WHITING PETROLEUM CORPORATION

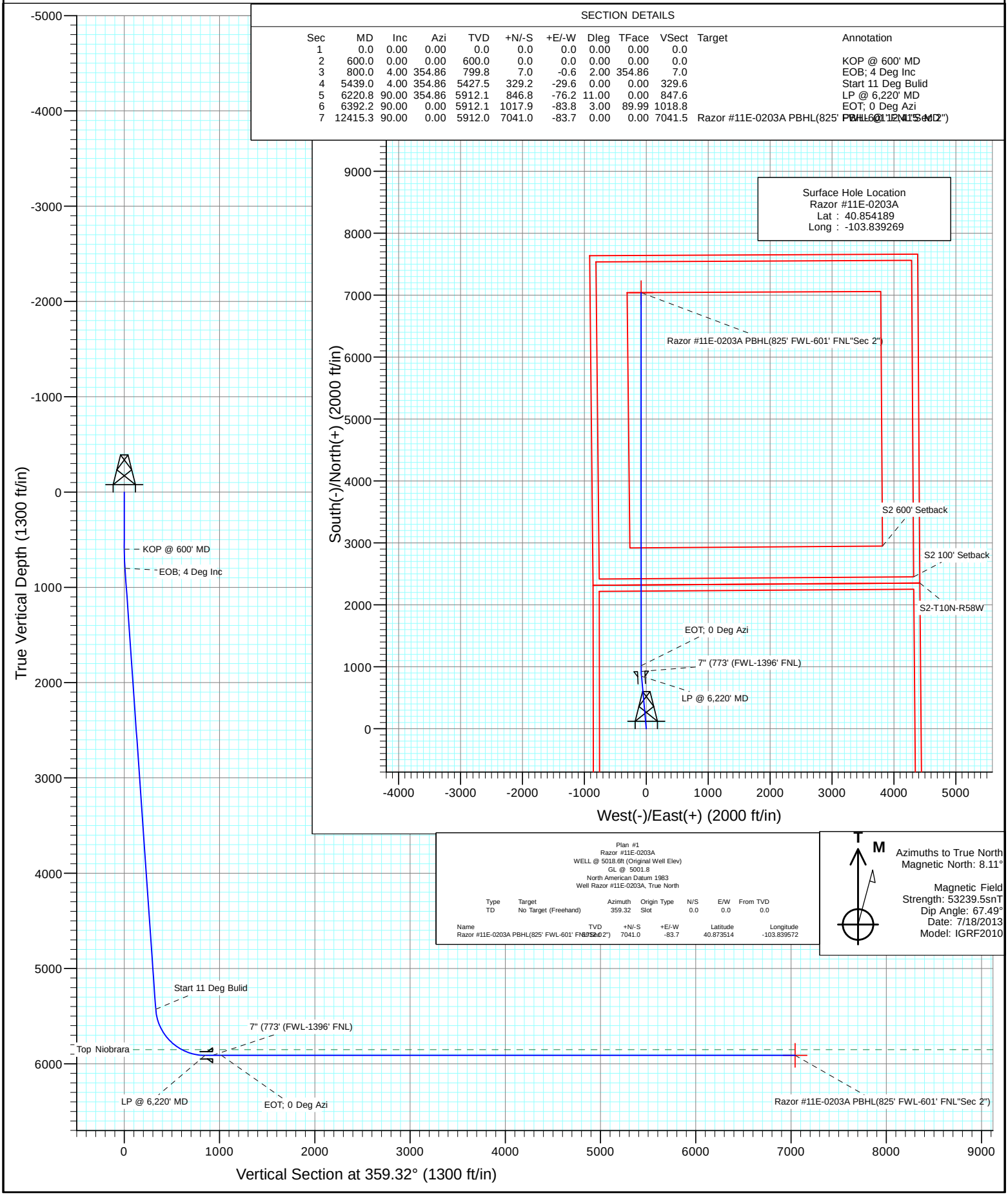
Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11E-0203A
Wellbore: HZ
Design: Plan #1

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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0		KOP @ 600' MD
3	800.0	4.00	354.86	799.8	7.0	-0.6	2.00	354.86	7.0		EOB; 4 Deg Inc
4	5439.0	4.00	354.86	5427.5	329.2	-29.6	0.00	0.00	329.6		Start 11 Deg Bulid
5	6220.8	90.00	354.86	5912.1	846.8	-76.2	11.00	0.00	847.6		LP @ 6,220' MD
6	6392.2	90.00	0.00	5912.1	1017.9	-83.8	3.00	89.99	1018.8		EOT; 0 Deg Azi
7	12415.3	90.00	0.00	5912.0	7041.0	-83.7	0.00	0.00	7041.5	Razor #11E-0203A PBHL(825' FWL-601' FNL"Sec 2")	

Surface Hole Location
Razor #11E-0203A
Lat : 40.854189
Long : -103.839269



Plan #1
Razor #11E-0203A
WELL @ 5018.6ft (Original Well Elev)
GL @ 5001.8
North American Datum 1983
Well Razor #11E-0203A, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
TD	No Target (Freehand)	359.32	Slot	0.0	0.0	0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Razor #11E-0203A PBHL(825' FWL-601' FNL"Sec 2")	5912.0	7041.0	-83.7	40.873514	-103.839572

T M

Azimuths to True North
Magnetic North: 8.11°

Magnetic Field
Strength: 53239.5snT
Dip Angle: 67.49°
Date: 7/18/2013
Model: IGRF2010

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-0203A	**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 #11E-0203A

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,558,335.12 ft	**Latitude:**	40.854189
	+E/-W	0.0 ft	**Easting:**	3,459,411.75 ft	**Longitude:**	-103.839269
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,001.8 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/18/2013	8.11	67.49	53,240

