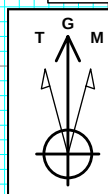
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S21-T10N-R58W
Well: Razor #21B-2812B
Wellbore: HZ
Design: Plan #1

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	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0		KOP @ 900' MD
3	1100.0	4.00	150.83	1099.8	-6.1	3.4	2.00	150.83	6.4		EOB; 4°
4	5404.1	4.00	150.83	5393.5	-268.3	149.7	0.00	0.00	280.3		Start 11° Build
5	6185.9	90.00	150.83	5878.0	-722.0	403.0	11.00	0.00	754.3		LP @ 6185' MD
6	7158.3	90.00	180.00	5878.0	-1652.8	645.2	3.00	90.00	1702.7		EOT; 180° Az
7	12895.6	90.00	180.00	5878.0	-7390.2	645.2	0.00	0.00	7418.3	21B-2812B BHL	PBHL @ 12895' MD



Azimuths to Grid North
True North: -1.05°
Magnetic North: 7.09°

Magnetic Field
Strength: 53242.8snT
Dip Angle: 67.47°
Date: 5/20/2013
Model: IGRF2010

Surface Hole Location
Razor #21B-2812B
X: 3451634.94
Y: 1549373.94

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
21B-2812B BHL	5878.0	-7390.2	645.2	1541983.72	3452280.14

Plan #1
Razor #21B-2812B
WELL @ 4853.8ft (Original Well Elev)
Ground Elevation @ 4837.3
North American Datum 1983
Well Razor #21B-2812B, Grid North

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Project Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site S21-T10N-R58W

Site Position:		**Northing:**	1,549,497.72 ft	**Latitude:**	40° 49' 48.98 N
From:	Lat/Long	**Easting:**	3,452,853.58 ft	**Longitude:**	103° 51' 48.82 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.06 °

Well Razor #21B-2812B

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,549,373.94 ft	**Latitude:**	40° 49' 47.98 N
	+E/-W	0.0 ft	**Easting:**	3,451,634.94 ft	**Longitude:**	103° 52' 4.70 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,837.3 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2013	8.14	67.47	53,243

Design Plan #1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	175.01

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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	4.00	150.83	1,099.8	-6.1	3.4	2.00	2.00	0.00	150.83	
5,404.1	4.00	150.83	5,393.5	-268.3	149.7	0.00	0.00	0.00	0.00	
6,185.9	90.00	150.83	5,878.0	-722.0	403.0	11.00	11.00	0.00	0.00	
7,158.3	90.00	180.00	5,878.0	-1,652.8	645.2	3.00	0.00	3.00	90.00	
12,895.6	90.00	180.00	5,878.0	-7,390.2	645.2	0.00	0.00	0.00	0.00	21B-2812B BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
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	KOP @ 900' MD
1,000.0	2.00	150.83	1,000.0	-1.5	0.9	1.6	2.00	2.00	
1,100.0	4.00	150.83	1,099.8	-6.1	3.4	6.4	2.00	2.00	EOB; 4°
1,200.0	4.00	150.83	1,199.6	-12.2	6.8	12.7	0.00	0.00	
1,300.0	4.00	150.83	1,299.4	-18.3	10.2	19.1	0.00	0.00	
1,400.0	4.00	150.83	1,399.1	-24.4	13.6	25.5	0.00	0.00	
1,500.0	4.00	150.83	1,498.9	-30.5	17.0	31.8	0.00	0.00	
1,600.0	4.00	150.83	1,598.6	-36.5	20.4	38.2	0.00	0.00	
1,700.0	4.00	150.83	1,698.4	-42.6	23.8	44.5	0.00	0.00	
1,800.0	4.00	150.83	1,798.1	-48.7	27.2	50.9	0.00	0.00	
1,900.0	4.00	150.83	1,897.9	-54.8	30.6	57.3	0.00	0.00	
2,000.0	4.00	150.83	1,997.6	-60.9	34.0	63.6	0.00	0.00	
2,100.0	4.00	150.83	2,097.4	-67.0	37.4	70.0	0.00	0.00	
2,200.0	4.00	150.83	2,197.2	-73.1	40.8	76.4	0.00	0.00	
2,300.0	4.00	150.83	2,296.9	-79.2	44.2	82.7	0.00	0.00	
2,400.0	4.00	150.83	2,396.7	-85.3	47.6	89.1	0.00	0.00	
2,500.0	4.00	150.83	2,496.4	-91.4	51.0	95.5	0.00	0.00	
2,600.0	4.00	150.83	2,596.2	-97.5	54.4	101.8	0.00	0.00	
2,700.0	4.00	150.83	2,695.9	-103.5	57.8	108.2	0.00	0.00	
2,800.0	4.00	150.83	2,795.7	-109.6	61.2	114.5	0.00	0.00	
2,900.0	4.00	150.83	2,895.5	-115.7	64.6	120.9	0.00	0.00	
3,000.0	4.00	150.83	2,995.2	-121.8	68.0	127.3	0.00	0.00	
3,100.0	4.00	150.83	3,095.0	-127.9	71.4	133.6	0.00	0.00	
3,200.0	4.00	150.83	3,194.7	-134.0	74.8	140.0	0.00	0.00	
3,300.0	4.00	150.83	3,294.5	-140.1	78.2	146.4	0.00	0.00	
3,400.0	4.00	150.83	3,394.2	-146.2	81.6	152.7	0.00	0.00	
3,500.0	4.00	150.83	3,494.0	-152.3	85.0	159.1	0.00	0.00	
3,600.0	4.00	150.83	3,593.7	-158.4	88.4	165.5	0.00	0.00	
3,700.0	4.00	150.83	3,693.5	-164.5	91.8	171.8	0.00	0.00	
3,800.0	4.00	150.83	3,793.3	-170.5	95.2	178.2	0.00	0.00	
3,900.0	4.00	150.83	3,893.0	-176.6	98.6	184.5	0.00	0.00	
4,000.0	4.00	150.83	3,992.8	-182.7	102.0	190.9	0.00	0.00	
4,100.0	4.00	150.83	4,092.5	-188.8	105.4	197.3	0.00	0.00	
4,200.0	4.00	150.83	4,192.3	-194.9	108.8	203.6	0.00	0.00	
4,300.0	4.00	150.83	4,292.0	-201.0	112.2	210.0	0.00	0.00	
4,400.0	4.00	150.83	4,391.8	-207.1	115.6	216.4	0.00	0.00	
4,500.0	4.00	150.83	4,491.6	-213.2	119.0	222.7	0.00	0.00	
4,600.0	4.00	150.83	4,591.3	-219.3	122.4	229.1	0.00	0.00	
4,700.0	4.00	150.83	4,691.1	-225.4	125.8	235.5	0.00	0.00	
4,800.0	4.00	150.83	4,790.8	-231.5	129.2	241.8	0.00	0.00	
4,900.0	4.00	150.83	4,890.6	-237.6	132.6	248.2	0.00	0.00	
5,000.0	4.00	150.83	4,990.3	-243.6	136.0	254.5	0.00	0.00	
5,100.0	4.00	150.83	5,090.1	-249.7	139.4	260.9	0.00	0.00	

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Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	4.00	150.83	5,189.9	-255.8	142.8	267.3	0.00	0.00	
5,300.0	4.00	150.83	5,289.6	-261.9	146.2	273.6	0.00	0.00	
5,400.0	4.00	150.83	5,389.4	-268.0	149.6	280.0	0.00	0.00	
5,404.1	4.00	150.83	5,393.5	-268.3	149.7	280.3	0.00	0.00	Start 11° Build
5,500.0	14.55	150.83	5,488.0	-281.7	157.3	294.3	11.00	11.00	
5,600.0	25.55	150.83	5,581.8	-311.6	173.9	325.6	11.00	11.00	
5,700.0	36.55	150.83	5,667.3	-356.6	199.0	372.5	11.00	11.00	
5,800.0	47.55	150.83	5,741.4	-415.0	231.6	433.5	11.00	11.00	
5,891.5	57.62	150.83	5,797.0	-478.4	267.0	499.8	11.00	11.00	Top Niobrara
5,900.0	58.55	150.83	5,801.5	-484.6	270.5	506.3	11.00	11.00	
6,000.0	69.55	150.83	5,845.2	-563.0	314.3	588.2	11.00	11.00	
6,100.0	80.55	150.83	5,870.9	-647.3	361.3	676.2	11.00	11.00	
6,185.9	90.00	150.83	5,878.0	-722.0	403.0	754.3	11.00	11.00	LP @ 6185' MD
6,200.0	90.00	151.25	5,878.0	-734.3	409.8	767.1	3.00	0.00	
6,300.0	90.00	154.25	5,878.0	-823.2	455.6	859.7	3.00	0.00	7"
6,400.0	90.00	157.25	5,878.0	-914.3	496.6	954.1	3.00	0.00	
6,500.0	90.00	160.25	5,878.0	-1,007.5	532.9	1,050.1	3.00	0.00	
6,600.0	90.00	163.25	5,878.0	-1,102.5	564.2	1,147.4	3.00	0.00	
6,700.0	90.00	166.25	5,878.0	-1,199.0	590.5	1,245.8	3.00	0.00	
6,800.0	90.00	169.25	5,878.0	-1,296.7	611.7	1,345.0	3.00	0.00	
6,900.0	90.00	172.25	5,878.0	-1,395.4	627.8	1,444.7	3.00	0.00	
7,000.0	90.00	175.25	5,878.0	-1,494.7	638.7	1,544.6	3.00	0.00	
7,100.0	90.00	178.25	5,878.0	-1,594.6	644.3	1,644.6	3.00	0.00	
7,158.3	90.00	180.00	5,878.0	-1,652.8	645.2	1,702.7	3.00	0.00	EOT; 180° Az
7,200.0	90.00	180.00	5,878.0	-1,694.6	645.2	1,744.3	0.00	0.00	
7,300.0	90.00	180.00	5,878.0	-1,794.6	645.2	1,843.9	0.00	0.00	
7,400.0	90.00	180.00	5,878.0	-1,894.6	645.2	1,943.5	0.00	0.00	
7,500.0	90.00	180.00	5,878.0	-1,994.6	645.2	2,043.1	0.00	0.00	
7,600.0	90.00	180.00	5,878.0	-2,094.6	645.2	2,142.7	0.00	0.00	
7,700.0	90.00	180.00	5,878.0	-2,194.6	645.2	2,242.4	0.00	0.00	
7,800.0	90.00	180.00	5,878.0	-2,294.6	645.2	2,342.0	0.00	0.00	
7,900.0	90.00	180.00	5,878.0	-2,394.6	645.2	2,441.6	0.00	0.00	
8,000.0	90.00	180.00	5,878.0	-2,494.6	645.2	2,541.2	0.00	0.00	
8,100.0	90.00	180.00	5,878.0	-2,594.6	645.2	2,640.9	0.00	0.00	
8,200.0	90.00	180.00	5,878.0	-2,694.6	645.2	2,740.5	0.00	0.00	
8,300.0	90.00	180.00	5,878.0	-2,794.6	645.2	2,840.1	0.00	0.00	
8,400.0	90.00	180.00	5,878.0	-2,894.6	645.2	2,939.7	0.00	0.00	
8,500.0	90.00	180.00	5,878.0	-2,994.6	645.2	3,039.3	0.00	0.00	
8,600.0	90.00	180.00	5,878.0	-3,094.6	645.2	3,139.0	0.00	0.00	
8,700.0	90.00	180.00	5,878.0	-3,194.6	645.2	3,238.6	0.00	0.00	
8,800.0	90.00	180.00	5,878.0	-3,294.6	645.2	3,338.2	0.00	0.00	
8,900.0	90.00	180.00	5,878.0	-3,394.6	645.2	3,437.8	0.00	0.00	
9,000.0	90.00	180.00	5,878.0	-3,494.6	645.2	3,537.4	0.00	0.00	
9,100.0	90.00	180.00	5,878.0	-3,594.6	645.2	3,637.1	0.00	0.00	
9,200.0	90.00	180.00	5,878.0	-3,694.6	645.2	3,736.7	0.00	0.00	
9,300.0	90.00	180.00	5,878.0	-3,794.6	645.2	3,836.3	0.00	0.00	
9,400.0	90.00	180.00	5,878.0	-3,894.6	645.2	3,935.9	0.00	0.00	
9,500.0	90.00	180.00	5,878.0	-3,994.6	645.2	4,035.5	0.00	0.00	
9,600.0	90.00	180.00	5,878.0	-4,094.6	645.2	4,135.2	0.00	0.00	
9,700.0	90.00	180.00	5,878.0	-4,194.6	645.2	4,234.8	0.00	0.00	
9,800.0	90.00	180.00	5,878.0	-4,294.6	645.2	4,334.4	0.00	0.00	
9,900.0	90.00	180.00	5,878.0	-4,394.6	645.2	4,434.0	0.00	0.00	

