01	-3,182.0	643.4	629.3	504.9	124.40	5.059	
8,800.0	5,735.9	8,685.2	5,736.0	63.9	64.2	-90.01	-3,282.0	644.3	630.2	502.0	128.16	4.917	
8,900.0	5,735.9	8,785.2	5,736.0	65.8	66.1	-90.01	-3,382.0	645.1	631.1	499.2	131.92	4.784	
9,000.0	5,735.9	8,885.2	5,736.0	67.7	67.9	-90.01	-3,482.0	646.0	632.0	496.3	135.69	4.658	
9,100.0	5,735.9	8,985.2	5,736.0	69.5	69.8	-90.01	-3,582.0	646.9	632.8	493.4	139.46	4.538	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	5,735.9	9,085.2	5,736.0	71.4	71.7	-90.01	-3,682.0	647.8	633.7	490.5	143.23	4.424	
9,300.0	5,735.9	9,185.2	5,736.0	73.3	73.5	-90.01	-3,782.0	648.6	634.6	487.6	147.01	4.317	
9,400.0	5,735.9	9,285.2	5,736.0	75.2	75.4	-90.01	-3,882.0	649.5	635.5	484.7	150.80	4.214	
9,500.0	5,735.9	9,385.2	5,736.0	77.1	77.3	-90.01	-3,981.9	650.4	636.4	481.8	154.58	4.117	
9,600.0	5,735.9	9,485.2	5,736.0	79.0	79.1	-90.01	-4,081.9	651.3	637.2	478.9	158.37	4.024	
9,700.0	5,735.9	9,585.2	5,736.0	80.9	81.0	-90.01	-4,181.9	652.1	638.1	476.0	162.16	3.935	
9,800.0	5,735.9	9,685.2	5,736.0	82.8	82.9	-90.00	-4,281.9	653.0	639.0	473.0	165.96	3.850	
9,900.0	5,735.9	9,785.2	5,736.0	84.7	84.8	-90.00	-4,381.9	653.9	639.9	470.1	169.76	3.769	
10,000.0	5,735.9	9,885.2	5,736.0	86.6	86.6	-90.00	-4,481.9	654.8	640.8	467.2	173.56	3.692	
10,100.0	5,736.0	9,985.2	5,736.0	88.5	88.5	-90.00	-4,581.9	655.6	641.6	464.3	177.36	3.618	
10,200.0	5,736.0	10,085.2	5,736.0	90.4	90.4	-90.00	-4,681.9	656.5	642.5	461.4	181.16	3.547	
10,300.0	5,736.0	10,185.2	5,736.0	92.3	92.3	-90.00	-4,781.9	657.4	643.4	458.4	184.97	3.478	
10,400.0	5,736.0	10,285.2	5,736.0	94.2	94.2	-90.00	-4,881.9	658.2	644.3	455.5	188.77	3.413	
10,500.0	5,736.0	10,385.2	5,736.0	96.1	96.1	-90.00	-4,981.9	659.1	645.2	452.6	192.58	3.350	
10,600.0	5,736.0	10,485.2	5,736.0	98.0	98.0	-90.00	-5,081.9	660.0	646.0	449.6	196.39	3.289	
10,700.0	5,736.0	10,585.2	5,736.0	99.9	99.9	-90.00	-5,181.9	660.9	646.9	446.7	200.21	3.231	
10,800.0	5,736.0	10,685.2	5,736.0	101.8	101.8	-90.00	-5,281.8	661.7	647.8	443.8	204.02	3.175	
10,900.0	5,736.0	10,785.2	5,736.0	103.7	103.6	-90.00	-5,381.8	662.6	648.7	440.8	207.83	3.121	
11,000.0	5,736.0	10,885.2	5,736.0	105.7	105.5	-90.00	-5,481.8	663.5	649.6	437.9	211.65	3.069	
11,100.0	5,736.0	10,985.2	5,736.0	107.6	107.4	-90.00	-5,581.8	664.4	650.4	435.0	215.47	3.019	
11,200.0	5,736.0	11,085.1	5,736.0	109.5	109.3	-90.00	-5,681.8	665.2	651.3	432.0	219.28	2.970	
11,300.0	5,736.0	11,185.1	5,736.0	111.4	111.2	-90.00	-5,781.8	666.1	652.2	429.1	223.10	2.923	
11,400.0	5,736.0	11,285.1	5,736.0	113.3	113.1	-90.00	-5,881.8	667.0	653.1	426.1	226.92	2.878	
11,500.0	5,736.0	11,385.1	5,736.0	115.2	115.0	-90.00	-5,981.8	667.8	654.0	423.2	230.74	2.834	
11,600.0	5,736.0	11,485.1	5,736.0	117.1	116.9	-90.00	-6,081.8	668.7	654.8	420.3	234.57	2.792	
11,700.0	5,736.0	11,585.1	5,736.0	119.0	118.8	-90.00	-6,181.8	669.6	655.7	417.3	238.39	2.751	
11,800.0	5,736.0	11,685.1	5,736.0	120.9	120.7	-90.00	-6,281.8	670.5	656.6	414.4	242.21	2.711	
11,900.0	5,736.0	11,785.1	5,736.0	122.8	122.6	-90.00	-6,381.8	671.3	657.5	411.4	246.04	2.672	
12,000.0	5,736.0	11,885.1	5,736.0	124.7	124.5	-90.00	-6,481.8	672.2	658.4	408.5	249.86	2.635	
12,100.0	5,736.0	11,985.1	5,736.0	126.7	126.4	-90.00	-6,581.8	673.1	659.2	405.5	253.69	2.599	
12,200.0	5,736.0	12,085.1	5,736.0	128.6	128.3	-90.00	-6,681.7	674.0	660.1	402.6	257.52	2.563	
12,300.0	5,736.0	12,185.1	5,736.0	130.5	130.3	-90.00	-6,781.7	674.8	661.0	399.6	261.34	2.529	
12,400.0	5,736.0	12,285.1	5,736.0	132.4	132.2	-90.00	-6,881.7	675.7	661.9	396.7	265.17	2.496	
12,500.0	5,736.0	12,385.1	5,736.0	134.3	134.1	-90.00	-6,981.7	676.6	662.7	393.8	269.00	2.464	
12,559.5	5,736.0	12,444.6	5,736.0	135.4	135.2	-90.00	-7,041.2	677.1	663.3	392.0	271.28	2.445	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	-90.91	-20.4	-1,286.4	1,286.6				
100.0	100.0	110.5	110.5	0.1	0.1	-90.91	-20.4	-1,286.4	1,286.6	1,286.4	0.21	6,089.520	
200.0	200.0	210.5	210.5	0.3	0.3	-90.91	-20.4	-1,286.4	1,286.6	1,285.9	0.66	1,946.992	
300.0	300.0	310.5	310.5	0.5	0.6	-90.91	-20.4	-1,286.4	1,286.6	1,285.5	1.11	1,158.737	
400.0	400.0	410.5	410.5	0.8	0.8	-90.91	-20.4	-1,286.4	1,286.6	1,285.0	1.56	824.807	
462.8	462.8	473.3	473.3	0.9	0.9	-90.91	-20.4	-1,286.4	1,286.6	1,284.8	1.84	698.484	CC
500.0	500.0	509.2	509.2	1.0	1.0	-90.91	-20.4	-1,286.4	1,286.6	1,284.6	2.00	642.032	ES
600.0	600.0	600.0	600.0	1.2	1.2	-90.98	-22.0	-1,287.0	1,287.2	1,284.8	2.41	534.473	
700.0	700.0	683.7	683.5	1.4	1.4	-91.15	-26.0	-1,288.2	1,288.8	1,286.0	2.79	461.940	
800.0	800.0	781.0	780.7	1.7	1.5	-91.44	-32.4	-1,290.3	1,291.1	1,287.8	3.21	401.723	
900.0	900.0	880.8	880.2	1.9	1.8	-91.73	-39.0	-1,292.4	1,293.4	1,289.7	3.66	353.665	
1,000.0	1,000.0	980.5	979.7	2.1	2.0	-92.02	-45.6	-1,294.6	1,295.7	1,291.6	4.11	315.217	
1,100.0	1,100.0	1,080.3	1,079.2	2.3	2.2	-92.31	-52.3	-1,296.7	1,298.1	1,293.6	4.57	283.977	
1,200.0	1,200.0	1,180.1	1,178.7	2.6	2.5	-92.60	-58.9	-1,298.8	1,300.6	1,295.5	5.04	258.206	
1,300.0	1,300.0	1,279.8	1,278.2	2.8	2.7	-92.88	-65.5	-1,301.0	1,303.0	1,297.5	5.51	236.647	
1,400.0	1,400.0	1,379.6	1,377.7	3.0	3.0	-93.17	-72.1	-1,303.1	1,305.5	1,299.5	5.98	218.380	
1,500.0	1,500.0	1,479.3	1,477.3	3.2	3.2	-93.45	-78.8	-1,305.3	1,308.0	1,301.6	6.45	202.727	
1,600.0	1,600.0	1,579.1	1,576.8	3.5	3.5	-93.74	-85.4	-1,307.4	1,310.6	1,303.7	6.93	189.179	
1,700.0	1,700.0	1,678.8	1,676.3	3.7	3.7	-94.02	-92.0	-1,309.5	1,313.2	1,305.8	7.40	177.346	
1,800.0	1,800.0	1,778.6	1,775.8	3.9	4.0	-94.30	-98.6	-1,311.7	1,315.8	1,307.9	7.88	166.929	
1,900.0	1,900.0	1,878.3	1,875.3	4.1	4.3	-94.58	-105.2	-1,313.8	1,318.5	1,310.1	8.36	157.691	
2,000.0	2,000.0	1,978.1	1,974.8	4.4	4.5	-94.86	-111.9	-1,315.9	1,321.2	1,312.3	8.84	149.447	
2,100.0	2,100.0	2,077.9	2,074.3	4.6	4.8	-95.14	-118.5	-1,318.1	1,323.9	1,314.5	9.32	142.046	
2,200.0	2,200.0	2,177.6	2,173.9	4.8	5.0	-95.41	-125.1	-1,320.2	1,326.6	1,316.8	9.80	135.368	
2,300.0	2,300.0	2,277.4	2,273.4	5.0	5.3	-95.69	-131.7	-1,322.3	1,329.4	1,319.1	10.28	129.312	
2,400.0	2,400.0	2,377.1	2,372.9	5.3	5.6	-95.96	-138.4	-1,324.5	1,332.2	1,321.4	10.76	123.796	
2,500.0	2,500.0	2,476.9	2,472.4	5.5	5.8	-96.24	-145.0	-1,326.6	1,335.0	1,323.8	11.24	118.753	
2,600.0	2,600.0	2,576.6	2,571.9	5.7	6.1	-96.51	-151.6	-1,328.7	1,337.9	1,326.2	11.72	114.125	
2,700.0	2,700.0	2,676.4	2,671.4	5.9	6.3	-96.78	-158.2	-1,330.9	1,340.8	1,328.6	12.20	109.862	
2,800.0	2,800.0	2,776.2	2,770.9	6.2	6.6	-97.05	-164.9	-1,333.0	1,343.7	1,331.1	12.69	105.925	
2,900.0	2,900.0	2,875.9	2,870.4	6.4	6.9	-97.32	-171.5	-1,335.1	1,346.7	1,333.5	13.17	102.277	
3,000.0	3,000.0	2,975.7	2,970.0	6.6	7.1	-97.59	-178.1	-1,337.3	1,349.7	1,336.0	13.65	98.888	
3,100.0	3,100.0	3,075.4	3,069.5	6.8	7.4	-97.85	-184.7	-1,339.4	1,352.7	1,338.6	14.13	95.731	
3,200.0	3,200.0	3,175.2	3,169.0	7.1	7.6	-98.12	-191.3	-1,341.5	1,355.8	1,341.1	14.61	92.785	
3,300.0	3,300.0	3,274.9	3,268.5	7.3	7.9	-98.38	-198.0	-1,343.7	1,358.8	1,343.7	15.09	90.029	
3,400.0	3,400.0	3,374.7	3,368.0	7.5	8.2	-98.64	-204.6	-1,345.8	1,361.9	1,346.4	15.57	87.444	
3,500.0	3,500.0	3,474.5	3,467.5	7.7	8.4	-98.91	-211.2	-1,347.9	1,365.1	1,349.0	16.06	85.017	
3,600.0	3,600.0	3,574.2	3,567.0	8.0	8.7	-99.17	-217.8	-1,350.1	1,368.2	1,351.7	16.54	82.733	
