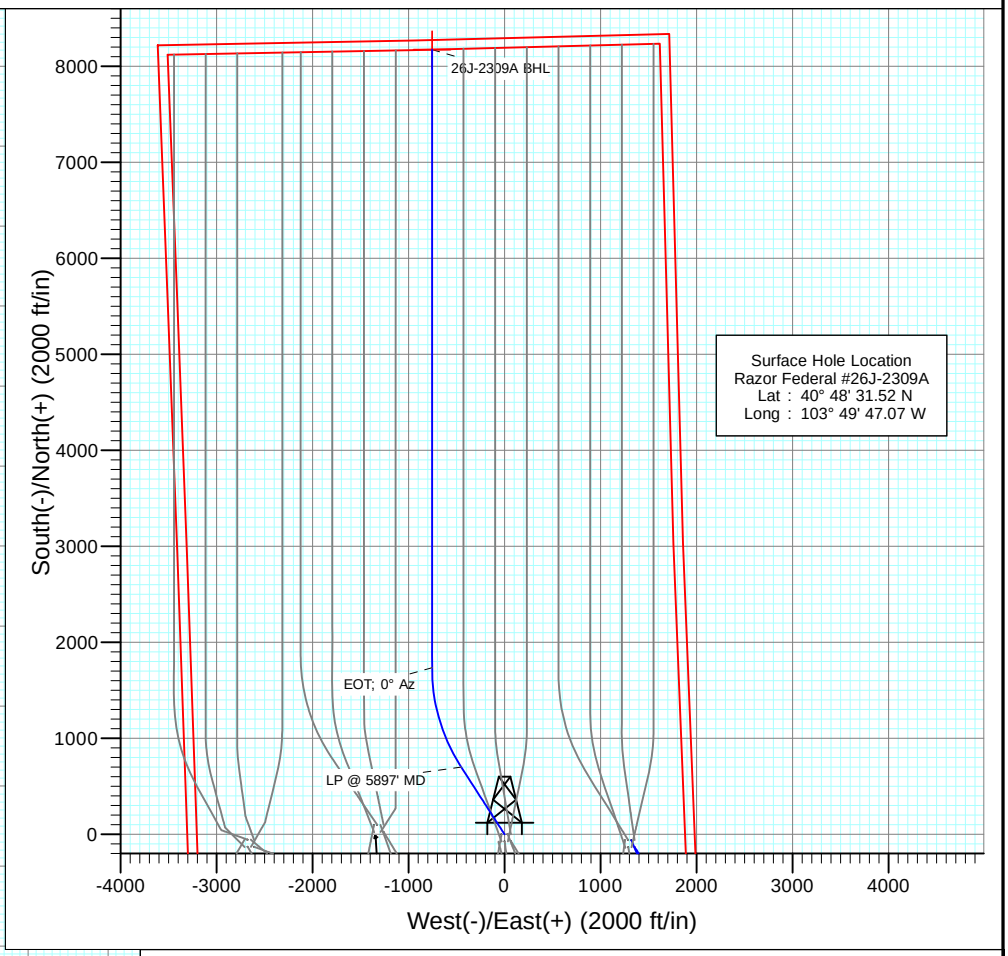
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor Federal #26J-2309A
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	700.0	4.00	327.22	699.8	5.9	-3.8	2.00	327.22	6.2	
4	5115.4	4.00	327.22	5104.5	264.8	-170.5	0.00	0.00	279.4	
5	5897.2	90.00	327.22	5589.0	701.7	-451.9	11.00	0.00	740.3	
6	6989.9	90.00	0.00	5589.0	1735.7	-756.0	3.00	90.00	1798.0	
7	13427.8	90.00	0.00	5589.0	8173.6	-756.0	0.00	0.00	8208.5	26J-2309A BHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
26J-2309A BHL	8173.6	-756.0	1550008.04	3461602.79	40° 49' 52.41 N	103° 49' 54.90 W

T G M
Azimuths to Grid North
True North: -1.08°
Magnetic North: 7.04°

Magnetic Field
Strength: 53237.8snT
Dip Angle: 67.46°
Date: 5/16/2013
Model: IGRF2010

Plan #1
Razor Federal #26J-2309A
WELL @ 4742.1ft (Original Well Elev)
Ground Elevation @ 4725.6
North American Datum 1983
Well Razor Federal #26J-2309A, Grid North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W

Site Position:		**Northing:**	1,541,777.36 ft	**Latitude:**	40.808739
From:	Lat/Long	**Easting:**	3,459,649.47 ft	**Longitude:**	-103.839531
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.07 °

Well Razor Federal #26J-2309A

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,541,834.43 ft	**Latitude:**	40.808756
	+E/-W	0.0 ft	**Easting:**	3,462,358.78 ft	**Longitude:**	-103.829742
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,725.6 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	8.12	67.46	53,238

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	354.72

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	327.22	699.8	5.9	-3.8	2.00	2.00	0.00	327.22	
5,115.4	4.00	327.22	5,104.5	264.8	-170.5	0.00	0.00	0.00	0.00	
5,897.2	90.00	327.22	5,589.0	701.7	-451.9	11.00	11.00	0.00	0.00	
6,989.9	90.00	0.00	5,589.0	1,735.7	-756.0	3.00	0.00	3.00	90.00	
13,427.8	90.00	0.00	5,589.0	8,173.6	-756.0	0.00	0.00	0.00	0.00	26J-2309A BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2309A	**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	KOP @ 500' MD
600.0	2.00	327.22	600.0	1.5	-0.9	1.5	2.00	2.00	
700.0	4.00	327.22	699.8	5.9	-3.8	6.2	2.00	2.00	EOB; 4°
800.0	4.00	327.22	799.6	11.7	-7.6	12.4	0.00	0.00	
900.0	4.00	327.22	899.4	17.6	-11.3	18.6	0.00	0.00	
1,000.0	4.00	327.22	999.1	23.5	-15.1	24.8	0.00	0.00	
1,100.0	4.00	327.22	1,098.9	29.3	-18.9	30.9	0.00	0.00	
1,200.0	4.00	327.22	1,198.6	35.2	-22.7	37.1	0.00	0.00	
1,300.0	4.00	327.22	1,298.4	41.1	-26.4	43.3	0.00	0.00	
1,400.0	4.00	327.22	1,398.1	46.9	-30.2	49.5	0.00	0.00	
1,500.0	4.00	327.22	1,497.9	52.8	-34.0	55.7	0.00	0.00	
1,600.0	4.00	327.22	1,597.6	58.7	-37.8	61.9	0.00	0.00	
1,700.0	4.00	327.22	1,697.4	64.5	-41.5	68.1	0.00	0.00	
1,800.0	4.00	327.22	1,797.2	70.4	-45.3	74.3	0.00	0.00	
1,900.0	4.00	327.22	1,896.9	76.2	-49.1	80.4	0.00	0.00	
2,000.0	4.00	327.22	1,996.7	82.1	-52.9	86.6	0.00	0.00	
2,100.0	4.00	327.22	2,096.4	88.0	-56.7	92.8	0.00	0.00	
2,200.0	4.00	327.22	2,196.2	93.8	-60.4	99.0	0.00	0.00	
2,300.0	4.00	327.22	2,295.9	99.7	-64.2	105.2	0.00	0.00	
2,400.0	4.00	327.22	2,395.7	105.6	-68.0	111.4	0.00	0.00	
2,500.0	4.00	327.22	2,495.5	111.4	-71.8	117.6	0.00	0.00	
2,600.0	4.00	327.22	2,595.2	117.3	-75.5	123.8	0.00	0.00	
2,700.0	4.00	327.22	2,695.0	123.2	-79.3	129.9	0.00	0.00	
2,800.0	4.00	327.22	2,794.7	129.0	-83.1	136.1	0.00	0.00	
2,900.0	4.00	327.22	2,894.5	134.9	-86.9	142.3	0.00	0.00	
3,000.0	4.00	327.22	2,994.2	140.8	-90.6	148.5	0.00	0.00	
3,100.0	4.00	327.22	3,094.0	146.6	-94.4	154.7	0.00	0.00	
3,200.0	4.00	327.22	3,193.7	152.5	-98.2	160.9	0.00	0.00	
3,300.0	4.00	327.22	3,293.5	158.4	-102.0	167.1	0.00	0.00	
3,400.0	4.00	327.22	3,393.3	164.2	-105.7	173.3	0.00	0.00	
3,500.0	4.00	327.22	3,493.0	170.1	-109.5	179.4	0.00	0.00	
3,600.0	4.00	327.22	3,592.8	175.9	-113.3	185.6	0.00	0.00	
3,700.0	4.00	327.22	3,692.5	181.8	-117.1	191.8	0.00	0.00	
3,800.0	4.00	327.22	3,792.3	187.7	-120.9	198.0	0.00	0.00	
3,900.0	4.00	327.22	3,892.0	193.5	-124.6	204.2	0.00	0.00	
4,000.0	4.00	327.22	3,991.8	199.4	-128.4	210.4	0.00	0.00	
4,100.0	4.00	327.22	4,091.6	205.3	-132.2	216.6	0.00	0.00	
4,200.0	4.00	327.22	4,191.3	211.1	-136.0	222.8	0.00	0.00	
4,300.0	4.00	327.22	4,291.1	217.0	-139.7	228.9	0.00	0.00	
4,400.0	4.00	327.22	4,390.8	222.9	-143.5	235.1	0.00	0.00	
4,500.0	4.00	327.22	4,490.6	228.7	-147.3	241.3	0.00	0.00	
4,600.0	4.00	327.22	4,590.3	234.6	-151.1	247.5	0.00	0.00	
4,700.0	4.00	327.22	4,690.1	240.5	-154.8	253.7	0.00	0.00	
4,800.0	4.00	327.22	4,789.9	246.3	-158.6	259.9	0.00	0.00	
4,900.0	4.00	327.22	4,889.6	252.2	-162.4	266.1	0.00	0.00	
5,000.0	4.00	327.22	4,989.4	258.1	-166.2	272.3	0.00	0.00	
5,100.0	4.00	327.22	5,089.1	263.9	-170.0	278.4	0.00	0.00	

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Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2309A	**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
5,115.4	4.00	327.22	5,104.5	264.8	-170.5	279.4	0.00	0.00	Start 11° Build
5,200.0	13.30	327.22	5,188.0	275.5	-177.4	290.7	11.00	11.00	
5,300.0	24.30	327.22	5,282.5	302.6	-194.8	319.2	11.00	11.00	
5,400.0	35.30	327.22	5,369.2	344.3	-221.7	363.3	11.00	11.00	
5,500.0	46.30	327.22	5,444.8	399.2	-257.0	421.1	11.00	11.00	
5,600.0	57.30	327.22	5,506.5	465.1	-299.5	490.7	11.00	11.00	
5,674.2	65.47	327.22	5,542.0	519.9	-334.8	548.5	11.00	11.00	Top Niobrara
5,700.0	68.30	327.22	5,552.1	539.8	-347.6	569.5	11.00	11.00	
5,800.0	79.30	327.22	5,580.0	620.4	-399.5	654.6	11.00	11.00	
5,897.2	90.00	327.22	5,589.0	701.7	-451.9	740.3	11.00	11.00	LP @ 5897' MD
5,900.0	90.00	327.30	5,589.0	704.0	-453.4	742.8	3.00	0.00	
6,000.0	90.00	330.30	5,589.0	789.5	-505.1	832.7	3.00	0.00	
6,100.0	90.00	333.30	5,589.0	877.7	-552.4	924.8	3.00	0.00	7"
6,200.0	90.00	336.30	5,589.0	968.1	-595.0	1,018.8	3.00	0.00	
6,300.0	90.00	339.30	5,589.0	1,060.7	-632.7	1,114.5	3.00	0.00	
6,400.0	90.00	342.30	5,589.0	1,155.1	-665.6	1,211.5	3.00	0.00	
6,500.0	90.00	345.30	5,589.0	1,251.2	-693.5	1,309.7	3.00	0.00	
6,600.0	90.00	348.30	5,589.0	1,348.5	-716.3	1,408.8	3.00	0.00	
6,700.0	90.00	351.30	5,589.0	1,446.9	-734.0	1,508.4	3.00	0.00	
6,800.0	90.00	354.30	5,589.0	1,546.1	-746.6	1,608.3	3.00	0.00	
6,900.0	90.00	357.30	5,589.0	1,645.8	-753.9	1,708.3	3.00	0.00	
6,989.9	90.00	0.00	5,589.0	1,735.7	-756.0	1,798.0	3.00	0.00	EOT; 0° Az
7,000.0	90.00	0.00	5,589.0	1,745.8	-756.0	1,808.0	0.00	0.00	
7,100.0	90.00	0.00	5,589.0	1,845.8	-756.0	1,907.6	0.00	0.00	
7,200.0	90.00	0.00	5,589.0	1,945.8	-756.0	2,007.2	0.00	0.00	
7,300.0	90.00	0.00	5,589.0	2,045.8	-756.0	2,106.7	0.00	0.00	
7,400.0	90.00	0.00	5,589.0	2,145.8	-756.0	2,206.3	0.00	0.00	
7,500.0	90.00	0.00	5,589.0	2,245.8	-756.0	2,305.9	0.00	0.00	
7,600.0	90.00	0.00	5,589.0	2,345.8	-756.0	2,405.5	0.00	0.00	
7,700.0	90.00	0.00	5,589.0	2,445.8	-756.0	2,505.0	0.00	0.00	
7,800.0	90.00	0.00	5,589.0	2,545.8	-756.0	2,604.6	0.00	0.00	
7,900.0	90.00	0.00	5,589.0	2,645.8	-756.0	2,704.2	0.00	0.00	
8,000.0	90.00	0.00	5,589.0	2,745.8	-756.0	2,803.8	0.00	0.00	
8,100.0	90.00	0.00	5,589.0	2,845.8	-756.0	2,903.3	0.00	0.00	
8,200.0	90.00	0.00	5,589.0	2,945.8	-756.0	3,002.9	0.00	0.00	
8,300.0	90.00	0.00	5,589.0	3,045.8	-756.0	3,102.5	0.00	0.00	
8,400.0	90.00	0.00	5,589.0	3,145.8	-756.0	3,202.1	0.00	0.00	
8,500.0	90.00	0.00	5,589.0	3,245.8	-756.0	3,301.6	0.00	0.00	
8,600.0	90.00	0.00	5,589.0	3,345.8	-756.0	3,401.2	0.00	0.00	
8,700.0	90.00	0.00	5,589.0	3,445.8	-756.0	3,500.8	0.00	0.00	
8,800.0	90.00	0.00	5,589.0	3,545.8	-756.0	3,600.4	0.00	0.00	
8,900.0	90.00	0.00	5,589.0	3,645.8	-756.0	3,699.9	0.00	0.00	
9,000.0	90.00	0.00	5,589.0	3,745.8	-756.0	3,799.5	0.00	0.00	
9,100.0	90.00	0.00	5,589.0	3,845.8	-756.0	3,899.1	0.00	0.00	
9,200.0	90.00	0.00	5,589.0	3,945.8	-756.0	3,998.7	0.00	0.00	
9,300.0	90.00	0.00	5,589.0	4,045.8	-756.0	4,098.2	0.00	0.00	
9,400.0	90.00	0.00	5,589.0	4,145.8	-756.0	4,197.8	0.00	0.00	
9,500.0	90.00	0.00	5,589.0	4,245.8	-756.0	4,297.4	0.00	0.00	
9,600.0	90.00	0.00	5,589.0	4,345.8	-756.0	4,397.0	0.00	0.00	
9,700.0	90.00	0.00	5,589.0	4,445.8	-756.0	4,496.5	0.00	0.00	
9,800.0	90.00	0.00	5,589.0	4,545.8	-756.0	4,596.1	0.00	0.00	
9,900.0	90.00	0.00	5,589.0	4,645.8	-756.0	4,695.7	0.00	0.00	