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Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,000.0	90.00	180.00	5,878.0	-4,494.6	645.2	4,533.7	0.00	0.00	
10,100.0	90.00	180.00	5,878.0	-4,594.6	645.2	4,633.3	0.00	0.00	
10,200.0	90.00	180.00	5,878.0	-4,694.6	645.2	4,732.9	0.00	0.00	
10,300.0	90.00	180.00	5,878.0	-4,794.6	645.2	4,832.5	0.00	0.00	
10,400.0	90.00	180.00	5,878.0	-4,894.6	645.2	4,932.1	0.00	0.00	
10,500.0	90.00	180.00	5,878.0	-4,994.6	645.2	5,031.8	0.00	0.00	
10,600.0	90.00	180.00	5,878.0	-5,094.6	645.2	5,131.4	0.00	0.00	
10,700.0	90.00	180.00	5,878.0	-5,194.6	645.2	5,231.0	0.00	0.00	
10,800.0	90.00	180.00	5,878.0	-5,294.6	645.2	5,330.6	0.00	0.00	
10,900.0	90.00	180.00	5,878.0	-5,394.6	645.2	5,430.2	0.00	0.00	
11,000.0	90.00	180.00	5,878.0	-5,494.6	645.2	5,529.9	0.00	0.00	
11,100.0	90.00	180.00	5,878.0	-5,594.6	645.2	5,629.5	0.00	0.00	
11,200.0	90.00	180.00	5,878.0	-5,694.6	645.2	5,729.1	0.00	0.00	
11,300.0	90.00	180.00	5,878.0	-5,794.6	645.2	5,828.7	0.00	0.00	
11,400.0	90.00	180.00	5,878.0	-5,894.6	645.2	5,928.3	0.00	0.00	
11,500.0	90.00	180.00	5,878.0	-5,994.6	645.2	6,028.0	0.00	0.00	
11,600.0	90.00	180.00	5,878.0	-6,094.6	645.2	6,127.6	0.00	0.00	
11,700.0	90.00	180.00	5,878.0	-6,194.6	645.2	6,227.2	0.00	0.00	
11,800.0	90.00	180.00	5,878.0	-6,294.6	645.2	6,326.8	0.00	0.00	
11,900.0	90.00	180.00	5,878.0	-6,394.6	645.2	6,426.5	0.00	0.00	
12,000.0	90.00	180.00	5,878.0	-6,494.6	645.2	6,526.1	0.00	0.00	
12,100.0	90.00	180.00	5,878.0	-6,594.6	645.2	6,625.7	0.00	0.00	
12,200.0	90.00	180.00	5,878.0	-6,694.6	645.2	6,725.3	0.00	0.00	
12,300.0	90.00	180.00	5,878.0	-6,794.6	645.2	6,824.9	0.00	0.00	
12,400.0	90.00	180.00	5,878.0	-6,894.6	645.2	6,924.6	0.00	0.00	
12,500.0	90.00	180.00	5,878.0	-6,994.6	645.2	7,024.2	0.00	0.00	
12,600.0	90.00	180.00	5,878.0	-7,094.6	645.2	7,123.8	0.00	0.00	
12,700.0	90.00	180.00	5,878.0	-7,194.6	645.2	7,223.4	0.00	0.00	
12,800.0	90.00	180.00	5,878.0	-7,294.6	645.2	7,323.0	0.00	0.00	
12,895.6	90.00	180.00	5,878.0	-7,390.2	645.2	7,418.3	0.00	0.00	PBHL @ 12895' 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
21B-2812B BHL - plan hits target center - Point	0.00	0.00	5,878.0	-7,390.2	645.2	1,541,983.72	3,452,280.14	40° 48' 34.85 N	103° 51' 58.08 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,300.0	5,878.0	7"	0.000	0.000

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,891.5	5,797.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
900.0	900.0	0.0	0.0	KOP @ 900' MD
1,100.0	1,099.8	-6.1	3.4	EOB; 4°
5,404.1	5,393.5	-268.3	149.7	Start 11° Build
6,185.9	5,878.0	-722.0	403.0	LP @ 6185' MD
7,158.3	5,878.0	-1,652.8	645.2	EOT; 180° Az
12,895.6	5,878.0	-7,390.2	645.2	PBHL @ 12895' MD

WHITING WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO
S21-T10N-R58W
Razor #21B-2812B
HZ
Plan #1

Anticollision Report

28 May, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

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

Survey Tool Program **Date** 5/22/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,895.0	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S21-T10N-R58W						
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Nelson Ranches E-1 (Existing) - Existing - ASSUMED VE						Out of range
Razor #21A-0913A - HZ - Plan #1						Out of range
Razor #21A-0914B - HZ - Plan #1						Out of range
Razor #21A-0915A - HZ - Plan #1						Out of range
Razor #21A-0916B - HZ - Plan #1						Out of range
Razor #21A-2813A - HZ - Plan #1	12,866.4	12,798.9	342.7	69.0	1.252	Level 3, CC
Razor #21A-2813A - HZ - Plan #1	12,895.7	12,821.3	342.7	68.2	1.248	Level 2, ES, SF
Razor #21A-2814B - HZ - Plan #1						Out of range
Razor #21A-2815A - HZ - Plan #1						Out of range
Razor #21A-2816B - HZ - Plan #1						Out of range
Razor #21B-0909A - HZ - Plan #1	500.0	500.0	100.9	98.9	50.788	CC, ES
Razor #21B-0909A - HZ - Plan #1	1,100.0	1,091.1	141.9	137.3	30.858	SF
Razor #21B-0910B - HZ - Plan #1	700.0	700.0	98.5	95.6	34.153	CC, ES
Razor #21B-0910B - HZ - Plan #1	1,300.0	1,294.5	129.8	124.3	23.766	SF
Razor #21B-0911A - HZ - Plan #1	900.0	900.0	76.1	72.3	20.116	CC, ES
Razor #21B-0911A - HZ - Plan #1	1,000.0	997.3	79.3	75.1	18.879	SF
Razor #21B-0912B - HZ - Plan #1	900.0	900.0	33.2	29.4	8.781	CC, ES
Razor #21B-0912B - HZ - Plan #1	1,100.0	1,099.8	37.2	32.6	8.073	SF
Razor #21B-2809A - HZ - Plan #1	900.0	900.0	125.2	121.4	33.081	CC, ES
Razor #21B-2809A - HZ - Plan #1	5,404.1	5,403.5	325.4	300.3	12.964	SF
Razor #21B-2810B - HZ - Plan #1	821.7	821.8	66.1	62.7	19.471	CC
Razor #21B-2810B - HZ - Plan #1	900.0	899.9	66.2	62.5	17.848	ES
Razor #21B-2810B - HZ - Plan #1	5,404.1	5,401.7	204.5	178.2	7.784	SF
Razor #21B-2811A - HZ - Plan #1	1,095.8	1,100.6	55.4	50.9	12.396	CC
Razor #21B-2811A - HZ - Plan #1	5,508.7	5,525.3	76.9	49.6	2.818	ES
Razor #21B-2811A - HZ - Plan #1	12,895.7	12,768.4	340.7	64.8	1.235	Level 2, SF
Razor #21C-0905A - HZ - Plan #1						Out of range
Razor #21C-0906B - HZ - Plan #1						Out of range
Razor #21C-0907A - HZ - Plan #1						Out of range
Razor #21C-0908B - HZ - Plan #1						Out of range
Razor #21C-2805A - HZ - Plan #1						Out of range
Razor #21C-2806B - HZ - Plan #1						Out of range
Razor #21C-2807A - HZ - Plan #1						Out of range
Razor #21C-2808B - HZ - Plan #1						Out of range
Razor #21D-0901A - HZ - Plan #1						Out of range
Razor #21D-0902B - HZ - Plan #1						Out of range
Razor #21D-0903A - HZ - Plan #1						Out of range
Razor #21D-0904B - HZ - Plan #1						Out of range
Razor #21D-2801A - HZ - Plan #1						Out of range
Razor #21D-2802B - HZ - Plan #1						Out of range
Razor #21D-2803A - HZ - Plan #1						Out of range
Razor #21D-2804B - HZ - Plan #1						Out of range