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	359.32

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	354.86	799.8	7.0	-0.6	2.00	2.00	0.00	354.86	
5,439.0	4.00	354.86	5,427.5	329.2	-29.6	0.00	0.00	0.00	0.00	
6,220.8	90.00	354.86	5,912.1	846.8	-76.2	11.00	11.00	0.00	0.00	
6,392.2	90.00	0.00	5,912.1	1,017.9	-83.8	3.00	0.00	3.00	89.99	
12,415.3	90.00	0.00	5,912.0	7,041.0	-83.7	0.00	0.00	0.00	0.00	Razor #11E-0203A PI

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-0203A	**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	354.86	700.0	1.7	-0.2	1.7	2.00	2.00	
800.0	4.00	354.86	799.8	7.0	-0.6	7.0	2.00	2.00	EOB; 4 Deg Inc
900.0	4.00	354.86	899.6	13.9	-1.3	13.9	0.00	0.00	
1,000.0	4.00	354.86	999.4	20.8	-1.9	20.9	0.00	0.00	
1,100.0	4.00	354.86	1,099.1	27.8	-2.5	27.8	0.00	0.00	
1,200.0	4.00	354.86	1,198.9	34.7	-3.1	34.8	0.00	0.00	
1,300.0	4.00	354.86	1,298.6	41.7	-3.7	41.7	0.00	0.00	
1,400.0	4.00	354.86	1,398.4	48.6	-4.4	48.7	0.00	0.00	
1,500.0	4.00	354.86	1,498.1	55.6	-5.0	55.6	0.00	0.00	
1,600.0	4.00	354.86	1,597.9	62.5	-5.6	62.6	0.00	0.00	
1,700.0	4.00	354.86	1,697.6	69.5	-6.2	69.5	0.00	0.00	
1,800.0	4.00	354.86	1,797.4	76.4	-6.9	76.5	0.00	0.00	
1,900.0	4.00	354.86	1,897.2	83.4	-7.5	83.5	0.00	0.00	
2,000.0	4.00	354.86	1,996.9	90.3	-8.1	90.4	0.00	0.00	
2,100.0	4.00	354.86	2,096.7	97.3	-8.7	97.4	0.00	0.00	
2,200.0	4.00	354.86	2,196.4	104.2	-9.4	104.3	0.00	0.00	
2,300.0	4.00	354.86	2,296.2	111.2	-10.0	111.3	0.00	0.00	
2,400.0	4.00	354.86	2,395.9	118.1	-10.6	118.2	0.00	0.00	
2,500.0	4.00	354.86	2,495.7	125.1	-11.2	125.2	0.00	0.00	
2,600.0	4.00	354.86	2,595.5	132.0	-11.9	132.1	0.00	0.00	
2,700.0	4.00	354.86	2,695.2	139.0	-12.5	139.1	0.00	0.00	
2,800.0	4.00	354.86	2,795.0	145.9	-13.1	146.0	0.00	0.00	
2,900.0	4.00	354.86	2,894.7	152.8	-13.7	153.0	0.00	0.00	
3,000.0	4.00	354.86	2,994.5	159.8	-14.4	160.0	0.00	0.00	
3,100.0	4.00	354.86	3,094.2	166.7	-15.0	166.9	0.00	0.00	
3,200.0	4.00	354.86	3,194.0	173.7	-15.6	173.9	0.00	0.00	
3,300.0	4.00	354.86	3,293.7	180.6	-16.2	180.8	0.00	0.00	
3,400.0	4.00	354.86	3,393.5	187.6	-16.9	187.8	0.00	0.00	
3,500.0	4.00	354.86	3,493.3	194.5	-17.5	194.7	0.00	0.00	
3,600.0	4.00	354.86	3,593.0	201.5	-18.1	201.7	0.00	0.00	
3,700.0	4.00	354.86	3,692.8	208.4	-18.7	208.6	0.00	0.00	
3,800.0	4.00	354.86	3,792.5	215.4	-19.4	215.6	0.00	0.00	
3,900.0	4.00	354.86	3,892.3	222.3	-20.0	222.5	0.00	0.00	
4,000.0	4.00	354.86	3,992.0	229.3	-20.6	229.5	0.00	0.00	
4,100.0	4.00	354.86	4,091.8	236.2	-21.2	236.5	0.00	0.00	
4,200.0	4.00	354.86	4,191.6	243.2	-21.9	243.4	0.00	0.00	
4,300.0	4.00	354.86	4,291.3	250.1	-22.5	250.4	0.00	0.00	
4,400.0	4.00	354.86	4,391.1	257.1	-23.1	257.3	0.00	0.00	
4,500.0	4.00	354.86	4,490.8	264.0	-23.7	264.3	0.00	0.00	
4,600.0	4.00	354.86	4,590.6	271.0	-24.4	271.2	0.00	0.00	
4,700.0	4.00	354.86	4,690.3	277.9	-25.0	278.2	0.00	0.00	
4,800.0	4.00	354.86	4,790.1	284.9	-25.6	285.1	0.00	0.00	
4,900.0	4.00	354.86	4,889.9	291.8	-26.2	292.1	0.00	0.00	
5,000.0	4.00	354.86	4,989.6	298.7	-26.9	299.0	0.00	0.00	
5,100.0	4.00	354.86	5,089.4	305.7	-27.5	306.0	0.00	0.00	