3,700.0	3,700.0	3,674.0	3,666.6	8.2	9.0	-99.43	-224.5	-1,352.2	1,371.4	1,354.4	17.02	80.579	
3,800.0	3,800.0	3,773.7	3,766.1	8.4	9.2	-99.68	-231.1	-1,354.3	1,374.6	1,357.1	17.50	78.546	
3,900.0	3,900.0	3,873.5	3,865.6	8.6	9.5	-99.94	-237.7	-1,356.5	1,377.9	1,359.9	17.98	76.624	
4,000.0	4,000.0	3,973.2	3,965.1	8.9	9.8	-100.20	-244.3	-1,358.6	1,381.2	1,362.7	18.46	74.803	
4,100.0	4,100.0	4,073.0	4,064.6	9.1	10.0	-100.45	-251.0	-1,360.7	1,384.5	1,365.5	18.95	73.077	
4,200.0	4,200.0	4,172.7	4,164.1	9.3	10.3	-100.70	-257.6	-1,362.9	1,387.8	1,368.4	19.43	71.438	
4,300.0	4,300.0	4,272.5	4,263.6	9.5	10.5	-100.95	-264.2	-1,365.0	1,391.1	1,371.2	19.91	69.879	
4,400.0	4,400.0	4,372.3	4,363.2	9.8	10.8	-101.20	-270.8	-1,367.2	1,394.5	1,374.1	20.39	68.396	
4,500.0	4,500.0	4,472.0	4,462.7	10.0	11.1	-101.45	-277.4	-1,369.3	1,397.9	1,377.1	20.87	66.982	
4,600.0	4,600.0	4,571.8	4,562.2	10.2	11.3	-101.70	-284.1	-1,371.4	1,401.4	1,380.0	21.35	65.634	
4,700.0	4,700.0	4,671.5	4,661.7	10.4	11.6	-101.95	-290.7	-1,373.6	1,404.8	1,383.0	21.83	64.346	
4,800.0	4,800.0	4,771.3	4,761.2	10.7	11.9	-102.20	-297.3	-1,375.7	1,408.3	1,386.0	22.31	63.115	
4,900.0	4,900.0	4,871.0	4,860.7	10.9	12.1	-102.44	-303.9	-1,377.8	1,411.8	1,389.0	22.79	61.937	
5,000.0	5,000.0	4,970.8	4,960.2	11.1	12.4	-102.68	-310.6	-1,380.0	1,415.4	1,392.1	23.28	60.810	

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-3414B
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-3414B	**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	5,070.6	5,059.7	11.3	12.6	-102.93	-317.2	-1,382.1	1,418.9	1,395.2	23.76	59.729	
5,200.0	5,200.0	5,170.3	5,159.3	11.6	12.9	-103.17	-323.8	-1,384.2	1,422.5	1,398.3	24.24	58.692	
5,215.0	5,215.0	5,185.3	5,174.2	11.6	13.0	-103.20	-324.8	-1,384.5	1,423.1	1,398.8	24.31	58.540	
5,250.0	5,250.0	5,200.0	5,188.9	11.7	13.0	78.14	-325.8	-1,384.9	1,424.3	1,400.0	24.28	58.664	
5,300.0	5,299.6	5,225.0	5,213.7	11.7	13.1	77.97	-328.4	-1,385.7	1,425.9	1,401.5	24.43	58.373	
5,350.0	5,348.5	5,250.0	5,238.4	11.8	13.1	77.87	-332.0	-1,386.9	1,427.7	1,403.1	24.57	58.103	
5,400.0	5,396.1	5,266.2	5,254.3	11.9	13.2	77.78	-335.0	-1,387.8	1,429.4	1,404.7	24.70	57.879	
5,450.0	5,442.1	5,300.0	5,287.1	12.0	13.4	77.86	-342.7	-1,390.3	1,431.3	1,406.4	24.89	57.494	
5,500.0	5,486.0	5,300.0	5,287.1	12.1	13.4	77.68	-342.7	-1,390.3	1,433.0	1,408.1	24.97	57.393	
5,550.0	5,527.4	5,327.1	5,313.0	12.2	13.5	77.81	-350.4	-1,392.8	1,434.8	1,409.6	25.19	56.950	
5,600.0	5,565.9	5,350.0	5,334.5	12.4	13.6	77.94	-357.9	-1,395.2	1,436.8	1,411.3	25.43	56.496	
5,650.0	5,601.2	5,366.8	5,350.0	12.6	13.7	78.01	-363.9	-1,397.1	1,438.8	1,413.1	25.69	56.006	
5,700.0	5,632.9	5,400.0	5,380.2	12.8	13.9	78.42	-377.2	-1,401.4	1,441.1	1,415.0	26.10	55.204	
5,750.0	5,660.8	5,400.0	5,380.2	13.1	13.9	78.18	-377.2	-1,401.4	1,443.3	1,416.9	26.36	54.743	
5,800.0	5,684.5	5,423.9	5,401.3	13.5	14.1	78.46	-387.9	-1,404.9	1,445.8	1,418.9	26.89	53.759	
5,850.0	5,704.0	5,450.0	5,423.7	13.9	14.2	78.81	-400.6	-1,409.0	1,448.7	1,421.1	27.51	52.657	
5,900.0	5,718.9	5,450.0	5,423.7	14.3	14.2	78.47	-400.6	-1,409.0	1,451.8	1,423.8	27.96	51.920	
5,950.0	5,729.2	5,477.2	5,446.2	14.8	14.5	78.87	-415.0	-1,413.6	1,455.2	1,426.4	28.74	50.635	
6,000.0	5,734.8	5,500.0	5,464.6	15.4	14.6	79.14	-427.9	-1,417.8	1,459.1	1,429.5	29.53	49.417	
6,033.2	5,735.9	5,500.0	5,464.6	15.7	14.6	78.84	-427.9	-1,417.8	1,461.8	1,431.9	29.91	48.869	
6,083.3	5,735.9	5,520.7	5,480.7	16.3	14.8	79.52	-440.3	-1,421.8	1,466.2	1,435.5	30.78	47.637	
6,100.0	5,735.9	5,526.4	5,485.1	16.5	14.9	79.70	-443.8	-1,422.9	1,467.8	1,436.8	31.05	47.267	
6,200.0	5,735.9	5,564.4	5,513.0	17.8	15.2	80.82	-468.4	-1,430.8	1,480.1	1,447.3	32.87	45.028	
6,300.0	5,735.9	5,608.9	5,543.1	19.2	15.7	82.05	-499.5	-1,440.8	1,497.2	1,462.3	34.89	42.915	
6,400.0	5,735.9	5,660.8	5,574.7	20.7	16.2	83.33	-538.7	-1,453.5	1,518.4	1,481.3	37.10	40.923	
6,500.0	5,735.9	5,721.0	5,605.9	22.3	16.9	84.59	-587.7	-1,469.3	1,542.9	1,503.4	39.52	39.038	
6,600.0	5,735.9	5,789.6	5,633.9	23.9	17.8	85.72	-647.2	-1,488.4	1,569.9	1,527.8	42.14	37.252	
6,700.0	5,735.9	5,865.5	5,655.1	25.6	18.9	86.57	-716.5	-1,510.8	1,598.7	1,553.8	44.96	35.561	
6,800.0	5,735.9	5,946.4	5,665.7	27.3	20.1	87.02	-792.7	-1,535.4	1,628.7	1,580.7	47.92	33.988	
6,900.0	5,735.9	6,436.6	5,666.5	29.0	27.1	87.22	-1,272.1	-1,631.5	1,651.7	1,595.1	56.56	29.201	
7,000.0	5,735.9	6,652.1	5,666.6	30.7	30.5	87.23	-1,487.5	-1,636.2	1,652.3	1,590.7	61.67	26.791	
7,100.0	5,735.9	6,752.1	5,666.6	32.5	32.2	87.23	-1,587.5	-1,636.2	1,652.3	1,587.2	65.14	25.365	
7,200.0	5,735.9	6,852.1	5,666.6	34.3	33.9	87.23	-1,687.5	-1,636.2	1,652.3	1,583.7	68.65	24.069	
7,300.0	5,735.9	6,952.1	5,666.6	36.1	35.6	87.23	-1,787.5	-1,636.2	1,652.3	1,580.1	72.19	22.889	
7,400.0	5,735.9	7,052.1	5,666.6	37.9	37.3	87.23	-1,887.5	-1,636.2	1,652.3	1,576.5	75.76	21.810	
7,500.0	5,735.9	7,152.1	5,666.6	39.7	39.1	87.23	-1,987.5	-1,636.2	1,652.3	1,572.9	79.36	20.821	
7,600.0	5,735.9	7,252.1	5,666.6	41.5	40.8	87.23	-2,087.5	-1,636.2	1,652.3	1,569.3	82.97	19.913	
7,700.0	5,735.9	7,352.1	5,666.6	43.4	42.6	87.23	-2,187.5	-1,636.2	1,652.3	1,565.7	86.61	19.077	
7,800.0	5,735.9	7,452.1	5,666.6	45.2	44.4	87.23	-2,287.5	-1,636.2	1,652.3	1,562.0	90.27	18.305	
7,900.0	5,735.9	7,552.1	5,666.6	47.1	46.2	87.23	-2,387.5	-1,636.2	1,652.3	1,558.3	93.94	17.590	
8,000.0	5,735.9	7,652.1	5,666.6	48.9	48.0	87.23	-2,487.5	-1,636.2	1,652.3	1,554.7	97.62	16.926	
8,100.0	5,735.9	7,752.1	5,666.6	50.8	49.8	87.23	-2,587.5	-1,636.2	1,652.3	1,551.0	101.31	16.309	
8,200.0	5,735.9	7,852.1	5,666.7	52.6	51.7	87.23	-2,687.5	-1,636.2	1,652.3	1,547.2	105.02	15.733	
8,300.0	5,735.9	7,952.1	5,666.7	54.5	53.5	87.23	-2,787.5	-1,636.2	1,652.3	1,543.5	108.73	15.196	
8,400.0	5,735.9	8,052.1	5,666.7	56.4	55.4	87.23	-2,887.5	-1,636.2	1,652.3	1,539.8	112.45	14.693	
8,500.0	5,735.9	8,152.1	5,666.7	58.2	57.2	87.23	-2,987.5	-1,636.2	1,652.2	1,536.1	116.18	14.221	
8,600.0	5,735.9	8,252.1	5,666.7	60.1	59.0	87.23	-3,087.5	-1,636.2	1,652.2	1,532.3	119.92	13.778	
8,700.0	5,735.9	8,352.1	5,666.7	62.0	60.9	87.23	-3,187.5	-1,636.2	1,652.2	1,528.6	123.66	13.361	
8,800.0	5,735.9	8,452.1	5,666.7	63.9	62.8	87.23	-3,287.5	-1,636.2	1,652.2	1,524.8	127.41	12.968	
8,900.0	5,735.9	8,552.1	5,666.7	65.8	64.6	87.23	-3,387.5	-1,636.2	1,652.2	1,521.1	131.17	12.596	
9,000.0	5,735.9	8,652.1	5,666.7	67.7	66.5	87.23	-3,487.5	-1,636.2	1,652.2	1,517.3	134.92	12.246	
9,100.0	5,735.9	8,752.1	5,666.7	69.5	68.4	87.23	-3,587.5	-1,636.2	1,652.2	1,513.5	138.69	11.913	

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-3414B
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-3414B	**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
9,200.0	5,735.9	8,852.1	5,666.7	71.4	70.2	87.24	-3,687.5	-1,636.2	1,652.2	1,509.8	142.45	11.598	
9,300.0	5,735.9	8,952.1	5,666.7	73.3	72.1	87.24	-3,787.5	-1,636.2	1,652.2	1,506.0	146.23	11.299	
9,400.0	5,735.9	9,052.1	5,666.7	75.2	74.0	87.24	-3,887.5	-1,636.2	1,652.2	1,502.2	150.00	11.015	
9,500.0	5,735.9	9,152.1	5,666.8	77.1	75.9	87.24	-3,987.5	-1,636.2	1,652.2	1,498.4	153.78	10.744	
9,600.0	5,735.9	9,252.1	5,666.8	79.0	77.7	87.24	-4,087.5	-1,636.2	1,652.2	1,494.6	157.56	10.486	