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Well:	Razor Federal #26J-2309A	**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	0.00	5,589.0	4,745.8	-756.0	4,795.3	0.00	0.00	
10,100.0	90.00	0.00	5,589.0	4,845.8	-756.0	4,894.8	0.00	0.00	
10,200.0	90.00	0.00	5,589.0	4,945.8	-756.0	4,994.4	0.00	0.00	
10,300.0	90.00	0.00	5,589.0	5,045.8	-756.0	5,094.0	0.00	0.00	
10,400.0	90.00	0.00	5,589.0	5,145.8	-756.0	5,193.6	0.00	0.00	
10,500.0	90.00	0.00	5,589.0	5,245.8	-756.0	5,293.1	0.00	0.00	
10,600.0	90.00	0.00	5,589.0	5,345.8	-756.0	5,392.7	0.00	0.00	
10,700.0	90.00	0.00	5,589.0	5,445.8	-756.0	5,492.3	0.00	0.00	
10,800.0	90.00	0.00	5,589.0	5,545.8	-756.0	5,591.9	0.00	0.00	
10,900.0	90.00	0.00	5,589.0	5,645.8	-756.0	5,691.4	0.00	0.00	
11,000.0	90.00	0.00	5,589.0	5,745.8	-756.0	5,791.0	0.00	0.00	
11,100.0	90.00	0.00	5,589.0	5,845.8	-756.0	5,890.6	0.00	0.00	
11,200.0	90.00	0.00	5,589.0	5,945.8	-756.0	5,990.2	0.00	0.00	
11,300.0	90.00	0.00	5,589.0	6,045.8	-756.0	6,089.7	0.00	0.00	
11,400.0	90.00	0.00	5,589.0	6,145.8	-756.0	6,189.3	0.00	0.00	
11,500.0	90.00	0.00	5,589.0	6,245.8	-756.0	6,288.9	0.00	0.00	
11,600.0	90.00	0.00	5,589.0	6,345.8	-756.0	6,388.5	0.00	0.00	
11,700.0	90.00	0.00	5,589.0	6,445.8	-756.0	6,488.0	0.00	0.00	
11,800.0	90.00	0.00	5,589.0	6,545.8	-756.0	6,587.6	0.00	0.00	
11,900.0	90.00	0.00	5,589.0	6,645.8	-756.0	6,687.2	0.00	0.00	
12,000.0	90.00	0.00	5,589.0	6,745.8	-756.0	6,786.8	0.00	0.00	
12,100.0	90.00	0.00	5,589.0	6,845.8	-756.0	6,886.3	0.00	0.00	
12,200.0	90.00	0.00	5,589.0	6,945.8	-756.0	6,985.9	0.00	0.00	
12,300.0	90.00	0.00	5,589.0	7,045.8	-756.0	7,085.5	0.00	0.00	
12,400.0	90.00	0.00	5,589.0	7,145.8	-756.0	7,185.1	0.00	0.00	
12,500.0	90.00	0.00	5,589.0	7,245.8	-756.0	7,284.6	0.00	0.00	
12,600.0	90.00	0.00	5,589.0	7,345.8	-756.0	7,384.2	0.00	0.00	
12,700.0	90.00	0.00	5,589.0	7,445.8	-756.0	7,483.8	0.00	0.00	
12,800.0	90.00	0.00	5,589.0	7,545.8	-756.0	7,583.4	0.00	0.00	
12,900.0	90.00	0.00	5,589.0	7,645.8	-756.0	7,682.9	0.00	0.00	
13,000.0	90.00	0.00	5,589.0	7,745.8	-756.0	7,782.5	0.00	0.00	
13,100.0	90.00	0.00	5,589.0	7,845.8	-756.0	7,882.1	0.00	0.00	
13,200.0	90.00	0.00	5,589.0	7,945.8	-756.0	7,981.7	0.00	0.00	
13,300.0	90.00	0.00	5,589.0	8,045.8	-756.0	8,081.2	0.00	0.00	
13,400.0	90.00	0.00	5,589.0	8,145.8	-756.0	8,180.8	0.00	0.00	
13,427.8	90.00	0.00	5,589.0	8,173.6	-756.0	8,208.5	0.00	0.00	PBHL @ 13427' 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
26J-2309A BHL - plan hits target center - Point	0.00	0.00	5,589.0	8,173.6	-756.0	1,550,008.04	3,461,602.79	40.831225	-103.831917

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2309A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,100.0	5,589.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,674.2	5,542.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.0	500.0	0.0	0.0	KOP @ 500' MD
700.0	699.8	5.9	-3.8	EOB; 4°
5,115.4	5,104.5	264.8	-170.5	Start 11° Build
5,897.2	5,589.0	701.7	-451.9	LP @ 5897' MD
6,989.9	5,589.0	1,735.7	-756.0	EOT; 0° Az
13,427.8	5,589.0	8,173.6	-756.0	PBHL @ 13427' MD

