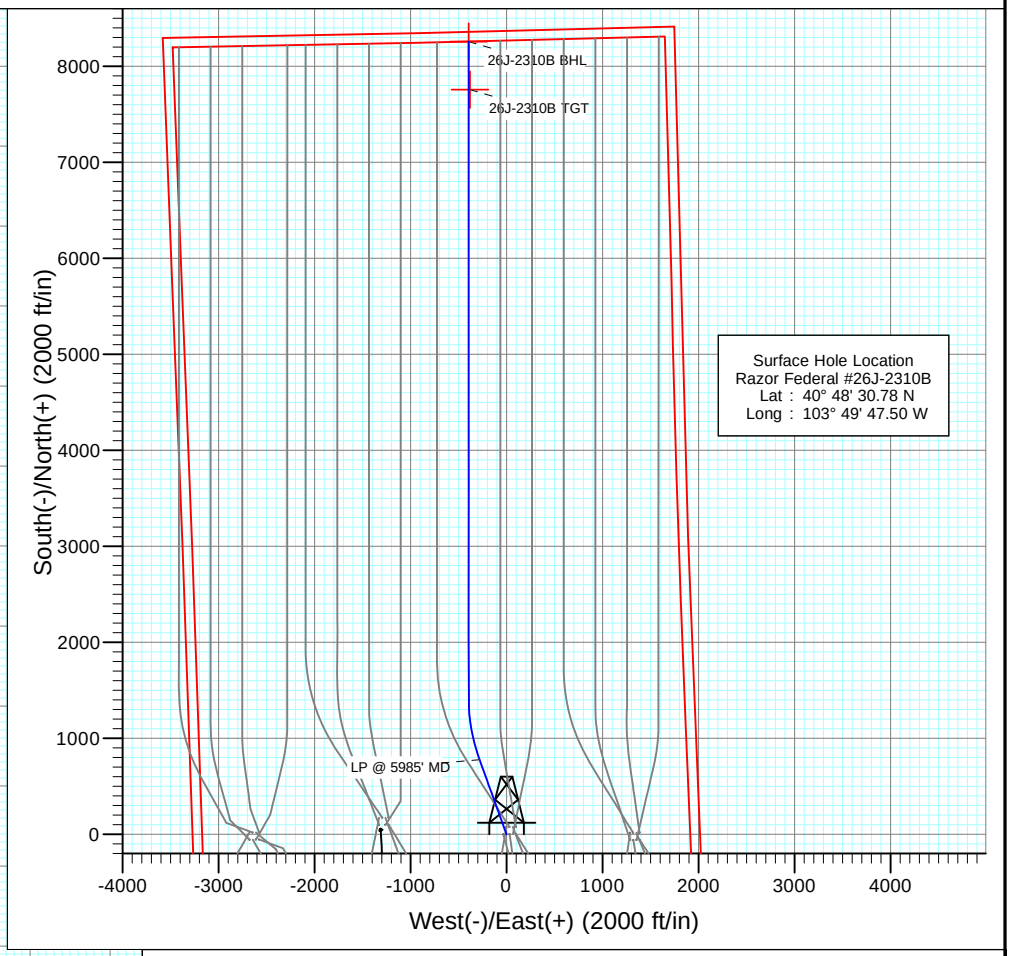
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor Federal #26J-2310B
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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	900.0	4.00	340.13	899.8	6.6	-2.4	2.00	340.13	6.7	
4	5204.1	4.00	340.13	5193.5	288.9	-104.4	0.00	0.00	293.6	
5	5985.9	90.00	340.13	5678.0	777.6	-281.0	11.00	0.00	790.1	
6	6648.3	90.00	0.00	5678.0	1426.7	-394.7	3.00	90.00	1444.0	
7	13479.2	90.00	0.00	5678.0	8257.7	-394.7	0.00	0.00	8267.1	26J-2310B BHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
26J-2310B BHL	8257.7	-394.7	1550016.43	3461932.54	40° 49' 52.43 N	103° 49' 50.61 W
26J-2310B TGT	7757.6	-381.4	1549516.35	3461945.86	40° 49' 47.49 N	103° 49' 50.56 W

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

Magnetic Field
Strength: 53237.6snT
Dip Angle: 67.46°
Date: 5/16/2013
Model: IGRF2010

Plan #1
Razor Federal #26J-2310B
WELL @ 4742.1ft (Original Well Elev)
Ground Elevation @ 4725.6
North American Datum 1983
Well Razor Federal #26J-2310B, Grid North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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-2310B

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,541,758.77 ft	**Latitude:**	40.808550
	+E/-W	0.0 ft	**Easting:**	3,462,327.26 ft	**Longitude:**	-103.829861
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	357.26

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	4.00	340.13	899.8	6.6	-2.4	2.00	2.00	0.00	340.13	
5,204.1	4.00	340.13	5,193.5	288.9	-104.4	0.00	0.00	0.00	0.00	
5,985.9	90.00	340.13	5,678.0	777.6	-281.0	11.00	11.00	0.00	0.00	
6,648.3	90.00	0.00	5,678.0	1,426.7	-394.7	3.00	0.00	3.00	90.00	
13,479.2	90.00	0.00	5,678.0	8,257.7	-394.7	0.00	0.00	0.00	0.00	26J-2310B BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	KOP @ 700' MD
800.0	2.00	340.13	800.0	1.6	-0.6	1.7	2.00	2.00	
900.0	4.00	340.13	899.8	6.6	-2.4	6.7	2.00	2.00	EOB; 4°
1,000.0	4.00	340.13	999.6	13.1	-4.7	13.3	0.00	0.00	
1,100.0	4.00	340.13	1,099.4	19.7	-7.1	20.0	0.00	0.00	
1,200.0	4.00	340.13	1,199.1	26.2	-9.5	26.7	0.00	0.00	
1,300.0	4.00	340.13	1,298.9	32.8	-11.9	33.3	0.00	0.00	
1,400.0	4.00	340.13	1,398.6	39.4	-14.2	40.0	0.00	0.00	
1,500.0	4.00	340.13	1,498.4	45.9	-16.6	46.7	0.00	0.00	
1,600.0	4.00	340.13	1,598.1	52.5	-19.0	53.3	0.00	0.00	
1,700.0	4.00	340.13	1,697.9	59.0	-21.3	60.0	0.00	0.00	
1,800.0	4.00	340.13	1,797.6	65.6	-23.7	66.7	0.00	0.00	
1,900.0	4.00	340.13	1,897.4	72.2	-26.1	73.3	0.00	0.00	
2,000.0	4.00	340.13	1,997.2	78.7	-28.5	80.0	0.00	0.00	
2,100.0	4.00	340.13	2,096.9	85.3	-30.8	86.7	0.00	0.00	
2,200.0	4.00	340.13	2,196.7	91.8	-33.2	93.3	0.00	0.00	
2,300.0	4.00	340.13	2,296.4	98.4	-35.6	100.0	0.00	0.00	
2,400.0	4.00	340.13	2,396.2	105.0	-37.9	106.7	0.00	0.00	
2,500.0	4.00	340.13	2,495.9	111.5	-40.3	113.3	0.00	0.00	
2,600.0	4.00	340.13	2,595.7	118.1	-42.7	120.0	0.00	0.00	
2,700.0	4.00	340.13	2,695.5	124.6	-45.0	126.7	0.00	0.00	
2,800.0	4.00	340.13	2,795.2	131.2	-47.4	133.3	0.00	0.00	
2,900.0	4.00	340.13	2,895.0	137.8	-49.8	140.0	0.00	0.00	
3,000.0	4.00	340.13	2,994.7	144.3	-52.2	146.7	0.00	0.00	
3,100.0	4.00	340.13	3,094.5	150.9	-54.5	153.3	0.00	0.00	
3,200.0	4.00	340.13	3,194.2	157.5	-56.9	160.0	0.00	0.00	
3,300.0	4.00	340.13	3,294.0	164.0	-59.3	166.7	0.00	0.00	
3,400.0	4.00	340.13	3,393.7	170.6	-61.6	173.3	0.00	0.00	
3,500.0	4.00	340.13	3,493.5	177.1	-64.0	180.0	0.00	0.00	
3,600.0	4.00	340.13	3,593.3	183.7	-66.4	186.7	0.00	0.00	
3,700.0	4.00	340.13	3,693.0	190.3	-68.8	193.3	0.00	0.00	
3,800.0	4.00	340.13	3,792.8	196.8	-71.1	200.0	0.00	0.00	
3,900.0	4.00	340.13	3,892.5	203.4	-73.5	206.7	0.00	0.00	
4,000.0	4.00	340.13	3,992.3	209.9	-75.9	213.3	0.00	0.00	
4,100.0	4.00	340.13	4,092.0	216.5	-78.2	220.0	0.00	0.00	
4,200.0	4.00	340.13	4,191.8	223.1	-80.6	226.6	0.00	0.00	
4,300.0	4.00	340.13	4,291.6	229.6	-83.0	233.3	0.00	0.00	
4,400.0	4.00	340.13	4,391.3	236.2	-85.4	240.0	0.00	0.00	
4,500.0	4.00	340.13	4,491.1	242.7	-87.7	246.6	0.00	0.00	
4,600.0	4.00	340.13	4,590.8	249.3	-90.1	253.3	0.00	0.00	
4,700.0	4.00	340.13	4,690.6	255.9	-92.5	260.0	0.00	0.00	
4,800.0	4.00	340.13	4,790.3	262.4	-94.8	266.6	0.00	0.00	
4,900.0	4.00	340.13	4,890.1	269.0	-97.2	273.3	0.00	0.00	
5,000.0	4.00	340.13	4,989.9	275.5	-99.6	280.0	0.00	0.00	
5,100.0	4.00	340.13	5,089.6	282.1	-102.0	286.6	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2310B	**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	340.13	5,189.4	288.7	-104.3	293.3	0.00	0.00	
5,204.1	4.00	340.13	5,193.5	288.9	-104.4	293.6	0.00	0.00	Start 11° Build
5,300.0	14.55	340.13	5,288.0	303.4	-109.7	308.3	11.00	11.00	
5,400.0	25.55	340.13	5,381.8	335.6	-121.3	341.0	11.00	11.00	
5,500.0	36.55	340.13	5,467.3	384.1	-138.8	390.2	11.00	11.00	
5,600.0	47.55	340.13	5,541.4	447.0	-161.5	454.2	11.00	11.00	
5,600.8	47.64	340.13	5,542.0	447.5	-161.7	454.7	11.00	11.00	Top Niobrara
5,700.0	58.55	340.13	5,601.5	522.0	-188.6	530.4	11.00	11.00	
5,800.0	69.55	340.13	5,645.2	606.4	-219.2	616.2	11.00	11.00	
5,900.0	80.55	340.13	5,670.9	697.1	-252.0	708.4	11.00	11.00	
5,985.9	90.00	340.13	5,678.0	777.6	-281.0	790.1	11.00	11.00	LP @ 5985' MD
6,000.0	90.00	340.55	5,678.0	790.8	-285.8	803.6	3.00	0.00	
6,100.0	90.00	343.55	5,678.0	886.0	-316.6	900.1	3.00	0.00	
6,200.0	90.00	346.55	5,678.0	982.6	-342.4	997.8	3.00	0.00	
6,300.0	90.00	349.55	5,678.0	1,080.4	-363.1	1,096.5	3.00	0.00	7"
6,400.0	90.00	352.55	5,678.0	1,179.2	-378.6	1,195.9	3.00	0.00	
6,500.0	90.00	355.55	5,678.0	1,278.6	-389.0	1,295.7	3.00	0.00	
6,600.0	90.00	358.55	5,678.0	1,378.5	-394.1	1,395.7	3.00	0.00	
6,648.3	90.00	0.00	5,678.0	1,426.7	-394.7	1,444.0	3.00	0.00	EOT; 0° Az
6,700.0	90.00	0.00	5,678.0	1,478.5	-394.7	1,495.6	0.00	0.00	
6,800.0	90.00	0.00	5,678.0	1,578.5	-394.7	1,595.5	0.00	0.00	
6,900.0	90.00	0.00	5,678.0	1,678.5	-394.7	1,695.4	0.00	0.00	
7,000.0	90.00	0.00	5,678.0	1,778.5	-394.7	1,795.3	0.00	0.00	
7,100.0	90.00	0.00	5,678.0	1,878.5	-394.7	1,895.2	0.00	0.00	
7,200.0	90.00	0.00	5,678.0	1,978.5	-394.7	1,995.1	0.00	0.00	
7,300.0	90.00	0.00	5,678.0	2,078.5	-394.7	2,094.9	0.00	0.00	
7,400.0	90.00	0.00	5,678.0	2,178.5	-394.7	2,194.8	0.00	0.00	
7,500.0	90.00	0.00	5,678.0	2,278.5	-394.7	2,294.7	0.00	0.00	
7,600.0	90.00	0.00	5,678.0	2,378.5	-394.7	2,394.6	0.00	0.00	
7,700.0	90.00	0.00	5,678.0	2,478.5	-394.7	2,494.5	0.00	0.00	
7,800.0	90.00	0.00	5,678.0	2,578.5	-394.7	2,594.4	0.00	0.00	
7,900.0	90.00	0.00	5,678.0	2,678.5	-394.7	2,694.3	0.00	0.00	
8,000.0	90.00	0.00	5,678.0	2,778.5	-394.7	2,794.1	0.00	0.00	
8,100.0	90.00	0.00	5,678.0	2,878.5	-394.7	2,894.0	0.00	0.00	
8,200.0	90.00	0.00	5,678.0	2,978.5	-394.7	2,993.9	0.00	0.00	
8,300.0	90.00	0.00	5,678.0	3,078.5	-394.7	3,093.8	0.00	0.00	
8,400.0	90.00	0.00	5,678.0	3,178.5	-394.7	3,193.7	0.00	0.00	
8,500.0	90.00	0.00	5,678.0	3,278.5	-394.7	3,293.6	0.00	0.00	
8,600.0	90.00	0.00	5,678.0	3,378.5	-394.7	3,393.5	0.00	0.00	
8,700.0	90.00	0.00	5,678.0	3,478.5	-394.7	3,493.3	0.00	0.00	
8,800.0	90.00	0.00	5,678.0	3,578.5	-394.7	3,593.2	0.00	0.00	
8,900.0	90.00	0.00	5,678.0	3,678.5	-394.7	3,693.1	0.00	0.00	
9,000.0	90.00	0.00	5,678.0	3,778.5	-394.7	3,793.0	0.00	0.00	
9,100.0	90.00	0.00	5,678.0	3,878.5	-394.7	3,892.9	0.00	0.00	
9,200.0	90.00	0.00	5,678.0	3,978.5	-394.7	3,992.8	0.00	0.00	
9,300.0	90.00	0.00	5,678.0	4,078.5	-394.7	4,092.7	0.00	0.00	
9,400.0	90.00	0.00	5,678.0	4,178.5	-394.7	4,192.6	0.00	0.00	
9,500.0	90.00	0.00	5,678.0	4,278.5	-394.7	4,292.4	0.00	0.00	
9,600.0	90.00	0.00	5,678.0	4,378.5	-394.7	4,392.3	0.00	0.00	
9,700.0	90.00	0.00	5,678.0	4,478.5	-394.7	4,492.2	0.00	0.00	
9,800.0	90.00	0.00	5,678.0	4,578.5	-394.7	4,592.1	0.00	0.00	
9,900.0	90.00	0.00	5,678.0	4,678.5	-394.7	4,692.0	0.00	0.00	