9,700.0	5,735.9	9,352.1	5,666.8	80.9	79.6	87.24	-4,187.5	-1,636.2	1,652.2	1,490.8	161.34	10.240	
9,800.0	5,735.9	9,452.1	5,666.8	82.8	81.5	87.24	-4,287.5	-1,636.2	1,652.2	1,487.0	165.13	10.005	
9,900.0	5,735.9	9,552.1	5,666.8	84.7	83.4	87.24	-4,387.5	-1,636.2	1,652.2	1,483.3	168.92	9.781	
10,000.0	5,735.9	9,652.1	5,666.8	86.6	85.3	87.24	-4,487.5	-1,636.2	1,652.2	1,479.5	172.71	9.566	
10,100.0	5,736.0	9,752.1	5,666.8	88.5	87.2	87.24	-4,587.5	-1,636.2	1,652.2	1,475.7	176.50	9.361	
10,200.0	5,736.0	9,852.1	5,666.8	90.4	89.1	87.24	-4,687.5	-1,636.2	1,652.2	1,471.9	180.29	9.164	
10,300.0	5,736.0	9,952.1	5,666.8	92.3	91.0	87.24	-4,787.5	-1,636.2	1,652.1	1,468.1	184.09	8.975	
10,400.0	5,736.0	10,052.1	5,666.8	94.2	92.9	87.24	-4,887.5	-1,636.2	1,652.1	1,464.3	187.89	8.793	
10,500.0	5,736.0	10,152.1	5,666.8	96.1	94.8	87.24	-4,987.5	-1,636.2	1,652.1	1,460.4	191.69	8.619	
10,600.0	5,736.0	10,252.1	5,666.8	98.0	96.6	87.24	-5,087.5	-1,636.2	1,652.1	1,456.6	195.49	8.451	
10,700.0	5,736.0	10,352.1	5,666.9	99.9	98.5	87.24	-5,187.5	-1,636.2	1,652.1	1,452.8	199.29	8.290	
10,800.0	5,736.0	10,452.1	5,666.9	101.8	100.4	87.24	-5,287.5	-1,636.2	1,652.1	1,449.0	203.09	8.135	
10,900.0	5,736.0	10,552.1	5,666.9	103.7	102.3	87.24	-5,387.5	-1,636.2	1,652.1	1,445.2	206.90	7.985	
11,000.0	5,736.0	10,652.1	5,666.9	105.7	104.2	87.24	-5,487.5	-1,636.2	1,652.1	1,441.4	210.71	7.841	
11,100.0	5,736.0	10,752.1	5,666.9	107.6	106.1	87.24	-5,587.5	-1,636.2	1,652.1	1,437.6	214.51	7.702	
11,200.0	5,736.0	10,852.1	5,666.9	109.5	108.0	87.24	-5,687.5	-1,636.2	1,652.1	1,433.8	218.32	7.567	
11,300.0	5,736.0	10,952.1	5,666.9	111.4	109.9	87.24	-5,787.5	-1,636.2	1,652.1	1,430.0	222.13	7.437	
11,400.0	5,736.0	11,052.1	5,666.9	113.3	111.8	87.24	-5,887.5	-1,636.2	1,652.1	1,426.1	225.94	7.312	
11,500.0	5,736.0	11,152.1	5,666.9	115.2	113.7	87.24	-5,987.5	-1,636.2	1,652.1	1,422.3	229.75	7.191	
11,600.0	5,736.0	11,252.1	5,666.9	117.1	115.6	87.24	-6,087.5	-1,636.2	1,652.1	1,418.5	233.57	7.073	
11,700.0	5,736.0	11,352.1	5,666.9	119.0	117.6	87.24	-6,187.5	-1,636.3	1,652.1	1,414.7	237.38	6.960	
11,800.0	5,736.0	11,452.1	5,666.9	120.9	119.5	87.24	-6,287.5	-1,636.3	1,652.1	1,410.9	241.19	6.850	
11,900.0	5,736.0	11,552.1	5,666.9	122.8	121.4	87.24	-6,387.5	-1,636.3	1,652.1	1,407.1	245.01	6.743	
12,000.0	5,736.0	11,652.1	5,667.0	124.7	123.3	87.24	-6,487.5	-1,636.3	1,652.1	1,403.2	248.82	6.639	
12,100.0	5,736.0	11,752.1	5,667.0	126.7	125.2	87.24	-6,587.5	-1,636.3	1,652.0	1,399.4	252.64	6.539	
12,200.0	5,736.0	11,852.1	5,667.0	128.6	127.1	87.24	-6,687.5	-1,636.3	1,652.0	1,395.6	256.46	6.442	
12,300.0	5,736.0	11,952.1	5,667.0	130.5	129.0	87.24	-6,787.5	-1,636.3	1,652.0	1,391.8	260.27	6.347	
12,400.0	5,736.0	12,052.1	5,667.0	132.4	130.9	87.24	-6,887.5	-1,636.3	1,652.0	1,387.9	264.09	6.256	
12,500.0	5,736.0	12,152.1	5,667.0	134.3	132.8	87.24	-6,987.5	-1,636.3	1,652.0	1,384.1	267.91	6.166	
12,559.5	5,736.0	12,211.6	5,667.0	135.4	133.9	87.24	-7,047.0	-1,636.3	1,652.0	1,381.8	270.18	6.115	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	-94.35	-95.4	-1,253.5	1,257.1				
100.0	100.0	107.5	107.5	0.1	0.1	-94.35	-95.4	-1,253.5	1,257.1	1,256.9	0.20	6,146.174	
200.0	200.0	207.5	207.5	0.3	0.3	-94.35	-95.4	-1,253.5	1,257.1	1,256.5	0.65	1,922.002	
300.0	300.0	307.5	307.5	0.5	0.6	-94.35	-95.4	-1,253.5	1,257.1	1,256.0	1.10	1,139.110	
400.0	400.0	407.5	407.5	0.8	0.8	-94.35	-95.4	-1,253.5	1,257.1	1,255.6	1.55	809.411	
500.0	500.0	507.5	507.5	1.0	1.0	-94.35	-95.4	-1,253.5	1,257.1	1,255.1	2.00	627.725	
600.0	600.0	607.5	607.5	1.2	1.2	-94.35	-95.4	-1,253.5	1,257.1	1,254.7	2.45	512.652	
700.0	700.0	707.5	707.5	1.4	1.5	-94.35	-95.4	-1,253.5	1,257.1	1,254.2	2.90	433.232	
800.0	800.0	807.5	807.5	1.7	1.7	-94.35	-95.4	-1,253.5	1,257.1	1,253.8	3.35	375.119	
900.0	900.0	907.5	907.5	1.9	1.9	-94.35	-95.4	-1,253.5	1,257.1	1,253.3	3.80	330.753	
1,000.0	1,000.0	1,007.5	1,007.5	2.1	2.1	-94.35	-95.4	-1,253.5	1,257.1	1,252.9	4.25	295.771	
1,100.0	1,100.0	1,107.5	1,107.5	2.3	2.4	-94.35	-95.4	-1,253.5	1,257.1	1,252.4	4.70	267.481	
1,200.0	1,200.0	1,207.5	1,207.5	2.6	2.6	-94.35	-95.4	-1,253.5	1,257.1	1,252.0	5.15	244.131	
1,300.0	1,300.0	1,307.5	1,307.5	2.8	2.8	-94.35	-95.4	-1,253.5	1,257.1	1,251.5	5.60	224.530	
1,400.0	1,400.0	1,407.5	1,407.5	3.0	3.0	-94.35	-95.4	-1,253.5	1,257.1	1,251.1	6.05	207.842	
1,500.0	1,500.0	1,507.5	1,507.5	3.2	3.3	-94.35	-95.4	-1,253.5	1,257.1	1,250.6	6.50	193.464	
1,600.0	1,600.0	1,607.5	1,607.5	3.5	3.5	-94.35	-95.4	-1,253.5	1,257.1	1,250.2	6.95	180.946	
1,700.0	1,700.0	1,707.5	1,707.5	3.7	3.7	-94.35	-95.4	-1,253.5	1,257.1	1,249.7	7.40	169.949	
1,800.0	1,800.0	1,807.5	1,807.5	3.9	3.9	-94.35	-95.4	-1,253.5	1,257.1	1,249.3	7.85	160.213	
1,900.0	1,900.0	1,907.5	1,907.5	4.1	4.2	-94.35	-95.4	-1,253.5	1,257.1	1,248.8	8.30	151.532	
2,000.0	2,000.0	2,007.5	2,007.5	4.4	4.4	-94.35	-95.4	-1,253.5	1,257.1	1,248.4	8.75	143.743	
2,100.0	2,100.0	2,107.5	2,107.5	4.6	4.6	-94.35	-95.4	-1,253.5	1,257.1	1,247.9	9.20	136.715	
2,200.0	2,200.0	2,207.5	2,207.5	4.8	4.8	-94.35	-95.4	-1,253.5	1,257.1	1,247.5	9.64	130.343	
2,300.0	2,300.0	2,307.5	2,307.5	5.0	5.1	-94.35	-95.4	-1,253.5	1,257.1	1,247.0	10.09	124.539	
2,400.0	2,400.0	2,407.5	2,407.5	5.3	5.3	-94.35	-95.4	-1,253.5	1,257.1	1,246.6	10.54	119.229	
2,500.0	2,500.0	2,507.5	2,507.5	5.5	5.5	-94.35	-95.4	-1,253.5	1,257.1	1,246.1	10.99	114.354	
2,600.0	2,600.0	2,607.5	2,607.5	5.7	5.7	-94.35	-95.4	-1,253.5	1,257.1	1,245.7	11.44	109.861	
2,700.0	2,700.0	2,707.5	2,707.5	5.9	6.0	-94.35	-95.4	-1,253.5	1,257.1	1,245.2	11.89	105.708	
2,800.0	2,800.0	2,807.5	2,807.5	6.2	6.2	-94.35	-95.4	-1,253.5	1,257.1	1,244.8	12.34	101.858	
2,900.0	2,900.0	2,907.5	2,907.5	6.4	6.4	-94.35	-95.4	-1,253.5	1,257.1	1,244.3	12.79	98.279	
3,000.0	3,000.0	3,007.5	3,007.5	6.6	6.6	-94.35	-95.4	-1,253.5	1,257.1	1,243.9	13.24	94.942	
3,100.0	3,100.0	3,107.5	3,107.5	6.8	6.9	-94.35	-95.4	-1,253.5	1,257.1	1,243.4	13.69	91.825	
3,200.0	3,200.0	3,207.5	3,207.5	7.1	7.1	-94.35	-95.4	-1,253.5	1,257.1	1,243.0	14.14	88.905	
3,300.0	3,300.0	3,307.5	3,307.5	7.3	7.3	-94.35	-95.4	-1,253.5	1,257.1	1,242.5	14.59	86.166	
3,400.0	3,400.0	3,407.5	3,407.5	7.5	7.5	-94.35	-95.4	-1,253.5	1,257.1	1,242.1	15.04	83.590	
3,500.0	3,500.0	3,507.5	3,507.5	7.7	7.8	-94.35	-95.4	-1,253.5	1,257.1	1,241.6	15.49	81.164	
3,600.0	3,600.0	3,607.5	3,607.5	8.0	8.0	-94.35	-95.4	-1,253.5	1,257.1	1,241.2	15.94	78.875	
3,700.0	3,700.0	3,707.5	3,707.5	8.2	8.2	-94.35	-95.4	-1,253.5	1,257.1	1,240.7	16.39	76.711	
3,800.0	3,800.0	3,807.5	3,807.5	8.4	8.4	-94.35	-95.4	-1,253.5	1,257.1	1,240.3	16.84	74.663	
3,900.0	3,900.0	3,907.5	3,907.5	8.6	8.7	-94.35	-95.4	-1,253.5	1,257.1	1,239.8	17.29	72.722	
4,000.0	4,000.0	4,007.5	4,007.5	8.9	8.9	-94.35	-95.4	-1,253.5	1,257.1	1,239.4	17.74	70.879	
4,100.0	4,100.0	4,107.5	4,107.5	9.1	9.1	-94.35	-95.4	-1,253.5	1,257.1	1,238.9	18.19	69.127	
4,200.0	4,200.0	4,207.5	4,207.5	9.3	9.3	-94.35	-95.4	-1,253.5	1,257.1	1,238.5	18.64	67.459	
4,300.0	4,300.0	4,307.5	4,307.5	9.5	9.6	-94.35	-95.4	-1,253.5	1,257.1	1,238.0	19.08	65.870	
4,400.0	4,400.0	4,407.5	4,407.5	9.8	9.8	-94.35	-95.4	-1,253.5	1,257.1	1,237.6	19.53	64.354	
4,500.0	4,500.0	4,507.5	4,507.5	10.0	10.0	-94.35	-95.4	-1,253.5	1,257.1	1,237.1	19.98	62.907	
