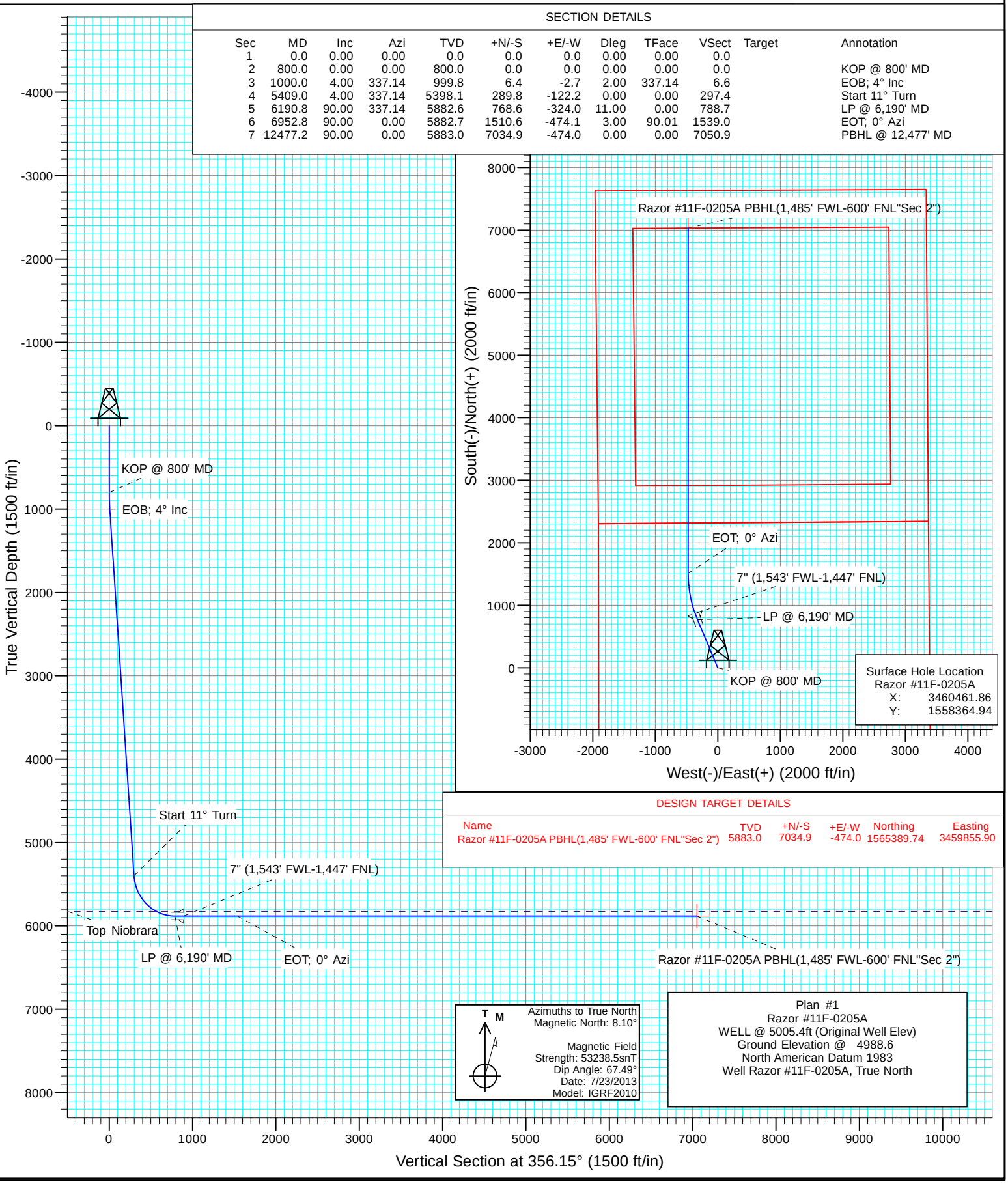
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11F-0205A
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0		KOP @ 800' MD
3	1000.0	4.00	337.14	999.8	6.4	-2.7	2.00	337.14	6.6		EOB; 4° Inc
4	5409.0	4.00	337.14	5398.1	289.8	-122.2	0.00	0.00	297.4		Start 11° Turn
5	6190.8	90.00	337.14	5882.6	768.6	-324.0	11.00	0.00	788.7		LP @ 6,190' MD
6	6952.8	90.00	0.00	5882.7	1510.6	-474.1	3.00	90.01	1539.0		EOT; 0° Azi
7	12477.2	90.00	0.00	5883.0	7034.9	-474.0	0.00	0.00	7050.9		PBHL @ 12,477' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor #11F-0205A PBHL(1,485' FWL-600' FNL"Sec 2")	5883.0	7034.9	-474.0	1565389.74	3459855.90

Azimuths to True North
Magnetic North: 8.10°

Magnetic Field
Strength: 53238.5snT
Dip Angle: 67.49°
Date: 7/23/2013
Model: IGRF2010

Plan #1
Razor #11F-0205A
WELL @ 5005.4ft (Original Well Elev)
Ground Elevation @ 4988.6
North American Datum 1983
Well Razor #11F-0205A, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11F-0205A	**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 S11-T10N-R58W

Site Position:		**Northing:**	1,558,623.69 ft	**Latitude:**	40.854775
From:	Lat/Long	**Easting:**	3,463,396.85 ft	**Longitude:**	-103.824847
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.08 °

Well Razor #11F-0205A

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,558,364.94 ft	**Latitude:**	40.854217
	+E/-W	0.0 ft	**Easting:**	3,460,461.86 ft	**Longitude:**	-103.835472
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,988.6 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/23/2013	8.10	67.49	53,239

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	356.15

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	4.00	337.14	999.8	6.4	-2.7	2.00	2.00	0.00	337.14	
5,409.0	4.00	337.14	5,398.1	289.8	-122.2	0.00	0.00	0.00	0.00	
6,190.8	90.00	337.14	5,882.6	768.6	-324.0	11.00	11.00	0.00	0.00	
6,952.8	90.00	0.00	5,882.7	1,510.6	-474.1	3.00	0.00	3.00	90.01	
12,477.2	90.00	0.00	5,883.0	7,034.9	-474.0	0.00	0.00	0.00	0.00	Razor #11F-0205A PE

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	KOP @ 800' MD
900.0	2.00	337.14	900.0	1.6	-0.7	1.6	2.00	2.00	
1,000.0	4.00	337.14	999.8	6.4	-2.7	6.6	2.00	2.00	EOB; 4° Inc
1,100.0	4.00	337.14	1,099.6	12.9	-5.4	13.2	0.00	0.00	
1,200.0	4.00	337.14	1,199.4	19.3	-8.1	19.8	0.00	0.00	
1,300.0	4.00	337.14	1,299.1	25.7	-10.8	26.4	0.00	0.00	
1,400.0	4.00	337.14	1,398.9	32.1	-13.6	33.0	0.00	0.00	
1,500.0	4.00	337.14	1,498.6	38.6	-16.3	39.6	0.00	0.00	
1,600.0	4.00	337.14	1,598.4	45.0	-19.0	46.2	0.00	0.00	
1,700.0	4.00	337.14	1,698.1	51.4	-21.7	52.8	0.00	0.00	
1,800.0	4.00	337.14	1,797.9	57.9	-24.4	59.4	0.00	0.00	
1,900.0	4.00	337.14	1,897.6	64.3	-27.1	66.0	0.00	0.00	
2,000.0	4.00	337.14	1,997.4	70.7	-29.8	72.6	0.00	0.00	
2,100.0	4.00	337.14	2,097.2	77.1	-32.5	79.1	0.00	0.00	
2,200.0	4.00	337.14	2,196.9	83.6	-35.2	85.7	0.00	0.00	
2,300.0	4.00	337.14	2,296.7	90.0	-37.9	92.3	0.00	0.00	
2,400.0	4.00	337.14	2,396.4	96.4	-40.6	98.9	0.00	0.00	
2,500.0	4.00	337.14	2,496.2	102.8	-43.4	105.5	0.00	0.00	
2,600.0	4.00	337.14	2,595.9	109.3	-46.1	112.1	0.00	0.00	
2,700.0	4.00	337.14	2,695.7	115.7	-48.8	118.7	0.00	0.00	
2,800.0	4.00	337.14	2,795.5	122.1	-51.5	125.3	0.00	0.00	
2,900.0	4.00	337.14	2,895.2	128.6	-54.2	131.9	0.00	0.00	
3,000.0	4.00	337.14	2,995.0	135.0	-56.9	138.5	0.00	0.00	
3,100.0	4.00	337.14	3,094.7	141.4	-59.6	145.1	0.00	0.00	
3,200.0	4.00	337.14	3,194.5	147.8	-62.3	151.7	0.00	0.00	
3,300.0	4.00	337.14	3,294.2	154.3	-65.0	158.3	0.00	0.00	
3,400.0	4.00	337.14	3,394.0	160.7	-67.7	164.9	0.00	0.00	
3,500.0	4.00	337.14	3,493.7	167.1	-70.5	171.5	0.00	0.00	
3,600.0	4.00	337.14	3,593.5	173.6	-73.2	178.1	0.00	0.00	
3,700.0	4.00	337.14	3,693.3	180.0	-75.9	184.7	0.00	0.00	
3,800.0	4.00	337.14	3,793.0	186.4	-78.6	191.3	0.00	0.00	
3,900.0	4.00	337.14	3,892.8	192.8	-81.3	197.9	0.00	0.00	
4,000.0	4.00	337.14	3,992.5	199.3	-84.0	204.5	0.00	0.00	
4,100.0	4.00	337.14	4,092.3	205.7	-86.7	211.1	0.00	0.00	
4,200.0	4.00	337.14	4,192.0	212.1	-89.4	217.7	0.00	0.00	
4,300.0	4.00	337.14	4,291.8	218.5	-92.1	224.2	0.00	0.00	
4,400.0	4.00	337.14	4,391.6	225.0	-94.8	230.8	0.00	0.00	
4,500.0	4.00	337.14	4,491.3	231.4	-97.6	237.4	0.00	0.00	
4,600.0	4.00	337.14	4,591.1	237.8	-100.3	244.0	0.00	0.00	
4,700.0	4.00	337.14	4,690.8	244.3	-103.0	250.6	0.00	0.00	
4,800.0	4.00	337.14	4,790.6	250.7	-105.7	257.2	0.00	0.00	
4,900.0	4.00	337.14	4,890.3	257.1	-108.4	263.8	0.00	0.00	
5,000.0	4.00	337.14	4,990.1	263.5	-111.1	270.4	0.00	0.00	
5,100.0	4.00	337.14	5,089.9	270.0	-113.8	277.0	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11F-0205A	**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	337.14	5,189.6	276.4	-116.5	283.6	0.00	0.00	
5,300.0	4.00	337.14	5,289.4	282.8	-119.2	290.2	0.00	0.00	
5,409.0	4.00	337.14	5,398.1	289.8	-122.2	297.4	0.00	0.00	Start 11° Turn
5,450.0	8.51	337.14	5,438.8	293.9	-123.9	301.6	11.00	11.00	
5,500.0	14.01	337.14	5,487.9	302.9	-127.7	310.8	11.00	11.00	
5,550.0	19.51	337.14	5,535.7	316.2	-133.3	324.5	11.00	11.00	
5,600.0	25.01	337.14	5,582.0	333.7	-140.7	342.4	11.00	11.00	
5,650.0	30.51	337.14	5,626.2	355.1	-149.7	364.4	11.00	11.00	
5,700.0	36.01	337.14	5,668.0	380.4	-160.4	390.3	11.00	11.00	
5,750.0	41.51	337.14	5,707.0	409.2	-172.5	419.9	11.00	11.00	
5,800.0	47.01	337.14	5,742.8	441.3	-186.1	452.9	11.00	11.00	
5,850.0	52.51	337.14	5,775.1	476.5	-200.9	488.9	11.00	11.00	
5,900.0	58.01	337.14	5,803.5	514.3	-216.8	527.8	11.00	11.00	
5,945.7	63.03	337.14	5,826.0	551.0	-232.3	565.3	11.00	11.00	Top Niobrara
5,950.0	63.51	337.14	5,828.0	554.5	-233.8	569.0	11.00	11.00	
6,000.0	69.01	337.14	5,848.1	596.7	-251.6	612.2	11.00	11.00	
6,050.0	74.51	337.14	5,863.7	640.4	-270.0	657.1	11.00	11.00	
6,100.0	80.01	337.14	5,874.7	685.3	-288.9	703.2	11.00	11.00	
6,150.0	85.51	337.14	5,881.0	731.0	-308.2	750.1	11.00	11.00	
6,190.8	90.00	337.14	5,882.6	768.6	-324.0	788.7	11.00	11.00	LP @ 6,190' MD
6,200.0	90.00	337.42	5,882.6	777.1	-327.6	797.3	3.00	0.00	
6,300.0	90.00	340.42	5,882.6	870.4	-363.6	892.9	3.00	0.00	7" (1,543' FWL-1,447' FNL)
6,400.0	90.00	343.42	5,882.6	965.4	-394.6	989.8	3.00	0.00	
6,500.0	90.00	346.42	5,882.6	1,062.0	-420.6	1,087.8	3.00	0.00	
6,600.0	90.00	349.42	5,882.7	1,159.7	-441.6	1,186.8	3.00	0.00	
6,700.0	90.00	352.42	5,882.7	1,258.5	-457.3	1,286.4	3.00	0.00	
6,800.0	90.00	355.42	5,882.7	1,357.9	-467.9	1,386.3	3.00	0.00	
6,900.0	90.00	358.42	5,882.7	1,457.7	-473.3	1,486.3	3.00	0.00	
6,952.8	90.00	0.00	5,882.7	1,510.6	-474.1	1,539.0	3.00	0.00	EOT; 0° Azi
7,000.0	90.00	0.00	5,882.7	1,557.7	-474.1	1,586.1	0.00	0.00	
7,100.0	90.00	0.00	5,882.7	1,657.7	-474.1	1,685.9	0.00	0.00	
7,200.0	90.00	0.00	5,882.7	1,757.7	-474.1	1,785.6	0.00	0.00	
7,300.0	90.00	0.00	5,882.7	1,857.7	-474.1	1,885.4	0.00	0.00	
7,400.0	90.00	0.00	5,882.7	1,957.7	-474.0	1,985.2	0.00	0.00	
7,500.0	90.00	0.00	5,882.7	2,057.7	-474.0	2,084.9	0.00	0.00	
7,600.0	90.00	0.00	5,882.7	2,157.7	-474.0	2,184.7	0.00	0.00	
7,700.0	90.00	0.00	5,882.7	2,257.7	-474.0	2,284.5	0.00	0.00	
7,800.0	90.00	0.00	5,882.7	2,357.7	-474.0	2,384.3	0.00	0.00	
7,900.0	90.00	0.00	5,882.7	2,457.7	-474.0	2,484.0	0.00	0.00	
8,000.0	90.00	0.00	5,882.7	2,557.7	-474.0	2,583.8	0.00	0.00	
8,100.0	90.00	0.00	5,882.7	2,657.7	-474.0	2,683.6	0.00	0.00	
8,200.0	90.00	0.00	5,882.7	2,757.7	-474.0	2,783.4	0.00	0.00	
8,300.0	90.00	0.00	5,882.8	2,857.7	-474.0	2,883.1	0.00	0.00	
8,400.0	90.00	0.00	5,882.8	2,957.7	-474.0	2,982.9	0.00	0.00	
8,500.0	90.00	0.00	5,882.8	3,057.7	-474.0	3,082.7	0.00	0.00	
8,600.0	90.00	0.00	5,882.8	3,157.7	-474.0	3,182.5	0.00	0.00	
8,700.0	90.00	0.00	5,882.8	3,257.7	-474.0	3,282.2	0.00	0.00	
8,800.0	90.00	0.00	5,882.8	3,357.7	-474.0	3,382.0	0.00	0.00	
8,900.0	90.00	0.00	5,882.8	3,457.7	-474.0	3,481.8	0.00	0.00	
9,000.0	90.00	0.00	5,882.8	3,557.7	-474.0	3,581.6	0.00	0.00	
9,100.0	90.00	0.00	5,882.8	3,657.7	-474.0	3,681.3	0.00	0.00	
9,200.0	90.00	0.00	5,882.8	3,757.7	-474.0	3,781.1	0.00	0.00	

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Well:	Razor #11F-0205A	**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
9,300.0	90.00	0.00	5,882.8	3,857.7	-474.0	3,880.9	0.00	0.00	
9,400.0	90.00	0.00	5,882.8	3,957.7	-474.0	3,980.6	0.00	0.00	
9,500.0	90.00	0.00	5,882.8	4,057.7	-474.0	4,080.4	0.00	0.00	
9,600.0	90.00	0.00	5,882.8	4,157.7	-474.0	4,180.2	0.00	0.00	
9,700.0	90.00	0.00	5,882.8	4,257.7	-474.0	4,280.0	0.00	0.00	
9,800.0	90.00	0.00	5,882.8	4,357.7	-474.0	4,379.7	0.00	0.00	
9,900.0	90.00	0.00	5,882.9	4,457.7	-474.0	4,479.5	0.00	0.00	
10,000.0	90.00	0.00	5,882.9	4,557.7	-474.0	4,579.3	0.00	0.00	
10,100.0	90.00	0.00	5,882.9	4,657.7	-474.0	4,679.1	0.00	0.00	
10,200.0	90.00	0.00	5,882.9	4,757.7	-474.0	4,778.8	0.00	0.00	
10,300.0	90.00	0.00	5,882.9	4,857.7	-474.0	4,878.6	0.00	0.00	
10,400.0	90.00	0.00	5,882.9	4,957.7	-474.0	4,978.4	0.00	0.00	
10,500.0	90.00	0.00	5,882.9	5,057.7	-474.0	5,078.2	0.00	0.00	
10,600.0	90.00	0.00	5,882.9	5,157.7	-474.0	5,177.9	0.00	0.00	
10,700.0	90.00	0.00	5,882.9	5,257.7	-474.0	5,277.7	0.00	0.00	
10,800.0	90.00	0.00	5,882.9	5,357.7	-474.0	5,377.5	0.00	0.00	
10,900.0	90.00	0.00	5,882.9	5,457.7	-474.0	5,477.3	0.00	0.00	
11,000.0	90.00	0.00	5,882.9	5,557.7	-474.0	5,577.0	0.00	0.00	
11,100.0	90.00	0.00	5,882.9	5,657.7	-474.0	5,676.8	0.00	0.00	
11,200.0	90.00	0.00	5,882.9	5,757.7	-474.0	5,776.6	0.00	0.00	
11,300.0	90.00	0.00	5,882.9	5,857.7	-474.0	5,876.3	0.00	0.00	
11,400.0	90.00	0.00	5,882.9	5,957.7	-474.0	5,976.1	0.00	0.00	
11,500.0	90.00	0.00	5,883.0	6,057.7	-474.0	6,075.9	0.00	0.00	
11,600.0	90.00	0.00	5,883.0	6,157.7	-474.0	6,175.7	0.00	0.00	
11,700.0	90.00	0.00	5,883.0	6,257.7	-474.0	6,275.4	0.00	0.00	
11,800.0	90.00	0.00	5,883.0	6,357.7	-474.0	6,375.2	0.00	0.00	
11,900.0	90.00	0.00	5,883.0	6,457.7	-474.0	6,475.0	0.00	0.00	
12,000.0	90.00	0.00	5,883.0	6,557.7	-474.0	6,574.8	0.00	0.00	
12,100.0	90.00	0.00	5,883.0	6,657.7	-474.0	6,674.5	0.00	0.00	
12,200.0	90.00	0.00	5,883.0	6,757.7	-474.0	6,774.3	0.00	0.00	
12,300.0	90.00	0.00	5,883.0	6,857.7	-474.0	6,874.1	0.00	0.00	
12,400.0	90.00	0.00	5,883.0	6,957.7	-474.0	6,973.9	0.00	0.00	
12,477.2	90.00	0.00	5,883.0	7,034.9	-474.0	7,050.9	0.00	0.00	PBHL @ 12,477' 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
Razor #11F-0205A PBHL - plan hits target center - Point	0.00	0.00	5,883.0	7,034.9	-474.0	1,565,389.74	3,459,855.90	40.873525	-103.837186

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,300.0	5,882.6	7" (1,543' FWL-1,447' FNL)	7.000	7.500

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5005.4ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,945.7	5,826.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
800.0	800.0	0.0	0.0	KOP @ 800' MD
1,000.0	999.8	6.4	-2.7	EOB; 4° Inc
5,409.0	5,398.1	289.8	-122.2	Start 11° Turn
6,190.8	5,882.6	768.6	-324.0	LP @ 6,190' MD
6,952.8	5,882.7	1,510.6	-474.1	EOT; 0° Azi
12,477.2	5,883.0	7,034.9	-474.0	PBHL @ 12,477' MD

