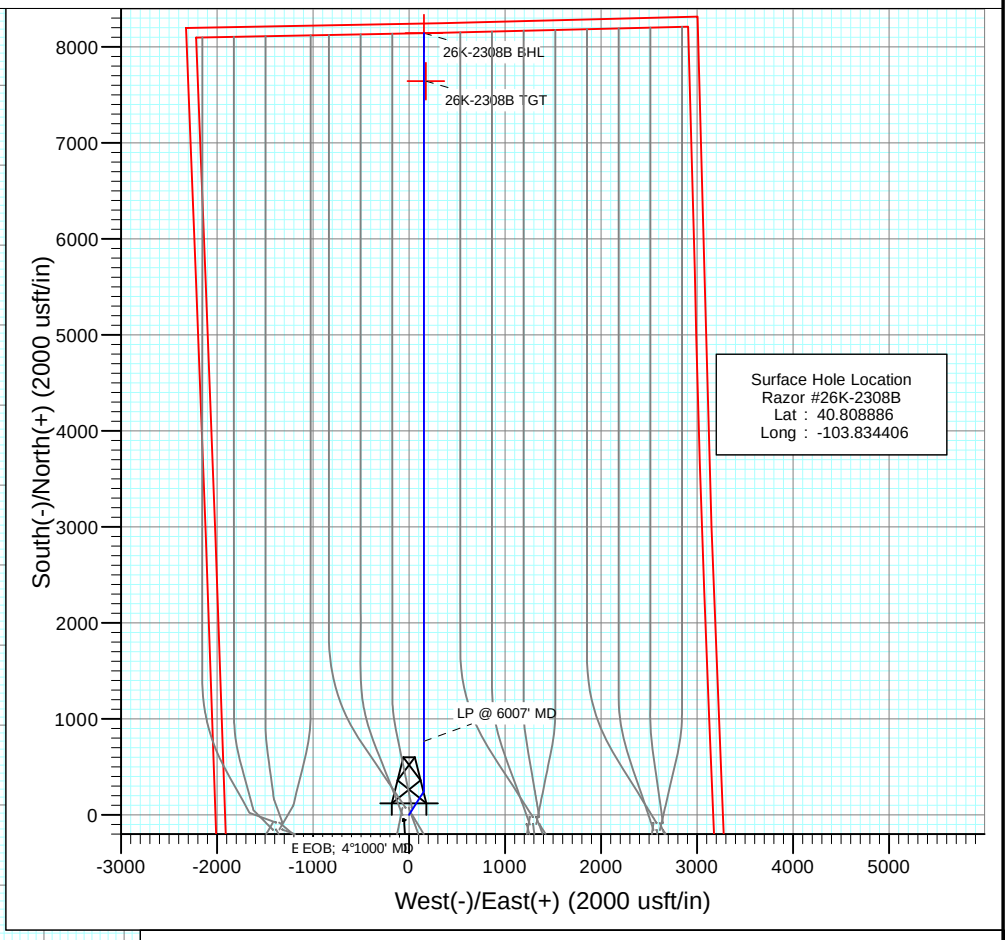
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor #26K-2308B
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	800.0	4.00	32.50	799.8	5.9	3.7	2.00	32.50	6.0	
4	4800.0	4.00	32.50	4790.1	241.2	153.7	0.00	0.00	244.1	
5	5000.0	0.00	0.00	4989.9	247.1	157.4	2.00	180.00	250.1	
6	5189.2	0.00	0.00	5179.1	247.1	157.4	0.00	0.00	250.1	
7	6007.4	90.00	0.00	5700.0	768.0	157.4	11.00	0.00	770.9	
8	13381.7	90.00	0.00	5700.0	8142.3	157.9	0.00	0.00	8143.8	26K-2308B BHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
26K-2308B BHL	8142.3	157.9	1549996.74	3461217.93	40.831222	-103.833283
26K-2308B TGT	7642.7	177.2	1549497.14	3461237.29	40.829850	-103.833247

T G M
Azimuths to Grid North
True North: -1.08°
Magnetic North: 7.05°

Magnetic Field
Strength: 53237.3snT
Dip Angle: 67.46°
Date: 5/16/2013
Model: IGRF2010

Plan #1
Razor #26K-2308B
WELL @ 4754.0usft (Original Well Elev)
Ground Elevation @ 4737.5
North American Datum 1983
Well Razor #26K-2308B, Grid North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Project Weld County, CO

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

Site S26-T10N-R58W

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

Well Razor #26K-2308B

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,541,857.51 ft	**Latitude:**	40.808886
	+E/-W	0.0 ft	**Easting:**	3,461,066.98 ft	**Longitude:**	-103.834406
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,737.5 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	8.13	67.46	53,237

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	1.11

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	4.00	32.50	799.8	5.9	3.7	2.00	2.00	0.00	32.50	
4,800.0	4.00	32.50	4,790.1	241.2	153.7	0.00	0.00	0.00	0.00	
5,000.0	0.00	0.00	4,989.9	247.1	157.4	2.00	-2.00	0.00	180.00	
5,189.2	0.00	0.00	5,179.1	247.1	157.4	0.00	0.00	0.00	0.00	
6,007.4	90.00	0.00	5,700.0	768.0	157.5	11.00	11.00	0.00	0.00	
13,381.7	90.00	0.00	5,700.0	8,142.3	157.9	0.00	0.00	0.00	0.00	26K-2308B BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor #26K-2308B	**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	KOP @ 600' MD
700.0	2.00	32.50	700.0	1.5	0.9	1.5	2.00	2.00	
800.0	4.00	32.50	799.8	5.9	3.7	6.0	2.00	2.00	EOB; 4°
900.0	4.00	32.50	899.6	11.8	7.5	11.9	0.00	0.00	
1,000.0	4.00	32.50	999.4	17.7	11.2	17.9	0.00	0.00	
1,100.0	4.00	32.50	1,099.1	23.5	15.0	23.8	0.00	0.00	
1,200.0	4.00	32.50	1,198.9	29.4	18.7	29.8	0.00	0.00	
1,300.0	4.00	32.50	1,298.6	35.3	22.5	35.7	0.00	0.00	
1,400.0	4.00	32.50	1,398.4	41.2	26.2	41.7	0.00	0.00	
1,500.0	4.00	32.50	1,498.1	47.1	30.0	47.6	0.00	0.00	
1,600.0	4.00	32.50	1,597.9	53.0	33.7	53.6	0.00	0.00	
1,700.0	4.00	32.50	1,697.6	58.8	37.5	59.5	0.00	0.00	
1,800.0	4.00	32.50	1,797.4	64.7	41.2	65.5	0.00	0.00	
1,900.0	4.00	32.50	1,897.2	70.6	45.0	71.5	0.00	0.00	
2,000.0	4.00	32.50	1,996.9	76.5	48.7	77.4	0.00	0.00	
2,100.0	4.00	32.50	2,096.7	82.4	52.5	83.4	0.00	0.00	
2,200.0	4.00	32.50	2,196.4	88.3	56.2	89.3	0.00	0.00	
2,300.0	4.00	32.50	2,296.2	94.1	60.0	95.3	0.00	0.00	
2,400.0	4.00	32.50	2,395.9	100.0	63.7	101.2	0.00	0.00	
2,500.0	4.00	32.50	2,495.7	105.9	67.5	107.2	0.00	0.00	
2,600.0	4.00	32.50	2,595.5	111.8	71.2	113.1	0.00	0.00	
2,700.0	4.00	32.50	2,695.2	117.7	75.0	119.1	0.00	0.00	
2,800.0	4.00	32.50	2,795.0	123.5	78.7	125.1	0.00	0.00	
2,900.0	4.00	32.50	2,894.7	129.4	82.5	131.0	0.00	0.00	
3,000.0	4.00	32.50	2,994.5	135.3	86.2	137.0	0.00	0.00	
3,100.0	4.00	32.50	3,094.2	141.2	90.0	142.9	0.00	0.00	
3,200.0	4.00	32.50	3,194.0	147.1	93.7	148.9	0.00	0.00	
3,300.0	4.00	32.50	3,293.7	153.0	97.4	154.8	0.00	0.00	
3,400.0	4.00	32.50	3,393.5	158.8	101.2	160.8	0.00	0.00	
3,500.0	4.00	32.50	3,493.3	164.7	104.9	166.7	0.00	0.00	
3,600.0	4.00	32.50	3,593.0	170.6	108.7	172.7	0.00	0.00	
3,700.0	4.00	32.50	3,692.8	176.5	112.4	178.6	0.00	0.00	
3,800.0	4.00	32.50	3,792.5	182.4	116.2	184.6	0.00	0.00	
3,900.0	4.00	32.50	3,892.3	188.3	119.9	190.6	0.00	0.00	
4,000.0	4.00	32.50	3,992.0	194.1	123.7	196.5	0.00	0.00	
4,100.0	4.00	32.50	4,091.8	200.0	127.4	202.5	0.00	0.00	
4,200.0	4.00	32.50	4,191.6	205.9	131.2	208.4	0.00	0.00	
4,300.0	4.00	32.50	4,291.3	211.8	134.9	214.4	0.00	0.00	
4,400.0	4.00	32.50	4,391.1	217.7	138.7	220.3	0.00	0.00	
4,500.0	4.00	32.50	4,490.8	223.6	142.4	226.3	0.00	0.00	
4,600.0	4.00	32.50	4,590.6	229.4	146.2	232.2	0.00	0.00	
4,700.0	4.00	32.50	4,690.3	235.3	149.9	238.2	0.00	0.00	
4,800.0	4.00	32.50	4,790.1	241.2	153.7	244.1	0.00	0.00	Start 2° Drop
4,900.0	2.00	32.50	4,890.0	245.6	156.5	248.6	2.00	-2.00	
5,000.0	0.00	0.00	4,989.9	247.1	157.4	250.1	2.00	-2.00	EOD; Vertical
5,100.0	0.00	0.00	5,089.9	247.1	157.4	250.1	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor #26K-2308B	**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
5,189.2	0.00	0.00	5,179.1	247.1	157.4	250.1	0.00	0.00	Curve KOP @ 5189' MD
5,200.0	1.19	0.00	5,189.9	247.2	157.4	250.2	11.00	11.00	
5,300.0	12.19	0.00	5,289.1	258.8	157.4	261.8	11.00	11.00	
5,400.0	23.19	0.00	5,384.2	289.2	157.4	292.2	11.00	11.00	
5,500.0	34.19	0.00	5,471.8	337.1	157.4	340.1	11.00	11.00	
5,600.0	45.19	0.00	5,548.6	400.9	157.4	403.8	11.00	11.00	
5,622.3	47.64	0.00	5,564.0	417.0	157.4	420.0	11.00	11.00	Top Niobrara
5,700.0	56.19	0.00	5,611.9	478.1	157.4	481.1	11.00	11.00	
5,800.0	67.19	0.00	5,659.3	566.0	157.4	569.0	11.00	11.00	
5,900.0	78.19	0.00	5,689.0	661.4	157.4	664.3	11.00	11.00	
6,000.0	89.19	0.00	5,699.9	760.6	157.4	763.5	11.00	11.00	
6,007.4	90.00	0.00	5,700.0	768.0	157.5	770.9	10.95	10.95	LP @ 6007' MD - 7"
6,100.0	90.00	0.00	5,700.0	860.6	157.5	863.5	0.00	0.00	
6,200.0	90.00	0.00	5,700.0	960.6	157.5	963.5	0.00	0.00	
6,300.0	90.00	0.00	5,700.0	1,060.6	157.5	1,063.4	0.00	0.00	
6,400.0	90.00	0.00	5,700.0	1,160.6	157.5	1,163.4	0.00	0.00	
6,500.0	90.00	0.00	5,700.0	1,260.6	157.5	1,263.4	0.00	0.00	
6,600.0	90.00	0.00	5,700.0	1,360.6	157.5	1,363.4	0.00	0.00	
6,700.0	90.00	0.00	5,700.0	1,460.6	157.5	1,463.4	0.00	0.00	
6,800.0	90.00	0.00	5,700.0	1,560.6	157.5	1,563.4	0.00	0.00	
6,900.0	90.00	0.00	5,700.0	1,660.6	157.5	1,663.3	0.00	0.00	
7,000.0	90.00	0.00	5,700.0	1,760.6	157.5	1,763.3	0.00	0.00	
7,100.0	90.00	0.00	5,700.0	1,860.6	157.5	1,863.3	0.00	0.00	
7,200.0	90.00	0.00	5,700.0	1,960.6	157.5	1,963.3	0.00	0.00	
7,300.0	90.00	0.00	5,700.0	2,060.6	157.5	2,063.3	0.00	0.00	
7,400.0	90.00	0.00	5,700.0	2,160.6	157.5	2,163.2	0.00	0.00	
7,500.0	90.00	0.00	5,700.0	2,260.6	157.5	2,263.2	0.00	0.00	
7,600.0	90.00	0.00	5,700.0	2,360.6	157.5	2,363.2	0.00	0.00	
7,700.0	90.00	0.00	5,700.0	2,460.6	157.5	2,463.2	0.00	0.00	
7,800.0	90.00	0.00	5,700.0	2,560.6	157.6	2,563.2	0.00	0.00	
7,900.0	90.00	0.00	5,700.0	2,660.6	157.6	2,663.1	0.00	0.00	
8,000.0	90.00	0.00	5,700.0	2,760.6	157.6	2,763.1	0.00	0.00	
8,100.0	90.00	0.00	5,700.0	2,860.6	157.6	2,863.1	0.00	0.00	
8,200.0	90.00	0.00	5,700.0	2,960.6	157.6	2,963.1	0.00	0.00	
8,300.0	90.00	0.00	5,700.0	3,060.6	157.6	3,063.1	0.00	0.00	
8,400.0	90.00	0.00	5,700.0	3,160.6	157.6	3,163.1	0.00	0.00	
8,500.0	90.00	0.00	5,700.0	3,260.6	157.6	3,263.0	0.00	0.00	
8,600.0	90.00	0.00	5,700.0	3,360.6	157.6	3,363.0	0.00	0.00	
8,700.0	90.00	0.00	5,700.0	3,460.6	157.6	3,463.0	0.00	0.00	
8,800.0	90.00	0.00	5,700.0	3,560.6	157.6	3,563.0	0.00	0.00	
8,900.0	90.00	0.00	5,700.0	3,660.6	157.6	3,663.0	0.00	0.00	
9,000.0	90.00	0.00	5,700.0	3,760.6	157.6	3,762.9	0.00	0.00	
9,100.0	90.00	0.00	5,700.0	3,860.6	157.6	3,862.9	0.00	0.00	
9,200.0	90.00	0.00	5,700.0	3,960.6	157.6	3,962.9	0.00	0.00	
9,300.0	90.00	0.00	5,700.0	4,060.6	157.6	4,062.9	0.00	0.00	
9,400.0	90.00	0.00	5,700.0	4,160.6	157.6	4,162.9	0.00	0.00	
9,500.0	90.00	0.00	5,700.0	4,260.6	157.7	4,262.8	0.00	0.00	
9,600.0	90.00	0.00	5,700.0	4,360.6	157.7	4,362.8	0.00	0.00	
9,700.0	90.00	0.00	5,700.0	4,460.6	157.7	4,462.8	0.00	0.00	
9,800.0	90.00	0.00	5,700.0	4,560.6	157.7	4,562.8	0.00	0.00	
9,900.0	90.00	0.00	5,700.0	4,660.6	157.7	4,662.8	0.00	0.00	
10,000.0	90.00	0.00	5,700.0	4,760.6	157.7	4,762.8	0.00	0.00	