Whiting Petroleum Corporation

Weld County, CO
S26-T10N-R58W
Razor Federal #26J-2309A
HZ
Plan #1

Anticollision Report

22 May, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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	13,427.4	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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
S26-T10N-R58W						
Razor #26J-2633L - HZ - Plan #1	200.0	200.0	99.5	98.9	156.205	CC, ES
Razor #26J-2633L - HZ - Plan #1	4,100.0	4,070.1	497.0	478.7	27.120	SF
Razor #26K-2305A - HZ - Plan #1						Out of range
Razor #26K-2306B - HZ - Plan #1						Out of range
Razor #26K-2307A - HZ - Plan #1						Out of range
Razor #26K-2308B - HZ - Plan #1	13,419.7	13,381.7	390.7	85.5	1.280	Level 3, CC
Razor #26K-2308B - HZ - Plan #1	13,427.8	13,381.7	390.8	85.4	1.280	Level 3, ES, SF
Razor #26K-3505A - HZ - Plan #1						Out of range
Razor #26K-3507A - HZ - Plan #1						Out of range
Razor #26K-3508B - HZ - Plan #1						Out of range
Razor #26L-2301A - HZ - Plan #1						Out of range
Razor #26L-2302B - HZ - Plan #1						Out of range
Razor #26L-2303A - HZ - Plan #1						Out of range
Razor #26L-2304B - HZ - Plan #1						Out of range
Razor #26L-3501A - HZ - Plan #1						Out of range
Razor #26L-3502B - HZ - Plan #1						Out of range
Razor #26L-3503A - HZ - Plan #1						Out of range
Razor #26L-3504B - HZ - Plan #1						Out of range
Razor 26-3524H (Existing) - Existing - SURVEYs						Out of range
Razor Federal #26I-2313A - HZ - Plan #1						Out of range
Razor Federal #26I-2314B - HZ - Plan #1						Out of range
Razor Federal #26I-2315A - HZ - Plan #1						Out of range
Razor Federal #26I-2316B - HZ - Plan #1						Out of range
Razor Federal #26I-3513A - HZ - Plan #1						Out of range
Razor Federal #26I-3514B - HZ - Plan #1						Out of range
Razor Federal #26I-3515A - HZ - Plan #1						Out of range
Razor Federal #26I-3516B - HZ - Plan #1						Out of range
Razor Federal #26J-2310B - HZ - Plan #1	4,638.4	4,642.6	67.6	46.6	3.223	CC
Razor Federal #26J-2310B - HZ - Plan #1	13,427.8	13,470.8	341.6	38.5	1.127	Level 2, ES, SF
Razor Federal #26J-2311A - HZ - Plan #1	500.0	500.0	66.2	64.2	33.318	CC, ES
Razor Federal #26J-2311A - HZ - Plan #1	5,150.0	5,150.8	190.7	165.7	7.629	SF
Razor Federal #26J-2312B - HZ - Plan #1	500.0	500.0	82.1	80.1	41.339	CC, ES
Razor Federal #26J-2312B - HZ - Plan #1	5,115.4	5,115.2	269.4	245.1	11.093	SF
Razor Federal #26J-3509A - HZ - Plan #1	842.0	841.5	27.3	23.8	7.713	CC, ES
Razor Federal #26J-3509A - HZ - Plan #1	1,000.0	999.1	29.5	25.2	6.885	SF
Razor Federal #26J-3510B - HZ - Plan #1	500.0	500.0	75.1	73.1	37.797	CC, ES
Razor Federal #26J-3510B - HZ - Plan #1	800.0	793.4	94.0	90.7	28.730	SF
Razor Federal #26J-3511A - HZ - Plan #1	500.0	500.0	33.2	31.2	16.729	CC, ES
Razor Federal #26J-3511A - HZ - Plan #1	800.0	799.6	42.3	38.9	12.682	SF
Razor Federal #26J-3512B - HZ - Plan #1	500.0	500.0	100.1	98.1	50.394	CC, ES
Razor Federal #26J-3512B - HZ - Plan #1	1,200.0	1,189.1	148.0	143.0	29.308	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor #26J-2633L - 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	-140.06	-76.3	-63.9	99.5				
100.0	100.0	100.0	100.0	0.1	0.1	-140.06	-76.3	-63.9	99.5	99.3	0.19	530.348	
200.0	200.0	200.0	200.0	0.3	0.3	-140.06	-76.3	-63.9	99.5	98.9	0.64	156.205	CC, ES
300.0	300.0	298.0	298.0	0.5	0.5	-140.84	-77.9	-63.5	100.5	99.5	1.06	94.876	
400.0	400.0	396.7	396.5	0.8	0.7	-142.99	-82.6	-62.2	103.4	102.0	1.49	69.468	
500.0	500.0	496.5	496.2	1.0	0.9	-145.28	-87.8	-60.8	106.9	105.0	1.94	55.056	
600.0	600.0	596.3	595.8	1.2	1.2	-115.39	-93.1	-59.4	111.2	108.9	2.39	46.592	
700.0	699.8	695.7	695.1	1.4	1.4	-119.50	-98.3	-58.0	117.5	114.7	2.84	41.357	
800.0	799.6	794.9	794.2	1.7	1.7	-123.94	-103.5	-56.7	125.4	122.1	3.30	38.010	
900.0	899.4	894.2	893.3	1.9	1.9	-127.84	-108.7	-55.3	133.9	130.1	3.76	35.636	
1,000.0	999.1	993.4	992.4	2.2	2.2	-131.26	-114.0	-53.9	142.9	138.7	4.22	33.907	
1,100.0	1,098.9	1,092.7	1,091.5	2.4	2.4	-134.27	-119.2	-52.5	152.4	147.8	4.67	32.617	
1,200.0	1,198.6	1,191.9	1,190.6	2.7	2.7	-136.92	-124.4	-51.1	162.3	157.2	5.13	31.634	
1,300.0	1,298.4	1,291.2	1,289.7	2.9	2.9	-139.26	-129.6	-49.7	172.5	166.9	5.59	30.870	
1,400.0	1,398.1	1,390.4	1,388.8	3.2	3.1	-141.34	-134.9	-48.3	182.9	176.9	6.04	30.268	
1,500.0	1,497.9	1,489.7	1,487.9	3.4	3.4	-143.20	-140.1	-46.9	193.5	187.0	6.50	29.784	
1,600.0	1,597.6	1,588.9	1,587.0	3.7	3.6	-144.86	-145.3	-45.5	204.4	197.4	6.95	29.392	
1,700.0	1,697.4	1,688.2	1,686.1	3.9	3.9	-146.35	-150.5	-44.1	215.3	207.9	7.41	29.069	
1,800.0	1,797.2	1,787.4	1,785.2	4.2	4.1	-147.70	-155.7	-42.7	226.5	218.6	7.86	28.801	
1,900.0	1,896.9	1,886.7	1,884.3	4.4	4.4	-148.92	-161.0	-41.3	237.7	229.4	8.32	28.576	
2,000.0	1,996.7	1,985.9	1,983.4	4.7	4.6	-150.04	-166.2	-39.9	249.0	240.2	8.77	28.386	
2,100.0	2,096.4	2,085.1	2,082.5	4.9	4.9	-151.05	-171.4	-38.5	260.4	251.2	9.23	28.224	
2,200.0	2,196.2	2,184.4	2,181.6	5.2	5.1	-151.98	-176.6	-37.2	271.9	262.2	9.68	28.084	
2,300.0	2,295.9	2,283.6	2,280.7	5.5	5.4	-152.83	-181.9	-35.8	283.4	273.3	10.13	27.964	
2,400.0	2,395.7	2,382.9	2,379.8	5.7	5.6	-153.62	-187.1	-34.4	295.0	284.4	10.59	27.859	
2,500.0	2,495.5	2,482.1	2,478.9	6.0	5.9	-154.35	-192.3	-33.0	306.6	295.6	11.04	27.767	
2,600.0	2,595.2	2,581.4	2,578.0	6.2	6.1	-155.02	-197.5	-31.6	318.3	306.8	11.50	27.686	
2,700.0	2,695.0	2,680.6	2,677.1	6.5	6.4	-155.65	-202.7	-30.2	330.1	318.1	11.95	27.615	
2,800.0	2,794.7	2,779.9	2,776.2	6.7	6.6	-156.23	-208.0	-28.8	341.8	329.4	12.41	27.551	
2,900.0	2,894.5	2,879.1	2,875.3	7.0	6.9	-156.78	-213.2	-27.4	353.7	340.8	12.86	27.495	
3,000.0	2,994.2	2,978.4	2,974.4	7.2	7.1	-157.29	-218.4	-26.0	365.5	352.2	13.32	27.444	
3,100.0	3,094.0	3,077.6	3,073.5	7.5	7.4	-157.77	-223.6	-24.6	377.3	363.6	13.77	27.399	
3,200.0	3,193.7	3,176.9	3,172.6	7.8	7.6	-158.21	-228.9	-23.2	389.2	375.0	14.23	27.358	
3,300.0	3,293.5	3,276.1	3,271.7	8.0	7.9	-158.64	-234.1	-21.8	401.1	386.4	14.68	27.321	
3,400.0	3,393.3	3,375.4	3,370.8	8.3	8.1	-159.03	-239.3	-20.4	413.1	397.9	15.14	27.287	
3,500.0	3,493.0	3,474.6	3,469.9	8.5	8.4	-159.41	-244.5	-19.0	425.0	409.4	15.59	27.257	
3,600.0	3,592.8	3,573.8	3,569.0	8.8	8.6	-159.76	-249.8	-17.7	437.0	420.9	16.05	27.229	
3,700.0	3,692.5	3,673.1	3,668.1	9.0	8.9	-160.10	-255.0	-16.3	448.9	432.4	16.50	27.203	
3,800.0	3,792.3	3,772.3	3,767.2	9.3	9.1	-160.42	-260.2	-14.9	460.9	444.0	16.96	27.180	
3,900.0	3,892.0	3,871.6	3,866.3	9.6	9.4	-160.72	-265.4	-13.5	472.9	455.5	17.41	27.158	
4,000.0	3,991.8	3,970.8	3,965.4	9.8	9.6	-161.01	-270.6	-12.1	485.0	467.1	17.87	27.139	
4,100.0	4,091.6	4,070.1	4,064.5	10.1	9.8	-161.28	-275.9	-10.7	497.0	478.7	18.32	27.120	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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor #26K-2308B - 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	5,589.0	6,371.5	5,700.0	28.8	24.7	-102.51	1,155.2	-1,134.3	479.1	425.5	53.53	8.949	
6,500.0	5,589.0	6,467.5	5,700.0	30.5	26.3	-103.08	1,251.2	-1,134.3	451.8	395.0	56.79	7.956	
6,600.0	5,589.0	6,564.9	5,700.0	32.2	28.0	-103.61	1,348.5	-1,134.3	429.6	369.6	60.00	7.160	
6,700.0	5,589.0	6,663.3	5,700.0	33.9	29.7	-104.06	1,446.9	-1,134.3	412.4	349.2	63.12	6.533	
6,800.0	5,589.0	6,762.5	5,700.0	35.5	31.4	-104.40	1,546.1	-1,134.3	400.2	334.1	66.14	6.051	
6,900.0	5,589.0	6,862.2	5,700.0	37.1	33.1	-104.61	1,645.9	-1,134.3	393.1	324.1	69.04	5.694	
6,989.9	5,589.0	6,952.1	5,700.0	38.5	34.7	-104.68	1,735.7	-1,134.3	391.1	319.5	71.53	5.467	
7,000.0	5,589.0	6,962.2	5,700.0	38.7	34.9	-104.68	1,745.8	-1,134.3	391.1	319.2	71.87	5.441	
7,100.0	5,589.0	7,062.2	5,700.0	40.2	36.7	-104.68	1,845.8	-1,134.3	391.1	315.8	75.23	5.198	
7,200.0	5,589.0	7,162.2	5,700.0	41.8	38.5	-104.68	1,945.8	-1,134.3	391.1	312.4	78.63	4.973	
7,300.0	5,589.0	7,262.2	5,700.0	43.4	40.3	-104.68	2,045.8	-1,134.3	391.0	309.0	82.05	4.766	
7,400.0	5,589.0	7,362.2	5,700.0	45.0	42.1	-104.68	2,145.8	-1,134.3	391.0	305.5	85.51	4.573	
7,500.0	5,589.0	7,462.2	5,700.0	46.7	44.0	-104.68	2,245.8	-1,134.3	391.0	302.1	88.98	4.395	
7,600.0	5,589.0	7,562.2	5,700.0	48.4	45.8	-104.68	2,345.8	-1,134.3	391.0	298.6	92.48	4.228	
7,700.0	5,589.0	7,662.2	5,700.0	50.1	47.6	-104.68	2,445.8	-1,134.3	391.0	295.0	95.99	4.074	
7,800.0	5,589.0	7,762.2	5,700.0	51.8	49.5	-104.68	2,545.8	-1,134.3	391.0	291.5	99.52	3.929	
7,900.0	5,589.0	7,862.2	5,700.0	53.5	51.3	-104.68	2,645.8	-1,134.2	391.0	288.0	103.06	3.794	
8,000.0	5,589.0	7,962.2	5,700.0	55.2	53.2	-104.68	2,745.8	-1,134.2	391.0	284.4	106.62	3.667	
8,100.0	5,589.0	8,062.2	5,700.0	57.0	55.1	-104.68	2,845.8	-1,134.2	391.0	280.8	110.19	3.549	
8,200.0	5,589.0	8,162.2	5,700.0	58.7	56.9	-104.68	2,945.8	-1,134.2	391.0	277.2	113.77	3.437	
8,300.0	5,589.0	8,262.2	5,700.0	60.5	58.8	-104.68	3,045.8	-1,134.2	391.0	273.6	117.35	3.332	
8,400.0	5,589.0	8,362.2	5,700.0	62.2	60.7	-104.68	3,145.8	-1,134.2	391.0	270.0	120.95	3.233	
8,500.0	5,589.0	8,462.2	5,700.0	64.0	62.5	-104.68	3,245.8	-1,134.2	391.0	266.4	124.56	3.139	
8,600.0	5,589.0	8,562.2	5,700.0	65.8	64.4	-104.68	3,345.8	-1,134.2	391.0	262.8	128.17	3.051	
8,700.0	5,589.0	8,662.2	5,700.0	67.6	66.3	-104.68	3,445.8	-1,134.2	391.0	259.2	131.79	2.967	
8,800.0	5,589.0	8,762.2	5,700.0	69.4	68.2	-104.68	3,545.8	-1,134.2	391.0	255.6	135.41	2.887	
8,900.0	5,589.0	8,862.2	5,700.0	71.2	70.1	-104.68	3,645.8	-1,134.2	391.0	251.9	139.04	2.812	
9,000.0	5,589.0	8,962.2	5,700.0	73.0	71.9	-104.68	3,745.8	-1,134.2	391.0	248.3	142.68	2.740	
9,100.0	5,589.0	9,062.2	5,700.0	74.8	73.8	-104.68	3,845.8	-1,134.2	391.0	244.6	146.32	2.672	
9,200.0	5,589.0	9,162.2	5,700.0	76.7	75.7	-104.68	3,945.8	-1,134.2	390.9	241.0	149.96	2.607	
9,300.0	5,589.0	9,262.2	5,700.0	78.5	77.6	-104.68	4,045.8	-1,134.2	390.9	237.3	153.61	2.545	
9,400.0	5,589.0	9,362.2	5,700.0	80.3	79.5	-104.68	4,145.8	-1,134.2	390.9	233.7	157.26	2.486	
9,500.0	5,589.0	9,462.2	5,700.0	82.2	81.4	-104.68	4,245.8	-1,134.2	390.9	230.0	160.92	2.429	
9,600.0	5,589.0	9,562.2	5,700.0	84.0	83.3	-104.68	4,345.8	-1,134.1	390.9	226.3	164.58	2.375	
9,700.0	5,589.0	9,662.2	5,700.0	85.8	85.2	-104.68	4,445.8	-1,134.1	390.9	222.7	168.24	2.324	
9,800.0	5,589.0	9,762.2	5,700.0	87.7	87.1	-104.68	4,545.8	-1,134.1	390.9	219.0	171.90	2.274	