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Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor Federal #26J-2310B	**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	5,678.0	4,778.5	-394.7	4,791.9	0.00	0.00	
10,100.0	90.00	0.00	5,678.0	4,878.5	-394.7	4,891.8	0.00	0.00	
10,200.0	90.00	0.00	5,678.0	4,978.5	-394.7	4,991.6	0.00	0.00	
10,300.0	90.00	0.00	5,678.0	5,078.5	-394.7	5,091.5	0.00	0.00	
10,400.0	90.00	0.00	5,678.0	5,178.5	-394.7	5,191.4	0.00	0.00	
10,500.0	90.00	0.00	5,678.0	5,278.5	-394.7	5,291.3	0.00	0.00	
10,600.0	90.00	0.00	5,678.0	5,378.5	-394.7	5,391.2	0.00	0.00	
10,700.0	90.00	0.00	5,678.0	5,478.5	-394.7	5,491.1	0.00	0.00	
10,800.0	90.00	0.00	5,678.0	5,578.5	-394.7	5,591.0	0.00	0.00	
10,900.0	90.00	0.00	5,678.0	5,678.5	-394.7	5,690.8	0.00	0.00	
11,000.0	90.00	0.00	5,678.0	5,778.5	-394.7	5,790.7	0.00	0.00	
11,100.0	90.00	0.00	5,678.0	5,878.5	-394.7	5,890.6	0.00	0.00	
11,200.0	90.00	0.00	5,678.0	5,978.5	-394.7	5,990.5	0.00	0.00	
11,300.0	90.00	0.00	5,678.0	6,078.5	-394.7	6,090.4	0.00	0.00	
11,400.0	90.00	0.00	5,678.0	6,178.5	-394.7	6,190.3	0.00	0.00	
11,500.0	90.00	0.00	5,678.0	6,278.5	-394.7	6,290.2	0.00	0.00	
11,600.0	90.00	0.00	5,678.0	6,378.5	-394.7	6,390.0	0.00	0.00	
11,700.0	90.00	0.00	5,678.0	6,478.5	-394.7	6,489.9	0.00	0.00	
11,800.0	90.00	0.00	5,678.0	6,578.5	-394.7	6,589.8	0.00	0.00	
11,900.0	90.00	0.00	5,678.0	6,678.5	-394.7	6,689.7	0.00	0.00	
12,000.0	90.00	0.00	5,678.0	6,778.5	-394.7	6,789.6	0.00	0.00	
12,100.0	90.00	0.00	5,678.0	6,878.5	-394.7	6,889.5	0.00	0.00	
12,200.0	90.00	0.00	5,678.0	6,978.5	-394.7	6,989.4	0.00	0.00	
12,300.0	90.00	0.00	5,678.0	7,078.5	-394.7	7,089.2	0.00	0.00	
12,400.0	90.00	0.00	5,678.0	7,178.5	-394.7	7,189.1	0.00	0.00	
12,500.0	90.00	0.00	5,678.0	7,278.5	-394.7	7,289.0	0.00	0.00	
12,600.0	90.00	0.00	5,678.0	7,378.5	-394.7	7,388.9	0.00	0.00	
12,700.0	90.00	0.00	5,678.0	7,478.5	-394.7	7,488.8	0.00	0.00	
12,800.0	90.00	0.00	5,678.0	7,578.5	-394.7	7,588.7	0.00	0.00	
12,900.0	90.00	0.00	5,678.0	7,678.5	-394.7	7,688.6	0.00	0.00	
13,000.0	90.00	0.00	5,678.0	7,778.5	-394.7	7,788.4	0.00	0.00	
13,100.0	90.00	0.00	5,678.0	7,878.5	-394.7	7,888.3	0.00	0.00	
13,200.0	90.00	0.00	5,678.0	7,978.5	-394.7	7,988.2	0.00	0.00	
13,300.0	90.00	0.00	5,678.0	8,078.5	-394.7	8,088.1	0.00	0.00	
13,400.0	90.00	0.00	5,678.0	8,178.5	-394.7	8,188.0	0.00	0.00	
13,479.2	90.00	0.00	5,678.0	8,257.7	-394.7	8,267.1	0.00	0.00	PBHL @ 13479' 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-2310B TGT - plan misses target center by 13.3ft at 12979.1ft MD (5678.0 TVD, 7757.6 N, -394.7 E) - Point	0.00	0.00	5,678.0	7,757.6	-381.4	1,549,516.35	3,461,945.86	40.829858	-103.830711
26J-2310B BHL - plan hits target center - Point	0.00	0.00	5,678.0	8,257.7	-394.7	1,550,016.43	3,461,932.56	40.831231	-103.830725

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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)
6,300.0	5,678.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,600.8	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
700.0	700.0	0.0	0.0	KOP @ 700' MD
900.0	899.8	6.6	-2.4	EOB; 4°
5,204.1	5,193.5	288.9	-104.4	Start 11° Build
5,985.9	5,678.0	777.6	-281.0	LP @ 5985' MD
6,648.3	5,678.0	1,426.7	-394.7	EOT; 0° Az
13,479.2	5,678.0	8,257.7	-394.7	PBHL @ 13479' MD

Whiting Petroleum Corporation

Weld County, CO
S26-T10N-R58W
Razor Federal #26J-2310B
HZ
Plan #1

Anticollision Report

22 May, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	13,479.1	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	419.5	419.7	31.5	29.9	19.848	CC
Razor #26J-2633L - HZ - Plan #1	500.0	500.1	31.8	29.8	16.295	ES
Razor #26J-2633L - HZ - Plan #1	800.0	799.5	38.5	35.2	11.607	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						Out of range
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-2309A - HZ - Plan #1	4,642.6	4,638.4	67.6	46.6	3.223	CC
Razor Federal #26J-2309A - HZ - Plan #1	13,479.2	13,427.8	341.7	38.4	1.127	Level 2, ES, SF
Razor Federal #26J-2311A - HZ - Plan #1	1,014.8	1,012.5	121.3	117.0	28.192	CC
Razor Federal #26J-2311A - HZ - Plan #1	13,479.2	13,283.4	341.6	38.0	1.125	Level 2, ES, SF
Razor Federal #26J-2312B - HZ - Plan #1	700.0	700.0	66.2	63.3	22.934	CC, ES
Razor Federal #26J-2312B - HZ - Plan #1	5,204.1	5,200.9	226.8	201.7	9.044	SF
Razor Federal #26J-3509A - HZ - Plan #1	1,505.4	1,504.9	11.3	4.8	1.753	CC, ES, SF
Razor Federal #26J-3510B - HZ - Plan #1	600.0	600.0	32.9	30.5	13.527	CC
Razor Federal #26J-3510B - HZ - Plan #1	700.0	699.8	33.2	30.3	11.618	ES
Razor Federal #26J-3510B - HZ - Plan #1	800.0	799.3	35.4	32.1	10.836	SF
Razor Federal #26J-3511A - HZ - Plan #1	1,198.7	1,198.4	87.3	82.3	17.312	CC
Razor Federal #26J-3511A - HZ - Plan #1	1,200.0	1,199.7	87.3	82.3	17.291	ES
Razor Federal #26J-3511A - HZ - Plan #1	1,600.0	1,595.8	103.7	96.8	15.092	SF
Razor Federal #26J-3512B - HZ - Plan #1	700.0	700.0	99.1	96.2	34.354	CC, ES
Razor Federal #26J-3512B - HZ - Plan #1	1,300.0	1,292.3	125.6	120.1	22.886	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	-91.16	-0.7	-32.4	32.4				
100.0	100.0	100.0	100.0	0.1	0.1	-91.16	-0.7	-32.4	32.4	32.2	0.19	172.578	
200.0	200.0	200.0	200.0	0.3	0.3	-91.16	-0.7	-32.4	32.4	31.8	0.64	50.830	
300.0	300.0	300.2	300.2	0.5	0.5	-94.20	-2.3	-31.9	32.0	31.0	1.06	30.077	
400.0	400.0	400.2	400.1	0.8	0.7	-103.00	-7.1	-30.7	31.5	30.0	1.50	21.024	
419.5	419.5	419.7	419.5	0.8	0.8	-104.93	-8.1	-30.4	31.5	29.9	1.58	19.848	CC
500.0	500.0	500.1	499.8	1.0	1.0	-112.86	-12.3	-29.3	31.8	29.8	1.95	16.295	ES
600.0	600.0	599.9	599.5	1.2	1.2	-122.26	-17.6	-27.9	33.0	30.5	2.41	13.665	
700.0	700.0	699.8	699.2	1.4	1.4	-130.80	-22.8	-26.5	35.0	32.1	2.88	12.153	
800.0	800.0	799.5	798.8	1.7	1.7	-120.61	-28.1	-25.1	38.5	35.2	3.32	11.607	SF
900.0	899.8	898.9	898.0	1.9	1.9	-131.84	-33.3	-23.7	45.3	41.5	3.76	12.023	
1,000.0	999.6	998.1	997.1	2.1	2.2	-141.21	-38.5	-22.3	54.6	50.4	4.20	12.990	
1,100.0	1,099.4	1,097.4	1,096.2	2.4	2.4	-147.72	-43.8	-20.9	65.0	60.4	4.65	13.987	
1,200.0	1,199.1	1,196.6	1,195.3	2.6	2.7	-152.40	-49.0	-19.5	76.0	70.9	5.09	14.923	
1,300.0	1,298.9	1,295.8	1,294.4	2.8	2.9	-155.89	-54.2	-18.1	87.4	81.8	5.54	15.772	
1,400.0	1,398.6	1,395.1	1,393.4	3.1	3.2	-158.57	-59.4	-16.7	99.0	93.0	5.99	16.532	
1,500.0	1,498.4	1,494.3	1,492.5	3.3	3.4	-160.68	-64.7	-15.3	110.7	104.3	6.44	17.210	
1,600.0	1,598.1	1,593.5	1,591.6	3.6	3.7	-162.39	-69.9	-13.9	122.6	115.8	6.88	17.814	
1,700.0	1,697.9	1,692.8	1,690.7	3.8	3.9	-163.79	-75.1	-12.5	134.6	127.3	7.33	18.355	
1,800.0	1,797.6	1,792.0	1,789.8	4.1	4.1	-164.96	-80.3	-11.1	146.7	138.9	7.79	18.840	
1,900.0	1,897.4	1,891.2	1,888.9	4.3	4.4	-165.96	-85.5	-9.7	158.8	150.6	8.24	19.278	
2,000.0	1,997.2	1,990.4	1,987.9	4.6	4.6	-166.81	-90.8	-8.3	170.9	162.2	8.69	19.673	
2,100.0	2,096.9	2,089.7	2,087.0	4.8	4.9	-167.55	-96.0	-7.0	183.1	174.0	9.14	20.032	
2,200.0	2,196.7	2,188.9	2,186.1	5.1	5.1	-168.20	-101.2	-5.6	195.3	185.7	9.59	20.360	
2,300.0	2,296.4	2,288.1	2,285.2	5.3	5.4	-168.77	-106.4	-4.2	207.5	197.5	10.05	20.660	
2,400.0	2,396.2	2,387.4	2,384.3	5.6	5.6	-169.28	-111.7	-2.8	219.8	209.3	10.50	20.935	
2,500.0	2,495.9	2,486.6	2,483.4	5.9	5.9	-169.74	-116.9	-1.4	232.0	221.1	10.95	21.188	
2,600.0	2,595.7	2,585.8	2,582.4	6.1	6.1	-170.15	-122.1	0.0	244.3	232.9	11.40	21.422	
2,700.0	2,695.5	2,685.1	2,681.5	6.4	6.4	-170.52	-127.3	1.4	256.6	244.7	11.86	21.639	
2,800.0	2,795.2	2,784.3	2,780.6	6.6	6.6	-170.85	-132.5	2.8	268.9	256.6	12.31	21.841	
2,900.0	2,895.0	2,883.5	2,879.7	6.9	6.9	-171.16	-137.8	4.2	281.2	268.4	12.77	22.028	
3,000.0	2,994.7	2,982.7	2,978.8	7.1	7.1	-171.44	-143.0	5.6	293.5	280.3	13.22	22.203	
3,100.0	3,094.5	3,082.0	3,077.9	7.4	7.4	-171.70	-148.2	7.0	305.8	292.1	13.67	22.367	
3,200.0	3,194.2	3,181.2	3,176.9	7.6	7.6	-171.94	-153.4	8.4	318.1	304.0	14.13	22.521	
3,300.0	3,294.0	3,280.4	3,276.0	7.9	7.9	-172.16	-158.7	9.8	330.5	315.9	14.58	22.665	
3,400.0	3,393.7	3,379.7	3,375.1	8.2	8.1	-172.36	-163.9	11.1	342.8	327.8	15.03	22.800	
3,500.0	3,493.5	3,478.9	3,474.2	8.4	8.4	-172.55	-169.1	12.5	355.1	339.6	15.49	22.928	
3,600.0	3,593.3	3,578.1	3,573.3	8.7	8.6	-172.73	-174.3	13.9	367.5	351.5	15.94	23.049	
3,700.0	3,693.0	3,677.4	3,672.3	8.9	8.9	-172.90	-179.5	15.3	379.8	363.4	16.40	23.163	
3,800.0	3,792.8	3,776.6	3,771.4	9.2	9.1	-173.05	-184.8	16.7	392.1	375.3	16.85	23.271	
3,900.0	3,892.5	3,875.8	3,870.5	9.4	9.4	-173.20	-190.0	18.1	404.5	387.2	17.31	23.374	
4,000.0	3,992.3	3,975.0	3,969.6	9.7	9.6	-173.34	-195.2	19.5	416.8	399.1	17.76	23.471	
4,100.0	4,092.0	4,074.3	4,068.7	9.9	9.9	-173.46	-200.4	20.9	429.2	411.0	18.21	23.564	
4,200.0	4,191.8	4,173.5	4,167.8	10.2	10.1	-173.59	-205.7	22.3	441.5	422.9	18.67	23.652	
4,300.0	4,291.6	4,272.7	4,266.8	10.5	10.4	-173.70	-210.9	23.7	453.9	434.8	19.12	23.736	
4,400.0	4,391.3	4,372.0	4,365.9	10.7	10.6	-173.81	-216.1	25.1	466.3	446.7	19.58	23.816	
4,500.0	4,491.1	4,471.2	4,465.0	11.0	10.9	-173.92	-221.3	26.5	478.6	458.6	20.03	23.892	
4,600.0	4,590.8	4,570.4	4,564.1	11.2	11.1	-174.02	-226.5	27.9	491.0	470.5	20.49	23.966	