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Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,100.0	90.00	0.00	5,700.0	4,860.6	157.7	4,862.7	0.00	0.00	
10,200.0	90.00	0.00	5,700.0	4,960.6	157.7	4,962.7	0.00	0.00	
10,300.0	90.00	0.00	5,700.0	5,060.6	157.7	5,062.7	0.00	0.00	
10,400.0	90.00	0.00	5,700.0	5,160.6	157.7	5,162.7	0.00	0.00	
10,500.0	90.00	0.00	5,700.0	5,260.6	157.7	5,262.7	0.00	0.00	
10,600.0	90.00	0.00	5,700.0	5,360.6	157.7	5,362.6	0.00	0.00	
10,700.0	90.00	0.00	5,700.0	5,460.6	157.7	5,462.6	0.00	0.00	
10,800.0	90.00	0.00	5,700.0	5,560.6	157.7	5,562.6	0.00	0.00	
10,900.0	90.00	0.00	5,700.0	5,660.6	157.7	5,662.6	0.00	0.00	
11,000.0	90.00	0.00	5,700.0	5,760.6	157.7	5,762.6	0.00	0.00	
11,100.0	90.00	0.00	5,700.0	5,860.6	157.7	5,862.5	0.00	0.00	
11,200.0	90.00	0.00	5,700.0	5,960.6	157.8	5,962.5	0.00	0.00	
11,300.0	90.00	0.00	5,700.0	6,060.6	157.8	6,062.5	0.00	0.00	
11,400.0	90.00	0.00	5,700.0	6,160.6	157.8	6,162.5	0.00	0.00	
11,500.0	90.00	0.00	5,700.0	6,260.6	157.8	6,262.5	0.00	0.00	
11,600.0	90.00	0.00	5,700.0	6,360.6	157.8	6,362.5	0.00	0.00	
11,700.0	90.00	0.00	5,700.0	6,460.6	157.8	6,462.4	0.00	0.00	
11,800.0	90.00	0.00	5,700.0	6,560.6	157.8	6,562.4	0.00	0.00	
11,900.0	90.00	0.00	5,700.0	6,660.6	157.8	6,662.4	0.00	0.00	
12,000.0	90.00	0.00	5,700.0	6,760.6	157.8	6,762.4	0.00	0.00	
12,100.0	90.00	0.00	5,700.0	6,860.6	157.8	6,862.4	0.00	0.00	
12,200.0	90.00	0.00	5,700.0	6,960.6	157.8	6,962.3	0.00	0.00	
12,300.0	90.00	0.00	5,700.0	7,060.6	157.8	7,062.3	0.00	0.00	
12,400.0	90.00	0.00	5,700.0	7,160.6	157.8	7,162.3	0.00	0.00	
12,500.0	90.00	0.00	5,700.0	7,260.6	157.8	7,262.3	0.00	0.00	
12,600.0	90.00	0.00	5,700.0	7,360.6	157.8	7,362.3	0.00	0.00	
12,700.0	90.00	0.00	5,700.0	7,460.6	157.8	7,462.2	0.00	0.00	
12,800.0	90.00	0.00	5,700.0	7,560.6	157.8	7,562.2	0.00	0.00	
12,900.0	90.00	0.00	5,700.0	7,660.6	157.8	7,662.2	0.00	0.00	
13,000.0	90.00	0.00	5,700.0	7,760.6	157.9	7,762.2	0.00	0.00	
13,100.0	90.00	0.00	5,700.0	7,860.6	157.9	7,862.2	0.00	0.00	
13,200.0	90.00	0.00	5,700.0	7,960.6	157.9	7,962.2	0.00	0.00	
13,300.0	90.00	0.00	5,700.0	8,060.6	157.9	8,062.1	0.00	0.00	
13,381.7	90.00	0.00	5,700.0	8,142.3	157.9	8,143.8	0.00	0.00	PBHL @ 13381' 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
26K-2308B TGT	0.00	0.00	5,700.0	7,642.7	177.2	1,549,500.24	3,461,244.21	40.829850	-103.833247
- plan misses target center by 19.4ft at 12882.1ft MD (5700.0 TVD, 7642.7 N, 157.8 E)									
- Point									
26K-2308B BHL	0.00	0.00	5,700.0	8,142.3	157.9	1,549,999.84	3,461,224.85	40.831222	-103.833283
- plan hits target center									
- Point									

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site:	S26-T10N-R58W	**North Reference:**	Grid
Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,007.4	5,700.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,622.3	5,564.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
600.0	600.0	0.0	0.0	KOP @ 600' MD
800.0	799.8	5.9	3.7	EOB; 4°
4,800.0	4,790.1	241.2	153.7	Start 2° Drop
5,000.0	4,989.9	247.1	157.4	EOD; Vertical
5,189.2	5,179.1	247.1	157.4	Curve KOP @ 5189' MD
6,007.4	5,700.0	768.0	157.5	LP @ 6007' MD
13,381.7	5,700.0	8,142.3	157.9	PBHL @ 13381' MD

Whiting Petroleum Corporation

Weld County, CO
S26-T10N-R58W
Razor #26K-2308B
HZ
Plan #1

Anticollision Report

22 May, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1

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

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

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,380.9	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S26-T10N-R58W						
Razor #26J-2633L - HZ - Plan #1						Out of range
Razor #26K-2305A - HZ - Plan #1	500.0	500.0	82.0	80.0	41.276	CC, ES
Razor #26K-2305A - HZ - Plan #1	5,200.0	5,165.3	383.7	359.1	15.632	SF
Razor #26K-2306B - HZ - Plan #1	600.0	600.0	65.9	63.5	27.054	CC, ES
Razor #26K-2306B - HZ - Plan #1	5,450.0	5,389.6	354.3	327.9	13.416	SF
Razor #26K-2307A - HZ - Plan #1	1,138.1	1,133.3	67.1	62.2	13.819	CC
Razor #26K-2307A - HZ - Plan #1	13,381.7	13,182.5	342.7	43.1	1.144	Level 2, ES, SF
Razor #26K-3505A - HZ - Plan #1	1,215.0	1,215.2	95.1	89.9	18.403	CC, ES
Razor #26K-3505A - HZ - Plan #1	1,600.0	1,596.6	108.7	101.9	15.894	SF
Razor #26K-3507A - HZ - Plan #1	1,344.6	1,344.8	12.7	6.9	2.208	CC, ES, SF
Razor #26K-3508B - HZ - Plan #1	963.3	962.8	27.7	23.6	6.781	CC
Razor #26K-3508B - HZ - Plan #1	1,000.0	999.4	27.8	23.5	6.537	ES
Razor #26K-3508B - HZ - Plan #1	1,100.0	1,099.1	29.3	24.6	6.207	SF
Razor #26L-2301A - HZ - Plan #1						Out of range
Razor #26L-2302B - HZ - Plan #1						Out of range
Razor #26L-2303A - HZ - Plan #1						Out of range
Razor #26L-2304B - HZ - Plan #1						Out of range
Razor #26L-3501A - HZ - Plan #1						Out of range
Razor #26L-3502B - HZ - Plan #1						Out of range
Razor #26L-3503A - HZ - Plan #1						Out of range
Razor #26L-3504B - HZ - Plan #1						Out of range
Razor 26-3524H (Existing) - Existing - SURVEYs	0.0	0.0	60.4			
Razor 26-3524H (Existing) - Existing - SURVEYs	5,100.0	5,067.0	359.8	337.9	16.467	SF
Razor Federal #26I-2313A - HZ - Plan #1						Out of range
Razor Federal #26I-2314B - HZ - Plan #1						Out of range
Razor Federal #26I-2315A - HZ - Plan #1						Out of range
Razor Federal #26I-2316B - HZ - Plan #1						Out of range
Razor Federal #26I-3513A - HZ - Plan #1						Out of range
Razor Federal #26I-3514B - HZ - Plan #1						Out of range
Razor Federal #26I-3515A - HZ - Plan #1						Out of range
Razor Federal #26I-3516B - HZ - Plan #1						Out of range
Razor Federal #26J-2309A - HZ - Plan #1	13,381.7	13,419.6	390.7	85.5	1.280	Level 3, CC, ES, SF
Razor Federal #26J-2310B - HZ - Plan #1						Out of range
Razor Federal #26J-2311A - HZ - Plan #1						Out of range
Razor Federal #26J-2312B - HZ - Plan #1						Out of range
Razor Federal #26J-3509A - HZ - Plan #1						Out of range
Razor Federal #26J-3510B - HZ - Plan #1						Out of range
Razor Federal #26J-3511A - HZ - Plan #1						Out of range
Razor Federal #26J-3512B - HZ - Plan #1						Out of range

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2305A - HZ - Plan #1 — **Offset Site Error:** 0.0 ft