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Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-0203A	**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	354.86	5,189.1	312.6	-28.1	313.0	0.00	0.00	
5,300.0	4.00	354.86	5,288.9	319.6	-28.7	319.9	0.00	0.00	
5,400.0	4.00	354.86	5,388.6	326.5	-29.4	326.9	0.00	0.00	
5,439.0	4.00	354.86	5,427.5	329.2	-29.6	329.6	0.00	0.00	Start 11 Deg Bulid
5,450.0	5.21	354.86	5,438.5	330.1	-29.7	330.5	11.00	11.00	
5,500.0	10.71	354.86	5,488.0	337.0	-30.3	337.4	11.00	11.00	
5,550.0	16.21	354.86	5,536.6	348.6	-31.4	349.0	11.00	11.00	
5,600.0	21.71	354.86	5,583.9	364.8	-32.8	365.1	11.00	11.00	
5,650.0	27.21	354.86	5,629.4	385.4	-34.7	385.8	11.00	11.00	
5,700.0	32.71	354.86	5,672.7	410.3	-36.9	410.7	11.00	11.00	
5,750.0	38.21	354.86	5,713.4	439.1	-39.5	439.6	11.00	11.00	
5,800.0	43.71	354.86	5,751.1	471.8	-42.4	472.2	11.00	11.00	
5,850.0	49.21	354.86	5,785.6	507.8	-45.7	508.4	11.00	11.00	
5,900.0	54.71	354.86	5,816.4	547.1	-49.2	547.6	11.00	11.00	
5,950.0	60.21	354.86	5,843.2	589.0	-53.0	589.6	11.00	11.00	
5,968.2	62.21	354.86	5,852.0	604.9	-54.4	605.5	11.00	11.00	Top Niobrara
6,000.0	65.71	354.86	5,866.0	633.4	-57.0	634.0	11.00	11.00	
6,050.0	71.21	354.86	5,884.3	679.7	-61.1	680.3	11.00	11.00	
6,100.0	76.71	354.86	5,898.1	727.5	-65.4	728.2	11.00	11.00	
6,150.0	82.21	354.86	5,907.3	776.4	-69.8	777.2	11.00	11.00	
6,200.0	87.71	354.86	5,911.7	826.0	-74.3	826.9	11.00	11.00	
6,220.8	90.00	354.86	5,912.1	846.8	-76.2	847.6	11.00	11.00	LP @ 6,220' MD
6,300.0	90.00	357.24	5,912.1	925.7	-81.6	926.7	3.00	0.00	7" (773' (FWL-1396' FNL)
6,392.2	90.00	0.00	5,912.1	1,017.9	-83.8	1,018.8	3.00	0.00	EOT; 0 Deg Azi
6,400.0	90.00	0.00	5,912.1	1,025.7	-83.8	1,026.6	0.00	0.00	
6,500.0	90.00	0.00	5,912.1	1,125.7	-83.8	1,126.6	0.00	0.00	
6,600.0	90.00	0.00	5,912.1	1,225.7	-83.8	1,226.6	0.00	0.00	
6,700.0	90.00	0.00	5,912.1	1,325.7	-83.8	1,326.6	0.00	0.00	
6,800.0	90.00	0.00	5,912.1	1,425.7	-83.8	1,426.6	0.00	0.00	
6,900.0	90.00	0.00	5,912.1	1,525.7	-83.8	1,526.6	0.00	0.00	
7,000.0	90.00	0.00	5,912.1	1,625.7	-83.8	1,626.6	0.00	0.00	
7,100.0	90.00	0.00	5,912.1	1,725.7	-83.8	1,726.6	0.00	0.00	
7,200.0	90.00	0.00	5,912.1	1,825.7	-83.8	1,826.6	0.00	0.00	
7,300.0	90.00	0.00	5,912.1	1,925.7	-83.8	1,926.6	0.00	0.00	
7,400.0	90.00	0.00	5,912.1	2,025.7	-83.8	2,026.6	0.00	0.00	
7,500.0	90.00	0.00	5,912.1	2,125.7	-83.8	2,126.6	0.00	0.00	
7,600.0	90.00	0.00	5,912.1	2,225.7	-83.8	2,226.6	0.00	0.00	
7,700.0	90.00	0.00	5,912.1	2,325.7	-83.8	2,326.5	0.00	0.00	
7,800.0	90.00	0.00	5,912.1	2,425.7	-83.8	2,426.5	0.00	0.00	
7,900.0	90.00	0.00	5,912.1	2,525.7	-83.8	2,526.5	0.00	0.00	
8,000.0	90.00	0.00	5,912.1	2,625.7	-83.8	2,626.5	0.00	0.00	
8,100.0	90.00	0.00	5,912.1	2,725.7	-83.8	2,726.5	0.00	0.00	
8,200.0	90.00	0.00	5,912.1	2,825.7	-83.8	2,826.5	0.00	0.00	
8,300.0	90.00	0.00	5,912.1	2,925.7	-83.8	2,926.5	0.00	0.00	