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-2310B
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-2310B	**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-2309A - 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	22.62	75.7	31.5	82.0				
100.0	100.0	100.0	100.0	0.1	0.1	22.62	75.7	31.5	82.0	81.8	0.19	436.711	
200.0	200.0	200.0	200.0	0.3	0.3	22.62	75.7	31.5	82.0	81.3	0.64	128.626	
300.0	300.0	300.0	300.0	0.5	0.5	22.62	75.7	31.5	82.0	80.9	1.09	75.420	
400.0	400.0	400.0	400.0	0.8	0.8	22.62	75.7	31.5	82.0	80.4	1.54	53.351	
500.0	500.0	500.0	500.0	1.0	1.0	22.62	75.7	31.5	82.0	80.0	1.99	41.274	
600.0	600.0	598.4	598.3	1.2	1.2	21.66	77.1	30.6	82.9	80.5	2.43	34.135	
700.0	700.0	696.5	696.3	1.4	1.4	18.92	81.3	27.9	86.0	83.2	2.88	29.898	
800.0	800.0	796.3	795.9	1.7	1.7	35.94	87.2	24.1	89.1	85.8	3.33	26.734	
900.0	899.8	896.3	895.6	1.9	1.9	34.54	93.0	20.3	89.5	85.7	3.79	23.603	
1,000.0	999.6	996.2	995.4	2.1	2.2	33.77	98.9	16.6	88.5	84.2	4.26	20.778	
1,100.0	1,099.4	1,096.2	1,095.1	2.4	2.4	32.99	104.8	12.8	87.5	82.7	4.73	18.502	
1,200.0	1,199.1	1,196.2	1,194.8	2.6	2.6	32.19	110.6	9.0	86.5	81.3	5.20	16.633	
1,300.0	1,298.9	1,296.2	1,294.6	2.8	2.9	31.37	116.5	5.2	85.5	79.8	5.67	15.076	
1,400.0	1,398.6	1,396.2	1,394.3	3.1	3.2	30.53	122.4	1.5	84.6	78.4	6.15	13.760	
1,500.0	1,498.4	1,496.2	1,494.1	3.3	3.4	29.67	128.2	-2.3	83.6	77.0	6.62	12.636	
1,600.0	1,598.1	1,596.2	1,593.8	3.6	3.7	28.79	134.1	-6.1	82.7	75.6	7.09	11.664	
1,700.0	1,697.9	1,696.2	1,693.6	3.8	3.9	27.89	139.9	-9.9	81.8	74.3	7.56	10.818	
1,800.0	1,797.6	1,796.1	1,793.3	4.1	4.2	26.98	145.8	-13.7	80.9	72.9	8.03	10.075	
1,900.0	1,897.4	1,896.1	1,893.1	4.3	4.4	26.04	151.7	-17.4	80.1	71.6	8.50	9.418	
2,000.0	1,997.2	1,996.1	1,992.8	4.6	4.7	25.08	157.5	-21.2	79.3	70.3	8.97	8.833	
2,100.0	2,096.9	2,096.1	2,092.5	4.8	4.9	24.11	163.4	-25.0	78.5	69.0	9.44	8.310	
2,200.0	2,196.7	2,196.1	2,192.3	5.1	5.2	23.11	169.3	-28.8	77.7	67.8	9.91	7.840	
2,300.0	2,296.4	2,296.1	2,292.0	5.3	5.4	22.09	175.1	-32.5	76.9	66.5	10.37	7.415	
2,400.0	2,396.2	2,396.1	2,391.8	5.6	5.7	21.06	181.0	-36.3	76.2	65.3	10.84	7.030	
2,500.0	2,495.9	2,496.1	2,491.5	5.9	6.0	20.00	186.9	-40.1	75.5	64.2	11.30	6.680	
2,600.0	2,595.7	2,596.0	2,591.3	6.1	6.2	18.93	192.7	-43.9	74.8	63.0	11.76	6.360	
2,700.0	2,695.5	2,696.0	2,691.0	6.4	6.5	17.83	198.6	-47.6	74.1	61.9	12.22	6.067	
2,800.0	2,795.2	2,796.0	2,790.8	6.6	6.7	16.72	204.5	-51.4	73.5	60.8	12.67	5.799	
2,900.0	2,895.0	2,896.0	2,890.5	6.9	7.0	15.58	210.3	-55.2	72.9	59.8	13.13	5.551	
3,000.0	2,994.7	2,996.0	2,990.2	7.1	7.2	14.43	216.2	-59.0	72.3	58.7	13.58	5.324	
3,100.0	3,094.5	3,096.0	3,090.0	7.4	7.5	13.26	222.0	-62.7	71.8	57.7	14.04	5.113	
3,200.0	3,194.2	3,196.0	3,189.7	7.6	7.8	12.07	227.9	-66.5	71.3	56.8	14.49	4.918	
3,300.0	3,294.0	3,296.0	3,289.5	7.9	8.0	10.87	233.8	-70.3	70.8	55.8	14.94	4.737	
3,400.0	3,393.7	3,395.9	3,389.2	8.2	8.3	9.65	239.6	-74.1	70.3	54.9	15.39	4.570	
3,500.0	3,493.5	3,495.9	3,489.0	8.4	8.5	8.41	245.5	-77.8	69.9	54.1	15.84	4.414	
3,600.0	3,593.3	3,595.9	3,588.7	8.7	8.8	7.16	251.4	-81.6	69.5	53.2	16.29	4.269	
3,700.0	3,693.0	3,695.9	3,688.4	8.9	9.0	5.90	257.2	-85.4	69.2	52.4	16.73	4.133	
3,800.0	3,792.8	3,795.9	3,788.2	9.2	9.3	4.63	263.1	-89.2	68.8	51.7	17.18	4.007	
3,900.0	3,892.5	3,895.9	3,887.9	9.4	9.6	3.34	269.0	-93.0	68.6	50.9	17.63	3.889	
4,000.0	3,992.3	3,995.9	3,987.7	9.7	9.8	2.04	274.8	-96.7	68.3	50.2	18.08	3.779	
4,100.0	4,092.0	4,095.9	4,087.4	9.9	10.1	0.74	280.7	-100.5	68.1	49.6	18.52	3.677	
4,200.0	4,191.8	4,195.8	4,187.2	10.2	10.3	-0.57	286.5	-104.3	67.9	48.9	18.97	3.580	
4,300.0	4,291.6	4,295.8	4,286.9	10.5	10.6	-1.89	292.4	-108.1	67.8	48.4	19.42	3.490	
4,400.0	4,391.3	4,395.8	4,386.7	10.7	10.8	-3.22	298.3	-111.8	67.7	47.8	19.87	3.406	
4,500.0	4,491.1	4,495.8	4,486.4	11.0	11.1	-4.54	304.1	-115.6	67.6	47.3	20.32	3.327	
4,600.0	4,590.8	4,595.8	4,586.1	11.2	11.4	-5.87	310.0	-119.4	67.6	46.8	20.77	3.253	
4,642.6	4,633.3	4,638.4	4,628.7	11.3	11.5	-6.44	312.5	-121.0	67.6	46.6	20.97	3.223	CC
4,700.0	4,690.6	4,695.8	4,685.9	11.5	11.6	-7.20	315.9	-123.2	67.6	46.3	21.23	3.183	
4,800.0	4,790.3	4,795.8	4,785.6	11.7	11.9	-8.53	321.7	-126.9	67.6	45.9	21.68	3.118	
4,900.0	4,890.1	4,895.8	4,885.4	12.0	12.1	-9.86	327.6	-130.7	67.7	45.5	22.14	3.057	
5,000.0	4,989.9	4,995.7	4,985.1	12.3	12.4	-11.18	333.5	-134.5	67.8	45.2	22.60	3.000	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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-2309A - 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	5,089.6	5,095.7	5,084.9	12.5	12.6	-12.50	339.3	-138.3	67.9	44.9	23.06	2.946	
5,204.1	5,193.5	5,189.6	5,177.8	12.8	12.9	-13.67	349.2	-144.6	74.2	50.6	23.53	3.152	
5,250.0	5,239.0	5,229.1	5,216.2	12.9	13.1	-14.16	357.5	-149.9	80.5	56.9	23.65	3.406	
5,300.0	5,288.0	5,271.8	5,256.5	13.1	13.3	-15.18	369.1	-157.4	87.0	63.4	23.61	3.686	
5,350.0	5,335.7	5,314.1	5,295.3	13.3	13.5	-16.59	383.2	-166.5	93.0	69.6	23.41	3.973	
5,400.0	5,381.8	5,355.9	5,332.2	13.6	13.8	-18.31	399.8	-177.2	98.5	75.5	23.08	4.269	
5,450.0	5,425.8	5,400.0	5,369.2	13.9	14.1	-20.45	420.0	-190.2	103.7	81.0	22.68	4.572	
5,500.0	5,467.3	5,438.7	5,399.9	14.2	14.4	-22.55	439.7	-202.9	108.4	86.2	22.22	4.879	
5,550.0	5,506.0	5,479.7	5,430.5	14.6	14.8	-24.98	462.7	-217.7	112.9	91.0	21.82	5.173	
5,600.0	5,541.4	5,520.5	5,458.6	15.1	15.2	-27.61	487.5	-233.7	117.1	95.5	21.56	5.431	
5,650.0	5,573.4	5,561.1	5,484.3	15.6	15.6	-30.39	513.9	-250.7	121.2	99.6	21.54	5.625	
5,700.0	5,601.5	5,600.0	5,506.5	16.1	16.0	-33.19	540.8	-268.0	125.2	103.4	21.82	5.737	
5,750.0	5,625.5	5,641.9	5,527.7	16.7	16.6	-36.35	571.2	-287.6	129.2	106.6	22.60	5.716	
5,800.0	5,645.2	5,682.3	5,545.3	17.4	17.1	-39.49	601.7	-307.2	133.2	109.5	23.77	5.604	
5,850.0	5,660.4	5,722.7	5,560.1	18.1	17.7	-42.68	633.3	-327.6	137.4	112.1	25.37	5.418	
5,900.0	5,670.9	5,763.2	5,571.9	18.8	18.3	-45.93	665.9	-348.6	141.9	114.5	27.33	5.190	
5,950.0	5,676.8	5,800.0	5,580.0	19.6	18.9	-48.83	696.1	-368.0	146.6	117.2	29.38	4.988	
5,985.9	5,678.0	5,833.3	5,585.1	20.2	19.4	-51.52	723.7	-385.8	150.0	118.7	31.32	4.790	
6,000.0	5,678.0	5,844.9	5,586.4	20.4	19.6	-52.49	733.4	-392.0	151.6	119.6	32.02	4.735	
6,100.0	5,678.0	5,935.3	5,589.0	21.8	21.1	-57.68	809.5	-440.6	170.7	134.4	36.32	4.701	
6,200.0	5,678.0	6,040.6	5,589.0	23.3	22.7	-61.80	900.7	-493.4	193.5	153.1	40.35	4.795	
6,300.0	5,678.0	6,147.6	5,589.0	24.8	24.5	-65.02	996.1	-541.7	216.7	172.6	44.08	4.915	
6,400.0	5,678.0	6,256.3	5,589.0	26.4	26.3	-67.59	1,095.6	-585.3	240.0	192.4	47.57	5.045	
6,500.0	5,678.0	6,366.7	5,589.0	28.0	28.2	-69.67	1,199.2	-623.7	263.3	212.4	50.86	5.177	
6,600.0	5,678.0	6,479.0	5,589.0	29.6	30.1	-71.39	1,306.6	-656.5	286.3	232.3	53.96	5.306	
6,648.3	5,678.0	6,533.9	5,589.0	30.3	31.1	-72.11	1,359.7	-670.3	297.2	241.8	55.38	5.367	
6,700.0	5,678.0	6,593.3	5,589.0	31.2	32.1	-72.87	1,417.6	-683.4	308.2	250.8	57.36	5.373	
6,800.0	5,678.0	6,710.4	5,589.0	32.8	34.0	-73.95	1,532.9	-704.1	325.1	263.9	61.17	5.315	
6,900.0	5,678.0	6,829.6	5,589.0	34.5	36.0	-74.60	1,651.3	-717.7	336.2	271.2	64.95	5.175	
7,000.0	5,678.0	6,950.1	5,589.0	36.2	37.9	-74.88	1,771.6	-724.1	341.2	272.5	68.69	4.967	
7,100.0	5,678.0	7,057.0	5,589.0	37.9	39.6	-74.90	1,878.5	-724.5	341.5	269.4	72.14	4.735	
7,200.0	5,678.0	7,157.0	5,589.0	39.6	41.1	-74.90	1,978.5	-724.5	341.5	266.1	75.48	4.525	
7,300.0	5,678.0	7,257.0	5,589.0	41.4	42.7	-74.90	2,078.5	-724.5	341.5	262.7	78.85	4.331	
7,400.0	5,678.0	7,357.0	5,589.0	43.1	44.3	-74.90	2,178.5	-724.5	341.5	259.3	82.26	4.152	
7,500.0	5,678.0	7,457.0	5,589.0	44.9	46.0	-74.90	2,278.5	-724.5	341.5	255.9	85.69	3.986	
7,600.0	5,678.0	7,557.0	5,589.0	46.7	47.6	-74.90	2,378.5	-724.5	341.5	252.4	89.14	3.831	
7,700.0	5,678.0	7,657.0	5,589.0	48.5	49.3	-74.90	2,478.5	-724.5	341.5	248.9	92.62	3.688	
7,800.0	5,678.0	7,757.0	5,589.0	50.3	51.0	-74.90	2,578.5	-724.5	341.5	245.4	96.11	3.554	
7,900.0	5,678.0	7,857.0	5,589.0	52.1	52.7	-74.90	2,678.5	-724.5	341.5	241.9	99.62	3.428	
8,000.0	5,678.0	7,957.0	5,589.0	53.9	54.5	-74.90	2,778.5	-724.5	341.5	238.4	103.14	3.311	
8,100.0	5,678.0	8,057.0	5,589.0	55.8	56.2	-74.90	2,878.5	-724.5	341.5	234.9	106.68	3.202	
8,200.0	5,678.0	8,157.0	5,589.0	57.6	57.9	-74.90	2,978.5	-724.5	341.5	231.3	110.23	3.098	
8,300.0	5,678.0	8,257.0	5,589.0	59.4	59.7	-74.90	3,078.5	-724.5	341.5	227.8	113.79	3.002	
8,400.0	5,678.0	8,357.0	5,589.0	61.3	61.5	-74.90	3,178.5	-724.5	341.5	224.2	117.36	2.910	
8,500.0	5,678.0	8,457.0	5,589.0	63.1	63.3	-74.90	3,278.5	-724.5	341.5	220.6	120.94	2.824	
8,600.0	5,678.0	8,557.0	5,589.0	65.0	65.0	-74.90	3,378.5	-724.5	341.5	217.0	124.53	2.743	
8,700.0	5,678.0	8,657.0	5,589.0	66.8	66.8	-74.90	3,478.5	-724.5	341.5	213.4	128.12	2.666	
8,800.0	5,678.0	8,757.0	5,589.0	68.7	68.6	-74.90	3,578.5	-724.5	341.5	209.8	131.73	2.593	
8,900.0	5,678.0	8,857.0	5,589.0	70.6	70.4	-74.90	3,678.5	-724.5	341.5	206.2	135.34	2.524	
9,000.0	5,678.0	8,957.0	5,589.0	72.4	72.2	-74.90	3,778.5	-724.5	341.5	202.6	138.95	2.458	
9,100.0	5,678.0	9,057.0	5,589.0	74.3	74.1	-74.90	3,878.5	-724.5	341.5	199.0	142.57	2.396	
9,200.0	5,678.0	9,157.0	5,589.0	76.2	75.9	-74.90	3,978.5	-724.5	341.5	195.4	146.20	2.336	