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-2813A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,400.0	5,878.0	6,400.0	5,779.0	24.2	24.1	-77.65	-962.3	980.4	495.1	451.1	43.95	11.265	
6,500.0	5,878.0	6,463.7	5,779.0	25.7	25.1	-77.18	-1,025.9	976.7	454.0	407.3	46.63	9.735	
6,600.0	5,878.0	6,542.5	5,779.0	27.4	26.3	-76.59	-1,104.7	975.1	421.4	371.9	49.51	8.512	
6,700.0	5,878.0	6,636.8	5,779.0	29.0	27.8	-75.93	-1,199.0	975.1	395.8	343.1	52.68	7.514	
6,800.0	5,878.0	6,734.5	5,779.0	30.6	29.4	-75.30	-1,296.7	975.1	375.2	319.4	55.89	6.714	
6,900.0	5,878.0	6,833.2	5,779.0	32.2	31.1	-74.78	-1,395.4	975.1	359.7	300.6	59.09	6.088	
7,000.0	5,878.0	6,932.6	5,779.0	33.8	32.8	-74.40	-1,494.8	975.1	349.2	287.0	62.24	5.611	
7,100.0	5,878.0	7,032.4	5,779.0	35.4	34.5	-74.19	-1,594.6	975.1	343.7	278.4	65.32	5.262	
7,158.3	5,878.0	7,090.7	5,779.0	36.3	35.5	-74.15	-1,652.8	975.1	342.9	275.8	67.09	5.111	
7,200.0	5,878.0	7,132.4	5,779.0	37.0	36.3	-74.15	-1,694.6	975.1	342.9	274.4	68.48	5.007	
7,300.0	5,878.0	7,232.4	5,779.0	38.6	38.0	-74.15	-1,794.6	975.1	342.9	271.0	71.87	4.771	
7,400.0	5,878.0	7,332.4	5,779.0	40.2	39.8	-74.15	-1,894.6	975.1	342.9	267.6	75.28	4.555	
7,500.0	5,878.0	7,432.4	5,779.0	41.9	41.6	-74.15	-1,994.6	975.1	342.9	264.2	78.72	4.356	
7,600.0	5,878.0	7,532.4	5,779.0	43.6	43.4	-74.15	-2,094.6	975.1	342.9	260.7	82.18	4.172	
7,700.0	5,878.0	7,632.4	5,779.0	45.3	45.2	-74.15	-2,194.6	975.0	342.9	257.2	85.67	4.002	
7,800.0	5,878.0	7,732.4	5,779.0	47.0	47.1	-74.15	-2,294.6	975.0	342.9	253.7	89.17	3.845	
7,900.0	5,878.0	7,832.4	5,779.0	48.7	48.9	-74.15	-2,394.6	975.0	342.9	250.2	92.69	3.699	
8,000.0	5,878.0	7,932.4	5,779.0	50.4	50.7	-74.15	-2,494.6	975.0	342.9	246.6	96.22	3.563	
8,100.0	5,878.0	8,032.4	5,779.0	52.2	52.6	-74.15	-2,594.6	975.0	342.9	243.1	99.77	3.437	
8,200.0	5,878.0	8,132.4	5,779.0	54.0	54.4	-74.15	-2,694.6	975.0	342.9	239.5	103.32	3.318	
8,300.0	5,878.0	8,232.4	5,779.0	55.7	56.3	-74.15	-2,794.6	975.0	342.8	236.0	106.89	3.207	
8,400.0	5,878.0	8,332.4	5,779.0	57.5	58.1	-74.15	-2,894.6	975.0	342.8	232.4	110.47	3.104	
8,500.0	5,878.0	8,432.4	5,779.0	59.3	60.0	-74.15	-2,994.6	975.0	342.8	228.8	114.06	3.006	
8,600.0	5,878.0	8,532.4	5,779.0	61.1	61.9	-74.15	-3,094.6	975.0	342.8	225.2	117.65	2.914	
8,700.0	5,878.0	8,632.4	5,779.0	62.9	63.7	-74.15	-3,194.6	975.0	342.8	221.6	121.25	2.827	
8,800.0	5,878.0	8,732.4	5,779.0	64.8	65.6	-74.15	-3,294.6	975.0	342.8	218.0	124.86	2.746	
8,900.0	5,878.0	8,832.4	5,779.0	66.6	67.5	-74.15	-3,394.6	975.0	342.8	214.4	128.47	2.668	
9,000.0	5,878.0	8,932.4	5,779.0	68.4	69.4	-74.15	-3,494.6	975.0	342.8	210.7	132.09	2.595	
9,100.0	5,878.0	9,032.4	5,779.0	70.2	71.2	-74.15	-3,594.6	975.0	342.8	207.1	135.71	2.526	
9,200.0	5,878.0	9,132.4	5,779.0	72.1	73.1	-74.15	-3,694.6	975.0	342.8	203.5	139.34	2.460	
9,300.0	5,878.0	9,232.4	5,779.0	73.9	75.0	-74.15	-3,794.6	975.0	342.8	199.8	142.97	2.398	
9,400.0	5,878.0	9,332.4	5,779.0	75.7	76.9	-74.15	-3,894.6	975.0	342.8	196.2	146.61	2.338	
9,500.0	5,878.0	9,432.4	5,779.0	77.6	78.8	-74.15	-3,994.6	975.0	342.8	192.5	150.25	2.282	
9,600.0	5,878.0	9,532.4	5,779.0	79.4	80.7	-74.15	-4,094.6	975.0	342.8	188.9	153.89	2.227	
9,700.0	5,878.0	9,632.4	5,779.0	81.3	82.5	-74.15	-4,194.6	975.0	342.8	185.3	157.54	2.176	
9,800.0	5,878.0	9,732.4	5,779.0	83.2	84.4	-74.15	-4,294.6	975.0	342.8	181.6	161.19	2.127	
9,900.0	5,878.0	9,832.4	5,779.0	85.0	86.3	-74.15	-4,394.6	975.0	342.8	177.9	164.84	2.079	
10,000.0	5,878.0	9,932.4	5,779.0	86.9	88.2	-74.15	-4,494.6	975.0	342.8	174.3	168.50	2.034	
10,100.0	5,878.0	10,032.4	5,779.0	88.7	90.1	-74.15	-4,594.6	974.9	342.8	170.6	172.15	1.991	
10,200.0	5,878.0	10,132.4	5,779.0	90.6	92.0	-74.15	-4,694.6	974.9	342.8	167.0	175.81	1.950	
10,300.0	5,878.0	10,232.4	5,779.0	92.5	93.9	-74.15	-4,794.6	974.9	342.8	163.3	179.48	1.910	
10,400.0	5,878.0	10,332.4	5,779.0	94.3	95.8	-74.15	-4,894.6	974.9	342.8	159.6	183.14	1.872	
10,500.0	5,878.0	10,432.4	5,779.0	96.2	97.7	-74.15	-4,994.6	974.9	342.8	156.0	186.80	1.835	
10,600.0	5,878.0	10,532.4	5,779.0	98.1	99.6	-74.15	-5,094.6	974.9	342.8	152.3	190.47	1.800	
10,700.0	5,878.0	10,632.4	5,779.0	100.0	101.5	-74.15	-5,194.6	974.9	342.8	148.6	194.14	1.765	
10,800.0	5,878.0	10,732.4	5,779.0	101.8	103.4	-74.15	-5,294.6	974.9	342.7	144.9	197.81	1.733	
10,900.0	5,878.0	10,832.4	5,779.0	103.7	105.3	-74.15	-5,394.6	974.9	342.7	141.3	201.48	1.701	
11,000.0	5,878.0	10,932.4	5,779.0	105.6	107.2	-74.15	-5,494.6	974.9	342.7	137.6	205.16	1.671	
11,100.0	5,878.0	11,032.4	5,779.0	107.5	109.1	-74.15	-5,594.6	974.9	342.7	133.9	208.83	1.641	
11,200.0	5,878.0	11,132.4	5,779.0	109.4	111.0	-74.15	-5,694.6	974.9	342.7	130.2	212.51	1.613	
11,300.0	5,878.0	11,232.4	5,779.0	111.2	112.9	-74.15	-5,794.6	974.9	342.7	126.5	216.18	1.585	
11,400.0	5,878.0	11,332.4	5,779.0	113.1	114.8	-74.15	-5,894.6	974.9	342.7	122.9	219.86	1.559	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21A-2813A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,500.0	5,878.0	11,432.4	5,779.0	115.0	116.7	-74.15	-5,994.6	974.9	342.7	119.2	223.54	1.533	
11,600.0	5,878.0	11,532.4	5,779.0	116.9	118.6	-74.15	-6,094.6	974.9	342.7	115.5	227.22	1.508	
11,700.0	5,878.0	11,632.4	5,779.0	118.8	120.5	-74.15	-6,194.6	974.9	342.7	111.8	230.90	1.484	Level 3
11,800.0	5,878.0	11,732.4	5,779.0	120.7	122.4	-74.15	-6,294.6	974.9	342.7	108.1	234.59	1.461	Level 3
11,900.0	5,878.0	11,832.4	5,779.0	122.6	124.3	-74.15	-6,394.6	974.9	342.7	104.4	238.27	1.438	Level 3
12,000.0	5,878.0	11,932.5	5,779.0	124.5	126.2	-74.15	-6,494.6	974.9	342.7	100.7	241.95	1.416	Level 3
12,100.0	5,878.0	12,032.5	5,779.0	126.4	128.1	-74.15	-6,594.6	974.9	342.7	97.1	245.64	1.395	Level 3
12,200.0	5,878.0	12,132.5	5,779.0	128.2	130.0	-74.15	-6,694.6	974.9	342.7	93.4	249.32	1.374	Level 3
12,300.0	5,878.0	12,232.5	5,779.0	130.1	131.9	-74.15	-6,794.6	974.9	342.7	89.7	253.01	1.354	Level 3
12,400.0	5,878.0	12,332.5	5,779.0	132.0	133.8	-74.15	-6,894.6	974.9	342.7	86.0	256.70	1.335	Level 3
12,500.0	5,878.0	12,432.5	5,779.0	133.9	135.8	-74.15	-6,994.6	974.9	342.7	82.3	260.38	1.316	Level 3
12,600.0	5,878.0	12,532.5	5,779.0	135.8	137.7	-74.15	-7,094.6	974.8	342.7	78.6	264.07	1.298	Level 3
12,700.0	5,878.0	12,632.5	5,779.0	137.7	139.6	-74.15	-7,194.6	974.8	342.7	74.9	267.76	1.280	Level 3
12,800.0	5,878.0	12,732.5	5,779.0	139.6	141.5	-74.15	-7,294.6	974.8	342.7	71.2	271.45	1.262	Level 3
12,866.4	5,878.0	12,798.9	5,779.0	140.6	142.7	-74.15	-7,361.0	974.8	342.7	69.0	273.67	1.252	Level 3, CC
12,895.7	5,878.0	12,821.3	5,779.0	141.1	143.2	-74.15	-7,383.4	974.8	342.7	68.2	274.53	1.248	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-42.03	74.9	-67.5	100.9				
100.0	100.0	100.0	100.0	0.1	0.1	-42.03	74.9	-67.5	100.9	100.7	0.19	537.383	
200.0	200.0	200.0	200.0	0.3	0.3	-42.03	74.9	-67.5	100.9	100.2	0.64	158.277	
300.0	300.0	300.0	300.0	0.5	0.5	-42.03	74.9	-67.5	100.9	99.8	1.09	92.806	
400.0	400.0	400.0	400.0	0.8	0.8	-42.03	74.9	-67.5	100.9	99.3	1.54	65.650	
500.0	500.0	500.0	500.0	1.0	1.0	-42.03	74.9	-67.5	100.9	98.9	1.99	50.788	CC, ES
600.0	600.0	596.6	596.6	1.2	1.2	-41.87	76.3	-68.4	102.5	100.1	2.43	42.231	
700.0	700.0	693.0	692.9	1.4	1.4	-41.39	80.5	-70.9	107.5	104.6	2.87	37.408	
800.0	800.0	792.5	792.1	1.7	1.7	-40.78	86.4	-74.5	114.4	111.0	3.33	34.375	
900.0	900.0	892.3	891.6	1.9	1.9	-40.24	92.3	-78.1	121.2	117.5	3.78	32.083	
1,000.0	1,000.0	991.9	991.0	2.1	2.1	169.53	98.3	-81.7	129.8	125.6	4.20	30.948	
1,100.0	1,099.8	1,091.1	1,090.0	2.3	2.4	170.28	104.2	-85.3	141.9	137.3	4.60	30.858	SF
1,200.0	1,199.6	1,190.2	1,188.8	2.5	2.6	171.05	110.1	-88.9	155.7	150.7	5.01	31.090	
1,300.0	1,299.4	1,289.2	1,287.6	2.7	2.9	171.69	116.0	-92.5	169.5	164.0	5.42	31.247	
1,400.0	1,399.1	1,388.2	1,386.4	2.9	3.1	172.24	121.9	-96.1	183.3	177.4	5.85	31.353	
1,500.0	1,498.9	1,487.3	1,485.2	3.1	3.4	172.71	127.8	-99.7	197.1	190.8	6.27	31.421	
1,600.0	1,598.6	1,586.3	1,584.0	3.3	3.6	173.12	133.7	-103.3	210.9	204.2	6.70	31.465	
1,700.0	1,698.4	1,685.3	1,682.7	3.6	3.9	173.48	139.6	-106.9	224.8	217.6	7.14	31.491	
1,800.0	1,798.1	1,784.3	1,781.5	3.8	4.1	173.80	145.5	-110.5	238.6	231.1	7.57	31.504	
1,900.0	1,897.9	1,883.4	1,880.3	4.1	4.4	174.08	151.4	-114.0	252.5	244.5	8.01	31.508	
2,000.0	1,997.6	1,982.4	1,979.1	4.3	4.6	174.34	157.3	-117.6	266.4	257.9	8.45	31.505	
2,100.0	2,097.4	2,081.4	2,077.9	4.6	4.9	174.56	163.2	-121.2	280.2	271.4	8.90	31.498	