Survey Program: 0-ISCWSA MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-24.77	74.4	-34.3	82.0				
100.0	100.0	100.0	100.0	0.1	0.1	-24.77	74.4	-34.3	82.0	81.8	0.19	436.729	
200.0	200.0	200.0	200.0	0.3	0.3	-24.77	74.4	-34.3	82.0	81.3	0.64	128.631	
300.0	300.0	300.0	300.0	0.5	0.5	-24.77	74.4	-34.3	82.0	80.9	1.09	75.423	
400.0	400.0	400.0	400.0	0.8	0.8	-24.77	74.4	-34.3	82.0	80.4	1.54	53.353	
500.0	500.0	500.0	500.0	1.0	1.0	-24.77	74.4	-34.3	82.0	80.0	1.99	41.276	CC, ES
600.0	600.0	597.2	597.2	1.2	1.2	-24.96	75.8	-35.3	83.6	81.2	2.43	34.456	
700.0	700.0	694.2	694.1	1.4	1.4	-58.84	79.9	-38.0	87.8	84.9	2.87	30.578	
800.0	799.8	793.8	793.4	1.7	1.7	-62.12	85.6	-41.9	92.1	88.8	3.32	27.769	
900.0	899.6	893.5	892.9	1.9	1.9	-66.12	91.4	-45.8	96.1	92.3	3.77	25.461	
1,000.0	999.4	993.2	992.4	2.1	2.1	-69.78	97.1	-49.7	100.4	96.2	4.23	23.717	
1,100.0	1,099.1	1,092.9	1,091.8	2.4	2.4	-73.13	102.9	-53.6	105.2	100.5	4.70	22.372	
1,200.0	1,198.9	1,192.6	1,191.3	2.6	2.6	-76.18	108.6	-57.5	110.2	105.1	5.17	21.315	
1,300.0	1,298.6	1,292.4	1,290.8	2.9	2.9	-78.96	114.4	-61.4	115.6	110.0	5.65	20.473	
1,400.0	1,398.4	1,392.1	1,390.2	3.1	3.1	-81.48	120.2	-65.3	121.2	115.1	6.12	19.792	
1,500.0	1,498.1	1,491.8	1,489.7	3.4	3.4	-83.78	125.9	-69.3	127.0	120.4	6.60	19.234	
1,600.0	1,597.9	1,591.5	1,589.1	3.6	3.6	-85.87	131.7	-73.2	133.0	125.9	7.09	18.773	
1,700.0	1,697.6	1,691.2	1,688.6	3.9	3.9	-87.79	137.4	-77.1	139.2	131.6	7.57	18.387	
1,800.0	1,797.4	1,790.9	1,788.1	4.1	4.2	-89.53	143.2	-81.0	145.5	137.5	8.06	18.062	
1,900.0	1,897.2	1,890.6	1,887.5	4.4	4.4	-91.14	148.9	-84.9	151.9	143.4	8.54	17.786	
2,000.0	1,996.9	1,990.3	1,987.0	4.6	4.7	-92.61	154.7	-88.8	158.5	149.5	9.03	17.549	
2,100.0	2,096.7	2,090.0	2,086.5	4.9	4.9	-93.96	160.5	-92.7	165.1	155.6	9.52	17.345	
2,200.0	2,196.4	2,189.7	2,185.9	5.1	5.2	-95.21	166.2	-96.6	171.9	161.8	10.01	17.168	
2,300.0	2,296.2	2,289.4	2,285.4	5.4	5.4	-96.36	172.0	-100.5	178.7	168.2	10.50	17.013	
2,400.0	2,395.9	2,389.1	2,384.9	5.6	5.7	-97.43	177.7	-104.4	185.5	174.5	10.99	16.878	
2,500.0	2,495.7	2,488.8	2,484.3	5.9	5.9	-98.42	183.5	-108.3	192.4	181.0	11.48	16.758	
2,600.0	2,595.5	2,588.5	2,583.8	6.2	6.2	-99.35	189.2	-112.2	199.4	187.4	11.98	16.653	
2,700.0	2,695.2	2,688.2	2,683.2	6.4	6.4	-100.21	195.0	-116.1	206.4	194.0	12.47	16.558	
2,800.0	2,795.0	2,788.0	2,782.7	6.7	6.7	-101.01	200.8	-120.0	213.5	200.6	12.96	16.474	
2,900.0	2,894.7	2,887.7	2,882.2	6.9	7.0	-101.76	206.5	-123.9	220.6	207.2	13.45	16.399	
3,000.0	2,994.5	2,987.4	2,981.6	7.2	7.2	-102.47	212.3	-127.8	227.8	213.8	13.95	16.331	
3,100.0	3,094.2	3,087.1	3,081.1	7.4	7.5	-103.13	218.0	-131.7	235.0	220.5	14.44	16.270	
3,200.0	3,194.0	3,186.8	3,180.6	7.7	7.7	-103.75	223.8	-135.6	242.2	227.2	14.93	16.215	
3,300.0	3,293.8	3,286.5	3,280.0	7.9	8.0	-104.34	229.5	-139.5	249.4	234.0	15.43	16.165	
3,400.0	3,393.5	3,386.2	3,379.5	8.2	8.2	-104.90	235.3	-143.4	256.6	240.7	15.92	16.119	
3,500.0	3,493.3	3,485.9	3,479.0	8.5	8.5	-105.42	241.1	-147.3	263.9	247.5	16.42	16.077	
3,600.0	3,593.0	3,585.6	3,578.4	8.7	8.8	-105.91	246.8	-151.2	271.2	254.3	16.91	16.039	
3,700.0	3,692.8	3,685.3	3,677.9	9.0	9.0	-106.38	252.6	-155.1	278.5	261.1	17.40	16.004	
3,800.0	3,792.5	3,785.0	3,777.3	9.2	9.3	-106.83	258.3	-159.0	285.9	268.0	17.90	15.972	
3,900.0	3,892.3	3,884.7	3,876.8	9.5	9.5	-107.25	264.1	-162.9	293.2	274.8	18.39	15.943	
4,000.0	3,992.1	3,984.4	3,976.3	9.7	9.8	-107.65	269.8	-166.8	300.6	281.7	18.89	15.915	
4,100.0	4,091.8	4,084.1	4,075.7	10.0	10.0	-108.04	275.6	-170.7	308.0	288.6	19.38	15.890	
4,200.0	4,191.6	4,183.8	4,175.2	10.2	10.3	-108.40	281.4	-174.6	315.4	295.5	19.88	15.867	
4,300.0	4,291.3	4,283.6	4,274.7	10.5	10.6	-108.75	287.1	-178.5	322.8	302.4	20.37	15.845	
4,400.0	4,391.1	4,383.3	4,374.1	10.8	10.8	-109.08	292.9	-182.4	330.2	309.4	20.87	15.825	
4,500.0	4,490.8	4,483.0	4,473.6	11.0	11.1	-109.40	298.6	-186.3	337.7	316.3	21.36	15.806	
4,600.0	4,590.6	4,582.7	4,573.1	11.3	11.3	-109.70	304.4	-190.2	345.1	323.2	21.86	15.789	
4,700.0	4,690.3	4,682.4	4,672.5	11.5	11.6	-110.00	310.1	-194.1	352.5	330.2	22.35	15.772	
4,800.0	4,790.1	4,782.1	4,772.0	11.8	11.8	-110.28	315.9	-198.0	360.0	337.2	22.85	15.757	
4,900.0	4,890.0	4,881.8	4,871.5	12.0	12.1	-110.42	321.7	-201.9	366.9	343.5	23.31	15.737	
5,000.0	4,989.9	4,981.6	4,971.0	12.2	12.3	-77.53	327.4	-205.8	372.5	348.8	23.72	15.702	
5,100.0	5,089.9	5,081.4	5,070.6	12.3	12.6	-76.80	333.2	-209.7	377.6	353.5	24.14	15.643	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2305A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,189.2	5,179.1	5,150.0	5,139.0	12.5	12.8	-76.30	337.3	-212.5	382.9	358.4	24.48	15.641	
5,200.0	5,189.9	5,165.3	5,154.2	12.5	12.8	-76.04	338.7	-213.5	383.7	359.1	24.54	15.632	SF
5,250.0	5,239.8	5,200.0	5,188.5	12.7	12.9	-75.33	343.2	-216.5	388.7	363.9	24.75	15.701	
5,300.0	5,289.1	5,229.0	5,216.8	12.8	13.1	-74.76	348.5	-220.1	394.7	369.7	24.98	15.799	
5,350.0	5,337.4	5,260.5	5,247.0	13.0	13.2	-74.32	355.6	-224.9	401.8	376.5	25.24	15.917	
5,400.0	5,384.2	5,300.0	5,284.2	13.2	13.4	-74.16	366.7	-232.5	409.9	384.3	25.56	16.037	
5,450.0	5,429.2	5,322.4	5,304.7	13.5	13.5	-73.77	374.0	-237.4	418.7	392.9	25.84	16.203	
5,500.0	5,471.8	5,350.0	5,329.6	13.8	13.7	-73.53	384.0	-244.2	428.6	402.5	26.18	16.375	
5,550.0	5,511.8	5,382.6	5,358.0	14.1	13.9	-73.54	397.2	-253.1	439.4	412.9	26.59	16.528	
5,600.0	5,548.7	5,412.0	5,382.7	14.5	14.1	-73.48	410.3	-262.0	451.2	424.2	27.03	16.693	
5,650.0	5,582.1	5,440.9	5,406.1	14.9	14.3	-73.44	424.4	-271.6	463.9	436.4	27.52	16.855	
5,700.0	5,611.9	5,469.3	5,428.2	15.3	14.6	-73.39	439.2	-281.6	477.5	449.4	28.07	17.009	
5,750.0	5,637.7	5,500.0	5,450.9	15.9	14.8	-73.47	456.3	-293.2	492.1	463.4	28.71	17.140	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2306B - HZ - Plan #1 — **Offset Site Error:** 0.0 ft