Whiting Petroleum Corporation

Weld County, CO
S11-T10N-R58W
Razor #11F-0205A
HZ
Plan #1

Anticollision Report

24 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #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 10,000.0usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 7/24/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,476.3	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S11-T10N-R58W						
Razor #11F-0206B - HZ - Plan #1	838.0	838.2	32.7	29.2	9.333	CC
Razor #11F-0206B - HZ - Plan #1	900.0	900.2	32.9	29.1	8.706	ES
Razor #11F-0206B - HZ - Plan #1	12,477.2	12,494.3	344.7	86.3	1.334	Level 3, SF
Razor #11F-0207A - HZ - Plan #1	600.0	600.0	66.1	63.7	27.144	CC
Razor #11F-0207A - HZ - Plan #1	700.0	699.7	66.3	63.4	23.008	ES
Razor #11F-0207A - HZ - Plan #1	12,477.2	12,385.7	659.9	391.7	2.461	SF
Razor #11F-0208B - HZ - Plan #1	500.0	500.0	99.1	97.1	49.937	CC, ES
Razor #11F-0208B - HZ - Plan #1	12,477.2	12,532.7	994.6	729.0	3.744	SF
Razor #11F-1405A - HZ - Plan #1	500.0	500.0	74.9	72.9	37.727	CC, ES
Razor #11F-1405A - HZ - Plan #1	1,000.0	993.5	107.7	103.6	26.219	SF
Razor #11F-1406B - HZ - Plan #1	600.0	600.0	81.9	79.4	33.625	CC, ES
Razor #11F-1406B - HZ - Plan #1	900.0	894.3	95.9	92.2	26.031	SF
Razor #11F-1407A - HZ - Plan #1	700.0	700.0	99.9	97.0	34.635	CC, ES
Razor #11F-1407A - HZ - Plan #1	1,000.0	992.8	118.7	114.6	28.797	SF
Razor #11F-1408B - HZ - Plan #1	800.0	800.0	124.3	120.9	37.272	CC, ES
Razor #11F-1408B - HZ - Plan #1	5,409.0	5,357.5	737.9	714.0	30.926	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0206B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.02	0.0	33.0	33.0				
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	33.0	33.0	32.9	0.19	176.699	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	33.0	33.0	32.4	0.64	51.911	
300.0	300.0	300.0	300.0	0.5	0.5	90.02	0.0	33.0	33.0	32.0	1.09	30.425	
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	33.0	33.0	31.5	1.54	21.518	
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	33.0	33.0	31.1	1.99	16.646	
600.0	600.0	600.0	600.0	1.2	1.2	90.02	0.0	33.0	33.0	30.6	2.43	13.572	
700.0	700.0	700.0	700.0	1.4	1.4	90.02	0.0	33.0	33.0	30.2	2.88	11.457	
800.0	800.0	800.2	800.1	1.7	1.7	87.01	1.7	32.7	32.8	29.4	3.33	9.834	
838.0	838.0	838.2	838.2	1.8	1.8	107.53	3.3	32.5	32.7	29.2	3.50	9.333	CC
900.0	900.0	900.2	900.0	1.9	1.9	103.65	6.9	31.8	32.9	29.1	3.78	8.706	ES
1,000.0	999.8	1,000.1	999.7	2.1	2.1	100.45	13.7	30.6	34.1	29.9	4.24	8.050	
1,100.0	1,099.6	1,100.1	1,099.5	2.3	2.4	100.27	20.6	29.4	35.7	30.9	4.70	7.581	
1,200.0	1,199.4	1,200.1	1,199.2	2.6	2.6	100.11	27.5	28.2	37.2	32.0	5.18	7.185	
1,300.0	1,299.1	1,300.1	1,299.0	2.8	2.8	99.96	34.3	26.9	38.8	33.1	5.66	6.847	
1,400.0	1,398.9	1,400.1	1,398.7	3.1	3.1	99.82	41.2	25.7	40.3	34.2	6.15	6.557	
1,500.0	1,498.6	1,500.1	1,498.5	3.3	3.3	99.70	48.1	24.5	41.8	35.2	6.64	6.305	
1,600.0	1,598.4	1,600.1	1,598.2	3.6	3.6	99.58	54.9	23.3	43.4	36.3	7.13	6.086	
1,700.0	1,698.1	1,700.1	1,698.0	3.8	3.8	99.47	61.8	22.1	45.0	37.3	7.63	5.893	
1,800.0	1,797.9	1,800.1	1,797.7	4.1	4.1	99.36	68.7	20.8	46.5	38.4	8.13	5.723	
1,900.0	1,897.6	1,900.0	1,897.4	4.3	4.3	99.27	75.5	19.6	48.1	39.4	8.63	5.570	
2,000.0	1,997.4	2,000.0	1,997.2	4.6	4.6	99.18	82.4	18.4	49.6	40.5	9.13	5.434	
2,100.0	2,097.2	2,100.0	2,096.9	4.8	4.8	99.09	89.3	17.2	51.2	41.5	9.63	5.311	
2,200.0	2,196.9	2,200.0	2,196.7	5.1	5.1	99.01	96.1	16.0	52.7	42.6	10.13	5.200	
2,300.0	2,296.7	2,300.0	2,296.4	5.3	5.3	98.94	103.0	14.7	54.3	43.6	10.64	5.099	
2,400.0	2,396.4	2,400.0	2,396.2	5.6	5.6	98.86	109.9	13.5	55.8	44.7	11.14	5.007	
2,500.0	2,496.2	2,500.0	2,495.9	5.8	5.9	98.80	116.7	12.3	57.4	45.7	11.65	4.923	
2,600.0	2,595.9	2,600.0	2,595.7	6.1	6.1	98.73	123.6	11.1	58.9	46.8	12.16	4.845	
2,700.0	2,695.7	2,699.9	2,695.4	6.3	6.4	98.67	130.5	9.8	60.5	47.8	12.67	4.774	
2,800.0	2,795.5	2,799.9	2,795.1	6.6	6.6	98.62	137.3	8.6	62.0	48.8	13.17	4.707	
2,900.0	2,895.2	2,899.9	2,894.9	6.8	6.9	98.56	144.2	7.4	63.6	49.9	13.68	4.646	
3,000.0	2,995.0	2,999.9	2,994.6	7.1	7.1	98.51	151.1	6.2	65.1	50.9	14.19	4.589	
3,100.0	3,094.7	3,099.9	3,094.4	7.3	7.4	98.46	157.9	5.0	66.7	52.0	14.70	4.536	
3,200.0	3,194.5	3,199.9	3,194.1	7.6	7.6	98.41	164.8	3.7	68.2	53.0	15.21	4.486	
3,300.0	3,294.2	3,299.9	3,293.9	7.9	7.9	98.37	171.7	2.5	69.8	54.1	15.72	4.439	
3,400.0	3,394.0	3,399.9	3,393.6	8.1	8.1	98.32	178.5	1.3	71.3	55.1	16.23	4.395	
3,500.0	3,493.7	3,499.8	3,493.4	8.4	8.4	98.28	185.4	0.1	72.9	56.1	16.74	4.354	
3,600.0	3,593.5	3,599.8	3,593.1	8.6	8.7	98.24	192.3	-1.1	74.4	57.2	17.25	4.315	
3,700.0	3,693.3	3,699.8	3,692.8	8.9	8.9	98.20	199.2	-2.4	76.0	58.2	17.76	4.279	
3,800.0	3,793.0	3,799.8	3,792.6	9.1	9.2	98.17	206.0	-3.6	77.5	59.3	18.27	4.244	
3,900.0	3,892.8	3,899.8	3,892.3	9.4	9.4	98.13	212.9	-4.8	79.1	60.3	18.78	4.211	
4,000.0	3,992.5	3,999.8	3,992.1	9.6	9.7	98.10	219.8	-6.0	80.6	61.3	19.29	4.180	
4,100.0	4,092.3	4,099.8	4,091.8	9.9	9.9	98.07	226.6	-7.2	82.2	62.4	19.80	4.151	
4,200.0	4,192.0	4,199.8	4,191.6	10.2	10.2	98.03	233.5	-8.5	83.7	63.4	20.31	4.123	
4,300.0	4,291.8	4,299.8	4,291.3	10.4	10.4	98.00	240.4	-9.7	85.3	64.5	20.82	4.096	
4,400.0	4,391.6	4,399.7	4,391.1	10.7	10.7	97.97	247.2	-10.9	86.8	65.5	21.33	4.071	
4,500.0	4,491.3	4,499.7	4,490.8	10.9	11.0	97.95	254.1	-12.1	88.4	66.5	21.84	4.047	
4,600.0	4,591.1	4,599.7	4,590.5	11.2	11.2	97.92	261.0	-13.3	89.9	67.6	22.36	4.023	
4,700.0	4,690.8	4,699.7	4,690.3	11.4	11.5	97.89	267.8	-14.6	91.5	68.6	22.87	4.001	
4,800.0	4,790.6	4,799.7	4,790.0	11.7	11.7	97.87	274.7	-15.8	93.0	69.7	23.38	3.980	
4,900.0	4,890.3	4,899.7	4,889.8	11.9	12.0	97.84	281.6	-17.0	94.6	70.7	23.89	3.960	
5,000.0	4,990.1	4,999.7	4,989.5	12.2	12.2	97.82	288.4	-18.2	96.2	71.8	24.40	3.940	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0206B - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,089.9	5,099.7	5,089.3	12.5	12.5	97.80	295.3	-19.5	97.7	72.8	24.91	3.922	
5,200.0	5,189.6	5,199.6	5,189.0	12.7	12.7	97.77	302.2	-20.7	99.3	73.8	25.42	3.904	
5,300.0	5,289.4	5,299.6	5,288.8	13.0	13.0	97.75	309.0	-21.9	100.8	74.9	25.94	3.887	
5,409.0	5,398.1	5,408.6	5,397.5	13.3	13.3	97.73	316.5	-23.2	102.5	76.0	26.49	3.869	
5,450.0	5,438.8	5,449.6	5,438.3	13.4	13.4	98.51	319.3	-23.7	103.4	76.7	26.71	3.870	
5,500.0	5,487.9	5,499.1	5,487.8	13.5	13.5	101.66	322.7	-24.3	105.3	78.3	26.97	3.903	
5,550.0	5,535.7	5,548.5	5,536.8	13.8	13.7	106.21	327.4	-25.2	108.7	81.5	27.20	3.998	
5,600.0	5,582.0	5,598.6	5,586.1	14.0	13.8	110.29	336.7	-26.8	114.0	86.5	27.42	4.157	
5,650.0	5,626.2	5,649.6	5,635.0	14.3	14.0	113.73	351.0	-29.3	120.8	93.1	27.61	4.373	
5,700.0	5,668.0	5,701.5	5,683.1	14.7	14.3	116.46	370.2	-32.8	128.9	101.1	27.80	4.636	
5,750.0	5,707.0	5,754.3	5,729.7	15.1	14.6	118.50	394.5	-37.1	138.1	110.1	28.02	4.930	
5,800.0	5,742.8	5,808.0	5,774.4	15.5	15.0	119.89	423.8	-42.3	148.2	119.9	28.30	5.239	
5,850.0	5,775.1	5,862.6	5,816.4	16.0	15.4	120.69	458.1	-48.4	159.1	130.4	28.69	5.545	
5,900.0	5,803.5	5,918.1	5,855.1	16.5	15.9	120.97	497.2	-55.3	170.4	141.2	29.24	5.828	
5,950.0	5,827.9	5,974.5	5,889.8	17.1	16.5	120.81	540.8	-63.1	182.1	152.1	29.98	6.073	
6,000.0	5,848.1	6,031.7	5,920.0	17.8	17.2	120.25	588.6	-71.6	194.0	163.0	30.95	6.268	
6,050.0	5,863.7	6,089.7	5,945.0	18.5	17.9	119.37	640.1	-80.8	206.0	173.8	32.15	6.407	
6,100.0	5,874.7	6,148.4	5,964.3	19.2	18.6	118.20	694.8	-90.5	217.9	184.4	33.57	6.492	
6,150.0	5,881.0	6,207.9	5,977.2	20.0	19.5	116.80	751.9	-100.6	229.7	194.5	35.20	6.527	
6,190.8	5,882.6	6,256.9	5,982.9	20.6	20.2	115.51	799.8	-109.1	239.2	202.5	36.66	6.525	
6,200.0	5,882.6	6,268.0	5,983.6	20.8	20.3	115.37	810.7	-111.1	241.2	204.2	36.98	6.523	
6,300.0	5,882.6	6,362.3	5,984.1	22.2	21.7	113.39	903.7	-126.3	260.2	220.0	40.21	6.471	
6,400.0	5,882.6	6,449.0	5,984.1	23.7	22.9	111.75	989.8	-136.4	278.5	235.2	43.29	6.432	
6,500.0	5,882.6	6,535.0	5,984.1	25.3	24.1	110.36	1,075.6	-142.6	296.3	249.9	46.35	6.393	
6,600.0	5,882.6	6,620.5	5,984.1	26.9	25.4	109.18	1,161.0	-144.9	313.6	264.2	49.35	6.354	
6,700.0	5,882.6	6,717.9	5,984.1	28.5	26.9	108.14	1,258.5	-144.9	328.5	276.0	52.51	6.256	
6,800.0	5,882.6	6,817.3	5,984.1	30.1	28.5	107.49	1,357.9	-144.9	338.6	283.0	55.60	6.090	
6,900.0	5,882.7	6,917.2	5,984.1	31.7	30.2	107.18	1,457.7	-144.9	343.8	285.2	58.54	5.872	
6,952.8	5,882.7	6,970.0	5,984.1	32.5	31.1	107.13	1,510.6	-144.9	344.5	284.4	60.03	5.738	
7,000.0	5,882.7	7,017.1	5,984.1	33.3	31.9	107.13	1,557.7	-144.9	344.5	282.9	61.57	5.595	
7,100.0	5,882.7	7,117.1	5,984.1	34.9	33.6	107.13	1,657.7	-144.9	344.5	279.6	64.86	5.311	
7,200.0	5,882.7	7,217.1	5,984.1	36.6	35.4	107.13	1,757.7	-144.9	344.5	276.3	68.19	5.052	
7,300.0	5,882.7	7,317.1	5,984.1	38.3	37.2	107.13	1,857.7	-144.8	344.5	272.9	71.56	4.814	
7,400.0	5,882.7	7,417.1	5,984.1	40.0	38.9	107.12	1,957.7	-144.8	344.5	269.5	74.96	4.596	
7,500.0	5,882.7	7,517.1	5,984.1	41.7	40.7	107.12	2,057.7	-144.8	344.5	266.1	78.38	4.395	
7,600.0	5,882.7	7,617.1	5,984.1	43.4	42.5	107.12	2,157.7	-144.8	344.5	262.7	81.83	4.210	
7,700.0	5,882.7	7,717.1	5,984.1	45.2	44.4	107.12	2,257.7	-144.8	344.5	259.2	85.30	4.039	
7,800.0	5,882.7	7,817.1	5,984.1	46.9	46.2	107.12	2,357.7	-144.8	344.5	255.7	88.79	3.880	
7,900.0	5,882.7	7,917.1	5,984.1	48.7	48.0	107.12	2,457.7	-144.8	344.5	252.2	92.30	3.733	
8,000.0	5,882.7	8,017.1	5,984.1	50.5	49.8	107.11	2,557.7	-144.8	344.5	248.7	95.82	3.595	
8,100.0	5,882.7	8,117.1	5,984.1	52.3	51.7	107.11	2,657.7	-144.8	344.5	245.2	99.35	3.468	
8,200.0	5,882.7	8,217.1	5,984.1	54.1	53.5	107.11	2,757.7	-144.8	344.5	241.6	102.90	3.348	
8,300.0	5,882.7	8,317.1	5,984.1	55.9	55.4	107.11	2,857.7	-144.8	344.5	238.1	106.45	3.236	
8,400.0	5,882.7	8,417.1	5,984.1	57.7	57.3	107.11	2,957.7	-144.8	344.5	234.5	110.02	3.132	
8,500.0	5,882.8	8,517.1	5,984.1	59.6	59.1	107.11	3,057.7	-144.7	344.5	230.9	113.59	3.033	
8,600.0	5,882.8	8,617.1	5,984.1	61.4	61.0	107.10	3,157.7	-144.7	344.5	227.4	117.17	2.940	
8,700.0	5,882.8	8,717.1	5,984.1	63.2	62.9	107.10	3,257.7	-144.7	344.5	223.8	120.76	2.853	
8,800.0	5,882.8	8,817.1	5,984.1	65.1	64.7	107.10	3,357.7	-144.7	344.5	220.2	124.35	2.771	
8,900.0	5,882.8	8,917.1	5,984.1	66.9	66.6	107.10	3,457.7	-144.7	344.5	216.6	127.95	2.693	
9,000.0	5,882.8	9,017.1	5,984.1	68.8	68.5	107.10	3,557.7	-144.7	344.6	213.0	131.56	2.619	
9,100.0	5,882.8	9,117.1	5,984.1	70.6	70.4	107.10	3,657.7	-144.7	344.6	209.4	135.17	2.549	
9,200.0	5,882.8	9,217.1	5,984.1	72.5	72.2	107.09	3,757.7	-144.7	344.6	205.8	138.79	2.483	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0206B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,882.8	9,317.1	5,984.1	74.3	74.1	107.09	3,857.7	-144.7	344.6	202.2	142.41	2.420	
9,400.0	5,882.8	9,417.1	5,984.1	76.2	76.0	107.09	3,957.7	-144.7	344.6	198.5	146.03	2.360	
9,500.0	5,882.8	9,517.1	5,984.1	78.1	77.9	107.09	4,057.7	-144.7	344.6	194.9	149.66	2.302	
9,600.0	5,882.8	9,617.1	5,984.1	79.9	79.8	107.09	4,157.7	-144.7	344.6	191.3	153.29	2.248	
9,700.0	5,882.8	9,717.1	5,984.1	81.8	81.7	107.09	4,257.7	-144.7	344.6	187.7	156.93	2.196	
9,800.0	5,882.8	9,817.1	5,984.1	83.7	83.6	107.08	4,357.7	-144.6	344.6	184.0	160.57	2.146	
9,900.0	5,882.8	9,917.1	5,984.1	85.6	85.5	107.08	4,457.7	-144.6	344.6	180.4	164.21	2.099	
10,000.0	5,882.8	10,017.1	5,984.1	87.4	87.4	107.08	4,557.7	-144.6	344.6	176.7	167.85	2.053	
10,100.0	5,882.9	10,117.1	5,984.1	89.3	89.3	107.08	4,657.7	-144.6	344.6	173.1	171.50	2.009	
10,200.0	5,882.9	10,217.1	5,984.1	91.2	91.2	107.08	4,757.7	-144.6	344.6	169.5	175.14	1.968	
10,300.0	5,882.9	10,317.1	5,984.1	93.1	93.1	107.08	4,857.7	-144.6	344.6	165.8	178.79	1.927	
10,400.0	5,882.9	10,417.1	5,984.0	95.0	95.0	107.07	4,957.7	-144.6	344.6	162.2	182.45	1.889	
10,500.0	5,882.9	10,517.1	5,984.0	96.9	96.9	107.07	5,057.7	-144.6	344.6	158.5	186.10	1.852	
10,600.0	5,882.9	10,617.1	5,984.0	98.8	98.8	107.07	5,157.7	-144.6	344.6	154.9	189.76	1.816	
10,700.0	5,882.9	10,717.1	5,984.0	100.6	100.7	107.07	5,257.7	-144.6	344.6	151.2	193.41	1.782	
10,800.0	5,882.9	10,817.1	5,984.0	102.5	102.6	107.07	5,357.7	-144.6	344.6	147.6	197.07	1.749	
10,900.0	5,882.9	10,917.1	5,984.0	104.4	104.5	107.06	5,457.7	-144.6	344.6	143.9	200.74	1.717	
11,000.0	5,882.9	11,017.1	5,984.0	106.3	106.4	107.06	5,557.7	-144.5	344.6	140.2	204.40	1.686	
11,100.0	5,882.9	11,117.1	5,984.0	108.2	108.3	107.06	5,657.7	-144.5	344.6	136.6	208.06	1.656	
11,200.0	5,882.9	11,217.1	5,984.0	110.1	110.2	107.06	5,757.7	-144.5	344.6	132.9	211.73	1.628	
11,300.0	5,882.9	11,317.1	5,984.0	112.0	112.1	107.06	5,857.7	-144.5	344.7	129.3	215.39	1.600	
11,400.0	5,882.9	11,417.1	5,984.0	113.9	114.0	107.06	5,957.7	-144.5	344.7	125.6	219.06	1.573	
11,500.0	5,882.9	11,517.1	5,984.0	115.8	115.9	107.05	6,057.7	-144.5	344.7	121.9	222.73	1.547	
11,600.0	5,882.9	11,617.1	5,984.0	117.7	117.8	107.05	6,157.7	-144.5	344.7	118.3	226.40	1.522	
11,700.0	5,883.0	11,717.1	5,984.0	119.6	119.7	107.05	6,257.7	-144.5	344.7	114.6	230.07	1.498	Level 3
11,800.0	5,883.0	11,817.1	5,984.0	121.5	121.6	107.05	6,357.7	-144.5	344.7	110.9	233.74	1.475	Level 3
11,900.0	5,883.0	11,917.1	5,984.0	123.4	123.5	107.05	6,457.7	-144.5	344.7	107.3	237.41	1.452	Level 3
12,000.0	5,883.0	12,017.1	5,984.0	125.3	125.4	107.05	6,557.7	-144.5	344.7	103.6	241.09	1.430	Level 3
12,100.0	5,883.0	12,117.1	5,984.0	127.2	127.3	107.04	6,657.7	-144.5	344.7	99.9	244.76	1.408	Level 3
12,200.0	5,883.0	12,217.1	5,984.0	129.1	129.3	107.04	6,757.7	-144.5	344.7	96.3	248.44	1.387	Level 3
12,300.0	5,883.0	12,317.1	5,984.0	131.0	131.2	107.04	6,857.7	-144.4	344.7	92.6	252.11	1.367	Level 3
12,400.0	5,883.0	12,417.1	5,984.0	132.9	133.1	107.04	6,957.7	-144.4	344.7	88.9	255.79	1.348	Level 3
12,477.2	5,883.0	12,494.3	5,984.0	134.1	134.5	107.04	7,034.9	-144.4	344.7	86.3	258.37	1.334	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0207A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	66.1	66.1				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	66.1	66.1	65.9	0.19	353.397	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	66.1	66.1	65.5	0.64	103.823	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	66.1	66.1	65.0	1.09	60.850	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	66.1	66.1	64.6	1.54	43.037	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	66.1	66.1	64.1	1.99	33.291	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	66.1	66.1	63.7	2.43	27.144	CC