9,900.0	5,589.0	9,862.2	5,700.0	89.5	89.0	-104.68	4,645.8	-1,134.1	390.9	215.3	175.57	2.226	
10,000.0	5,589.0	9,962.2	5,700.0	91.4	90.9	-104.68	4,745.8	-1,134.1	390.9	211.7	179.24	2.181	
10,100.0	5,589.0	10,062.2	5,700.0	93.2	92.8	-104.68	4,845.8	-1,134.1	390.9	208.0	182.91	2.137	
10,200.0	5,589.0	10,162.2	5,700.0	95.1	94.7	-104.68	4,945.8	-1,134.1	390.9	204.3	186.59	2.095	
10,300.0	5,589.0	10,262.2	5,700.0	97.0	96.6	-104.68	5,045.8	-1,134.1	390.9	200.6	190.26	2.054	
10,400.0	5,589.0	10,362.2	5,700.0	98.8	98.5	-104.68	5,145.8	-1,134.1	390.9	196.9	193.94	2.015	
10,500.0	5,589.0	10,462.2	5,700.0	100.7	100.4	-104.68	5,245.8	-1,134.1	390.9	193.3	197.62	1.978	
10,600.0	5,589.0	10,562.2	5,700.0	102.6	102.3	-104.69	5,345.8	-1,134.1	390.9	189.6	201.31	1.942	
10,700.0	5,589.0	10,662.2	5,700.0	104.4	104.2	-104.69	5,445.8	-1,134.1	390.9	185.9	204.99	1.907	
10,800.0	5,589.0	10,762.2	5,700.0	106.3	106.1	-104.69	5,545.8	-1,134.1	390.9	182.2	208.68	1.873	
10,900.0	5,589.0	10,862.2	5,700.0	108.2	108.0	-104.69	5,645.8	-1,134.1	390.9	178.5	212.36	1.840	
11,000.0	5,589.0	10,962.2	5,700.0	110.0	109.9	-104.69	5,745.8	-1,134.1	390.8	174.8	216.05	1.809	
11,100.0	5,589.0	11,062.2	5,700.0	111.9	111.8	-104.69	5,845.8	-1,134.1	390.8	171.1	219.74	1.779	
11,200.0	5,589.0	11,162.2	5,700.0	113.8	113.7	-104.69	5,945.8	-1,134.1	390.8	167.4	223.43	1.749	
11,300.0	5,589.0	11,262.2	5,700.0	115.7	115.6	-104.69	6,045.8	-1,134.0	390.8	163.7	227.12	1.721	
11,400.0	5,589.0	11,362.2	5,700.0	117.5	117.5	-104.69	6,145.8	-1,134.0	390.8	160.0	230.82	1.693	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor #26K-2308B - 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	5,589.0	11,462.2	5,700.0	119.4	119.4	-104.69	6,245.8	-1,134.0	390.8	156.3	234.51	1.667	
11,600.0	5,589.0	11,562.2	5,700.0	121.3	121.3	-104.69	6,345.8	-1,134.0	390.8	152.6	238.21	1.641	
11,700.0	5,589.0	11,662.2	5,700.0	123.2	123.2	-104.69	6,445.8	-1,134.0	390.8	148.9	241.90	1.616	
11,800.0	5,589.0	11,762.2	5,700.0	125.1	125.1	-104.69	6,545.8	-1,134.0	390.8	145.2	245.60	1.591	
11,900.0	5,589.0	11,862.2	5,700.0	127.0	127.0	-104.69	6,645.8	-1,134.0	390.8	141.5	249.30	1.568	
12,000.0	5,589.0	11,962.2	5,700.0	128.8	128.9	-104.69	6,745.8	-1,134.0	390.8	137.8	253.00	1.545	
12,100.0	5,589.0	12,062.2	5,700.0	130.7	130.8	-104.69	6,845.8	-1,134.0	390.8	134.1	256.70	1.522	
12,200.0	5,589.0	12,162.2	5,700.0	132.6	132.7	-104.69	6,945.8	-1,134.0	390.8	130.4	260.40	1.501	
12,300.0	5,589.0	12,262.2	5,700.0	134.5	134.6	-104.69	7,045.8	-1,134.0	390.8	126.7	264.10	1.480	Level 3
12,400.0	5,589.0	12,362.2	5,700.0	136.4	136.6	-104.69	7,145.8	-1,134.0	390.8	123.0	267.80	1.459	Level 3
12,500.0	5,589.0	12,462.2	5,700.0	138.3	138.5	-104.69	7,245.8	-1,134.0	390.8	119.3	271.51	1.439	Level 3
12,600.0	5,589.0	12,562.2	5,700.0	140.2	140.4	-104.69	7,345.8	-1,134.0	390.8	115.6	275.21	1.420	Level 3
12,700.0	5,589.0	12,662.2	5,700.0	142.1	142.3	-104.69	7,445.8	-1,134.0	390.8	111.8	278.91	1.401	Level 3
12,800.0	5,589.0	12,762.2	5,700.0	143.9	144.2	-104.69	7,545.8	-1,134.0	390.7	108.1	282.62	1.383	Level 3
12,900.0	5,589.0	12,862.2	5,700.0	145.8	146.1	-104.69	7,645.8	-1,134.0	390.7	104.4	286.32	1.365	Level 3
13,000.0	5,589.0	12,962.2	5,700.0	147.7	148.0	-104.69	7,745.8	-1,134.0	390.7	100.7	290.03	1.347	Level 3
13,100.0	5,589.0	13,062.2	5,700.0	149.6	149.9	-104.69	7,845.8	-1,133.9	390.7	97.0	293.74	1.330	Level 3
13,200.0	5,589.0	13,162.2	5,700.0	151.5	151.8	-104.69	7,945.8	-1,133.9	390.7	93.3	297.44	1.314	Level 3
13,300.0	5,589.0	13,262.2	5,700.0	153.4	153.7	-104.69	8,045.8	-1,133.9	390.7	89.6	301.15	1.297	Level 3
13,400.0	5,589.0	13,362.2	5,700.0	155.3	155.4	-104.69	8,145.8	-1,133.9	390.7	86.1	304.64	1.283	Level 3
13,419.7	5,589.0	13,381.7	5,700.0	155.6	155.7	-104.69	8,165.4	-1,133.9	390.7	85.5	305.24	1.280	Level 3, CC
13,427.8	5,589.0	13,381.7	5,700.0	155.7	155.7	-104.69	8,165.4	-1,133.9	390.8	85.4	305.36	1.280	Level 3, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2310B - 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	-157.38	-75.7	-31.5	82.0				
100.0	100.0	100.0	100.0	0.1	0.1	-157.38	-75.7	-31.5	82.0	81.8	0.19	436.711	
200.0	200.0	200.0	200.0	0.3	0.3	-157.38	-75.7	-31.5	82.0	81.3	0.64	128.626	
300.0	300.0	300.0	300.0	0.5	0.5	-157.38	-75.7	-31.5	82.0	80.9	1.09	75.420	
400.0	400.0	400.0	400.0	0.8	0.8	-157.38	-75.7	-31.5	82.0	80.4	1.54	53.351	
500.0	500.0	500.0	500.0	1.0	1.0	-157.38	-75.7	-31.5	82.0	80.0	1.99	41.274	
600.0	600.0	600.0	600.0	1.2	1.2	-125.58	-75.7	-31.5	83.0	80.5	2.43	34.078	
700.0	699.8	699.8	699.8	1.4	1.4	-128.36	-75.7	-31.5	86.1	83.2	2.89	29.834	
800.0	799.6	802.2	802.2	1.7	1.7	-131.22	-73.9	-32.1	89.2	85.8	3.35	26.647	
900.0	899.4	904.7	904.5	1.9	1.9	-132.61	-68.8	-34.0	89.5	85.6	3.81	23.464	
1,000.0	999.1	1,004.7	1,004.2	2.2	2.1	-133.38	-62.2	-36.4	88.4	84.2	4.28	20.666	
1,100.0	1,098.9	1,104.6	1,104.0	2.4	2.4	-134.17	-55.7	-38.7	87.4	82.7	4.75	18.410	
1,200.0	1,198.6	1,204.6	1,203.7	2.7	2.6	-134.97	-49.1	-41.1	86.4	81.2	5.22	16.558	
1,300.0	1,298.4	1,304.6	1,303.5	2.9	2.9	-135.79	-42.5	-43.5	85.5	79.8	5.69	15.013	
1,400.0	1,398.1	1,404.6	1,403.2	3.2	3.1	-136.63	-36.0	-45.9	84.5	78.4	6.17	13.706	
1,500.0	1,497.9	1,504.6	1,503.0	3.4	3.3	-137.49	-29.4	-48.2	83.6	77.0	6.64	12.589	
1,600.0	1,597.6	1,604.6	1,602.7	3.7	3.6	-138.37	-22.9	-50.6	82.7	75.6	7.11	11.624	
1,700.0	1,697.4	1,704.6	1,702.4	3.9	3.8	-139.27	-16.3	-53.0	81.8	74.2	7.58	10.783	
1,800.0	1,797.2	1,804.6	1,802.2	4.2	4.1	-140.18	-9.8	-55.3	80.9	72.9	8.06	10.044	
1,900.0	1,896.9	1,904.5	1,901.9	4.4	4.3	-141.12	-3.2	-57.7	80.1	71.5	8.53	9.390	
2,000.0	1,996.7	2,004.5	2,001.7	4.7	4.6	-142.08	3.4	-60.1	79.2	70.2	8.99	8.809	
2,100.0	2,096.4	2,104.5	2,101.4	4.9	4.9	-143.06	9.9	-62.5	78.4	69.0	9.46	8.288	
2,200.0	2,196.2	2,204.5	2,201.2	5.2	5.1	-144.05	16.5	-64.8	77.6	67.7	9.93	7.820	
2,300.0	2,295.9	2,304.5	2,300.9	5.5	5.4	-145.07	23.0	-67.2	76.9	66.5	10.39	7.397	
2,400.0	2,395.7	2,404.5	2,400.7	5.7	5.6	-146.11	29.6	-69.6	76.1	65.3	10.86	7.014	
2,500.0	2,495.5	2,504.5	2,500.4	6.0	5.9	-147.16	36.2	-71.9	75.4	64.1	11.32	6.665	
2,600.0	2,595.2	2,604.5	2,600.1	6.2	6.1	-148.24	42.7	-74.3	74.7	63.0	11.78	6.346	
2,700.0	2,695.0	2,704.4	2,699.9	6.5	6.4	-149.34	49.3	-76.7	74.1	61.9	12.24	6.055	
2,800.0	2,794.7	2,804.4	2,799.6	6.7	6.6	-150.45	55.8	-79.0	73.5	60.8	12.69	5.787	
2,900.0	2,894.5	2,904.4	2,899.4	7.0	6.9	-151.59	62.4	-81.4	72.9	59.7	13.15	5.541	
3,000.0	2,994.2	3,004.4	2,999.1	7.2	7.1	-152.74	69.0	-83.8	72.3	58.7	13.60	5.314	
3,100.0	3,094.0	3,104.4	3,098.9	7.5	7.4	-153.91	75.5	-86.2	71.7	57.7	14.06	5.104	
3,200.0	3,193.7	3,204.4	3,198.6	7.8	7.7	-155.10	82.1	-88.5	71.2	56.7	14.51	4.910	
3,300.0	3,293.5	3,304.4	3,298.4	8.0	7.9	-156.30	88.6	-90.9	70.8	55.8	14.96	4.730	
3,400.0	3,393.3	3,404.4	3,398.1	8.3	8.2	-157.52	95.2	-93.3	70.3	54.9	15.41	4.563	
3,500.0	3,493.0	3,504.3	3,497.8	8.5	8.4	-158.76	101.8	-95.6	69.9	54.0	15.86	4.407	
3,600.0	3,592.8	3,604.3	3,597.6	8.8	8.7	-160.01	108.3	-98.0	69.5	53.2	16.31	4.263	
3,700.0	3,692.5	3,704.3	3,697.3	9.0	8.9	-161.27	114.9	-100.4	69.1	52.4	16.75	4.128	
3,800.0	3,792.3	3,804.3	3,797.1	9.3	9.2	-162.55	121.4	-102.8	68.8	51.6	17.20	4.002	
3,900.0	3,892.0	3,904.3	3,896.8	9.6	9.4	-163.84	128.0	-105.1	68.6	50.9	17.65	3.885	
4,000.0	3,991.8	4,004.3	3,996.6	9.8	9.7	-165.13	134.6	-107.5	68.3	50.2	18.09	3.775	
4,100.0	4,091.6	4,104.3	4,096.3	10.1	10.0	-166.44	141.1	-109.9	68.1	49.5	18.54	3.672	
4,200.0	4,191.3	4,204.3	4,196.0	10.3	10.2	-167.75	147.7	-112.2	67.9	48.9	18.99	3.576	
4,300.0	4,291.1	4,304.2	4,295.8	10.6	10.5	-169.07	154.2	-114.6	67.8	48.3	19.44	3.486	
4,400.0	4,390.8	4,404.2	4,395.5	10.8	10.7	-170.39	160.8	-117.0	67.7	47.8	19.89	3.402	
4,500.0	4,490.6	4,504.2	4,495.3	11.1	11.0	-171.72	167.4	-119.3	67.6	47.3	20.34	3.324	
4,600.0	4,590.3	4,604.2	4,595.0	11.4	11.2	-173.05	173.9	-121.7	67.6	46.8	20.79	3.250	
4,638.4	4,628.7	4,642.6	4,633.3	11.5	11.3	-173.56	176.4	-122.6	67.6	46.6	20.97	3.223	CC
4,700.0	4,690.1	4,704.2	4,694.8	11.6	11.5	-174.38	180.5	-124.1	67.6	46.3	21.25	3.180	
4,800.0	4,789.9	4,804.2	4,794.5	11.9	11.7	-175.71	187.0	-126.5	67.6	45.9	21.70	3.116	
4,900.0	4,889.6	4,904.2	4,894.3	12.1	12.0	-177.03	193.6	-128.8	67.7	45.5	22.16	3.055	
5,000.0	4,989.4	5,004.2	4,994.0	12.4	12.3	-178.36	200.2	-131.2	67.8	45.2	22.62	2.998	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2310B - 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	5,089.1	5,104.1	5,093.7	12.7	12.5	-179.68	206.7	-133.6	68.0	44.9	23.08	2.944	
5,115.4	5,104.5	5,119.6	5,109.1	12.7	12.6	-179.88	207.7	-133.9	68.0	44.8	23.15	2.936	
5,150.0	5,138.9	5,154.1	5,143.6	12.8	12.6	179.67	210.0	-134.8	69.2	45.9	23.25	2.976	
5,200.0	5,188.0	5,203.8	5,193.1	13.0	12.8	179.10	213.2	-135.9	75.0	51.8	23.23	3.228	
5,250.0	5,236.1	5,261.6	5,250.4	13.2	13.0	178.06	220.0	-138.4	82.9	59.9	23.04	3.600	
5,300.0	5,282.5	5,320.4	5,307.6	13.4	13.2	176.25	233.0	-143.1	90.3	67.6	22.67	3.984	
5,350.0	5,327.1	5,380.1	5,363.7	13.7	13.5	173.78	252.2	-150.0	97.1	74.9	22.15	4.383	
5,400.0	5,369.2	5,440.5	5,417.6	14.1	13.8	170.75	277.7	-159.2	103.3	81.8	21.54	4.797	
5,450.0	5,408.5	5,501.5	5,468.5	14.5	14.2	167.23	309.2	-170.6	109.1	88.2	20.93	5.212	
5,500.0	5,444.8	5,562.8	5,515.3	15.0	14.7	163.27	346.3	-184.0	114.5	94.0	20.46	5.595	
5,550.0	5,477.5	5,624.2	5,557.4	15.5	15.3	158.92	388.4	-199.3	119.6	99.3	20.31	5.888	
5,600.0	5,506.5	5,685.7	5,593.8	16.0	16.0	154.25	434.9	-216.1	124.5	103.9	20.66	6.026	
5,650.0	5,531.4	5,746.9	5,624.1	16.7	16.7	149.32	485.0	-234.1	129.4	107.8	21.66	5.975	
5,700.0	5,552.1	5,807.8	5,647.9	17.4	17.5	144.20	537.7	-253.2	134.5	111.1	23.36	5.756	
5,750.0	5,568.4	5,868.3	5,664.8	18.1	18.4	138.96	592.2	-272.9	139.7	114.0	25.68	5.440	
5,800.0	5,580.0	5,928.1	5,674.8	18.9	19.3	133.66	647.7	-292.9	145.2	116.8	28.46	5.102	
5,850.0	5,586.9	5,987.0	5,678.0	19.7	20.2	128.42	702.9	-312.9	151.1	119.6	31.52	4.795	
5,897.2	5,589.0	6,030.0	5,678.0	20.5	20.8	124.89	743.6	-327.0	158.9	125.1	33.79	4.702	
5,900.0	5,589.0	6,032.5	5,678.0	20.5	20.8	124.75	745.9	-327.8	159.5	125.5	33.92	4.702	
6,000.0	5,589.0	6,122.7	5,678.0	22.1	22.1	120.33	832.1	-354.4	180.2	142.0	38.19	4.717	