2,200.0	2,197.2	2,180.4	2,176.7	4.8	5.1	174.77	169.1	-124.8	294.1	284.8	9.34	31.487	
2,300.0	2,296.9	2,279.5	2,275.5	5.1	5.4	174.96	175.0	-128.4	308.0	298.2	9.79	31.473	
2,400.0	2,396.7	2,378.5	2,374.2	5.3	5.7	175.13	180.9	-132.0	321.9	311.7	10.23	31.458	
2,500.0	2,496.4	2,477.5	2,473.0	5.6	5.9	175.29	186.8	-135.6	335.8	325.1	10.68	31.442	
2,600.0	2,596.2	2,576.6	2,571.8	5.8	6.2	175.43	192.7	-139.2	349.7	338.5	11.13	31.425	
2,700.0	2,695.9	2,675.6	2,670.6	6.1	6.4	175.57	198.6	-142.8	363.6	352.0	11.58	31.408	
2,800.0	2,795.7	2,774.6	2,769.4	6.3	6.7	175.69	204.5	-146.3	377.4	365.4	12.02	31.391	
2,900.0	2,895.5	2,873.6	2,868.2	6.6	6.9	175.80	210.4	-149.9	391.3	378.9	12.47	31.374	
3,000.0	2,995.2	2,972.7	2,967.0	6.8	7.2	175.91	216.3	-153.5	405.2	392.3	12.92	31.357	
3,100.0	3,095.0	3,071.7	3,065.7	7.1	7.4	176.01	222.2	-157.1	419.1	405.8	13.37	31.340	
3,200.0	3,194.7	3,170.7	3,164.5	7.4	7.7	176.11	228.1	-160.7	433.0	419.2	13.82	31.323	
3,300.0	3,294.5	3,269.7	3,263.3	7.6	7.9	176.19	234.0	-164.3	446.9	432.7	14.28	31.307	
3,400.0	3,394.2	3,368.8	3,362.1	7.9	8.2	176.28	239.9	-167.9	460.8	446.1	14.73	31.291	
3,500.0	3,494.0	3,467.8	3,460.9	8.1	8.4	176.35	245.8	-171.5	474.7	459.6	15.18	31.276	
3,600.0	3,593.8	3,566.8	3,559.7	8.4	8.7	176.43	251.7	-175.1	488.6	473.0	15.63	31.261	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0910B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.42	-0.7	-98.5	98.5				
100.0	100.0	100.0	100.0	0.1	0.1	-90.42	-0.7	-98.5	98.5	98.3	0.19	524.972	
200.0	200.0	200.0	200.0	0.3	0.3	-90.42	-0.7	-98.5	98.5	97.9	0.64	154.622	
300.0	300.0	300.0	300.0	0.5	0.5	-90.42	-0.7	-98.5	98.5	97.4	1.09	90.662	
400.0	400.0	400.0	400.0	0.8	0.8	-90.42	-0.7	-98.5	98.5	97.0	1.54	64.134	
500.0	500.0	500.0	500.0	1.0	1.0	-90.42	-0.7	-98.5	98.5	96.5	1.99	49.616	
600.0	600.0	600.0	600.0	1.2	1.2	-90.42	-0.7	-98.5	98.5	96.1	2.44	40.457	
700.0	700.0	700.0	700.0	1.4	1.4	-90.42	-0.7	-98.5	98.5	95.6	2.88	34.153	CC, ES
800.0	800.0	798.9	798.9	1.7	1.7	-89.48	0.9	-99.1	99.1	95.7	3.33	29.737	
900.0	900.0	897.6	897.5	1.9	1.9	-86.73	5.8	-100.6	100.8	97.1	3.78	26.675	
1,000.0	1,000.0	997.2	996.8	2.1	2.1	126.73	12.4	-102.8	104.6	100.4	4.20	24.888	
1,100.0	1,099.8	1,096.5	1,095.8	2.3	2.4	132.00	18.9	-105.0	111.3	106.7	4.61	24.121	
1,200.0	1,199.6	1,195.5	1,194.6	2.5	2.6	137.29	25.5	-107.1	120.1	115.1	5.03	23.858	
1,300.0	1,299.4	1,294.5	1,293.4	2.7	2.8	141.83	32.1	-109.3	129.8	124.3	5.46	23.766	SF
1,400.0	1,399.1	1,393.6	1,392.2	2.9	3.1	145.73	38.6	-111.4	140.2	134.3	5.89	23.789	
1,500.0	1,498.9	1,492.6	1,491.0	3.1	3.3	149.08	45.2	-113.6	151.1	144.8	6.33	23.884	
1,600.0	1,598.6	1,591.6	1,589.8	3.3	3.6	151.98	51.8	-115.7	162.5	155.8	6.76	24.025	
1,700.0	1,698.4	1,690.7	1,688.6	3.6	3.8	154.49	58.3	-117.9	174.3	167.1	7.20	24.194	
1,800.0	1,798.1	1,789.7	1,787.4	3.8	4.1	156.68	64.9	-120.1	186.3	178.7	7.64	24.376	
1,900.0	1,897.9	1,888.7	1,886.2	4.1	4.3	158.60	71.4	-122.2	198.6	190.5	8.08	24.564	
2,000.0	1,997.6	1,987.8	1,985.0	4.3	4.6	160.30	78.0	-124.4	211.0	202.5	8.53	24.753	
2,100.0	2,097.4	2,086.8	2,083.8	4.6	4.8	161.81	84.6	-126.5	223.7	214.7	8.97	24.938	
2,200.0	2,197.2	2,185.9	2,182.6	4.8	5.1	163.16	91.1	-128.7	236.4	227.0	9.41	25.118	
2,300.0	2,296.9	2,284.9	2,281.4	5.1	5.3	164.37	97.7	-130.8	249.3	239.5	9.86	25.292	
2,400.0	2,396.7	2,383.9	2,380.1	5.3	5.6	165.46	104.3	-133.0	262.3	252.0	10.30	25.459	
2,500.0	2,496.4	2,483.0	2,478.9	5.6	5.8	166.45	110.8	-135.1	275.4	264.6	10.75	25.618	
2,600.0	2,596.2	2,582.0	2,577.7	5.8	6.1	167.34	117.4	-137.3	288.5	277.3	11.20	25.769	
2,700.0	2,695.9	2,681.0	2,676.5	6.1	6.3	168.16	124.0	-139.4	301.7	290.1	11.64	25.913	
2,800.0	2,795.7	2,780.1	2,775.3	6.3	6.6	168.92	130.5	-141.6	315.0	302.9	12.09	26.050	
2,900.0	2,895.5	2,879.1	2,874.1	6.6	6.8	169.61	137.1	-143.8	328.3	315.8	12.54	26.180	
3,000.0	2,995.2	2,978.1	2,972.9	6.8	7.1	170.24	143.6	-145.9	341.7	328.7	12.99	26.304	
3,100.0	3,095.0	3,077.2	3,071.7	7.1	7.3	170.83	150.2	-148.1	355.0	341.6	13.44	26.421	
3,200.0	3,194.7	3,176.2	3,170.5	7.4	7.6	171.38	156.8	-150.2	368.5	354.6	13.89	26.532	
3,300.0	3,294.5	3,275.2	3,269.3	7.6	7.8	171.88	163.3	-152.4	381.9	367.6	14.34	26.638	
3,400.0	3,394.2	3,374.3	3,368.1	7.9	8.1	172.36	169.9	-154.5	395.4	380.6	14.79	26.739	
3,500.0	3,494.0	3,473.3	3,466.9	8.1	8.3	172.80	176.5	-156.7	408.9	393.7	15.24	26.835	
3,600.0	3,593.8	3,572.4	3,565.7	8.4	8.6	173.21	183.0	-158.8	422.5	406.8	15.69	26.926	
3,700.0	3,693.5	3,671.4	3,664.5	8.7	8.8	173.60	189.6	-161.0	436.0	419.9	16.14	27.013	
3,800.0	3,793.3	3,770.4	3,763.3	8.9	9.1	173.96	196.2	-163.1	449.6	433.0	16.59	27.096	
3,900.0	3,893.0	3,869.5	3,862.1	9.2	9.4	174.31	202.7	-165.3	463.2	446.1	17.04	27.175	
4,000.0	3,992.8	3,968.5	3,960.9	9.4	9.6	174.63	209.3	-167.4	476.8	459.3	17.50	27.251	
4,100.0	4,092.5	4,067.5	4,059.7	9.7	9.9	174.94	215.9	-169.6	490.4	472.4	17.95	27.323	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0911A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.05	76.1	-1.4	76.1				
100.0	100.0	100.0	100.0	0.1	0.1	-1.05	76.1	-1.4	76.1	75.9	0.19	405.562	
200.0	200.0	200.0	200.0	0.3	0.3	-1.05	76.1	-1.4	76.1	75.5	0.64	119.451	
300.0	300.0	300.0	300.0	0.5	0.5	-1.05	76.1	-1.4	76.1	75.0	1.09	70.040	
400.0	400.0	400.0	400.0	0.8	0.8	-1.05	76.1	-1.4	76.1	74.6	1.54	49.546	
500.0	500.0	500.0	500.0	1.0	1.0	-1.05	76.1	-1.4	76.1	74.1	1.99	38.330	
600.0	600.0	600.0	600.0	1.2	1.2	-1.05	76.1	-1.4	76.1	73.7	2.44	31.255	
700.0	700.0	700.0	700.0	1.4	1.4	-1.05	76.1	-1.4	76.1	73.2	2.88	26.384	
800.0	800.0	800.0	800.0	1.7	1.7	-1.05	76.1	-1.4	76.1	72.8	3.33	22.827	
900.0	900.0	900.0	900.0	1.9	1.9	-1.05	76.1	-1.4	76.1	72.3	3.78	20.116	CC, ES
1,000.0	1,000.0	997.3	997.3	2.1	2.1	-152.57	77.7	-1.6	79.3	75.1	4.20	18.879	SF
1,100.0	1,099.8	1,094.0	1,093.8	2.3	2.3	-154.31	82.6	-2.3	89.1	84.5	4.61	19.336	
1,200.0	1,199.6	1,192.8	1,192.5	2.5	2.6	-156.27	89.4	-3.2	102.4	97.3	5.02	20.384	
1,300.0	1,299.4	1,291.9	1,291.3	2.7	2.8	-157.78	96.3	-4.1	115.7	110.3	5.44	21.279	
1,400.0	1,399.1	1,391.0	1,390.1	2.9	3.0	-158.98	103.1	-5.0	129.2	123.3	5.86	22.036	
1,500.0	1,498.9	1,490.0	1,488.9	3.1	3.3	-159.95	110.0	-5.9	142.7	136.4	6.29	22.681	
1,600.0	1,598.6	1,589.1	1,587.7	3.3	3.5	-160.76	116.8	-6.8	156.2	149.4	6.72	23.235	
1,700.0	1,698.4	1,688.2	1,686.6	3.6	3.7	-161.43	123.7	-7.7	169.7	162.5	7.16	23.715	
1,800.0	1,798.1	1,787.2	1,785.4	3.8	4.0	-162.01	130.5	-8.6	183.3	175.7	7.59	24.135	
1,900.0	1,897.9	1,886.3	1,884.2	4.1	4.2	-162.51	137.4	-9.6	196.8	188.8	8.03	24.504	
2,000.0	1,997.6	1,985.3	1,983.0	4.3	4.5	-162.94	144.2	-10.5	210.4	202.0	8.47	24.831	
2,100.0	2,097.4	2,084.4	2,081.8	4.6	4.7	-163.32	151.1	-11.4	224.0	215.1	8.92	25.121	
2,200.0	2,197.2	2,183.5	2,180.7	4.8	5.0	-163.66	157.9	-12.3	237.6	228.3	9.36	25.382	
2,300.0	2,296.9	2,282.5	2,279.5	5.1	5.2	-163.96	164.8	-13.2	251.2	241.4	9.81	25.616	
2,400.0	2,396.7	2,381.6	2,378.3	5.3	5.5	-164.23	171.6	-14.1	264.9	254.6	10.25	25.829	
2,500.0	2,496.4	2,480.6	2,477.1	5.6	5.7	-164.47	178.5	-15.0	278.5	267.8	10.70	26.021	
2,600.0	2,596.2	2,579.7	2,575.9	5.8	6.0	-164.69	185.3	-15.9	292.1	281.0	11.15	26.197	
2,700.0	2,695.9	2,678.8	2,674.8	6.1	6.2	-164.89	192.2	-16.8	305.7	294.1	11.60	26.358	
2,800.0	2,795.7	2,777.8	2,773.6	6.3	6.5	-165.07	199.0	-17.8	319.4	307.3	12.05	26.505	
2,900.0	2,895.5	2,876.9	2,872.4	6.6	6.7	-165.24	205.9	-18.7	333.0	320.5	12.50	26.641	
3,000.0	2,995.2	2,975.9	2,971.2	6.8	7.0	-165.40	212.7	-19.6	346.7	333.7	12.95	26.767	
3,100.0	3,095.0	3,075.0	3,070.0	7.1	7.2	-165.54	219.6	-20.5	360.3	346.9	13.40	26.884	
3,200.0	3,194.7	3,174.1	3,168.9	7.4	7.5	-165.67	226.4	-21.4	374.0	360.1	13.85	26.992	
3,300.0	3,294.5	3,273.1	3,267.7	7.6	7.7	-165.80	233.3	-22.3	387.6	373.3	14.31	27.093	
3,400.0	3,394.2	3,372.2	3,366.5	7.9	8.0	-165.91	240.1	-23.2	401.3	386.5	14.76	27.187	
3,500.0	3,494.0	3,471.3	3,465.3	8.1	8.2	-166.02	247.0	-24.1	414.9	399.7	15.21	27.275	
3,600.0	3,593.8	3,570.3	3,564.1	8.4	8.5	-166.12	253.8	-25.1	428.6	412.9	15.66	27.358	
3,700.0	3,693.5	3,669.4	3,663.0	8.7	8.7	-166.21	260.7	-26.0	442.2	426.1	16.12	27.435	
3,800.0	3,793.3	3,768.4	3,761.8	8.9	9.0	-166.30	267.5	-26.9	455.9	439.3	16.57	27.509	
3,900.0	3,893.0	3,867.5	3,860.6	9.2	9.2	-166.39	274.4	-27.8	469.5	452.5	17.03	27.577	
4,000.0	3,992.8	3,966.6	3,959.4	9.4	9.5	-166.47	281.2	-28.7	483.2	465.7	17.48	27.642	