700.0	700.0	699.7	699.7	1.4	1.4	88.51	1.7	66.3	66.3	63.4	2.88	23.008	ES
800.0	800.0	799.1	798.9	1.7	1.7	84.15	6.9	66.9	67.3	64.0	3.33	20.199	
900.0	900.0	898.9	898.5	1.9	1.9	102.74	13.8	67.8	69.6	65.8	3.79	18.371	
1,000.0	999.8	998.9	998.2	2.1	2.1	101.45	20.7	68.7	72.8	68.6	4.25	17.143	
1,100.0	1,099.6	1,098.8	1,097.9	2.3	2.4	101.61	27.6	69.5	76.4	71.7	4.72	16.200	
1,200.0	1,199.4	1,198.7	1,197.6	2.6	2.6	101.76	34.5	70.4	80.0	74.8	5.19	15.406	
1,300.0	1,299.1	1,298.7	1,297.3	2.8	2.9	101.90	41.4	71.2	83.6	77.9	5.68	14.730	
1,400.0	1,398.9	1,398.6	1,397.0	3.1	3.1	102.03	48.4	72.1	87.2	81.0	6.16	14.151	
1,500.0	1,498.6	1,498.6	1,496.7	3.3	3.4	102.14	55.3	73.0	90.8	84.2	6.65	13.650	
1,600.0	1,598.4	1,598.5	1,596.4	3.6	3.6	102.25	62.2	73.8	94.4	87.3	7.15	13.212	
1,700.0	1,698.1	1,698.4	1,696.1	3.8	3.9	102.35	69.1	74.7	98.0	90.4	7.64	12.827	
1,800.0	1,797.9	1,798.4	1,795.8	4.1	4.1	102.44	76.0	75.6	101.6	93.5	8.14	12.487	
1,900.0	1,897.6	1,898.3	1,895.5	4.3	4.4	102.53	83.0	76.4	105.2	96.6	8.64	12.183	
2,000.0	1,997.4	1,998.2	1,995.1	4.6	4.6	102.61	89.9	77.3	108.8	99.7	9.14	11.911	
2,100.0	2,097.2	2,098.2	2,094.8	4.8	4.9	102.68	96.8	78.1	112.4	102.8	9.64	11.666	
2,200.0	2,196.9	2,198.1	2,194.5	5.1	5.1	102.75	103.7	79.0	116.0	105.9	10.14	11.445	
2,300.0	2,296.7	2,298.0	2,294.2	5.3	5.4	102.82	110.6	79.9	119.6	109.0	10.64	11.243	
2,400.0	2,396.4	2,398.0	2,393.9	5.6	5.6	102.88	117.5	80.7	123.2	112.1	11.14	11.059	
2,500.0	2,496.2	2,497.9	2,493.6	5.8	5.9	102.94	124.5	81.6	126.8	115.2	11.65	10.890	
2,600.0	2,595.9	2,597.8	2,593.3	6.1	6.1	102.99	131.4	82.5	130.4	118.3	12.15	10.735	
2,700.0	2,695.7	2,697.8	2,693.0	6.3	6.4	103.05	138.3	83.3	134.0	121.4	12.65	10.592	
2,800.0	2,795.5	2,797.7	2,792.7	6.6	6.7	103.10	145.2	84.2	137.6	124.5	13.16	10.460	
2,900.0	2,895.2	2,897.6	2,892.4	6.8	6.9	103.14	152.1	85.0	141.2	127.6	13.66	10.337	
3,000.0	2,995.0	2,997.6	2,992.1	7.1	7.2	103.19	159.0	85.9	144.8	130.7	14.17	10.222	
3,100.0	3,094.7	3,097.5	3,091.8	7.3	7.4	103.23	166.0	86.8	148.5	133.8	14.68	10.116	
3,200.0	3,194.5	3,197.4	3,191.4	7.6	7.7	103.27	172.9	87.6	152.1	136.9	15.18	10.016	
3,300.0	3,294.2	3,297.4	3,291.1	7.9	7.9	103.31	179.8	88.5	155.7	140.0	15.69	9.923	
3,400.0	3,394.0	3,397.3	3,390.8	8.1	8.2	103.35	186.7	89.3	159.3	143.1	16.19	9.835	
3,500.0	3,493.7	3,497.3	3,490.5	8.4	8.4	103.38	193.6	90.2	162.9	146.2	16.70	9.752	
3,600.0	3,593.5	3,597.2	3,590.2	8.6	8.7	103.42	200.6	91.1	166.5	149.3	17.21	9.675	
3,700.0	3,693.3	3,697.1	3,689.9	8.9	8.9	103.45	207.5	91.9	170.1	152.4	17.71	9.601	
3,800.0	3,793.0	3,797.1	3,789.6	9.1	9.2	103.48	214.4	92.8	173.7	155.5	18.22	9.532	
3,900.0	3,892.8	3,897.0	3,889.3	9.4	9.5	103.51	221.3	93.7	177.3	158.6	18.73	9.466	
4,000.0	3,992.5	3,996.9	3,989.0	9.6	9.7	103.54	228.2	94.5	180.9	161.7	19.24	9.404	
4,100.0	4,092.3	4,096.9	4,088.7	9.9	10.0	103.57	235.1	95.4	184.5	164.8	19.74	9.345	
4,200.0	4,192.0	4,196.8	4,188.4	10.2	10.2	103.59	242.1	96.2	188.1	167.8	20.25	9.289	
4,300.0	4,291.8	4,296.7	4,288.1	10.4	10.5	103.62	249.0	97.1	191.7	170.9	20.76	9.235	
4,400.0	4,391.6	4,396.7	4,387.7	10.7	10.7	103.64	255.9	98.0	195.3	174.0	21.27	9.184	
4,500.0	4,491.3	4,496.6	4,487.4	10.9	11.0	103.67	262.8	98.8	198.9	177.1	21.77	9.136	
4,600.0	4,591.1	4,596.5	4,587.1	11.2	11.2	103.69	269.7	99.7	202.5	180.2	22.28	9.089	
4,700.0	4,690.8	4,696.5	4,686.8	11.4	11.5	103.71	276.6	100.5	206.1	183.3	22.79	9.045	
4,800.0	4,790.6	4,796.4	4,786.5	11.7	11.8	103.73	283.6	101.4	209.7	186.4	23.30	9.002	
4,900.0	4,890.3	4,896.3	4,886.2	11.9	12.0	103.75	290.5	102.3	213.3	189.5	23.80	8.962	
5,000.0	4,990.1	4,996.3	4,985.9	12.2	12.3	103.77	297.4	103.1	216.9	192.6	24.31	8.923	
5,100.0	5,089.9	5,096.2	5,085.6	12.5	12.5	103.79	304.3	104.0	220.5	195.7	24.82	8.885	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0207A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,196.1	5,185.3	12.7	12.8	103.81	311.2	104.9	224.1	198.8	25.33	8.849	
5,300.0	5,289.4	5,296.1	5,285.0	13.0	13.0	103.83	318.2	105.7	227.8	201.9	25.84	8.815	
5,409.0	5,398.1	5,405.0	5,393.6	13.3	13.3	103.85	325.7	106.7	231.7	205.3	26.39	8.779	
5,450.0	5,438.8	5,442.0	5,430.5	13.4	13.4	103.73	329.2	107.1	233.8	207.2	26.60	8.792	
5,500.0	5,487.9	5,486.3	5,474.1	13.5	13.6	103.48	336.8	108.0	238.6	211.7	26.90	8.870	
5,550.0	5,535.7	5,530.3	5,516.6	13.8	13.8	103.10	348.0	109.4	245.6	218.3	27.25	9.012	
5,600.0	5,582.0	5,574.0	5,557.8	14.0	14.0	102.58	362.6	111.2	254.7	227.1	27.66	9.210	
5,650.0	5,626.2	5,617.3	5,597.1	14.3	14.2	101.94	380.3	113.5	266.0	237.8	28.13	9.454	
5,700.0	5,668.0	5,660.1	5,634.5	14.7	14.5	101.15	401.0	116.0	279.2	250.5	28.68	9.734	
5,750.0	5,707.0	5,700.0	5,667.7	15.1	14.7	100.19	423.0	118.8	294.2	265.0	29.29	10.047	
5,800.0	5,742.8	5,744.2	5,702.4	15.5	15.1	99.20	450.2	122.2	311.0	281.0	30.01	10.362	
5,850.0	5,775.1	5,785.6	5,732.6	16.0	15.4	98.04	478.2	125.6	329.3	298.5	30.81	10.688	
5,900.0	5,803.5	5,826.5	5,760.2	16.5	15.8	96.76	508.1	129.4	349.0	317.3	31.69	11.013	
5,950.0	5,827.9	5,867.0	5,785.1	17.1	16.2	95.38	539.8	133.3	369.9	337.3	32.65	11.330	
6,000.0	5,848.1	5,907.3	5,807.4	17.8	16.7	93.91	573.2	137.5	391.9	358.2	33.68	11.636	
6,050.0	5,863.7	5,947.5	5,826.9	18.5	17.1	92.37	608.0	141.8	414.7	380.0	34.77	11.928	
6,100.0	5,874.7	5,987.6	5,843.6	19.2	17.6	90.78	644.1	146.3	438.3	402.4	35.92	12.202	
6,150.0	5,881.0	6,027.8	5,857.5	20.0	18.1	89.16	681.6	151.0	462.4	425.3	37.11	12.461	
6,190.8	5,882.6	6,060.9	5,866.8	20.6	18.6	87.84	713.1	154.9	482.4	444.3	38.11	12.660	
6,200.0	5,882.6	6,068.4	5,868.6	20.8	18.7	88.10	720.3	155.8	486.9	448.6	38.35	12.698	
6,300.0	5,882.6	6,154.3	5,881.8	22.2	19.9	89.90	804.5	166.3	533.9	492.9	40.99	13.027	
6,400.0	5,882.6	6,267.6	5,883.1	23.7	21.4	90.05	917.0	178.8	575.4	531.4	44.07	13.058	
6,500.0	5,882.6	6,405.4	5,883.1	25.3	23.4	90.05	1,054.7	185.4	606.1	558.5	47.61	12.732	
6,600.0	5,882.6	6,510.5	5,883.1	26.9	25.0	90.05	1,159.7	185.6	627.1	576.3	50.87	12.327	
6,700.0	5,882.6	6,609.2	5,883.1	28.5	26.6	90.04	1,258.4	185.6	642.9	588.8	54.10	11.884	
6,800.0	5,882.6	6,708.6	5,883.1	30.1	28.2	90.04	1,357.9	185.6	653.5	596.2	57.31	11.403	
6,900.0	5,882.7	6,808.5	5,883.1	31.7	29.9	90.04	1,457.7	185.6	658.9	598.4	60.46	10.898	
6,952.8	5,882.7	6,861.3	5,883.1	32.5	30.8	90.04	1,510.5	185.6	659.6	597.5	62.10	10.623	
7,000.0	5,882.7	6,908.5	5,883.1	33.3	31.6	90.04	1,557.7	185.6	659.6	596.0	63.69	10.357	
7,100.0	5,882.7	7,008.5	5,883.1	34.9	33.4	90.04	1,657.7	185.6	659.6	592.5	67.11	9.829	
7,200.0	5,882.7	7,108.5	5,883.1	36.6	35.1	90.04	1,757.7	185.6	659.7	589.1	70.58	9.346	
7,300.0	5,882.7	7,208.5	5,883.1	38.3	36.9	90.04	1,857.7	185.6	659.7	585.6	74.08	8.905	
7,400.0	5,882.7	7,308.5	5,883.1	40.0	38.7	90.04	1,957.7	185.6	659.7	582.0	77.62	8.499	
7,500.0	5,882.7	7,408.5	5,883.1	41.7	40.5	90.04	2,057.7	185.6	659.7	578.5	81.18	8.126	
7,600.0	5,882.7	7,508.5	5,883.1	43.4	42.3	90.04	2,157.7	185.6	659.7	574.9	84.77	7.782	
7,700.0	5,882.7	7,608.5	5,883.1	45.2	44.1	90.04	2,257.7	185.6	659.7	571.3	88.37	7.465	
7,800.0	5,882.7	7,708.5	5,883.1	46.9	45.9	90.03	2,357.7	185.6	659.7	567.7	92.00	7.170	
7,900.0	5,882.7	7,808.5	5,883.1	48.7	47.8	90.03	2,457.7	185.6	659.7	564.0	95.65	6.897	
8,000.0	5,882.7	7,908.5	5,883.1	50.5	49.6	90.03	2,557.7	185.6	659.7	560.4	99.31	6.643	
8,100.0	5,882.7	8,008.5	5,883.1	52.3	51.5	90.03	2,657.7	185.7	659.7	556.7	102.98	6.406	
8,200.0	5,882.7	8,108.5	5,883.1	54.1	53.3	90.03	2,757.7	185.7	659.7	553.0	106.66	6.185	
8,300.0	5,882.7	8,208.5	5,883.1	55.9	55.2	90.03	2,857.7	185.7	659.7	549.3	110.36	5.978	
8,400.0	5,882.7	8,308.5	5,883.1	57.7	57.0	90.03	2,957.7	185.7	659.7	545.6	114.07	5.784	
8,500.0	5,882.8	8,408.5	5,883.1	59.6	58.9	90.03	3,057.7	185.7	659.7	541.9	117.78	5.601	
8,600.0	5,882.8	8,508.5	5,883.1	61.4	60.8	90.03	3,157.7	185.7	659.7	538.2	121.50	5.430	
8,700.0	5,882.8	8,608.5	5,883.1	63.2	62.6	90.03	3,257.7	185.7	659.7	534.5	125.23	5.268	
8,800.0	5,882.8	8,708.5	5,883.1	65.1	64.5	90.03	3,357.7	185.7	659.7	530.8	128.97	5.115	
8,900.0	5,882.8	8,808.5	5,883.1	66.9	66.4	90.03	3,457.7	185.7	659.7	527.0	132.71	4.971	
9,000.0	5,882.8	8,908.5	5,883.1	68.8	68.3	90.03	3,557.7	185.7	659.7	523.3	136.46	4.835	
9,100.0	5,882.8	9,008.5	5,883.1	70.6	70.2	90.03	3,657.7	185.7	659.7	519.5	140.21	4.705	
9,200.0	5,882.8	9,108.5	5,883.1	72.5	72.1	90.02	3,757.7	185.7	659.8	515.8	143.97	4.583	
9,300.0	5,882.8	9,208.5	5,883.1	74.3	73.9	90.02	3,857.7	185.7	659.8	512.0	147.73	4.466	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0207A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	9,308.5	5,883.1	76.2	75.8	90.02	3,957.7	185.7	659.8	508.3	151.50	4.355	
9,500.0	5,882.8	9,408.5	5,883.1	78.1	77.7	90.02	4,057.7	185.7	659.8	504.5	155.27	4.249	
9,600.0	5,882.8	9,508.5	5,883.1	79.9	79.6	90.02	4,157.7	185.7	659.8	500.7	159.04	4.148	
9,700.0	5,882.8	9,608.5	5,883.1	81.8	81.5	90.02	4,257.7	185.7	659.8	497.0	162.82	4.052	
9,800.0	5,882.8	9,708.5	5,883.1	83.7	83.4	90.02	4,357.7	185.8	659.8	493.2	166.60	3.960	
9,900.0	5,882.8	9,808.5	5,883.1	85.6	85.3	90.02	4,457.7	185.8	659.8	489.4	170.38	3.872	
10,000.0	5,882.8	9,908.5	5,883.1	87.4	87.2	90.02	4,557.7	185.8	659.8	485.6	174.17	3.788	
10,100.0	5,882.9	10,008.5	5,883.1	89.3	89.1	90.02	4,657.7	185.8	659.8	481.8	177.96	3.708	
10,200.0	5,882.9	10,108.5	5,883.1	91.2	91.0	90.02	4,757.7	185.8	659.8	478.1	181.75	3.630	
10,300.0	5,882.9	10,208.5	5,883.1	93.1	92.9	90.02	4,857.7	185.8	659.8	474.3	185.54	3.556	
10,400.0	5,882.9	10,308.5	5,883.0	95.0	94.8	90.02	4,957.7	185.8	659.8	470.5	189.33	3.485	
10,500.0	5,882.9	10,408.5	5,883.0	96.9	96.7	90.01	5,057.7	185.8	659.8	466.7	193.13	3.416	
10,600.0	5,882.9	10,508.5	5,883.0	98.8	98.6	90.01	5,157.7	185.8	659.8	462.9	196.93	3.351	
10,700.0	5,882.9	10,608.5	5,883.0	100.6	100.5	90.01	5,257.7	185.8	659.8	459.1	200.73	3.287	
10,800.0	5,882.9	10,708.5	5,883.0	102.5	102.4	90.01	5,357.7	185.8	659.8	455.3	204.53	3.226	
10,900.0	5,882.9	10,808.5	5,883.0	104.4	104.3	90.01	5,457.7	185.8	659.8	451.5	208.33	3.167	
11,000.0	5,882.9	10,908.5	5,883.0	106.3	106.2	90.01	5,557.7	185.8	659.8	447.7	212.14	3.110	
11,100.0	5,882.9	11,008.5	5,883.0	108.2	108.1	90.01	5,657.7	185.8	659.8	443.9	215.94	3.056	
11,200.0	5,882.9	11,108.5	5,883.0	110.1	110.0	90.01	5,757.7	185.8	659.9	440.1	219.75	3.003	
11,300.0	5,882.9	11,208.5	5,883.0	112.0	111.9	90.01	5,857.7	185.8	659.9	436.3	223.56	2.952	
11,400.0	5,882.9	11,308.5	5,883.0	113.9	113.8	90.01	5,957.7	185.8	659.9	432.5	227.37	2.902	
11,500.0	5,882.9	11,408.5	5,883.0	115.8	115.7	90.01	6,057.7	185.9	659.9	428.7	231.18	2.854	
11,600.0	5,882.9	11,508.5	5,883.0	117.7	117.6	90.01	6,157.7	185.9	659.9	424.9	234.99	2.808	
11,700.0	5,883.0	11,608.5	5,883.0	119.6	119.6	90.01	6,257.7	185.9	659.9	421.1	238.80	2.763	
11,800.0	5,883.0	11,708.5	5,883.0	121.5	121.5	90.01	6,357.7	185.9	659.9	417.3	242.62	2.720	
11,900.0	5,883.0	11,808.5	5,883.0	123.4	123.4	90.00	6,457.7	185.9	659.9	413.5	246.43	2.678	
12,000.0	5,883.0	11,908.5	5,883.0	125.3	125.3	90.00	6,557.7	185.9	659.9	409.6	250.25	2.637	
12,100.0	5,883.0	12,008.5	5,883.0	127.2	127.2	90.00	6,657.7	185.9	659.9	405.8	254.06	2.597	
12,200.0	5,883.0	12,108.5	5,883.0	129.1	129.1	90.00	6,757.7	185.9	659.9	402.0	257.88	2.559	
12,300.0	5,883.0	12,208.5	5,883.0	131.0	131.0	90.00	6,857.7	185.9	659.9	398.2	261.70	2.522	
12,400.0	5,883.0	12,308.5	5,883.0	132.9	132.9	90.00	6,957.7	185.9	659.9	394.4	265.52	2.485	
12,477.2	5,883.0	12,385.7	5,883.0	134.1	134.4	90.00	7,034.9	185.9	659.9	391.7	268.20	2.461 SF	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0208B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	99.1	99.1				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	99.1	99.1	98.9	0.19	530.096	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	99.1	99.1	98.5	0.64	155.734	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	99.1	99.1	98.0	1.09	91.275	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	99.1	99.1	97.6	1.54	64.555	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	99.1	99.1	97.1	1.99	49.937	CC, ES
600.0	600.0	598.8	598.8	1.2	1.2	89.09	1.6	99.7	99.7	97.3	2.43	41.038	
700.0	700.0	697.3	697.2	1.4	1.4	86.41	6.4	101.5	101.7	98.8	2.88	35.351	
800.0	800.0	797.0	796.6	1.7	1.7	82.93	12.9	103.9	104.7	101.4	3.33	31.407	
900.0	900.0	896.9	896.2	1.9	1.9	103.33	19.4	106.3	108.5	104.7	3.79	28.617	
1,000.0	999.8	996.7	995.9	2.1	2.2	102.75	26.0	108.7	113.2	108.9	4.25	26.610	
1,100.0	1,099.6	1,096.6	1,095.5	2.3	2.4	103.13	32.5	111.1	118.3	113.5	4.72	25.037	
1,200.0	1,199.4	1,196.5	1,195.1	2.6	2.6	103.47	39.0	113.5	123.3	118.1	5.20	23.719	
1,300.0	1,299.1	1,296.4	1,294.7	2.8	2.9	103.79	45.6	115.9	128.4	122.7	5.68	22.603	
1,400.0	1,398.9	1,396.2	1,394.4	3.1	3.1	104.09	52.1	118.3	133.5	127.3	6.17	21.648	
1,500.0	1,498.6	1,496.1	1,494.0	3.3	3.4	104.36	58.6	120.8	138.6	131.9	6.65	20.823	
1,600.0	1,598.4	1,596.0	1,593.6	3.6	3.6	104.62	65.2	123.2	143.6	136.5	7.14	20.105	
1,700.0	1,698.1	1,695.8	1,693.2	3.8	3.9	104.85	71.7	125.6	148.7	141.1	7.64	19.474	
1,800.0	1,797.9	1,795.7	1,792.9	4.1	4.2	105.07	78.3	128.0	153.8	145.7	8.13	18.916	
1,900.0	1,897.6	1,895.6	1,892.5	4.3	4.4	105.28	84.8	130.4	158.9	150.3	8.63	18.420	
2,000.0	1,997.4	1,995.4	1,992.1	4.6	4.7	105.47	91.3	132.8	164.0	154.9	9.12	17.976	
2,100.0	2,097.2	2,095.3	2,091.7	4.8	4.9	105.66	97.9	135.2	169.1	159.5	9.62	17.576	
2,200.0	2,196.9	2,195.2	2,191.4	5.1	5.2	105.83	104.4	137.6	174.2	164.1	10.12	17.214	
2,300.0	2,296.7	2,295.0	2,291.0	5.3	5.4	105.99	110.9	140.0	179.3	168.7	10.62	16.885	
2,400.0	2,396.4	2,394.9	2,390.6	5.6	5.7	106.14	117.5	142.4	184.4	173.3	11.12	16.585	
2,500.0	2,496.2	2,494.8	2,490.2	5.8	5.9	106.29	124.0	144.9	189.5	177.9	11.62	16.311	
2,600.0	2,595.9	2,594.6	2,589.9	6.1	6.2	106.42	130.5	147.3	194.6	182.5	12.12	16.058	
2,700.0	2,695.7	2,694.5	2,689.5	6.3	6.4	106.55	137.1	149.7	199.7	187.1	12.62	15.825	
2,800.0	2,795.5	2,794.4	2,789.1	6.6	6.7	106.68	143.6	152.1	204.8	191.7	13.12	15.610	