8,400.0	90.00	0.00	5,912.1	3,025.7	-83.8	3,026.5	0.00	0.00	
8,500.0	90.00	0.00	5,912.0	3,125.7	-83.8	3,126.5	0.00	0.00	
8,600.0	90.00	0.00	5,912.0	3,225.7	-83.8	3,226.5	0.00	0.00	
8,700.0	90.00	0.00	5,912.0	3,325.7	-83.8	3,326.5	0.00	0.00	
8,800.0	90.00	0.00	5,912.0	3,425.7	-83.8	3,426.5	0.00	0.00	
8,900.0	90.00	0.00	5,912.0	3,525.7	-83.8	3,526.5	0.00	0.00	
9,000.0	90.00	0.00	5,912.0	3,625.7	-83.8	3,626.5	0.00	0.00	
9,100.0	90.00	0.00	5,912.0	3,725.7	-83.8	3,726.4	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-0203A	**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
9,200.0	90.00	0.00	5,912.0	3,825.7	-83.8	3,826.4	0.00	0.00	
9,300.0	90.00	0.00	5,912.0	3,925.7	-83.8	3,926.4	0.00	0.00	
9,400.0	90.00	0.00	5,912.0	4,025.7	-83.8	4,026.4	0.00	0.00	
9,500.0	90.00	0.00	5,912.0	4,125.7	-83.8	4,126.4	0.00	0.00	
9,600.0	90.00	0.00	5,912.0	4,225.7	-83.8	4,226.4	0.00	0.00	
9,700.0	90.00	0.00	5,912.0	4,325.7	-83.8	4,326.4	0.00	0.00	
9,800.0	90.00	0.00	5,912.0	4,425.7	-83.8	4,426.4	0.00	0.00	
9,900.0	90.00	0.00	5,912.0	4,525.7	-83.8	4,526.4	0.00	0.00	
10,000.0	90.00	0.00	5,912.0	4,625.7	-83.8	4,626.4	0.00	0.00	
10,100.0	90.00	0.00	5,912.0	4,725.7	-83.8	4,726.4	0.00	0.00	
10,200.0	90.00	0.00	5,912.0	4,825.7	-83.8	4,826.4	0.00	0.00	
10,300.0	90.00	0.00	5,912.0	4,925.7	-83.8	4,926.4	0.00	0.00	
10,400.0	90.00	0.00	5,912.0	5,025.7	-83.8	5,026.4	0.00	0.00	
10,500.0	90.00	0.00	5,912.0	5,125.7	-83.8	5,126.3	0.00	0.00	
10,600.0	90.00	0.00	5,912.0	5,225.7	-83.8	5,226.3	0.00	0.00	
10,700.0	90.00	0.00	5,912.0	5,325.7	-83.8	5,326.3	0.00	0.00	
10,800.0	90.00	0.00	5,912.0	5,425.7	-83.8	5,426.3	0.00	0.00	
10,900.0	90.00	0.00	5,912.0	5,525.7	-83.8	5,526.3	0.00	0.00	
11,000.0	90.00	0.00	5,912.0	5,625.7	-83.8	5,626.3	0.00	0.00	
11,100.0	90.00	0.00	5,912.0	5,725.7	-83.8	5,726.3	0.00	0.00	
11,200.0	90.00	0.00	5,912.0	5,825.7	-83.8	5,826.3	0.00	0.00	
11,300.0	90.00	0.00	5,912.0	5,925.7	-83.8	5,926.3	0.00	0.00	
11,400.0	90.00	0.00	5,912.0	6,025.7	-83.8	6,026.3	0.00	0.00	
11,500.0	90.00	0.00	5,912.0	6,125.7	-83.8	6,126.3	0.00	0.00	
11,600.0	90.00	0.00	5,912.0	6,225.7	-83.8	6,226.3	0.00	0.00	
11,700.0	90.00	0.00	5,912.0	6,325.7	-83.8	6,326.3	0.00	0.00	
11,800.0	90.00	0.00	5,912.0	6,425.7	-83.7	6,426.3	0.00	0.00	
11,900.0	90.00	0.00	5,912.0	6,525.7	-83.7	6,526.2	0.00	0.00	
12,000.0	90.00	0.00	5,912.0	6,625.7	-83.7	6,626.2	0.00	0.00	
12,100.0	90.00	0.00	5,912.0	6,725.7	-83.7	6,726.2	0.00	0.00	
12,200.0	90.00	0.00	5,912.0	6,825.7	-83.7	6,826.2	0.00	0.00	
12,300.0	90.00	0.00	5,912.0	6,925.7	-83.7	6,926.2	0.00	0.00	
12,400.0	90.00	0.00	5,912.0	7,025.7	-83.7	7,026.2	0.00	0.00	
12,415.3	90.00	0.00	5,912.0	7,041.0	-83.7	7,041.5	0.00	0.00	PBHL @ 12,415' 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 #11E-0203A PBH - plan hits target center - Point	0.00	0.00	5,912.0	7,041.0	-83.7	1,565,373.33	3,459,196.17	40.873514	-103.839572