Survey Program: 0-ISCWSA MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-91.08	-1.2	-65.9	65.9				
100.0	100.0	100.0	100.0	0.1	0.1	-91.08	-1.2	-65.9	65.9	65.7	0.19	351.053	
200.0	200.0	200.0	200.0	0.3	0.3	-91.08	-1.2	-65.9	65.9	65.2	0.64	103.397	
300.0	300.0	300.0	300.0	0.5	0.5	-91.08	-1.2	-65.9	65.9	64.8	1.09	60.627	
400.0	400.0	400.0	400.0	0.8	0.8	-91.08	-1.2	-65.9	65.9	64.3	1.54	42.887	
500.0	500.0	500.0	500.0	1.0	1.0	-91.08	-1.2	-65.9	65.9	63.9	1.99	33.178	
600.0	600.0	600.0	600.0	1.2	1.2	-91.08	-1.2	-65.9	65.9	63.5	2.44	27.054	CC, ES
700.0	700.0	700.0	700.0	1.4	1.4	-124.81	-1.2	-65.9	66.9	64.0	2.88	23.197	
800.0	799.8	799.1	799.1	1.7	1.7	-126.90	0.4	-66.5	70.5	67.1	3.33	21.184	
900.0	899.6	898.3	898.1	1.9	1.9	-127.36	5.1	-68.4	76.2	72.4	3.78	20.175	
1,000.0	999.4	998.0	997.6	2.1	2.1	-126.57	11.6	-70.9	82.4	78.2	4.24	19.452	
1,100.0	1,099.1	1,097.8	1,097.2	2.4	2.4	-125.88	18.1	-73.5	88.7	84.0	4.71	18.843	
1,200.0	1,198.9	1,197.6	1,196.8	2.6	2.6	-125.29	24.6	-76.0	94.9	89.7	5.18	18.325	
1,300.0	1,298.6	1,297.4	1,296.3	2.9	2.8	-124.77	31.1	-78.6	101.2	95.5	5.66	17.881	
1,400.0	1,398.4	1,397.2	1,395.9	3.1	3.1	-124.31	37.5	-81.1	107.5	101.3	6.14	17.498	
1,500.0	1,498.1	1,497.0	1,495.4	3.4	3.3	-123.90	44.0	-83.7	113.8	107.1	6.63	17.164	
1,600.0	1,597.9	1,596.8	1,595.0	3.6	3.6	-123.53	50.5	-86.2	120.0	112.9	7.12	16.871	
1,700.0	1,697.6	1,696.6	1,694.5	3.9	3.8	-123.20	57.0	-88.8	126.3	118.7	7.60	16.613	
1,800.0	1,797.4	1,796.4	1,794.1	4.1	4.1	-122.91	63.4	-91.3	132.6	124.5	8.10	16.383	
1,900.0	1,897.2	1,896.2	1,893.6	4.4	4.3	-122.63	69.9	-93.9	138.9	130.3	8.59	16.178	
2,000.0	1,996.9	1,996.0	1,993.2	4.6	4.6	-122.39	76.4	-96.5	145.2	136.1	9.08	15.994	
2,100.0	2,096.7	2,095.8	2,092.8	4.9	4.8	-122.16	82.9	-99.0	151.5	142.0	9.57	15.827	
2,200.0	2,196.4	2,195.6	2,192.3	5.1	5.1	-121.95	89.3	-101.6	157.8	147.8	10.07	15.676	
2,300.0	2,296.2	2,295.4	2,291.9	5.4	5.3	-121.76	95.8	-104.1	164.1	153.6	10.56	15.538	
2,400.0	2,395.9	2,395.2	2,391.4	5.6	5.6	-121.58	102.3	-106.7	170.5	159.4	11.06	15.413	
2,500.0	2,495.7	2,495.0	2,491.0	5.9	5.8	-121.41	108.8	-109.2	176.8	165.2	11.56	15.297	
2,600.0	2,595.5	2,594.8	2,590.5	6.2	6.1	-121.26	115.3	-111.8	183.1	171.0	12.05	15.190	
2,700.0	2,695.2	2,694.6	2,690.1	6.4	6.4	-121.12	121.7	-114.3	189.4	176.8	12.55	15.092	
2,800.0	2,795.0	2,794.4	2,789.7	6.7	6.6	-120.98	128.2	-116.9	195.7	182.7	13.05	15.001	
2,900.0	2,894.7	2,894.2	2,889.2	6.9	6.9	-120.85	134.7	-119.4	202.0	188.5	13.54	14.916	
3,000.0	2,994.5	2,994.0	2,988.8	7.2	7.1	-120.74	141.2	-122.0	208.3	194.3	14.04	14.837	
3,100.0	3,094.2	3,093.8	3,088.3	7.4	7.4	-120.62	147.6	-124.5	214.7	200.1	14.54	14.764	
3,200.0	3,194.0	3,193.6	3,187.9	7.7	7.6	-120.52	154.1	-127.1	221.0	205.9	15.04	14.695	
3,300.0	3,293.8	3,293.4	3,287.4	7.9	7.9	-120.42	160.6	-129.6	227.3	211.8	15.54	14.630	
3,400.0	3,393.5	3,393.2	3,387.0	8.2	8.1	-120.32	167.1	-132.2	233.6	217.6	16.03	14.569	
3,500.0	3,493.3	3,493.0	3,486.6	8.5	8.4	-120.24	173.5	-134.7	239.9	223.4	16.53	14.512	
3,600.0	3,593.0	3,592.8	3,586.1	8.7	8.6	-120.15	180.0	-137.3	246.2	229.2	17.03	14.458	
3,700.0	3,692.8	3,692.6	3,685.7	9.0	8.9	-120.07	186.5	-139.8	252.6	235.0	17.53	14.407	
3,800.0	3,792.5	3,792.4	3,785.2	9.2	9.2	-119.99	193.0	-142.4	258.9	240.9	18.03	14.359	
3,900.0	3,892.3	3,892.2	3,884.8	9.5	9.4	-119.92	199.5	-144.9	265.2	246.7	18.53	14.313	
4,000.0	3,992.1	3,992.0	3,984.3	9.7	9.7	-119.85	205.9	-147.5	271.5	252.5	19.03	14.270	
4,100.0	4,091.8	4,091.8	4,083.9	10.0	9.9	-119.79	212.4	-150.0	277.9	258.3	19.53	14.229	
4,200.0	4,191.6	4,191.6	4,183.4	10.2	10.2	-119.72	218.9	-152.6	284.2	264.2	20.03	14.190	
4,300.0	4,291.3	4,291.4	4,283.0	10.5	10.4	-119.66	225.4	-155.1	290.5	270.0	20.53	14.153	
4,400.0	4,391.1	4,391.2	4,382.6	10.8	10.7	-119.60	231.8	-157.7	296.8	275.8	21.03	14.117	
4,500.0	4,490.8	4,491.0	4,482.1	11.0	10.9	-119.55	238.3	-160.2	303.2	281.6	21.53	14.083	
4,600.0	4,590.6	4,590.8	4,581.7	11.3	11.2	-119.49	244.8	-162.8	309.5	287.4	22.03	14.051	
4,700.0	4,690.3	4,690.6	4,681.2	11.5	11.5	-119.44	251.3	-165.3	315.8	293.3	22.52	14.020	
4,800.0	4,790.1	4,790.4	4,780.8	11.8	11.7	-119.39	257.8	-167.9	322.1	299.1	23.02	13.990	
4,900.0	4,890.0	4,890.3	4,880.4	12.0	12.0	-119.18	264.2	-170.4	327.6	304.1	23.50	13.942	
5,000.0	4,989.9	4,990.1	4,979.9	12.2	12.2	-85.91	270.7	-173.0	331.4	307.5	23.92	13.854	
5,100.0	5,089.9	5,089.8	5,079.5	12.3	12.5	-84.84	277.2	-175.5	334.5	310.1	24.35	13.735	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2306B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,189.2	5,179.1	5,178.8	5,168.2	12.5	12.7	-83.89	283.0	-177.8	337.3	312.6	24.75	13.627	
5,200.0	5,189.9	5,189.6	5,179.0	12.5	12.7	-83.77	283.7	-178.1	337.7	312.9	24.80	13.613	
5,250.0	5,239.8	5,236.4	5,225.7	12.7	12.9	-83.64	286.8	-179.3	339.0	313.9	25.05	13.535	
5,300.0	5,289.1	5,274.8	5,263.7	12.8	13.0	-83.75	291.3	-181.1	341.0	315.7	25.31	13.473	
5,350.0	5,337.4	5,313.1	5,301.3	13.0	13.1	-83.92	298.4	-183.9	344.2	318.6	25.62	13.435	
5,400.0	5,384.2	5,350.0	5,336.8	13.2	13.3	-84.11	307.6	-187.5	348.7	322.7	25.98	13.422	
5,450.0	5,429.2	5,389.6	5,374.1	13.5	13.5	-84.39	320.1	-192.4	354.3	327.9	26.41	13.416 SF	
5,500.0	5,471.8	5,427.8	5,408.9	13.8	13.7	-84.67	334.6	-198.1	361.1	334.2	26.89	13.428	
5,550.0	5,511.8	5,466.0	5,442.6	14.1	13.9	-84.94	351.4	-204.8	369.1	341.7	27.44	13.453	
5,600.0	5,548.7	5,500.0	5,471.3	14.5	14.1	-85.06	368.3	-211.4	378.3	350.3	28.02	13.502	
5,650.0	5,582.1	5,542.4	5,505.4	14.9	14.5	-85.46	391.7	-220.7	388.6	359.8	28.74	13.521	
5,700.0	5,611.9	5,580.7	5,534.4	15.3	14.8	-85.67	415.0	-229.8	400.0	370.5	29.50	13.557	
5,750.0	5,637.7	5,619.1	5,561.5	15.9	15.1	-85.84	440.3	-239.8	412.5	382.1	30.34	13.594	
5,800.0	5,659.3	5,657.7	5,586.6	16.4	15.5	-85.96	467.5	-250.5	425.9	394.7	31.25	13.630	
5,850.0	5,676.4	5,696.5	5,609.7	17.0	15.9	-86.03	496.6	-262.0	440.4	408.1	32.23	13.662	
5,900.0	5,689.0	5,735.8	5,630.5	17.7	16.4	-86.04	527.6	-274.2	455.6	422.4	33.29	13.688	
5,950.0	5,696.8	5,775.5	5,649.0	18.3	16.9	-86.01	560.2	-287.0	471.7	437.3	34.41	13.709	
6,000.0	5,699.9	5,815.8	5,665.0	19.0	17.4	-85.93	594.7	-300.6	488.4	452.9	35.58	13.726	
6,007.4	5,700.0	5,821.8	5,667.1	19.1	17.5	-85.91	599.9	-302.7	491.0	455.2	35.76	13.728	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2307A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	22.80	75.7	31.8	82.1				
100.0	100.0	100.0	100.0	0.1	0.1	22.80	75.7	31.8	82.1	81.9	0.19	437.324	
200.0	200.0	200.0	200.0	0.3	0.3	22.80	75.7	31.8	82.1	81.4	0.64	128.806	
300.0	300.0	300.0	300.0	0.5	0.5	22.80	75.7	31.8	82.1	81.0	1.09	75.525	
400.0	400.0	400.0	400.0	0.8	0.8	22.80	75.7	31.8	82.1	80.5	1.54	53.426	
500.0	500.0	500.0	500.0	1.0	1.0	22.80	75.7	31.8	82.1	80.1	1.99	41.332	
600.0	600.0	600.0	600.0	1.2	1.2	22.80	75.7	31.8	82.1	79.6	2.44	33.702	
700.0	700.0	700.0	700.0	1.4	1.4	-9.92	75.7	31.8	80.4	77.5	2.88	27.855	
800.0	799.8	799.8	799.8	1.7	1.7	-10.62	75.7	31.8	75.2	71.9	3.33	22.556	
900.0	899.6	897.6	897.6	1.9	1.9	-12.41	77.3	31.5	69.8	66.0	3.78	18.485	
1,000.0	999.4	995.5	995.3	2.1	2.1	-15.90	82.2	30.5	67.5	63.2	4.22	15.979	
1,100.0	1,099.1	1,095.2	1,094.8	2.4	2.3	-20.35	89.0	29.0	67.1	62.4	4.68	14.343	
1,138.1	1,137.1	1,133.3	1,132.8	2.5	2.4	-22.05	91.6	28.5	67.1	62.2	4.85	13.819	CC
1,200.0	1,198.9	1,195.1	1,194.4	2.6	2.6	-24.82	95.8	27.6	67.1	62.0	5.14	13.068	
1,300.0	1,298.6	1,294.9	1,294.1	2.9	2.8	-29.26	102.6	26.2	67.6	62.0	5.60	12.068	
1,400.0	1,398.4	1,394.8	1,393.7	3.1	3.1	-33.61	109.5	24.8	68.5	62.4	6.07	11.279	
1,500.0	1,498.1	1,494.7	1,493.3	3.4	3.3	-37.84	116.3	23.4	69.7	63.2	6.54	10.656	
1,600.0	1,597.9	1,594.5	1,592.9	3.6	3.5	-41.89	123.1	22.0	71.3	64.3	7.02	10.164	
1,700.0	1,697.6	1,694.4	1,692.5	3.9	3.8	-45.75	129.9	20.6	73.3	65.8	7.49	9.776	
1,800.0	1,797.4	1,794.3	1,792.2	4.1	4.0	-49.40	136.8	19.2	75.5	67.5	7.98	9.469	
1,900.0	1,897.2	1,894.1	1,891.8	4.4	4.3	-52.82	143.6	17.7	78.1	69.6	8.46	9.228	
2,000.0	1,996.9	1,994.0	1,991.4	4.6	4.5	-56.01	150.4	16.3	80.9	71.9	8.95	9.039	
2,100.0	2,096.7	2,093.8	2,091.0	4.9	4.8	-58.98	157.2	14.9	83.9	74.5	9.44	8.892	
2,200.0	2,196.4	2,193.7	2,190.6	5.1	5.0	-61.73	164.0	13.5	87.2	77.3	9.93	8.778	
2,300.0	2,296.2	2,293.6	2,290.3	5.4	5.3	-64.28	170.9	12.1	90.6	80.2	10.43	8.692	
2,400.0	2,395.9	2,393.4	2,389.9	5.6	5.5	-66.64	177.7	10.7	94.2	83.3	10.92	8.627	
2,500.0	2,495.7	2,493.3	2,489.5	5.9	5.8	-68.83	184.5	9.3	98.0	86.6	11.42	8.579	
2,600.0	2,595.5	2,593.2	2,589.1	6.2	6.0	-70.85	191.3	7.9	101.9	90.0	11.92	8.546	
2,700.0	2,695.2	2,693.0	2,688.7	6.4	6.3	-72.72	198.1	6.4	105.9	93.5	12.42	8.524	
2,800.0	2,795.0	2,792.9	2,788.4	6.7	6.6	-74.45	205.0	5.0	110.0	97.1	12.92	8.511	
2,900.0	2,894.7	2,892.7	2,888.0	6.9	6.8	-76.06	211.8	3.6	114.2	100.8	13.43	8.506	
3,000.0	2,994.5	2,992.6	2,987.6	7.2	7.1	-77.55	218.6	2.2	118.5	104.6	13.93	8.507	
3,100.0	3,094.2	3,092.5	3,087.2	7.4	7.3	-78.93	225.4	0.8	122.9	108.4	14.43	8.513	
3,200.0	3,194.0	3,192.3	3,186.8	7.7	7.6	-80.22	232.2	-0.6	127.3	112.4	14.94	8.522	
3,300.0	3,293.8	3,292.2	3,286.4	7.9	7.8	-81.42	239.1	-2.0	131.8	116.3	15.44	8.534	
3,400.0	3,393.5	3,392.1	3,386.1	8.2	8.1	-82.55	245.9	-3.4	136.3	120.4	15.94	8.549	
3,500.0	3,493.3	3,491.9	3,485.7	8.5	8.3	-83.60	252.7	-4.9	140.9	124.5	16.45	8.566	
3,600.0	3,593.0	3,591.8	3,585.3	8.7	8.6	-84.58	259.5	-6.3	145.5	128.6	16.95	8.585	
3,700.0	3,692.8	3,691.6	3,684.9	9.0	8.8	-85.50	266.4	-7.7	150.2	132.8	17.46	8.605	
3,800.0	3,792.5	3,791.5	3,784.5	9.2	9.1	-86.37	273.2	-9.1	154.9	137.0	17.96	8.625	
3,900.0	3,892.3	3,891.4	3,884.2	9.5	9.3	-87.19	280.0	-10.5	159.7	141.2	18.47	8.646	
4,000.0	3,992.1	3,991.2	3,983.8	9.7	9.6	-87.96	286.8	-11.9	164.5	145.5	18.97	8.668	
4,100.0	4,091.8	4,091.1	4,083.4	10.0	9.9	-88.68	293.6	-13.3	169.3	149.8	19.48	8.690	
4,200.0	4,191.6	4,191.0	4,183.0	10.2	10.1	-89.37	300.5	-14.7	174.1	154.1	19.98	8.712	
4,300.0	4,291.3	4,290.8	4,282.6	10.5	10.4	-90.01	307.3	-16.2	178.9	158.5	20.49	8.734	
4,400.0	4,391.1	4,390.7	4,382.3	10.8	10.6	-90.63	314.1	-17.6	183.8	162.8	20.99	8.756	
4,500.0	4,490.8	4,490.5	4,481.9	11.0	10.9	-91.21	320.9	-19.0	188.7	167.2	21.50	8.778	
4,600.0	4,590.6	4,590.4	4,581.5	11.3	11.1	-91.76	327.7	-20.4	193.6	171.6	22.00	8.799	
4,700.0	4,690.3	4,690.3	4,681.1	11.5	11.4	-92.29	334.6	-21.8	198.6	176.1	22.51	8.821	
4,800.0	4,790.1	4,790.1	4,780.7	11.8	11.6	-92.79	341.4	-23.2	203.5	180.5	23.02	8.842	
4,900.0	4,890.0	4,890.0	4,880.4	12.0	11.9	-92.88	348.2	-24.6	208.4	184.9	23.48	8.875	
5,000.0	4,989.9	4,989.8	4,979.9	12.2	12.2	-59.53	355.0	-26.1	213.1	189.2	23.88	8.924	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2307A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,089.9	5,089.6	5,079.5	12.3	12.4	-58.17	361.8	-27.5	217.8	193.6	24.28	8.972	
5,189.2	5,179.1	5,168.6	5,158.2	12.5	12.6	-56.95	368.3	-28.8	223.1	198.5	24.64	9.056	
5,200.0	5,189.9	5,176.8	5,166.3	12.5	12.7	-56.67	369.4	-29.0	224.2	199.5	24.68	9.081	
5,250.0	5,239.8	5,214.7	5,203.5	12.7	12.8	-55.54	376.2	-30.4	228.8	204.0	24.88	9.199	
5,300.0	5,289.1	5,250.0	5,237.7	12.8	12.9	-54.74	384.9	-32.2	233.5	208.5	25.03	9.326	
5,350.0	5,337.4	5,289.8	5,275.3	13.0	13.1	-54.21	397.5	-34.8	238.0	212.8	25.18	9.449	
5,400.0	5,384.2	5,327.1	5,309.7	13.2	13.3	-53.97	411.7	-37.8	242.2	216.9	25.30	9.574	