6,100.0	5,589.0	6,211.9	5,678.0	23.7	23.5	116.90	918.5	-376.6	201.2	159.0	42.17	4.771	
6,200.0	5,589.0	6,300.0	5,678.0	25.4	24.8	114.18	1,004.7	-394.6	222.3	176.4	45.91	4.841	
6,300.0	5,589.0	6,387.9	5,678.0	27.1	26.2	111.96	1,091.5	-408.5	243.2	193.7	49.47	4.915	
6,400.0	5,589.0	6,474.6	5,678.0	28.8	27.6	110.16	1,177.7	-418.4	263.7	210.9	52.84	4.991	
6,500.0	5,589.0	6,560.7	5,678.0	30.5	29.0	108.65	1,263.5	-424.2	283.8	227.8	56.03	5.066	
6,600.0	5,589.0	6,648.3	5,678.0	32.2	30.3	107.36	1,351.1	-426.3	303.4	244.3	59.08	5.136	
6,700.0	5,589.0	6,744.1	5,678.0	33.9	31.9	106.30	1,446.9	-426.3	320.4	258.3	62.11	5.158	
6,800.0	5,589.0	6,843.3	5,678.0	35.5	33.5	105.60	1,546.1	-426.2	332.4	267.4	65.00	5.114	
6,900.0	5,589.0	6,943.0	5,678.0	37.1	35.2	105.21	1,645.8	-426.2	339.5	271.8	67.68	5.016	
6,989.9	5,589.0	7,032.9	5,678.0	38.5	36.7	105.10	1,735.7	-426.2	341.5	271.6	69.91	4.885	
7,000.0	5,589.0	7,043.0	5,678.0	38.7	36.9	105.10	1,745.8	-426.2	341.5	271.3	70.25	4.862	
7,100.0	5,589.0	7,143.0	5,678.0	40.2	38.6	105.10	1,845.8	-426.2	341.5	268.0	73.57	4.642	
7,200.0	5,589.0	7,243.0	5,678.0	41.8	40.4	105.10	1,945.8	-426.2	341.5	264.6	76.92	4.440	
7,300.0	5,589.0	7,343.0	5,678.0	43.4	42.1	105.10	2,045.8	-426.2	341.5	261.2	80.31	4.253	
7,400.0	5,589.0	7,443.0	5,678.0	45.0	43.9	105.10	2,145.8	-426.2	341.5	257.8	83.73	4.079	
7,500.0	5,589.0	7,543.0	5,678.0	46.7	45.7	105.10	2,245.8	-426.2	341.5	254.4	87.17	3.918	
7,600.0	5,589.0	7,643.0	5,678.0	48.4	47.5	105.10	2,345.8	-426.2	341.5	250.9	90.63	3.768	
7,700.0	5,589.0	7,743.0	5,678.0	50.1	49.3	105.10	2,445.8	-426.2	341.5	247.4	94.12	3.629	
7,800.0	5,589.0	7,843.0	5,678.0	51.8	51.1	105.10	2,545.8	-426.2	341.5	243.9	97.62	3.499	
7,900.0	5,589.0	7,943.0	5,678.0	53.5	52.9	105.10	2,645.8	-426.2	341.5	240.4	101.13	3.377	
8,000.0	5,589.0	8,043.0	5,678.0	55.2	54.7	105.10	2,745.8	-426.2	341.5	236.9	104.66	3.263	
8,100.0	5,589.0	8,143.0	5,678.0	57.0	56.6	105.10	2,845.8	-426.2	341.5	233.3	108.20	3.156	
8,200.0	5,589.0	8,243.0	5,678.0	58.7	58.4	105.10	2,945.8	-426.2	341.5	229.8	111.76	3.056	
8,300.0	5,589.0	8,343.0	5,678.0	60.5	60.2	105.10	3,045.8	-426.2	341.5	226.2	115.32	2.962	
8,400.0	5,589.0	8,443.0	5,678.0	62.2	62.1	105.10	3,145.8	-426.2	341.5	222.6	118.90	2.873	
8,500.0	5,589.0	8,543.0	5,678.0	64.0	63.9	105.10	3,245.8	-426.2	341.5	219.1	122.48	2.789	
8,600.0	5,589.0	8,643.0	5,678.0	65.8	65.8	105.10	3,345.8	-426.2	341.5	215.5	126.07	2.709	
8,700.0	5,589.0	8,743.0	5,678.0	67.6	67.6	105.10	3,445.8	-426.2	341.5	211.9	129.67	2.634	
8,800.0	5,589.0	8,843.0	5,678.0	69.4	69.5	105.10	3,545.8	-426.2	341.5	208.3	133.28	2.563	
8,900.0	5,589.0	8,943.0	5,678.0	71.2	71.4	105.10	3,645.8	-426.2	341.5	204.7	136.89	2.495	
9,000.0	5,589.0	9,043.0	5,678.0	73.0	73.2	105.10	3,745.8	-426.2	341.5	201.0	140.51	2.431	
9,100.0	5,589.0	9,143.0	5,678.0	74.8	75.1	105.10	3,845.8	-426.2	341.5	197.4	144.13	2.370	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2310B - 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	5,589.0	9,243.0	5,678.0	76.7	77.0	105.10	3,945.8	-426.2	341.5	193.8	147.76	2.312	
9,300.0	5,589.0	9,343.0	5,678.0	78.5	78.8	105.10	4,045.8	-426.2	341.5	190.2	151.39	2.256	
9,400.0	5,589.0	9,443.0	5,678.0	80.3	80.7	105.10	4,145.8	-426.2	341.5	186.5	155.02	2.203	
9,500.0	5,589.0	9,543.0	5,678.0	82.2	82.6	105.10	4,245.8	-426.2	341.5	182.9	158.66	2.153	
9,600.0	5,589.0	9,643.0	5,678.0	84.0	84.5	105.10	4,345.8	-426.2	341.6	179.2	162.31	2.104	
9,700.0	5,589.0	9,743.0	5,678.0	85.8	86.3	105.10	4,445.8	-426.2	341.6	175.6	165.95	2.058	
9,800.0	5,589.0	9,843.0	5,678.0	87.7	88.2	105.10	4,545.8	-426.2	341.6	171.9	169.60	2.014	
9,900.0	5,589.0	9,943.0	5,678.0	89.5	90.1	105.10	4,645.8	-426.2	341.6	168.3	173.26	1.971	
10,000.0	5,589.0	10,043.0	5,678.0	91.4	92.0	105.10	4,745.8	-426.2	341.6	164.6	176.91	1.931	
10,100.0	5,589.0	10,143.0	5,678.0	93.2	93.9	105.10	4,845.8	-426.2	341.6	161.0	180.57	1.892	
10,200.0	5,589.0	10,243.0	5,678.0	95.1	95.8	105.10	4,945.8	-426.2	341.6	157.3	184.23	1.854	
10,300.0	5,589.0	10,343.0	5,678.0	97.0	97.7	105.10	5,045.8	-426.2	341.6	153.7	187.90	1.818	
10,400.0	5,589.0	10,443.0	5,678.0	98.8	99.5	105.10	5,145.8	-426.2	341.6	150.0	191.56	1.783	
10,500.0	5,589.0	10,543.0	5,678.0	100.7	101.4	105.10	5,245.8	-426.2	341.6	146.3	195.23	1.750	
10,600.0	5,589.0	10,643.0	5,678.0	102.6	103.3	105.10	5,345.8	-426.2	341.6	142.7	198.90	1.717	
10,700.0	5,589.0	10,743.0	5,678.0	104.4	105.2	105.10	5,445.8	-426.2	341.6	139.0	202.57	1.686	
10,800.0	5,589.0	10,843.0	5,678.0	106.3	107.1	105.10	5,545.8	-426.2	341.6	135.3	206.24	1.656	
10,900.0	5,589.0	10,943.0	5,678.0	108.2	109.0	105.10	5,645.8	-426.2	341.6	131.6	209.92	1.627	
11,000.0	5,589.0	11,043.0	5,678.0	110.0	110.9	105.10	5,745.8	-426.2	341.6	128.0	213.59	1.599	
11,100.0	5,589.0	11,143.0	5,678.0	111.9	112.8	105.10	5,845.8	-426.2	341.6	124.3	217.27	1.572	
11,200.0	5,589.0	11,243.0	5,678.0	113.8	114.7	105.10	5,945.8	-426.2	341.6	120.6	220.95	1.546	
11,300.0	5,589.0	11,343.0	5,678.0	115.7	116.6	105.10	6,045.8	-426.2	341.6	116.9	224.63	1.521	
11,400.0	5,589.0	11,443.0	5,678.0	117.5	118.5	105.10	6,145.8	-426.2	341.6	113.2	228.31	1.496	Level 3
11,500.0	5,589.0	11,543.0	5,678.0	119.4	120.4	105.10	6,245.8	-426.2	341.6	109.6	232.00	1.472	Level 3
11,600.0	5,589.0	11,643.0	5,678.0	121.3	122.3	105.10	6,345.8	-426.2	341.6	105.9	235.68	1.449	Level 3
11,700.0	5,589.0	11,743.0	5,678.0	123.2	124.2	105.10	6,445.8	-426.2	341.6	102.2	239.37	1.427	Level 3
11,800.0	5,589.0	11,843.0	5,678.0	125.1	126.1	105.10	6,545.8	-426.2	341.6	98.5	243.05	1.405	Level 3
11,900.0	5,589.0	11,943.0	5,678.0	127.0	128.0	105.10	6,645.8	-426.2	341.6	94.8	246.74	1.384	Level 3
12,000.0	5,589.0	12,043.0	5,678.0	128.8	129.9	105.10	6,745.8	-426.2	341.6	91.1	250.43	1.364	Level 3
12,100.0	5,589.0	12,143.0	5,678.0	130.7	131.8	105.10	6,845.8	-426.2	341.6	87.4	254.12	1.344	Level 3
12,200.0	5,589.0	12,243.0	5,678.0	132.6	133.7	105.10	6,945.8	-426.2	341.6	83.8	257.81	1.325	Level 3
12,300.0	5,589.0	12,343.0	5,678.0	134.5	135.6	105.10	7,045.8	-426.2	341.6	80.1	261.50	1.306	Level 3
12,400.0	5,589.0	12,443.0	5,678.0	136.4	137.5	105.10	7,145.8	-426.2	341.6	76.4	265.19	1.288	Level 3
12,500.0	5,589.0	12,543.0	5,678.0	138.3	139.4	105.10	7,245.8	-426.2	341.6	72.7	268.89	1.270	Level 3
12,600.0	5,589.0	12,643.0	5,678.0	140.2	141.3	105.10	7,345.8	-426.2	341.6	69.0	272.58	1.253	Level 3
12,700.0	5,589.0	12,743.0	5,678.0	142.1	143.2	105.10	7,445.8	-426.2	341.6	65.3	276.27	1.236	Level 2
12,800.0	5,589.0	12,843.0	5,678.0	143.9	145.1	105.10	7,545.8	-426.2	341.6	61.6	279.97	1.220	Level 2
12,900.0	5,589.0	12,943.0	5,678.0	145.8	147.0	105.10	7,645.8	-426.2	341.6	57.9	283.67	1.204	Level 2
13,000.0	5,589.0	13,043.0	5,678.0	147.7	148.9	105.10	7,745.8	-426.2	341.6	54.2	287.36	1.189	Level 2
13,100.0	5,589.0	13,143.0	5,678.0	149.6	150.8	105.10	7,845.8	-426.2	341.6	50.5	291.06	1.174	Level 2
13,200.0	5,589.0	13,243.0	5,678.0	151.5	152.7	105.10	7,945.8	-426.2	341.6	46.8	294.76	1.159	Level 2
13,300.0	5,589.0	13,343.0	5,678.0	153.4	154.6	105.10	8,045.8	-426.2	341.6	43.1	298.45	1.144	Level 2
13,400.0	5,589.0	13,443.0	5,678.0	155.3	156.5	105.10	8,145.8	-426.2	341.6	39.4	302.15	1.130	Level 2
13,427.8	5,589.0	13,470.8	5,678.0	155.7	157.1	105.10	8,173.6	-426.2	341.6	38.5	303.09	1.127	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2311A - 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	88.94	1.2	66.2	66.2				
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.2	66.2	66.2	66.0	0.19	352.530	
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.2	66.2	66.2	65.5	0.64	103.832	
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.2	66.2	66.2	65.1	1.09	60.882	
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.2	66.2	66.2	64.6	1.54	43.067	
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.2	66.2	66.2	64.2	1.99	33.318	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	122.98	1.2	66.2	67.1	64.7	2.43	27.574	
700.0	699.8	699.8	699.8	1.4	1.4	126.52	1.2	66.2	70.1	67.2	2.88	24.320	
800.0	799.6	799.6	799.6	1.7	1.7	130.83	1.2	66.2	74.5	71.1	3.33	22.336	
900.0	899.4	899.4	899.4	1.9	1.9	134.65	1.2	66.2	79.2	75.4	3.79	20.911	
1,000.0	999.1	1,000.3	1,000.3	2.2	2.1	136.97	2.9	65.9	83.5	79.3	4.24	19.684	
1,100.0	1,098.9	1,101.5	1,101.3	2.4	2.3	136.93	8.2	65.0	86.5	81.8	4.70	18.390	
1,200.0	1,198.6	1,201.4	1,201.0	2.7	2.6	135.89	15.1	63.8	88.8	83.6	5.17	17.177	
1,300.0	1,298.4	1,301.4	1,300.7	2.9	2.8	134.90	21.9	62.6	91.1	85.5	5.64	16.151	
1,400.0	1,398.1	1,401.4	1,400.5	3.2	3.0	133.96	28.8	61.4	93.4	87.3	6.12	15.276	
1,500.0	1,497.9	1,501.3	1,500.2	3.4	3.3	133.06	35.7	60.3	95.8	89.2	6.60	14.521	
1,600.0	1,597.6	1,601.3	1,599.9	3.7	3.5	132.21	42.6	59.1	98.2	91.1	7.08	13.865	
1,700.0	1,697.4	1,701.2	1,699.6	3.9	3.8	131.40	49.4	57.9	100.6	93.0	7.57	13.291	
1,800.0	1,797.2	1,801.2	1,799.3	4.2	4.0	130.62	56.3	56.7	103.0	95.0	8.06	12.785	
1,900.0	1,896.9	1,901.2	1,899.0	4.4	4.3	129.89	63.2	55.6	105.5	96.9	8.55	12.335	
2,000.0	1,996.7	2,001.1	1,998.8	4.7	4.5	129.18	70.1	54.4	108.0	98.9	9.05	11.934	
2,100.0	2,096.4	2,101.1	2,098.5	4.9	4.8	128.51	76.9	53.2	110.4	100.9	9.54	11.573	
2,200.0	2,196.2	2,201.0	2,198.2	5.2	5.0	127.87	83.8	52.0	112.9	102.9	10.04	11.249	
2,300.0	2,295.9	2,301.0	2,297.9	5.5	5.3	127.25	90.7	50.9	115.4	104.9	10.54	10.954	
2,400.0	2,395.7	2,401.0	2,397.6	5.7	5.5	126.66	97.6	49.7	118.0	106.9	11.04	10.687	
2,500.0	2,495.5	2,500.9	2,497.4	6.0	5.8	126.10	104.4	48.5	120.5	108.9	11.54	10.442	
2,600.0	2,595.2	2,600.9	2,597.1	6.2	6.0	125.56	111.3	47.3	123.0	111.0	12.04	10.218	
2,700.0	2,695.0	2,700.9	2,696.8	6.5	6.3	125.04	118.2	46.2	125.6	113.0	12.54	10.012	
2,800.0	2,794.7	2,800.8	2,796.5	6.7	6.5	124.54	125.0	45.0	128.1	115.1	13.05	9.822	
2,900.0	2,894.5	2,900.8	2,896.2	7.0	6.8	124.06	131.9	43.8	130.7	117.2	13.55	9.647	
3,000.0	2,994.2	3,000.7	2,995.9	7.2	7.0	123.60	138.8	42.6	133.3	119.2	14.06	9.484	
3,100.0	3,094.0	3,100.7	3,095.7	7.5	7.3	123.16	145.7	41.5	135.9	121.3	14.56	9.333	
3,200.0	3,193.7	3,200.7	3,195.4	7.8	7.5	122.74	152.5	40.3	138.5	123.4	15.07	9.192	
3,300.0	3,293.5	3,300.6	3,295.1	8.0	7.8	122.33	159.4	39.1	141.1	125.5	15.57	9.060	