4,600.0	4,600.0	4,607.5	4,607.5	10.2	10.2	-94.35	-95.4	-1,253.5	1,257.1	1,236.7	20.43	61.523	
4,700.0	4,700.0	4,707.5	4,707.5	10.4	10.4	-94.35	-95.4	-1,253.5	1,257.1	1,236.2	20.88	60.198	
4,800.0	4,800.0	4,807.5	4,807.5	10.7	10.7	-94.35	-95.4	-1,253.5	1,257.1	1,235.8	21.33	58.930	
4,900.0	4,900.0	4,907.5	4,907.5	10.9	10.9	-94.35	-95.4	-1,253.5	1,257.1	1,235.3	21.78	57.714	
5,000.0	5,000.0	5,007.5	5,007.5	11.1	11.1	-94.35	-95.4	-1,253.5	1,257.1	1,234.9	22.23	56.547	
5,100.0	5,100.0	5,107.5	5,107.5	11.3	11.3	-94.35	-95.4	-1,253.5	1,257.1	1,234.4	22.68	55.426	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
5,200.0	5,200.0	5,207.5	5,207.5	11.6	11.6	-94.35	-95.4	-1,253.5	1,257.1	1,234.0	23.13	54.349	
5,215.0	5,215.0	5,222.5	5,222.5	11.6	11.6	-94.35	-95.4	-1,253.5	1,257.1	1,233.9	23.20	54.191	
5,236.0	5,236.0	5,241.0	5,241.0	11.6	11.6	87.16	-95.5	-1,253.5	1,257.1	1,233.8	23.28	54.005	CC
5,250.0	5,250.0	5,250.0	5,250.0	11.7	11.7	87.17	-95.7	-1,253.5	1,257.1	1,233.8	23.32	53.903	
5,300.0	5,299.6	5,291.0	5,290.9	11.7	11.7	87.23	-98.7	-1,253.6	1,257.3	1,233.8	23.47	53.577	
5,350.0	5,348.5	5,330.2	5,329.6	11.8	11.8	87.30	-104.6	-1,253.9	1,257.6	1,234.0	23.61	53.273	
5,400.0	5,396.1	5,369.5	5,367.9	11.9	11.9	87.38	-113.4	-1,254.2	1,258.2	1,234.4	23.75	52.970	
5,450.0	5,442.1	5,409.0	5,405.6	12.0	11.9	87.48	-125.2	-1,254.7	1,259.0	1,235.1	23.91	52.652	
5,500.0	5,486.0	5,450.0	5,443.7	12.1	12.0	87.60	-140.3	-1,255.3	1,260.0	1,235.9	24.09	52.295	
5,550.0	5,527.4	5,488.8	5,478.5	12.2	12.1	87.72	-157.4	-1,256.0	1,261.2	1,236.8	24.31	51.885	
5,600.0	5,565.9	5,529.2	5,513.3	12.4	12.2	87.86	-177.8	-1,256.9	1,262.6	1,238.0	24.57	51.389	
5,650.0	5,601.2	5,570.0	5,546.8	12.6	12.3	88.02	-201.1	-1,257.8	1,264.2	1,239.3	24.89	50.793	
5,700.0	5,632.9	5,611.2	5,578.6	12.8	12.4	88.18	-227.3	-1,258.9	1,266.0	1,240.8	25.28	50.084	
5,750.0	5,660.8	5,650.0	5,606.6	13.1	12.5	88.32	-254.1	-1,260.0	1,268.1	1,242.4	25.73	49.279	
5,800.0	5,684.5	5,695.4	5,636.7	13.5	12.7	88.54	-288.1	-1,261.4	1,270.4	1,244.1	26.30	48.295	
5,850.0	5,704.0	5,738.5	5,662.4	13.9	13.0	88.73	-322.6	-1,262.8	1,272.8	1,245.9	26.96	47.216	
5,900.0	5,718.9	5,782.3	5,685.6	14.3	13.2	88.93	-359.8	-1,264.4	1,275.5	1,247.8	27.71	46.036	
5,950.0	5,729.2	5,827.0	5,705.9	14.8	13.6	89.14	-399.6	-1,266.0	1,278.4	1,249.8	28.55	44.775	
6,000.0	5,734.8	5,872.7	5,723.0	15.4	13.9	89.36	-441.8	-1,267.7	1,281.4	1,252.0	29.49	43.457	
6,033.2	5,735.9	5,903.6	5,732.4	15.7	14.2	89.51	-471.2	-1,268.9	1,283.6	1,253.4	30.15	42.568	
6,083.3	5,735.9	5,951.8	5,743.7	16.3	14.7	90.01	-518.0	-1,270.8	1,286.2	1,255.0	31.20	41.222	
6,100.0	5,735.9	5,968.2	5,746.5	16.5	14.8	90.14	-534.2	-1,271.5	1,286.9	1,255.3	31.58	40.757	
6,200.0	5,735.9	6,069.0	5,753.0	17.8	16.0	90.43	-634.5	-1,275.6	1,291.0	1,257.0	34.03	37.938	
6,300.0	5,735.9	6,168.9	5,753.0	19.2	17.2	90.42	-734.4	-1,279.7	1,295.1	1,258.4	36.72	35.267	
6,400.0	5,735.9	6,268.8	5,753.0	20.7	18.6	90.42	-834.2	-1,283.8	1,299.2	1,259.6	39.60	32.808	
6,500.0	5,735.9	6,368.7	5,753.0	22.3	20.0	90.42	-934.0	-1,287.9	1,303.3	1,260.7	42.63	30.571	
6,600.0	5,735.9	6,468.6	5,753.0	23.9	21.6	90.42	-1,033.9	-1,292.0	1,307.4	1,261.6	45.79	28.553	
6,700.0	5,735.9	6,568.6	5,753.0	25.6	23.1	90.42	-1,133.7	-1,296.1	1,311.5	1,262.5	49.05	26.741	
6,800.0	5,735.9	6,668.5	5,753.0	27.3	24.8	90.42	-1,233.5	-1,300.2	1,315.6	1,263.2	52.38	25.115	
6,900.0	5,735.9	6,769.8	5,753.0	29.0	26.5	90.42	-1,334.8	-1,304.4	1,319.7	1,263.9	55.81	23.648	
7,000.0	5,735.9	6,922.5	5,753.0	30.7	28.9	90.42	-1,487.4	-1,305.9	1,320.2	1,260.2	59.95	22.020	
7,100.0	5,735.9	7,022.5	5,753.0	32.5	30.6	90.42	-1,587.4	-1,305.9	1,320.2	1,256.7	63.46	20.804	
7,200.0	5,735.9	7,122.5	5,753.0	34.3	32.4	90.42	-1,687.4	-1,305.9	1,320.2	1,253.2	67.00	19.705	
7,300.0	5,735.9	7,222.5	5,753.0	36.1	34.2	90.42	-1,787.4	-1,305.9	1,320.2	1,249.6	70.57	18.708	
7,400.0	5,735.9	7,322.5	5,753.0	37.9	36.0	90.42	-1,887.4	-1,305.9	1,320.2	1,246.0	74.17	17.800	
7,500.0	5,735.9	7,422.5	5,753.0	39.7	37.8	90.42	-1,987.4	-1,305.9	1,320.2	1,242.4	77.79	16.971	
7,600.0	5,735.9	7,522.5	5,753.0	41.5	39.6	90.42	-2,087.4	-1,305.9	1,320.2	1,238.7	81.43	16.212	
7,700.0	5,735.9	7,622.5	5,753.0	43.4	41.4	90.42	-2,187.4	-1,305.9	1,320.2	1,235.1	85.09	15.515	
7,800.0	5,735.9	7,722.5	5,753.0	45.2	43.2	90.42	-2,287.4	-1,305.9	1,320.2	1,231.4	88.77	14.872	
7,900.0	5,735.9	7,822.5	5,753.0	47.1	45.1	90.42	-2,387.4	-1,305.9	1,320.1	1,227.7	92.45	14.279	
8,000.0	5,735.9	7,922.5	5,753.0	48.9	46.9	90.42	-2,487.4	-1,306.0	1,320.1	1,224.0	96.16	13.729	
8,100.0	5,735.9	8,022.5	5,753.0	50.8	48.8	90.42	-2,587.4	-1,306.0	1,320.1	1,220.3	99.87	13.219	
8,200.0	5,735.9	8,122.5	5,753.0	52.6	50.6	90.42	-2,687.4	-1,306.0	1,320.1	1,216.6	103.59	12.744	
8,300.0	5,735.9	8,222.5	5,753.0	54.5	52.5	90.42	-2,787.4	-1,306.0	1,320.1	1,212.8	107.32	12.301	
8,400.0	5,735.9	8,322.5	5,753.0	56.4	54.3	90.42	-2,887.4	-1,306.0	1,320.1	1,209.1	111.06	11.887	
8,500.0	5,735.9	8,422.5	5,753.0	58.2	56.2	90.42	-2,987.4	-1,306.0	1,320.1	1,205.3	114.80	11.499	
8,600.0	5,735.9	8,522.5	5,753.0	60.1	58.1	90.42	-3,087.4	-1,306.0	1,320.1	1,201.6	118.55	11.136	
8,700.0	5,735.9	8,622.5	5,753.0	62.0	60.0	90.42	-3,187.4	-1,306.0	1,320.1	1,197.8	122.31	10.794	
8,800.0	5,735.9	8,722.5	5,753.0	63.9	61.8	90.42	-3,287.4	-1,306.0	1,320.1	1,194.1	126.07	10.471	
8,900.0	5,735.9	8,822.5	5,753.0	65.8	63.7	90.42	-3,387.4	-1,306.0	1,320.1	1,190.3	129.84	10.168	
9,000.0	5,735.9	8,922.5	5,753.0	67.7	65.6	90.42	-3,487.4	-1,306.0	1,320.1	1,186.5	133.61	9.881	
9,100.0	5,735.9	9,022.5	5,753.0	69.5	67.5	90.42	-3,587.4	-1,306.0	1,320.1	1,182.7	137.38	9.609	

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-3414B
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-3414B	**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	5,735.9	9,122.5	5,753.0	71.4	69.4	90.42	-3,687.4	-1,306.0	1,320.1	1,179.0	141.16	9.352	
9,300.0	5,735.9	9,222.5	5,753.0	73.3	71.3	90.42	-3,787.4	-1,306.0	1,320.1	1,175.2	144.94	9.108	
9,400.0	5,735.9	9,322.5	5,753.0	75.2	73.2	90.42	-3,887.4	-1,306.0	1,320.1	1,171.4	148.73	8.876	
9,500.0	5,735.9	9,422.5	5,753.0	77.1	75.1	90.41	-3,987.4	-1,306.0	1,320.1	1,167.6	152.51	8.656	
9,600.0	5,735.9	9,522.5	5,753.0	79.0	77.0	90.41	-4,087.4	-1,306.0	1,320.1	1,163.8	156.30	8.446	
9,700.0	5,735.9	9,622.5	5,753.0	80.9	78.8	90.41	-4,187.4	-1,306.0	1,320.1	1,160.0	160.10	8.246	
9,800.0	5,735.9	9,722.5	5,753.0	82.8	80.7	90.41	-4,287.4	-1,306.0	1,320.1	1,156.2	163.89	8.055	
9,900.0	5,735.9	9,822.5	5,753.0	84.7	82.6	90.41	-4,387.4	-1,306.1	1,320.1	1,152.4	167.69	7.872	
10,000.0	5,735.9	9,922.5	5,753.0	86.6	84.5	90.41	-4,487.4	-1,306.1	1,320.1	1,148.6	171.49	7.698	
10,100.0	5,736.0	10,022.5	5,753.0	88.5	86.4	90.41	-4,587.4	-1,306.1	1,320.1	1,144.8	175.29	7.531	
10,200.0	5,736.0	10,122.5	5,753.0	90.4	88.3	90.41	-4,687.4	-1,306.1	1,320.1	1,141.0	179.09	7.371	
10,300.0	5,736.0	10,222.5	5,753.0	92.3	90.2	90.41	-4,787.4	-1,306.1	1,320.1	1,137.2	182.89	7.218	
10,400.0	5,736.0	10,322.5	5,753.0	94.2	92.1	90.41	-4,887.4	-1,306.1	1,320.1	1,133.4	186.70	7.071	
10,500.0	5,736.0	10,422.5	5,753.0	96.1	94.0	90.41	-4,987.4	-1,306.1	1,320.1	1,129.6	190.51	6.929	