5,450.0	5,429.2	5,364.2	5,342.7	13.5	13.5	-54.00	428.3	-41.2	246.3	220.9	25.42	9.692	
5,500.0	5,471.8	5,400.0	5,373.4	13.8	13.7	-54.25	446.4	-45.0	250.2	224.7	25.54	9.797	
5,550.0	5,511.8	5,438.3	5,404.7	14.1	14.0	-54.79	468.0	-49.4	253.8	228.1	25.73	9.866	
5,600.0	5,548.7	5,475.3	5,433.3	14.5	14.3	-55.52	490.9	-54.2	257.3	231.3	25.99	9.899	
5,650.0	5,582.1	5,512.3	5,460.2	14.9	14.6	-56.47	515.8	-59.3	260.6	234.3	26.37	9.884	
5,700.0	5,611.9	5,550.0	5,485.6	15.3	15.0	-57.62	543.0	-65.0	263.9	237.0	26.90	9.810	
5,750.0	5,637.7	5,586.6	5,508.4	15.9	15.3	-58.91	571.1	-70.8	267.1	239.5	27.58	9.683	
5,800.0	5,659.3	5,623.9	5,529.4	16.4	15.7	-60.38	601.3	-77.0	270.3	241.9	28.46	9.500	
5,850.0	5,676.4	5,661.5	5,548.3	17.0	16.2	-61.99	633.1	-83.6	273.7	244.2	29.51	9.275	
5,900.0	5,689.0	5,700.0	5,565.2	17.7	16.6	-63.77	666.9	-90.6	277.3	246.5	30.75	9.018	
5,950.0	5,696.8	5,737.6	5,579.2	18.3	17.1	-65.58	701.1	-97.7	281.1	249.0	32.12	8.752	
6,000.0	5,699.9	5,776.3	5,591.0	19.0	17.7	-67.53	737.2	-105.2	285.3	251.7	33.63	8.484	
6,007.4	5,700.0	5,782.0	5,592.5	19.1	17.7	-67.82	742.6	-106.3	286.0	252.1	33.86	8.445	
6,100.0	5,700.0	5,856.5	5,606.4	20.5	18.8	-71.44	814.2	-121.1	297.5	260.6	36.92	8.060	
6,200.0	5,700.0	5,948.4	5,610.0	22.0	20.2	-73.14	904.1	-139.5	315.4	275.4	40.01	7.883	
6,300.0	5,700.0	6,066.3	5,610.0	23.6	21.9	-74.08	1,020.6	-158.0	330.4	287.1	43.34	7.624	
6,400.0	5,700.0	6,186.2	5,610.0	25.2	23.6	-74.60	1,139.8	-169.3	339.6	292.9	46.72	7.268	
6,500.0	5,700.0	6,306.9	5,610.0	26.9	25.4	-74.77	1,260.5	-173.2	342.7	292.5	50.16	6.831	
6,600.0	5,700.0	6,407.1	5,610.0	28.6	27.0	-74.77	1,360.6	-173.2	342.7	289.3	53.38	6.419	
6,700.0	5,700.0	6,507.1	5,610.0	30.3	28.7	-74.77	1,460.6	-173.2	342.7	286.0	56.69	6.045	
6,800.0	5,700.0	6,607.1	5,610.0	32.0	30.4	-74.77	1,560.6	-173.1	342.7	282.6	60.04	5.707	
6,900.0	5,700.0	6,707.1	5,610.0	33.8	32.1	-74.77	1,660.6	-173.1	342.7	279.2	63.44	5.401	
7,000.0	5,700.0	6,807.1	5,610.0	35.6	33.8	-74.77	1,760.6	-173.1	342.7	275.8	66.87	5.124	
7,100.0	5,700.0	6,907.1	5,610.0	37.4	35.6	-74.77	1,860.6	-173.1	342.7	272.3	70.33	4.872	
7,200.0	5,700.0	7,007.1	5,610.0	39.2	37.4	-74.77	1,960.6	-173.1	342.7	268.9	73.82	4.642	
7,300.0	5,700.0	7,107.1	5,610.0	41.0	39.2	-74.77	2,060.6	-173.1	342.7	265.3	77.32	4.432	
7,400.0	5,700.0	7,207.1	5,610.0	42.8	41.0	-74.77	2,160.6	-173.1	342.7	261.8	80.85	4.238	
7,500.0	5,700.0	7,307.1	5,610.0	44.6	42.8	-74.77	2,260.6	-173.1	342.7	258.3	84.39	4.060	
7,600.0	5,700.0	7,407.1	5,610.0	46.5	44.6	-74.77	2,360.6	-173.1	342.7	254.7	87.95	3.896	
7,700.0	5,700.0	7,507.1	5,610.0	48.3	46.4	-74.77	2,460.6	-173.1	342.7	251.2	91.52	3.744	
7,800.0	5,700.0	7,607.1	5,610.0	50.2	48.2	-74.77	2,560.6	-173.1	342.7	247.6	95.10	3.603	
7,900.0	5,700.0	7,707.1	5,610.0	52.0	50.1	-74.77	2,660.6	-173.1	342.7	244.0	98.69	3.472	
8,000.0	5,700.0	7,807.1	5,610.0	53.9	51.9	-74.77	2,760.6	-173.1	342.7	240.4	102.29	3.350	
8,100.0	5,700.0	7,907.1	5,610.0	55.8	53.8	-74.77	2,860.6	-173.1	342.7	236.8	105.90	3.236	
8,200.0	5,700.0	8,007.1	5,610.0	57.6	55.6	-74.77	2,960.6	-173.1	342.7	233.2	109.52	3.129	
8,300.0	5,700.0	8,107.1	5,610.0	59.5	57.5	-74.77	3,060.6	-173.1	342.7	229.5	113.14	3.029	
8,400.0	5,700.0	8,207.1	5,610.0	61.4	59.4	-74.77	3,160.6	-173.1	342.7	225.9	116.77	2.935	
8,500.0	5,700.0	8,307.1	5,610.0	63.2	61.2	-74.77	3,260.6	-173.0	342.7	222.3	120.40	2.846	
8,600.0	5,700.0	8,407.1	5,610.0	65.1	63.1	-74.77	3,360.6	-173.0	342.7	218.6	124.04	2.763	
8,700.0	5,700.0	8,507.1	5,610.0	67.0	65.0	-74.77	3,460.6	-173.0	342.7	215.0	127.69	2.684	
8,800.0	5,700.0	8,607.1	5,610.0	68.9	66.8	-74.77	3,560.6	-173.0	342.7	211.3	131.33	2.609	
8,900.0	5,700.0	8,707.1	5,610.0	70.8	68.7	-74.77	3,660.6	-173.0	342.7	207.7	134.99	2.539	
9,000.0	5,700.0	8,807.1	5,610.0	72.7	70.6	-74.77	3,760.6	-173.0	342.7	204.0	138.64	2.472	
9,100.0	5,700.0	8,907.1	5,610.0	74.5	72.5	-74.77	3,860.6	-173.0	342.7	200.4	142.30	2.408	
9,200.0	5,700.0	9,007.1	5,610.0	76.4	74.4	-74.77	3,960.6	-173.0	342.7	196.7	145.96	2.348	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-2307A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,700.0	9,107.1	5,610.0	78.3	76.2	-74.77	4,060.6	-173.0	342.7	193.0	149.63	2.290	
9,400.0	5,700.0	9,207.1	5,610.0	80.2	78.1	-74.77	4,160.6	-173.0	342.7	189.4	153.29	2.235	
9,500.0	5,700.0	9,307.1	5,610.0	82.1	80.0	-74.77	4,260.6	-173.0	342.7	185.7	156.96	2.183	
9,600.0	5,700.0	9,407.1	5,610.0	84.0	81.9	-74.77	4,360.6	-173.0	342.7	182.0	160.64	2.133	
9,700.0	5,700.0	9,507.1	5,610.0	85.9	83.8	-74.77	4,460.6	-173.0	342.7	178.4	164.31	2.086	
9,800.0	5,700.0	9,607.1	5,610.0	87.8	85.7	-74.77	4,560.6	-173.0	342.7	174.7	167.99	2.040	
9,900.0	5,700.0	9,707.1	5,610.0	89.7	87.6	-74.77	4,660.6	-173.0	342.7	171.0	171.66	1.996	
10,000.0	5,700.0	9,807.1	5,610.0	91.6	89.5	-74.77	4,760.6	-173.0	342.7	167.3	175.34	1.954	
10,100.0	5,700.0	9,907.1	5,610.0	93.5	91.4	-74.77	4,860.6	-173.0	342.7	163.6	179.02	1.914	
10,200.0	5,700.0	10,007.1	5,610.0	95.4	93.3	-74.77	4,960.6	-173.0	342.7	160.0	182.71	1.876	
10,300.0	5,700.0	10,107.1	5,610.0	97.3	95.2	-74.77	5,060.6	-172.9	342.7	156.3	186.39	1.838	
10,400.0	5,700.0	10,207.1	5,610.0	99.2	97.1	-74.77	5,160.6	-172.9	342.7	152.6	190.08	1.803	
10,500.0	5,700.0	10,307.1	5,610.0	101.1	99.0	-74.77	5,260.6	-172.9	342.7	148.9	193.76	1.769	
10,600.0	5,700.0	10,407.1	5,610.0	103.0	100.9	-74.77	5,360.6	-172.9	342.7	145.2	197.45	1.735	
10,700.0	5,700.0	10,507.1	5,610.0	104.9	102.8	-74.77	5,460.6	-172.9	342.7	141.5	201.14	1.704	
10,800.0	5,700.0	10,607.1	5,610.0	106.8	104.7	-74.77	5,560.6	-172.9	342.7	137.8	204.83	1.673	
10,900.0	5,700.0	10,707.1	5,610.0	108.7	106.6	-74.77	5,660.6	-172.9	342.7	134.2	208.52	1.643	
11,000.0	5,700.0	10,807.1	5,610.0	110.6	108.5	-74.77	5,760.6	-172.9	342.7	130.5	212.21	1.615	
11,100.0	5,700.0	10,907.1	5,610.0	112.5	110.4	-74.77	5,860.6	-172.9	342.7	126.8	215.91	1.587	
11,200.0	5,700.0	11,007.1	5,610.0	114.4	112.3	-74.77	5,960.6	-172.9	342.7	123.1	219.60	1.560	
11,300.0	5,700.0	11,107.1	5,610.0	116.3	114.2	-74.77	6,060.6	-172.9	342.7	119.4	223.29	1.535	
11,400.0	5,700.0	11,207.1	5,610.0	118.2	116.1	-74.77	6,160.6	-172.9	342.7	115.7	226.99	1.510	
11,500.0	5,700.0	11,307.1	5,610.0	120.1	118.0	-74.77	6,260.6	-172.9	342.7	112.0	230.69	1.485	Level 3
11,600.0	5,700.0	11,407.1	5,610.0	122.0	119.9	-74.77	6,360.6	-172.9	342.7	108.3	234.38	1.462	Level 3
11,700.0	5,700.0	11,507.1	5,610.0	123.9	121.8	-74.77	6,460.6	-172.9	342.7	104.6	238.08	1.439	Level 3
11,800.0	5,700.0	11,607.1	5,610.0	125.8	123.7	-74.77	6,560.6	-172.9	342.7	100.9	241.78	1.417	Level 3
11,900.0	5,700.0	11,707.1	5,610.0	127.7	125.6	-74.77	6,660.6	-172.9	342.7	97.2	245.48	1.396	Level 3
12,000.0	5,700.0	11,807.1	5,610.0	129.6	127.5	-74.77	6,760.6	-172.8	342.7	93.5	249.18	1.375	Level 3
12,100.0	5,700.0	11,907.1	5,610.0	131.6	129.4	-74.77	6,860.6	-172.8	342.7	89.8	252.88	1.355	Level 3
12,200.0	5,700.0	12,007.1	5,610.0	133.5	131.3	-74.77	6,960.6	-172.8	342.7	86.1	256.58	1.336	Level 3
12,300.0	5,700.0	12,107.1	5,610.0	135.4	133.2	-74.77	7,060.6	-172.8	342.7	82.4	260.28	1.317	Level 3
12,400.0	5,700.0	12,207.1	5,610.0	137.3	135.1	-74.77	7,160.6	-172.8	342.7	78.7	263.98	1.298	Level 3
12,500.0	5,700.0	12,307.1	5,610.0	139.2	137.0	-74.77	7,260.6	-172.8	342.7	75.0	267.68	1.280	Level 3
12,600.0	5,700.0	12,407.1	5,610.0	141.1	138.9	-74.77	7,360.6	-172.8	342.7	71.3	271.38	1.263	Level 3
12,700.0	5,700.0	12,507.1	5,610.0	143.0	140.8	-74.77	7,460.6	-172.8	342.7	67.6	275.09	1.246	Level 2
12,800.0	5,700.0	12,607.1	5,610.0	144.9	142.7	-74.77	7,560.6	-172.8	342.7	63.9	278.79	1.229	Level 2
12,900.0	5,700.0	12,707.1	5,610.0	146.8	144.7	-74.77	7,660.6	-172.8	342.7	60.2	282.49	1.213	Level 2
13,000.0	5,700.0	12,807.1	5,610.0	148.7	146.6	-74.77	7,760.6	-172.8	342.7	56.5	286.20	1.197	Level 2
13,100.0	5,700.0	12,907.1	5,610.0	150.6	148.5	-74.77	7,860.6	-172.8	342.7	52.8	289.90	1.182	Level 2
13,200.0	5,700.0	13,007.1	5,610.0	152.6	150.4	-74.77	7,960.6	-172.8	342.7	49.1	293.61	1.167	Level 2
13,300.0	5,700.0	13,107.1	5,610.0	154.5	152.3	-74.77	8,060.6	-172.8	342.7	45.4	297.29	1.153	Level 2
13,346.7	5,700.0	13,153.7	5,610.0	155.2	153.0	-74.77	8,107.3	-172.8	342.7	44.0	298.70	1.147	Level 2
13,381.7	5,700.0	13,182.5	5,610.0	155.7	153.4	-74.77	8,136.1	-172.8	342.7	43.1	299.66	1.144	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-3505A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-42.36	73.8	-67.3	99.9				
100.0	100.0	100.0	100.0	0.1	0.1	-42.36	73.8	-67.3	99.9	99.7	0.19	532.081	
200.0	200.0	200.0	200.0	0.3	0.3	-42.36	73.8	-67.3	99.9	99.2	0.64	156.715	
300.0	300.0	300.0	300.0	0.5	0.5	-42.36	73.8	-67.3	99.9	98.8	1.09	91.890	
400.0	400.0	400.0	400.0	0.8	0.8	-42.36	73.8	-67.3	99.9	98.3	1.54	65.002	
500.0	500.0	500.0	500.0	1.0	1.0	-42.36	73.8	-67.3	99.9	97.9	1.99	50.287	
600.0	600.0	600.0	600.0	1.2	1.2	-42.36	73.8	-67.3	99.9	97.4	2.44	41.005	
700.0	700.0	700.0	700.0	1.4	1.4	-75.84	73.8	-67.3	99.4	96.5	2.88	34.489	
800.0	799.8	799.8	799.8	1.7	1.7	-78.82	73.8	-67.3	98.3	94.9	3.33	29.500	
900.0	899.6	899.6	899.6	1.9	1.9	-82.85	73.8	-67.3	97.2	93.4	3.79	25.654	
1,000.0	999.4	999.4	999.4	2.1	2.1	-86.95	73.8	-67.3	96.5	92.3	4.25	22.721	
1,100.0	1,099.1	1,100.2	1,100.2	2.4	2.3	-92.11	72.1	-67.6	95.8	91.1	4.69	20.447	
1,200.0	1,198.9	1,200.4	1,200.2	2.6	2.5	-99.31	66.9	-68.7	95.1	90.0	5.10	18.639	
1,215.0	1,213.8	1,215.2	1,215.0	2.7	2.5	-100.53	65.9	-68.9	95.1	89.9	5.17	18.403	CC, ES
1,300.0	1,298.6	1,299.4	1,299.0	2.9	2.7	-107.44	60.2	-70.1	95.8	90.3	5.53	17.327	
1,400.0	1,398.4	1,398.5	1,397.9	3.1	2.9	-115.31	53.4	-71.4	98.4	92.5	5.96	16.503	
1,500.0	1,498.1	1,497.6	1,496.7	3.4	3.1	-122.64	46.6	-72.8	102.8	96.4	6.40	16.057	
1,600.0	1,597.9	1,596.6	1,595.5	3.6	3.3	-129.29	39.8	-74.2	108.7	101.9	6.84	15.894	SF
1,700.0	1,697.6	1,695.7	1,694.3	3.9	3.5	-135.19	33.1	-75.6	116.0	108.7	7.28	15.931	
1,800.0	1,797.4	1,794.7	1,793.1	4.1	3.8	-140.36	26.3	-76.9	124.3	116.6	7.72	16.106	
1,900.0	1,897.2	1,893.8	1,891.9	4.4	4.0	-144.85	19.5	-78.3	133.5	125.4	8.16	16.371	
2,000.0	1,996.9	1,992.9	1,990.8	4.6	4.2	-148.75	12.8	-79.7	143.5	134.9	8.60	16.691	
2,100.0	2,096.7	2,091.9	2,089.6	4.9	4.5	-152.13	6.0	-81.1	154.0	145.0	9.04	17.042	
2,200.0	2,196.4	2,191.0	2,188.4	5.1	4.7	-155.07	-0.8	-82.4	165.0	155.5	9.48	17.409	
2,300.0	2,296.2	2,290.0	2,287.2	5.4	4.9	-157.65	-7.6	-83.8	176.3	166.4	9.92	17.780	
2,400.0	2,395.9	2,389.1	2,386.0	5.6	5.2	-159.91	-14.3	-85.2	188.0	177.6	10.36	18.148	
2,500.0	2,495.7	2,488.2	2,484.9	5.9	5.4	-161.90	-21.1	-86.6	199.9	189.1	10.80	18.507	
2,600.0	2,595.5	2,587.2	2,583.7	6.2	5.7	-163.67	-27.9	-87.9	212.1	200.8	11.25	18.855	
2,700.0	2,695.2	2,686.3	2,682.5	6.4	5.9	-165.25	-34.7	-89.3	224.4	212.7	11.69	19.191	
2,800.0	2,795.0	2,785.3	2,781.3	6.7	6.2	-166.66	-41.4	-90.7	236.8	224.7	12.14	19.513	
2,900.0	2,894.7	2,884.4	2,880.1	6.9	6.4	-167.93	-48.2	-92.1	249.4	236.9	12.58	19.821	
3,000.0	2,994.5	2,983.5	2,978.9	7.2	6.7	-169.08	-55.0	-93.4	262.1	249.1	13.03	20.115	
3,100.0	3,094.2	3,082.5	3,077.8	7.4	6.9	-170.12	-61.7	-94.8	274.9	261.5	13.48	20.396	
3,200.0	3,194.0	3,181.6	3,176.6	7.7	7.2	-171.07	-68.5	-96.2	287.8	273.9	13.93	20.663	