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,300.0	5,912.1	7" (773' (FWL-1396' FNL)	7.000	7.500

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-0203A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,968.2	5,852.0	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	7.0	-0.6	EOB; 4 Deg Inc
5,439.0	5,427.5	329.2	-29.6	Start 11 Deg Bulid
6,220.8	5,912.1	846.8	-76.2	LP @ 6,220' MD
6,392.2	5,912.1	1,017.9	-83.8	EOT; 0 Deg Azi
12,415.3	5,912.0	7,041.0	-83.7	PBHL @ 12,415' MD

Whiting Petroleum Corporation

Weld County, CO
S11-T10N-R58W
Razor #11E-0203A
HZ
Plan #1

Anticollision Report

19 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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:	MD Interval 100.0ft	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,356.1ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 7/19/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,415.3	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

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
S11-T10N-R58W						
Razor #11E-0201A - HZ - Plan #1	799.4	799.3	65.7	62.4	19.732	CC
Razor #11E-0201A - HZ - Plan #1	800.0	799.8	65.7	62.4	19.716	ES
Razor #11E-0201A - HZ - Plan #1	12,416.2	12,579.3	659.9	391.1	2.455	SF
Razor #11E-0202B - HZ - Plan #1	710.8	710.7	32.9	30.0	11.230	CC, ES
Razor #11E-0202B - HZ - Plan #1	12,416.2	12,569.6	345.4	86.4	1.333	Level 3, SF
Razor #11E-0204B - HZ - Plan #1	466.7	466.7	33.1	31.2	18.013	CC
Razor #11E-0204B - HZ - Plan #1	600.0	599.7	33.5	31.1	13.771	ES
Razor #11E-0204B - HZ - Plan #1	12,416.2	12,518.8	344.7	85.9	1.332	Level 3, SF
Razor #11E-1401A - HZ - Plan #1	500.0	500.0	99.9	97.9	50.314	CC, ES
Razor #11E-1401A - HZ - Plan #1	5,400.0	5,350.7	723.4	699.2	29.868	SF
Razor #11E-1402B - HZ - Plan #1	566.7	566.7	81.9	79.6	35.828	CC
Razor #11E-1402B - HZ - Plan #1	600.0	600.0	81.9	79.4	33.623	ES
Razor #11E-1402B - HZ - Plan #1	800.0	793.6	94.8	91.5	28.966	SF
Razor #11E-1403A - HZ - Plan #1	600.0	600.0	74.9	72.5	30.766	CC, ES
Razor #11E-1403A - HZ - Plan #1	800.0	797.0	83.5	80.2	25.252	SF
Razor #11E-1404B - HZ - Plan #1	600.0	600.0	81.9	79.4	33.629	CC, ES
Razor #11E-1404B - HZ - Plan #1	900.0	896.4	96.9	93.1	25.795	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.12	1.0	-66.1	66.1				
100.0	100.0	100.0	100.0	0.1	0.1	-89.12	1.0	-66.1	66.1	65.9	0.19	353.376	
200.0	200.0	200.0	200.0	0.3	0.3	-89.12	1.0	-66.1	66.1	65.5	0.64	103.830	
300.0	300.0	300.0	300.0	0.5	0.5	-89.12	1.0	-66.1	66.1	65.0	1.09	60.855	
400.0	400.0	400.0	400.0	0.8	0.8	-89.12	1.0	-66.1	66.1	64.6	1.54	43.041	
500.0	500.0	500.0	500.0	1.0	1.0	-89.12	1.0	-66.1	66.1	64.1	1.99	33.295	
600.0	600.0	600.0	600.0	1.2	1.2	-89.12	1.0	-66.1	66.1	63.7	2.43	27.147	
700.0	700.0	700.0	700.0	1.4	1.4	-85.49	1.0	-66.1	65.9	63.1	2.88	22.867	
799.4	799.2	799.3	799.3	1.7	1.7	-90.00	1.0	-66.1	65.7	62.4	3.33	19.732	CC
800.0	799.8	799.8	799.8	1.7	1.7	-90.04	1.0	-66.1	65.7	62.4	3.33	19.716	ES
900.0	899.6	898.8	898.8	1.9	1.9	-94.65	2.5	-66.9	66.7	62.9	3.79	17.607	
1,000.0	999.4	998.0	997.8	2.1	2.1	-96.38	6.9	-69.5	69.1	64.8	4.25	16.269	
1,100.0	1,099.1	1,097.9	1,097.5	2.4	2.3	-96.63	13.0	-73.0	72.1	67.4	4.72	15.283	
1,200.0	1,198.9	1,197.9	1,197.2	2.6	2.6	-96.87	19.0	-76.5	75.1	69.9	5.19	14.456	
1,300.0	1,298.6	1,297.8	1,297.0	2.9	2.8	-97.08	25.0	-80.0	78.1	72.4	5.68	13.755	
1,400.0	1,398.4	1,397.8	1,396.7	3.1	3.1	-97.28	31.1	-83.5	81.1	74.9	6.16	13.154	
1,500.0	1,498.1	1,497.8	1,496.4	3.4	3.3	-97.47	37.1	-87.0	84.1	77.4	6.66	12.635	
1,600.0	1,597.9	1,597.7	1,596.1	3.6	3.5	-97.64	43.1	-90.5	87.1	80.0	7.15	12.183	
1,700.0	1,697.6	1,697.7	1,695.8	3.9	3.8	-97.80	49.1	-94.0	90.1	82.5	7.65	11.785	
1,800.0	1,797.4	1,797.6	1,795.5	4.1	4.0	-97.95	55.2	-97.5	93.1	85.0	8.14	11.434	
1,900.0	1,897.2	1,897.6	1,895.2	4.4	4.3	-98.09	61.2	-101.0	96.1	87.5	8.64	11.121	
2,000.0	1,996.9	1,997.5	1,994.9	4.6	4.5	-98.23	67.2	-104.5	99.1	90.0	9.14	10.841	