4,100.0	4,092.5	4,065.6	4,058.2	9.7	9.7	-166.54	288.1	-29.6	496.8	478.9	17.93	27.704	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.16	0.5	-33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	-89.16	0.5	-33.2	33.2	33.0	0.19	177.043	
200.0	200.0	200.0	200.0	0.3	0.3	-89.16	0.5	-33.2	33.2	32.6	0.64	52.145	
300.0	300.0	300.0	300.0	0.5	0.5	-89.16	0.5	-33.2	33.2	32.1	1.09	30.575	
400.0	400.0	400.0	400.0	0.8	0.8	-89.16	0.5	-33.2	33.2	31.7	1.54	21.629	
500.0	500.0	500.0	500.0	1.0	1.0	-89.16	0.5	-33.2	33.2	31.2	1.99	16.732	
600.0	600.0	600.0	600.0	1.2	1.2	-89.16	0.5	-33.2	33.2	30.8	2.44	13.644	
700.0	700.0	700.0	700.0	1.4	1.4	-89.16	0.5	-33.2	33.2	30.3	2.88	11.518	
800.0	800.0	800.0	800.0	1.7	1.7	-89.16	0.5	-33.2	33.2	29.9	3.33	9.965	
900.0	900.0	900.0	900.0	1.9	1.9	-89.16	0.5	-33.2	33.2	29.4	3.78	8.781	CC, ES
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	122.53	0.5	-33.2	34.1	29.9	4.21	8.115	
1,100.0	1,099.8	1,099.8	1,099.8	2.3	2.3	129.29	0.5	-33.2	37.2	32.6	4.61	8.073	SF
1,200.0	1,199.6	1,199.4	1,199.4	2.5	2.6	139.00	2.2	-32.8	42.1	37.1	5.02	8.395	
1,300.0	1,299.4	1,298.5	1,298.3	2.7	2.8	150.37	7.2	-31.6	49.0	43.6	5.44	9.010	
1,400.0	1,399.1	1,397.6	1,397.2	2.9	3.0	160.32	13.9	-30.1	58.1	52.2	5.86	9.909	
1,500.0	1,498.9	1,496.8	1,496.1	3.1	3.2	167.43	20.6	-28.5	68.5	62.2	6.29	10.878	
1,600.0	1,598.6	1,595.9	1,595.0	3.3	3.5	172.63	27.4	-26.9	79.6	72.9	6.73	11.831	
1,700.0	1,698.4	1,695.1	1,693.9	3.6	3.7	176.53	34.1	-25.3	91.2	84.1	7.17	12.730	
1,800.0	1,798.1	1,794.2	1,792.9	3.8	3.9	179.55	40.8	-23.7	103.2	95.6	7.61	13.563	
1,900.0	1,897.9	1,893.4	1,891.8	4.1	4.2	-178.07	47.6	-22.1	115.3	107.3	8.05	14.327	
2,000.0	1,997.6	1,992.5	1,990.7	4.3	4.4	-176.14	54.3	-20.6	127.7	119.2	8.50	15.027	
2,100.0	2,097.4	2,091.7	2,089.6	4.6	4.7	-174.56	61.0	-19.0	140.1	131.2	8.94	15.667	
2,200.0	2,197.2	2,190.8	2,188.5	4.8	4.9	-173.23	67.8	-17.4	152.6	143.3	9.39	16.253	
2,300.0	2,296.9	2,290.0	2,287.4	5.1	5.2	-172.10	74.5	-15.8	165.3	155.4	9.84	16.790	
2,400.0	2,396.7	2,389.1	2,386.3	5.3	5.4	-171.14	81.2	-14.2	177.9	167.6	10.29	17.283	
2,500.0	2,496.4	2,488.3	2,485.2	5.6	5.7	-170.30	88.0	-12.6	190.6	179.9	10.75	17.737	
2,600.0	2,596.2	2,587.5	2,584.2	5.8	5.9	-169.57	94.7	-11.0	203.3	192.1	11.20	18.156	
2,700.0	2,695.9	2,686.6	2,683.1	6.1	6.1	-168.92	101.4	-9.5	216.1	204.5	11.65	18.543	
2,800.0	2,795.7	2,785.8	2,782.0	6.3	6.4	-168.35	108.2	-7.9	228.9	216.8	12.11	18.902	
2,900.0	2,895.5	2,884.9	2,880.9	6.6	6.6	-167.84	114.9	-6.3	241.7	229.1	12.57	19.236	
3,000.0	2,995.2	2,984.1	2,979.8	6.8	6.9	-167.37	121.6	-4.7	254.5	241.5	13.02	19.546	
3,100.0	3,095.0	3,083.2	3,078.7	7.1	7.1	-166.96	128.4	-3.1	267.4	253.9	13.48	19.836	
3,200.0	3,194.7	3,182.4	3,177.6	7.4	7.4	-166.58	135.1	-1.5	280.2	266.3	13.94	20.108	
3,300.0	3,294.5	3,281.5	3,276.5	7.6	7.6	-166.23	141.8	0.1	293.1	278.7	14.39	20.362	
3,400.0	3,394.2	3,380.7	3,375.5	7.9	7.9	-165.92	148.6	1.6	306.0	291.1	14.85	20.600	
3,500.0	3,494.0	3,479.8	3,474.4	8.1	8.1	-165.62	155.3	3.2	318.9	303.5	15.31	20.825	
3,600.0	3,593.8	3,579.0	3,573.3	8.4	8.4	-165.36	162.0	4.8	331.7	316.0	15.77	21.036	
3,700.0	3,693.5	3,678.2	3,672.2	8.7	8.6	-165.11	168.8	6.4	344.6	328.4	16.23	21.235	
3,800.0	3,793.3	3,777.3	3,771.1	8.9	8.9	-164.88	175.5	8.0	357.5	340.9	16.69	21.424	
3,900.0	3,893.0	3,876.5	3,870.0	9.2	9.1	-164.66	182.2	9.6	370.5	353.3	17.15	21.602	
4,000.0	3,992.8	3,975.6	3,968.9	9.4	9.4	-164.46	189.0	11.2	383.4	365.8	17.61	21.771	
4,100.0	4,092.5	4,074.8	4,067.9	9.7	9.7	-164.28	195.7	12.7	396.3	378.2	18.07	21.932	
4,200.0	4,192.3	4,173.9	4,166.8	10.0	9.9	-164.10	202.4	14.3	409.2	390.7	18.53	22.084	
4,300.0	4,292.1	4,273.1	4,265.7	10.2	10.2	-163.94	209.1	15.9	422.1	403.1	18.99	22.229	
4,400.0	4,391.8	4,372.2	4,364.6	10.5	10.4	-163.78	215.9	17.5	435.1	415.6	19.45	22.367	
4,500.0	4,491.6	4,471.4	4,463.5	10.7	10.7	-163.64	222.6	19.1	448.0	428.1	19.91	22.499	
4,600.0	4,591.3	4,570.5	4,562.4	11.0	10.9	-163.50	229.3	20.7	460.9	440.5	20.37	22.624	
4,700.0	4,691.1	4,669.7	4,661.3	11.3	11.2	-163.37	236.1	22.3	473.9	453.0	20.83	22.744	
4,800.0	4,790.8	4,768.9	4,760.2	11.5	11.4	-163.24	242.8	23.8	486.8	465.5	21.30	22.859	
4,900.0	4,890.6	4,868.0	4,859.2	11.8	11.7	-163.13	249.5	25.4	499.7	478.0	21.76	22.969	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2809A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-53.59	74.3	-100.7	125.2				
100.0	100.0	100.0	100.0	0.1	0.1	-53.59	74.3	-100.7	125.2	125.0	0.19	666.964	
200.0	200.0	200.0	200.0	0.3	0.3	-53.59	74.3	-100.7	125.2	124.5	0.64	196.443	
300.0	300.0	300.0	300.0	0.5	0.5	-53.59	74.3	-100.7	125.2	124.1	1.09	115.184	
400.0	400.0	400.0	400.0	0.8	0.8	-53.59	74.3	-100.7	125.2	123.6	1.54	81.480	
500.0	500.0	500.0	500.0	1.0	1.0	-53.59	74.3	-100.7	125.2	123.2	1.99	63.035	
600.0	600.0	600.0	600.0	1.2	1.2	-53.59	74.3	-100.7	125.2	122.7	2.44	51.400	
700.0	700.0	700.0	700.0	1.4	1.4	-53.59	74.3	-100.7	125.2	122.3	2.88	43.390	
800.0	800.0	800.0	800.0	1.7	1.7	-53.59	74.3	-100.7	125.2	121.8	3.33	37.541	
900.0	900.0	900.0	900.0	1.9	1.9	-53.59	74.3	-100.7	125.2	121.4	3.78	33.081	CC, ES
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	155.90	74.3	-100.7	126.8	122.6	4.21	30.136	
1,100.0	1,099.8	1,099.8	1,099.8	2.3	2.3	156.79	74.3	-100.7	131.6	127.0	4.61	28.554	
1,200.0	1,199.6	1,199.6	1,199.6	2.5	2.6	157.93	74.3	-100.7	138.0	133.0	5.02	27.498	
1,300.0	1,299.4	1,299.4	1,299.4	2.7	2.8	158.97	74.3	-100.7	144.5	139.1	5.44	26.574	
1,400.0	1,399.1	1,399.1	1,399.1	2.9	3.0	159.92	74.3	-100.7	151.0	145.2	5.86	25.764	
1,500.0	1,498.9	1,498.9	1,498.9	3.1	3.2	160.79	74.3	-100.7	157.6	151.3	6.29	25.051	
1,600.0	1,598.6	1,601.4	1,601.3	3.3	3.4	161.06	72.6	-101.2	163.4	156.7	6.70	24.383	
1,700.0	1,698.4	1,703.9	1,703.7	3.6	3.6	160.20	67.3	-102.5	167.5	160.4	7.09	23.622	
1,800.0	1,798.1	1,803.8	1,803.3	3.8	3.8	158.92	60.5	-104.2	170.9	163.4	7.49	22.820	
1,900.0	1,897.9	1,903.6	1,903.0	4.1	4.0	157.68	53.7	-105.8	174.4	166.5	7.90	22.076	
2,000.0	1,997.6	2,003.5	2,002.6	4.3	4.2	156.49	47.0	-107.5	178.0	169.7	8.32	21.388	
2,100.0	2,097.4	2,103.4	2,102.2	4.6	4.4	155.35	40.2	-109.2	181.7	172.9	8.75	20.753	
2,200.0	2,197.2	2,203.2	2,201.8	4.8	4.6	154.25	33.5	-110.8	185.4	176.2	9.19	20.167	
2,300.0	2,296.9	2,303.1	2,301.5	5.1	4.8	153.20	26.7	-112.5	189.2	179.5	9.64	19.626	
2,400.0	2,396.7	2,403.0	2,401.1	5.3	5.0	152.19	19.9	-114.2	193.0	182.9	10.09	19.127	
2,500.0	2,496.4	2,502.8	2,500.7	5.6	5.3	151.22	13.2	-115.9	197.0	186.4	10.55	18.665	
2,600.0	2,596.2	2,602.7	2,600.4	5.8	5.5	150.29	6.4	-117.5	200.9	189.9	11.02	18.239	
2,700.0	2,695.9	2,702.6	2,700.0	6.1	5.7	149.39	-0.4	-119.2	204.9	193.5	11.49	17.843	
2,800.0	2,795.7	2,802.5	2,799.6	6.3	6.0	148.53	-7.1	-120.9	209.0	197.0	11.96	17.477	
2,900.0	2,895.5	2,902.3	2,899.2	6.6	6.2	147.70	-13.9	-122.6	213.1	200.7	12.44	17.137	
3,000.0	2,995.2	3,002.2	2,998.9	6.8	6.4	146.90	-20.6	-124.2	217.3	204.3	12.92	16.820	
3,100.0	3,095.0	3,102.1	3,098.5	7.1	6.7	146.13	-27.4	-125.9	221.5	208.1	13.40	16.526	
3,200.0	3,194.7	3,201.9	3,198.1	7.4	6.9	145.40	-34.2	-127.6	225.7	211.8	13.89	16.251	
3,300.0	3,294.5	3,301.8	3,297.7	7.6	7.2	144.68	-40.9	-129.3	230.0	215.6	14.38	15.995	
3,400.0	3,394.2	3,401.7	3,397.4	7.9	7.4	144.00	-47.7	-130.9	234.3	219.4	14.87	15.755	
3,500.0	3,494.0	3,501.5	3,497.0	8.1	7.7	143.34	-54.5	-132.6	238.6	223.2	15.36	15.530	
3,600.0	3,593.8	3,601.4	3,596.6	8.4	7.9	142.70	-61.2	-134.3	243.0	227.1	15.86	15.320	
3,700.0	3,693.5	3,701.3	3,696.2	8.7	8.2	142.09	-68.0	-135.9	247.4	231.0	16.36	15.122	
3,800.0	3,793.3	3,801.1	3,795.9	8.9	8.4	141.49	-74.7	-137.6	251.8	234.9	16.86	14.936	
3,900.0	3,893.0	3,901.0	3,895.5	9.2	8.7	140.92	-81.5	-139.3	256.2	238.9	17.36	14.761	
4,000.0	3,992.8	4,000.9	3,995.1	9.4	8.9	140.37	-88.3	-141.0	260.7	242.8	17.86	14.596	
4,100.0	4,092.5	4,100.7	4,094.7	9.7	9.2	139.84	-95.0	-142.6	265.2	246.8	18.36	14.441	
4,200.0	4,192.3	4,200.6	4,194.4	10.0	9.4	139.32	-101.8	-144.3	269.7	250.8	18.87	14.294	
4,300.0	4,292.1	4,300.5	4,294.0	10.2	9.7	138.82	-108.6	-146.0	274.2	254.9	19.38	14.154	
4,400.0	4,391.8	4,400.4	4,393.6	10.5	9.9	138.34	-115.3	-147.7	278.8	258.9	19.88	14.023	
4,500.0	4,491.6	4,500.2	4,493.2	10.7	10.2	137.87	-122.1	-149.3	283.4	263.0	20.39	13.898	
4,600.0	4,591.3	4,600.1	4,592.9	11.0	10.4	137.42	-128.8	-151.0	288.0	267.1	20.90	13.779	
4,700.0	4,691.1	4,700.0	4,692.5	11.3	10.7	136.98	-135.6	-152.7	292.6	271.2	21.41	13.667	