10,600.0	5,736.0	10,522.5	5,753.0	98.0	96.0	90.41	-5,087.4	-1,306.1	1,320.1	1,125.8	194.32	6.794	
10,700.0	5,736.0	10,622.5	5,753.0	99.9	97.9	90.41	-5,187.4	-1,306.1	1,320.1	1,122.0	198.13	6.663	
10,800.0	5,736.0	10,722.5	5,753.0	101.8	99.8	90.41	-5,287.4	-1,306.1	1,320.1	1,118.2	201.94	6.537	
10,900.0	5,736.0	10,822.5	5,753.0	103.7	101.7	90.41	-5,387.4	-1,306.1	1,320.1	1,114.3	205.75	6.416	
11,000.0	5,736.0	10,922.5	5,753.0	105.7	103.6	90.41	-5,487.4	-1,306.1	1,320.1	1,110.5	209.56	6.299	
11,100.0	5,736.0	11,022.5	5,753.0	107.6	105.5	90.41	-5,587.4	-1,306.1	1,320.1	1,106.7	213.38	6.187	
11,200.0	5,736.0	11,122.5	5,753.0	109.5	107.4	90.41	-5,687.4	-1,306.1	1,320.1	1,102.9	217.19	6.078	
11,300.0	5,736.0	11,222.5	5,753.0	111.4	109.3	90.41	-5,787.4	-1,306.1	1,320.1	1,099.1	221.01	5.973	
11,400.0	5,736.0	11,322.5	5,753.0	113.3	111.2	90.41	-5,887.4	-1,306.1	1,320.1	1,095.3	224.83	5.872	
11,500.0	5,736.0	11,422.5	5,753.0	115.2	113.1	90.41	-5,987.4	-1,306.1	1,320.1	1,091.4	228.64	5.774	
11,600.0	5,736.0	11,522.5	5,753.0	117.1	115.0	90.41	-6,087.4	-1,306.1	1,320.1	1,087.6	232.46	5.679	
11,700.0	5,736.0	11,622.5	5,753.0	119.0	116.9	90.41	-6,187.4	-1,306.1	1,320.1	1,083.8	236.28	5.587	
11,800.0	5,736.0	11,722.5	5,753.0	120.9	118.8	90.41	-6,287.4	-1,306.1	1,320.1	1,080.0	240.10	5.498	
11,900.0	5,736.0	11,822.5	5,753.0	122.8	120.8	90.41	-6,387.4	-1,306.2	1,320.1	1,076.2	243.92	5.412	
12,000.0	5,736.0	11,922.5	5,753.0	124.7	122.7	90.41	-6,487.4	-1,306.2	1,320.1	1,072.3	247.75	5.328	
12,100.0	5,736.0	12,022.5	5,753.0	126.7	124.6	90.41	-6,587.4	-1,306.2	1,320.1	1,068.5	251.57	5.247	
12,200.0	5,736.0	12,122.5	5,753.0	128.6	126.5	90.41	-6,687.4	-1,306.2	1,320.1	1,064.7	255.39	5.169	
12,300.0	5,736.0	12,222.5	5,753.0	130.5	128.4	90.41	-6,787.4	-1,306.2	1,320.1	1,060.9	259.21	5.093	
12,400.0	5,736.0	12,322.5	5,753.0	132.4	130.3	90.41	-6,887.4	-1,306.2	1,320.1	1,057.0	263.04	5.019	
12,500.0	5,736.0	12,422.5	5,753.0	134.3	132.2	90.41	-6,987.4	-1,306.2	1,320.1	1,053.2	266.86	4.947	
12,559.5	5,736.0	12,482.0	5,753.0	135.4	133.4	90.41	-7,046.9	-1,306.2	1,320.1	1,050.9	269.14	4.905	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	-90.96	-20.4	-1,221.1	1,221.3				
100.0	100.0	110.5	110.5	0.1	0.1	-90.96	-20.4	-1,221.1	1,221.3	1,221.1	0.21	5,780.347	
200.0	200.0	210.5	210.5	0.3	0.3	-90.96	-20.4	-1,221.1	1,221.3	1,220.6	0.66	1,848.139	
300.0	300.0	310.5	310.5	0.5	0.6	-90.96	-20.4	-1,221.1	1,221.3	1,220.2	1.11	1,099.905	
400.0	400.0	410.5	410.5	0.8	0.8	-90.96	-20.4	-1,221.1	1,221.3	1,219.7	1.56	782.930	
500.0	500.0	511.6	511.6	1.0	1.0	-90.96	-20.4	-1,221.1	1,221.3	1,219.3	2.01	608.009	
600.0	600.0	621.5	621.5	1.2	1.2	-91.07	-22.9	-1,220.5	1,220.8	1,218.3	2.45	498.581	
700.0	700.0	728.4	728.2	1.4	1.4	-91.37	-29.1	-1,219.0	1,219.5	1,216.6	2.88	423.485	
800.0	800.0	828.2	827.7	1.7	1.6	-91.69	-35.9	-1,217.4	1,218.1	1,214.8	3.32	367.226	
900.0	900.0	927.9	927.2	1.9	1.9	-92.01	-42.6	-1,215.8	1,216.7	1,212.9	3.77	322.964	
1,000.0	1,000.0	1,027.7	1,026.7	2.1	2.1	-92.33	-49.4	-1,214.2	1,215.3	1,211.1	4.23	287.549	
1,100.0	1,100.0	1,127.4	1,126.2	2.3	2.4	-92.65	-56.2	-1,212.6	1,214.0	1,209.3	4.69	258.735	
1,200.0	1,200.0	1,227.2	1,225.7	2.6	2.6	-92.98	-62.9	-1,211.0	1,212.7	1,207.6	5.16	234.922	
1,300.0	1,300.0	1,326.9	1,325.3	2.8	2.8	-93.30	-69.7	-1,209.4	1,211.5	1,205.9	5.64	214.960	
1,400.0	1,400.0	1,426.7	1,424.8	3.0	3.1	-93.62	-76.5	-1,207.8	1,210.3	1,204.2	6.11	198.014	
1,500.0	1,500.0	1,526.5	1,524.3	3.2	3.4	-93.95	-83.3	-1,206.2	1,209.2	1,202.6	6.59	183.467	
1,600.0	1,600.0	1,626.2	1,623.8	3.5	3.6	-94.27	-90.0	-1,204.6	1,208.0	1,201.0	7.07	170.855	
1,700.0	1,700.0	1,726.0	1,723.3	3.7	3.9	-94.60	-96.8	-1,203.0	1,207.0	1,199.4	7.55	159.822	
1,800.0	1,800.0	1,825.7	1,822.8	3.9	4.1	-94.93	-103.6	-1,201.4	1,205.9	1,197.9	8.03	150.096	
1,900.0	1,900.0	1,925.5	1,922.3	4.1	4.4	-95.25	-110.3	-1,199.8	1,204.9	1,196.4	8.52	141.461	
2,000.0	2,000.0	2,025.2	2,021.8	4.4	4.6	-95.58	-117.1	-1,198.2	1,203.9	1,194.9	9.00	133.746	
2,100.0	2,100.0	2,125.0	2,121.4	4.6	4.9	-95.91	-123.9	-1,196.6	1,203.0	1,193.5	9.49	126.814	
2,200.0	2,200.0	2,224.7	2,220.9	4.8	5.2	-96.24	-130.7	-1,195.0	1,202.1	1,192.2	9.97	120.553	
2,300.0	2,300.0	2,324.5	2,320.4	5.0	5.4	-96.57	-137.4	-1,193.4	1,201.3	1,190.8	10.46	114.871	
2,400.0	2,400.0	2,424.3	2,419.9	5.3	5.7	-96.90	-144.2	-1,191.8	1,200.5	1,189.6	10.94	109.693	
2,500.0	2,500.0	2,524.0	2,519.4	5.5	5.9	-97.23	-151.0	-1,190.2	1,199.7	1,188.3	11.43	104.956	
2,600.0	2,600.0	2,623.8	2,618.9	5.7	6.2	-97.56	-157.7	-1,188.6	1,199.0	1,187.1	11.92	100.605	
2,700.0	2,700.0	2,723.5	2,718.4	5.9	6.5	-97.89	-164.5	-1,187.0	1,198.3	1,185.9	12.41	96.598	
2,800.0	2,800.0	2,823.3	2,818.0	6.2	6.7	-98.22	-171.3	-1,185.4	1,197.7	1,184.8	12.89	92.894	
2,900.0	2,900.0	2,923.0	2,917.5	6.4	7.0	-98.55	-178.1	-1,183.7	1,197.1	1,183.7	13.38	89.461	
3,000.0	3,000.0	3,022.8	3,017.0	6.6	7.2	-98.89	-184.8	-1,182.1	1,196.5	1,182.7	13.87	86.272	
3,100.0	3,100.0	3,122.6	3,116.5	6.8	7.5	-99.22	-191.6	-1,180.5	1,196.0	1,181.6	14.36	83.301	
3,200.0	3,200.0	3,222.3	3,216.0	7.1	7.8	-99.55	-198.4	-1,178.9	1,195.5	1,180.7	14.85	80.527	
3,300.0	3,300.0	3,322.1	3,315.5	7.3	8.0	-99.88	-205.1	-1,177.3	1,195.1	1,179.7	15.34	77.932	
3,400.0	3,400.0	3,421.8	3,415.0	7.5	8.3	-100.22	-211.9	-1,175.7	1,194.7	1,178.9	15.82	75.498	
3,500.0	3,500.0	3,521.6	3,514.5	7.7	8.6	-100.55	-218.7	-1,174.1	1,194.3	1,178.0	16.31	73.213	
3,600.0	3,600.0	3,621.3	3,614.1	8.0	8.8	-100.88	-225.5	-1,172.5	1,194.0	1,177.2	16.80	71.062	
3,700.0	3,700.0	3,721.1	3,713.6	8.2	9.1	-101.22	-232.2	-1,170.9	1,193.7	1,176.4	17.29	69.035	
3,800.0	3,800.0	3,820.9	3,813.1	8.4	9.3	-101.55	-239.0	-1,169.3	1,193.5	1,175.7	17.78	67.121	
3,900.0	3,900.0	3,920.6	3,912.6	8.6	9.6	-101.89	-245.8	-1,167.7	1,193.3	1,175.0	18.27	65.312	
4,000.0	4,000.0	4,020.4	4,012.1	8.9	9.9	-102.22	-252.5	-1,166.1	1,193.1	1,174.4	18.76	63.599	
4,100.0	4,100.0	4,120.1	4,111.6	9.1	10.1	-102.55	-259.3	-1,164.5	1,193.0	1,173.8	19.25	61.975	
4,200.0	4,200.0	4,219.9	4,211.1	9.3	10.4	-102.89	-266.1	-1,162.9	1,192.9	1,173.2	19.74	60.433	
4,300.0	4,300.0	4,319.6	4,310.7	9.5	10.7	-103.22	-272.9	-1,161.3	1,192.9	1,172.7	20.23	58.968	
4,331.4	4,331.4	4,351.0	4,341.9	9.6	10.7	-103.33	-275.0	-1,160.8	1,192.9	1,172.5	20.38	58.523	
4,400.0	4,400.0	4,419.4	4,410.2	9.8	10.9	-103.56	-279.6	-1,159.7	1,192.9	1,172.2	20.72	57.574	
4,500.0	4,500.0	4,519.1	4,509.7	10.0	11.2	-103.89	-286.4	-1,158.1	1,193.0	1,171.8	21.21	56.246	
4,600.0	4,600.0	4,618.9	4,609.2	10.2	11.5	-104.22	-293.2	-1,156.5	1,193.1	1,171.4	21.70	54.980	
4,700.0	4,700.0	4,718.7	4,708.7	10.4	11.7	-104.56	-299.9	-1,154.9	1,193.2	1,171.0	22.19	53.772	
4,800.0	4,800.0	4,818.4	4,808.2	10.7	12.0	-104.89	-306.7	-1,153.3	1,193.4	1,170.7	22.68	52.617	
4,900.0	4,900.0	4,918.2	4,907.7	10.9	12.2	-105.23	-313.5	-1,151.7	1,193.6	1,170.4	23.17	51.513	
5,000.0	5,000.0	5,017.9	5,007.2	11.1	12.5	-105.56	-320.3	-1,150.1	1,193.8	1,170.2	23.66	50.456	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	5,117.7	5,106.8	11.3	12.8	-105.89	-327.0	-1,148.5	1,194.1	1,170.0	24.15	49.444	
5,200.0	5,200.0	5,215.0	5,203.8	11.6	13.0	-106.24	-334.0	-1,146.8	1,194.5	1,169.8	24.64	48.470	