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-2310B
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-2310B	**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-2309A - 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
9,300.0	5,678.0	9,257.0	5,589.0	78.0	77.7	-74.90	4,078.5	-724.5	341.5	191.7	149.82	2.280	
9,400.0	5,678.0	9,357.0	5,589.0	79.9	79.5	-74.90	4,178.5	-724.5	341.5	188.1	153.46	2.226	
9,500.0	5,678.0	9,457.0	5,589.0	81.8	81.4	-74.90	4,278.5	-724.5	341.5	184.5	157.10	2.174	
9,600.0	5,678.0	9,557.0	5,589.0	83.7	83.2	-74.90	4,378.5	-724.5	341.6	180.8	160.74	2.125	
9,700.0	5,678.0	9,657.0	5,589.0	85.5	85.1	-74.90	4,478.5	-724.5	341.6	177.2	164.38	2.078	
9,800.0	5,678.0	9,757.0	5,589.0	87.4	86.9	-74.90	4,578.5	-724.5	341.6	173.5	168.03	2.033	
9,900.0	5,678.0	9,857.0	5,589.0	89.3	88.7	-74.90	4,678.5	-724.5	341.6	169.9	171.69	1.989	
10,000.0	5,678.0	9,957.0	5,589.0	91.2	90.6	-74.90	4,778.5	-724.5	341.6	166.2	175.34	1.948	
10,100.0	5,678.0	10,057.0	5,589.0	93.1	92.5	-74.90	4,878.5	-724.5	341.6	162.6	179.00	1.908	
10,200.0	5,678.0	10,157.0	5,589.0	95.0	94.3	-74.90	4,978.5	-724.5	341.6	158.9	182.66	1.870	
10,300.0	5,678.0	10,257.0	5,589.0	96.8	96.2	-74.90	5,078.5	-724.5	341.6	155.2	186.32	1.833	
10,400.0	5,678.0	10,357.0	5,589.0	98.7	98.0	-74.90	5,178.5	-724.5	341.6	151.6	189.98	1.798	
10,500.0	5,678.0	10,457.0	5,589.0	100.6	99.9	-74.90	5,278.5	-724.5	341.6	147.9	193.65	1.764	
10,600.0	5,678.0	10,557.0	5,589.0	102.5	101.8	-74.90	5,378.5	-724.5	341.6	144.2	197.32	1.731	
10,700.0	5,678.0	10,657.0	5,589.0	104.4	103.6	-74.90	5,478.5	-724.5	341.6	140.6	200.99	1.699	
10,800.0	5,678.0	10,757.0	5,589.0	106.3	105.5	-74.90	5,578.5	-724.5	341.6	136.9	204.66	1.669	
10,900.0	5,678.0	10,857.0	5,589.0	108.2	107.4	-74.90	5,678.5	-724.5	341.6	133.2	208.34	1.639	
11,000.0	5,678.0	10,957.0	5,589.0	110.1	109.2	-74.90	5,778.5	-724.5	341.6	129.5	212.01	1.611	
11,100.0	5,678.0	11,057.0	5,589.0	112.0	111.1	-74.90	5,878.5	-724.5	341.6	125.9	215.69	1.584	
11,200.0	5,678.0	11,157.0	5,589.0	113.9	113.0	-74.90	5,978.5	-724.5	341.6	122.2	219.37	1.557	
11,300.0	5,678.0	11,257.0	5,589.0	115.8	114.9	-74.90	6,078.5	-724.5	341.6	118.5	223.05	1.531	
11,400.0	5,678.0	11,357.0	5,589.0	117.7	116.7	-74.90	6,178.5	-724.5	341.6	114.8	226.73	1.506	
11,500.0	5,678.0	11,457.0	5,589.0	119.6	118.6	-74.90	6,278.5	-724.5	341.6	111.1	230.41	1.482	Level 3
11,600.0	5,678.0	11,557.0	5,589.0	121.5	120.5	-74.90	6,378.5	-724.5	341.6	107.5	234.10	1.459	Level 3
11,700.0	5,678.0	11,657.0	5,589.0	123.4	122.4	-74.90	6,478.5	-724.5	341.6	103.8	237.78	1.436	Level 3
11,800.0	5,678.0	11,757.0	5,589.0	125.3	124.3	-74.90	6,578.5	-724.5	341.6	100.1	241.47	1.415	Level 3
11,900.0	5,678.0	11,857.0	5,589.0	127.2	126.1	-74.90	6,678.5	-724.5	341.6	96.4	245.16	1.393	Level 3
12,000.0	5,678.0	11,957.0	5,589.0	129.1	128.0	-74.90	6,778.5	-724.5	341.6	92.7	248.84	1.373	Level 3
12,100.0	5,678.0	12,057.0	5,589.0	131.0	129.9	-74.90	6,878.5	-724.5	341.6	89.0	252.53	1.353	Level 3
12,200.0	5,678.0	12,157.0	5,589.0	132.9	131.8	-74.90	6,978.5	-724.5	341.6	85.3	256.22	1.333	Level 3
12,300.0	5,678.0	12,257.0	5,589.0	134.8	133.7	-74.90	7,078.5	-724.5	341.6	81.7	259.91	1.314	Level 3
12,400.0	5,678.0	12,357.0	5,589.0	136.7	135.6	-74.90	7,178.5	-724.5	341.6	78.0	263.61	1.296	Level 3
12,500.0	5,678.0	12,457.0	5,589.0	138.6	137.5	-74.90	7,278.5	-724.5	341.6	74.3	267.30	1.278	Level 3
12,600.0	5,678.0	12,557.0	5,589.0	140.5	139.4	-74.90	7,378.5	-724.5	341.6	70.6	270.99	1.260	Level 3
12,700.0	5,678.0	12,657.0	5,589.0	142.4	141.2	-74.90	7,478.5	-724.5	341.6	66.9	274.69	1.243	Level 2
12,800.0	5,678.0	12,757.0	5,589.0	144.3	143.1	-74.90	7,578.5	-724.5	341.6	63.2	278.38	1.227	Level 2
12,900.0	5,678.0	12,857.0	5,589.0	146.2	145.0	-74.90	7,678.5	-724.5	341.6	59.5	282.08	1.211	Level 2
13,000.0	5,678.0	12,957.0	5,589.0	148.1	146.9	-74.90	7,778.5	-724.5	341.6	55.8	285.77	1.195	Level 2
13,100.0	5,678.0	13,057.0	5,589.0	150.0	148.8	-74.90	7,878.5	-724.5	341.6	52.1	289.47	1.180	Level 2
13,200.0	5,678.0	13,157.0	5,589.0	151.9	150.7	-74.90	7,978.5	-724.5	341.6	48.4	293.17	1.165	Level 2
13,300.0	5,678.0	13,257.0	5,589.0	153.8	152.6	-74.90	8,078.5	-724.5	341.6	44.7	296.86	1.151	Level 2
13,400.0	5,678.0	13,357.0	5,589.0	155.7	154.5	-74.90	8,178.5	-724.5	341.6	41.0	300.56	1.136	Level 2
13,444.1	5,678.0	13,401.1	5,589.0	156.6	155.3	-74.90	8,222.6	-724.5	341.6	39.4	302.19	1.130	Level 2
13,479.2	5,678.0	13,427.8	5,589.0	157.2	155.7	-74.90	8,249.3	-724.5	341.7	38.4	303.24	1.127	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	51.80	76.9	97.7	124.3				
100.0	100.0	100.0	100.0	0.1	0.1	51.80	76.9	97.7	124.3	124.1	0.19	662.294	
200.0	200.0	200.0	200.0	0.3	0.3	51.80	76.9	97.7	124.3	123.7	0.64	195.067	
300.0	300.0	300.0	300.0	0.5	0.5	51.80	76.9	97.7	124.3	123.2	1.09	114.378	
400.0	400.0	400.0	400.0	0.8	0.8	51.80	76.9	97.7	124.3	122.8	1.54	80.910	
500.0	500.0	500.0	500.0	1.0	1.0	51.80	76.9	97.7	124.3	122.3	1.99	62.594	
600.0	600.0	600.0	600.0	1.2	1.2	51.80	76.9	97.7	124.3	121.9	2.44	51.040	
700.0	700.0	700.0	700.0	1.4	1.4	51.80	76.9	97.7	124.3	121.4	2.88	43.087	
800.0	800.0	800.0	800.0	1.7	1.7	72.44	76.9	97.7	123.8	120.4	3.33	37.128	
900.0	899.8	899.8	899.8	1.9	1.9	74.81	76.9	97.7	122.3	118.5	3.78	32.324	
1,000.0	999.6	998.0	998.0	2.1	2.1	77.21	78.5	97.4	121.3	117.1	4.23	28.645	
1,014.8	1,014.3	1,012.5	1,012.5	2.2	2.1	77.45	79.1	97.3	121.3	117.0	4.30	28.192	CC
1,100.0	1,099.4	1,096.4	1,096.2	2.4	2.3	78.18	83.5	96.5	121.8	117.1	4.69	25.949	
1,200.0	1,199.1	1,196.3	1,195.9	2.6	2.6	78.34	90.4	95.4	123.0	117.8	5.16	23.816	
1,300.0	1,298.9	1,296.3	1,295.7	2.8	2.8	78.51	97.3	94.2	124.1	118.5	5.64	22.012	
1,400.0	1,398.6	1,396.3	1,395.4	3.1	3.0	78.67	104.1	93.0	125.3	119.2	6.12	20.472	
1,500.0	1,498.4	1,496.3	1,495.2	3.3	3.3	78.83	111.0	91.8	126.5	119.9	6.61	19.144	
1,600.0	1,598.1	1,596.3	1,594.9	3.6	3.5	78.98	117.9	90.7	127.7	120.6	7.10	17.990	
1,700.0	1,697.9	1,696.3	1,694.7	3.8	3.8	79.13	124.8	89.5	128.9	121.3	7.59	16.979	
1,800.0	1,797.6	1,796.3	1,794.4	4.1	4.0	79.28	131.6	88.3	130.1	122.0	8.09	16.087	
1,900.0	1,897.4	1,896.3	1,894.2	4.3	4.3	79.43	138.5	87.1	131.3	122.7	8.58	15.294	
2,000.0	1,997.2	1,996.3	1,993.9	4.6	4.5	79.58	145.4	86.0	132.5	123.4	9.08	14.586	
2,100.0	2,096.9	2,096.2	2,093.7	4.8	4.8	79.72	152.3	84.8	133.6	124.1	9.58	13.949	
2,200.0	2,196.7	2,196.2	2,193.4	5.1	5.0	79.86	159.1	83.6	134.8	124.8	10.08	13.374	
2,300.0	2,296.4	2,296.2	2,293.2	5.3	5.3	79.99	166.0	82.4	136.0	125.5	10.58	12.853	
2,400.0	2,396.2	2,396.2	2,392.9	5.6	5.5	80.13	172.9	81.3	137.2	126.1	11.09	12.378	
2,500.0	2,495.9	2,496.2	2,492.7	5.9	5.8	80.26	179.8	80.1	138.4	126.8	11.59	11.943	
2,600.0	2,595.7	2,596.2	2,592.4	6.1	6.0	80.39	186.6	78.9	139.6	127.5	12.10	11.544	
2,700.0	2,695.5	2,696.2	2,692.2	6.4	6.3	80.52	193.5	77.7	140.8	128.2	12.60	11.176	
2,800.0	2,795.2	2,796.2	2,791.9	6.6	6.5	80.64	200.4	76.6	142.0	128.9	13.11	10.836	
2,900.0	2,895.0	2,896.2	2,891.7	6.9	6.8	80.77	207.3	75.4	143.2	129.6	13.61	10.521	
3,000.0	2,994.7	2,996.2	2,991.4	7.1	7.0	80.89	214.1	74.2	144.4	130.3	14.12	10.229	
3,100.0	3,094.5	3,096.2	3,091.1	7.4	7.3	81.01	221.0	73.0	145.6	131.0	14.63	9.956	
3,200.0	3,194.2	3,196.2	3,190.9	7.6	7.5	81.12	227.9	71.9	146.8	131.7	15.13	9.702	
3,300.0	3,294.0	3,296.2	3,290.6	7.9	7.8	81.24	234.8	70.7	148.0	132.4	15.64	9.463	
3,400.0	3,393.7	3,396.2	3,390.4	8.2	8.0	81.35	241.6	69.5	149.2	133.1	16.15	9.240	
3,500.0	3,493.5	3,496.1	3,490.1	8.4	8.3	81.46	248.5	68.3	150.4	133.8	16.66	9.030	
3,600.0	3,593.3	3,596.1	3,589.9	8.7	8.5	81.57	255.4	67.2	151.6	134.4	17.16	8.833	
3,700.0	3,693.0	3,696.1	3,689.6	8.9	8.8	81.68	262.3	66.0	152.8	135.1	17.67	8.647	
3,800.0	3,792.8	3,796.1	3,789.4	9.2	9.1	81.79	269.1	64.8	154.0	135.8	18.18	8.471	
3,900.0	3,892.5	3,896.1	3,889.1	9.4	9.3	81.89	276.0	63.6	155.2	136.5	18.69	8.304	
4,000.0	3,992.3	3,996.1	3,988.9	9.7	9.6	82.00	282.9	62.5	156.4	137.2	19.20	8.147	
4,100.0	4,092.0	4,096.1	4,088.6	9.9	9.8	82.10	289.8	61.3	157.6	137.9	19.71	7.997	
4,200.0	4,191.8	4,196.1	4,188.4	10.2	10.1	82.20	296.6	60.1	158.8	138.6	20.22	7.855	
4,300.0	4,291.6	4,296.1	4,288.1	10.5	10.3	82.30	303.5	58.9	160.0	139.3	20.73	7.720	
4,400.0	4,391.3	4,396.1	4,387.9	10.7	10.6	82.39	310.4	57.8	161.2	140.0	21.24	7.592	
4,500.0	4,491.1	4,496.1	4,487.6	11.0	10.8	82.49	317.3	56.6	162.5	140.7	21.75	7.469	
4,600.0	4,590.8	4,596.1	4,587.4	11.2	11.1	82.58	324.1	55.4	163.7	141.4	22.26	7.352	
4,700.0	4,690.6	4,696.1	4,687.1	11.5	11.3	82.68	331.0	54.2	164.9	142.1	22.77	7.240	
4,800.0	4,790.3	4,796.0	4,786.9	11.7	11.6	82.77	337.9	53.1	166.1	142.8	23.28	7.133	
4,900.0	4,890.1	4,896.0	4,886.6	12.0	11.9	82.86	344.8	51.9	167.3	143.5	23.79	7.031	
5,000.0	4,989.9	4,996.0	4,986.4	12.3	12.1	82.95	351.6	50.7	168.5	144.2	24.30	6.933	