2,900.0	2,895.2	2,894.3	2,888.7	6.8	7.0	106.80	150.2	154.5	209.9	196.3	13.62	15.410	
3,000.0	2,995.0	2,994.1	2,988.4	7.1	7.2	106.91	156.7	156.9	215.0	200.9	14.12	15.224	
3,100.0	3,094.7	3,094.0	3,088.0	7.3	7.5	107.01	163.2	159.3	220.1	205.5	14.63	15.050	
3,200.0	3,194.5	3,193.9	3,187.6	7.6	7.7	107.12	169.8	161.7	225.2	210.1	15.13	14.888	
3,300.0	3,294.2	3,293.7	3,287.2	7.9	8.0	107.21	176.3	164.1	230.3	214.7	15.63	14.736	
3,400.0	3,394.0	3,393.6	3,386.9	8.1	8.2	107.31	182.8	166.5	235.4	219.3	16.13	14.594	
3,500.0	3,493.7	3,493.5	3,486.5	8.4	8.5	107.40	189.4	169.0	240.6	223.9	16.64	14.460	
3,600.0	3,593.5	3,593.3	3,586.1	8.6	8.7	107.48	195.9	171.4	245.7	228.5	17.14	14.334	
3,700.0	3,693.3	3,693.2	3,685.7	8.9	9.0	107.56	202.4	173.8	250.8	233.1	17.64	14.215	
3,800.0	3,793.0	3,793.1	3,785.4	9.1	9.2	107.64	209.0	176.2	255.9	237.7	18.15	14.102	
3,900.0	3,892.8	3,892.9	3,885.0	9.4	9.5	107.72	215.5	178.6	261.0	242.4	18.65	13.996	
4,000.0	3,992.5	3,992.8	3,984.6	9.6	9.8	107.79	222.1	181.0	266.1	247.0	19.15	13.895	
4,100.0	4,092.3	4,092.7	4,084.2	9.9	10.0	107.86	228.6	183.4	271.2	251.6	19.66	13.799	
4,200.0	4,192.0	4,192.5	4,183.9	10.2	10.3	107.93	235.1	185.8	276.3	256.2	20.16	13.708	
4,300.0	4,291.8	4,292.4	4,283.5	10.4	10.5	107.99	241.7	188.2	281.4	260.8	20.66	13.621	
4,400.0	4,391.6	4,392.3	4,383.1	10.7	10.8	108.06	248.2	190.6	286.6	265.4	21.17	13.538	
4,500.0	4,491.3	4,492.2	4,482.8	10.9	11.0	108.12	254.7	193.1	291.7	270.0	21.67	13.460	
4,600.0	4,591.1	4,592.0	4,582.4	11.2	11.3	108.18	261.3	195.5	296.8	274.6	22.17	13.384	
4,700.0	4,690.8	4,691.9	4,682.0	11.4	11.5	108.23	267.8	197.9	301.9	279.2	22.68	13.313	
4,800.0	4,790.6	4,791.8	4,781.6	11.7	11.8	108.29	274.3	200.3	307.0	283.8	23.18	13.244	
4,900.0	4,890.3	4,891.6	4,881.3	11.9	12.1	108.34	280.9	202.7	312.1	288.4	23.69	13.178	
5,000.0	4,990.1	4,991.5	4,980.9	12.2	12.3	108.39	287.4	205.1	317.2	293.1	24.19	13.115	
5,100.0	5,089.9	5,091.4	5,080.5	12.5	12.6	108.44	294.0	207.5	322.4	297.7	24.69	13.054	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0208B - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,191.2	5,180.1	12.7	12.8	108.49	300.5	209.9	327.5	302.3	25.20	12.996	
5,300.0	5,289.4	5,291.1	5,279.8	13.0	13.1	108.53	307.0	212.3	332.6	306.9	25.70	12.940	
5,409.0	5,398.1	5,400.0	5,388.3	13.3	13.4	108.58	314.1	215.0	338.2	311.9	26.25	12.881	
5,450.0	5,438.8	5,440.8	5,429.1	13.4	13.5	108.58	316.8	216.0	340.8	314.3	26.45	12.886	
5,500.0	5,487.9	5,490.2	5,478.4	13.5	13.6	109.11	320.1	217.1	345.4	318.7	26.69	12.942	
5,550.0	5,535.7	5,533.2	5,521.2	13.8	13.7	109.82	323.3	218.3	352.0	325.1	26.93	13.074	
5,600.0	5,582.0	5,571.7	5,559.3	14.0	13.8	110.20	328.7	220.3	361.7	334.6	27.17	13.312	
5,650.0	5,626.2	5,609.9	5,596.5	14.3	14.0	110.30	336.6	223.2	374.6	347.1	27.46	13.643	
5,700.0	5,668.0	5,650.0	5,634.9	14.7	14.2	110.19	347.7	227.3	390.5	362.7	27.79	14.049	
5,750.0	5,707.0	5,684.7	5,667.2	15.1	14.3	109.58	359.4	231.7	409.2	381.0	28.19	14.513	
5,800.0	5,742.8	5,721.2	5,700.2	15.5	14.5	108.73	373.9	237.0	430.5	401.8	28.69	15.008	
5,850.0	5,775.1	5,756.8	5,731.4	16.0	14.8	107.54	390.2	243.0	454.3	425.0	29.28	15.515	
5,900.0	5,803.5	5,791.7	5,760.6	16.5	15.0	106.02	408.0	249.6	480.3	450.3	30.00	16.011	
5,950.0	5,827.9	5,825.8	5,787.9	17.1	15.3	104.16	427.1	256.6	508.3	477.4	30.84	16.483	
6,000.0	5,848.1	5,859.0	5,813.2	17.8	15.5	101.98	447.4	264.1	538.0	506.2	31.78	16.926	
6,050.0	5,863.7	5,891.6	5,836.6	18.5	15.8	99.50	468.6	271.9	569.2	536.3	32.82	17.342	
6,100.0	5,874.7	5,923.5	5,858.1	19.2	16.1	96.75	490.7	280.1	601.6	567.7	33.92	17.739	
6,150.0	5,881.0	5,954.9	5,877.8	20.0	16.4	93.76	513.6	288.5	635.1	600.1	35.03	18.132	
6,190.8	5,882.6	5,980.1	5,892.6	20.6	16.7	91.19	532.9	295.6	663.1	627.1	35.93	18.455	
6,200.0	5,882.6	5,985.9	5,895.8	20.8	16.8	91.56	537.3	297.3	669.4	633.3	36.11	18.538	
6,300.0	5,882.6	6,055.6	5,930.6	22.2	17.6	94.99	594.0	318.2	737.2	699.1	38.08	19.357	
6,400.0	5,882.6	6,139.6	5,961.3	23.7	18.6	97.19	667.3	345.2	801.5	761.1	40.32	19.876	
6,500.0	5,882.6	6,236.5	5,980.6	25.3	20.0	97.92	756.2	378.0	860.7	817.8	42.96	20.037	
6,600.0	5,882.6	6,367.0	5,983.7	26.9	21.8	97.22	879.0	421.7	913.4	867.1	46.22	19.762	
6,700.0	5,882.6	6,544.2	5,983.7	28.5	24.3	96.47	1,049.8	468.6	954.5	904.3	50.24	18.999	
6,800.0	5,882.6	6,738.3	5,983.7	30.1	27.2	96.03	1,241.0	501.6	981.8	927.0	54.79	17.919	
6,900.0	5,882.7	6,942.8	5,983.7	31.7	30.4	95.84	1,445.0	515.2	993.7	934.0	59.67	16.652	
6,952.8	5,882.7	7,008.4	5,983.7	32.5	31.4	95.83	1,510.5	515.3	994.5	932.9	61.59	16.147	
7,000.0	5,882.7	7,055.5	5,983.7	33.3	32.1	95.83	1,557.7	515.3	994.5	931.4	63.14	15.751	
7,100.0	5,882.7	7,155.5	5,983.7	34.9	33.8	95.83	1,657.7	515.3	994.5	928.1	66.47	14.962	
7,200.0	5,882.7	7,255.5	5,983.7	36.6	35.4	95.83	1,757.7	515.3	994.5	924.7	69.85	14.239	
7,300.0	5,882.7	7,355.5	5,983.7	38.3	37.1	95.83	1,857.7	515.3	994.5	921.3	73.27	13.574	
7,400.0	5,882.7	7,455.5	5,983.7	40.0	38.8	95.83	1,957.7	515.3	994.5	917.8	76.73	12.962	
7,500.0	5,882.7	7,555.5	5,983.7	41.7	40.5	95.83	2,057.7	515.3	994.5	914.3	80.22	12.398	
7,600.0	5,882.7	7,655.5	5,983.7	43.4	42.3	95.83	2,157.7	515.3	994.5	910.8	83.74	11.876	
7,700.0	5,882.7	7,755.5	5,983.7	45.2	44.0	95.83	2,257.7	515.4	994.5	907.3	87.29	11.394	
7,800.0	5,882.7	7,855.5	5,983.7	46.9	45.8	95.83	2,357.7	515.4	994.5	903.7	90.86	10.946	
7,900.0	5,882.7	7,955.5	5,983.7	48.7	47.5	95.83	2,457.7	515.4	994.5	900.1	94.45	10.530	
8,000.0	5,882.7	8,055.5	5,983.7	50.5	49.3	95.83	2,557.7	515.4	994.5	896.5	98.06	10.142	
8,100.0	5,882.7	8,155.5	5,983.7	52.3	51.1	95.83	2,657.7	515.4	994.5	892.9	101.68	9.781	
8,200.0	5,882.7	8,255.5	5,983.7	54.1	52.9	95.83	2,757.7	515.4	994.5	889.2	105.32	9.443	
8,300.0	5,882.7	8,355.5	5,983.8	55.9	54.7	95.83	2,857.7	515.4	994.6	885.6	108.97	9.127	
8,400.0	5,882.7	8,455.5	5,983.8	57.7	56.6	95.83	2,957.7	515.4	994.6	881.9	112.64	8.830	
8,500.0	5,882.8	8,555.5	5,983.8	59.6	58.4	95.83	3,057.7	515.4	994.6	878.2	116.31	8.551	
8,600.0	5,882.8	8,655.5	5,983.8	61.4	60.2	95.83	3,157.7	515.4	994.6	874.6	119.99	8.288	
8,700.0	5,882.8	8,755.5	5,983.8	63.2	62.1	95.83	3,257.7	515.4	994.6	870.9	123.68	8.041	
8,800.0	5,882.8	8,855.5	5,983.8	65.1	63.9	95.83	3,357.7	515.4	994.6	867.2	127.38	7.808	
8,900.0	5,882.8	8,955.5	5,983.8	66.9	65.8	95.83	3,457.7	515.4	994.6	863.5	131.09	7.587	
9,000.0	5,882.8	9,055.5	5,983.8	68.8	67.6	95.83	3,557.7	515.4	994.6	859.8	134.81	7.378	
9,100.0	5,882.8	9,155.5	5,983.8	70.6	69.5	95.83	3,657.7	515.4	994.6	856.0	138.52	7.180	
9,200.0	5,882.8	9,255.5	5,983.8	72.5	71.3	95.83	3,757.7	515.4	994.6	852.3	142.25	6.992	
9,300.0	5,882.8	9,355.5	5,983.8	74.3	73.2	95.83	3,857.7	515.4	994.6	848.6	145.98	6.813	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-0208B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	9,455.5	5,983.8	76.2	75.1	95.83	3,957.7	515.4	994.6	844.9	149.72	6.643	
9,500.0	5,882.8	9,555.5	5,983.8	78.1	76.9	95.83	4,057.7	515.4	994.6	841.1	153.46	6.481	
9,600.0	5,882.8	9,655.5	5,983.8	79.9	78.8	95.83	4,157.7	515.4	994.6	837.4	157.20	6.327	
9,700.0	5,882.8	9,755.5	5,983.8	81.8	80.7	95.83	4,257.7	515.4	994.6	833.6	160.95	6.179	
9,800.0	5,882.8	9,855.5	5,983.8	83.7	82.5	95.83	4,357.7	515.4	994.6	829.9	164.70	6.039	
9,900.0	5,882.8	9,955.5	5,983.8	85.6	84.4	95.83	4,457.7	515.4	994.6	826.1	168.45	5.904	
10,000.0	5,882.8	10,055.5	5,983.9	87.4	86.3	95.83	4,557.7	515.4	994.6	822.4	172.21	5.775	
10,100.0	5,882.9	10,155.5	5,983.9	89.3	88.2	95.83	4,657.7	515.4	994.6	818.6	175.97	5.652	
10,200.0	5,882.9	10,255.5	5,983.9	91.2	90.1	95.83	4,757.7	515.4	994.6	814.8	179.74	5.534	
10,300.0	5,882.9	10,355.5	5,983.9	93.1	92.0	95.83	4,857.7	515.4	994.6	811.1	183.50	5.420	
10,400.0	5,882.9	10,455.5	5,983.9	95.0	93.8	95.83	4,957.7	515.4	994.6	807.3	187.27	5.311	
10,500.0	5,882.9	10,555.5	5,983.9	96.9	95.7	95.83	5,057.7	515.4	994.6	803.5	191.04	5.206	
10,600.0	5,882.9	10,655.5	5,983.9	98.8	97.6	95.83	5,157.7	515.4	994.6	799.8	194.82	5.105	
10,700.0	5,882.9	10,755.5	5,983.9	100.6	99.5	95.83	5,257.7	515.4	994.6	796.0	198.59	5.008	
10,800.0	5,882.9	10,855.5	5,983.9	102.5	101.4	95.83	5,357.7	515.4	994.6	792.2	202.37	4.915	
10,900.0	5,882.9	10,955.5	5,983.9	104.4	103.3	95.83	5,457.7	515.4	994.6	788.5	206.15	4.825	
11,000.0	5,882.9	11,055.5	5,983.9	106.3	105.2	95.83	5,557.7	515.4	994.6	784.7	209.93	4.738	
11,100.0	5,882.9	11,155.5	5,983.9	108.2	107.1	95.83	5,657.7	515.4	994.6	780.9	213.71	4.654	
11,200.0	5,882.9	11,255.5	5,983.9	110.1	109.0	95.83	5,757.7	515.4	994.6	777.1	217.49	4.573	
11,300.0	5,882.9	11,355.5	5,983.9	112.0	110.9	95.83	5,857.7	515.5	994.6	773.3	221.28	4.495	
11,400.0	5,882.9	11,455.5	5,983.9	113.9	112.8	95.83	5,957.7	515.5	994.6	769.5	225.07	4.419	
11,500.0	5,882.9	11,555.5	5,983.9	115.8	114.7	95.83	6,057.7	515.5	994.6	765.8	228.85	4.346	
11,600.0	5,882.9	11,655.5	5,983.9	117.7	116.6	95.83	6,157.7	515.5	994.6	762.0	232.64	4.275	
11,700.0	5,883.0	11,755.5	5,984.0	119.6	118.5	95.83	6,257.7	515.5	994.6	758.2	236.43	4.207	
11,800.0	5,883.0	11,855.5	5,984.0	121.5	120.4	95.83	6,357.7	515.5	994.6	754.4	240.23	4.140	
11,900.0	5,883.0	11,955.5	5,984.0	123.4	122.3	95.83	6,457.7	515.5	994.6	750.6	244.02	4.076	
12,000.0	5,883.0	12,055.5	5,984.0	125.3	124.2	95.83	6,557.7	515.5	994.6	746.8	247.81	4.014	
12,100.0	5,883.0	12,155.5	5,984.0	127.2	126.1	95.83	6,657.7	515.5	994.6	743.0	251.61	3.953	
12,200.0	5,883.0	12,255.5	5,984.0	129.1	128.0	95.83	6,757.7	515.5	994.6	739.2	255.40	3.894	
12,300.0	5,883.0	12,355.5	5,984.0	131.0	129.9	95.83	6,857.7	515.5	994.6	735.4	259.20	3.837	
12,400.0	5,883.0	12,455.5	5,984.0	132.9	131.8	95.83	6,957.7	515.5	994.6	731.6	263.00	3.782	
12,477.2	5,883.0	12,532.7	5,984.0	134.1	133.2	95.83	7,034.9	515.5	994.6	729.0	265.66	3.744	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1405A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-74.9	0.0	74.9				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-74.9	0.0	74.9	74.7	0.19	400.486	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-74.9	0.0	74.9	74.3	0.64	117.657	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-74.9	0.0	74.9	73.8	1.09	68.958	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-74.9	0.0	74.9	73.4	1.54	48.771	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-74.9	0.0	74.9	72.9	1.99	37.727	CC, ES
600.0	600.0	597.6	597.5	1.2	1.2	-179.59	-76.5	-0.5	76.5	74.1	2.40	31.815	
700.0	700.0	694.9	694.7	1.4	1.4	-178.46	-81.2	-2.2	81.4	78.5	2.81	28.900	
800.0	800.0	794.5	794.1	1.7	1.6	-177.09	-87.7	-4.5	88.0	84.8	3.24	27.188	
900.0	900.0	894.1	893.5	1.9	1.8	-153.44	-94.3	-6.7	96.3	92.6	3.67	26.228	
1,000.0	999.8	993.5	992.6	2.1	2.0	-153.59	-100.8	-9.0	107.7	103.6	4.11	26.219	SF
1,100.0	1,099.6	1,092.6	1,091.5	2.3	2.3	-154.17	-107.3	-11.3	120.6	116.1	4.54	26.547	
1,200.0	1,199.4	1,191.8	1,190.4	2.6	2.5	-154.63	-113.9	-13.6	133.6	128.6	4.99	26.790	
1,300.0	1,299.1	1,290.9	1,289.3	2.8	2.8	-155.01	-120.4	-15.9	146.5	141.1	5.43	26.976	
1,400.0	1,398.9	1,390.1	1,388.3	3.1	3.0	-155.33	-126.9	-18.1	159.5	153.6	5.88	27.120	
1,500.0	1,498.6	1,489.2	1,487.2	3.3	3.3	-155.60	-133.5	-20.4	172.5	166.1	6.33	27.233	
1,600.0	1,598.4	1,588.4	1,586.1	3.6	3.5	-155.83	-140.0	-22.7	185.5	178.7	6.79	27.326	
1,700.0	1,698.1	1,687.6	1,685.0	3.8	3.8	-156.03	-146.5	-25.0	198.4	191.2	7.24	27.400	
1,800.0	1,797.9	1,786.7	1,783.9	4.1	4.0	-156.21	-153.1	-27.2	211.4	203.7	7.70	27.462	
1,900.0	1,897.6	1,885.9	1,882.8	4.3	4.3	-156.37	-159.6	-29.5	224.4	216.2	8.16	27.514	
2,000.0	1,997.4	1,985.0	1,981.7	4.6	4.5	-156.51	-166.1	-31.8	237.4	228.8	8.61	27.557	
2,100.0	2,097.2	2,084.2	2,080.6	4.8	4.8	-156.63	-172.7	-34.0	250.4	241.3	9.07	27.594	
2,200.0	2,196.9	2,183.3	2,179.5	5.1	5.1	-156.75	-179.2	-36.3	263.3	253.8	9.53	27.625	
2,300.0	2,296.7	2,282.5	2,278.4	5.3	5.3	-156.85	-185.7	-38.6	276.3	266.3	9.99	27.653	
2,400.0	2,396.4	2,381.6	2,377.4	5.6	5.6	-156.94	-192.3	-40.9	289.3	278.9	10.45	27.676	
2,500.0	2,496.2	2,480.8	2,476.3	5.8	5.8	-157.03	-198.8	-43.1	302.3	291.4	10.91	27.697	
2,600.0	2,595.9	2,579.9	2,575.2	6.1	6.1	-157.11	-205.3	-45.4	315.3	303.9	11.38	27.715	
2,700.0	2,695.7	2,679.1	2,674.1	6.3	6.3	-157.18	-211.9	-47.7	328.3	316.4	11.84	27.731	
2,800.0	2,795.5	2,778.2	2,773.0	6.6	6.6	-157.24	-218.4	-50.0	341.3	329.0	12.30	27.746	
2,900.0	2,895.2	2,877.4	2,871.9	6.8	6.9	-157.31	-224.9	-52.2	354.3	341.5	12.76	27.758	
3,000.0	2,995.0	2,976.5	2,970.8	7.1	7.1	-157.36	-231.5	-54.5	367.2	354.0	13.22	27.770	
3,100.0	3,094.7	3,075.7	3,069.7	7.3	7.4	-157.42	-238.0	-56.8	380.2	366.5	13.69	27.780	
3,200.0	3,194.5	3,174.8	3,168.6	7.6	7.6	-157.47	-244.5	-59.1	393.2	379.1	14.15	27.789	
3,300.0	3,294.2	3,274.0	3,267.6	7.9	7.9	-157.51	-251.0	-61.3	406.2	391.6	14.61	27.797	
3,400.0	3,394.0	3,373.1	3,366.5	8.1	8.2	-157.56	-257.6	-63.6	419.2	404.1	15.08	27.805	
3,500.0	3,493.7	3,472.3	3,465.4	8.4	8.4	-157.60	-264.1	-65.9	432.2	416.7	15.54	27.812	
3,600.0	3,593.5	3,571.4	3,564.3	8.6	8.7	-157.64	-270.6	-68.2	445.2	429.2	16.00	27.818	
3,700.0	3,693.3	3,670.6	3,663.2	8.9	9.0	-157.67	-277.2	-70.4	458.2	441.7	16.47	27.824	
3,800.0	3,793.0	3,769.7	3,762.1	9.1	9.2	-157.71	-283.7	-72.7	471.2	454.2	16.93	27.829	
3,900.0	3,892.8	3,868.9	3,861.0	9.4	9.5	-157.74	-290.2	-75.0	484.2	466.8	17.39	27.834	
4,000.0	3,992.5	3,968.1	3,959.9	9.6	9.7	-157.77	-296.8	-77.3	497.1	479.3	17.86	27.838	
4,100.0	4,092.3	4,067.2	4,058.8	9.9	10.0	-157.80	-303.3	-79.5	510.1	491.8	18.32	27.843	
4,200.0	4,192.0	4,166.4	4,157.7	10.2	10.3	-157.83	-309.8	-81.8	523.1	504.3	18.79	27.846	
4,300.0	4,291.8	4,265.5	4,256.7	10.4	10.5	-157.85	-316.4	-84.1	536.1	516.9	19.25	27.850	
4,400.0	4,391.6	4,364.7	4,355.6	10.7	10.8	-157.88	-322.9	-86.4	549.1	529.4	19.71	27.853	
4,500.0	4,491.3	4,463.8	4,454.5	10.9	11.0	-157.90	-329.4	-88.6	562.1	541.9	20.18	27.856	
4,600.0	4,591.1	4,563.0	4,553.4	11.2	11.3	-157.93	-336.0	-90.9	575.1	554.5	20.64	27.859	
4,700.0	4,690.8	4,662.1	4,652.3	11.4	11.6	-157.95	-342.5	-93.2	588.1	567.0	21.11	27.862	
4,800.0	4,790.6	4,761.3	4,751.2	11.7	11.8	-157.97	-349.0	-95.5	601.1	579.5	21.57	27.864	
4,900.0	4,890.3	4,860.4	4,850.1	11.9	12.1	-157.99	-355.6	-97.7	614.1	592.0	22.04	27.867	