5,215.0	5,215.0	5,228.3	5,217.0	11.6	13.1	-106.32	-335.6	-1,146.4	1,194.6	1,169.9	24.72	48.323	
5,250.0	5,250.0	5,259.1	5,247.4	11.7	13.2	74.99	-340.6	-1,145.3	1,194.6	1,169.8	24.83	48.107	
5,300.0	5,299.6	5,300.0	5,287.2	11.7	13.4	74.83	-349.8	-1,143.1	1,193.8	1,168.7	25.06	47.634	
5,350.0	5,348.5	5,346.1	5,330.9	11.8	13.6	74.76	-363.8	-1,139.8	1,192.0	1,166.7	25.34	47.043	
5,400.0	5,396.1	5,389.0	5,370.4	11.9	13.8	74.83	-380.1	-1,135.9	1,189.3	1,163.6	25.63	46.408	
5,450.0	5,442.1	5,431.5	5,408.0	12.0	14.1	75.03	-399.4	-1,131.3	1,185.6	1,159.6	25.94	45.697	
5,500.0	5,486.0	5,473.8	5,443.6	12.1	14.4	75.35	-421.5	-1,126.1	1,181.0	1,154.7	26.30	44.898	
5,550.0	5,527.4	5,515.7	5,477.1	12.2	14.8	75.79	-446.1	-1,120.2	1,175.5	1,148.8	26.72	43.999	
5,600.0	5,565.9	5,557.5	5,508.3	12.4	15.2	76.35	-473.1	-1,113.9	1,169.2	1,142.0	27.20	42.990	
5,650.0	5,601.2	5,600.0	5,537.6	12.6	15.6	77.03	-503.0	-1,106.8	1,162.1	1,134.3	27.77	41.852	
5,700.0	5,632.9	5,640.4	5,563.1	12.8	16.0	77.82	-533.6	-1,099.5	1,154.3	1,125.8	28.41	40.621	
5,750.0	5,660.8	5,681.7	5,586.6	13.1	16.5	78.72	-566.6	-1,091.7	1,145.8	1,116.6	29.17	39.280	
5,800.0	5,684.5	5,723.0	5,607.3	13.5	17.0	79.72	-601.4	-1,083.5	1,136.7	1,106.7	30.02	37.862	
5,850.0	5,704.0	5,764.3	5,625.1	13.9	17.5	80.83	-637.6	-1,074.9	1,127.1	1,096.2	30.97	36.391	
5,900.0	5,718.9	5,805.6	5,639.9	14.3	18.1	82.02	-675.1	-1,066.0	1,117.2	1,085.2	32.02	34.894	
5,950.0	5,729.2	5,850.0	5,652.3	14.8	18.8	83.30	-716.6	-1,056.2	1,106.9	1,073.7	33.18	33.355	
6,000.0	5,734.8	5,888.7	5,660.2	15.4	19.3	84.64	-753.5	-1,047.4	1,096.4	1,062.0	34.34	31.923	
6,033.2	5,735.9	5,916.5	5,664.0	15.7	19.8	85.56	-780.2	-1,041.1	1,089.3	1,054.1	35.17	30.972	
6,083.3	5,735.9	5,958.7	5,667.1	16.3	20.4	85.67	-821.2	-1,031.4	1,078.2	1,041.9	36.31	29.696	
6,100.0	5,735.9	5,972.8	5,667.4	16.5	20.6	85.67	-834.9	-1,028.1	1,074.3	1,037.6	36.72	29.260	
6,200.0	5,735.9	6,036.4	5,667.4	17.8	21.5	85.61	-897.0	-1,014.4	1,052.8	1,013.9	38.88	27.076	
6,300.0	5,735.9	6,100.0	5,667.4	19.2	22.4	85.56	-959.5	-1,002.8	1,034.5	993.4	41.13	25.152	
6,400.0	5,735.9	6,164.4	5,667.4	20.7	23.3	85.52	-1,023.2	-993.1	1,019.5	976.0	43.52	23.424	
6,500.0	5,735.9	6,229.3	5,667.4	22.3	24.3	85.48	-1,087.7	-985.5	1,007.9	961.9	46.01	21.906	
6,600.0	5,735.9	6,300.0	5,667.4	23.9	25.3	85.46	-1,158.1	-979.8	999.7	951.0	48.66	20.546	
6,700.0	5,735.9	6,360.4	5,667.4	25.6	26.2	85.44	-1,218.4	-977.0	994.8	943.6	51.22	19.421	
6,800.0	5,735.9	6,429.5	5,667.4	27.3	27.3	85.44	-1,287.5	-976.0	993.4	939.4	53.97	18.406	
6,900.0	5,735.9	6,529.5	5,667.4	29.0	28.9	85.44	-1,387.5	-976.0	993.4	936.1	57.34	17.325	
7,000.0	5,735.9	6,629.5	5,667.4	30.7	30.6	85.44	-1,487.5	-976.0	993.4	932.6	60.80	16.338	
7,100.0	5,735.9	6,729.5	5,667.4	32.5	32.4	85.44	-1,587.5	-976.0	993.4	929.1	64.31	15.448	
7,200.0	5,735.9	6,829.5	5,667.4	34.3	34.1	85.44	-1,687.5	-976.0	993.4	925.5	67.85	14.642	
7,300.0	5,735.9	6,929.5	5,667.4	36.1	35.9	85.44	-1,787.5	-976.0	993.4	922.0	71.42	13.910	
7,400.0	5,735.9	7,029.5	5,667.4	37.9	37.7	85.44	-1,887.5	-976.0	993.4	918.4	75.01	13.243	
7,500.0	5,735.9	7,129.5	5,667.4	39.7	39.5	85.44	-1,987.5	-976.0	993.4	914.7	78.63	12.633	
7,600.0	5,735.9	7,229.5	5,667.3	41.5	41.3	85.44	-2,087.5	-976.0	993.4	911.1	82.27	12.075	
7,700.0	5,735.9	7,329.5	5,667.3	43.4	43.1	85.43	-2,187.5	-976.0	993.4	907.4	85.92	11.561	
7,800.0	5,735.9	7,429.5	5,667.3	45.2	44.9	85.43	-2,287.5	-976.0	993.4	903.8	89.59	11.088	
7,900.0	5,735.9	7,529.5	5,667.3	47.1	46.8	85.43	-2,387.5	-976.0	993.4	900.1	93.27	10.650	
8,000.0	5,735.9	7,629.5	5,667.3	48.9	48.6	85.43	-2,487.5	-976.0	993.4	896.4	96.97	10.244	
8,100.0	5,735.9	7,729.5	5,667.3	50.8	50.4	85.43	-2,587.5	-976.0	993.4	892.7	100.67	9.867	
8,200.0	5,735.9	7,829.5	5,667.3	52.6	52.3	85.43	-2,687.5	-976.0	993.3	889.0	104.39	9.516	
8,300.0	5,735.9	7,929.5	5,667.3	54.5	54.2	85.43	-2,787.5	-976.0	993.3	885.2	108.11	9.189	
8,400.0	5,735.9	8,029.5	5,667.3	56.4	56.0	85.43	-2,887.5	-976.0	993.3	881.5	111.84	8.882	
8,500.0	5,735.9	8,129.5	5,667.3	58.2	57.9	85.43	-2,987.5	-976.1	993.3	877.8	115.57	8.595	
8,600.0	5,735.9	8,229.5	5,667.3	60.1	59.7	85.43	-3,087.5	-976.1	993.3	874.0	119.31	8.325	
8,700.0	5,735.9	8,329.5	5,667.3	62.0	61.6	85.43	-3,187.5	-976.1	993.3	870.3	123.06	8.072	
8,800.0	5,735.9	8,429.5	5,667.3	63.9	63.5	85.43	-3,287.5	-976.1	993.3	866.5	126.81	7.833	
8,900.0	5,735.9	8,529.5	5,667.3	65.8	65.4	85.43	-3,387.5	-976.1	993.3	862.7	130.57	7.608	
9,000.0	5,735.9	8,629.5	5,667.2	67.7	67.2	85.43	-3,487.5	-976.1	993.3	859.0	134.33	7.395	
9,100.0	5,735.9	8,729.5	5,667.2	69.5	69.1	85.43	-3,587.5	-976.1	993.3	855.2	138.10	7.193	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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
9,200.0	5,735.9	8,829.5	5,667.2	71.4	71.0	85.43	-3,687.5	-976.1	993.3	851.4	141.86	7.002	
9,300.0	5,735.9	8,929.5	5,667.2	73.3	72.9	85.43	-3,787.5	-976.1	993.3	847.7	145.64	6.820	
9,400.0	5,735.9	9,029.5	5,667.2	75.2	74.8	85.43	-3,887.5	-976.1	993.3	843.9	149.41	6.648	
9,500.0	5,735.9	9,129.5	5,667.2	77.1	76.7	85.43	-3,987.5	-976.1	993.3	840.1	153.19	6.484	
9,600.0	5,735.9	9,229.5	5,667.2	79.0	78.6	85.42	-4,087.5	-976.1	993.3	836.3	156.97	6.328	
9,700.0	5,735.9	9,329.5	5,667.2	80.9	80.5	85.42	-4,187.5	-976.1	993.3	832.5	160.75	6.179	
9,800.0	5,735.9	9,429.5	5,667.2	82.8	82.4	85.42	-4,287.5	-976.1	993.3	828.7	164.53	6.037	
9,900.0	5,735.9	9,529.5	5,667.2	84.7	84.3	85.42	-4,387.5	-976.1	993.3	824.9	168.32	5.901	
10,000.0	5,735.9	9,629.5	5,667.2	86.6	86.1	85.42	-4,487.5	-976.1	993.3	821.2	172.11	5.771	
10,100.0	5,736.0	9,729.5	5,667.2	88.5	88.0	85.42	-4,587.5	-976.1	993.3	817.4	175.90	5.647	
10,200.0	5,736.0	9,829.5	5,667.2	90.4	89.9	85.42	-4,687.5	-976.1	993.3	813.6	179.69	5.527	
10,300.0	5,736.0	9,929.5	5,667.2	92.3	91.8	85.42	-4,787.5	-976.1	993.2	809.8	183.49	5.413	
10,400.0	5,736.0	10,029.5	5,667.1	94.2	93.7	85.42	-4,887.5	-976.1	993.2	806.0	187.28	5.303	
10,500.0	5,736.0	10,129.5	5,667.1	96.1	95.6	85.42	-4,987.5	-976.1	993.2	802.2	191.08	5.198	
10,600.0	5,736.0	10,229.5	5,667.1	98.0	97.5	85.42	-5,087.5	-976.1	993.2	798.4	194.88	5.097	
10,700.0	5,736.0	10,329.5	5,667.1	99.9	99.4	85.42	-5,187.5	-976.1	993.2	794.6	198.68	4.999	
10,800.0	5,736.0	10,429.5	5,667.1	101.8	101.4	85.42	-5,287.5	-976.1	993.2	790.7	202.48	4.905	
10,900.0	5,736.0	10,529.5	5,667.1	103.7	103.3	85.42	-5,387.5	-976.1	993.2	786.9	206.28	4.815	
11,000.0	5,736.0	10,629.5	5,667.1	105.7	105.2	85.42	-5,487.5	-976.1	993.2	783.1	210.08	4.728	
11,100.0	5,736.0	10,729.5	5,667.1	107.6	107.1	85.42	-5,587.5	-976.1	993.2	779.3	213.89	4.644	
11,200.0	5,736.0	10,829.5	5,667.1	109.5	109.0	85.42	-5,687.5	-976.1	993.2	775.5	217.69	4.562	
11,300.0	5,736.0	10,929.5	5,667.1	111.4	110.9	85.42	-5,787.5	-976.1	993.2	771.7	221.50	4.484	
11,400.0	5,736.0	11,029.5	5,667.1	113.3	112.8	85.41	-5,887.5	-976.1	993.2	767.9	225.30	4.408	
11,500.0	5,736.0	11,129.5	5,667.1	115.2	114.7	85.41	-5,987.5	-976.1	993.2	764.1	229.11	4.335	
11,600.0	5,736.0	11,229.5	5,667.1	117.1	116.6	85.41	-6,087.5	-976.1	993.2	760.3	232.92	4.264	
11,700.0	5,736.0	11,329.5	5,667.1	119.0	118.5	85.41	-6,187.5	-976.1	993.2	756.5	236.73	4.195	