4,800.0	4,790.8	4,799.8	4,792.1	11.5	11.0	136.55	-142.4	-154.4	297.2	275.3	21.92	13.560	
4,900.0	4,890.6	4,899.7	4,891.7	11.8	11.2	136.14	-149.1	-156.0	301.9	279.4	22.43	13.458	
5,000.0	4,990.3	4,999.6	4,991.4	12.1	11.5	135.74	-155.9	-157.7	306.5	283.6	22.94	13.361	
5,100.0	5,090.1	5,099.4	5,091.0	12.3	11.7	135.36	-162.7	-159.4	311.2	287.8	23.45	13.268	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2809A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.9	5,199.3	5,190.6	12.6	12.0	134.98	-169.4	-161.1	315.9	291.9	23.97	13.180	
5,300.0	5,289.6	5,299.2	5,290.2	12.8	12.2	134.62	-176.2	-162.7	320.6	296.1	24.48	13.096	
5,404.1	5,393.5	5,403.5	5,393.5	13.1	12.6	133.00	-190.1	-166.2	325.4	300.3	25.10	12.964	SF
5,450.0	5,439.1	5,448.0	5,436.3	13.3	12.8	131.19	-201.9	-169.1	329.1	303.7	25.38	12.967	
5,500.0	5,488.0	5,495.1	5,480.2	13.4	13.0	128.86	-218.3	-173.1	336.5	310.9	25.68	13.105	
5,550.0	5,535.7	5,540.6	5,521.1	13.7	13.2	126.21	-237.7	-177.9	347.5	321.5	26.00	13.365	
5,600.0	5,581.8	5,584.4	5,558.6	14.0	13.5	123.29	-259.5	-183.3	361.8	335.5	26.37	13.722	
5,650.0	5,625.8	5,626.3	5,592.7	14.3	13.8	120.14	-283.3	-189.2	379.4	352.6	26.82	14.147	
5,700.0	5,667.3	5,666.6	5,623.4	14.7	14.2	116.78	-308.5	-195.5	399.9	372.5	27.37	14.611	
5,750.0	5,706.0	5,705.2	5,650.9	15.1	14.5	113.26	-334.7	-202.0	423.0	394.9	28.05	15.077	
5,800.0	5,741.5	5,742.2	5,675.3	15.6	14.8	109.57	-361.7	-208.6	448.4	419.5	28.92	15.506	
5,850.0	5,773.4	5,777.8	5,696.9	16.1	15.2	105.74	-389.2	-215.4	475.8	445.9	29.91	15.909	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-91.05	-1.2	-66.1	66.1				
100.0	100.0	100.0	100.0	0.1	0.1	-91.05	-1.2	-66.1	66.1	66.0	0.19	352.418	
200.0	200.0	200.0	200.0	0.3	0.3	-91.05	-1.2	-66.1	66.1	65.5	0.64	103.799	
300.0	300.0	300.0	300.0	0.5	0.5	-91.05	-1.2	-66.1	66.1	65.1	1.09	60.862	
400.0	400.0	400.0	400.0	0.8	0.8	-91.05	-1.2	-66.1	66.1	64.6	1.54	43.053	
500.0	500.0	500.0	500.0	1.0	1.0	-91.05	-1.2	-66.1	66.1	64.2	1.99	33.307	
600.0	600.0	600.0	600.0	1.2	1.2	-91.05	-1.2	-66.1	66.1	63.7	2.44	27.159	
700.0	700.0	700.0	700.0	1.4	1.4	-91.05	-1.2	-66.1	66.1	63.3	2.88	22.927	
800.0	800.0	800.1	800.0	1.7	1.6	-92.57	-3.0	-66.0	66.1	62.8	3.31	19.992	
821.7	821.7	821.8	821.7	1.7	1.7	-93.30	-3.8	-66.0	66.1	62.7	3.39	19.471	CC
900.0	900.0	899.9	899.7	1.9	1.8	-97.09	-8.2	-65.7	66.2	62.5	3.71	17.848	ES
1,000.0	1,000.0	999.7	999.3	2.1	2.0	107.52	-15.1	-65.3	67.6	63.5	4.11	16.452	
1,100.0	1,099.8	1,099.6	1,099.0	2.3	2.2	105.91	-22.1	-64.9	70.2	65.7	4.50	15.599	
1,200.0	1,199.6	1,199.6	1,198.7	2.5	2.5	105.78	-29.0	-64.5	73.3	68.4	4.92	14.912	
1,300.0	1,299.4	1,299.5	1,298.4	2.7	2.7	105.67	-36.0	-64.1	76.4	71.1	5.35	14.280	
1,400.0	1,399.1	1,399.5	1,398.1	2.9	2.9	105.56	-43.0	-63.7	79.5	73.7	5.80	13.708	
1,500.0	1,498.9	1,499.5	1,497.8	3.1	3.2	105.46	-49.9	-63.3	82.7	76.4	6.26	13.194	
1,600.0	1,598.6	1,599.4	1,597.5	3.3	3.4	105.37	-56.9	-62.9	85.8	79.0	6.74	12.733	
1,700.0	1,698.4	1,699.4	1,697.2	3.6	3.6	105.28	-63.9	-62.5	88.9	81.7	7.22	12.319	
1,800.0	1,798.1	1,799.3	1,797.0	3.8	3.9	105.20	-70.8	-62.1	92.0	84.3	7.70	11.948	
1,900.0	1,897.9	1,899.3	1,896.7	4.1	4.1	105.12	-77.8	-61.7	95.1	86.9	8.19	11.613	
2,000.0	1,997.6	1,999.2	1,996.4	4.3	4.4	105.05	-84.7	-61.3	98.3	89.6	8.69	11.311	
2,100.0	2,097.4	2,099.2	2,096.1	4.6	4.7	104.99	-91.7	-60.9	101.4	92.2	9.19	11.037	
2,200.0	2,197.2	2,199.1	2,195.8	4.8	4.9	104.92	-98.7	-60.5	104.5	94.8	9.69	10.788	
2,300.0	2,296.9	2,299.1	2,295.5	5.1	5.2	104.87	-105.6	-60.1	107.6	97.4	10.19	10.561	
2,400.0	2,396.7	2,399.0	2,395.2	5.3	5.4	104.81	-112.6	-59.7	110.7	100.0	10.70	10.353	
2,500.0	2,496.4	2,499.0	2,494.9	5.6	5.7	104.76	-119.5	-59.3	113.9	102.7	11.20	10.162	
2,600.0	2,596.2	2,598.9	2,594.6	5.8	5.9	104.71	-126.5	-58.9	117.0	105.3	11.71	9.986	
2,700.0	2,695.9	2,698.9	2,694.3	6.1	6.2	104.66	-133.5	-58.5	120.1	107.9	12.22	9.824	
2,800.0	2,795.7	2,798.8	2,794.0	6.3	6.5	104.62	-140.4	-58.1	123.2	110.5	12.74	9.674	
2,900.0	2,895.5	2,898.8	2,893.7	6.6	6.7	104.57	-147.4	-57.7	126.3	113.1	13.25	9.535	
3,000.0	2,995.2	2,998.7	2,993.4	6.8	7.0	104.53	-154.3	-57.3	129.5	115.7	13.76	9.405	
3,100.0	3,095.0	3,098.7	3,093.2	7.1	7.2	104.50	-161.3	-56.9	132.6	118.3	14.28	9.285	
3,200.0	3,194.7	3,198.6	3,192.9	7.4	7.5	104.46	-168.3	-56.5	135.7	120.9	14.80	9.172	
3,300.0	3,294.5	3,298.6	3,292.6	7.6	7.8	104.42	-175.2	-56.1	138.8	123.5	15.31	9.066	
3,400.0	3,394.2	3,398.5	3,392.3	7.9	8.0	104.39	-182.2	-55.7	142.0	126.1	15.83	8.967	
3,500.0	3,494.0	3,498.5	3,492.0	8.1	8.3	104.36	-189.1	-55.3	145.1	128.7	16.35	8.874	
3,600.0	3,593.8	3,598.4	3,591.7	8.4	8.5	104.33	-196.1	-54.9	148.2	131.3	16.87	8.786	
3,700.0	3,693.5	3,698.4	3,691.4	8.7	8.8	104.30	-203.1	-54.5	151.3	133.9	17.39	8.703	
3,800.0	3,793.3	3,798.3	3,791.1	8.9	9.1	104.27	-210.0	-54.1	154.4	136.5	17.91	8.625	
3,900.0	3,893.0	3,898.3	3,890.8	9.2	9.3	104.24	-217.0	-53.7	157.6	139.1	18.42	8.551	
4,000.0	3,992.8	3,998.2	3,990.5	9.4	9.6	104.22	-223.9	-53.3	160.7	141.7	18.94	8.481	
4,100.0	4,092.5	4,098.2	4,090.2	9.7	9.9	104.19	-230.9	-52.9	163.8	144.3	19.47	8.415	
4,200.0	4,192.3	4,198.1	4,189.9	10.0	10.1	104.17	-237.9	-52.5	166.9	146.9	19.99	8.352	
4,300.0	4,292.1	4,298.1	4,289.7	10.2	10.4	104.15	-244.8	-52.1	170.0	149.5	20.51	8.292	
4,400.0	4,391.8	4,398.0	4,389.4	10.5	10.6	104.12	-251.8	-51.7	173.2	152.1	21.03	8.235	
4,500.0	4,491.6	4,498.0	4,489.1	10.7	10.9	104.10	-258.8	-51.3	176.3	154.7	21.55	8.180	
4,600.0	4,591.3	4,597.9	4,588.8	11.0	11.2	104.08	-265.7	-50.9	179.4	157.3	22.07	8.128	
4,700.0	4,691.1	4,697.9	4,688.5	11.3	11.4	104.06	-272.7	-50.5	182.5	159.9	22.59	8.079	
4,800.0	4,790.8	4,797.9	4,788.2	11.5	11.7	104.04	-279.6	-50.1	185.7	162.5	23.12	8.031	
4,900.0	4,890.6	4,897.8	4,887.9	11.8	12.0	104.02	-286.6	-49.7	188.8	165.1	23.64	7.986	
5,000.0	4,990.3	4,997.8	4,987.6	12.1	12.2	104.00	-293.6	-49.3	191.9	167.7	24.16	7.942	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,097.7	5,087.3	12.3	12.5	103.99	-300.5	-48.9	195.0	170.3	24.68	7.901	
5,200.0	5,189.9	5,197.7	5,187.0	12.6	12.8	103.97	-307.5	-48.5	198.1	172.9	25.21	7.861	
5,300.0	5,289.6	5,297.6	5,286.7	12.8	13.0	103.95	-314.4	-48.1	201.3	175.5	25.73	7.822	
5,404.1	5,393.5	5,401.7	5,390.5	13.1	13.3	103.94	-321.7	-47.7	204.5	178.2	26.27	7.784	SF
5,450.0	5,439.1	5,444.3	5,432.9	13.3	13.4	103.78	-326.2	-47.4	206.8	180.2	26.53	7.795	
5,500.0	5,488.0	5,490.3	5,478.1	13.4	13.6	103.48	-334.8	-46.9	211.2	184.3	26.86	7.863	
5,550.0	5,535.7	5,536.2	5,522.2	13.7	13.8	103.05	-347.4	-46.2	217.6	190.3	27.26	7.983	
5,600.0	5,581.8	5,581.7	5,564.7	14.0	14.0	102.49	-363.7	-45.2	225.9	198.2	27.72	8.149	
5,650.0	5,625.8	5,626.9	5,605.3	14.3	14.3	101.79	-383.4	-44.1	236.1	207.8	28.27	8.352	
5,700.0	5,667.3	5,671.7	5,643.7	14.7	14.6	100.98	-406.4	-42.8	248.0	219.1	28.90	8.583	
5,750.0	5,706.0	5,716.1	5,679.7	15.1	15.0	100.06	-432.3	-41.3	261.6	231.9	29.63	8.826	
5,800.0	5,741.5	5,760.1	5,713.1	15.6	15.4	99.03	-461.0	-39.6	276.6	246.1	30.49	9.072	
5,850.0	5,773.4	5,803.8	5,743.7	16.1	15.8	97.90	-492.1	-37.8	293.0	261.5	31.45	9.317	
5,900.0	5,801.5	5,847.1	5,771.3	16.7	16.2	96.69	-525.3	-35.9	310.6	278.1	32.51	9.554	
5,950.0	5,825.5	5,890.2	5,796.0	17.3	16.7	95.40	-560.6	-33.9	329.3	295.6	33.67	9.780	
6,000.0	5,845.2	5,933.1	5,817.6	18.0	17.2	94.05	-597.6	-31.7	348.8	313.9	34.91	9.991	
6,050.0	5,860.4	5,976.0	5,836.1	18.8	17.8	92.65	-636.2	-29.5	369.2	332.9	36.24	10.188	
6,100.0	5,870.9	6,018.9	5,851.3	19.5	18.3	91.23	-676.2	-27.2	390.1	352.5	37.62	10.369	
6,150.0	5,876.8	6,062.0	5,863.2	20.3	18.9	89.79	-717.6	-24.8	411.4	372.4	39.06	10.534	
6,185.9	5,878.0	6,093.2	5,869.7	20.9	19.4	88.76	-748.0	-23.1	426.9	386.8	40.11	10.643	
6,200.0	5,878.0	6,105.5	5,871.7	21.1	19.6	89.08	-760.2	-22.4	433.0	392.5	40.55	10.679	
6,300.0	5,878.0	6,194.3	5,878.0	22.6	20.9	90.00	-848.5	-17.3	473.6	430.0	43.57	10.869	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-24.62	75.5	-34.6	83.1				
100.0	100.0	100.0	100.0	0.1	0.1	-24.62	75.5	-34.6	83.1	82.9	0.19	442.520	
200.0	200.0	200.0	200.0	0.3	0.3	-24.62	75.5	-34.6	83.1	82.4	0.64	130.337	
300.0	300.0	300.0	300.0	0.5	0.5	-24.62	75.5	-34.6	83.1	82.0	1.09	76.423	
400.0	400.0	400.0	400.0	0.8	0.8	-24.62	75.5	-34.6	83.1	81.5	1.54	54.061	
500.0	500.0	500.0	500.0	1.0	1.0	-24.62	75.5	-34.6	83.1	81.1	1.99	41.823	