2,100.0	2,096.7	2,097.5	2,094.6	4.9	4.8	-98.35	73.3	-108.0	102.1	92.5	9.65	10.589	
2,200.0	2,196.4	2,197.4	2,194.4	5.1	5.0	-98.47	79.3	-111.5	105.2	95.0	10.15	10.361	
2,300.0	2,296.2	2,297.4	2,294.1	5.4	5.3	-98.58	85.3	-115.0	108.2	97.5	10.65	10.154	
2,400.0	2,395.9	2,397.3	2,393.8	5.6	5.6	-98.69	91.4	-118.5	111.2	100.0	11.16	9.965	
2,500.0	2,495.7	2,497.3	2,493.5	5.9	5.8	-98.79	97.4	-122.0	114.2	102.5	11.66	9.792	
2,600.0	2,595.5	2,597.3	2,593.2	6.2	6.1	-98.88	103.4	-125.5	117.2	105.0	12.17	9.632	
2,700.0	2,695.2	2,697.2	2,692.9	6.4	6.3	-98.97	109.5	-129.0	120.2	107.5	12.67	9.486	
2,800.0	2,795.0	2,797.2	2,792.6	6.7	6.6	-99.06	115.5	-132.5	123.2	110.1	13.18	9.350	
2,900.0	2,894.7	2,897.1	2,892.3	6.9	6.8	-99.14	121.5	-136.0	126.2	112.6	13.69	9.224	
3,000.0	2,994.5	2,997.1	2,992.0	7.2	7.1	-99.22	127.5	-139.5	129.3	115.1	14.19	9.107	
3,100.0	3,094.2	3,097.0	3,091.8	7.4	7.3	-99.29	133.6	-143.0	132.3	117.6	14.70	8.997	
3,200.0	3,194.0	3,197.0	3,191.5	7.7	7.6	-99.36	139.6	-146.5	135.3	120.1	15.21	8.895	
3,300.0	3,293.7	3,296.9	3,291.2	7.9	7.8	-99.43	145.6	-150.0	138.3	122.6	15.72	8.800	
3,400.0	3,393.5	3,396.9	3,390.9	8.2	8.1	-99.49	151.7	-153.5	141.3	125.1	16.22	8.710	
3,500.0	3,493.3	3,496.8	3,490.6	8.4	8.4	-99.56	157.7	-157.0	144.3	127.6	16.73	8.625	
3,600.0	3,593.0	3,596.8	3,590.3	8.7	8.6	-99.62	163.7	-160.5	147.3	130.1	17.24	8.546	
3,700.0	3,692.8	3,696.8	3,690.0	9.0	8.9	-99.67	169.8	-164.0	150.4	132.6	17.75	8.471	
3,800.0	3,792.5	3,796.7	3,789.7	9.2	9.1	-99.73	175.8	-167.5	153.4	135.1	18.26	8.400	
3,900.0	3,892.3	3,896.7	3,889.4	9.5	9.4	-99.78	181.8	-171.0	156.4	137.6	18.77	8.333	
4,000.0	3,992.0	3,996.6	3,989.2	9.7	9.6	-99.83	187.8	-174.5	159.4	140.1	19.28	8.269	
4,100.0	4,091.8	4,096.6	4,088.9	10.0	9.9	-99.88	193.9	-178.0	162.4	142.6	19.79	8.209	
4,200.0	4,191.6	4,196.5	4,188.6	10.2	10.2	-99.93	199.9	-181.5	165.4	145.1	20.29	8.151	
4,300.0	4,291.3	4,296.5	4,288.3	10.5	10.4	-99.97	205.9	-185.0	168.4	147.6	20.80	8.097	
4,400.0	4,391.1	4,396.4	4,388.0	10.8	10.7	-100.02	212.0	-188.5	171.5	150.1	21.31	8.045	
4,500.0	4,490.8	4,496.4	4,487.7	11.0	10.9	-100.06	218.0	-192.0	174.5	152.7	21.82	7.995	
4,600.0	4,590.6	4,596.3	4,587.4	11.3	11.2	-100.10	224.0	-195.5	177.5	155.2	22.33	7.948	
4,700.0	4,690.3	4,696.3	4,687.1	11.5	11.4	-100.14	230.1	-199.0	180.5	157.7	22.84	7.902	
4,800.0	4,790.1	4,796.3	4,786.8	11.8	11.7	-100.18	236.1	-202.5	183.5	160.2	23.35	7.859	
4,900.0	4,889.9	4,896.2	4,886.6	12.0	11.9	-100.21	242.1	-206.0	186.5	162.7	23.86	7.818	
5,000.0	4,989.6	4,996.2	4,986.3	12.3	12.2	-100.25	248.2	-209.5	189.6	165.2	24.37	7.778	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0201A - 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	5,089.4	5,096.1	5,086.0	12.5	12.5	-100.29	254.2	-213.0	192.6	167.7	24.88	7.740	
5,200.0	5,189.1	5,196.1	5,185.7	12.8	12.7	-100.32	260.2	-216.5	195.6	170.2	25.39	7.703	
5,300.0	5,288.9	5,296.0	5,285.4	13.1	13.0	-100.35	266.2	-220.0	198.6	172.7	25.90	7.668	
5,400.0	5,388.6	5,396.0	5,385.1	13.3	13.2	-100.38	272.3	-223.5	201.6	175.2	26.41	7.634	
5,500.0	5,488.0	5,490.7	5,479.3	13.6	13.5	-100.24	280.3	-228.2	206.0	179.1	26.94	7.646	
5,600.0	5,583.9	5,581.1	5,566.7	14.0	13.9	-99.69	300.2	-239.7	217.4	189.8	27.68	7.854	
5,700.0	5,672.7	5,670.5	5,647.8	14.6	14.4	-98.76	332.4	-258.4	236.1	207.4	28.69	8.231	
5,800.0	5,751.1	5,758.6	5,720.4	15.4	15.0	-97.45	375.4	-283.4	261.3	231.3	29.99	8.714	
5,900.0	5,816.4	5,845.5	5,782.7	16.4	15.8	-95.75	427.6	-313.7	292.1	260.5	31.62	9.238	
6,000.0	5,866.0	5,931.4	5,833.7	17.5	16.7	-93.72	487.3	-348.3	327.5	293.9	33.59	9.749	
6,100.0	5,898.1	6,017.1	5,872.6	18.8	17.8	-91.44	553.2	-386.6	366.3	330.4	35.86	10.213	
6,200.0	5,911.7	6,103.3	5,898.6	20.3	19.0	-89.02	624.3	-427.8	407.2	368.9	38.37	10.612	
6,300.0	5,912.1	6,191.3	5,910.8	21.7	20.4	-89.81	699.6	-471.5	450.7	409.9	40.79	11.049	
6,400.0	5,912.1	6,299.6	5,911.6	23.1	22.2	-89.93	794.1	-524.4	497.8	454.4	43.32	11.491	