3,300.0	3,293.8	3,280.6	3,275.4	7.9	7.4	-171.94	-75.3	-97.6	300.8	286.4	14.38	20.918	
3,400.0	3,393.5	3,379.7	3,374.2	8.2	7.7	-172.73	-82.1	-98.9	313.8	299.0	14.83	21.160	
3,500.0	3,493.3	3,478.7	3,473.0	8.5	8.0	-173.47	-88.8	-100.3	326.8	311.6	15.28	21.392	
3,600.0	3,593.0	3,577.8	3,571.9	8.7	8.2	-174.14	-95.6	-101.7	340.0	324.2	15.73	21.612	
3,700.0	3,692.8	3,676.9	3,670.7	9.0	8.5	-174.77	-102.4	-103.1	353.1	336.9	16.18	21.823	
3,800.0	3,792.5	3,775.9	3,769.5	9.2	8.7	-175.35	-109.1	-104.4	366.3	349.7	16.63	22.023	
3,900.0	3,892.3	3,875.0	3,868.3	9.5	9.0	-175.89	-115.9	-105.8	379.6	362.5	17.09	22.215	
4,000.0	3,992.1	3,974.0	3,967.1	9.7	9.2	-176.39	-122.7	-107.2	392.8	375.3	17.54	22.398	
4,100.0	4,091.8	4,073.1	4,065.9	10.0	9.5	-176.87	-129.5	-108.6	406.1	388.1	17.99	22.573	
4,200.0	4,191.6	4,172.2	4,164.8	10.2	9.8	-177.31	-136.2	-109.9	419.4	401.0	18.44	22.740	
4,300.0	4,291.3	4,271.2	4,263.6	10.5	10.0	-177.72	-143.0	-111.3	432.8	413.9	18.90	22.901	
4,400.0	4,391.1	4,370.3	4,362.4	10.8	10.3	-178.11	-149.8	-112.7	446.1	426.8	19.35	23.054	
4,500.0	4,490.8	4,469.3	4,461.2	11.0	10.5	-178.48	-156.5	-114.1	459.5	439.7	19.81	23.201	
4,600.0	4,590.6	4,568.4	4,560.0	11.3	10.8	-178.83	-163.3	-115.4	472.9	452.6	20.26	23.342	
4,700.0	4,690.3	4,667.5	4,658.9	11.5	11.0	-179.15	-170.1	-116.8	486.3	465.6	20.71	23.478	
4,800.0	4,790.1	4,766.5	4,757.7	11.8	11.3	-179.46	-176.9	-118.2	499.7	478.6	21.17	23.608	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-3507A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.08	75.0	-1.4	75.0				
100.0	100.0	100.0	100.0	0.1	0.1	-1.08	75.0	-1.4	75.0	74.8	0.19	399.777	
200.0	200.0	200.0	200.0	0.3	0.3	-1.08	75.0	-1.4	75.0	74.4	0.64	117.747	
300.0	300.0	300.0	300.0	0.5	0.5	-1.08	75.0	-1.4	75.0	73.9	1.09	69.041	
400.0	400.0	400.0	400.0	0.8	0.8	-1.08	75.0	-1.4	75.0	73.5	1.54	48.839	
500.0	500.0	500.0	500.0	1.0	1.0	-1.08	75.0	-1.4	75.0	73.0	1.99	37.783	
600.0	600.0	600.0	600.0	1.2	1.2	-1.08	75.0	-1.4	75.0	72.6	2.44	30.809	
700.0	700.0	700.0	700.0	1.4	1.4	-34.34	75.0	-1.4	73.6	70.7	2.88	25.511	
800.0	799.8	802.2	802.2	1.7	1.6	-36.50	73.3	-0.8	67.6	64.3	3.32	20.389	
900.0	899.6	903.6	903.5	1.9	1.8	-39.24	68.2	1.1	56.9	53.2	3.74	15.236	
1,000.0	999.4	1,002.8	1,002.4	2.1	2.0	-42.81	61.7	3.4	44.9	40.7	4.16	10.773	
1,100.0	1,099.1	1,102.1	1,101.4	2.4	2.2	-48.97	55.2	5.8	33.1	28.5	4.60	7.194	
1,200.0	1,198.9	1,201.3	1,200.4	2.6	2.5	-61.53	48.7	8.2	22.1	17.0	5.04	4.374	
1,300.0	1,298.6	1,300.5	1,299.4	2.9	2.7	-92.70	42.2	10.5	13.8	8.3	5.52	2.507	
1,344.6	1,343.1	1,344.8	1,343.5	3.0	2.8	-116.31	39.3	11.6	12.7	6.9	5.73	2.208	CC, ES, SF
1,400.0	1,398.4	1,399.7	1,398.3	3.1	2.9	-144.77	35.7	12.9	14.4	8.5	5.97	2.417	
1,500.0	1,498.1	1,498.9	1,497.3	3.4	3.2	-172.99	29.2	15.3	23.2	16.8	6.38	3.631	
1,600.0	1,597.9	1,598.2	1,596.3	3.6	3.4	175.49	22.7	17.6	34.3	27.5	6.82	5.033	
1,700.0	1,697.6	1,697.4	1,695.3	3.9	3.7	169.73	16.2	20.0	46.1	38.9	7.27	6.352	
1,800.0	1,797.4	1,796.6	1,794.2	4.1	3.9	166.34	9.7	22.4	58.3	50.5	7.72	7.548	
1,900.0	1,897.2	1,895.8	1,893.2	4.4	4.2	164.11	3.2	24.7	70.5	62.3	8.17	8.626	
2,000.0	1,996.9	1,995.0	1,992.2	4.6	4.4	162.55	-3.3	27.1	82.8	74.2	8.63	9.595	
2,100.0	2,096.7	2,094.2	2,091.2	4.9	4.7	161.39	-9.8	29.5	95.2	86.1	9.09	10.471	
2,200.0	2,196.4	2,193.5	2,190.1	5.1	4.9	160.50	-16.3	31.8	107.6	98.0	9.55	11.264	
2,300.0	2,296.2	2,292.7	2,289.1	5.4	5.2	159.80	-22.8	34.2	120.0	110.0	10.01	11.985	
2,400.0	2,395.9	2,391.9	2,388.1	5.6	5.4	159.22	-29.3	36.6	132.4	121.9	10.47	12.643	
2,500.0	2,495.7	2,491.1	2,487.1	5.9	5.7	158.75	-35.8	38.9	144.8	133.9	10.93	13.246	
2,600.0	2,595.5	2,590.3	2,586.0	6.2	5.9	158.35	-42.3	41.3	157.3	145.9	11.40	13.799	
2,700.0	2,695.2	2,689.5	2,685.0	6.4	6.2	158.00	-48.8	43.7	169.7	157.9	11.86	14.310	
2,800.0	2,795.0	2,788.8	2,784.0	6.7	6.4	157.71	-55.3	46.0	182.2	169.9	12.33	14.782	
2,900.0	2,894.7	2,888.0	2,883.0	6.9	6.7	157.45	-61.9	48.4	194.6	181.9	12.79	15.219	
3,000.0	2,994.5	2,987.2	2,981.9	7.2	7.0	157.23	-68.4	50.8	207.1	193.9	13.25	15.626	
3,100.0	3,094.2	3,086.4	3,080.9	7.4	7.2	157.02	-74.9	53.1	219.6	205.9	13.72	16.005	
3,200.0	3,194.0	3,185.6	3,179.9	7.7	7.5	156.85	-81.4	55.5	232.0	217.9	14.18	16.358	
3,300.0	3,293.8	3,284.8	3,278.9	7.9	7.7	156.68	-87.9	57.9	244.5	229.9	14.65	16.690	
3,400.0	3,393.5	3,384.1	3,377.9	8.2	8.0	156.54	-94.4	60.2	257.0	241.9	15.12	17.000	
3,500.0	3,493.3	3,483.3	3,476.8	8.5	8.3	156.41	-100.9	62.6	269.5	253.9	15.58	17.292	
3,600.0	3,593.0	3,582.5	3,575.8	8.7	8.5	156.29	-107.4	65.0	281.9	265.9	16.05	17.567	
3,700.0	3,692.8	3,681.7	3,674.8	9.0	8.8	156.18	-113.9	67.3	294.4	277.9	16.52	17.826	
3,800.0	3,792.5	3,780.9	3,773.8	9.2	9.0	156.08	-120.4	69.7	306.9	289.9	16.98	18.071	
3,900.0	3,892.3	3,880.2	3,872.7	9.5	9.3	155.98	-126.9	72.1	319.4	301.9	17.45	18.303	
4,000.0	3,992.1	3,979.4	3,971.7	9.7	9.6	155.90	-133.4	74.4	331.8	313.9	17.92	18.522	
4,100.0	4,091.8	4,078.6	4,070.7	10.0	9.8	155.82	-139.9	76.8	344.3	325.9	18.38	18.731	
4,200.0	4,191.6	4,177.8	4,169.7	10.2	10.1	155.74	-146.4	79.2	356.8	338.0	18.85	18.928	
4,300.0	4,291.3	4,277.0	4,268.6	10.5	10.3	155.67	-152.9	81.5	369.3	350.0	19.32	19.117	
4,400.0	4,391.1	4,376.2	4,367.6	10.8	10.6	155.61	-159.4	83.9	381.8	362.0	19.78	19.296	
4,500.0	4,490.8	4,475.5	4,466.6	11.0	10.9	155.55	-165.9	86.3	394.2	374.0	20.25	19.467	
4,600.0	4,590.6	4,574.7	4,565.6	11.3	11.1	155.49	-172.4	88.6	406.7	386.0	20.72	19.630	
4,700.0	4,690.3	4,673.9	4,664.5	11.5	11.4	155.44	-178.9	91.0	419.2	398.0	21.19	19.786	
4,800.0	4,790.1	4,773.1	4,763.5	11.8	11.6	155.39	-185.4	93.4	431.7	410.0	21.66	19.935	
4,900.0	4,890.0	4,872.5	4,862.7	12.0	11.9	155.34	-191.9	95.8	442.6	420.5	22.12	20.010	
5,000.0	4,989.9	4,972.2	4,962.1	12.2	12.2	-172.42	-198.5	98.1	450.4	427.8	22.53	19.990	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-3507A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,089.9	5,071.9	5,061.6	12.3	12.4	-172.83	-205.0	100.5	456.6	433.6	22.95	19.892	
5,189.2	5,179.1	5,150.0	5,139.5	12.5	12.6	-173.15	-210.3	102.4	462.4	439.1	23.33	19.823	
5,200.0	5,189.9	5,150.0	5,139.5	12.5	12.6	-173.13	-210.3	102.4	463.6	440.2	23.35	19.857	
5,250.0	5,239.8	5,183.0	5,172.2	12.7	12.8	-173.28	-214.3	103.9	472.9	449.5	23.40	20.205	
5,300.0	5,289.1	5,200.0	5,188.9	12.8	12.8	-173.26	-217.1	104.9	489.2	466.0	23.23	21.062	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-3508B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.92	0.6	33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	88.92	0.6	33.2	33.2	33.0	0.19	177.002	
200.0	200.0	200.0	200.0	0.3	0.3	88.92	0.6	33.2	33.2	32.6	0.64	52.133	
300.0	300.0	300.0	300.0	0.5	0.5	88.92	0.6	33.2	33.2	32.1	1.09	30.568	
400.0	400.0	400.0	400.0	0.8	0.8	88.92	0.6	33.2	33.2	31.7	1.54	21.623	
500.0	500.0	500.0	500.0	1.0	1.0	88.92	0.6	33.2	33.2	31.2	1.99	16.729	
600.0	600.0	600.0	600.0	1.2	1.2	88.92	0.6	33.2	33.2	30.8	2.44	13.641	
700.0	700.0	700.0	700.0	1.4	1.4	59.02	0.6	33.2	32.3	29.4	2.88	11.200	
800.0	799.8	799.8	799.8	1.7	1.7	67.67	0.6	33.2	29.9	26.6	3.33	8.986	
900.0	899.6	899.6	899.6	1.9	1.9	80.95	0.6	33.2	28.0	24.2	3.79	7.400	
963.3	962.8	962.8	962.8	2.0	2.0	90.00	0.6	33.2	27.7	23.6	4.08	6.781	CC
1,000.0	999.4	999.4	999.4	2.1	2.1	95.27	0.6	33.2	27.8	23.5	4.25	6.537	ES
1,100.0	1,099.1	1,099.1	1,099.1	2.4	2.3	108.96	0.6	33.2	29.3	24.6	4.72	6.207	SF
1,200.0	1,198.9	1,197.7	1,197.7	2.6	2.5	120.41	-0.8	34.1	33.9	28.8	5.15	6.586	
1,300.0	1,298.6	1,295.9	1,295.8	2.9	2.7	127.86	-5.1	36.7	42.9	37.4	5.56	7.714	
1,400.0	1,398.4	1,395.1	1,394.7	3.1	2.9	132.18	-11.0	40.3	54.2	48.2	5.99	9.051	
1,500.0	1,498.1	1,494.4	1,493.8	3.4	3.1	135.00	-16.9	43.9	65.6	59.2	6.41	10.237	
1,600.0	1,597.9	1,593.7	1,592.9	3.6	3.3	136.99	-22.9	47.5	77.2	70.4	6.84	11.283	
1,700.0	1,697.6	1,693.0	1,691.9	3.9	3.5	138.45	-28.8	51.1	88.8	81.6	7.28	12.205	
1,800.0	1,797.4	1,792.3	1,791.0	4.1	3.8	139.58	-34.7	54.7	100.5	92.8	7.72	13.021	
1,900.0	1,897.2	1,891.6	1,890.0	4.4	4.0	140.47	-40.6	58.2	112.2	104.1	8.17	13.746	
2,000.0	1,996.9	1,990.9	1,989.1	4.6	4.2	141.19	-46.5	61.8	124.0	115.4	8.61	14.394	
2,100.0	2,096.7	2,090.2	2,088.1	4.9	4.4	141.79	-52.5	65.4	135.7	126.7	9.06	14.974	
2,200.0	2,196.4	2,189.5	2,187.2	5.1	4.7	142.29	-58.4	69.0	147.5	138.0	9.52	15.498	
2,300.0	2,296.2	2,288.8	2,286.3	5.4	4.9	142.72	-64.3	72.6	159.3	149.3	9.97	15.971	
2,400.0	2,395.9	2,388.1	2,385.3	5.6	5.2	143.09	-70.2	76.2	171.0	160.6	10.43	16.401	
2,500.0	2,495.7	2,487.4	2,484.4	5.9	5.4	143.41	-76.2	79.8	182.8	171.9	10.89	16.793	
2,600.0	2,595.5	2,586.7	2,583.4	6.2	5.7	143.69	-82.1	83.4	194.6	183.3	11.35	17.152	
2,700.0	2,695.2	2,686.0	2,682.5	6.4	5.9	143.94	-88.0	87.0	206.4	194.6	11.81	17.481	
2,800.0	2,795.0	2,785.3	2,781.5	6.7	6.2	144.16	-93.9	90.6	218.2	205.9	12.27	17.784	
2,900.0	2,894.7	2,884.6	2,880.6	6.9	6.4	144.36	-99.8	94.2	230.0	217.3	12.73	18.065	
3,000.0	2,994.5	2,983.9	2,979.7	7.2	6.7	144.54	-105.8	97.8	241.8	228.6	13.20	18.324	
3,100.0	3,094.2	3,083.2	3,078.7	7.4	6.9	144.71	-111.7	101.4	253.6	240.0	13.66	18.565	
3,200.0	3,194.0	3,182.5	3,177.8	7.7	7.2	144.86	-117.6	105.0	265.4	251.3	14.13	18.790	
3,300.0	3,293.8	3,281.8	3,276.8	7.9	7.4	144.99	-123.5	108.6	277.2	262.6	14.59	18.999	
3,400.0	3,393.5	3,381.1	3,375.9	8.2	7.7	145.12	-129.5	112.1	289.0	274.0	15.06	19.195	
3,500.0	3,493.3	3,480.4	3,474.9	8.5	7.9	145.24	-135.4	115.7	300.9	285.3	15.53	19.378	
3,600.0	3,593.0	3,579.7	3,574.0	8.7	8.2	145.34	-141.3	119.3	312.7	296.7	15.99	19.551	
3,700.0	3,692.8	3,679.0	3,673.0	9.0	8.4	145.44	-147.2	122.9	324.5	308.0	16.46	19.713	
3,800.0	3,792.5	3,778.3	3,772.1	9.2	8.7	145.53	-153.1	126.5	336.3	319.4	16.93	19.866	
3,900.0	3,892.3	3,877.6	3,871.2	9.5	8.9	145.62	-159.1	130.1	348.1	330.7	17.40	20.010	
4,000.0	3,992.1	3,976.9	3,970.2	9.7	9.2	145.70	-165.0	133.7	359.9	342.1	17.87	20.146	
4,100.0	4,091.8	4,076.2	4,069.3	10.0	9.5	145.78	-170.9	137.3	371.7	353.4	18.34	20.275	
4,200.0	4,191.6	4,175.5	4,168.3	10.2	9.7	145.85	-176.8	140.9	383.6	364.8	18.80	20.397	
4,300.0	4,291.3	4,274.8	4,267.4	10.5	10.0	145.91	-182.7	144.5	395.4	376.1	19.27	20.513	
4,400.0	4,391.1	4,374.1	4,366.4	10.8	10.2	145.97	-188.7	148.1	407.2	387.5	19.74	20.624	
4,500.0	4,490.8	4,473.4	4,465.5	11.0	10.5	146.03	-194.6	151.7	419.0	398.8	20.21	20.729	
4,600.0	4,590.6	4,572.7	4,564.6	11.3	10.8	146.09	-200.5	155.3	430.8	410.2	20.68	20.829	
4,700.0	4,690.3	4,672.0	4,663.6	11.5	11.0	146.14	-206.4	158.9	442.7	421.5	21.16	20.924	
4,800.0	4,790.1	4,771.3	4,762.7	11.8	11.3	146.19	-212.4	162.5	454.5	432.9	21.63	21.015	
4,900.0	4,890.0	4,870.7	4,861.9	12.0	11.5	146.23	-218.3	166.1	464.9	442.8	22.09	21.048	
5,000.0	4,989.9	4,970.4	4,961.3	12.2	11.8	178.51	-224.2	169.7	472.4	449.9	22.49	21.000	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor #26K-3508B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,089.9	5,070.2	5,060.8	12.3	12.0	178.10	-230.2	173.3	478.4	455.5	22.91	20.878	
5,189.2	5,179.1	5,159.2	5,149.6	12.5	12.3	177.74	-235.5	176.5	483.9	460.6	23.31	20.756	
5,200.0	5,189.9	5,169.9	5,160.3	12.5	12.3	177.69	-236.1	176.9	484.6	461.3	23.36	20.750	
5,250.0	5,239.8	5,219.5	5,209.8	12.7	12.4	177.48	-239.1	178.7	491.1	467.7	23.44	20.950	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor 26-3524H (Existing) - Existing - SURVEYs