5,000.0	4,990.1	4,959.6	4,949.0	12.2	12.4	-158.01	-362.1	-100.0	627.1	604.6	22.50	27.869	
5,100.0	5,089.9	5,058.7	5,047.9	12.5	12.6	-158.03	-368.6	-102.3	640.1	617.1	22.97	27.871	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1405A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,157.9	5,146.9	12.7	12.9	-158.05	-375.2	-104.6	653.1	629.6	23.43	27.873	
5,300.0	5,289.4	5,257.0	5,245.8	13.0	13.1	-158.06	-381.7	-106.8	666.1	642.2	23.89	27.875	
5,409.0	5,398.1	5,365.1	5,353.6	13.3	13.4	-158.08	-388.8	-109.3	680.2	655.8	24.40	27.876	
5,450.0	5,438.8	5,405.5	5,393.9	13.4	13.5	-157.85	-391.5	-110.2	687.0	662.6	24.42	28.129	
5,500.0	5,487.9	5,429.4	5,417.7	13.5	13.6	-157.38	-393.4	-110.9	700.0	675.8	24.24	28.874	
5,550.0	5,535.7	5,450.0	5,438.1	13.8	13.7	-156.61	-395.8	-111.8	719.0	695.1	23.90	30.080	
5,600.0	5,582.0	5,468.5	5,456.3	14.0	13.7	-155.52	-398.7	-112.8	743.6	720.1	23.44	31.727	
5,650.0	5,626.2	5,485.4	5,473.0	14.3	13.8	-154.00	-401.8	-113.9	773.2	750.3	22.88	33.786	
5,700.0	5,668.0	5,500.0	5,487.2	14.7	13.9	-151.92	-405.0	-114.9	807.2	784.8	22.32	36.159	
5,750.0	5,707.0	5,500.0	5,487.2	15.1	13.9	-148.70	-405.0	-114.9	845.3	823.4	21.90	38.594	
5,800.0	5,742.8	5,524.1	5,510.4	15.5	14.0	-145.13	-410.9	-117.0	886.1	864.3	21.78	40.678	
5,850.0	5,775.1	5,532.7	5,518.7	16.0	14.0	-139.51	-413.3	-117.9	929.8	907.4	22.35	41.599	
5,900.0	5,803.5	5,550.0	5,535.0	16.5	14.1	-132.23	-418.5	-119.7	975.6	951.6	23.95	40.726	
5,950.0	5,827.9	5,550.0	5,535.0	17.1	14.1	-120.00	-418.5	-119.7	1,022.6	995.4	27.16	37.652	
6,000.0	5,848.1	5,550.0	5,535.0	17.8	14.1	-102.64	-418.5	-119.7	1,070.5	1,039.7	30.86	34.691	
6,050.0	5,863.7	5,550.0	5,535.0	18.5	14.1	-81.55	-418.5	-119.7	1,118.9	1,086.6	32.31	34.629	
6,100.0	5,874.7	5,550.0	5,535.0	19.2	14.1	-61.74	-418.5	-119.7	1,167.3	1,137.3	29.95	38.974	
6,150.0	5,881.0	5,550.0	5,535.0	20.0	14.1	-46.79	-418.5	-119.7	1,215.2	1,189.4	25.78	47.144	
6,190.8	5,882.6	5,550.0	5,535.0	20.6	14.1	-38.13	-418.5	-119.7	1,253.7	1,231.2	22.53	55.635	
6,200.0	5,882.6	5,550.0	5,535.0	20.8	14.1	-37.55	-418.5	-119.7	1,262.3	1,239.9	22.40	56.361	
6,300.0	5,882.6	5,550.0	5,535.0	22.2	14.1	-30.19	-418.5	-119.7	1,357.0	1,336.9	20.12	67.442	
6,400.0	5,882.6	5,527.8	5,513.9	23.7	14.0	-19.07	-411.9	-117.4	1,452.6	1,437.1	15.44	94.085	
6,500.0	5,882.6	5,521.0	5,507.5	25.3	14.0	-7.65	-410.1	-116.7	1,549.3	1,538.0	11.28	137.333	
6,600.0	5,882.6	5,500.0	5,487.2	26.9	13.9	4.86	-405.0	-114.9	1,646.6	1,635.8	10.80	152.524	
6,700.0	5,882.6	5,500.0	5,487.2	28.5	13.9	16.86	-405.0	-114.9	1,743.8	1,728.2	15.60	111.766	
6,800.0	5,882.6	5,500.0	5,487.2	30.1	13.9	28.08	-405.0	-114.9	1,840.9	1,818.7	22.18	82.997	
6,900.0	5,882.7	5,500.0	5,487.2	31.7	13.9	37.80	-405.0	-114.9	1,937.7	1,909.3	28.33	68.393	
6,952.8	5,882.7	5,500.0	5,487.2	32.5	13.9	42.25	-405.0	-114.9	1,988.6	1,957.5	31.16	63.814	
7,000.0	5,882.7	5,500.0	5,487.2	33.3	13.9	42.25	-405.0	-114.9	2,034.1	2,002.4	31.74	64.090	
7,100.0	5,882.7	5,500.0	5,487.2	34.9	13.9	42.25	-405.0	-114.9	2,130.8	2,097.8	32.97	64.622	
7,200.0	5,882.7	5,500.0	5,487.2	36.6	13.9	42.25	-405.0	-114.9	2,227.7	2,193.5	34.23	65.089	
7,300.0	5,882.7	5,479.6	5,467.2	38.3	13.8	40.97	-400.7	-113.5	2,324.5	2,289.8	34.70	66.983	
7,400.0	5,882.7	5,475.9	5,463.6	40.0	13.8	40.74	-400.0	-113.2	2,421.7	2,385.9	35.82	67.618	
7,500.0	5,882.7	5,472.4	5,460.2	41.7	13.8	40.53	-399.4	-113.0	2,519.2	2,482.2	36.94	68.195	
7,600.0	5,882.7	5,450.0	5,438.1	43.4	13.7	39.19	-395.8	-111.8	2,617.2	2,579.9	37.30	70.165	
7,700.0	5,882.7	5,450.0	5,438.1	45.2	13.7	39.19	-395.8	-111.8	2,714.9	2,676.3	38.56	70.412	
7,800.0	5,882.7	5,450.0	5,438.1	46.9	13.7	39.19	-395.8	-111.8	2,812.7	2,772.9	39.82	70.636	
7,900.0	5,882.7	5,450.0	5,438.1	48.7	13.7	39.19	-395.8	-111.8	2,910.6	2,869.6	41.09	70.839	
8,000.0	5,882.7	5,450.0	5,438.1	50.5	13.7	39.19	-395.8	-111.8	3,008.8	2,966.4	42.36	71.023	
8,100.0	5,882.7	5,450.0	5,438.1	52.3	13.7	39.19	-395.8	-111.8	3,107.0	3,063.3	43.64	71.191	
8,200.0	5,882.7	5,450.0	5,438.1	54.1	13.7	39.19	-395.8	-111.8	3,205.3	3,160.4	44.93	71.344	
8,300.0	5,882.7	5,450.0	5,438.1	55.9	13.7	39.19	-395.8	-111.8	3,303.7	3,257.5	46.22	71.485	
8,400.0	5,882.7	5,450.0	5,438.1	57.7	13.7	39.19	-395.8	-111.8	3,402.3	3,354.8	47.51	71.615	
8,500.0	5,882.8	5,450.0	5,438.1	59.6	13.7	39.19	-395.8	-111.8	3,500.9	3,452.1	48.80	71.735	
8,600.0	5,882.8	5,450.0	5,438.1	61.4	13.7	39.19	-395.8	-111.8	3,599.6	3,549.5	50.10	71.846	
8,700.0	5,882.8	5,450.0	5,438.1	63.2	13.7	39.19	-395.8	-111.8	3,698.3	3,646.9	51.40	71.949	
8,800.0	5,882.8	5,450.0	5,438.1	65.1	13.7	39.19	-395.8	-111.8	3,797.2	3,744.4	52.71	72.045	
8,900.0	5,882.8	5,450.0	5,438.1	66.9	13.7	39.19	-395.8	-111.8	3,896.0	3,842.0	54.01	72.134	
9,000.0	5,882.8	5,450.0	5,438.1	68.8	13.7	39.19	-395.8	-111.8	3,995.0	3,939.7	55.32	72.218	
9,100.0	5,882.8	5,450.0	5,438.1	70.6	13.7	39.19	-395.8	-111.8	4,094.0	4,037.3	56.63	72.296	
9,200.0	5,882.8	5,450.0	5,438.1	72.5	13.7	39.19	-395.8	-111.8	4,193.0	4,135.1	57.94	72.369	
9,300.0	5,882.8	5,450.0	5,438.1	74.3	13.7	39.19	-395.8	-111.8	4,292.1	4,232.8	59.25	72.438	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1405A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	5,450.0	5,438.1	76.2	13.7	39.19	-395.8	-111.8	4,391.2	4,330.6	60.57	72.503	
9,500.0	5,882.8	5,450.0	5,438.1	78.1	13.7	39.19	-395.8	-111.8	4,490.4	4,428.5	61.88	72.564	
9,600.0	5,882.8	5,431.2	5,419.4	79.9	13.6	38.10	-393.6	-111.0	4,589.2	4,527.2	62.04	73.971	
9,700.0	5,882.8	5,430.0	5,418.3	81.8	13.6	38.03	-393.4	-110.9	4,688.4	4,625.1	63.27	74.104	
9,800.0	5,882.8	5,429.0	5,417.2	83.7	13.6	37.97	-393.3	-110.9	4,787.6	4,723.1	64.50	74.231	
9,900.0	5,882.8	5,410.0	5,398.4	85.6	13.5	36.91	-391.8	-110.3	4,887.2	4,822.6	64.60	75.658	
10,000.0	5,882.8	5,410.0	5,398.4	87.4	13.5	36.91	-391.8	-110.3	4,986.4	4,920.6	65.87	75.699	
10,100.0	5,882.9	5,410.0	5,398.4	89.3	13.5	36.91	-391.8	-110.3	5,085.7	5,018.6	67.15	75.738	
10,200.0	5,882.9	5,410.0	5,398.4	91.2	13.5	36.91	-391.8	-110.3	5,185.0	5,116.6	68.43	75.774	
10,300.0	5,882.9	5,410.0	5,398.4	93.1	13.5	36.91	-391.8	-110.3	5,284.3	5,214.6	69.71	75.810	
10,400.0	5,882.9	5,410.0	5,398.4	95.0	13.5	36.91	-391.8	-110.3	5,383.7	5,312.7	70.98	75.843	
10,500.0	5,882.9	5,410.0	5,398.4	96.9	13.5	36.91	-391.8	-110.3	5,483.1	5,410.8	72.26	75.875	
10,600.0	5,882.9	5,410.0	5,398.4	98.8	13.5	36.91	-391.8	-110.3	5,582.5	5,508.9	73.55	75.905	
10,700.0	5,882.9	5,410.0	5,398.4	100.6	13.5	36.91	-391.8	-110.3	5,681.9	5,607.1	74.83	75.934	
10,800.0	5,882.9	5,410.0	5,398.4	102.5	13.5	36.91	-391.8	-110.3	5,781.3	5,705.2	76.11	75.962	
10,900.0	5,882.9	5,410.0	5,398.4	104.4	13.5	36.91	-391.8	-110.3	5,880.8	5,803.4	77.39	75.989	
11,000.0	5,882.9	5,410.0	5,398.4	106.3	13.5	36.91	-391.8	-110.3	5,980.3	5,901.6	78.67	76.015	
11,100.0	5,882.9	5,410.0	5,398.4	108.2	13.5	36.91	-391.8	-110.3	6,079.8	5,999.8	79.96	76.039	
11,200.0	5,882.9	5,410.0	5,398.4	110.1	13.5	36.91	-391.8	-110.3	6,179.3	6,098.0	81.24	76.063	
11,300.0	5,882.9	5,410.0	5,398.4	112.0	13.5	36.91	-391.8	-110.3	6,278.8	6,196.3	82.52	76.085	
11,400.0	5,882.9	5,410.0	5,398.4	113.9	13.5	36.91	-391.8	-110.3	6,378.3	6,294.5	83.81	76.107	
11,500.0	5,882.9	5,410.0	5,398.4	115.8	13.5	36.91	-391.8	-110.3	6,477.9	6,392.8	85.09	76.128	
11,600.0	5,882.9	5,410.0	5,398.4	117.7	13.5	36.91	-391.8	-110.3	6,577.5	6,491.1	86.38	76.148	
11,700.0	5,883.0	5,410.0	5,398.4	119.6	13.5	36.91	-391.8	-110.3	6,677.1	6,589.4	87.66	76.167	
11,800.0	5,883.0	5,410.0	5,398.4	121.5	13.5	36.91	-391.8	-110.3	6,776.6	6,687.7	88.95	76.186	
11,900.0	5,883.0	5,410.0	5,398.4	123.4	13.5	36.91	-391.8	-110.3	6,876.3	6,786.0	90.23	76.204	
12,000.0	5,883.0	5,410.0	5,398.4	125.3	13.5	36.91	-391.8	-110.3	6,975.9	6,884.3	91.52	76.221	
12,100.0	5,883.0	5,410.0	5,398.4	127.2	13.5	36.91	-391.8	-110.3	7,075.5	6,982.7	92.81	76.238	
12,200.0	5,883.0	5,410.0	5,398.4	129.1	13.5	36.91	-391.8	-110.3	7,175.1	7,081.0	94.09	76.255	
12,300.0	5,883.0	5,410.0	5,398.4	131.0	13.5	36.91	-391.8	-110.3	7,274.8	7,179.4	95.38	76.270	
12,400.0	5,883.0	5,410.0	5,398.4	132.9	13.5	36.91	-391.8	-110.3	7,374.4	7,277.8	96.67	76.285	
12,477.2	5,883.0	5,410.0	5,398.4	134.1	13.5	36.91	-391.8	-110.3	7,451.4	7,353.9	97.42	76.487	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1406B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	156.19	-74.9	33.0	81.9				
100.0	100.0	100.0	100.0	0.1	0.1	156.19	-74.9	33.0	81.9	81.7	0.19	437.773	
200.0	200.0	200.0	200.0	0.3	0.3	156.19	-74.9	33.0	81.9	81.2	0.64	128.611	
300.0	300.0	300.0	300.0	0.5	0.5	156.19	-74.9	33.0	81.9	80.8	1.09	75.378	
400.0	400.0	400.0	400.0	0.8	0.8	156.19	-74.9	33.0	81.9	80.3	1.54	53.312	
500.0	500.0	500.0	500.0	1.0	1.0	156.19	-74.9	33.0	81.9	79.9	1.99	41.240	
600.0	600.0	600.0	600.0	1.2	1.2	156.19	-74.9	33.0	81.9	79.4	2.43	33.625	CC, ES
700.0	700.0	697.5	697.5	1.4	1.4	156.75	-76.6	32.9	83.4	80.5	2.85	29.218	
800.0	800.0	794.8	794.7	1.7	1.6	158.31	-81.5	32.4	87.9	84.6	3.26	26.959	
900.0	900.0	894.3	893.9	1.9	1.8	-176.94	-88.4	31.7	95.9	92.2	3.68	26.031	SF
1,000.0	999.8	993.6	993.0	2.1	2.0	-175.49	-95.3	31.1	107.4	103.3	4.11	26.141	
1,100.0	1,099.6	1,092.7	1,091.8	2.3	2.2	-174.41	-102.2	30.4	120.7	116.2	4.54	26.617	
1,200.0	1,199.4	1,191.8	1,190.7	2.6	2.5	-173.54	-109.1	29.8	134.1	129.1	4.97	26.986	
1,300.0	1,299.1	1,290.9	1,289.5	2.8	2.7	-172.83	-115.9	29.1	147.5	142.1	5.41	27.277	
1,400.0	1,398.9	1,390.0	1,388.4	3.1	2.9	-172.25	-122.8	28.4	160.9	155.0	5.85	27.511	
1,500.0	1,498.6	1,489.0	1,487.2	3.3	3.2	-171.75	-129.7	27.8	174.3	168.0	6.29	27.702	
1,600.0	1,598.4	1,588.1	1,586.0	3.6	3.4	-171.32	-136.6	27.1	187.7	181.0	6.74	27.859	
1,700.0	1,698.1	1,687.2	1,684.9	3.8	3.7	-170.95	-143.5	26.4	201.2	194.0	7.19	27.993	
1,800.0	1,797.9	1,786.3	1,783.7	4.1	3.9	-170.62	-150.3	25.8	214.6	207.0	7.64	28.106	
1,900.0	1,897.6	1,885.4	1,882.6	4.3	4.2	-170.34	-157.2	25.1	228.1	220.0	8.09	28.202	
2,000.0	1,997.4	1,984.5	1,981.4	4.6	4.4	-170.08	-164.1	24.5	241.5	233.0	8.54	28.285	
2,100.0	2,097.2	2,083.6	2,080.3	4.8	4.7	-169.86	-171.0	23.8	255.0	246.0	8.99	28.358	
2,200.0	2,196.9	2,182.6	2,179.1	5.1	5.0	-169.65	-177.9	23.1	268.4	259.0	9.44	28.422	
2,300.0	2,296.7	2,281.7	2,278.0	5.3	5.2	-169.47	-184.7	22.5	281.9	272.0	9.90	28.478	
2,400.0	2,396.4	2,380.8	2,376.8	5.6	5.5	-169.30	-191.6	21.8	295.4	285.0	10.35	28.528	
2,500.0	2,496.2	2,479.9	2,475.6	5.8	5.7	-169.15	-198.5	21.1	308.8	298.0	10.81	28.572	
2,600.0	2,595.9	2,579.0	2,574.5	6.1	6.0	-169.01	-205.4	20.5	322.3	311.1	11.27	28.612	
2,700.0	2,695.7	2,678.1	2,673.3	6.3	6.2	-168.88	-212.3	19.8	335.8	324.1	11.72	28.648	
2,800.0	2,795.5	2,777.2	2,772.2	6.6	6.5	-168.76	-219.1	19.2	349.3	337.1	12.18	28.681	
2,900.0	2,895.2	2,876.2	2,871.0	6.8	6.8	-168.65	-226.0	18.5	362.8	350.1	12.63	28.711	
3,000.0	2,995.0	2,975.3	2,969.9	7.1	7.0	-168.54	-232.9	17.8	376.2	363.1	13.09	28.738	
3,100.0	3,094.7	3,074.4	3,068.7	7.3	7.3	-168.45	-239.8	17.2	389.7	376.2	13.55	28.763	
3,200.0	3,194.5	3,173.5	3,167.5	7.6	7.5	-168.36	-246.7	16.5	403.2	389.2	14.01	28.786	
3,300.0	3,294.2	3,272.6	3,266.4	7.9	7.8	-168.28	-253.5	15.8	416.7	402.2	14.46	28.807	
3,400.0	3,394.0	3,371.7	3,365.2	8.1	8.1	-168.20	-260.4	15.2	430.2	415.2	14.92	28.826	
3,500.0	3,493.7	3,470.7	3,464.1	8.4	8.3	-168.12	-267.3	14.5	443.6	428.3	15.38	28.844	
3,600.0	3,593.5	3,569.8	3,562.9	8.6	8.6	-168.06	-274.2	13.9	457.1	441.3	15.84	28.861	
3,700.0	3,693.3	3,668.9	3,661.8	8.9	8.8	-167.99	-281.1	13.2	470.6	454.3	16.30	28.877	
3,800.0	3,793.0	3,768.0	3,760.6	9.1	9.1	-167.93	-287.9	12.5	484.1	467.3	16.76	28.891	
3,900.0	3,892.8	3,867.1	3,859.5	9.4	9.4	-167.87	-294.8	11.9	497.6	480.4	17.21	28.905	
4,000.0	3,992.5	3,966.2	3,958.3	9.6	9.6	-167.82	-301.7	11.2	511.1	493.4	17.67	28.917	
4,100.0	4,092.3	4,065.3	4,057.1	9.9	9.9	-167.76	-308.6	10.5	524.6	506.4	18.13	28.929	
4,200.0	4,192.0	4,164.3	4,156.0	10.2	10.1	-167.71	-315.5	9.9	538.0	519.5	18.59	28.941	
4,300.0	4,291.8	4,263.4	4,254.8	10.4	10.4	-167.67	-322.3	9.2	551.5	532.5	19.05	28.951	
4,400.0	4,391.6	4,362.5	4,353.7	10.7	10.7	-167.62	-329.2	8.6	565.0	545.5	19.51	28.961	
4,500.0	4,491.3	4,461.6	4,452.5	10.9	10.9	-167.58	-336.1	7.9	578.5	558.5	19.97	28.971	
4,600.0	4,591.1	4,560.7	4,551.4	11.2	11.2	-167.54	-343.0	7.2	592.0	571.6	20.43	28.979	
4,700.0	4,690.8	4,659.8	4,650.2	11.4	11.4	-167.50	-349.9	6.6	605.5	584.6	20.89	28.988	
4,800.0	4,790.6	4,758.9	4,749.0	11.7	11.7	-167.46	-356.7	5.9	619.0	597.6	21.35	28.996	
4,900.0	4,890.3	4,857.9	4,847.9	11.9	12.0	-167.43	-363.6	5.2	632.5	610.7	21.81	29.003	
5,000.0	4,990.1	4,957.0	4,946.7	12.2	12.2	-167.39	-370.5	4.6	646.0	623.7	22.27	29.011	
5,100.0	5,089.9	5,056.1	5,045.6	12.5	12.5	-167.36	-377.4	3.9	659.4	636.7	22.73	29.018	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1406B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,155.2	5,144.4	12.7	12.7	-167.33	-384.3	3.3	672.9	649.8	23.19	29.024	
5,300.0	5,289.4	5,254.3	5,243.3	13.0	13.0	-167.30	-391.1	2.6	686.4	662.8	23.65	29.030	
5,409.0	5,398.1	5,362.3	5,351.0	13.3	13.3	-167.27	-398.6	1.9	701.1	677.0	24.15	29.037	
5,450.0	5,438.8	5,402.7	5,391.3	13.4	13.4	-167.11	-401.4	1.6	708.2	684.1	24.15	29.323	
5,500.0	5,487.9	5,451.0	5,439.5	13.5	13.5	-166.88	-404.8	1.3	721.0	697.0	23.98	30.064	
5,550.0	5,535.7	5,497.8	5,486.2	13.8	13.7	-166.60	-408.0	1.0	738.3	714.6	23.62	31.257	
5,600.0	5,582.0	5,524.2	5,512.6	14.0	13.7	-166.11	-410.0	0.8	760.2	737.2	23.04	33.000	
5,650.0	5,626.2	5,550.0	5,538.1	14.3	13.8	-165.42	-413.1	0.5	787.7	765.4	22.30	35.328	
5,700.0	5,668.0	5,550.0	5,538.1	14.7	13.8	-164.20	-413.1	0.5	820.0	798.6	21.39	38.331	
5,750.0	5,707.0	5,570.0	5,557.9	15.1	13.9	-162.77	-416.4	0.2	856.5	836.0	20.46	41.854	
5,800.0	5,742.8	5,581.2	5,568.9	15.5	13.9	-160.62	-418.5	0.0	896.8	877.2	19.57	45.814	
5,850.0	5,775.1	5,600.0	5,587.2	16.0	14.0	-157.76	-422.6	-0.4	940.2	921.3	18.91	49.706	
5,900.0	5,803.5	5,600.0	5,587.2	16.5	14.0	-152.67	-422.6	-0.4	985.7	966.7	19.00	51.873	
5,950.0	5,827.9	5,600.0	5,587.2	17.1	14.0	-144.00	-422.6	-0.4	1,033.1	1,012.2	20.93	49.370	
6,000.0	5,848.1	5,600.0	5,587.2	17.8	14.0	-127.83	-422.6	-0.4	1,081.7	1,055.8	25.99	41.628	