3,400.0	3,393.3	3,400.6	3,394.8	8.3	8.0	121.93	166.3	37.9	143.7	127.6	16.08	8.937	
3,500.0	3,493.0	3,500.5	3,494.5	8.5	8.3	121.55	173.2	36.8	146.3	129.7	16.59	8.822	
3,600.0	3,592.8	3,600.5	3,594.2	8.8	8.6	121.18	180.0	35.6	149.0	131.9	17.09	8.714	
3,700.0	3,692.5	3,700.5	3,694.0	9.0	8.8	120.83	186.9	34.4	151.6	134.0	17.60	8.612	
3,800.0	3,792.3	3,800.4	3,793.7	9.3	9.1	120.48	193.8	33.2	154.2	136.1	18.11	8.516	
3,900.0	3,892.0	3,900.4	3,893.4	9.6	9.3	120.15	200.6	32.1	156.9	138.2	18.62	8.425	
4,000.0	3,991.8	4,000.3	3,993.1	9.8	9.6	119.83	207.5	30.9	159.5	140.4	19.13	8.339	
4,100.0	4,091.6	4,100.3	4,092.8	10.1	9.8	119.52	214.4	29.7	162.2	142.5	19.64	8.258	
4,200.0	4,191.3	4,200.3	4,192.6	10.3	10.1	119.22	221.3	28.5	164.8	144.7	20.15	8.181	
4,300.0	4,291.1	4,300.2	4,292.3	10.6	10.3	118.93	228.1	27.4	167.5	146.8	20.65	8.108	
4,400.0	4,390.8	4,400.2	4,392.0	10.8	10.6	118.65	235.0	26.2	170.1	149.0	21.16	8.039	
4,500.0	4,490.6	4,500.1	4,491.7	11.1	10.8	118.38	241.9	25.0	172.8	151.1	21.67	7.973	
4,600.0	4,590.3	4,600.1	4,591.4	11.4	11.1	118.11	248.8	23.8	175.5	153.3	22.18	7.910	
4,700.0	4,690.1	4,700.1	4,691.1	11.6	11.4	117.86	255.6	22.7	178.2	155.5	22.69	7.851	
4,800.0	4,789.9	4,800.0	4,790.9	11.9	11.6	117.61	262.5	21.5	180.8	157.6	23.20	7.793	
4,900.0	4,889.6	4,900.0	4,890.6	12.1	11.9	117.37	269.4	20.3	183.5	159.8	23.71	7.739	
5,000.0	4,989.4	5,000.0	4,990.3	12.4	12.1	117.13	276.3	19.1	186.2	162.0	24.22	7.687	
5,100.0	5,089.1	5,099.9	5,090.0	12.7	12.4	116.90	283.1	18.0	188.9	164.2	24.74	7.637	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2311A - 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
5,115.4	5,104.5	5,115.3	5,105.4	12.7	12.4	116.87	284.2	17.8	189.3	164.5	24.81	7.629	
5,150.0	5,138.9	5,150.8	5,140.6	12.8	12.5	116.59	287.9	17.2	190.7	165.7	24.99	7.629	SF
5,200.0	5,188.0	5,201.8	5,190.7	13.0	12.7	115.89	297.3	15.5	194.2	168.9	25.29	7.679	
5,250.0	5,236.1	5,252.5	5,239.3	13.2	12.9	114.86	311.4	13.1	199.5	173.9	25.64	7.782	
5,300.0	5,282.5	5,302.8	5,286.0	13.4	13.2	113.55	329.9	10.0	206.7	180.6	26.06	7.930	
5,350.0	5,327.1	5,352.7	5,330.2	13.7	13.5	112.00	352.6	6.1	215.5	188.9	26.56	8.112	
5,400.0	5,369.2	5,402.0	5,371.6	14.1	13.8	110.26	379.0	1.6	226.0	198.8	27.17	8.317	
5,450.0	5,408.5	5,450.8	5,409.9	14.5	14.1	108.38	408.8	-3.5	238.0	210.1	27.90	8.533	
5,500.0	5,444.8	5,499.0	5,444.7	15.0	14.6	106.39	441.6	-9.1	251.5	222.8	28.74	8.751	
5,550.0	5,477.5	5,546.6	5,476.0	15.5	15.0	104.32	477.0	-15.2	266.3	236.6	29.71	8.964	
5,600.0	5,506.5	5,593.7	5,503.6	16.0	15.5	102.21	514.6	-21.6	282.3	251.5	30.80	9.167	
5,650.0	5,531.4	5,640.3	5,527.4	16.7	16.0	100.08	554.1	-28.4	299.3	267.3	31.98	9.358	
5,700.0	5,552.1	5,686.6	5,547.4	17.4	16.6	97.95	595.2	-35.4	317.1	283.9	33.26	9.537	
5,750.0	5,568.4	5,732.6	5,563.5	18.1	17.2	95.84	637.6	-42.6	335.7	301.1	34.60	9.702	
5,800.0	5,580.0	5,778.4	5,575.7	18.9	17.8	93.76	681.1	-50.1	354.7	318.7	36.00	9.854	
5,850.0	5,586.9	5,824.1	5,584.0	19.7	18.5	91.73	725.5	-57.6	374.1	336.7	37.43	9.995	
5,897.2	5,589.0	5,867.4	5,588.2	20.5	19.1	89.87	767.9	-64.9	392.6	353.8	38.81	10.117	
5,900.0	5,589.0	5,869.9	5,588.3	20.5	19.1	89.89	770.4	-65.3	393.7	354.8	38.89	10.123	
6,000.0	5,589.0	5,950.6	5,589.0	22.1	20.3	90.00	850.1	-78.2	431.3	389.6	41.64	10.358	
6,100.0	5,589.0	6,026.1	5,589.0	23.7	21.3	90.00	924.9	-87.3	467.5	423.2	44.36	10.539	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2312B - 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	155.05	-74.4	34.6	82.1				
100.0	100.0	100.0	100.0	0.1	0.1	155.05	-74.4	34.6	82.1	81.9	0.19	437.402	
200.0	200.0	200.0	200.0	0.3	0.3	155.05	-74.4	34.6	82.1	81.5	0.64	128.829	
300.0	300.0	300.0	300.0	0.5	0.5	155.05	-74.4	34.6	82.1	81.0	1.09	75.539	
400.0	400.0	400.0	400.0	0.8	0.8	155.05	-74.4	34.6	82.1	80.6	1.54	53.435	
500.0	500.0	500.0	500.0	1.0	1.0	155.05	-74.4	34.6	82.1	80.1	1.99	41.339	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-172.33	-74.4	34.6	83.8	81.4	2.44	34.411	
700.0	699.8	699.8	699.8	1.4	1.4	-172.76	-74.4	34.6	89.0	86.1	2.89	30.838	
800.0	799.6	799.6	799.6	1.7	1.7	-173.29	-74.4	34.6	95.9	92.6	3.33	28.782	
900.0	899.4	899.4	899.4	1.9	1.9	-173.74	-74.4	34.6	102.9	99.1	3.78	27.201	
1,000.0	999.1	999.1	999.1	2.2	2.1	-174.14	-74.4	34.6	109.8	105.6	4.23	25.949	
1,100.0	1,098.9	1,098.9	1,098.9	2.4	2.3	-174.49	-74.4	34.6	116.7	112.1	4.68	24.934	
1,200.0	1,198.6	1,202.0	1,202.0	2.7	2.6	-175.35	-72.7	35.0	122.3	117.2	5.14	23.807	
1,300.0	1,298.4	1,305.1	1,304.9	2.9	2.8	-177.22	-67.2	36.1	125.2	119.6	5.60	22.382	
1,400.0	1,398.1	1,405.0	1,404.5	3.2	3.0	-179.46	-60.4	37.5	127.1	121.0	6.05	21.009	
1,500.0	1,497.9	1,504.8	1,504.2	3.4	3.3	178.37	-53.6	38.9	129.1	122.6	6.50	19.846	
1,600.0	1,597.6	1,604.7	1,603.8	3.7	3.5	176.27	-46.8	40.3	131.3	124.3	6.96	18.853	
1,700.0	1,697.4	1,704.5	1,703.4	3.9	3.7	174.25	-39.9	41.7	133.7	126.3	7.43	17.999	
1,800.0	1,797.2	1,804.4	1,803.0	4.2	4.0	172.29	-33.1	43.0	136.2	128.3	7.89	17.258	
1,900.0	1,896.9	1,904.3	1,902.6	4.4	4.2	170.41	-26.3	44.4	138.9	130.5	8.36	16.613	
2,000.0	1,996.7	2,004.1	2,002.3	4.7	4.5	168.60	-19.5	45.8	141.7	132.9	8.83	16.047	
2,100.0	2,096.4	2,104.0	2,101.9	4.9	4.7	166.87	-12.6	47.2	144.7	135.4	9.31	15.548	
2,200.0	2,196.2	2,203.9	2,201.5	5.2	4.9	165.21	-5.8	48.6	147.8	138.0	9.78	15.107	
2,300.0	2,295.9	2,303.7	2,301.1	5.5	5.2	163.61	1.0	50.0	151.0	140.8	10.26	14.714	
2,400.0	2,395.7	2,403.6	2,400.7	5.7	5.4	162.09	7.8	51.4	154.4	143.6	10.75	14.364	
2,500.0	2,495.5	2,503.4	2,500.3	6.0	5.7	160.62	14.7	52.8	157.8	146.6	11.23	14.051	
2,600.0	2,595.2	2,603.3	2,600.0	6.2	5.9	159.23	21.5	54.2	161.3	149.6	11.72	13.770	
2,700.0	2,695.0	2,703.2	2,699.6	6.5	6.2	157.89	28.3	55.6	165.0	152.8	12.20	13.516	
2,800.0	2,794.7	2,803.0	2,799.2	6.7	6.4	156.61	35.1	57.0	168.7	156.0	12.69	13.287	
2,900.0	2,894.5	2,902.9	2,898.8	7.0	6.7	155.38	42.0	58.4	172.5	159.3	13.19	13.079	
3,000.0	2,994.2	3,002.7	2,998.4	7.2	6.9	154.21	48.8	59.7	176.3	162.6	13.68	12.891	
3,100.0	3,094.0	3,102.6	3,098.1	7.5	7.2	153.09	55.6	61.1	180.3	166.1	14.17	12.719	
3,200.0	3,193.7	3,202.5	3,197.7	7.8	7.4	152.02	62.4	62.5	184.3	169.6	14.67	12.562	
3,300.0	3,293.5	3,302.3	3,297.3	8.0	7.7	151.00	69.3	63.9	188.3	173.2	15.16	12.419	
3,400.0	3,393.3	3,402.2	3,396.9	8.3	7.9	150.01	76.1	65.3	192.5	176.8	15.66	12.288	
3,500.0	3,493.0	3,502.1	3,496.5	8.5	8.2	149.07	82.9	66.7	196.6	180.5	16.16	12.167	
3,600.0	3,592.8	3,601.9	3,596.1	8.8	8.5	148.17	89.7	68.1	200.9	184.2	16.66	12.056	
3,700.0	3,692.5	3,701.8	3,695.8	9.0	8.7	147.31	96.6	69.5	205.1	188.0	17.16	11.954	
3,800.0	3,792.3	3,801.6	3,795.4	9.3	9.0	146.48	103.4	70.9	209.5	191.8	17.66	11.860	
3,900.0	3,892.0	3,901.5	3,895.0	9.6	9.2	145.68	110.2	72.3	213.8	195.7	18.16	11.773	
4,000.0	3,991.8	4,001.4	3,994.6	9.8	9.5	144.92	117.0	73.7	218.2	199.6	18.66	11.692	
4,100.0	4,091.6	4,101.2	4,094.2	10.1	9.7	144.19	123.9	75.0	222.7	203.5	19.17	11.617	
4,200.0	4,191.3	4,201.1	4,193.9	10.3	10.0	143.48	130.7	76.4	227.1	207.5	19.67	11.548	
4,300.0	4,291.1	4,300.9	4,293.5	10.6	10.2	142.80	137.5	77.8	231.6	211.5	20.17	11.483	
4,400.0	4,390.8	4,400.8	4,393.1	10.8	10.5	142.15	144.4	79.2	236.2	215.5	20.68	11.423	
4,500.0	4,490.6	4,500.7	4,492.7	11.1	10.7	141.53	151.2	80.6	240.7	219.6	21.18	11.367	
4,600.0	4,590.3	4,600.5	4,592.3	11.4	11.0	140.92	158.0	82.0	245.3	223.7	21.68	11.314	
4,700.0	4,690.1	4,700.4	4,691.9	11.6	11.2	140.34	164.8	83.4	250.0	227.8	22.19	11.265	
4,800.0	4,789.9	4,800.3	4,791.6	11.9	11.5	139.78	171.7	84.8	254.6	231.9	22.69	11.219	
4,900.0	4,889.6	4,900.1	4,891.2	12.1	11.8	139.24	178.5	86.2	259.3	236.1	23.20	11.176	
5,000.0	4,989.4	5,000.0	4,990.8	12.4	12.0	138.72	185.3	87.6	264.0	240.3	23.70	11.136	
5,100.0	5,089.1	5,099.8	5,090.4	12.7	12.3	138.22	192.1	89.0	268.7	244.5	24.21	11.098	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-2312B - 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
5,115.4	5,104.5	5,115.2	5,105.8	12.7	12.3	138.14	193.2	89.2	269.4	245.1	24.29	11.093 SF	
5,150.0	5,138.9	5,149.7	5,140.2	12.8	12.4	137.95	195.5	89.7	271.9	247.5	24.41	11.138	
5,200.0	5,188.0	5,199.2	5,189.5	13.0	12.5	138.02	198.9	90.3	278.5	254.0	24.50	11.365	
5,250.0	5,236.1	5,250.2	5,240.2	13.2	12.7	138.05	204.5	91.5	288.5	264.0	24.53	11.762	
5,300.0	5,282.5	5,301.2	5,290.0	13.4	12.8	137.47	214.8	93.6	301.6	277.0	24.53	12.293	
5,350.0	5,327.1	5,351.5	5,338.0	13.7	13.1	136.31	229.7	96.6	317.6	293.0	24.55	12.936	
5,400.0	5,369.2	5,400.8	5,383.4	14.1	13.3	134.62	248.6	100.5	336.4	311.8	24.63	13.656	
5,450.0	5,408.5	5,449.0	5,425.7	14.5	13.6	132.46	271.1	105.0	357.9	333.0	24.84	14.409	
5,500.0	5,444.8	5,495.8	5,464.7	15.0	13.9	129.87	296.5	110.2	381.9	356.7	25.22	15.144	
5,550.0	5,477.5	5,541.3	5,500.2	15.5	14.2	126.89	324.3	115.9	408.2	382.4	25.82	15.811	
5,600.0	5,506.5	5,585.3	5,532.1	16.0	14.6	123.56	354.1	122.0	436.6	410.0	26.67	16.374	
5,650.0	5,531.4	5,628.1	5,560.4	16.7	15.0	119.91	385.4	128.3	466.9	439.2	27.76	16.818	
5,700.0	5,552.1	5,669.6	5,585.4	17.4	15.4	115.96	417.9	135.0	498.8	469.8	29.09	17.151	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-3509A - 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	-91.06	-0.6	-32.1	32.1				
100.0	100.0	100.0	100.0	0.1	0.1	-91.06	-0.6	-32.1	32.1	31.9	0.19	171.102	
200.0	200.0	200.0	200.0	0.3	0.3	-91.06	-0.6	-32.1	32.1	31.5	0.64	50.395	
300.0	300.0	300.0	300.0	0.5	0.5	-91.06	-0.6	-32.1	32.1	31.0	1.09	29.549	
400.0	400.0	400.0	400.0	0.8	0.8	-91.06	-0.6	-32.1	32.1	30.6	1.54	20.903	
500.0	500.0	500.0	500.0	1.0	1.0	-91.06	-0.6	-32.1	32.1	30.1	1.99	16.171	
600.0	600.0	600.0	600.0	1.2	1.2	-61.02	-0.6	-32.1	31.2	28.8	2.43	12.833	
700.0	699.8	699.8	699.8	1.4	1.4	-70.11	-0.6	-32.1	29.1	26.2	2.88	10.077	
800.0	799.6	799.6	799.6	1.7	1.7	-83.89	-0.6	-32.1	27.5	24.1	3.34	8.215	
842.0	841.5	841.5	841.5	1.8	1.8	-90.00	-0.6	-32.1	27.3	23.8	3.54	7.713	CC, ES
900.0	899.4	899.4	899.4	1.9	1.9	-98.40	-0.6	-32.1	27.6	23.8	3.81	7.244	
1,000.0	999.1	999.1	999.1	2.2	2.1	-111.92	-0.6	-32.1	29.5	25.2	4.28	6.885	SF
1,100.0	1,098.9	1,097.7	1,097.7	2.4	2.3	-123.87	-2.2	-32.4	34.4	29.6	4.71	7.295	
1,200.0	1,198.6	1,195.8	1,195.6	2.7	2.5	-132.90	-7.2	-33.3	43.8	38.7	5.12	8.556	