Offset Site Error: 0.0 ft

Survey Program: 113-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-148.03	-51.3	-32.0	60.4				
100.0	100.0	99.1	99.1	0.1	0.1	-147.67	-51.6	-32.7	61.1	60.9	0.19	319.470	
200.0	200.0	198.7	198.7	0.3	0.3	-146.72	-52.4	-34.4	62.7	62.1	0.62	100.656	
300.0	300.0	299.0	298.9	0.5	0.5	-145.98	-53.4	-36.0	64.4	63.4	1.05	61.225	
400.0	400.0	398.9	398.8	0.8	0.7	-145.28	-54.2	-37.6	66.0	64.5	1.48	44.456	
500.0	500.0	498.9	498.8	1.0	0.9	-144.32	-55.0	-39.5	67.7	65.8	1.93	35.130	
600.0	600.0	599.3	599.2	1.2	1.1	-143.98	-55.8	-40.6	69.0	66.6	2.36	29.261	
700.0	700.0	699.4	699.3	1.4	1.3	-176.28	-56.2	-41.3	71.5	68.7	2.78	25.685	
800.0	799.8	799.3	799.2	1.7	1.6	-176.11	-56.6	-42.3	77.6	74.4	3.22	24.119	
900.0	899.6	899.3	899.2	1.9	1.8	-176.03	-56.5	-43.0	84.9	81.3	3.65	23.290	
1,000.0	999.4	998.8	998.7	2.1	2.0	-176.16	-56.8	-43.5	92.4	88.3	4.08	22.660	
1,100.0	1,099.1	1,097.9	1,097.8	2.4	2.2	-175.91	-56.8	-44.6	100.1	95.6	4.51	22.183	
1,200.0	1,198.9	1,196.4	1,196.3	2.6	2.4	-175.38	-57.3	-46.9	108.8	103.9	4.95	21.976	
1,300.0	1,298.6	1,295.8	1,295.7	2.9	2.6	-174.74	-58.2	-49.9	118.2	112.9	5.39	21.927	
1,400.0	1,398.4	1,394.3	1,394.0	3.1	2.8	-173.85	-58.7	-53.5	127.9	122.0	5.83	21.919	
1,500.0	1,498.1	1,495.0	1,494.7	3.4	3.1	-172.74	-59.0	-58.2	138.0	131.7	6.28	21.978	
1,600.0	1,597.9	1,595.3	1,594.9	3.6	3.3	-171.95	-58.8	-61.8	147.1	140.4	6.71	21.914	
1,700.0	1,697.6	1,694.9	1,694.4	3.9	3.5	-172.41	-60.4	-62.8	155.8	148.7	7.15	21.812	
1,800.0	1,797.4	1,792.6	1,792.2	4.1	3.7	-172.84	-62.5	-64.1	165.2	157.6	7.58	21.795	
1,900.0	1,897.2	1,898.8	1,898.3	4.4	3.9	-173.42	-64.7	-64.9	174.3	166.3	8.03	21.712	
2,000.0	1,996.9	2,001.5	2,000.9	4.6	4.1	-174.17	-64.1	-62.4	179.3	170.8	8.47	21.176	
2,100.0	2,096.7	2,101.7	2,101.1	4.9	4.3	-174.38	-62.2	-61.0	183.8	174.9	8.90	20.651	
2,200.0	2,196.4	2,204.6	2,204.0	5.1	4.5	-175.11	-60.4	-57.4	187.2	177.9	9.34	20.054	
2,300.0	2,296.2	2,298.1	2,297.4	5.4	4.7	-176.17	-60.5	-53.7	191.9	182.2	9.75	19.676	
2,400.0	2,395.9	2,401.1	2,400.3	5.6	4.9	-177.20	-61.2	-50.4	197.5	187.3	10.20	19.368	
2,500.0	2,495.7	2,503.2	2,502.3	5.9	5.1	-177.66	-59.0	-47.3	201.0	190.4	10.64	18.889	
2,600.0	2,595.5	2,595.7	2,594.8	6.2	5.3	-176.74	-56.2	-49.7	206.9	195.9	11.07	18.694	
2,700.0	2,695.2	2,698.1	2,696.9	6.4	5.6	-174.98	-51.6	-54.9	213.3	201.8	11.52	18.517	
2,800.0	2,795.0	2,795.8	2,794.5	6.7	5.8	-174.07	-48.7	-57.9	219.9	207.9	11.96	18.392	
2,900.0	2,894.7	2,895.6	2,894.3	6.9	6.0	-173.64	-47.8	-60.2	227.5	215.1	12.39	18.358	
3,000.0	2,994.5	2,997.6	2,996.2	7.2	6.2	-173.68	-46.6	-60.1	233.5	220.6	12.83	18.192	
3,100.0	3,094.2	3,092.7	3,091.4	7.4	6.4	-173.88	-46.8	-60.2	240.6	227.4	13.26	18.145	
3,200.0	3,194.0	3,192.9	3,191.5	7.7	6.6	-173.93	-47.7	-61.5	249.1	235.4	13.70	18.179	
3,300.0	3,293.8	3,295.1	3,293.7	7.9	6.8	-174.74	-49.7	-59.4	256.3	242.2	14.14	18.128	
3,400.0	3,393.5	3,396.4	3,394.9	8.2	7.0	-175.48	-51.2	-57.1	263.0	248.4	14.58	18.044	
3,500.0	3,493.3	3,498.2	3,496.7	8.5	7.2	-175.61	-50.4	-56.5	269.0	254.0	15.02	17.914	
3,600.0	3,593.0	3,597.4	3,596.0	8.7	7.4	-175.84	-49.7	-55.3	274.6	259.2	15.45	17.774	
3,700.0	3,692.8	3,697.5	3,696.1	9.0	7.6	-175.93	-48.8	-54.6	280.5	264.6	15.89	17.651	
3,800.0	3,792.5	3,798.1	3,796.6	9.2	7.8	-175.76	-46.9	-54.9	286.1	269.8	16.33	17.518	
3,900.0	3,892.3	3,900.6	3,899.0	9.5	8.1	-175.54	-44.3	-55.1	291.2	274.4	16.78	17.353	
4,000.0	3,992.1	3,996.9	3,995.3	9.7	8.3	-175.33	-42.1	-55.3	296.4	279.2	17.21	17.220	
4,100.0	4,091.8	4,095.0	4,093.4	10.0	8.5	-175.45	-41.5	-54.8	302.6	284.9	17.65	17.146	
4,200.0	4,191.6	4,196.1	4,194.5	10.2	8.7	-175.75	-41.4	-53.5	308.7	290.6	18.09	17.068	
4,300.0	4,291.3	4,294.5	4,292.9	10.5	8.9	-175.88	-40.9	-52.9	314.9	296.3	18.52	16.999	
4,400.0	4,391.1	4,391.8	4,390.2	10.8	9.1	-175.95	-40.7	-52.8	321.6	302.7	18.96	16.965	
4,500.0	4,490.8	4,490.2	4,488.6	11.0	9.3	-176.02	-41.2	-53.3	329.3	309.9	19.39	16.977	
4,600.0	4,590.6	4,593.5	4,591.9	11.3	9.5	-176.05	-41.0	-53.5	336.1	316.3	19.84	16.942	
4,700.0	4,690.3	4,692.8	4,691.2	11.5	9.7	-176.14	-40.7	-53.2	342.8	322.5	20.28	16.906	
4,800.0	4,790.1	4,792.3	4,790.7	11.8	9.9	-176.34	-41.0	-52.5	349.5	328.8	20.71	16.876	
4,900.0	4,890.0	4,892.6	4,891.0	12.0	10.1	-176.60	-41.5	-51.4	354.5	333.4	21.13	16.777	
5,000.0	4,989.9	4,985.7	4,984.1	12.2	10.3	-144.25	-42.1	-50.8	356.4	334.9	21.48	16.587	
5,100.0	5,089.9	5,067.0	5,065.3	12.3	10.5	-144.59	-45.4	-50.5	359.8	337.9	21.85	16.467	SF

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor 26-3524H (Existing) - Existing - SURVEYs