6,050.0	5,863.7	5,600.0	5,587.2	18.5	14.0	-97.99	-422.6	-0.4	1,131.0	1,098.5	32.50	34.799	
6,100.0	5,874.7	5,600.0	5,587.2	19.2	14.0	-62.24	-422.6	-0.4	1,180.5	1,150.2	30.30	38.959	
6,150.0	5,881.0	5,600.0	5,587.2	20.0	14.0	-39.40	-422.6	-0.4	1,229.7	1,206.7	23.00	53.471	
6,190.8	5,882.6	5,600.0	5,587.2	20.6	14.0	-29.12	-422.6	-0.4	1,269.3	1,250.7	18.55	68.417	
6,200.0	5,882.6	5,600.0	5,587.2	20.8	14.0	-28.24	-422.6	-0.4	1,278.2	1,259.9	18.23	70.109	
6,300.0	5,882.6	5,600.0	5,587.2	22.2	14.0	-17.17	-422.6	-0.4	1,375.2	1,361.4	13.78	99.780	
6,400.0	5,882.6	5,600.0	5,587.2	23.7	14.0	-3.57	-422.6	-0.4	1,472.9	1,463.3	9.62	153.109	
6,500.0	5,882.6	5,600.0	5,587.2	25.3	14.0	11.43	-422.6	-0.4	1,571.0	1,558.8	12.13	129.553	
6,600.0	5,882.6	5,580.4	5,568.0	26.9	13.9	24.62	-418.3	0.0	1,668.6	1,649.6	18.97	87.952	
6,700.0	5,882.6	5,575.7	5,563.5	28.5	13.9	36.04	-417.4	0.1	1,766.3	1,740.5	25.81	68.438	
6,800.0	5,882.6	5,571.4	5,559.2	30.1	13.9	45.12	-416.6	0.1	1,863.5	1,832.2	31.34	59.465	
6,900.0	5,882.7	5,550.0	5,538.1	31.7	13.8	50.77	-413.1	0.5	1,960.4	1,925.5	34.94	56.103	
6,952.8	5,882.7	5,550.0	5,538.1	32.5	13.8	54.03	-413.1	0.5	2,011.1	1,974.2	36.92	54.474	
7,000.0	5,882.7	5,550.0	5,538.1	33.3	13.8	54.03	-413.1	0.5	2,056.2	2,018.7	37.58	54.720	
7,100.0	5,882.7	5,550.0	5,538.1	34.9	13.8	54.03	-413.1	0.5	2,152.3	2,113.3	38.99	55.196	
7,200.0	5,882.7	5,550.0	5,538.1	36.6	13.8	54.03	-413.1	0.5	2,248.7	2,208.2	40.43	55.619	
7,300.0	5,882.7	5,550.0	5,538.1	38.3	13.8	54.03	-413.1	0.5	2,345.4	2,303.5	41.88	55.996	
7,400.0	5,882.7	5,550.0	5,538.1	40.0	13.8	54.03	-413.1	0.5	2,442.3	2,399.0	43.35	56.334	
7,500.0	5,882.7	5,550.0	5,538.1	41.7	13.8	54.03	-413.1	0.5	2,539.5	2,494.7	44.84	56.639	
7,600.0	5,882.7	5,550.0	5,538.1	43.4	13.8	54.03	-413.1	0.5	2,636.9	2,590.6	46.33	56.914	
7,700.0	5,882.7	5,550.0	5,538.1	45.2	13.8	54.03	-413.1	0.5	2,734.5	2,686.6	47.84	57.164	
7,800.0	5,882.7	5,550.0	5,538.1	46.9	13.8	54.03	-413.1	0.5	2,832.2	2,782.9	49.35	57.391	
7,900.0	5,882.7	5,550.0	5,538.1	48.7	13.8	54.03	-413.1	0.5	2,930.1	2,879.3	50.87	57.599	
8,000.0	5,882.7	5,550.0	5,538.1	50.5	13.8	54.03	-413.1	0.5	3,028.2	2,975.8	52.40	57.790	
8,100.0	5,882.7	5,550.0	5,538.1	52.3	13.8	54.03	-413.1	0.5	3,126.4	3,072.4	53.94	57.965	
8,200.0	5,882.7	5,550.0	5,538.1	54.1	13.8	54.03	-413.1	0.5	3,224.6	3,169.2	55.48	58.126	
8,300.0	5,882.7	5,533.1	5,521.3	55.9	13.8	52.74	-411.0	0.7	3,322.7	3,266.5	56.16	59.160	
8,400.0	5,882.7	5,531.6	5,519.8	57.7	13.8	52.62	-410.8	0.7	3,421.1	3,363.5	57.62	59.377	
8,500.0	5,882.8	5,530.1	5,518.4	59.6	13.7	52.51	-410.6	0.7	3,519.6	3,460.6	59.07	59.580	
8,600.0	5,882.8	5,528.8	5,517.1	61.4	13.7	52.41	-410.5	0.7	3,618.2	3,557.7	60.53	59.771	
8,700.0	5,882.8	5,511.0	5,499.4	63.2	13.7	51.10	-409.0	0.9	3,717.2	3,656.1	61.09	60.845	
8,800.0	5,882.8	5,511.0	5,499.4	65.1	13.7	51.10	-409.0	0.9	3,815.8	3,753.2	62.61	60.945	
8,900.0	5,882.8	5,511.0	5,499.4	66.9	13.7	51.10	-409.0	0.9	3,914.6	3,850.4	64.13	61.040	
9,000.0	5,882.8	5,511.0	5,499.4	68.8	13.7	51.10	-409.0	0.9	4,013.4	3,947.7	65.65	61.129	
9,100.0	5,882.8	5,511.0	5,499.4	70.6	13.7	51.10	-409.0	0.9	4,112.3	4,045.1	67.18	61.212	
9,200.0	5,882.8	5,511.0	5,499.4	72.5	13.7	51.10	-409.0	0.9	4,211.2	4,142.5	68.71	61.291	
9,300.0	5,882.8	5,511.0	5,499.4	74.3	13.7	51.10	-409.0	0.9	4,310.1	4,239.9	70.24	61.365	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1406B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	5,511.0	5,499.4	76.2	13.7	51.10	-409.0	0.9	4,409.2	4,337.4	71.77	61.435	
9,500.0	5,882.8	5,511.0	5,499.4	78.1	13.7	51.10	-409.0	0.9	4,508.2	4,434.9	73.30	61.501	
9,600.0	5,882.8	5,511.0	5,499.4	79.9	13.7	51.10	-409.0	0.9	4,607.3	4,532.5	74.84	61.564	
9,700.0	5,882.8	5,511.0	5,499.4	81.8	13.7	51.10	-409.0	0.9	4,706.5	4,630.1	76.37	61.624	
9,800.0	5,882.8	5,511.0	5,499.4	83.7	13.7	51.10	-409.0	0.9	4,805.6	4,727.7	77.91	61.680	
9,900.0	5,882.8	5,511.0	5,499.4	85.6	13.7	51.10	-409.0	0.9	4,904.8	4,825.4	79.45	61.734	
10,000.0	5,882.8	5,511.0	5,499.4	87.4	13.7	51.10	-409.0	0.9	5,004.1	4,923.1	80.99	61.786	
10,100.0	5,882.9	5,511.0	5,499.4	89.3	13.7	51.10	-409.0	0.9	5,103.3	5,020.8	82.53	61.835	
10,200.0	5,882.9	5,511.0	5,499.4	91.2	13.7	51.10	-409.0	0.9	5,202.6	5,118.6	84.07	61.882	
10,300.0	5,882.9	5,511.0	5,499.4	93.1	13.7	51.10	-409.0	0.9	5,302.0	5,216.3	85.62	61.926	
10,400.0	5,882.9	5,511.0	5,499.4	95.0	13.7	51.10	-409.0	0.9	5,401.3	5,314.1	87.16	61.969	
10,500.0	5,882.9	5,511.0	5,499.4	96.9	13.7	51.10	-409.0	0.9	5,500.7	5,412.0	88.71	62.010	
10,600.0	5,882.9	5,510.2	5,498.6	98.8	13.7	51.05	-408.9	0.9	5,600.1	5,509.9	90.19	62.090	
10,700.0	5,882.9	5,503.3	5,491.7	100.6	13.7	50.55	-408.4	0.9	5,699.5	5,608.3	91.19	62.499	
10,800.0	5,882.9	5,496.4	5,484.8	102.5	13.7	50.06	-407.9	1.0	5,798.9	5,706.7	92.18	62.908	
10,900.0	5,882.9	5,489.4	5,477.8	104.4	13.6	49.57	-407.5	1.0	5,898.3	5,805.2	93.15	63.318	
11,000.0	5,882.9	5,482.5	5,470.9	106.3	13.6	49.10	-407.0	1.1	5,997.8	5,903.7	94.12	63.727	
11,100.0	5,882.9	5,475.6	5,464.0	108.2	13.6	48.63	-406.5	1.1	6,097.2	6,002.2	95.07	64.137	
11,200.0	5,882.9	5,468.6	5,457.1	110.1	13.6	48.16	-406.0	1.2	6,196.7	6,100.7	96.00	64.547	
11,300.0	5,882.9	5,461.7	5,450.2	112.0	13.6	47.71	-405.5	1.2	6,296.2	6,199.2	96.93	64.956	
11,400.0	5,882.9	5,454.7	5,443.2	113.9	13.5	47.26	-405.1	1.3	6,395.7	6,297.8	97.84	65.366	
11,500.0	5,882.9	5,447.8	5,436.3	115.8	13.5	46.81	-404.6	1.3	6,495.1	6,396.4	98.75	65.776	
11,600.0	5,882.9	5,440.9	5,429.4	117.7	13.5	46.37	-404.1	1.3	6,594.6	6,495.0	99.64	66.185	
11,700.0	5,883.0	5,433.9	5,422.5	119.6	13.5	45.94	-403.6	1.4	6,694.2	6,593.6	100.52	66.594	
11,800.0	5,883.0	5,427.0	5,415.6	121.5	13.5	45.52	-403.1	1.4	6,793.7	6,692.3	101.39	67.003	
11,900.0	5,883.0	5,420.1	5,408.6	123.4	13.4	45.10	-402.6	1.5	6,893.2	6,790.9	102.25	67.412	
12,000.0	5,883.0	5,413.1	5,401.7	125.3	13.4	44.69	-402.2	1.5	6,992.7	6,889.6	103.11	67.821	
12,100.0	5,883.0	5,406.2	5,394.8	127.2	13.4	44.28	-401.7	1.6	7,092.2	6,988.3	103.95	68.229	
12,200.0	5,883.0	5,399.2	5,387.9	129.1	13.4	43.88	-401.2	1.6	7,191.8	7,087.0	104.78	68.636	
12,300.0	5,883.0	5,392.3	5,381.0	131.0	13.4	43.49	-400.7	1.7	7,291.3	7,185.7	105.61	69.043	
12,400.0	5,883.0	5,385.4	5,374.0	132.9	13.4	43.10	-400.2	1.7	7,390.9	7,284.5	106.42	69.449	
12,477.2	5,883.0	5,380.0	5,368.7	134.1	13.3	42.80	-399.9	1.8	7,467.7	7,360.9	106.80	69.922	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1407A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	138.58	-74.9	66.1	99.9				
100.0	100.0	100.0	100.0	0.1	0.1	138.58	-74.9	66.1	99.9	99.7	0.19	534.178	
200.0	200.0	200.0	200.0	0.3	0.3	138.58	-74.9	66.1	99.9	99.3	0.64	156.934	
300.0	300.0	300.0	300.0	0.5	0.5	138.58	-74.9	66.1	99.9	98.8	1.09	91.978	
400.0	400.0	400.0	400.0	0.8	0.8	138.58	-74.9	66.1	99.9	98.4	1.54	65.052	
500.0	500.0	500.0	500.0	1.0	1.0	138.58	-74.9	66.1	99.9	97.9	1.99	50.321	
600.0	600.0	600.0	600.0	1.2	1.2	138.58	-74.9	66.1	99.9	97.5	2.43	41.030	
700.0	700.0	700.0	700.0	1.4	1.4	138.58	-74.9	66.1	99.9	97.0	2.88	34.635	CC, ES
800.0	800.0	797.0	797.0	1.7	1.6	139.04	-76.5	66.4	101.4	98.1	3.30	30.706	
900.0	900.0	893.7	893.6	1.9	1.8	163.44	-81.3	67.4	107.5	103.8	3.71	29.006	
1,000.0	999.8	992.8	992.4	2.1	2.0	165.67	-88.1	68.8	118.7	114.6	4.12	28.797	SF
1,100.0	1,099.6	1,091.8	1,091.2	2.3	2.2	167.73	-94.9	70.1	131.8	127.3	4.54	29.037	
1,200.0	1,199.4	1,190.8	1,190.0	2.6	2.4	169.41	-101.6	71.5	145.1	140.1	4.97	29.223	
1,300.0	1,299.1	1,289.9	1,288.7	2.8	2.7	170.81	-108.4	72.9	158.4	153.1	5.40	29.369	
1,400.0	1,398.9	1,388.9	1,387.5	3.1	2.9	172.00	-115.2	74.3	171.9	166.0	5.83	29.486	
1,500.0	1,498.6	1,487.9	1,486.3	3.3	3.1	173.01	-121.9	75.7	185.4	179.1	6.27	29.581	
1,600.0	1,598.4	1,587.0	1,585.1	3.6	3.4	173.89	-128.7	77.0	198.9	192.2	6.71	29.660	
1,700.0	1,698.1	1,686.0	1,683.9	3.8	3.6	174.65	-135.5	78.4	212.5	205.3	7.15	29.725	
1,800.0	1,797.9	1,785.0	1,782.7	4.1	3.9	175.32	-142.2	79.8	226.1	218.5	7.59	29.781	
1,900.0	1,897.6	1,884.1	1,881.5	4.3	4.1	175.92	-149.0	81.2	239.7	231.7	8.04	29.828	
2,000.0	1,997.4	1,983.1	1,980.3	4.6	4.4	176.45	-155.8	82.5	253.4	244.9	8.48	29.869	
2,100.0	2,097.2	2,082.2	2,079.1	4.8	4.6	176.93	-162.6	83.9	267.1	258.2	8.93	29.904	
2,200.0	2,196.9	2,181.2	2,177.9	5.1	4.9	177.36	-169.3	85.3	280.8	271.4	9.38	29.935	
2,300.0	2,296.7	2,280.2	2,276.7	5.3	5.1	177.75	-176.1	86.7	294.5	284.7	9.83	29.962	
2,400.0	2,396.4	2,379.3	2,375.5	5.6	5.4	178.10	-182.9	88.1	308.2	297.9	10.28	29.986	
2,500.0	2,496.2	2,478.3	2,474.3	5.8	5.6	178.43	-189.6	89.4	322.0	311.2	10.73	30.008	
2,600.0	2,595.9	2,577.3	2,573.1	6.1	5.9	178.73	-196.4	90.8	335.7	324.5	11.18	30.027	
2,700.0	2,695.7	2,676.4	2,671.9	6.3	6.1	179.00	-203.2	92.2	349.5	337.8	11.63	30.044	
2,800.0	2,795.5	2,775.4	2,770.7	6.6	6.4	179.26	-209.9	93.6	363.2	351.1	12.08	30.059	
2,900.0	2,895.2	2,874.4	2,869.5	6.8	6.7	179.49	-216.7	94.9	377.0	364.4	12.54	30.073	
3,000.0	2,995.0	2,973.5	2,968.3	7.1	6.9	179.71	-223.5	96.3	390.8	377.8	12.99	30.086	
3,100.0	3,094.7	3,072.5	3,067.1	7.3	7.2	179.92	-230.3	97.7	404.5	391.1	13.44	30.097	
3,200.0	3,194.5	3,171.6	3,165.9	7.6	7.4	-179.89	-237.0	99.1	418.3	404.4	13.89	30.108	
3,300.0	3,294.2	3,270.6	3,264.7	7.9	7.7	-179.71	-243.8	100.4	432.1	417.8	14.35	30.117	
3,400.0	3,394.0	3,369.6	3,363.4	8.1	8.0	-179.54	-250.6	101.8	445.9	431.1	14.80	30.126	
3,500.0	3,493.7	3,468.7	3,462.2	8.4	8.2	-179.39	-257.3	103.2	459.7	444.4	15.25	30.134	
3,600.0	3,593.5	3,567.7	3,561.0	8.6	8.5	-179.24	-264.1	104.6	473.5	457.8	15.71	30.142	
3,700.0	3,693.3	3,666.7	3,659.8	8.9	8.7	-179.10	-270.9	106.0	487.3	471.1	16.16	30.149	
3,800.0	3,793.0	3,765.8	3,758.6	9.1	9.0	-178.97	-277.6	107.3	501.1	484.5	16.62	30.155	
3,900.0	3,892.8	3,864.8	3,857.4	9.4	9.2	-178.84	-284.4	108.7	514.9	497.8	17.07	30.161	
4,000.0	3,992.5	3,963.8	3,956.2	9.6	9.5	-178.72	-291.2	110.1	528.7	511.2	17.53	30.167	
4,100.0	4,092.3	4,062.9	4,055.0	9.9	9.8	-178.61	-297.9	111.5	542.5	524.5	17.98	30.172	
4,200.0	4,192.0	4,161.9	4,153.8	10.2	10.0	-178.50	-304.7	112.8	556.3	537.9	18.44	30.177	
4,300.0	4,291.8	4,261.0	4,252.6	10.4	10.3	-178.40	-311.5	114.2	570.1	551.2	18.89	30.181	
4,400.0	4,391.6	4,360.0	4,351.4	10.7	10.6	-178.30	-318.3	115.6	584.0	564.6	19.35	30.185	
4,500.0	4,491.3	4,459.0	4,450.2	10.9	10.8	-178.21	-325.0	117.0	597.8	578.0	19.80	30.189	
4,600.0	4,591.1	4,558.1	4,549.0	11.2	11.1	-178.12	-331.8	118.4	611.6	591.3	20.26	30.193	
4,700.0	4,690.8	4,657.1	4,647.8	11.4	11.3	-178.04	-338.6	119.7	625.4	604.7	20.71	30.197	
4,800.0	4,790.6	4,756.1	4,746.6	11.7	11.6	-177.96	-345.3	121.1	639.2	618.1	21.17	30.200	
4,900.0	4,890.3	4,855.2	4,845.4	11.9	11.9	-177.88	-352.1	122.5	653.1	631.4	21.62	30.203	
5,000.0	4,990.1	4,954.2	4,944.2	12.2	12.1	-177.81	-358.9	123.9	666.9	644.8	22.08	30.206	
5,100.0	5,089.9	5,053.2	5,043.0	12.5	12.4	-177.74	-365.6	125.2	680.7	658.2	22.53	30.209	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1407A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,152.3	5,141.8	12.7	12.6	-177.67	-372.4	126.6	694.5	671.5	22.99	30.212	
5,300.0	5,289.4	5,251.3	5,240.6	13.0	12.9	-177.60	-379.2	128.0	708.4	684.9	23.44	30.214	
5,409.0	5,398.1	5,359.3	5,348.2	13.3	13.2	-177.53	-386.6	129.5	723.4	699.5	23.94	30.217	
5,450.0	5,438.8	5,399.6	5,388.5	13.4	13.3	-177.48	-389.3	130.1	730.7	706.7	23.94	30.522	
5,500.0	5,487.9	5,425.7	5,414.5	13.5	13.4	-177.40	-391.3	130.5	744.4	720.6	23.70	31.402	
5,550.0	5,535.7	5,450.0	5,438.6	13.8	13.4	-177.28	-394.3	131.1	764.3	741.0	23.27	32.848	
5,600.0	5,582.0	5,450.0	5,438.6	14.0	13.4	-177.12	-394.3	131.1	790.1	767.5	22.58	34.990	
5,650.0	5,626.2	5,477.4	5,465.6	14.3	13.5	-176.88	-398.9	132.0	820.8	799.0	21.78	37.692	
5,700.0	5,668.0	5,500.0	5,487.6	14.7	13.6	-176.56	-403.7	133.0	856.4	835.6	20.78	41.207	
5,750.0	5,707.0	5,500.0	5,487.6	15.1	13.6	-176.11	-403.7	133.0	895.7	876.1	19.58	45.735	
5,800.0	5,742.8	5,500.0	5,487.6	15.5	13.6	-175.43	-403.7	133.0	938.6	920.4	18.26	51.402	
5,850.0	5,775.1	5,519.5	5,506.5	16.0	13.7	-174.44	-408.7	134.0	983.8	966.9	16.88	58.271	
5,900.0	5,803.5	5,525.0	5,511.7	16.5	13.7	-172.65	-410.2	134.3	1,031.1	1,015.6	15.50	66.522	
5,950.0	5,827.9	5,528.6	5,515.2	17.1	13.8	-168.80	-411.2	134.5	1,079.9	1,065.3	14.58	74.079	
6,000.0	5,848.1	5,530.6	5,517.1	17.8	13.8	-155.16	-411.8	134.6	1,129.5	1,112.2	17.29	65.333	
6,050.0	5,863.7	5,530.9	5,517.4	18.5	13.8	-47.64	-411.9	134.6	1,179.4	1,154.0	25.40	46.443	
6,100.0	5,874.7	5,529.8	5,516.4	19.2	13.8	-13.53	-411.6	134.6	1,229.2	1,217.3	11.93	103.079	
6,150.0	5,881.0	5,527.4	5,514.0	20.0	13.8	-7.54	-410.9	134.4	1,278.5	1,269.1	9.43	135.583	
6,190.8	5,882.6	5,524.5	5,511.3	20.6	13.7	-5.47	-410.0	134.3	1,318.0	1,309.4	8.66	152.170	
6,200.0	5,882.6	5,523.7	5,510.6	20.8	13.7	-4.52	-409.8	134.2	1,326.8	1,318.3	8.52	155.740	
6,300.0	5,882.6	5,500.0	5,487.6	22.2	13.6	5.89	-403.7	133.0	1,423.4	1,414.1	9.29	153.277	
6,400.0	5,882.6	5,500.0	5,487.6	23.7	13.6	16.21	-403.7	133.0	1,519.5	1,506.0	13.53	112.312	
6,500.0	5,882.6	5,500.0	5,487.6	25.3	13.6	26.14	-403.7	133.0	1,615.8	1,596.8	19.03	84.888	
6,600.0	5,882.6	5,500.0	5,487.6	26.9	13.6	35.10	-403.7	133.0	1,711.9	1,687.5	24.43	70.062	
6,700.0	5,882.6	5,500.0	5,487.6	28.5	13.6	42.81	-403.7	133.0	1,807.6	1,778.4	29.19	61.920	
6,800.0	5,882.6	5,500.0	5,487.6	30.1	13.6	49.24	-403.7	133.0	1,902.8	1,869.6	33.20	57.315	
6,900.0	5,882.7	5,500.0	5,487.6	31.7	13.6	54.55	-403.7	133.0	1,997.2	1,960.7	36.52	54.688	
6,952.8	5,882.7	5,500.0	5,487.6	32.5	13.6	56.96	-403.7	133.0	2,046.7	2,008.7	38.04	53.807	
7,000.0	5,882.7	5,478.5	5,466.7	33.3	13.5	55.55	-399.1	132.0	2,090.4	2,052.3	38.08	54.895	
7,100.0	5,882.7	5,474.7	5,463.0	34.9	13.5	55.30	-398.4	131.9	2,184.2	2,144.8	39.40	55.438	
7,200.0	5,882.7	5,471.2	5,459.5	36.6	13.5	55.07	-397.7	131.8	2,278.6	2,237.9	40.74	55.926	
7,300.0	5,882.7	5,450.0	5,438.6	38.3	13.4	53.74	-394.3	131.1	2,373.8	2,332.3	41.53	57.160	
7,400.0	5,882.7	5,450.0	5,438.6	40.0	13.4	53.74	-394.3	131.1	2,468.9	2,425.9	42.99	57.423	
7,500.0	5,882.7	5,450.0	5,438.6	41.7	13.4	53.74	-394.3	131.1	2,564.3	2,519.8	44.47	57.660	