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-2310B
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-2310B	**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
5,100.0	5,089.6	5,096.0	5,086.1	12.5	12.4	83.04	358.5	49.5	169.7	144.9	24.81	6.839	
5,204.1	5,193.5	5,192.0	5,181.2	12.8	12.7	81.29	370.8	47.4	172.9	147.6	25.35	6.823	
5,250.0	5,239.0	5,232.7	5,220.6	12.9	12.8	79.20	381.0	45.7	176.1	150.5	25.61	6.876	
5,300.0	5,288.0	5,276.6	5,262.0	13.1	13.0	77.15	395.4	43.2	180.3	154.4	25.94	6.951	
5,350.0	5,335.7	5,320.1	5,301.6	13.3	13.3	75.33	413.0	40.2	185.2	158.9	26.30	7.041	
5,400.0	5,381.8	5,363.1	5,339.2	13.6	13.5	73.76	433.5	36.7	190.7	164.0	26.70	7.141	
5,450.0	5,425.8	5,405.8	5,374.7	13.9	13.8	72.44	456.9	32.7	196.6	169.5	27.14	7.246	
5,500.0	5,467.3	5,450.0	5,409.3	14.2	14.1	71.34	484.0	28.1	203.0	175.4	27.63	7.347	
5,550.0	5,506.0	5,490.1	5,438.6	14.6	14.5	70.49	511.0	23.5	209.6	181.4	28.15	7.445	
5,600.0	5,541.4	5,532.0	5,466.7	15.1	14.9	69.84	541.4	18.3	216.4	187.7	28.75	7.527	
5,650.0	5,573.4	5,573.6	5,492.2	15.6	15.3	69.38	573.9	12.7	223.4	194.0	29.44	7.590	
5,700.0	5,601.5	5,615.0	5,514.9	16.1	15.7	69.10	608.0	6.9	230.5	200.3	30.21	7.629	
5,750.0	5,625.5	5,656.4	5,534.8	16.7	16.2	68.98	643.8	0.8	237.6	206.5	31.10	7.642	
5,800.0	5,645.2	5,700.0	5,552.5	17.4	16.8	69.06	683.1	-5.9	244.8	212.7	32.13	7.619	
5,850.0	5,660.4	5,739.0	5,565.5	18.1	17.3	69.18	719.3	-12.1	251.9	218.7	33.21	7.585	
5,900.0	5,670.9	5,780.4	5,576.2	18.8	17.8	69.46	758.7	-18.9	259.0	224.6	34.44	7.520	
5,950.0	5,676.8	5,821.9	5,583.7	19.6	18.4	69.86	798.9	-25.8	266.0	230.3	35.78	7.436	
5,985.9	5,678.0	5,850.0	5,587.0	20.2	18.8	70.15	826.4	-30.5	271.0	234.3	36.76	7.374	
6,000.0	5,678.0	5,863.6	5,588.0	20.4	19.0	70.55	839.8	-32.7	273.0	235.8	37.23	7.332	
6,100.0	5,678.0	5,949.4	5,589.0	21.8	20.3	71.75	924.4	-46.5	287.0	247.0	39.99	7.176	
6,200.0	5,678.0	6,035.7	5,589.0	23.3	21.5	72.62	1,010.2	-56.7	300.5	257.8	42.71	7.036	
6,300.0	5,678.0	6,121.6	5,589.0	24.8	22.7	73.36	1,095.8	-63.0	313.3	267.9	45.44	6.895	
6,400.0	5,678.0	6,207.0	5,589.0	26.4	24.0	74.02	1,181.2	-65.5	325.5	277.4	48.16	6.760	
6,500.0	5,678.0	6,304.4	5,589.0	28.0	25.5	74.57	1,278.6	-65.5	335.5	284.4	51.05	6.572	
6,600.0	5,678.0	6,404.3	5,589.0	29.6	27.1	74.84	1,378.4	-65.5	340.4	286.5	53.92	6.314	
6,648.3	5,678.0	6,452.5	5,589.0	30.3	28.0	74.87	1,426.7	-65.5	341.0	285.8	55.26	6.172	
6,700.0	5,678.0	6,504.3	5,589.0	31.2	28.8	74.87	1,478.4	-65.5	341.0	284.1	56.94	5.990	
6,800.0	5,678.0	6,604.3	5,589.0	32.8	30.5	74.87	1,578.4	-65.5	341.0	280.8	60.24	5.662	
6,900.0	5,678.0	6,704.3	5,589.0	34.5	32.3	74.87	1,678.4	-65.5	341.0	277.5	63.58	5.364	
7,000.0	5,678.0	6,804.3	5,589.0	36.2	34.0	74.87	1,778.4	-65.5	341.1	274.1	66.97	5.093	
7,100.0	5,678.0	6,904.3	5,589.0	37.9	35.8	74.87	1,878.4	-65.5	341.1	270.7	70.39	4.845	
7,200.0	5,678.0	7,004.3	5,589.0	39.6	37.6	74.87	1,978.4	-65.5	341.1	267.2	73.84	4.619	
7,300.0	5,678.0	7,104.3	5,589.0	41.4	39.4	74.88	2,078.4	-65.5	341.1	263.8	77.31	4.412	
7,400.0	5,678.0	7,204.3	5,589.0	43.1	41.2	74.88	2,178.4	-65.5	341.1	260.3	80.81	4.221	
7,500.0	5,678.0	7,304.3	5,589.0	44.9	43.0	74.88	2,278.4	-65.4	341.1	256.8	84.33	4.045	
7,600.0	5,678.0	7,404.3	5,589.0	46.7	44.8	74.88	2,378.4	-65.4	341.1	253.2	87.86	3.882	
7,700.0	5,678.0	7,504.3	5,589.0	48.5	46.7	74.88	2,478.4	-65.4	341.1	249.7	91.41	3.732	
7,800.0	5,678.0	7,604.3	5,589.0	50.3	48.5	74.88	2,578.4	-65.4	341.1	246.2	94.97	3.592	
7,900.0	5,678.0	7,704.3	5,589.0	52.1	50.3	74.88	2,678.4	-65.4	341.1	242.6	98.54	3.462	
8,000.0	5,678.0	7,804.3	5,589.0	53.9	52.2	74.88	2,778.4	-65.4	341.1	239.0	102.12	3.340	
8,100.0	5,678.0	7,904.3	5,589.0	55.8	54.0	74.88	2,878.4	-65.4	341.1	235.4	105.72	3.227	
8,200.0	5,678.0	8,004.3	5,589.0	57.6	55.9	74.88	2,978.4	-65.4	341.1	231.8	109.32	3.121	
8,300.0	5,678.0	8,104.3	5,589.0	59.4	57.8	74.88	3,078.4	-65.4	341.2	228.2	112.93	3.021	
8,400.0	5,678.0	8,204.3	5,589.0	61.3	59.6	74.88	3,178.4	-65.4	341.2	224.6	116.54	2.927	
8,500.0	5,678.0	8,304.3	5,589.0	63.1	61.5	74.88	3,278.4	-65.4	341.2	221.0	120.17	2.839	
8,600.0	5,678.0	8,404.3	5,589.0	65.0	63.4	74.88	3,378.4	-65.3	341.2	217.4	123.80	2.756	
8,700.0	5,678.0	8,504.3	5,589.0	66.8	65.2	74.88	3,478.4	-65.3	341.2	213.8	127.43	2.677	
8,800.0	5,678.0	8,604.3	5,589.0	68.7	67.1	74.88	3,578.4	-65.3	341.2	210.1	131.07	2.603	
8,900.0	5,678.0	8,704.3	5,589.0	70.6	69.0	74.88	3,678.4	-65.3	341.2	206.5	134.71	2.533	
9,000.0	5,678.0	8,804.3	5,589.0	72.4	70.9	74.88	3,778.4	-65.3	341.2	202.9	138.36	2.466	
9,100.0	5,678.0	8,904.3	5,589.0	74.3	72.8	74.88	3,878.4	-65.3	341.2	199.2	142.01	2.403	
9,200.0	5,678.0	9,004.3	5,589.0	76.2	74.7	74.88	3,978.4	-65.3	341.2	195.6	145.67	2.343	