Survey Program: 113-ISCWSA MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,189.2	5,179.1	5,119.2	5,116.9	12.5	10.6	-145.37	-53.3	-50.1	370.4	348.2	22.15	16.721	
5,200.0	5,189.9	5,130.0	5,127.4	12.5	10.6	-145.50	-55.8	-49.9	372.4	350.2	22.21	16.770	
5,250.0	5,239.8	5,155.4	5,152.0	12.7	10.7	-145.47	-62.3	-49.5	385.3	363.0	22.34	17.250	
5,300.0	5,289.1	5,184.4	5,179.6	12.8	10.7	-145.41	-71.1	-49.0	404.3	381.9	22.35	18.088	
5,350.0	5,337.4	5,211.1	5,204.7	13.0	10.8	-145.03	-80.1	-48.9	428.8	406.6	22.25	19.277	
5,400.0	5,384.2	5,234.8	5,226.8	13.2	10.9	-144.17	-88.9	-48.8	458.5	436.4	22.05	20.797	
5,450.0	5,429.2	5,256.0	5,246.1	13.5	10.9	-142.71	-97.4	-48.6	492.7	470.9	21.80	22.600	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26J-2309A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,300.0	5,700.0	6,459.7	5,589.0	23.6	29.8	77.62	1,189.2	608.9	479.8	427.7	52.06	9.216	
6,400.0	5,700.0	6,537.8	5,589.0	25.2	31.1	77.07	1,264.7	589.1	454.9	400.0	54.92	8.283	
6,500.0	5,700.0	6,617.4	5,589.0	26.9	32.5	76.56	1,342.5	572.0	434.0	376.2	57.84	7.504	
6,600.0	5,700.0	6,700.0	5,589.0	28.6	33.9	76.10	1,423.8	557.8	417.2	356.4	60.83	6.858	
6,700.0	5,700.0	6,780.4	5,589.0	30.3	35.2	75.74	1,503.5	547.3	404.5	340.7	63.81	6.339	
6,800.0	5,700.0	6,863.2	5,589.0	32.0	36.5	75.48	1,586.0	540.0	396.0	329.1	66.84	5.924	
6,900.0	5,700.0	6,946.5	5,589.0	33.8	37.8	75.34	1,669.2	536.3	391.6	321.7	69.92	5.602	
6,970.1	5,700.0	7,007.9	5,589.0	35.0	38.8	75.32	1,730.7	535.8	391.1	318.9	72.12	5.423	
7,000.0	5,700.0	7,037.9	5,589.0	35.6	39.3	75.32	1,760.6	535.8	391.1	317.9	73.14	5.347	
7,100.0	5,700.0	7,137.9	5,589.0	37.4	40.8	75.32	1,860.6	535.8	391.1	314.5	76.52	5.111	
7,200.0	5,700.0	7,237.9	5,589.0	39.2	42.4	75.32	1,960.6	535.8	391.1	311.1	79.92	4.893	
7,300.0	5,700.0	7,337.9	5,589.0	41.0	44.0	75.32	2,060.6	535.8	391.0	307.7	83.36	4.691	
7,400.0	5,700.0	7,437.9	5,589.0	42.8	45.7	75.32	2,160.6	535.8	391.0	304.2	86.82	4.504	
7,500.0	5,700.0	7,537.9	5,589.0	44.6	47.3	75.32	2,260.6	535.8	391.0	300.7	90.30	4.330	
7,600.0	5,700.0	7,637.9	5,589.0	46.5	49.0	75.32	2,360.6	535.8	391.0	297.2	93.80	4.169	
7,700.0	5,700.0	7,737.9	5,589.0	48.3	50.7	75.32	2,460.6	535.8	391.0	293.7	97.32	4.018	
7,800.0	5,700.0	7,837.9	5,589.0	50.2	52.4	75.32	2,560.6	535.8	391.0	290.2	100.86	3.877	
7,900.0	5,700.0	7,937.9	5,589.0	52.0	54.1	75.32	2,660.6	535.8	391.0	286.6	104.41	3.745	
8,000.0	5,700.0	8,037.9	5,589.0	53.9	55.9	75.32	2,760.6	535.8	391.0	283.0	107.97	3.622	
8,100.0	5,700.0	8,137.9	5,589.0	55.8	57.6	75.32	2,860.6	535.8	391.0	279.5	111.54	3.505	
8,200.0	5,700.0	8,237.9	5,589.0	57.6	59.4	75.32	2,960.6	535.8	391.0	275.9	115.12	3.396	
8,300.0	5,700.0	8,337.9	5,589.0	59.5	61.1	75.32	3,060.6	535.8	391.0	272.3	118.71	3.294	
8,400.0	5,700.0	8,437.9	5,589.0	61.4	62.9	75.32	3,160.6	535.8	391.0	268.7	122.31	3.197	
8,500.0	5,700.0	8,537.9	5,589.0	63.2	64.7	75.32	3,260.6	535.8	391.0	265.1	125.92	3.105	
8,600.0	5,700.0	8,637.9	5,589.0	65.1	66.5	75.32	3,360.6	535.8	391.0	261.4	129.54	3.018	
8,700.0	5,700.0	8,737.9	5,589.0	67.0	68.3	75.32	3,460.6	535.8	391.0	257.8	133.16	2.936	
8,800.0	5,700.0	8,837.9	5,589.0	68.9	70.1	75.32	3,560.6	535.8	391.0	254.2	136.78	2.858	
8,900.0	5,700.0	8,937.9	5,589.0	70.8	71.9	75.32	3,660.6	535.8	391.0	250.5	140.42	2.784	
9,000.0	5,700.0	9,037.9	5,589.0	72.7	73.7	75.32	3,760.6	535.8	391.0	246.9	144.05	2.714	
9,100.0	5,700.0	9,137.9	5,589.0	74.5	75.5	75.32	3,860.6	535.8	390.9	243.3	147.69	2.647	
9,200.0	5,700.0	9,237.9	5,589.0	76.4	77.4	75.32	3,960.6	535.8	390.9	239.6	151.34	2.583	
9,300.0	5,700.0	9,337.9	5,589.0	78.3	79.2	75.32	4,060.6	535.8	390.9	235.9	154.99	2.522	
9,400.0	5,700.0	9,437.9	5,589.0	80.2	81.0	75.32	4,160.6	535.8	390.9	232.3	158.64	2.464	
9,500.0	5,700.0	9,537.9	5,589.0	82.1	82.9	75.32	4,260.6	535.8	390.9	228.6	162.30	2.409	
9,600.0	5,700.0	9,637.9	5,589.0	84.0	84.7	75.32	4,360.6	535.8	390.9	225.0	165.96	2.355	
9,700.0	5,700.0	9,737.9	5,589.0	85.9	86.5	75.32	4,460.6	535.8	390.9	221.3	169.62	2.305	
9,800.0	5,700.0	9,837.9	5,589.0	87.8	88.4	75.32	4,560.6	535.8	390.9	217.6	173.29	2.256	
9,900.0	5,700.0	9,937.9	5,589.0	89.7	90.2	75.32	4,660.6	535.8	390.9	213.9	176.96	2.209	
10,000.0	5,700.0	10,037.9	5,589.0	91.6	92.1	75.32	4,760.6	535.8	390.9	210.3	180.63	2.164	
10,100.0	5,700.0	10,137.9	5,589.0	93.5	94.0	75.32	4,860.6	535.8	390.9	206.6	184.30	2.121	
10,200.0	5,700.0	10,237.9	5,589.0	95.4	95.8	75.32	4,960.6	535.8	390.9	202.9	187.98	2.079	
10,300.0	5,700.0	10,337.9	5,589.0	97.3	97.7	75.32	5,060.6	535.8	390.9	199.2	191.66	2.039	
10,400.0	5,700.0	10,437.9	5,589.0	99.2	99.5	75.32	5,160.6	535.8	390.9	195.5	195.34	2.001	
10,500.0	5,700.0	10,537.9	5,589.0	101.1	101.4	75.32	5,260.6	535.8	390.9	191.9	199.02	1.964	
10,600.0	5,700.0	10,637.9	5,589.0	103.0	103.3	75.31	5,360.6	535.8	390.9	188.2	202.70	1.928	
10,700.0	5,700.0	10,737.9	5,589.0	104.9	105.1	75.31	5,460.6	535.8	390.9	184.5	206.39	1.894	
10,800.0	5,700.0	10,837.9	5,589.0	106.8	107.0	75.31	5,560.6	535.8	390.9	180.8	210.07	1.861	
10,900.0	5,700.0	10,937.9	5,589.0	108.7	108.9	75.31	5,660.6	535.8	390.9	177.1	213.76	1.828	
11,000.0	5,700.0	11,037.9	5,589.0	110.6	110.7	75.31	5,760.6	535.8	390.8	173.4	217.45	1.797	
11,100.0	5,700.0	11,137.9	5,589.0	112.5	112.6	75.31	5,860.6	535.8	390.8	169.7	221.14	1.767	
11,200.0	5,700.0	11,237.9	5,589.0	114.4	114.5	75.31	5,960.6	535.8	390.8	166.0	224.83	1.738	
11,300.0	5,700.0	11,337.9	5,589.0	116.3	116.4	75.31	6,060.6	535.8	390.8	162.3	228.52	1.710	

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 #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26J-2309A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

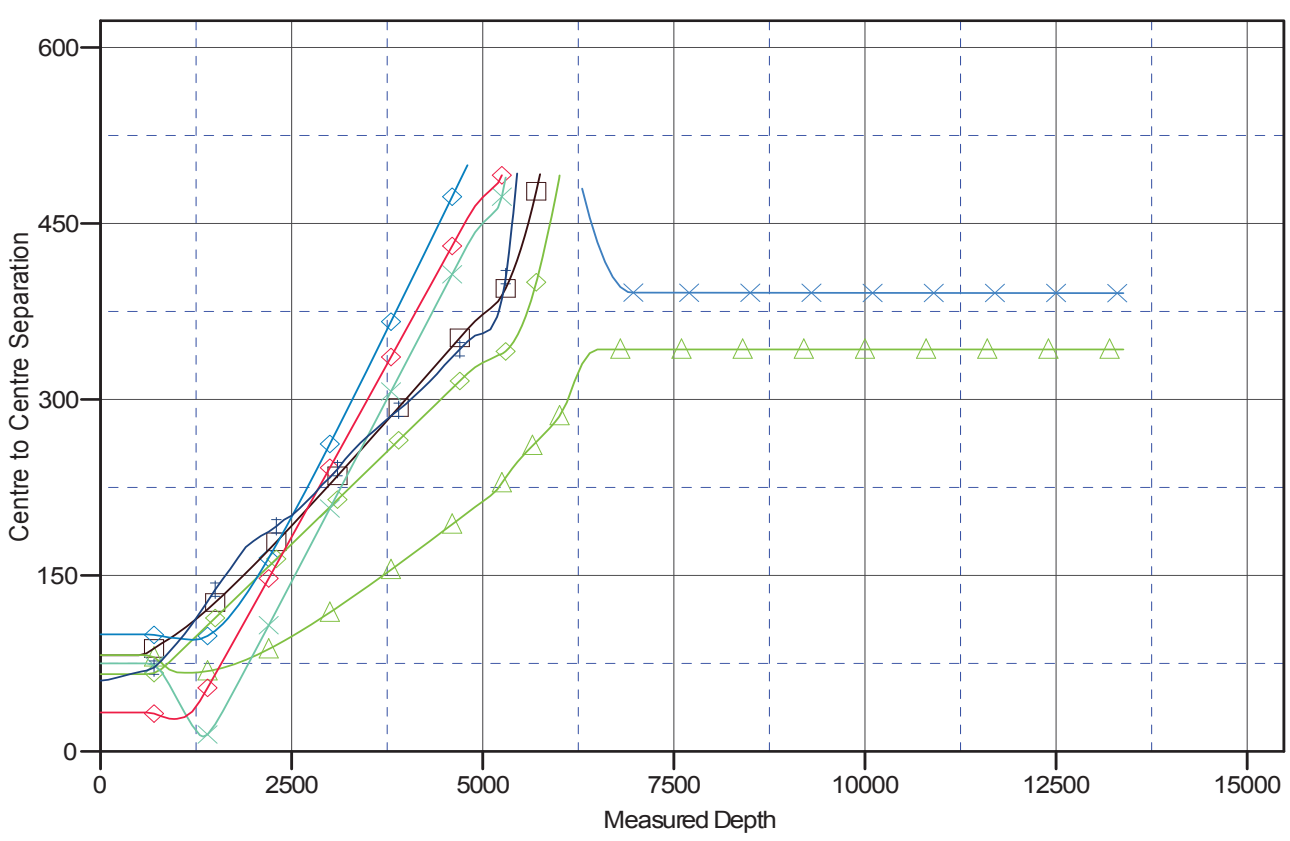
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,400.0	5,700.0	11,437.9	5,589.0	118.2	118.3	75.31	6,160.6	535.8	390.8	158.6	232.22	1.683	
11,500.0	5,700.0	11,537.9	5,589.0	120.1	120.1	75.31	6,260.6	535.8	390.8	154.9	235.91	1.657	
11,600.0	5,700.0	11,637.9	5,589.0	122.0	122.0	75.31	6,360.6	535.8	390.8	151.2	239.61	1.631	
11,700.0	5,700.0	11,737.9	5,589.0	123.9	123.9	75.31	6,460.6	535.8	390.8	147.5	243.30	1.606	
11,800.0	5,700.0	11,837.9	5,589.0	125.8	125.8	75.31	6,560.6	535.8	390.8	143.8	247.00	1.582	
11,900.0	5,700.0	11,937.9	5,589.0	127.7	127.7	75.31	6,660.6	535.8	390.8	140.1	250.70	1.559	
12,000.0	5,700.0	12,037.9	5,589.0	129.6	129.6	75.31	6,760.6	535.8	390.8	136.4	254.40	1.536	
12,100.0	5,700.0	12,137.9	5,589.0	131.6	131.4	75.31	6,860.6	535.8	390.8	132.7	258.10	1.514	
12,200.0	5,700.0	12,237.9	5,589.0	133.5	133.3	75.31	6,960.6	535.8	390.8	129.0	261.80	1.493	Level 3
12,300.0	5,700.0	12,337.9	5,589.0	135.4	135.2	75.31	7,060.6	535.8	390.8	125.3	265.50	1.472	Level 3
12,400.0	5,700.0	12,437.9	5,589.0	137.3	137.1	75.31	7,160.6	535.8	390.8	121.6	269.20	1.452	Level 3
12,500.0	5,700.0	12,537.9	5,589.0	139.2	139.0	75.31	7,260.6	535.8	390.8	117.9	272.91	1.432	Level 3
12,600.0	5,700.0	12,637.9	5,589.0	141.1	140.9	75.31	7,360.6	535.8	390.8	114.1	276.61	1.413	Level 3
12,700.0	5,700.0	12,737.9	5,589.0	143.0	142.8	75.31	7,460.6	535.8	390.8	110.4	280.32	1.394	Level 3
12,800.0	5,700.0	12,837.9	5,589.0	144.9	144.7	75.31	7,560.6	535.8	390.7	106.7	284.02	1.376	Level 3
12,900.0	5,700.0	12,937.9	5,589.0	146.8	146.6	75.31	7,660.6	535.8	390.7	103.0	287.73	1.358	Level 3
13,000.0	5,700.0	13,037.9	5,589.0	148.7	148.5	75.31	7,760.6	535.8	390.7	99.3	291.43	1.341	Level 3
13,100.0	5,700.0	13,137.9	5,589.0	150.6	150.3	75.31	7,860.6	535.8	390.7	95.6	295.14	1.324	Level 3
13,200.0	5,700.0	13,237.9	5,589.0	152.6	152.2	75.31	7,960.6	535.8	390.7	91.9	298.85	1.307	Level 3
13,300.0	5,700.0	13,337.9	5,589.0	154.5	154.1	75.31	8,060.6	535.8	390.7	88.2	302.55	1.291	Level 3
13,381.7	5,700.0	13,419.6	5,589.0	155.7	155.6	75.31	8,142.3	535.8	390.7	85.5	305.23	1.280	Level 3, CC, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26K-2308B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4754.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #26K-2308B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4754.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor #26K-2308B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.08°



LEGEND

- Razor #26K-2305A, HZ, Plan #1 V0
- Razor #26K-2306B, HZ, Plan #1 V0
- Razor #26K-2307A, HZ, Plan #1 V0
- Razor #26K-3505A, HZ, Plan #1 V0
- Razor #26K-3507A, HZ, Plan #1 V0
- Razor #26K-3508B, HZ, Plan #1 V0
- Razor 26-3524H (Existing), Existing, SURVEYs
- Razor Federal #26J-2309A, HZ, Plan #1 V0