11,800.0	5,736.0	11,429.5	5,667.1	120.9	120.4	85.41	-6,287.5	-976.1	993.2	752.6	240.54	4.129	
11,900.0	5,736.0	11,529.5	5,667.0	122.8	122.3	85.41	-6,387.5	-976.1	993.2	748.8	244.35	4.065	
12,000.0	5,736.0	11,629.5	5,667.0	124.7	124.2	85.41	-6,487.5	-976.1	993.2	745.0	248.16	4.002	
12,100.0	5,736.0	11,729.5	5,667.0	126.7	126.1	85.41	-6,587.5	-976.1	993.2	741.2	251.97	3.942	
12,200.0	5,736.0	11,829.5	5,667.0	128.6	128.1	85.41	-6,687.5	-976.1	993.2	737.4	255.78	3.883	
12,300.0	5,736.0	11,929.5	5,667.0	130.5	130.0	85.41	-6,787.5	-976.1	993.2	733.6	259.60	3.826	
12,400.0	5,736.0	12,029.5	5,667.0	132.4	131.9	85.41	-6,887.5	-976.1	993.2	729.7	263.41	3.770	
12,500.0	5,736.0	12,129.5	5,667.0	134.3	133.7	85.41	-6,987.5	-976.1	993.1	726.0	267.12	3.718	
12,559.5	5,736.0	12,189.0	5,667.0	135.4	134.6	85.41	-7,047.0	-976.1	993.1	724.0	269.18	3.690	CC, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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	-94.59	-95.4	-1,188.2	1,192.0				
100.0	100.0	107.5	107.5	0.1	0.1	-94.59	-95.4	-1,188.2	1,192.0	1,191.8	0.20	5,827.738	
200.0	200.0	207.5	207.5	0.3	0.3	-94.59	-95.4	-1,188.2	1,192.0	1,191.3	0.65	1,822.421	
300.0	300.0	307.5	307.5	0.5	0.6	-94.59	-95.4	-1,188.2	1,192.0	1,190.9	1.10	1,080.091	
400.0	400.0	407.5	407.5	0.8	0.8	-94.59	-95.4	-1,188.2	1,192.0	1,190.4	1.55	767.474	
500.0	500.0	508.8	508.8	1.0	1.0	-94.59	-95.4	-1,188.2	1,192.0	1,190.0	2.00	595.005	
600.0	600.0	626.2	626.1	1.2	1.2	-94.72	-97.9	-1,187.0	1,191.1	1,188.7	2.46	484.401	
700.0	700.0	736.8	736.6	1.4	1.5	-95.02	-104.0	-1,184.1	1,189.0	1,186.1	2.90	409.850	
800.0	800.0	836.6	836.1	1.7	1.7	-95.34	-110.3	-1,181.1	1,186.5	1,183.2	3.34	355.251	
900.0	900.0	936.3	935.6	1.9	1.9	-95.65	-116.6	-1,178.1	1,184.2	1,180.4	3.79	312.385	
1,000.0	1,000.0	1,036.1	1,035.1	2.1	2.1	-95.97	-122.9	-1,175.1	1,181.8	1,177.5	4.25	278.092	
1,100.0	1,100.0	1,135.9	1,134.6	2.3	2.4	-96.29	-129.2	-1,172.1	1,179.5	1,174.8	4.71	250.179	
1,200.0	1,200.0	1,235.6	1,234.1	2.6	2.6	-96.61	-135.4	-1,169.1	1,177.2	1,172.0	5.18	227.093	
1,300.0	1,300.0	1,335.4	1,333.7	2.8	2.9	-96.93	-141.7	-1,166.1	1,175.0	1,169.3	5.66	207.727	
1,400.0	1,400.0	1,435.1	1,433.2	3.0	3.1	-97.25	-148.0	-1,163.1	1,172.7	1,166.6	6.13	191.274	
1,500.0	1,500.0	1,534.9	1,532.7	3.2	3.4	-97.58	-154.3	-1,160.1	1,170.6	1,164.0	6.61	177.138	
1,600.0	1,600.0	1,634.6	1,632.2	3.5	3.6	-97.90	-160.6	-1,157.1	1,168.4	1,161.4	7.09	164.874	
1,700.0	1,700.0	1,734.4	1,731.7	3.7	3.9	-98.23	-166.9	-1,154.1	1,166.3	1,158.8	7.57	154.139	
1,800.0	1,800.0	1,834.1	1,831.2	3.9	4.2	-98.55	-173.1	-1,151.1	1,164.3	1,156.2	8.05	144.669	
1,900.0	1,900.0	1,933.9	1,930.7	4.1	4.4	-98.88	-179.4	-1,148.1	1,162.3	1,153.7	8.53	136.257	
2,000.0	2,000.0	2,033.7	2,030.2	4.4	4.7	-99.21	-185.7	-1,145.1	1,160.3	1,151.3	9.01	128.737	
2,100.0	2,100.0	2,133.4	2,129.8	4.6	4.9	-99.54	-192.0	-1,142.1	1,158.4	1,148.9	9.50	121.977	
2,200.0	2,200.0	2,233.2	2,229.3	4.8	5.2	-99.87	-198.3	-1,139.1	1,156.5	1,146.5	9.98	115.868	
2,300.0	2,300.0	2,332.9	2,328.8	5.0	5.4	-100.21	-204.5	-1,136.1	1,154.6	1,144.1	10.47	110.322	
2,400.0	2,400.0	2,432.7	2,428.3	5.3	5.7	-100.54	-210.8	-1,133.1	1,152.8	1,141.8	10.95	105.267	
2,500.0	2,500.0	2,532.4	2,527.8	5.5	6.0	-100.87	-217.1	-1,130.1	1,151.0	1,139.5	11.44	100.639	
2,600.0	2,600.0	2,632.2	2,627.3	5.7	6.2	-101.21	-223.4	-1,127.1	1,149.2	1,137.3	11.92	96.389	
2,700.0	2,700.0	2,732.0	2,726.8	5.9	6.5	-101.55	-229.7	-1,124.1	1,147.5	1,135.1	12.41	92.472	
2,800.0	2,800.0	2,831.7	2,826.4	6.2	6.8	-101.88	-235.9	-1,121.1	1,145.9	1,133.0	12.90	88.851	
2,900.0	2,900.0	2,931.5	2,925.9	6.4	7.0	-102.22	-242.2	-1,118.2	1,144.2	1,130.9	13.38	85.494	
3,000.0	3,000.0	3,031.2	3,025.4	6.6	7.3	-102.56	-248.5	-1,115.2	1,142.7	1,128.8	13.87	82.375	
3,100.0	3,100.0	3,131.0	3,124.9	6.8	7.5	-102.90	-254.8	-1,112.2	1,141.1	1,126.7	14.36	79.468	
3,200.0	3,200.0	3,230.7	3,224.4	7.1	7.8	-103.24	-261.1	-1,109.2	1,139.6	1,124.8	14.85	76.754	
3,300.0	3,300.0	3,330.5	3,323.9	7.3	8.1	-103.59	-267.3	-1,106.2	1,138.1	1,122.8	15.34	74.214	
3,400.0	3,400.0	3,430.2	3,423.4	7.5	8.3	-103.93	-273.6	-1,103.2	1,136.7	1,120.9	15.82	71.832	
3,500.0	3,500.0	3,530.0	3,523.0	7.7	8.6	-104.27	-279.9	-1,100.2	1,135.3	1,119.0	16.31	69.595	
3,600.0	3,600.0	3,629.8	3,622.5	8.0	8.9	-104.62	-286.2	-1,097.2	1,134.0	1,117.2	16.80	67.489	
3,700.0	3,700.0	3,729.5	3,722.0	8.2	9.1	-104.96	-292.5	-1,094.2	1,132.7	1,115.4	17.29	65.504	
3,800.0	3,800.0	3,829.3	3,821.5	8.4	9.4	-105.31	-298.8	-1,091.2	1,131.4	1,113.7	17.78	63.630	
3,900.0	3,900.0	3,929.0	3,921.0	8.6	9.6	-105.66	-305.0	-1,088.2	1,130.2	1,112.0	18.27	61.858	
4,000.0	4,000.0	4,028.8	4,020.5	8.9	9.9	-106.01	-311.3	-1,085.2	1,129.0	1,110.3	18.76	60.180	
4,100.0	4,100.0	4,128.5	4,120.0	9.1	10.2	-106.36	-317.6	-1,082.2	1,127.9	1,108.7	19.25	58.589	
4,200.0	4,200.0	4,228.3	4,219.5	9.3	10.4	-106.70	-323.9	-1,079.2	1,126.8	1,107.1	19.74	57.079	
4,300.0	4,300.0	4,328.1	4,319.1	9.5	10.7	-107.05	-330.2	-1,076.2	1,125.8	1,105.5	20.23	55.644	
4,400.0	4,400.0	4,427.8	4,418.6	9.8	11.0	-107.41	-336.4	-1,073.2	1,124.8	1,104.1	20.72	54.278	
4,500.0	4,500.0	4,527.6	4,518.1	10.0	11.2	-107.76	-342.7	-1,070.2	1,123.8	1,102.6	21.21	52.977	
4,600.0	4,600.0	4,627.3	4,617.6	10.2	11.5	-108.11	-349.0	-1,067.2	1,122.9	1,101.2	21.70	51.737	
4,700.0	4,700.0	4,727.1	4,717.1	10.4	11.7	-108.46	-355.3	-1,064.2	1,122.0	1,099.8	22.19	50.553	
4,800.0	4,800.0	4,826.8	4,816.6	10.7	12.0	-108.81	-361.6	-1,061.2	1,121.2	1,098.5	22.69	49.422	
4,900.0	4,900.0	4,926.6	4,916.1	10.9	12.3	-109.17	-367.8	-1,058.2	1,120.4	1,097.2	23.18	48.340	
5,000.0	5,000.0	5,026.4	5,015.7	11.1	12.5	-109.52	-374.1	-1,055.2	1,119.6	1,096.0	23.67	47.305	
5,100.0	5,100.0	5,126.1	5,115.2	11.3	12.8	-109.88	-380.4	-1,052.3	1,118.9	1,094.8	24.16	46.314	

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-3414B
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-3414B	**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
5,200.0	5,200.0	5,225.9	5,214.7	11.6	13.1	-110.23	-386.7	-1,049.3	1,118.3	1,093.6	24.65	45.363	
5,215.0	5,215.0	5,240.8	5,229.6	11.6	13.1	-110.28	-387.6	-1,048.8	1,118.2	1,093.4	24.73	45.224	
5,250.0	5,250.0	5,275.8	5,264.5	11.7	13.2	71.21	-389.8	-1,047.8	1,117.6	1,092.7	24.84	44.987	
5,300.0	5,299.6	5,335.7	5,324.0	11.7	13.4	71.43	-396.3	-1,044.7	1,115.2	1,090.1	25.08	44.461	
5,350.0	5,348.5	5,396.2	5,382.7	11.8	13.6	71.78	-409.0	-1,038.7	1,110.8	1,085.5	25.36	43.799	
5,400.0	5,396.1	5,456.0	5,438.8	11.9	14.0	72.27	-427.5	-1,030.0	1,104.5	1,078.8	25.69	42.989	
5,450.0	5,442.1	5,514.8	5,491.4	12.0	14.3	72.90	-451.4	-1,018.8	1,096.3	1,070.2	26.08	42.035	
5,500.0	5,486.0	5,572.4	5,539.7	12.1	14.8	73.67	-479.8	-1,005.4	1,086.3	1,059.7	26.53	40.942	
5,550.0	5,527.4	5,628.8	5,583.3	12.2	15.3	74.59	-512.0	-990.2	1,074.6	1,047.6	27.06	39.713	
5,600.0	5,565.9	5,683.8	5,621.9	12.4	15.8	75.66	-547.4	-973.6	1,061.4	1,033.7	27.67	38.357	
5,650.0	5,601.2	5,737.4	5,655.4	12.6	16.4	76.88	-585.3	-955.8	1,046.8	1,018.4	28.38	36.889	
5,700.0	5,632.9	5,789.7	5,683.7	12.8	17.1	78.25	-625.1	-937.1	1,030.9	1,001.7	29.18	35.331	
5,750.0	5,660.8	5,840.7	5,707.0	13.1	17.7	79.76	-666.2	-917.8	1,014.0	983.9	30.08	33.710	