6,500.0	5,912.1	6,423.3	5,911.6	24.7	24.1	-89.94	905.3	-578.4	541.4	494.8	46.60	11.619	
6,600.0	5,912.1	6,554.4	5,911.6	26.3	26.2	-89.95	1,026.8	-627.6	579.0	528.8	50.17	11.541	
6,700.0	5,912.1	6,692.5	5,911.6	28.0	28.5	-89.95	1,158.1	-670.3	610.0	556.0	54.00	11.296	
6,800.0	5,912.1	6,836.6	5,911.6	29.7	30.9	-89.95	1,298.0	-704.7	633.8	575.8	58.05	10.919	
6,900.0	5,912.1	6,985.2	5,911.6	31.4	33.4	-89.96	1,444.6	-728.9	650.2	587.9	62.25	10.444	
7,000.0	5,912.1	7,136.8	5,911.6	33.2	35.8	-89.96	1,595.6	-741.9	658.7	592.2	66.56	9.897	
7,100.0	5,912.1	7,267.0	5,911.6	34.9	37.9	-89.96	1,725.7	-743.8	660.0	589.5	70.51	9.360	
7,200.0	5,912.1	7,367.0	5,911.6	36.7	39.4	-89.96	1,825.7	-743.8	660.0	586.0	73.97	8.922	
7,300.0	5,912.1	7,467.0	5,911.6	38.5	41.1	-89.96	1,925.7	-743.8	660.0	582.5	77.47	8.520	
7,400.0	5,912.1	7,567.0	5,911.6	40.3	42.7	-89.96	2,025.7	-743.8	660.0	579.0	80.99	8.149	
7,500.0	5,912.1	7,667.0	5,911.6	42.1	44.3	-89.96	2,125.7	-743.8	660.0	575.5	84.54	7.807	
7,600.0	5,912.1	7,767.0	5,911.6	43.9	46.0	-89.96	2,225.7	-743.8	660.0	571.9	88.12	7.490	
7,700.0	5,912.1	7,867.0	5,911.7	45.8	47.7	-89.96	2,325.7	-743.8	660.0	568.3	91.72	7.196	
7,800.0	5,912.1	7,967.0	5,911.7	47.6	49.4	-89.96	2,425.7	-743.8	660.0	564.7	95.33	6.923	
7,900.0	5,912.1	8,067.0	5,911.7	49.5	51.2	-89.97	2,525.7	-743.8	660.0	561.0	98.97	6.669	
8,000.0	5,912.1	8,167.0	5,911.7	51.3	52.9	-89.97	2,625.7	-743.8	660.0	557.4	102.62	6.432	
8,100.0	5,912.1	8,267.0	5,911.7	53.2	54.6	-89.97	2,725.7	-743.8	660.0	553.7	106.28	6.210	
8,200.0	5,912.1	8,367.0	5,911.7	55.0	56.4	-89.97	2,825.7	-743.8	660.0	550.0	109.95	6.002	
8,300.0	5,912.1	8,467.0	5,911.7	56.9	58.2	-89.97	2,925.7	-743.8	660.0	546.4	113.64	5.808	
8,400.0	5,912.1	8,567.0	5,911.7	58.8	60.0	-89.97	3,025.7	-743.8	660.0	542.7	117.34	5.625	
8,500.0	5,912.0	8,667.0	5,911.7	60.7	61.8	-89.97	3,125.7	-743.8	660.0	538.9	121.04	5.453	
8,600.0	5,912.0	8,767.0	5,911.7	62.5	63.6	-89.97	3,225.7	-743.8	660.0	535.2	124.76	5.290	
8,700.0	5,912.0	8,867.0	5,911.7	64.4	65.4	-89.97	3,325.7	-743.8	660.0	531.5	128.48	5.137	
8,800.0	5,912.0	8,967.0	5,911.7	66.3	67.2	-89.97	3,425.7	-743.8	660.0	527.8	132.21	4.992	
8,900.0	5,912.0	9,067.0	5,911.7	68.2	69.0	-89.97	3,525.7	-743.8	660.0	524.0	135.94	4.855	
9,000.0	5,912.0	9,167.0	5,911.7	70.1	70.8	-89.97	3,625.7	-743.8	660.0	520.3	139.68	4.725	
9,100.0	5,912.0	9,267.0	5,911.8	71.9	72.6	-89.97	3,725.7	-743.8	660.0	516.5	143.43	4.601	
9,200.0	5,912.0	9,367.0	5,911.8	73.8	74.5	-89.98	3,825.7	-743.8	660.0	512.8	147.18	4.484	
9,300.0	5,912.0	9,467.0	5,911.8	75.7	76.3	-89.98	3,925.7	-743.8	660.0	509.0	150.94	4.373	
9,400.0	5,912.0	9,567.0	5,911.8	77.6	78.1	-89.98	4,025.7	-743.8	660.0	505.3	154.70	4.266	
9,500.0	5,912.0	9,667.0	5,911.8	79.5	80.0	-89.98	4,125.7	-743.8	660.0	501.5	158.46	4.165	
9,600.0	5,912.0	9,767.0	5,911.8	81.4	81.8	-89.98	4,225.7	-743.8	660.0	497.7	162.23	4.068	
9,700.0	5,912.0	9,867.0	5,911.8	83.3	83.7	-89.98	4,325.7	-743.8	660.0	494.0	166.00	3.976	
9,800.0	5,912.0	9,967.0	5,911.8	85.2	85.5	-89.98	4,425.7	-743.7	660.0	490.2	169.77	3.887	
9,900.0	5,912.0	10,067.0	5,911.8	87.1	87.4	-89.98	4,525.7	-743.7	660.0	486.4	173.55	3.803	
10,000.0	5,912.0	10,167.0	5,911.8	89.0	89.3	-89.98	4,625.7	-743.7	660.0	482.6	177.33	3.722	
10,100.0	5,912.0	10,267.0	5,911.8	90.9	91.1	-89.98	4,725.7	-743.7	660.0	478.8	181.11	3.644	
10,200.0	5,912.0	10,367.0	5,911.8	92.8	93.0	-89.98	4,825.7	-743.7	660.0	475.1	184.90	3.569	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0201A - 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
10,300.0	5,912.0	10,467.0	5,911.8	94.7	94.9	-89.98	4,925.7	-743.7	660.0	471.3	188.69	3.498	
10,400.0	5,912.0	10,567.0	5,911.9	96.6	96.7	-89.98	5,025.7	-743.7	660.0	467.5	192.48	3.429	
10,500.0	5,912.0	10,667.0	5,911.9	98.5	98.6	-89.98	5,125.7	-743.7	660.0	463.7	196.27	3.362	
10,600.0	5,912.0	10,767.0	5,911.9	100.4	100.5	-89.99	5,225.7	-743.7	659.9	459.9	200.06	3.299	