600.0	600.0	602.9	602.9	1.2	1.2	-24.78	73.7	-34.0	81.3	78.9	2.42	33.642	
700.0	700.0	705.4	705.3	1.4	1.4	-25.29	68.5	-32.4	75.9	73.1	2.84	26.772	
800.0	800.0	805.2	804.8	1.7	1.6	-26.05	61.9	-30.2	69.0	65.8	3.26	21.165	
900.0	900.0	904.9	904.3	1.9	1.8	-26.98	55.2	-28.1	62.1	58.4	3.69	16.834	
1,000.0	1,000.0	1,004.8	1,003.9	2.1	2.1	-179.00	48.6	-26.0	57.0	52.9	4.09	13.921	
1,095.8	1,095.7	1,100.6	1,099.4	2.3	2.3	179.66	42.2	-24.0	55.4	50.9	4.47	12.396	CC
1,100.0	1,099.8	1,104.8	1,103.6	2.3	2.3	179.60	42.0	-23.9	55.4	50.9	4.48	12.351	
1,200.0	1,199.6	1,204.8	1,203.4	2.5	2.5	178.17	35.3	-21.7	55.5	50.7	4.89	11.359	
1,300.0	1,299.4	1,304.8	1,303.1	2.7	2.8	176.76	28.7	-19.6	55.7	50.4	5.31	10.505	
1,400.0	1,399.1	1,404.7	1,402.9	2.9	3.0	175.36	22.0	-17.5	56.0	50.2	5.73	9.767	
1,500.0	1,498.9	1,504.7	1,502.6	3.1	3.3	173.96	15.4	-15.4	56.2	50.1	6.16	9.126	
1,600.0	1,598.6	1,604.7	1,602.4	3.3	3.6	172.59	8.7	-13.2	56.5	49.9	6.60	8.566	
1,700.0	1,698.4	1,704.7	1,702.1	3.6	3.8	171.23	2.1	-11.1	56.9	49.8	7.04	8.074	
1,800.0	1,798.1	1,804.7	1,801.9	3.8	4.1	169.88	-4.5	-9.0	57.2	49.7	7.49	7.639	
1,900.0	1,897.9	1,904.7	1,901.6	4.1	4.3	168.55	-11.2	-6.9	57.6	49.7	7.95	7.253	
2,000.0	1,997.6	2,004.7	2,001.3	4.3	4.6	167.24	-17.8	-4.7	58.1	49.7	8.40	6.909	
2,100.0	2,097.4	2,104.7	2,101.1	4.6	4.8	165.95	-24.5	-2.6	58.5	49.6	8.87	6.600	
2,200.0	2,197.2	2,204.7	2,200.8	4.8	5.1	164.69	-31.1	-0.5	59.0	49.7	9.33	6.322	
2,300.0	2,296.9	2,304.7	2,300.6	5.1	5.4	163.44	-37.8	1.6	59.5	49.7	9.80	6.071	
2,400.0	2,396.7	2,404.6	2,400.3	5.3	5.6	162.21	-44.4	3.8	60.0	49.8	10.27	5.844	
2,500.0	2,496.4	2,504.6	2,500.1	5.6	5.9	161.01	-51.0	5.9	60.6	49.9	10.75	5.637	
2,600.0	2,596.2	2,604.6	2,599.8	5.8	6.2	159.83	-57.7	8.0	61.2	50.0	11.23	5.449	
2,700.0	2,695.9	2,704.6	2,699.6	6.1	6.4	158.67	-64.3	10.2	61.8	50.1	11.72	5.277	
2,800.0	2,795.7	2,804.6	2,799.3	6.3	6.7	157.54	-71.0	12.3	62.5	50.3	12.20	5.119	
2,900.0	2,895.5	2,904.6	2,899.1	6.6	6.9	156.43	-77.6	14.4	63.1	50.4	12.69	4.974	
3,000.0	2,995.2	3,004.6	2,998.8	6.8	7.2	155.34	-84.3	16.5	63.8	50.6	13.18	4.841	
3,100.0	3,095.0	3,104.6	3,098.6	7.1	7.5	154.28	-90.9	18.7	64.5	50.9	13.68	4.717	
3,200.0	3,194.7	3,204.6	3,198.3	7.4	7.7	153.24	-97.5	20.8	65.3	51.1	14.18	4.604	
3,300.0	3,294.5	3,304.6	3,298.1	7.6	8.0	152.22	-104.2	22.9	66.0	51.3	14.68	4.498	
3,400.0	3,394.2	3,404.6	3,397.8	7.9	8.3	151.23	-110.8	25.0	66.8	51.6	15.18	4.400	
3,500.0	3,494.0	3,504.5	3,497.5	8.1	8.5	150.26	-117.5	27.2	67.6	51.9	15.69	4.309	
3,600.0	3,593.8	3,604.5	3,597.3	8.4	8.8	149.31	-124.1	29.3	68.4	52.2	16.19	4.224	
3,700.0	3,693.5	3,704.5	3,697.0	8.7	9.0	148.38	-130.8	31.4	69.2	52.5	16.70	4.146	
3,800.0	3,793.3	3,804.5	3,796.8	8.9	9.3	147.48	-137.4	33.5	70.1	52.9	17.21	4.072	
3,900.0	3,893.0	3,904.5	3,896.5	9.2	9.6	146.60	-144.0	35.7	71.0	53.2	17.73	4.003	
4,000.0	3,992.8	4,004.5	3,996.3	9.4	9.8	145.74	-150.7	37.8	71.8	53.6	18.24	3.938	
4,100.0	4,092.5	4,104.5	4,096.0	9.7	10.1	144.90	-157.3	39.9	72.7	54.0	18.76	3.878	
4,200.0	4,192.3	4,204.5	4,195.8	10.0	10.4	144.09	-164.0	42.1	73.7	54.4	19.28	3.821	
4,300.0	4,292.1	4,304.5	4,295.5	10.2	10.6	143.29	-170.6	44.2	74.6	54.8	19.79	3.768	
4,400.0	4,391.8	4,404.5	4,395.3	10.5	10.9	142.51	-177.3	46.3	75.5	55.2	20.31	3.718	
4,500.0	4,491.6	4,504.4	4,495.0	10.7	11.2	141.75	-183.9	48.4	76.5	55.6	20.84	3.671	
4,600.0	4,591.3	4,604.4	4,594.8	11.0	11.4	141.01	-190.5	50.6	77.5	56.1	21.36	3.626	
4,700.0	4,691.1	4,704.4	4,694.5	11.3	11.7	140.29	-197.2	52.7	78.4	56.6	21.88	3.584	
4,800.0	4,790.8	4,804.4	4,794.3	11.5	11.9	139.59	-203.8	54.8	79.4	57.0	22.41	3.545	
4,900.0	4,890.6	4,904.4	4,894.0	11.8	12.2	138.91	-210.5	56.9	80.4	57.5	22.93	3.507	
5,000.0	4,990.3	5,004.4	4,993.8	12.1	12.5	138.24	-217.1	59.1	81.5	58.0	23.46	3.472	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,104.4	5,093.5	12.3	12.7	137.59	-223.8	61.2	82.5	58.5	23.99	3.439	
5,200.0	5,189.9	5,204.4	5,193.2	12.6	13.0	136.95	-230.4	63.3	83.5	59.0	24.52	3.407	
5,300.0	5,289.6	5,304.4	5,293.0	12.8	13.3	136.33	-237.0	65.4	84.6	59.5	25.04	3.377	
5,404.1	5,393.5	5,416.4	5,403.6	13.1	13.7	130.44	-252.9	70.5	81.3	55.4	25.93	3.137	
5,450.0	5,439.1	5,464.8	5,449.8	13.3	13.9	124.46	-266.6	74.9	78.4	51.9	26.49	2.958	
5,500.0	5,488.0	5,516.4	5,497.3	13.4	14.2	117.10	-285.6	81.0	76.9	49.8	27.16	2.832	
5,508.7	5,496.4	5,525.3	5,505.3	13.5	14.2	115.76	-289.3	82.2	76.9	49.6	27.29	2.818 ES	
5,550.0	5,535.7	5,567.0	5,541.8	13.7	14.5	109.30	-308.5	88.3	77.7	49.7	27.92	2.782	
5,600.0	5,581.8	5,616.5	5,582.9	14.0	14.9	101.61	-334.8	96.7	80.6	51.9	28.72	2.807	
5,650.0	5,625.8	5,665.0	5,620.4	14.3	15.3	94.49	-364.0	106.1	85.7	56.2	29.52	2.902	
5,700.0	5,667.3	5,712.5	5,654.3	14.7	15.8	88.20	-395.8	116.3	92.5	62.2	30.28	3.056	
5,750.0	5,706.0	5,759.2	5,684.4	15.1	16.3	82.86	-429.7	127.1	100.8	69.9	30.98	3.255	
5,800.0	5,741.5	5,805.0	5,710.8	15.6	16.8	78.41	-465.4	138.5	110.2	78.6	31.63	3.485	
5,850.0	5,773.4	5,850.0	5,733.4	16.1	17.4	74.76	-502.4	150.4	120.4	88.2	32.27	3.732	
5,900.0	5,801.5	5,894.6	5,752.4	16.7	18.0	71.77	-540.8	162.7	131.1	98.2	32.92	3.984	
5,950.0	5,825.5	5,938.5	5,767.6	17.3	18.6	69.34	-580.0	175.2	142.2	108.6	33.61	4.230	
6,000.0	5,845.2	5,981.8	5,779.3	18.0	19.2	67.37	-619.7	187.9	153.4	119.0	34.37	4.462	
6,050.0	5,860.4	6,024.7	5,787.3	18.8	19.9	65.78	-659.8	200.8	164.5	129.3	35.21	4.673	
6,100.0	5,870.9	6,067.2	5,791.9	19.5	20.5	64.51	-700.1	213.7	175.6	139.4	36.17	4.855	
6,150.0	5,876.8	6,109.9	5,793.0	20.3	21.2	63.53	-740.7	226.7	186.4	149.2	37.26	5.003	
6,185.9	5,878.0	6,142.1	5,793.0	20.9	21.7	63.43	-771.5	236.1	193.7	155.5	38.25	5.065	
6,200.0	5,878.0	6,154.7	5,793.0	21.1	21.8	63.83	-783.6	239.6	196.5	157.7	38.77	5.069	
6,300.0	5,878.0	6,243.6	5,793.0	22.6	23.1	66.37	-869.5	262.4	216.1	173.9	42.20	5.122	
6,400.0	5,878.0	6,331.7	5,793.0	24.2	24.4	68.43	-955.7	281.0	235.5	190.0	45.50	5.176	
6,500.0	5,878.0	6,419.1	5,793.0	25.7	25.7	70.13	-1,041.9	295.4	254.5	205.8	48.71	5.225	
6,600.0	5,878.0	6,500.0	5,793.0	27.4	26.9	71.47	-1,122.1	305.3	273.2	221.5	51.72	5.282	
6,700.0	5,878.0	6,591.9	5,793.0	29.0	28.3	72.75	-1,213.8	312.4	291.2	236.3	54.82	5.312	
6,800.0	5,878.0	6,677.4	5,793.0	30.6	29.6	73.77	-1,299.2	315.0	308.6	250.9	57.68	5.351	
6,900.0	5,878.0	6,773.6	5,793.0	32.2	31.2	74.66	-1,395.4	315.1	324.0	263.4	60.64	5.343	
7,000.0	5,878.0	6,873.0	5,793.0	33.8	32.9	75.24	-1,494.8	315.1	334.5	271.1	63.47	5.270	
7,100.0	5,878.0	6,972.8	5,793.0	35.4	34.6	75.52	-1,594.6	315.1	340.0	273.9	66.09	5.145	
7,158.3	5,878.0	7,031.1	5,793.0	36.3	35.6	75.56	-1,652.8	315.1	340.9	273.4	67.50	5.050	
7,200.0	5,878.0	7,072.8	5,793.0	37.0	36.4	75.56	-1,694.6	315.1	340.9	272.0	68.90	4.947	
7,300.0	5,878.0	7,172.8	5,793.0	38.6	38.1	75.56	-1,794.6	315.1	340.9	268.6	72.29	4.715	
7,400.0	5,878.0	7,272.8	5,793.0	40.2	39.9	75.56	-1,894.6	315.1	340.9	265.1	75.72	4.502	
7,500.0	5,878.0	7,372.8	5,793.0	41.9	41.7	75.56	-1,994.6	315.1	340.9	261.7	79.17	4.305	
7,600.0	5,878.0	7,472.8	5,793.0	43.6	43.4	75.56	-2,094.6	315.1	340.8	258.2	82.64	4.124	
7,700.0	5,878.0	7,572.8	5,793.0	45.3	45.2	75.56	-2,194.6	315.1	340.8	254.7	86.14	3.957	
7,800.0	5,878.0	7,672.8	5,793.0	47.0	47.1	75.56	-2,294.6	315.1	340.8	251.2	89.66	3.802	
7,900.0	5,878.0	7,772.8	5,793.0	48.7	48.9	75.56	-2,394.6	315.1	340.8	247.6	93.19	3.657	
8,000.0	5,878.0	7,872.8	5,793.0	50.4	50.7	75.56	-2,494.6	315.1	340.8	244.1	96.74	3.523	
8,100.0	5,878.0	7,972.8	5,793.0	52.2	52.5	75.56	-2,594.6	315.1	340.8	240.5	100.30	3.398	
8,200.0	5,878.0	8,072.8	5,793.0	54.0	54.4	75.56	-2,694.6	315.1	340.8	237.0	103.88	3.281	
8,300.0	5,878.0	8,172.8	5,793.0	55.7	56.2	75.56	-2,794.6	315.1	340.8	233.4	107.46	3.172	
8,400.0	5,878.0	8,272.8	5,793.0	57.5	58.1	75.56	-2,894.6	315.1	340.8	229.8	111.06	3.069	
8,500.0	5,878.0	8,372.8	5,793.0	59.3	59.9	75.56	-2,994.6	315.1	340.8	226.2	114.66	2.972	
8,600.0	5,878.0	8,472.8	5,793.0	61.1	61.8	75.56	-3,094.6	315.2	340.8	222.5	118.27	2.882	
8,700.0	5,878.0	8,572.8	5,793.0	62.9	63.6	75.56	-3,194.6	315.2	340.8	218.9	121.89	2.796	
8,800.0	5,878.0	8,672.8	5,793.0	64.8	65.5	75.56	-3,294.6	315.2	340.8	215.3	125.52	2.715	
8,900.0	5,878.0	8,772.8	5,793.0	66.6	67.4	75.56	-3,394.6	315.2	340.8	211.7	129.15	2.639	
9,000.0	5,878.0	8,872.8	5,793.0	68.4	69.2	75.56	-3,494.6	315.2	340.8	208.0	132.78	2.567	
9,100.0	5,878.0	8,972.8	5,793.0	70.2	71.1	75.56	-3,594.6	315.2	340.8	204.4	136.43	2.498	