1,300.0	1,298.4	1,294.9	1,294.5	2.9	2.7	-138.67	-14.0	-34.5	55.8	50.2	5.53	10.079	
1,400.0	1,398.1	1,394.0	1,393.4	3.2	2.9	-142.38	-20.8	-35.7	68.1	62.1	5.95	11.445	
1,500.0	1,497.9	1,493.2	1,492.3	3.4	3.1	-144.94	-27.6	-36.9	80.6	74.3	6.37	12.651	
1,600.0	1,597.6	1,592.4	1,591.2	3.7	3.3	-146.82	-34.4	-38.1	93.3	86.5	6.80	13.712	
1,700.0	1,697.4	1,691.5	1,690.1	3.9	3.5	-148.24	-41.2	-39.3	106.0	98.8	7.24	14.649	
1,800.0	1,797.2	1,790.7	1,789.1	4.2	3.7	-149.36	-48.0	-40.5	118.8	111.1	7.67	15.479	
1,900.0	1,896.9	1,889.8	1,888.0	4.4	4.0	-150.27	-54.9	-41.7	131.6	123.5	8.12	16.217	
2,000.0	1,996.7	1,989.0	1,986.9	4.7	4.2	-151.01	-61.7	-42.9	144.5	135.9	8.56	16.877	
2,100.0	2,096.4	2,088.1	2,085.8	4.9	4.4	-151.63	-68.5	-44.1	157.3	148.3	9.00	17.470	
2,200.0	2,196.2	2,187.3	2,184.7	5.2	4.7	-152.16	-75.3	-45.3	170.2	160.7	9.45	18.005	
2,300.0	2,295.9	2,286.4	2,283.6	5.5	4.9	-152.61	-82.1	-46.5	183.1	173.2	9.90	18.489	
2,400.0	2,395.7	2,385.6	2,382.6	5.7	5.2	-153.00	-88.9	-47.7	196.0	185.6	10.35	18.929	
2,500.0	2,495.5	2,484.8	2,481.5	6.0	5.4	-153.35	-95.7	-48.9	208.9	198.1	10.81	19.331	
2,600.0	2,595.2	2,583.9	2,580.4	6.2	5.7	-153.65	-102.5	-50.1	221.8	210.5	11.26	19.699	
2,700.0	2,695.0	2,683.1	2,679.3	6.5	5.9	-153.92	-109.3	-51.3	234.7	223.0	11.71	20.038	
2,800.0	2,794.7	2,782.2	2,778.2	6.7	6.2	-154.16	-116.2	-52.5	247.6	235.5	12.17	20.350	
2,900.0	2,894.5	2,881.4	2,877.1	7.0	6.4	-154.38	-123.0	-53.7	260.6	247.9	12.63	20.638	
3,000.0	2,994.2	2,980.5	2,976.0	7.2	6.7	-154.58	-129.8	-54.9	273.5	260.4	13.08	20.906	
3,100.0	3,094.0	3,079.7	3,075.0	7.5	6.9	-154.76	-136.6	-56.1	286.4	272.9	13.54	21.154	
3,200.0	3,193.7	3,178.9	3,173.9	7.8	7.2	-154.92	-143.4	-57.3	299.4	285.4	14.00	21.386	
3,300.0	3,293.5	3,278.0	3,272.8	8.0	7.4	-155.08	-150.2	-58.5	312.3	297.8	14.46	21.602	
3,400.0	3,393.3	3,377.2	3,371.7	8.3	7.7	-155.21	-157.0	-59.7	325.2	310.3	14.92	21.805	
3,500.0	3,493.0	3,476.3	3,470.6	8.5	8.0	-155.34	-163.8	-60.9	338.2	322.8	15.38	21.995	
3,600.0	3,592.8	3,575.5	3,569.5	8.8	8.2	-155.46	-170.7	-62.1	351.1	335.3	15.84	22.173	
3,700.0	3,692.5	3,674.6	3,668.4	9.0	8.5	-155.57	-177.5	-63.3	364.1	347.8	16.30	22.341	
3,800.0	3,792.3	3,773.8	3,767.4	9.3	8.7	-155.67	-184.3	-64.5	377.0	360.3	16.76	22.499	
3,900.0	3,892.0	3,872.9	3,866.3	9.6	9.0	-155.77	-191.1	-65.7	390.0	372.8	17.22	22.649	
4,000.0	3,991.8	3,972.1	3,965.2	9.8	9.2	-155.86	-197.9	-66.9	402.9	385.2	17.68	22.790	
4,100.0	4,091.6	4,071.3	4,064.1	10.1	9.5	-155.94	-204.7	-68.1	415.9	397.7	18.14	22.924	
4,200.0	4,191.3	4,170.4	4,163.0	10.3	9.8	-156.02	-211.5	-69.3	428.8	410.2	18.60	23.051	
4,300.0	4,291.1	4,269.6	4,261.9	10.6	10.0	-156.10	-218.3	-70.5	441.8	422.7	19.07	23.172	
4,400.0	4,390.8	4,368.7	4,360.8	10.8	10.3	-156.17	-225.1	-71.7	454.7	435.2	19.53	23.286	
4,500.0	4,490.6	4,467.9	4,459.8	11.1	10.5	-156.23	-232.0	-72.9	467.7	447.7	19.99	23.395	
4,600.0	4,590.3	4,567.0	4,558.7	11.4	10.8	-156.30	-238.8	-74.1	480.6	460.2	20.45	23.500	
4,700.0	4,690.1	4,666.2	4,657.6	11.6	11.0	-156.36	-245.6	-75.3	493.6	472.7	20.92	23.599	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-3510B - 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	178.92	-75.0	1.4	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	178.92	-75.0	1.4	75.1	74.9	0.19	399.925	
200.0	200.0	200.0	200.0	0.3	0.3	178.92	-75.0	1.4	75.1	74.4	0.64	117.791	
300.0	300.0	300.0	300.0	0.5	0.5	178.92	-75.0	1.4	75.1	74.0	1.09	69.067	
400.0	400.0	400.0	400.0	0.8	0.8	178.92	-75.0	1.4	75.1	73.5	1.54	48.857	
500.0	500.0	500.0	500.0	1.0	1.0	178.92	-75.0	1.4	75.1	73.1	1.99	37.797	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-148.97	-75.0	1.4	76.5	74.1	2.44	31.429	
700.0	699.8	697.1	697.0	1.4	1.4	-150.85	-76.7	1.6	82.8	79.9	2.86	28.949	
800.0	799.6	793.4	793.3	1.7	1.6	-153.07	-81.5	2.3	94.0	90.7	3.27	28.730	SF
900.0	899.4	892.3	891.9	1.9	1.8	-154.86	-88.3	3.2	107.2	103.5	3.69	29.030	
1,000.0	999.1	991.3	990.7	2.2	2.0	-156.27	-95.2	4.1	120.5	116.4	4.12	29.275	
1,100.0	1,098.9	1,090.4	1,089.5	2.4	2.2	-157.40	-102.0	5.1	133.9	129.3	4.55	29.445	
1,200.0	1,198.6	1,189.5	1,188.4	2.7	2.5	-158.32	-108.9	6.0	147.3	142.3	4.98	29.563	
1,300.0	1,298.4	1,288.6	1,287.2	2.9	2.7	-159.08	-115.7	6.9	160.7	155.3	5.42	29.647	
1,400.0	1,398.1	1,387.6	1,386.0	3.2	2.9	-159.73	-122.6	7.8	174.1	168.3	5.86	29.706	
1,500.0	1,497.9	1,486.7	1,484.9	3.4	3.2	-160.29	-129.4	8.8	187.6	181.3	6.31	29.748	
1,600.0	1,597.6	1,585.8	1,583.7	3.7	3.4	-160.77	-136.3	9.7	201.1	194.4	6.75	29.776	
1,700.0	1,697.4	1,684.8	1,682.5	3.9	3.7	-161.19	-143.1	10.6	214.6	207.4	7.20	29.798	
1,800.0	1,797.2	1,783.9	1,781.4	4.2	3.9	-161.56	-150.0	11.5	228.1	220.5	7.65	29.812	
1,900.0	1,896.9	1,883.0	1,880.2	4.4	4.2	-161.89	-156.8	12.5	241.6	233.5	8.10	29.822	
2,000.0	1,996.7	1,982.1	1,979.0	4.7	4.4	-162.18	-163.7	13.4	255.2	246.6	8.55	29.828	
2,100.0	2,096.4	2,081.1	2,077.8	4.9	4.7	-162.45	-170.5	14.3	268.7	259.7	9.01	29.831	
2,200.0	2,196.2	2,180.2	2,176.7	5.2	4.9	-162.69	-177.4	15.2	282.2	272.8	9.46	29.832	
2,300.0	2,295.9	2,279.3	2,275.5	5.5	5.2	-162.91	-184.2	16.2	295.8	285.9	9.92	29.832	
2,400.0	2,395.7	2,378.4	2,374.3	5.7	5.5	-163.11	-191.1	17.1	309.3	299.0	10.37	29.831	
2,500.0	2,495.5	2,477.4	2,473.2	6.0	5.7	-163.29	-197.9	18.0	322.9	312.1	10.82	29.828	
2,600.0	2,595.2	2,576.5	2,572.0	6.2	6.0	-163.45	-204.8	19.0	336.4	325.2	11.28	29.825	
2,700.0	2,695.0	2,675.6	2,670.8	6.5	6.2	-163.61	-211.6	19.9	350.0	338.3	11.74	29.822	
2,800.0	2,794.7	2,774.6	2,769.7	6.7	6.5	-163.75	-218.5	20.8	363.6	351.4	12.19	29.818	
2,900.0	2,894.5	2,873.7	2,868.5	7.0	6.8	-163.88	-225.3	21.7	377.1	364.5	12.65	29.814	
3,000.0	2,994.2	2,972.8	2,967.3	7.2	7.0	-164.01	-232.2	22.7	390.7	377.6	13.11	29.810	
3,100.0	3,094.0	3,071.9	3,066.2	7.5	7.3	-164.12	-239.0	23.6	404.2	390.7	13.56	29.806	
3,200.0	3,193.7	3,170.9	3,165.0	7.8	7.5	-164.23	-245.9	24.5	417.8	403.8	14.02	29.801	
3,300.0	3,293.5	3,270.0	3,263.8	8.0	7.8	-164.33	-252.7	25.4	431.4	416.9	14.48	29.797	
3,400.0	3,393.3	3,369.1	3,362.7	8.3	8.0	-164.42	-259.6	26.4	444.9	430.0	14.93	29.792	
3,500.0	3,493.0	3,468.2	3,461.5	8.5	8.3	-164.51	-266.4	27.3	458.5	443.1	15.39	29.788	
3,600.0	3,592.8	3,567.2	3,560.3	8.8	8.6	-164.60	-273.3	28.2	472.1	456.2	15.85	29.784	
3,700.0	3,692.5	3,666.3	3,659.2	9.0	8.8	-164.68	-280.1	29.1	485.7	469.3	16.31	29.779	
3,800.0	3,792.3	3,765.4	3,758.0	9.3	9.1	-164.75	-286.9	30.1	499.2	482.5	16.77	29.775	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-3511A - 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	88.94	0.6	33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	88.94	0.6	33.2	33.2	33.0	0.19	177.002	
200.0	200.0	200.0	200.0	0.3	0.3	88.94	0.6	33.2	33.2	32.6	0.64	52.133	
300.0	300.0	300.0	300.0	0.5	0.5	88.94	0.6	33.2	33.2	32.1	1.09	30.568	
400.0	400.0	400.0	400.0	0.8	0.8	88.94	0.6	33.2	33.2	31.7	1.54	21.624	
500.0	500.0	500.0	500.0	1.0	1.0	88.94	0.6	33.2	33.2	31.2	1.99	16.729	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	124.19	0.6	33.2	34.2	31.7	2.43	14.042	
700.0	699.8	699.8	699.8	1.4	1.4	130.79	0.6	33.2	37.4	34.5	2.88	12.965	
800.0	799.6	799.6	799.6	1.7	1.7	137.96	0.6	33.2	42.3	38.9	3.33	12.682	SF
900.0	899.4	898.2	898.2	1.9	1.9	144.99	-1.0	33.8	48.8	45.1	3.76	13.004	
1,000.0	999.1	996.1	996.0	2.2	2.0	152.45	-5.6	35.7	58.6	54.4	4.16	14.076	
1,100.0	1,098.9	1,095.1	1,094.7	2.4	2.2	158.61	-12.1	38.2	70.6	66.0	4.58	15.418	
1,200.0	1,198.6	1,194.1	1,193.5	2.7	2.4	162.96	-18.5	40.7	83.2	78.2	5.00	16.641	
1,300.0	1,298.4	1,293.2	1,292.3	2.9	2.7	166.15	-24.9	43.2	96.1	90.7	5.42	17.720	
1,400.0	1,398.1	1,392.2	1,391.1	3.2	2.9	168.59	-31.4	45.7	109.3	103.4	5.85	18.666	
1,500.0	1,497.9	1,491.3	1,489.9	3.4	3.1	170.50	-37.8	48.2	122.6	116.3	6.29	19.496	
1,600.0	1,597.6	1,590.3	1,588.7	3.7	3.3	172.03	-44.2	50.7	136.0	129.3	6.72	20.225	
1,700.0	1,697.4	1,689.3	1,687.5	3.9	3.6	173.29	-50.7	53.2	149.5	142.3	7.16	20.868	
1,800.0	1,797.2	1,788.4	1,786.3	4.2	3.8	174.34	-57.1	55.7	163.1	155.5	7.61	21.440	
1,900.0	1,896.9	1,887.4	1,885.1	4.4	4.1	175.22	-63.6	58.3	176.7	168.6	8.05	21.950	
2,000.0	1,996.7	1,986.4	1,983.9	4.7	4.3	175.99	-70.0	60.8	190.3	181.8	8.49	22.406	
2,100.0	2,096.4	2,085.5	2,082.7	4.9	4.6	176.64	-76.4	63.3	204.0	195.0	8.94	22.818	
2,200.0	2,196.2	2,184.5	2,181.5	5.2	4.8	177.22	-82.9	65.8	217.6	208.3	9.39	23.190	
2,300.0	2,295.9	2,283.5	2,280.3	5.5	5.1	177.73	-89.3	68.3	231.4	221.5	9.83	23.527	
2,400.0	2,395.7	2,382.6	2,379.1	5.7	5.3	178.18	-95.7	70.8	245.1	234.8	10.28	23.835	
2,500.0	2,495.5	2,481.6	2,477.8	6.0	5.6	178.58	-102.2	73.3	258.8	248.1	10.73	24.117	
2,600.0	2,595.2	2,580.7	2,576.6	6.2	5.8	178.95	-108.6	75.8	272.6	261.4	11.18	24.376	
2,700.0	2,695.0	2,679.7	2,675.4	6.5	6.1	179.27	-115.0	78.4	286.3	274.7	11.63	24.614	
2,800.0	2,794.7	2,778.7	2,774.2	6.7	6.3	179.57	-121.5	80.9	300.1	288.0	12.08	24.835	
2,900.0	2,894.5	2,877.8	2,873.0	7.0	6.6	179.84	-127.9	83.4	313.9	301.3	12.53	25.039	
3,000.0	2,994.2	2,976.8	2,971.8	7.2	6.8	-179.91	-134.3	85.9	327.6	314.7	12.99	25.229	
3,100.0	3,094.0	3,075.8	3,070.6	7.5	7.1	-179.68	-140.8	88.4	341.4	328.0	13.44	25.405	
3,200.0	3,193.7	3,174.9	3,169.4	7.8	7.4	-179.47	-147.2	90.9	355.2	341.3	13.89	25.570	
3,300.0	3,293.5	3,273.9	3,268.2	8.0	7.6	-179.27	-153.7	93.4	369.0	354.7	14.34	25.724	
3,400.0	3,393.3	3,373.0	3,367.0	8.3	7.9	-179.09	-160.1	95.9	382.8	368.0	14.80	25.869	
3,500.0	3,493.0	3,472.0	3,465.8	8.5	8.1	-178.92	-166.5	98.4	396.6	381.4	15.25	26.005	
3,600.0	3,592.8	3,571.0	3,564.6	8.8	8.4	-178.76	-173.0	101.0	410.4	394.7	15.70	26.133	
3,700.0	3,692.5	3,670.1	3,663.4	9.0	8.7	-178.62	-179.4	103.5	424.2	408.1	16.16	26.253	
3,800.0	3,792.3	3,769.1	3,762.2	9.3	8.9	-178.48	-185.8	106.0	438.0	421.4	16.61	26.367	
3,900.0	3,892.0	3,868.1	3,861.0	9.6	9.2	-178.35	-192.3	108.5	451.8	434.8	17.07	26.474	
4,000.0	3,991.8	3,967.2	3,959.8	9.8	9.4	-178.23	-198.7	111.0	465.7	448.1	17.52	26.576	
4,100.0	4,091.6	4,066.2	4,058.6	10.1	9.7	-178.11	-205.1	113.5	479.5	461.5	17.98	26.673	
4,200.0	4,191.3	4,165.2	4,157.4	10.3	9.9	-178.01	-211.6	116.0	493.3	474.9	18.43	26.765	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 S26-T10N-R58W - Razor Federal #26J-3512B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