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-2310B
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-2310B	**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
9,300.0	5,678.0	9,104.3	5,589.0	78.0	76.5	74.88	4,078.4	-65.3	341.2	191.9	149.32	2.285	
9,400.0	5,678.0	9,204.3	5,589.0	79.9	78.4	74.88	4,178.4	-65.3	341.2	188.3	152.98	2.231	
9,500.0	5,678.0	9,304.3	5,589.0	81.8	80.3	74.88	4,278.4	-65.3	341.2	184.6	156.65	2.178	
9,600.0	5,678.0	9,404.3	5,589.0	83.7	82.2	74.88	4,378.4	-65.3	341.3	180.9	160.32	2.129	
9,700.0	5,678.0	9,504.3	5,589.0	85.5	84.1	74.88	4,478.4	-65.3	341.3	177.3	163.99	2.081	
9,800.0	5,678.0	9,604.3	5,589.0	87.4	86.0	74.88	4,578.4	-65.2	341.3	173.6	167.66	2.036	
9,900.0	5,678.0	9,704.3	5,589.0	89.3	87.9	74.88	4,678.4	-65.2	341.3	170.0	171.33	1.992	
10,000.0	5,678.0	9,804.3	5,589.0	91.2	89.8	74.88	4,778.4	-65.2	341.3	166.3	175.01	1.950	
10,100.0	5,678.0	9,904.3	5,589.0	93.1	91.7	74.88	4,878.4	-65.2	341.3	162.6	178.68	1.910	
10,200.0	5,678.0	10,004.3	5,589.0	95.0	93.6	74.89	4,978.4	-65.2	341.3	158.9	182.36	1.872	
10,300.0	5,678.0	10,104.3	5,589.0	96.8	95.5	74.89	5,078.4	-65.2	341.3	155.3	186.04	1.835	
10,400.0	5,678.0	10,204.3	5,589.0	98.7	97.4	74.89	5,178.4	-65.2	341.3	151.6	189.73	1.799	
10,500.0	5,678.0	10,304.3	5,589.0	100.6	99.3	74.89	5,278.4	-65.2	341.3	147.9	193.41	1.765	
10,600.0	5,678.0	10,404.3	5,589.0	102.5	101.2	74.89	5,378.4	-65.2	341.3	144.2	197.10	1.732	
10,700.0	5,678.0	10,504.3	5,589.0	104.4	103.1	74.89	5,478.4	-65.2	341.3	140.6	200.78	1.700	
10,800.0	5,678.0	10,604.3	5,589.0	106.3	105.0	74.89	5,578.4	-65.2	341.4	136.9	204.47	1.669	
10,900.0	5,678.0	10,704.3	5,589.0	108.2	106.9	74.89	5,678.4	-65.2	341.4	133.2	208.16	1.640	
11,000.0	5,678.0	10,804.3	5,589.0	110.1	108.8	74.89	5,778.4	-65.1	341.4	129.5	211.85	1.611	
11,100.0	5,678.0	10,904.3	5,589.0	112.0	110.7	74.89	5,878.4	-65.1	341.4	125.8	215.54	1.584	
11,200.0	5,678.0	11,004.3	5,589.0	113.9	112.6	74.89	5,978.4	-65.1	341.4	122.1	219.24	1.557	
11,300.0	5,678.0	11,104.3	5,589.0	115.8	114.5	74.89	6,078.4	-65.1	341.4	118.5	222.93	1.531	
11,400.0	5,678.0	11,204.3	5,589.0	117.7	116.4	74.89	6,178.4	-65.1	341.4	114.8	226.62	1.506	
11,500.0	5,678.0	11,304.3	5,589.0	119.6	118.3	74.89	6,278.4	-65.1	341.4	111.1	230.32	1.482	Level 3
11,600.0	5,678.0	11,404.3	5,589.0	121.5	120.2	74.89	6,378.4	-65.1	341.4	107.4	234.02	1.459	Level 3
11,700.0	5,678.0	11,504.3	5,589.0	123.4	122.1	74.89	6,478.4	-65.1	341.4	103.7	237.71	1.436	Level 3
11,800.0	5,678.0	11,604.3	5,589.0	125.3	124.0	74.89	6,578.4	-65.1	341.4	100.0	241.41	1.414	Level 3
11,900.0	5,678.0	11,704.3	5,589.0	127.2	125.9	74.89	6,678.4	-65.1	341.4	96.3	245.11	1.393	Level 3
12,000.0	5,678.0	11,804.3	5,589.0	129.1	127.8	74.89	6,778.4	-65.1	341.4	92.6	248.81	1.372	Level 3
12,100.0	5,678.0	11,904.3	5,589.0	131.0	129.7	74.89	6,878.4	-65.1	341.5	88.9	252.51	1.352	Level 3
12,200.0	5,678.0	12,004.3	5,589.0	132.9	131.6	74.89	6,978.4	-65.0	341.5	85.2	256.21	1.333	Level 3
12,300.0	5,678.0	12,104.3	5,589.0	134.8	133.5	74.89	7,078.4	-65.0	341.5	81.6	259.91	1.314	Level 3
12,400.0	5,678.0	12,204.3	5,589.0	136.7	135.4	74.89	7,178.4	-65.0	341.5	77.9	263.61	1.295	Level 3
12,500.0	5,678.0	12,304.3	5,589.0	138.6	137.4	74.89	7,278.4	-65.0	341.5	74.2	267.32	1.277	Level 3
12,600.0	5,678.0	12,404.3	5,589.0	140.5	139.3	74.89	7,378.4	-65.0	341.5	70.5	271.02	1.260	Level 3
12,700.0	5,678.0	12,504.3	5,589.0	142.4	141.2	74.89	7,478.4	-65.0	341.5	66.8	274.72	1.243	Level 2
12,800.0	5,678.0	12,604.3	5,589.0	144.3	143.1	74.89	7,578.4	-65.0	341.5	63.1	278.43	1.227	Level 2
12,900.0	5,678.0	12,704.3	5,589.0	146.2	145.0	74.89	7,678.4	-65.0	341.5	59.4	282.13	1.210	Level 2
13,000.0	5,678.0	12,804.3	5,589.0	148.1	146.9	74.89	7,778.4	-65.0	341.5	55.7	285.83	1.195	Level 2
13,100.0	5,678.0	12,904.3	5,589.0	150.0	148.8	74.89	7,878.4	-65.0	341.5	52.0	289.54	1.180	Level 2
13,200.0	5,678.0	13,004.3	5,589.0	151.9	150.7	74.90	7,978.4	-65.0	341.5	48.3	293.25	1.165	Level 2
13,300.0	5,678.0	13,104.3	5,589.0	153.8	152.6	74.90	8,078.4	-64.9	341.5	44.6	296.95	1.150	Level 2
13,400.0	5,678.0	13,204.3	5,589.0	155.7	154.5	74.90	8,178.4	-64.9	341.6	40.9	300.66	1.136	Level 2
13,479.2	5,678.0	13,283.4	5,589.0	157.2	156.0	74.90	8,257.6	-64.9	341.6	38.0	303.59	1.125	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	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	352.531	
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	
600.0	600.0	600.0	600.0	1.2	1.2	88.94	1.2	66.2	66.2	63.7	2.44	27.168	
700.0	700.0	700.0	700.0	1.4	1.4	88.94	1.2	66.2	66.2	63.3	2.88	22.934	CC, ES
800.0	800.0	800.0	800.0	1.7	1.7	110.21	1.2	66.2	66.7	63.4	3.33	20.027	
900.0	899.8	899.8	899.8	1.9	1.9	114.27	1.2	66.2	68.7	64.9	3.78	18.178	
1,000.0	999.6	999.6	999.6	2.1	2.1	119.34	1.2	66.2	71.9	67.7	4.23	16.981	
1,100.0	1,099.4	1,099.4	1,099.4	2.4	2.3	123.95	1.2	66.2	75.6	70.9	4.69	16.115	
1,200.0	1,199.1	1,199.4	1,199.4	2.6	2.6	126.88	2.9	66.5	79.5	74.3	5.14	15.449	
1,300.0	1,298.9	1,299.6	1,299.5	2.8	2.8	127.15	8.0	67.5	83.2	77.6	5.60	14.841	
1,400.0	1,398.6	1,399.5	1,399.1	3.1	3.0	126.24	14.9	68.9	86.7	80.6	6.07	14.281	
1,500.0	1,498.4	1,499.5	1,498.8	3.3	3.2	125.39	21.7	70.3	90.2	83.7	6.54	13.792	
1,600.0	1,598.1	1,599.4	1,598.5	3.6	3.5	124.62	28.5	71.7	93.8	86.8	7.02	13.361	
1,700.0	1,697.9	1,699.3	1,698.2	3.8	3.7	123.89	35.4	73.1	97.4	89.9	7.50	12.981	
1,800.0	1,797.6	1,799.3	1,797.9	4.1	4.0	123.22	42.2	74.5	101.0	93.0	7.99	12.643	
1,900.0	1,897.4	1,899.2	1,897.6	4.3	4.2	122.60	49.0	75.9	104.6	96.1	8.47	12.341	
2,000.0	1,997.2	1,999.1	1,997.2	4.6	4.4	122.02	55.8	77.3	108.2	99.2	8.96	12.070	
2,100.0	2,096.9	2,099.0	2,096.9	4.8	4.7	121.47	62.7	78.7	111.8	102.4	9.46	11.825	
2,200.0	2,196.7	2,199.0	2,196.6	5.1	4.9	120.96	69.5	80.1	115.4	105.5	9.95	11.604	
2,300.0	2,296.4	2,298.9	2,296.3	5.3	5.2	120.48	76.3	81.5	119.1	108.6	10.44	11.403	
2,400.0	2,396.2	2,398.8	2,396.0	5.6	5.4	120.03	83.2	82.9	122.7	111.8	10.94	11.219	
2,500.0	2,495.9	2,498.8	2,495.7	5.9	5.7	119.61	90.0	84.2	126.4	115.0	11.44	11.051	
2,600.0	2,595.7	2,598.7	2,595.4	6.1	5.9	119.21	96.8	85.6	130.1	118.1	11.94	10.896	
2,700.0	2,695.5	2,698.6	2,695.0	6.4	6.2	118.83	103.7	87.0	133.7	121.3	12.44	10.754	
2,800.0	2,795.2	2,798.5	2,794.7	6.6	6.4	118.47	110.5	88.4	137.4	124.5	12.94	10.622	
2,900.0	2,895.0	2,898.5	2,894.4	6.9	6.7	118.13	117.3	89.8	141.1	127.7	13.44	10.500	
3,000.0	2,994.7	2,998.4	2,994.1	7.1	6.9	117.81	124.2	91.2	144.8	130.8	13.94	10.387	
3,100.0	3,094.5	3,098.3	3,093.8	7.4	7.2	117.50	131.0	92.6	148.5	134.0	14.44	10.281	
3,200.0	3,194.2	3,198.3	3,193.5	7.6	7.4	117.21	137.8	94.0	152.2	137.2	14.94	10.183	
3,300.0	3,294.0	3,298.2	3,293.2	7.9	7.7	116.93	144.6	95.4	155.9	140.4	15.45	10.091	
3,400.0	3,393.7	3,398.1	3,392.8	8.2	7.9	116.67	151.5	96.8	159.6	143.6	15.95	10.004	
3,500.0	3,493.5	3,498.0	3,492.5	8.4	8.2	116.42	158.3	98.2	163.3	146.8	16.45	9.923	
3,600.0	3,593.3	3,598.0	3,592.2	8.7	8.4	116.17	165.1	99.6	167.0	150.0	16.96	9.847	
3,700.0	3,693.0	3,697.9	3,691.9	8.9	8.7	115.94	172.0	101.0	170.7	153.2	17.46	9.775	
3,800.0	3,792.8	3,797.8	3,791.6	9.2	9.0	115.72	178.8	102.3	174.4	156.4	17.97	9.707	
3,900.0	3,892.5	3,897.8	3,891.3	9.4	9.2	115.51	185.6	103.7	178.1	159.7	18.47	9.643	
4,000.0	3,992.3	3,997.7	3,991.0	9.7	9.5	115.31	192.5	105.1	181.8	162.9	18.98	9.582	
4,100.0	4,092.0	4,097.6	4,090.6	9.9	9.7	115.11	199.3	106.5	185.6	166.1	19.48	9.525	
4,200.0	4,191.8	4,197.5	4,190.3	10.2	10.0	114.92	206.1	107.9	189.3	169.3	19.99	9.470	
4,300.0	4,291.6	4,297.5	4,290.0	10.5	10.2	114.74	212.9	109.3	193.0	172.5	20.49	9.418	
4,400.0	4,391.3	4,397.4	4,389.7	10.7	10.5	114.57	219.8	110.7	196.7	175.7	21.00	9.369	
4,500.0	4,491.1	4,497.3	4,489.4	11.0	10.7	114.40	226.6	112.1	200.5	179.0	21.51	9.321	
4,600.0	4,590.8	4,597.3	4,589.1	11.2	11.0	114.24	233.4	113.5	204.2	182.2	22.01	9.277	
4,700.0	4,690.6	4,697.2	4,688.8	11.5	11.2	114.09	240.3	114.9	207.9	185.4	22.52	9.234	
4,800.0	4,790.3	4,797.1	4,788.4	11.7	11.5	113.94	247.1	116.3	211.7	188.6	23.03	9.193	
4,900.0	4,890.1	4,897.0	4,888.1	12.0	11.7	113.79	253.9	117.7	215.4	191.9	23.53	9.153	
5,000.0	4,989.9	4,997.0	4,987.8	12.3	12.0	113.65	260.8	119.0	219.1	195.1	24.04	9.116	
5,100.0	5,089.6	5,096.9	5,087.5	12.5	12.3	113.52	267.6	120.4	222.9	198.3	24.55	9.080	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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
5,204.1	5,193.5	5,200.9	5,191.3	12.8	12.5	113.38	274.7	121.9	226.8	201.7	25.07	9.044	SF
5,250.0	5,239.0	5,244.3	5,234.3	12.9	12.6	113.08	279.2	122.8	229.5	204.2	25.30	9.072	
5,300.0	5,288.0	5,291.1	5,280.2	13.1	12.8	112.51	288.1	124.6	234.9	209.3	25.58	9.183	
5,350.0	5,335.7	5,337.5	5,324.8	13.3	13.0	111.68	300.8	127.2	242.7	216.8	25.91	9.369	
5,400.0	5,381.8	5,383.4	5,367.6	13.6	13.2	110.63	317.1	130.5	252.9	226.6	26.29	9.620	
5,450.0	5,425.8	5,428.7	5,408.2	13.9	13.5	109.38	336.8	134.5	265.3	238.6	26.74	9.921	
5,500.0	5,467.3	5,473.4	5,446.3	14.2	13.7	107.94	359.5	139.2	279.8	252.6	27.28	10.258	
5,550.0	5,506.0	5,517.3	5,481.8	14.6	14.1	106.35	384.9	144.3	296.3	268.4	27.91	10.616	
5,600.0	5,541.4	5,560.6	5,514.5	15.1	14.4	104.61	412.7	150.0	314.6	285.9	28.64	10.983	
5,650.0	5,573.4	5,603.2	5,544.2	15.6	14.8	102.75	442.5	156.1	334.4	305.0	29.47	11.348	
5,700.0	5,601.5	5,645.1	5,571.0	16.1	15.1	100.78	474.2	162.5	355.7	325.3	30.40	11.702	
5,750.0	5,625.5	5,686.6	5,594.9	16.7	15.6	98.73	507.4	169.3	378.3	346.9	31.41	12.042	
5,800.0	5,645.2	5,727.6	5,615.7	17.4	16.0	96.61	542.0	176.4	401.8	369.3	32.50	12.365	
5,850.0	5,660.4	5,768.4	5,633.6	18.1	16.5	94.44	577.9	183.7	426.2	392.6	33.64	12.672	
5,900.0	5,670.9	5,809.0	5,648.5	18.8	17.0	92.26	614.8	191.2	451.3	416.5	34.81	12.963	
5,950.0	5,676.8	5,850.0	5,660.6	19.6	17.5	90.10	653.2	199.0	476.8	440.8	36.02	13.236	
5,985.9	5,678.0	5,879.0	5,667.2	20.2	17.9	88.55	680.9	204.7	495.4	458.5	36.90	13.423	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	-0.45	75.1	-0.6	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	-0.45	75.1	-0.6	75.1	74.9	0.19	399.971	
200.0	200.0	200.0	200.0	0.3	0.3	-0.45	75.1	-0.6	75.1	74.4	0.64	117.804	
300.0	300.0	300.0	300.0	0.5	0.5	-0.45	75.1	-0.6	75.1	74.0	1.09	69.075	
400.0	400.0	400.0	400.0	0.8	0.8	-0.45	75.1	-0.6	75.1	73.5	1.54	48.863	
500.0	500.0	500.0	500.0	1.0	1.0	-0.45	75.1	-0.6	75.1	73.1	1.99	37.801	
600.0	600.0	600.0	600.0	1.2	1.2	-0.45	75.1	-0.6	75.1	72.6	2.44	30.824	
700.0	700.0	700.0	700.0	1.4	1.4	-0.45	75.1	-0.6	75.1	72.2	2.88	26.021	
800.0	800.0	800.0	800.0	1.7	1.7	19.89	75.1	-0.6	73.4	70.1	3.33	22.016	
900.0	899.8	899.8	899.8	1.9	1.9	21.41	75.1	-0.6	68.5	64.7	3.79	18.104	
1,000.0	999.6	999.6	999.6	2.1	2.1	23.76	75.1	-0.6	62.1	57.8	4.24	14.654	
1,100.0	1,099.4	1,101.3	1,101.3	2.4	2.3	26.61	73.3	-0.9	54.0	49.3	4.67	11.566	
1,200.0	1,199.1	1,202.2	1,202.1	2.6	2.5	30.46	68.0	-1.8	42.6	37.5	5.09	8.370	
1,300.0	1,298.9	1,301.3	1,300.9	2.8	2.7	37.37	61.2	-3.0	29.8	24.3	5.51	5.412	
1,400.0	1,398.6	1,400.4	1,399.8	3.1	2.9	53.74	54.4	-4.2	18.1	12.2	5.95	3.043	
1,500.0	1,498.4	1,499.5	1,498.6	3.3	3.1	101.33	47.6	-5.4	11.3	4.9	6.41	1.762	
1,505.4	1,503.7	1,504.9	1,504.0	3.4	3.1	104.97	47.2	-5.5	11.3	4.8	6.44	1.753	CC, ES, SF
1,600.0	1,598.1	1,598.6	1,597.5	3.6	3.3	153.15	40.8	-6.6	17.0	10.2	6.78	2.507	
1,700.0	1,697.9	1,697.7	1,696.3	3.8	3.5	171.46	34.0	-7.8	28.5	21.3	7.19	3.964	
1,800.0	1,797.6	1,796.8	1,795.2	4.1	3.8	178.94	27.2	-9.0	41.2	33.6	7.62	5.406	
1,900.0	1,897.4	1,895.9	1,894.0	4.3	4.0	-177.14	20.4	-10.2	54.3	46.2	8.06	6.735	
2,000.0	1,997.2	1,995.0	1,992.9	4.6	4.2	-174.74	13.6	-11.4	67.5	59.0	8.50	7.941	
2,100.0	2,096.9	2,094.1	2,091.7	4.8	4.5	-173.13	6.8	-12.6	80.8	71.8	8.94	9.035	
2,200.0	2,196.7	2,193.2	2,190.6	5.1	4.7	-171.98	0.0	-13.8	94.1	84.7	9.38	10.029	
2,300.0	2,296.4	2,292.3	2,289.4	5.3	4.9	-171.11	-6.8	-15.0	107.5	97.6	9.83	10.934	
2,400.0	2,396.2	2,391.3	2,388.3	5.6	5.2	-170.44	-13.6	-16.2	120.8	110.6	10.28	11.760	
2,500.0	2,495.9	2,490.4	2,487.1	5.9	5.4	-169.89	-20.5	-17.4	134.2	123.5	10.72	12.517	
2,600.0	2,595.7	2,589.5	2,586.0	6.1	5.7	-169.45	-27.3	-18.6	147.6	136.5	11.17	13.214	
2,700.0	2,695.5	2,688.6	2,684.8	6.4	5.9	-169.08	-34.1	-19.8	161.1	149.4	11.62	13.855	
2,800.0	2,795.2	2,787.7	2,783.7	6.6	6.2	-168.77	-40.9	-21.0	174.5	162.4	12.08	14.449	
2,900.0	2,895.0	2,886.8	2,882.5	6.9	6.4	-168.50	-47.7	-22.2	187.9	175.4	12.53	14.999	
3,000.0	2,994.7	2,985.9	2,981.4	7.1	6.7	-168.27	-54.5	-23.4	201.3	188.4	12.98	15.510	
3,100.0	3,094.5	3,085.0	3,080.2	7.4	6.9	-168.07	-61.3	-24.6	214.8	201.3	13.43	15.987	
3,200.0	3,194.2	3,184.1	3,179.1	7.6	7.2	-167.89	-68.1	-25.8	228.2	214.3	13.89	16.431	
3,300.0	3,294.0	3,283.2	3,277.9	7.9	7.5	-167.73	-74.9	-27.0	241.6	227.3	14.34	16.848	
3,400.0	3,393.7	3,382.3	3,376.8	8.2	7.7	-167.59	-81.7	-28.2	255.1	240.3	14.80	17.238	
3,500.0	3,493.5	3,481.3	3,475.6	8.4	8.0	-167.46	-88.5	-29.4	268.5	253.2	15.25	17.605	
3,600.0	3,593.3	3,580.4	3,574.5	8.7	8.2	-167.34	-95.3	-30.6	281.9	266.2	15.71	17.950	
3,700.0	3,693.0	3,679.5	3,673.3	8.9	8.5	-167.24	-102.1	-31.8	295.4	279.2	16.16	18.275	
3,800.0	3,792.8	3,778.6	3,772.2	9.2	8.7	-167.14	-109.0	-33.0	308.8	292.2	16.62	18.582	
3,900.0	3,892.5	3,877.7	3,871.0	9.4	9.0	-167.05	-115.8	-34.2	322.3	305.2	17.08	18.873	
4,000.0	3,992.3	3,976.8	3,969.9	9.7	9.2	-166.97	-122.6	-35.4	335.7	318.2	17.53	19.148	
4,100.0	4,092.0	4,075.9	4,068.7	9.9	9.5	-166.90	-129.4	-36.6	349.1	331.2	17.99	19.409	
4,200.0	4,191.8	4,175.0	4,167.6	10.2	9.8	-166.83	-136.2	-37.8	362.6	344.1	18.45	19.657	
4,300.0	4,291.6	4,274.1	4,266.4	10.5	10.0	-166.77	-143.0	-39.0	376.0	357.1	18.90	19.892	
4,400.0	4,391.3	4,373.2	4,365.3	10.7	10.3	-166.71	-149.8	-40.2	389.5	370.1	19.36	20.117	
4,500.0	4,491.1	4,472.3	4,464.1	11.0	10.5	-166.65	-156.6	-41.4	402.9	383.1	19.82	20.331	
4,600.0	4,590.8	4,571.4	4,563.0	11.2	10.8	-166.60	-163.4	-42.6	416.4	396.1	20.28	20.535	
4,700.0	4,690.6	4,670.4	4,661.8	11.5	11.1	-166.55	-170.2	-43.8	429.8	409.1	20.73	20.730	
4,800.0	4,790.3	4,769.5	4,760.7	11.7	11.3	-166.50	-177.0	-45.0	443.2	422.1	21.19	20.916	
4,900.0	4,890.1	4,868.6	4,859.5	12.0	11.6	-166.46	-183.8	-46.2	456.7	435.0	21.65	21.094	
5,000.0	4,989.9	4,967.7	4,958.4	12.3	11.8	-166.42	-190.6	-47.4	470.1	448.0	22.11	21.265	