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 #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

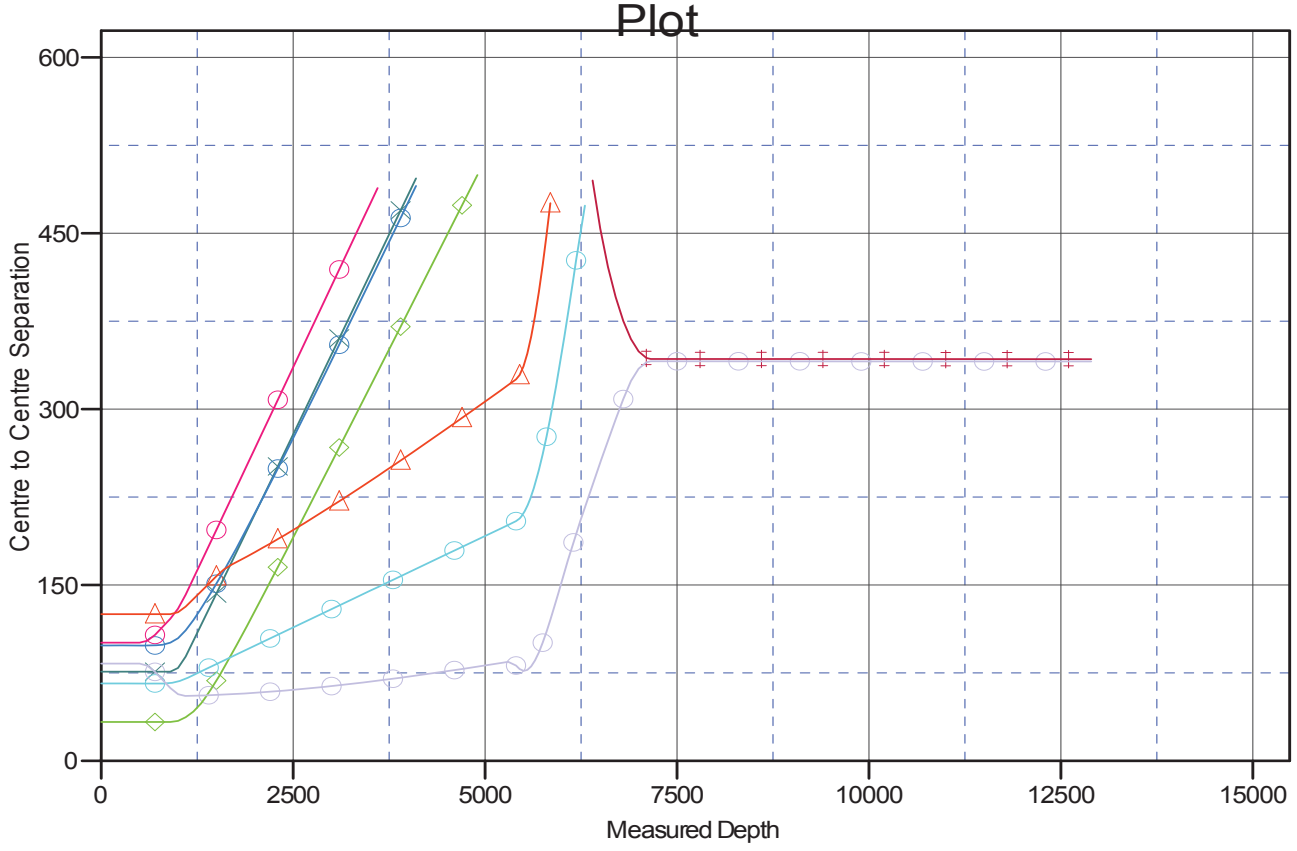
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,878.0	9,072.8	5,793.0	72.1	73.0	75.56	-3,694.6	315.2	340.8	200.7	140.07	2.433	
9,300.0	5,878.0	9,172.8	5,793.0	73.9	74.9	75.56	-3,794.6	315.2	340.8	197.1	143.72	2.371	
9,400.0	5,878.0	9,272.8	5,793.0	75.7	76.7	75.56	-3,894.6	315.2	340.8	193.4	147.38	2.312	
9,500.0	5,878.0	9,372.8	5,793.0	77.6	78.6	75.56	-3,994.6	315.2	340.8	189.8	151.04	2.256	
9,600.0	5,878.0	9,472.8	5,793.0	79.4	80.5	75.56	-4,094.6	315.2	340.8	186.1	154.70	2.203	
9,700.0	5,878.0	9,572.8	5,793.0	81.3	82.4	75.56	-4,194.6	315.2	340.8	182.4	158.36	2.152	
9,800.0	5,878.0	9,672.8	5,793.0	83.2	84.3	75.56	-4,294.6	315.2	340.8	178.8	162.03	2.103	
9,900.0	5,878.0	9,772.8	5,793.0	85.0	86.2	75.56	-4,394.6	315.2	340.8	175.1	165.70	2.057	
10,000.0	5,878.0	9,872.8	5,793.0	86.9	88.1	75.56	-4,494.6	315.2	340.8	171.4	169.38	2.012	
10,100.0	5,878.0	9,972.8	5,793.0	88.7	89.9	75.56	-4,594.6	315.2	340.8	167.7	173.05	1.969	
10,200.0	5,878.0	10,072.8	5,793.0	90.6	91.8	75.56	-4,694.6	315.2	340.8	164.0	176.73	1.928	
10,300.0	5,878.0	10,172.8	5,793.0	92.5	93.7	75.56	-4,794.6	315.2	340.8	160.4	180.41	1.889	
10,400.0	5,878.0	10,272.8	5,793.0	94.3	95.6	75.56	-4,894.6	315.2	340.8	156.7	184.09	1.851	
10,500.0	5,878.0	10,372.8	5,793.0	96.2	97.5	75.56	-4,994.6	315.2	340.8	153.0	187.78	1.815	
10,600.0	5,878.0	10,472.8	5,793.0	98.1	99.4	75.56	-5,094.6	315.2	340.8	149.3	191.47	1.780	
10,700.0	5,878.0	10,572.8	5,793.0	100.0	101.3	75.56	-5,194.6	315.2	340.8	145.6	195.15	1.746	
10,800.0	5,878.0	10,672.8	5,793.0	101.8	103.2	75.56	-5,294.6	315.2	340.8	141.9	198.84	1.714	
10,900.0	5,878.0	10,772.8	5,793.0	103.7	105.1	75.56	-5,394.6	315.2	340.8	138.2	202.53	1.682	
11,000.0	5,878.0	10,872.8	5,793.0	105.6	107.0	75.56	-5,494.6	315.2	340.8	134.5	206.23	1.652	
11,100.0	5,878.0	10,972.8	5,793.0	107.5	108.9	75.56	-5,594.6	315.2	340.7	130.8	209.92	1.623	
11,200.0	5,878.0	11,072.8	5,793.0	109.4	110.8	75.56	-5,694.6	315.2	340.7	127.1	213.62	1.595	
11,300.0	5,878.0	11,172.8	5,793.0	111.2	112.7	75.56	-5,794.6	315.2	340.7	123.4	217.31	1.568	
11,400.0	5,878.0	11,272.8	5,793.0	113.1	114.6	75.56	-5,894.6	315.2	340.7	119.7	221.01	1.542	
11,500.0	5,878.0	11,372.8	5,793.0	115.0	116.5	75.56	-5,994.6	315.2	340.7	116.0	224.71	1.516	
11,600.0	5,878.0	11,472.8	5,793.0	116.9	118.4	75.56	-6,094.6	315.2	340.7	112.3	228.41	1.492	Level 3
11,700.0	5,878.0	11,572.8	5,793.0	118.8	120.3	75.56	-6,194.6	315.2	340.7	108.6	232.11	1.468	Level 3
11,800.0	5,878.0	11,672.8	5,793.0	120.7	122.2	75.56	-6,294.6	315.2	340.7	104.9	235.81	1.445	Level 3
11,900.0	5,878.0	11,772.8	5,793.0	122.6	124.1	75.55	-6,394.6	315.2	340.7	101.2	239.51	1.423	Level 3
12,000.0	5,878.0	11,872.8	5,793.0	124.5	126.0	75.55	-6,494.6	315.3	340.7	97.5	243.22	1.401	Level 3
12,100.0	5,878.0	11,972.8	5,793.0	126.4	127.9	75.55	-6,594.6	315.3	340.7	93.8	246.92	1.380	Level 3
12,200.0	5,878.0	12,072.8	5,793.0	128.2	129.8	75.55	-6,694.6	315.3	340.7	90.1	250.62	1.359	Level 3
12,300.0	5,878.0	12,172.8	5,793.0	130.1	131.7	75.55	-6,794.6	315.3	340.7	86.4	254.33	1.340	Level 3
12,400.0	5,878.0	12,272.8	5,793.0	132.0	133.6	75.55	-6,894.6	315.3	340.7	82.7	258.04	1.320	Level 3
12,500.0	5,878.0	12,372.8	5,793.0	133.9	135.5	75.55	-6,994.6	315.3	340.7	79.0	261.74	1.302	Level 3
12,600.0	5,878.0	12,472.8	5,793.0	135.8	137.4	75.55	-7,094.6	315.3	340.7	75.3	265.45	1.283	Level 3
12,700.0	5,878.0	12,572.8	5,793.0	137.7	139.3	75.55	-7,194.6	315.3	340.7	71.5	269.16	1.266	Level 3
12,800.0	5,878.0	12,672.8	5,793.0	139.6	141.2	75.55	-7,294.6	315.3	340.7	67.8	272.87	1.249	Level 2
12,895.7	5,878.0	12,768.4	5,793.0	141.1	142.8	75.55	-7,390.2	315.3	340.7	64.8	275.85	1.235	Level 2, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21B-2812B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21B-2812B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4853.8ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #21B-2812B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°



LEGEND

Razor #21B-0912B, HZ, Plan #1 V0
Razor #21B-2810B, HZ, Plan #1 V0
Razor #21B-2809A, HZ, Plan #1 V0
Razor #21B-0911A, HZ, Plan #1 V0
Razor #21B-0909A, HZ, Plan #1 V0
Razor #21A-2813A, HZ, Plan #1 V0
Razor #21B-0910B, HZ, Plan #1 V0
Razor #21B-2811A, HZ, Plan #1 V0