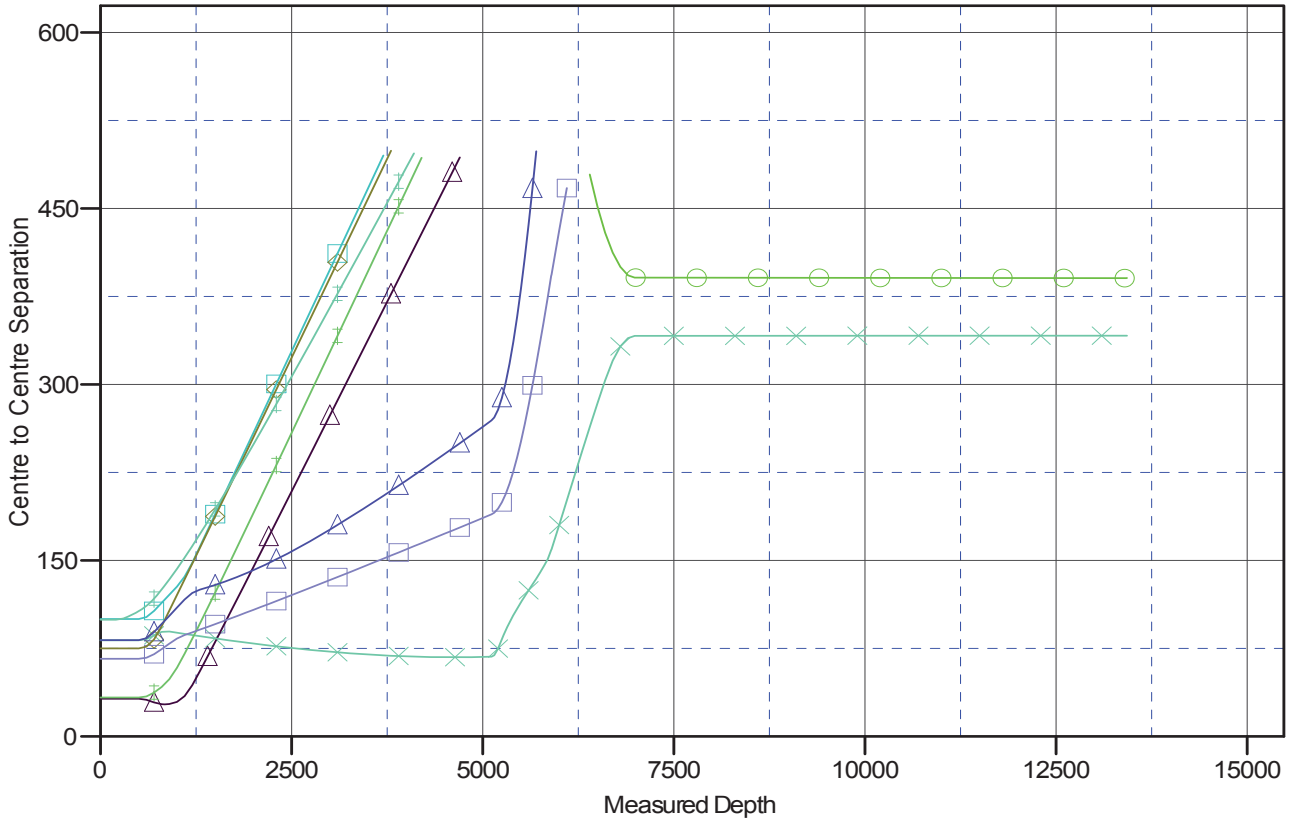
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	137.53	-73.8	67.6	100.1				
100.0	100.0	100.0	100.0	0.1	0.1	137.53	-73.8	67.6	100.1	99.9	0.19	533.215	
200.0	200.0	200.0	200.0	0.3	0.3	137.53	-73.8	67.6	100.1	99.4	0.64	157.049	
300.0	300.0	300.0	300.0	0.5	0.5	137.53	-73.8	67.6	100.1	99.0	1.09	92.086	
400.0	400.0	400.0	400.0	0.8	0.8	137.53	-73.8	67.6	100.1	98.5	1.54	65.141	
500.0	500.0	500.0	500.0	1.0	1.0	137.53	-73.8	67.6	100.1	98.1	1.99	50.394	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	170.47	-73.8	67.6	101.8	99.4	2.44	41.796	
700.0	699.8	699.8	699.8	1.4	1.4	170.92	-73.8	67.6	107.0	104.1	2.89	37.073	
800.0	799.6	799.6	799.6	1.7	1.7	171.47	-73.8	67.6	113.9	110.5	3.33	34.180	
900.0	899.4	899.4	899.4	1.9	1.9	171.97	-73.8	67.6	120.8	117.0	3.78	31.956	
1,000.0	999.1	999.1	999.1	2.2	2.1	172.40	-73.8	67.6	127.7	123.4	4.23	30.195	
1,100.0	1,098.9	1,094.4	1,094.4	2.4	2.3	172.87	-75.1	68.4	136.2	131.6	4.65	29.313	
1,200.0	1,198.6	1,189.1	1,188.9	2.7	2.5	173.43	-79.1	70.9	148.0	143.0	5.05	29.308	SF
1,300.0	1,298.4	1,287.5	1,287.2	2.9	2.7	174.02	-84.9	74.5	161.8	156.4	5.46	29.616	
1,400.0	1,398.1	1,386.6	1,385.9	3.2	2.9	174.52	-90.7	78.2	175.7	169.8	5.88	29.876	
1,500.0	1,497.9	1,485.6	1,484.7	3.4	3.1	174.94	-96.6	81.9	189.5	183.2	6.30	30.079	
1,600.0	1,597.6	1,584.6	1,583.5	3.7	3.3	175.31	-102.4	85.6	203.4	196.6	6.73	30.237	
1,700.0	1,697.4	1,683.6	1,682.3	3.9	3.5	175.63	-108.3	89.2	217.2	210.1	7.16	30.361	
1,800.0	1,797.2	1,782.7	1,781.1	4.2	3.8	175.91	-114.1	92.9	231.1	223.5	7.59	30.459	
1,900.0	1,896.9	1,881.7	1,879.9	4.4	4.0	176.16	-120.0	96.6	245.0	237.0	8.02	30.536	
2,000.0	1,996.7	1,980.7	1,978.7	4.7	4.2	176.38	-125.8	100.3	258.9	250.4	8.46	30.599	
2,100.0	2,096.4	2,079.8	2,077.4	4.9	4.5	176.58	-131.7	104.0	272.8	263.9	8.90	30.650	
2,200.0	2,196.2	2,178.8	2,176.2	5.2	4.7	176.76	-137.5	107.6	286.7	277.3	9.34	30.690	
2,300.0	2,295.9	2,277.8	2,275.0	5.5	4.9	176.92	-143.4	111.3	300.5	290.8	9.78	30.722	
2,400.0	2,395.7	2,376.8	2,373.8	5.7	5.2	177.07	-149.2	115.0	314.4	304.2	10.23	30.749	
2,500.0	2,495.5	2,475.9	2,472.6	6.0	5.4	177.21	-155.1	118.7	328.3	317.7	10.67	30.770	
2,600.0	2,595.2	2,574.9	2,571.4	6.2	5.7	177.33	-160.9	122.4	342.2	331.1	11.12	30.787	
2,700.0	2,695.0	2,673.9	2,670.2	6.5	5.9	177.45	-166.7	126.0	356.1	344.6	11.56	30.800	
2,800.0	2,794.7	2,772.9	2,768.9	6.7	6.2	177.56	-172.6	129.7	370.0	358.0	12.01	30.811	
2,900.0	2,894.5	2,872.0	2,867.7	7.0	6.4	177.66	-178.4	133.4	383.9	371.5	12.46	30.820	
3,000.0	2,994.2	2,971.0	2,966.5	7.2	6.7	177.75	-184.3	137.1	397.8	384.9	12.91	30.826	
3,100.0	3,094.0	3,070.0	3,065.3	7.5	6.9	177.84	-190.1	140.8	411.7	398.4	13.35	30.831	
3,200.0	3,193.7	3,169.0	3,164.1	7.8	7.2	177.92	-196.0	144.4	425.7	411.8	13.80	30.835	
3,300.0	3,293.5	3,268.1	3,262.9	8.0	7.5	177.99	-201.8	148.1	439.6	425.3	14.25	30.837	
3,400.0	3,393.3	3,367.1	3,361.7	8.3	7.7	178.06	-207.7	151.8	453.5	438.8	14.70	30.839	
3,500.0	3,493.0	3,466.1	3,460.4	8.5	8.0	178.13	-213.5	155.5	467.4	452.2	15.15	30.839	
3,600.0	3,592.8	3,565.2	3,559.2	8.8	8.2	178.19	-219.4	159.1	481.3	465.7	15.61	30.840	
3,700.0	3,692.5	3,664.2	3,658.0	9.0	8.5	178.25	-225.2	162.8	495.2	479.1	16.06	30.839	

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 Federal #26J-2309A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor Federal #26J-2309A	**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 @ 4742.1ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor Federal #26J-2309A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.08°



LEGEND

Razor Federal #26J-3512B, HZ, Plan #1 V0
Razor Federal #26J-2310B, HZ, Plan #1 V0
Razor #26J-2633L, HZ, Plan #1 V0
Razor Federal #26J-3509A, HZ, Plan #1 V0
Razor Federal #26J-3510B, HZ, Plan #1 V0
Razor Federal #26J-2311A, HZ, Plan #1 V0
Razor #26K-2308B, HZ, Plan #1 V0
Razor Federal #26J-3511A, HZ, Plan #1 V0
Razor Federal #26J-2312B, HZ, Plan #1 V0