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-2310B
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-2310B	**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
5,100.0	5,089.6	5,066.8	5,057.2	12.5	12.1	-166.38	-197.4	-48.6	483.6	461.0	22.57	21.429	
5,204.1	5,193.5	5,150.0	5,140.1	12.8	12.3	-166.31	-204.4	-49.9	499.2	476.2	23.00	21.700	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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	88.93	0.6	32.9	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	88.93	0.6	32.9	32.9	32.8	0.19	175.528	
200.0	200.0	200.0	200.0	0.3	0.3	88.93	0.6	32.9	32.9	32.3	0.64	51.699	
300.0	300.0	300.0	300.0	0.5	0.5	88.93	0.6	32.9	32.9	31.9	1.09	30.314	
400.0	400.0	400.0	400.0	0.8	0.8	88.93	0.6	32.9	32.9	31.4	1.54	21.443	
500.0	500.0	500.0	500.0	1.0	1.0	88.93	0.6	32.9	32.9	31.0	1.99	16.589	
600.0	600.0	600.0	600.0	1.2	1.2	88.93	0.6	32.9	32.9	30.5	2.44	13.527	CC
700.0	700.0	699.8	699.8	1.4	1.4	91.92	-1.1	33.2	33.2	30.3	2.86	11.618	ES
800.0	800.0	799.3	799.1	1.7	1.6	122.72	-6.3	33.9	35.4	32.1	3.26	10.836	SF
900.0	899.8	898.5	898.1	1.9	1.8	137.59	-13.1	34.8	42.1	38.4	3.69	11.405	
1,000.0	999.6	997.6	996.9	2.1	2.0	148.97	-20.0	35.7	52.3	48.2	4.12	12.702	
1,100.0	1,099.4	1,096.6	1,095.7	2.4	2.2	156.46	-26.8	36.6	63.9	59.4	4.55	14.046	
1,200.0	1,199.1	1,195.6	1,194.5	2.6	2.5	161.60	-33.7	37.6	76.3	71.3	4.99	15.300	
1,300.0	1,298.9	1,294.7	1,293.3	2.8	2.7	165.29	-40.5	38.5	89.1	83.7	5.42	16.425	
1,400.0	1,398.6	1,393.7	1,392.1	3.1	3.0	168.04	-47.3	39.4	102.2	96.3	5.86	17.422	
1,500.0	1,498.4	1,492.8	1,490.9	3.3	3.2	170.17	-54.2	40.3	115.4	109.1	6.31	18.302	
1,600.0	1,598.1	1,591.8	1,589.7	3.6	3.4	171.86	-61.0	41.3	128.8	122.0	6.75	19.080	
1,700.0	1,697.9	1,690.8	1,688.5	3.8	3.7	173.23	-67.9	42.2	142.3	135.1	7.20	19.771	
1,800.0	1,797.6	1,789.9	1,787.3	4.1	3.9	174.36	-74.7	43.1	155.8	148.1	7.64	20.386	
1,900.0	1,897.4	1,888.9	1,886.1	4.3	4.2	175.32	-81.6	44.0	169.4	161.3	8.09	20.937	
2,000.0	1,997.2	1,987.9	1,984.9	4.6	4.5	176.13	-88.4	45.0	183.0	174.4	8.54	21.432	
2,100.0	2,096.9	2,087.0	2,083.7	4.8	4.7	176.83	-95.3	45.9	196.6	187.6	8.99	21.879	
2,200.0	2,196.7	2,186.0	2,182.5	5.1	5.0	177.43	-102.1	46.8	210.3	200.9	9.44	22.284	
2,300.0	2,296.4	2,285.1	2,281.3	5.3	5.2	177.97	-109.0	47.8	224.0	214.1	9.89	22.653	
2,400.0	2,396.2	2,384.1	2,380.1	5.6	5.5	178.44	-115.8	48.7	237.7	227.4	10.34	22.991	
2,500.0	2,495.9	2,483.1	2,478.9	5.9	5.7	178.86	-122.7	49.6	251.4	240.6	10.79	23.300	
2,600.0	2,595.7	2,582.2	2,577.7	6.1	6.0	179.24	-129.5	50.5	265.2	253.9	11.24	23.585	
2,700.0	2,695.5	2,681.2	2,676.5	6.4	6.2	179.57	-136.3	51.5	278.9	267.2	11.70	23.848	
2,800.0	2,795.2	2,780.2	2,775.3	6.6	6.5	179.88	-143.2	52.4	292.7	280.5	12.15	24.091	
2,900.0	2,895.0	2,879.3	2,874.1	6.9	6.8	-179.84	-150.0	53.3	306.4	293.8	12.60	24.317	
3,000.0	2,994.7	2,978.3	2,972.9	7.1	7.0	-179.58	-156.9	54.2	320.2	307.1	13.06	24.527	
3,100.0	3,094.5	3,077.4	3,071.6	7.4	7.3	-179.35	-163.7	55.2	334.0	320.5	13.51	24.723	
3,200.0	3,194.2	3,176.4	3,170.4	7.6	7.5	-179.13	-170.6	56.1	347.8	333.8	13.96	24.906	
3,300.0	3,294.0	3,275.4	3,269.2	7.9	7.8	-178.93	-177.4	57.0	361.5	347.1	14.42	25.077	
3,400.0	3,393.7	3,374.5	3,368.0	8.2	8.1	-178.74	-184.3	57.9	375.3	360.5	14.87	25.238	
3,500.0	3,493.5	3,473.5	3,466.8	8.4	8.3	-178.57	-191.1	58.9	389.1	373.8	15.33	25.390	
3,600.0	3,593.3	3,572.5	3,565.6	8.7	8.6	-178.41	-198.0	59.8	402.9	387.1	15.78	25.533	
3,700.0	3,693.0	3,671.6	3,664.4	8.9	8.8	-178.26	-204.8	60.7	416.7	400.5	16.24	25.667	
3,800.0	3,792.8	3,770.6	3,763.2	9.2	9.1	-178.12	-211.7	61.6	430.5	413.8	16.69	25.795	
3,900.0	3,892.5	3,869.7	3,862.0	9.4	9.4	-177.99	-218.5	62.6	444.3	427.2	17.15	25.915	
4,000.0	3,992.3	3,968.7	3,960.8	9.7	9.6	-177.87	-225.3	63.5	458.1	440.5	17.60	26.029	
4,100.0	4,092.0	4,067.7	4,059.6	9.9	9.9	-177.75	-232.2	64.4	471.9	453.9	18.06	26.138	
4,200.0	4,191.8	4,166.8	4,158.4	10.2	10.1	-177.64	-239.0	65.3	485.7	467.2	18.51	26.241	
4,300.0	4,291.6	4,265.8	4,257.2	10.5	10.4	-177.54	-245.9	66.3	499.6	480.6	18.97	26.339	

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-2310B
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-2310B	**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