5,800.0	5,684.5	5,890.6	5,725.3	13.5	18.4	81.41	-708.2	-898.1	996.0	965.0	31.07	32.058	
5,850.0	5,704.0	5,939.5	5,738.9	13.9	19.2	83.19	-750.6	-878.2	977.4	945.2	32.14	30.405	
5,900.0	5,718.9	5,987.5	5,747.9	14.3	19.9	85.08	-793.3	-858.1	958.1	924.8	33.29	28.778	
5,950.0	5,729.2	6,034.7	5,752.5	14.8	20.7	87.06	-835.9	-838.1	938.3	903.8	34.49	27.202	
6,000.0	5,734.8	6,074.8	5,753.2	15.4	21.3	89.17	-872.1	-821.2	918.4	882.8	35.63	25.776	
6,033.2	5,735.9	6,100.0	5,753.2	15.7	21.7	90.68	-895.1	-810.8	905.5	869.1	36.37	24.900	
6,083.3	5,735.9	6,126.9	5,753.2	16.3	22.1	90.69	-919.7	-800.0	885.9	848.8	37.14	23.855	
6,100.0	5,735.9	6,137.4	5,753.2	16.5	22.3	90.70	-929.4	-795.9	879.4	841.9	37.47	23.469	
6,200.0	5,735.9	6,200.0	5,753.2	17.8	23.2	90.72	-987.5	-772.5	842.1	802.5	39.59	21.270	
6,300.0	5,735.9	6,267.0	5,753.2	19.2	24.2	90.74	-1,050.4	-749.6	807.9	766.0	41.93	19.266	
6,400.0	5,735.9	6,334.2	5,753.2	20.7	25.2	90.76	-1,114.3	-728.8	777.0	732.6	44.39	17.504	
6,500.0	5,735.9	6,400.0	5,753.2	22.3	26.3	90.78	-1,177.6	-710.7	749.5	702.6	46.92	15.976	
6,600.0	5,735.9	6,473.0	5,753.2	23.9	27.4	90.80	-1,248.4	-693.2	725.6	675.9	49.65	14.615	
6,700.0	5,735.9	6,544.2	5,753.2	25.6	28.6	90.81	-1,318.1	-678.7	705.2	652.8	52.41	13.455	
6,800.0	5,735.9	6,616.4	5,753.2	27.3	29.7	90.83	-1,389.4	-666.6	688.5	633.3	55.24	12.463	
6,900.0	5,735.9	6,700.0	5,753.2	29.0	31.1	90.84	-1,472.3	-656.1	675.7	617.4	58.31	11.589	
7,000.0	5,735.9	6,763.2	5,753.2	30.7	32.1	90.85	-1,535.2	-650.5	666.5	605.5	61.08	10.913	
7,100.0	5,735.9	6,837.3	5,753.2	32.5	33.2	90.85	-1,609.2	-646.7	661.3	597.2	64.05	10.324	
7,194.1	5,735.9	6,909.7	5,753.2	34.2	34.4	90.85	-1,681.5	-645.6	659.9	593.0	66.92	9.861	CC
7,200.0	5,735.9	6,915.5	5,753.2	34.3	34.5	90.85	-1,687.4	-645.6	659.9	592.8	67.12	9.831	
7,300.0	5,735.9	7,015.5	5,753.2	36.1	36.1	90.85	-1,787.4	-645.6	659.9	589.3	70.61	9.346	
7,400.0	5,735.9	7,115.5	5,753.2	37.9	37.7	90.85	-1,887.4	-645.7	659.9	585.8	74.16	8.899	
7,500.0	5,735.9	7,215.5	5,753.2	39.7	39.4	90.85	-1,987.4	-645.7	659.9	582.2	77.73	8.490	
7,600.0	5,735.9	7,315.5	5,753.2	41.5	41.1	90.85	-2,087.4	-645.7	659.9	578.6	81.33	8.115	
7,700.0	5,735.9	7,415.5	5,753.2	43.4	42.9	90.85	-2,187.4	-645.7	659.9	575.0	84.94	7.769	
7,800.0	5,735.9	7,515.5	5,753.2	45.2	44.6	90.85	-2,287.4	-645.7	659.9	571.4	88.58	7.450	
7,900.0	5,735.9	7,615.5	5,753.2	47.1	46.4	90.85	-2,387.4	-645.7	660.0	567.7	92.24	7.155	
8,000.0	5,735.9	7,715.5	5,753.2	48.9	48.1	90.85	-2,487.4	-645.7	660.0	564.1	95.91	6.881	
8,100.0	5,735.9	7,815.5	5,753.2	50.8	49.9	90.85	-2,587.4	-645.7	660.0	560.4	99.59	6.627	
8,200.0	5,735.9	7,915.5	5,753.2	52.6	51.7	90.85	-2,687.4	-645.8	660.0	556.7	103.28	6.390	
8,300.0	5,735.9	8,015.5	5,753.2	54.5	53.5	90.85	-2,787.4	-645.8	660.0	553.0	106.99	6.169	
8,400.0	5,735.9	8,115.5	5,753.1	56.4	55.3	90.84	-2,887.4	-645.8	660.0	549.3	110.70	5.962	
8,500.0	5,735.9	8,215.5	5,753.1	58.2	57.1	90.84	-2,987.4	-645.8	660.0	545.6	114.42	5.768	
8,600.0	5,735.9	8,315.5	5,753.1	60.1	59.0	90.84	-3,087.4	-645.8	660.0	541.8	118.15	5.586	
8,700.0	5,735.9	8,415.5	5,753.1	62.0	60.8	90.84	-3,187.4	-645.8	660.0	538.1	121.89	5.415	
8,800.0	5,735.9	8,515.5	5,753.1	63.9	62.6	90.84	-3,287.4	-645.8	660.0	534.4	125.63	5.254	
8,900.0	5,735.9	8,615.5	5,753.1	65.8	64.5	90.84	-3,387.4	-645.8	660.0	530.6	129.38	5.101	
9,000.0	5,735.9	8,715.5	5,753.1	67.7	66.3	90.84	-3,487.4	-645.9	660.0	526.9	133.13	4.958	
9,100.0	5,735.9	8,815.5	5,753.1	69.5	68.1	90.84	-3,587.4	-645.9	660.0	523.1	136.89	4.821	

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-3414B
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-3414B	**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	5,735.9	8,915.5	5,753.1	71.4	70.0	90.84	-3,687.4	-645.9	660.0	519.4	140.66	4.692	
9,300.0	5,735.9	9,015.5	5,753.1	73.3	71.9	90.84	-3,787.4	-645.9	660.0	515.6	144.42	4.570	
9,400.0	5,735.9	9,115.5	5,753.1	75.2	73.7	90.84	-3,887.4	-645.9	660.0	511.8	148.20	4.454	
9,500.0	5,735.9	9,215.5	5,753.1	77.1	75.6	90.84	-3,987.4	-645.9	660.0	508.1	151.97	4.343	
9,600.0	5,735.9	9,315.5	5,753.1	79.0	77.4	90.84	-4,087.4	-645.9	660.1	504.3	155.75	4.238	
9,700.0	5,735.9	9,415.5	5,753.1	80.9	79.3	90.84	-4,187.4	-645.9	660.1	500.5	159.53	4.137	
9,800.0	5,735.9	9,515.5	5,753.1	82.8	81.2	90.84	-4,287.4	-646.0	660.1	496.7	163.32	4.042	
9,900.0	5,735.9	9,615.5	5,753.1	84.7	83.1	90.84	-4,387.4	-646.0	660.1	493.0	167.10	3.950	
10,000.0	5,735.9	9,715.5	5,753.1	86.6	84.9	90.84	-4,487.4	-646.0	660.1	489.2	170.89	3.863	
10,100.0	5,736.0	9,815.5	5,753.1	88.5	86.8	90.84	-4,587.4	-646.0	660.1	485.4	174.68	3.779	
10,200.0	5,736.0	9,915.5	5,753.1	90.4	88.7	90.84	-4,687.4	-646.0	660.1	481.6	178.48	3.698	
10,300.0	5,736.0	10,015.5	5,753.1	92.3	90.6	90.84	-4,787.4	-646.0	660.1	477.8	182.27	3.621	
10,400.0	5,736.0	10,115.5	5,753.1	94.2	92.4	90.84	-4,887.4	-646.0	660.1	474.0	186.07	3.548	
10,500.0	5,736.0	10,215.5	5,753.1	96.1	94.3	90.83	-4,987.4	-646.0	660.1	470.2	189.87	3.477	
10,600.0	5,736.0	10,315.5	5,753.1	98.0	96.2	90.83	-5,087.4	-646.1	660.1	466.4	193.67	3.408	
10,700.0	5,736.0	10,415.5	5,753.1	99.9	98.1	90.83	-5,187.4	-646.1	660.1	462.6	197.47	3.343	
10,800.0	5,736.0	10,515.5	5,753.1	101.8	100.0	90.83	-5,287.4	-646.1	660.1	458.8	201.28	3.280	
10,900.0	5,736.0	10,615.5	5,753.1	103.7	101.9	90.83	-5,387.4	-646.1	660.1	455.0	205.08	3.219	
11,000.0	5,736.0	10,715.5	5,753.1	105.7	103.8	90.83	-5,487.4	-646.1	660.1	451.2	208.89	3.160	
11,100.0	5,736.0	10,815.5	5,753.1	107.6	105.7	90.83	-5,587.4	-646.1	660.1	447.4	212.70	3.104	
11,200.0	5,736.0	10,915.5	5,753.0	109.5	107.5	90.83	-5,687.4	-646.1	660.1	443.6	216.51	3.049	
11,300.0	5,736.0	11,015.5	5,753.0	111.4	109.4	90.83	-5,787.4	-646.1	660.2	439.8	220.32	2.996	
11,400.0	5,736.0	11,115.5	5,753.0	113.3	111.3	90.83	-5,887.4	-646.2	660.2	436.0	224.13	2.945	
11,500.0	5,736.0	11,215.5	5,753.0	115.2	113.2	90.83	-5,987.4	-646.2	660.2	432.2	227.94	2.896	
11,600.0	5,736.0	11,315.5	5,753.0	117.1	115.1	90.83	-6,087.4	-646.2	660.2	428.4	231.75	2.849	
11,700.0	5,736.0	11,415.5	5,753.0	119.0	117.0	90.83	-6,187.4	-646.2	660.2	424.6	235.57	2.802	
11,800.0	5,736.0	11,515.5	5,753.0	120.9	118.9	90.83	-6,287.4	-646.2	660.2	420.8	239.38	2.758	
11,900.0	5,736.0	11,615.5	5,753.0	122.8	120.8	90.83	-6,387.4	-646.2	660.2	417.0	243.20	2.715	
12,000.0	5,736.0	11,715.5	5,753.0	124.7	122.7	90.83	-6,487.4	-646.2	660.2	413.2	247.02	2.673	
12,100.0	5,736.0	11,815.5	5,753.0	126.7	124.6	90.83	-6,587.4	-646.3	660.2	409.4	250.84	2.632	
12,200.0	5,736.0	11,915.5	5,753.0	128.6	126.5	90.83	-6,687.4	-646.3	660.2	405.5	254.65	2.593	
12,300.0	5,736.0	12,015.5	5,753.0	130.5	128.4	90.83	-6,787.4	-646.3	660.2	401.7	258.47	2.554	
12,400.0	5,736.0	12,115.5	5,753.0	132.4	130.3	90.83	-6,887.4	-646.3	660.2	397.9	262.29	2.517	
12,500.0	5,736.0	12,215.5	5,753.0	134.3	132.2	90.82	-6,987.4	-646.3	660.2	394.2	266.06	2.481	
12,559.5	5,736.0	12,275.0	5,753.0	135.4	133.1	90.82	-7,046.9	-646.3	660.2	392.1	268.12	2.462	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27I-3414B
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-3414B	**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-3414B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°