7,600.0	5,882.7	5,450.0	5,438.6	43.4	13.4	53.74	-394.3	131.1	2,660.1	2,614.1	45.96	57.874	
7,700.0	5,882.7	5,450.0	5,438.6	45.2	13.4	53.74	-394.3	131.1	2,756.2	2,708.7	47.46	58.069	
7,800.0	5,882.7	5,450.0	5,438.6	46.9	13.4	53.74	-394.3	131.1	2,852.5	2,803.6	48.97	58.247	
7,900.0	5,882.7	5,450.0	5,438.6	48.7	13.4	53.74	-394.3	131.1	2,949.1	2,898.6	50.49	58.410	
8,000.0	5,882.7	5,450.0	5,438.6	50.5	13.4	53.74	-394.3	131.1	3,045.9	2,993.9	52.01	58.559	
8,100.0	5,882.7	5,450.0	5,438.6	52.3	13.4	53.74	-394.3	131.1	3,143.0	3,089.4	53.55	58.697	
8,200.0	5,882.7	5,450.0	5,438.6	54.1	13.4	53.74	-394.3	131.1	3,240.2	3,185.1	55.08	58.824	
8,300.0	5,882.7	5,450.0	5,438.6	55.9	13.4	53.74	-394.3	131.1	3,337.5	3,280.9	56.62	58.943	
8,400.0	5,882.7	5,450.0	5,438.6	57.7	13.4	53.74	-394.3	131.1	3,435.0	3,376.9	58.17	59.053	
8,500.0	5,882.8	5,450.0	5,438.6	59.6	13.4	53.74	-394.3	131.1	3,532.7	3,473.0	59.72	59.155	
8,600.0	5,882.8	5,450.0	5,438.6	61.4	13.4	53.74	-394.3	131.1	3,630.5	3,569.2	61.27	59.251	
8,700.0	5,882.8	5,450.0	5,438.6	63.2	13.4	53.74	-394.3	131.1	3,728.4	3,665.5	62.83	59.340	
8,800.0	5,882.8	5,450.0	5,438.6	65.1	13.4	53.74	-394.3	131.1	3,826.4	3,762.0	64.39	59.424	
8,900.0	5,882.8	5,450.0	5,438.6	66.9	13.4	53.74	-394.3	131.1	3,924.5	3,858.5	65.95	59.503	
9,000.0	5,882.8	5,450.0	5,438.6	68.8	13.4	53.74	-394.3	131.1	4,022.7	3,955.1	67.52	59.578	
9,100.0	5,882.8	5,432.2	5,421.0	70.6	13.4	52.64	-392.0	130.6	4,120.6	4,052.4	68.22	60.399	
9,200.0	5,882.8	5,431.0	5,419.8	72.5	13.4	52.57	-391.9	130.6	4,218.9	4,149.2	69.72	60.515	
9,300.0	5,882.8	5,429.8	5,418.6	74.3	13.4	52.50	-391.8	130.6	4,317.3	4,246.1	71.21	60.626	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1407A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	5,428.7	5,417.5	76.2	13.4	52.43	-391.6	130.5	4,415.8	4,343.1	72.71	60.732	
9,500.0	5,882.8	5,410.0	5,398.9	78.1	13.3	51.32	-390.0	130.2	4,514.6	4,441.4	73.29	61.599	
9,600.0	5,882.8	5,410.0	5,398.9	79.9	13.3	51.32	-390.0	130.2	4,613.2	4,538.4	74.83	61.649	
9,700.0	5,882.8	5,410.0	5,398.9	81.8	13.3	51.32	-390.0	130.2	4,711.8	4,635.4	76.37	61.698	
9,800.0	5,882.8	5,410.0	5,398.9	83.7	13.3	51.32	-390.0	130.2	4,810.5	4,732.6	77.91	61.743	
9,900.0	5,882.8	5,410.0	5,398.9	85.6	13.3	51.32	-390.0	130.2	4,909.2	4,829.8	79.45	61.787	
10,000.0	5,882.8	5,410.0	5,398.9	87.4	13.3	51.32	-390.0	130.2	5,008.0	4,927.0	81.00	61.829	
10,100.0	5,882.9	5,410.0	5,398.9	89.3	13.3	51.32	-390.0	130.2	5,106.8	5,024.3	82.54	61.869	
10,200.0	5,882.9	5,410.0	5,398.9	91.2	13.3	51.32	-390.0	130.2	5,205.7	5,121.6	84.09	61.907	
10,300.0	5,882.9	5,410.0	5,398.9	93.1	13.3	51.32	-390.0	130.2	5,304.6	5,218.9	85.64	61.944	
10,400.0	5,882.9	5,410.0	5,398.9	95.0	13.3	51.32	-390.0	130.2	5,403.5	5,316.3	87.18	61.979	
10,500.0	5,882.9	5,410.0	5,398.9	96.9	13.3	51.32	-390.0	130.2	5,502.5	5,413.8	88.73	62.013	
10,600.0	5,882.9	5,410.0	5,398.9	98.8	13.3	51.32	-390.0	130.2	5,601.5	5,511.3	90.28	62.046	
10,700.0	5,882.9	5,410.0	5,398.9	100.6	13.3	51.32	-390.0	130.2	5,700.6	5,608.8	91.83	62.077	
10,800.0	5,882.9	5,410.0	5,398.9	102.5	13.3	51.32	-390.0	130.2	5,799.7	5,706.3	93.38	62.107	
10,900.0	5,882.9	5,410.0	5,398.9	104.4	13.3	51.32	-390.0	130.2	5,898.8	5,803.9	94.93	62.136	
11,000.0	5,882.9	5,410.0	5,398.9	106.3	13.3	51.32	-390.0	130.2	5,998.0	5,901.5	96.49	62.164	
11,100.0	5,882.9	5,410.0	5,398.9	108.2	13.3	51.32	-390.0	130.2	6,097.1	5,999.1	98.04	62.191	
11,200.0	5,882.9	5,410.0	5,398.9	110.1	13.3	51.32	-390.0	130.2	6,196.3	6,096.7	99.59	62.217	
11,300.0	5,882.9	5,410.0	5,398.9	112.0	13.3	51.32	-390.0	130.2	6,295.6	6,194.4	101.15	62.242	
11,400.0	5,882.9	5,410.0	5,398.9	113.9	13.3	51.32	-390.0	130.2	6,394.8	6,292.1	102.70	62.266	
11,500.0	5,882.9	5,410.0	5,398.9	115.8	13.3	51.32	-390.0	130.2	6,494.1	6,389.8	104.26	62.290	
11,600.0	5,882.9	5,410.0	5,398.9	117.7	13.3	51.32	-390.0	130.2	6,593.4	6,487.6	105.81	62.312	
11,700.0	5,883.0	5,410.0	5,398.9	119.6	13.3	51.32	-390.0	130.2	6,692.7	6,585.3	107.37	62.334	
11,800.0	5,883.0	5,410.0	5,398.9	121.5	13.3	51.32	-390.0	130.2	6,792.1	6,683.1	108.92	62.356	
11,900.0	5,883.0	5,410.0	5,398.9	123.4	13.3	51.32	-390.0	130.2	6,891.4	6,780.9	110.48	62.376	
12,000.0	5,883.0	5,409.6	5,398.5	125.3	13.3	51.30	-390.0	130.2	6,990.8	6,878.8	112.01	62.413	
12,100.0	5,883.0	5,402.8	5,391.7	127.2	13.3	50.91	-389.5	130.1	7,090.2	6,977.1	113.04	62.722	
12,200.0	5,883.0	5,396.0	5,384.8	129.1	13.3	50.51	-389.1	130.0	7,189.6	7,075.5	114.06	63.032	
12,300.0	5,883.0	5,389.1	5,378.0	131.0	13.3	50.13	-388.6	129.9	7,289.0	7,173.9	115.07	63.342	
12,400.0	5,883.0	5,382.3	5,371.2	132.9	13.2	49.74	-388.1	129.8	7,388.4	7,272.3	116.07	63.653	
12,477.2	5,883.0	5,377.0	5,366.0	134.1	13.2	49.45	-387.8	129.7	7,465.1	7,348.6	116.59	64.029	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1408B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	127.08	-74.9	99.1	124.3				
100.0	100.0	100.0	100.0	0.1	0.1	127.08	-74.9	99.1	124.3	124.1	0.19	664.449	
200.0	200.0	200.0	200.0	0.3	0.3	127.08	-74.9	99.1	124.3	123.6	0.64	195.205	
300.0	300.0	300.0	300.0	0.5	0.5	127.08	-74.9	99.1	124.3	123.2	1.09	114.409	
400.0	400.0	400.0	400.0	0.8	0.8	127.08	-74.9	99.1	124.3	122.7	1.54	80.917	
500.0	500.0	500.0	500.0	1.0	1.0	127.08	-74.9	99.1	124.3	122.3	1.99	62.593	
600.0	600.0	600.0	600.0	1.2	1.2	127.08	-74.9	99.1	124.3	121.8	2.43	51.036	
700.0	700.0	700.0	700.0	1.4	1.4	127.08	-74.9	99.1	124.3	121.4	2.88	43.082	
800.0	800.0	800.0	800.0	1.7	1.7	127.08	-74.9	99.1	124.3	120.9	3.33	37.272	CC, ES
900.0	900.0	896.2	896.2	1.9	1.9	150.64	-76.4	99.8	127.2	123.5	3.75	33.942	
1,000.0	999.8	991.8	991.7	2.1	2.0	152.56	-80.8	101.7	136.3	132.2	4.15	32.842	
1,100.0	1,099.6	1,090.5	1,090.1	2.3	2.2	154.97	-87.1	104.5	148.9	144.3	4.56	32.620	
1,200.0	1,199.4	1,189.5	1,188.9	2.6	2.4	157.02	-93.4	107.3	161.6	156.7	4.98	32.453	
1,300.0	1,299.1	1,288.5	1,287.7	2.8	2.6	158.76	-99.7	110.1	174.6	169.2	5.40	32.305	
1,400.0	1,398.9	1,387.6	1,386.5	3.1	2.9	160.26	-106.0	112.9	187.7	181.9	5.83	32.174	
1,500.0	1,498.6	1,486.6	1,485.2	3.3	3.1	161.57	-112.3	115.7	200.9	194.6	6.27	32.059	
1,600.0	1,598.4	1,585.6	1,584.0	3.6	3.3	162.72	-118.7	118.5	214.2	207.5	6.70	31.957	
1,700.0	1,698.1	1,684.6	1,682.8	3.8	3.6	163.73	-125.0	121.3	227.6	220.4	7.14	31.867	
1,800.0	1,797.9	1,783.7	1,781.6	4.1	3.8	164.63	-131.3	124.1	241.0	233.4	7.58	31.787	
1,900.0	1,897.6	1,882.7	1,880.4	4.3	4.1	165.43	-137.6	126.8	254.5	246.5	8.02	31.717	
2,000.0	1,997.4	1,981.7	1,979.2	4.6	4.3	166.15	-143.9	129.6	268.0	259.5	8.47	31.653	
2,100.0	2,097.2	2,080.7	2,078.0	4.8	4.6	166.81	-150.3	132.4	281.6	272.7	8.91	31.596	
2,200.0	2,196.9	2,179.8	2,176.7	5.1	4.8	167.40	-156.6	135.2	295.2	285.8	9.36	31.544	
2,300.0	2,296.7	2,278.8	2,275.5	5.3	5.1	167.94	-162.9	138.0	308.8	299.0	9.80	31.497	
2,400.0	2,396.4	2,377.8	2,374.3	5.6	5.3	168.44	-169.2	140.8	322.5	312.2	10.25	31.454	
2,500.0	2,496.2	2,476.9	2,473.1	5.8	5.6	168.89	-175.5	143.6	336.1	325.4	10.70	31.415	
2,600.0	2,595.9	2,575.9	2,571.9	6.1	5.8	169.31	-181.8	146.4	349.8	338.7	11.15	31.379	
2,700.0	2,695.7	2,674.9	2,670.7	6.3	6.1	169.70	-188.2	149.2	363.5	351.9	11.60	31.346	
2,800.0	2,795.5	2,773.9	2,769.5	6.6	6.3	170.06	-194.5	152.0	377.3	365.2	12.05	31.315	
2,900.0	2,895.2	2,873.0	2,868.2	6.8	6.6	170.39	-200.8	154.8	391.0	378.5	12.50	31.287	
3,000.0	2,995.0	2,972.0	2,967.0	7.1	6.8	170.71	-207.1	157.6	404.7	391.8	12.95	31.260	
3,100.0	3,094.7	3,071.0	3,065.8	7.3	7.1	171.00	-213.4	160.4	418.5	405.1	13.40	31.236	
3,200.0	3,194.5	3,170.0	3,164.6	7.6	7.4	171.27	-219.7	163.2	432.3	418.4	13.85	31.212	
3,300.0	3,294.2	3,269.1	3,263.4	7.9	7.6	171.53	-226.1	166.0	446.1	431.8	14.30	31.191	
3,400.0	3,394.0	3,368.1	3,362.2	8.1	7.9	171.77	-232.4	168.7	459.8	445.1	14.75	31.171	
3,500.0	3,493.7	3,467.1	3,461.0	8.4	8.1	171.99	-238.7	171.5	473.6	458.4	15.20	31.151	
3,600.0	3,593.5	3,566.1	3,559.7	8.6	8.4	172.21	-245.0	174.3	487.4	471.8	15.66	31.133	
3,700.0	3,693.3	3,665.2	3,658.5	8.9	8.6	172.41	-251.3	177.1	501.3	485.1	16.11	31.117	
3,800.0	3,793.0	3,764.2	3,757.3	9.1	8.9	172.60	-257.7	179.9	515.1	498.5	16.56	31.100	
3,900.0	3,892.8	3,863.2	3,856.1	9.4	9.2	172.78	-264.0	182.7	528.9	511.9	17.01	31.085	
4,000.0	3,992.5	3,962.3	3,954.9	9.6	9.4	172.95	-270.3	185.5	542.7	525.2	17.47	31.071	
4,100.0	4,092.3	4,061.3	4,053.7	9.9	9.7	173.12	-276.6	188.3	556.5	538.6	17.92	31.057	
4,200.0	4,192.0	4,160.3	4,152.5	10.2	9.9	173.27	-282.9	191.1	570.4	552.0	18.37	31.044	
4,300.0	4,291.8	4,259.3	4,251.2	10.4	10.2	173.42	-289.2	193.9	584.2	565.4	18.83	31.032	
4,400.0	4,391.6	4,358.4	4,350.0	10.7	10.5	173.56	-295.6	196.7	598.1	578.8	19.28	31.020	
4,500.0	4,491.3	4,457.4	4,448.8	10.9	10.7	173.70	-301.9	199.5	611.9	592.2	19.73	31.009	
4,600.0	4,591.1	4,556.4	4,547.6	11.2	11.0	173.83	-308.2	202.3	625.7	605.6	20.19	30.998	
4,700.0	4,690.8	4,655.4	4,646.4	11.4	11.2	173.95	-314.5	205.1	639.6	619.0	20.64	30.988	
4,800.0	4,790.6	4,754.5	4,745.2	11.7	11.5	174.07	-320.8	207.9	653.5	632.4	21.09	30.978	
4,900.0	4,890.3	4,853.5	4,843.9	11.9	11.8	174.18	-327.2	210.6	667.3	645.8	21.55	30.968	
5,000.0	4,990.1	4,952.5	4,942.7	12.2	12.0	174.29	-333.5	213.4	681.2	659.2	22.00	30.959	
5,100.0	5,089.9	5,051.6	5,041.5	12.5	12.3	174.39	-339.8	216.2	695.0	672.6	22.46	30.951	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1408B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.6	5,150.6	5,140.3	12.7	12.5	174.49	-346.1	219.0	708.9	686.0	22.91	30.942	
5,300.0	5,289.4	5,249.6	5,239.1	13.0	12.8	174.59	-352.4	221.8	722.8	699.4	23.36	30.934	
5,409.0	5,398.1	5,357.5	5,346.8	13.3	13.1	174.69	-359.3	224.9	737.9	714.0	23.86	30.926	SF
5,450.0	5,438.8	5,397.9	5,387.0	13.4	13.2	174.66	-361.9	226.0	745.1	721.3	23.86	31.229	
5,500.0	5,487.9	5,446.1	5,435.1	13.5	13.3	174.61	-365.0	227.4	758.3	734.6	23.68	32.024	
5,550.0	5,535.7	5,492.8	5,481.7	13.8	13.4	174.54	-367.9	228.7	775.9	752.6	23.29	33.314	
5,600.0	5,582.0	5,511.0	5,499.8	14.0	13.5	174.33	-369.1	229.2	798.4	775.7	22.65	35.246	
5,650.0	5,626.2	5,537.8	5,526.5	14.3	13.6	174.07	-371.4	230.2	825.9	804.1	21.85	37.796	
5,700.0	5,668.0	5,550.0	5,538.6	14.7	13.6	173.63	-372.9	230.9	858.6	837.8	20.86	41.166	
5,750.0	5,707.0	5,550.0	5,538.6	15.1	13.6	172.91	-372.9	230.9	896.0	876.3	19.70	45.472	
5,800.0	5,742.8	5,575.2	5,563.4	15.5	13.7	172.16	-376.8	232.6	936.4	917.9	18.49	50.655	
5,850.0	5,775.1	5,583.6	5,571.7	16.0	13.7	170.82	-378.3	233.3	980.1	962.9	17.21	56.965	
5,900.0	5,803.5	5,600.0	5,587.7	16.5	13.8	168.91	-381.7	234.7	1,026.3	1,010.3	16.02	64.070	
5,950.0	5,827.9	5,600.0	5,587.7	17.1	13.8	164.83	-381.7	234.7	1,074.1	1,058.7	15.40	69.761	
6,000.0	5,848.1	5,600.0	5,587.7	17.8	13.8	155.23	-381.7	234.7	1,123.2	1,106.1	17.09	65.703	
6,050.0	5,863.7	5,600.0	5,587.7	18.5	13.8	119.11	-381.7	234.7	1,172.9	1,144.3	28.63	40.971	
6,100.0	5,874.7	5,600.0	5,587.7	19.2	13.8	41.52	-381.7	234.7	1,222.8	1,199.8	23.01	53.132	
6,150.0	5,881.0	5,600.0	5,587.7	20.0	13.8	19.17	-381.7	234.7	1,272.4	1,258.7	13.68	93.007	
6,190.8	5,882.6	5,600.0	5,587.7	20.6	13.8	12.99	-381.7	234.7	1,312.4	1,301.3	11.08	118.485	
6,200.0	5,882.6	5,600.0	5,587.7	20.8	13.8	14.12	-381.7	234.7	1,321.3	1,309.8	11.58	114.122	
6,300.0	5,882.6	5,600.0	5,587.7	22.2	13.8	26.02	-381.7	234.7	1,418.7	1,401.1	17.61	80.566	
6,400.0	5,882.6	5,600.0	5,587.7	23.7	13.8	36.55	-381.7	234.7	1,515.8	1,492.4	23.46	64.600	
6,500.0	5,882.6	5,577.7	5,565.9	25.3	13.7	43.17	-377.2	232.8	1,612.0	1,584.6	27.43	58.762	
6,600.0	5,882.6	5,573.2	5,561.5	26.9	13.7	49.83	-376.4	232.4	1,708.0	1,676.6	31.37	54.454	
6,700.0	5,882.6	5,550.0	5,538.6	28.5	13.6	53.62	-372.9	230.9	1,803.7	1,769.8	33.95	53.132	
6,800.0	5,882.6	5,550.0	5,538.6	30.1	13.6	58.36	-372.9	230.9	1,898.0	1,861.2	36.86	51.490	
6,900.0	5,882.7	5,550.0	5,538.6	31.7	13.6	62.24	-372.9	230.9	1,991.4	1,952.1	39.31	50.654	
6,952.8	5,882.7	5,550.0	5,538.6	32.5	13.6	63.99	-372.9	230.9	2,040.3	1,999.9	40.46	50.431	
7,000.0	5,882.7	5,550.0	5,538.6	33.3	13.6	63.99	-372.9	230.9	2,083.9	2,042.8	41.17	50.613	
7,100.0	5,882.7	5,550.0	5,538.6	34.9	13.6	63.99	-372.9	230.9	2,176.9	2,134.2	42.71	50.967	
7,200.0	5,882.7	5,550.0	5,538.6	36.6	13.6	63.99	-372.9	230.9	2,270.5	2,226.2	44.27	51.283	
7,300.0	5,882.7	5,550.0	5,538.6	38.3	13.6	63.99	-372.9	230.9	2,364.6	2,318.7	45.85	51.568	
7,400.0	5,882.7	5,550.0	5,538.6	40.0	13.6	63.99	-372.9	230.9	2,459.1	2,411.7	47.45	51.825	
7,500.0	5,882.7	5,550.0	5,538.6	41.7	13.6	63.99	-372.9	230.9	2,554.1	2,505.0	49.06	52.059	
7,600.0	5,882.7	5,550.0	5,538.6	43.4	13.6	63.99	-372.9	230.9	2,649.4	2,598.8	50.69	52.271	
7,700.0	5,882.7	5,550.0	5,538.6	45.2	13.6	63.99	-372.9	230.9	2,745.1	2,692.8	52.32	52.466	
7,800.0	5,882.7	5,550.0	5,538.6	46.9	13.6	63.99	-372.9	230.9	2,841.1	2,787.1	53.97	52.644	
7,900.0	5,882.7	5,550.0	5,538.6	48.7	13.6	63.99	-372.9	230.9	2,937.3	2,881.7	55.62	52.809	
8,000.0	5,882.7	5,550.0	5,538.6	50.5	13.6	63.99	-372.9	230.9	3,033.8	2,976.5	57.28	52.961	
8,100.0	5,882.7	5,550.0	5,538.6	52.3	13.6	63.99	-372.9	230.9	3,130.5	3,071.6	58.95	53.102	
8,200.0	5,882.7	5,550.0	5,538.6	54.1	13.6	63.99	-372.9	230.9	3,227.4	3,166.8	60.63	53.233	
8,300.0	5,882.7	5,532.5	5,521.3	55.9	13.6	62.84	-370.9	230.0	3,324.2	3,262.5	61.71	53.864	
8,400.0	5,882.7	5,531.2	5,519.9	57.7	13.5	62.75	-370.7	229.9	3,421.4	3,358.1	63.34	54.018	
8,500.0	5,882.8	5,529.9	5,518.7	59.6	13.5	62.66	-370.6	229.9	3,518.8	3,453.8	64.97	54.162	
8,600.0	5,882.8	5,528.6	5,517.4	61.4	13.5	62.58	-370.5	229.8	3,616.3	3,549.7	66.60	54.298	
8,700.0	5,882.8	5,511.0	5,499.8	63.2	13.5	61.45	-369.1	229.2	3,714.2	3,646.6	67.61	54.932	
8,800.0	5,882.8	5,511.0	5,499.8	65.1	13.5	61.45	-369.1	229.2	3,811.9	3,742.6	69.28	55.018	
8,900.0	5,882.8	5,511.0	5,499.8	66.9	13.5	61.45	-369.1	229.2	3,909.7	3,838.8	70.96	55.099	
9,000.0	5,882.8	5,511.0	5,499.8	68.8	13.5	61.45	-369.1	229.2	4,007.7	3,935.0	72.63	55.175	
9,100.0	5,882.8	5,511.0	5,499.8	70.6	13.5	61.45	-369.1	229.2	4,105.7	4,031.4	74.31	55.248	
9,200.0	5,882.8	5,511.0	5,499.8	72.5	13.5	61.45	-369.1	229.2	4,203.8	4,127.8	76.00	55.316	
9,300.0	5,882.8	5,511.0	5,499.8	74.3	13.5	61.45	-369.1	229.2	4,302.0	4,224.3	77.68	55.382	