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
0.0	0.0	0.0	0.0	0.0	0.0	40.32	76.3	64.7	100.0				
100.0	100.0	100.0	100.0	0.1	0.1	40.32	76.3	64.7	100.0	99.9	0.19	533.042	
200.0	200.0	200.0	200.0	0.3	0.3	40.32	76.3	64.7	100.0	99.4	0.64	156.998	
300.0	300.0	300.0	300.0	0.5	0.5	40.32	76.3	64.7	100.0	99.0	1.09	92.056	
400.0	400.0	400.0	400.0	0.8	0.8	40.32	76.3	64.7	100.0	98.5	1.54	65.119	
500.0	500.0	500.0	500.0	1.0	1.0	40.32	76.3	64.7	100.0	98.1	1.99	50.378	
600.0	600.0	600.0	600.0	1.2	1.2	40.32	76.3	64.7	100.0	97.6	2.44	41.079	
700.0	700.0	700.0	700.0	1.4	1.4	40.32	76.3	64.7	100.0	97.2	2.88	34.678	
800.0	800.0	800.0	800.0	1.7	1.7	61.08	76.3	64.7	99.2	95.9	3.33	29.752	
900.0	899.8	901.2	901.2	1.9	1.9	64.86	74.6	65.4	96.0	92.3	3.76	25.542	
1,000.0	999.6	1,001.6	1,001.4	2.1	2.1	71.87	69.7	67.3	91.6	87.4	4.17	21.948	
1,100.0	1,099.4	1,100.6	1,100.2	2.4	2.2	80.42	63.2	69.8	88.4	83.8	4.60	19.201	
1,198.7	1,197.8	1,198.4	1,197.7	2.6	2.4	89.27	56.9	72.3	87.3	82.3	5.05	17.312	CC
1,200.0	1,199.1	1,199.7	1,199.0	2.6	2.5	89.39	56.8	72.3	87.3	82.3	5.05	17.291	ES
1,300.0	1,298.9	1,298.7	1,297.8	2.8	2.7	98.36	50.4	74.9	88.5	83.0	5.51	16.066	
1,400.0	1,398.6	1,397.7	1,396.6	3.1	2.9	106.90	43.9	77.4	91.7	85.8	5.96	15.379	
1,500.0	1,498.4	1,496.7	1,495.4	3.3	3.1	114.70	37.5	79.9	96.9	90.5	6.42	15.093	
1,600.0	1,598.1	1,595.8	1,594.2	3.6	3.4	121.62	31.1	82.4	103.7	96.8	6.87	15.092	SF
1,700.0	1,697.9	1,694.8	1,692.9	3.8	3.6	127.62	24.6	84.9	111.8	104.5	7.31	15.282	
1,800.0	1,797.6	1,793.8	1,791.7	4.1	3.8	132.77	18.2	87.4	121.0	113.2	7.76	15.593	
1,900.0	1,897.4	1,892.9	1,890.5	4.3	4.1	137.17	11.8	89.9	131.0	122.8	8.20	15.976	
2,000.0	1,997.2	1,991.9	1,989.3	4.6	4.3	140.93	5.3	92.4	141.6	133.0	8.64	16.398	
2,100.0	2,096.9	2,090.9	2,088.1	4.8	4.6	144.16	-1.1	94.9	152.8	143.8	9.08	16.838	
2,200.0	2,196.7	2,189.9	2,186.9	5.1	4.8	146.94	-7.6	97.5	164.5	154.9	9.52	17.279	
2,300.0	2,296.4	2,289.0	2,285.7	5.3	5.1	149.35	-14.0	100.0	176.4	166.4	9.96	17.714	
2,400.0	2,396.2	2,388.0	2,384.4	5.6	5.3	151.46	-20.4	102.5	188.6	178.2	10.40	18.136	
2,500.0	2,495.9	2,487.0	2,483.2	5.9	5.6	153.31	-26.9	105.0	201.1	190.2	10.84	18.543	
2,600.0	2,595.7	2,586.0	2,582.0	6.1	5.8	154.94	-33.3	107.5	213.7	202.4	11.29	18.933	
2,700.0	2,695.5	2,685.1	2,680.8	6.4	6.1	156.39	-39.7	110.0	226.4	214.7	11.73	19.305	
2,800.0	2,795.2	2,784.1	2,779.6	6.6	6.4	157.68	-46.2	112.5	239.3	227.2	12.18	19.659	
2,900.0	2,895.0	2,883.1	2,878.4	6.9	6.6	158.84	-52.6	115.0	252.4	239.7	12.62	19.995	
3,000.0	2,994.7	2,982.2	2,977.2	7.1	6.9	159.89	-59.0	117.5	265.5	252.4	13.07	20.315	
3,100.0	3,094.5	3,081.2	3,075.9	7.4	7.1	160.84	-65.5	120.1	278.6	265.1	13.51	20.618	
3,200.0	3,194.2	3,180.2	3,174.7	7.6	7.4	161.70	-71.9	122.6	291.9	277.9	13.96	20.906	
3,300.0	3,294.0	3,279.2	3,273.5	7.9	7.6	162.49	-78.3	125.1	305.2	290.8	14.41	21.179	
3,400.0	3,393.7	3,378.3	3,372.3	8.2	7.9	163.21	-84.8	127.6	318.5	303.7	14.86	21.439	
3,500.0	3,493.5	3,477.3	3,471.1	8.4	8.1	163.88	-91.2	130.1	332.0	316.6	15.31	21.686	
3,600.0	3,593.3	3,576.3	3,569.9	8.7	8.4	164.49	-97.6	132.6	345.4	329.6	15.76	21.920	
3,700.0	3,693.0	3,675.3	3,668.7	8.9	8.7	165.05	-104.1	135.1	358.9	342.7	16.21	22.144	
3,800.0	3,792.8	3,774.4	3,767.4	9.2	8.9	165.58	-110.5	137.6	372.4	355.7	16.66	22.356	
3,900.0	3,892.5	3,873.4	3,866.2	9.4	9.2	166.07	-117.0	140.1	385.9	368.8	17.11	22.559	
4,000.0	3,992.3	3,972.4	3,965.0	9.7	9.4	166.52	-123.4	142.7	399.5	381.9	17.56	22.753	
4,100.0	4,092.0	4,071.4	4,063.8	9.9	9.7	166.95	-129.8	145.2	413.1	395.1	18.01	22.938	
4,200.0	4,191.8	4,170.5	4,162.6	10.2	10.0	167.35	-136.3	147.7	426.7	408.2	18.46	23.114	
4,300.0	4,291.6	4,269.5	4,261.4	10.5	10.2	167.72	-142.7	150.2	440.3	421.4	18.91	23.283	
4,400.0	4,391.3	4,368.5	4,360.2	10.7	10.5	168.07	-149.1	152.7	454.0	434.6	19.36	23.445	
4,500.0	4,491.1	4,467.6	4,458.9	11.0	10.7	168.41	-155.6	155.2	467.6	447.8	19.82	23.599	
4,600.0	4,590.8	4,566.6	4,557.7	11.2	11.0	168.72	-162.0	157.7	481.3	461.1	20.27	23.748	
4,700.0	4,690.6	4,665.6	4,656.5	11.5	11.3	169.01	-168.4	160.2	495.0	474.3	20.72	23.890	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor Federal #26J-2310B
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-2310B	**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

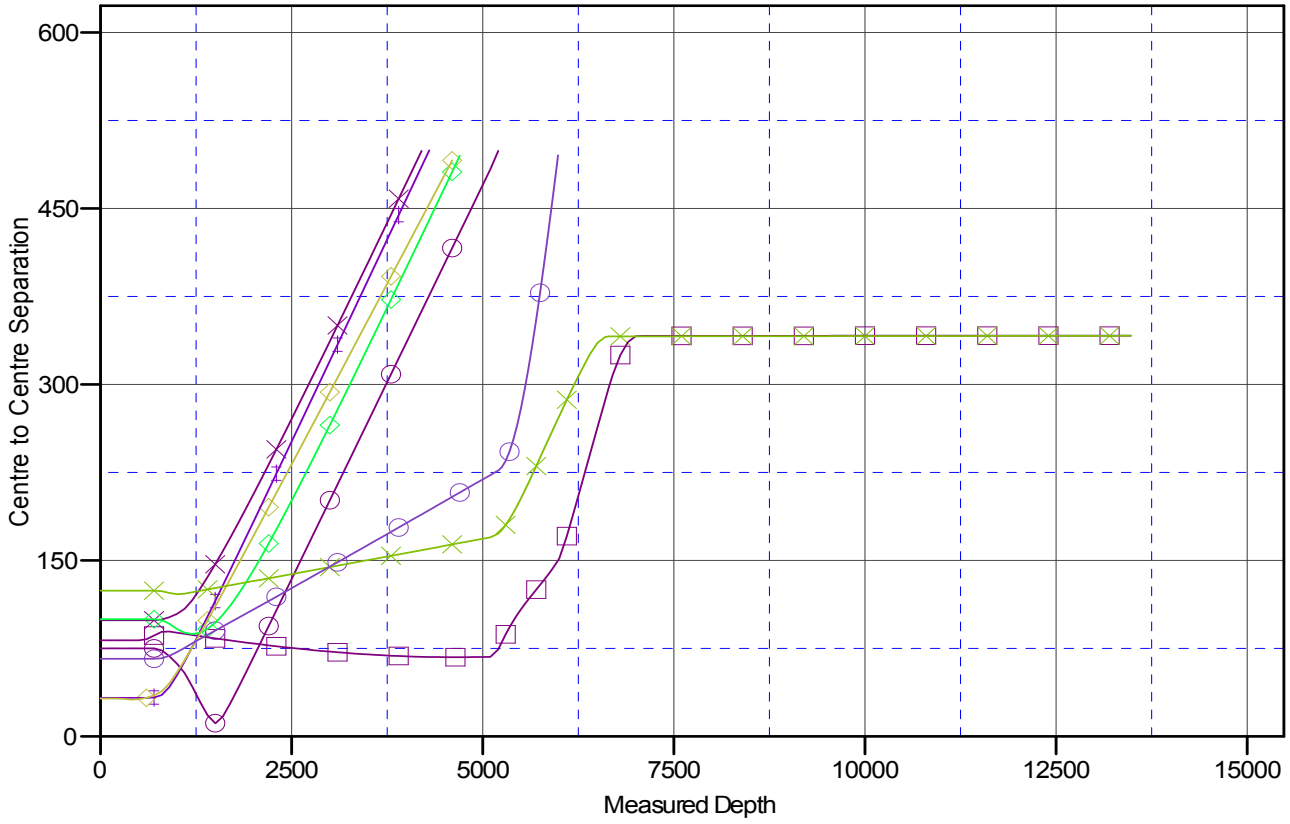
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.94	1.8	99.1	99.1				
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.8	99.1	99.1	98.9	0.19	528.059	
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.8	99.1	99.1	98.5	0.64	155.531	
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.8	99.1	99.1	98.0	1.09	91.195	
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.8	99.1	99.1	97.6	1.54	64.511	
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.8	99.1	99.1	97.1	1.99	49.907	
600.0	600.0	600.0	600.0	1.2	1.2	88.94	1.8	99.1	99.1	96.7	2.44	40.695	
700.0	700.0	700.0	700.0	1.4	1.4	88.94	1.8	99.1	99.1	96.2	2.88	34.354	CC, ES
800.0	800.0	800.0	800.0	1.7	1.7	109.75	1.8	99.1	99.7	96.3	3.33	29.909	
900.0	899.8	899.8	899.8	1.9	1.9	112.49	1.8	99.1	101.6	97.8	3.78	26.863	
1,000.0	999.6	999.6	999.6	2.1	2.1	116.02	1.8	99.1	104.4	100.2	4.23	24.669	
1,100.0	1,099.4	1,096.9	1,096.9	2.4	2.3	119.91	0.4	100.0	108.8	104.2	4.66	23.354	
1,200.0	1,199.1	1,193.5	1,193.4	2.6	2.5	124.60	-3.7	102.6	116.1	111.1	5.07	22.908	
1,300.0	1,298.9	1,292.3	1,292.0	2.8	2.7	129.35	-9.5	106.2	125.6	120.1	5.49	22.886	SF
1,400.0	1,398.6	1,391.4	1,390.8	3.1	2.9	133.42	-15.4	109.9	135.9	130.0	5.91	22.978	
1,500.0	1,498.4	1,490.4	1,489.6	3.3	3.1	136.92	-21.2	113.6	146.8	140.4	6.34	23.136	
1,600.0	1,598.1	1,589.5	1,588.4	3.6	3.3	139.92	-27.1	117.3	158.1	151.3	6.77	23.332	
1,700.0	1,697.9	1,688.5	1,687.1	3.8	3.5	142.52	-32.9	121.0	169.8	162.6	7.21	23.549	
1,800.0	1,797.6	1,787.5	1,785.9	4.1	3.8	144.78	-38.8	124.6	181.8	174.1	7.65	23.774	
1,900.0	1,897.4	1,886.6	1,884.7	4.3	4.0	146.76	-44.6	128.3	194.0	185.9	8.08	24.000	
2,000.0	1,997.2	1,985.6	1,983.5	4.6	4.2	148.51	-50.5	132.0	206.4	197.9	8.52	24.223	
2,100.0	2,096.9	2,084.7	2,082.3	4.8	4.5	150.05	-56.3	135.7	219.0	210.1	8.96	24.440	
2,200.0	2,196.7	2,183.7	2,181.1	5.1	4.7	151.43	-62.1	139.4	231.8	222.4	9.40	24.648	
2,300.0	2,296.4	2,282.7	2,279.9	5.3	5.0	152.67	-68.0	143.0	244.7	234.8	9.85	24.847	
2,400.0	2,396.2	2,381.8	2,378.7	5.6	5.2	153.78	-73.8	146.7	257.6	247.3	10.29	25.036	
2,500.0	2,495.9	2,480.8	2,477.5	5.9	5.5	154.78	-79.7	150.4	270.7	259.9	10.73	25.216	
2,600.0	2,595.7	2,579.8	2,576.3	6.1	5.7	155.69	-85.5	154.1	283.8	272.6	11.18	25.386	
2,700.0	2,695.5	2,678.9	2,675.1	6.4	6.0	156.52	-91.4	157.7	297.0	285.4	11.63	25.547	
2,800.0	2,795.2	2,777.9	2,773.9	6.6	6.2	157.28	-97.2	161.4	310.3	298.2	12.07	25.700	
2,900.0	2,895.0	2,877.0	2,872.7	6.9	6.5	157.98	-103.1	165.1	323.5	311.0	12.52	25.845	
3,000.0	2,994.7	2,976.0	2,971.5	7.1	6.7	158.62	-108.9	168.8	336.9	323.9	12.97	25.981	
3,100.0	3,094.5	3,075.0	3,070.3	7.4	7.0	159.21	-114.8	172.5	350.3	336.9	13.41	26.111	
3,200.0	3,194.2	3,174.1	3,169.1	7.6	7.2	159.76	-120.6	176.1	363.7	349.8	13.86	26.234	
3,300.0	3,294.0	3,273.1	3,267.9	7.9	7.5	160.27	-126.5	179.8	377.1	362.8	14.31	26.350	
3,400.0	3,393.7	3,372.1	3,366.7	8.2	7.7	160.75	-132.3	183.5	390.6	375.8	14.76	26.461	
3,500.0	3,493.5	3,471.2	3,465.5	8.4	8.0	161.19	-138.2	187.2	404.1	388.9	15.21	26.566	
3,600.0	3,593.3	3,570.2	3,564.3	8.7	8.2	161.61	-144.0	190.9	417.6	402.0	15.66	26.665	
3,700.0	3,693.0	3,669.3	3,663.1	8.9	8.5	162.00	-149.9	194.5	431.2	415.0	16.11	26.760	
3,800.0	3,792.8	3,768.3	3,761.9	9.2	8.7	162.36	-155.7	198.2	444.7	428.2	16.56	26.851	
3,900.0	3,892.5	3,867.3	3,860.7	9.4	9.0	162.71	-161.6	201.9	458.3	441.3	17.01	26.937	
4,000.0	3,992.3	3,966.4	3,959.5	9.7	9.3	163.03	-167.4	205.6	471.9	454.4	17.46	27.019	
4,100.0	4,092.0	4,065.4	4,058.3	9.9	9.5	163.34	-173.2	209.3	485.5	467.6	17.92	27.098	
4,200.0	4,191.8	4,164.4	4,157.1	10.2	9.8	163.63	-179.1	212.9	499.1	480.7	18.37	27.173	

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-2310B
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-2310B	**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-2310B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.08°



L E G E N D

Razor Federal #26J-3512B, HZ, Plan #1 V0
Razor Federal #26J-3510B, HZ, Plan #1 V0
Razor Federal #26J-2311A, HZ, Plan #1 V0
Razor Federal #26J-3509A, HZ, Plan #1 V0
Razor Federal #26J-3511A, HZ, Plan #1 V0
Razor Federal #26J-2312B, HZ, Plan #1 V0
Razor Federal #26J-2309A, HZ, Plan #1 V0
Razor #26J-2633L, HZ, Plan #1 V0