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 #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11F-1408B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,882.8	5,511.0	5,499.8	76.2	13.5	61.45	-369.1	229.2	4,400.3	4,320.9	79.37	55.444	
9,500.0	5,882.8	5,511.0	5,499.8	78.1	13.5	61.45	-369.1	229.2	4,498.7	4,417.6	81.05	55.503	
9,600.0	5,882.8	5,511.0	5,499.8	79.9	13.5	61.45	-369.1	229.2	4,597.1	4,514.4	82.74	55.559	
9,700.0	5,882.8	5,511.0	5,499.8	81.8	13.5	61.45	-369.1	229.2	4,695.6	4,611.2	84.43	55.613	
9,800.0	5,882.8	5,511.0	5,499.8	83.7	13.5	61.45	-369.1	229.2	4,794.2	4,708.1	86.13	55.665	
9,900.0	5,882.8	5,511.0	5,499.8	85.6	13.5	61.45	-369.1	229.2	4,892.8	4,805.0	87.82	55.714	
10,000.0	5,882.8	5,511.0	5,499.8	87.4	13.5	61.45	-369.1	229.2	4,991.5	4,902.0	89.52	55.761	
10,100.0	5,882.9	5,511.0	5,499.8	89.3	13.5	61.45	-369.1	229.2	5,090.2	4,999.0	91.21	55.806	
10,200.0	5,882.9	5,511.0	5,499.8	91.2	13.5	61.45	-369.1	229.2	5,189.0	5,096.1	92.91	55.849	
10,300.0	5,882.9	5,511.0	5,499.8	93.1	13.5	61.45	-369.1	229.2	5,287.8	5,193.2	94.61	55.891	
10,400.0	5,882.9	5,511.0	5,499.8	95.0	13.5	61.45	-369.1	229.2	5,386.7	5,290.4	96.31	55.931	
10,500.0	5,882.9	5,511.0	5,499.8	96.9	13.5	61.45	-369.1	229.2	5,485.6	5,387.6	98.01	55.969	
10,600.0	5,882.9	5,511.0	5,499.8	98.8	13.5	61.45	-369.1	229.2	5,584.6	5,484.8	99.71	56.006	
10,700.0	5,882.9	5,511.0	5,499.8	100.6	13.5	61.45	-369.1	229.2	5,683.5	5,582.1	101.42	56.042	
10,800.0	5,882.9	5,507.9	5,496.8	102.5	13.5	61.25	-368.9	229.1	5,782.6	5,679.6	102.95	56.170	
10,900.0	5,882.9	5,501.5	5,490.4	104.4	13.5	60.85	-368.5	228.9	5,881.6	5,777.3	104.29	56.396	
11,000.0	5,882.9	5,495.2	5,484.0	106.3	13.4	60.45	-368.1	228.7	5,980.7	5,875.1	105.62	56.624	
11,100.0	5,882.9	5,488.8	5,477.7	108.2	13.4	60.05	-367.7	228.6	6,079.8	5,972.8	106.94	56.852	
11,200.0	5,882.9	5,482.4	5,471.3	110.1	13.4	59.66	-367.3	228.4	6,178.9	6,070.6	108.25	57.080	
11,300.0	5,882.9	5,476.0	5,465.0	112.0	13.4	59.26	-366.9	228.2	6,278.0	6,168.5	109.55	57.310	
11,400.0	5,882.9	5,469.7	5,458.6	113.9	13.4	58.88	-366.5	228.0	6,377.2	6,266.4	110.83	57.540	
11,500.0	5,882.9	5,463.3	5,452.3	115.8	13.4	58.49	-366.1	227.8	6,476.4	6,364.3	112.10	57.771	
11,600.0	5,882.9	5,456.9	5,445.9	117.7	13.3	58.11	-365.6	227.7	6,575.6	6,462.2	113.37	58.003	
11,700.0	5,883.0	5,450.5	5,439.5	119.6	13.3	57.73	-365.2	227.5	6,674.8	6,560.2	114.62	58.235	
11,800.0	5,883.0	5,444.2	5,433.2	121.5	13.3	57.35	-364.8	227.3	6,774.0	6,658.2	115.86	58.468	
11,900.0	5,883.0	5,437.8	5,426.8	123.4	13.3	56.98	-364.4	227.1	6,873.3	6,756.2	117.09	58.703	
12,000.0	5,883.0	5,431.4	5,420.5	125.3	13.3	56.61	-364.0	226.9	6,972.5	6,854.2	118.30	58.938	
12,100.0	5,883.0	5,425.0	5,414.1	127.2	13.3	56.24	-363.6	226.8	7,071.8	6,952.3	119.51	59.173	
12,200.0	5,883.0	5,418.7	5,407.7	129.1	13.2	55.88	-363.2	226.6	7,171.1	7,050.4	120.71	59.410	
12,300.0	5,883.0	5,412.3	5,401.4	131.0	13.2	55.52	-362.8	226.4	7,270.4	7,148.5	121.89	59.647	
12,400.0	5,883.0	5,405.9	5,395.0	132.9	13.2	55.16	-362.4	226.2	7,369.7	7,246.7	123.06	59.886	
12,477.2	5,883.0	5,401.0	5,390.1	134.1	13.2	54.88	-362.1	226.1	7,446.4	7,322.7	123.71	60.192	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11F-0205A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5005.4usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11F-0205A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5005.4usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #11F-0205A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.08°