10,700.0	5,912.0	10,867.0	5,911.9	102.3	102.3	-89.99	5,325.7	-743.7	659.9	456.1	203.86	3.237	
10,800.0	5,912.0	10,967.0	5,911.9	104.2	104.2	-89.99	5,425.7	-743.7	659.9	452.3	207.66	3.178	
10,900.0	5,912.0	11,067.0	5,911.9	106.1	106.1	-89.99	5,525.7	-743.7	659.9	448.5	211.46	3.121	
11,000.0	5,912.0	11,167.0	5,911.9	108.0	108.0	-89.99	5,625.7	-743.7	659.9	444.7	215.26	3.066	
11,100.0	5,912.0	11,267.0	5,911.9	109.9	109.9	-89.99	5,725.7	-743.7	659.9	440.9	219.06	3.013	
11,200.0	5,912.0	11,367.0	5,911.9	111.8	111.7	-89.99	5,825.7	-743.7	659.9	437.1	222.86	2.961	
11,300.0	5,912.0	11,467.0	5,911.9	113.8	113.6	-89.99	5,925.7	-743.7	659.9	433.3	226.67	2.911	
11,400.0	5,912.0	11,567.0	5,911.9	115.7	115.5	-89.99	6,025.7	-743.7	659.9	429.5	230.48	2.863	
11,500.0	5,912.0	11,667.0	5,911.9	117.6	117.4	-89.99	6,125.7	-743.7	659.9	425.7	234.28	2.817	
11,600.0	5,912.0	11,767.0	5,911.9	119.5	119.3	-89.99	6,225.7	-743.7	659.9	421.8	238.09	2.772	
11,700.0	5,912.0	11,867.0	5,911.9	121.4	121.2	-89.99	6,325.7	-743.7	659.9	418.0	241.90	2.728	
11,800.0	5,912.0	11,967.0	5,912.0	123.3	123.1	-89.99	6,425.7	-743.7	659.9	414.2	245.71	2.686	
11,900.0	5,912.0	12,067.0	5,912.0	125.2	125.0	-90.00	6,525.7	-743.7	659.9	410.4	249.52	2.645	
12,000.0	5,912.0	12,167.0	5,912.0	127.1	126.9	-90.00	6,625.7	-743.7	659.9	406.6	253.34	2.605	
12,100.0	5,912.0	12,267.0	5,912.0	129.0	128.7	-90.00	6,725.7	-743.7	659.9	402.8	257.15	2.566	
12,200.0	5,912.0	12,367.0	5,912.0	130.9	130.6	-90.00	6,825.7	-743.7	659.9	399.0	260.97	2.529	
12,300.0	5,912.0	12,467.0	5,912.0	132.9	132.5	-90.00	6,925.7	-743.7	659.9	395.1	264.78	2.492	
12,400.0	5,912.0	12,567.0	5,912.0	134.8	134.2	-90.00	7,025.7	-743.7	659.9	391.5	268.37	2.459	
12,412.3	5,912.0	12,579.3	5,912.0	135.0	134.4	-90.00	7,038.0	-743.7	659.9	391.1	268.79	2.455	
12,416.2	5,912.0	12,579.3	5,912.0	135.1	134.4	-90.00	7,038.0	-743.7	659.9	391.1	268.86	2.455	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-33.0	33.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-33.0	33.0	32.9	0.19	176.667	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-33.0	33.0	32.4	0.64	51.909	
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-33.0	33.0	32.0	1.09	30.424	
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-33.0	33.0	31.5	1.54	21.518	
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-33.0	33.0	31.1	1.99	16.645	
600.0	600.0	600.0	600.0	1.2	1.2	-89.99	0.0	-33.0	33.0	30.6	2.43	13.572	
700.0	700.0	700.0	700.0	1.4	1.4	-87.88	0.0	-33.0	32.9	30.0	2.88	11.422	
710.8	710.7	710.7	710.7	1.5	1.5	-88.53	0.0	-33.1	32.9	30.0	2.93	11.230	CC, ES
800.0	799.8	799.7	799.6	1.7	1.7	-93.97	1.6	-33.6	33.4	30.1	3.33	10.027	
900.0	899.6	899.5	899.3	1.9	1.9	-96.96	6.6	-35.3	34.8	31.0	3.79	9.195	
1,000.0	999.4	999.5	999.1	2.1	2.1	-96.96	13.2	-37.6	36.5	32.3	4.26	8.577	
1,100.0	1,099.1	1,099.4	1,098.8	2.4	2.4	-96.96	19.8	-39.9	38.2	33.5	4.74	8.067	
1,200.0	1,198.9	1,199.4	1,198.5	2.6	2.6	-96.95	26.3	-42.1	39.9	34.7	5.22	7.641	
1,300.0	1,298.6	1,299.4	1,298.3	2.9	2.8	-96.95	32.9	-44.4	41.6	35.9	5.71	7.281	
1,400.0	1,398.4	1,399.4	1,398.0	3.1	3.1	-96.95	39.5	-46.7	43.3	37.1	6.20	6.974	
1,500.0	1,498.1	1,499.4	1,497.8	3.4	3.3	-96.95	46.1	-48.9	45.0	38.3	6.70	6.709	
1,600.0	1,597.9	1,599.4	1,597.5	3.6	3.6	-96.95	52.7	-51.2	46.6	39.4	7.20	6.478	
1,700.0	1,697.6	1,699.4	1,697.3	3.9	3.8	-96.95	59.3	-53.5	48.3	40.6	7.70	6.276	
1,800.0	1,797.4	1,799.3	1,797.0	4.1	4.1	-96.95	65.9	-55.8	50.0	41.8	8.20	6.098	
1,900.0	1,897.2	1,899.3	1,896.7	4.4	4.3	-96.95	72.5	-58.0	51.7	43.0	8.70	5.939	
2,000.0	1,996.9	1,999.3	1,996.5	4.6	4.6	-96.95	79.1	-60.3	53.4	44.2	9.21	5.797	
2,100.0	2,096.7	2,099.3	2,096.2	4.9	4.8	-96.95	85.7	-62.6	55.1	45.4	9.71	5.669	
2,200.0	2,196.4	2,199.3	2,196.0	5.1	5.1	-96.95	92.3	-64.9	56.8	46.5	10.22	5.553	
2,300.0	2,296.2	2,299.3	2,295.7	5.4	5.3	-96.94	98.9	-67.1	58.4	47.7	10.73	5.448	
2,400.0	2,395.9	2,399.3	2,395.4	5.6	5.6	-96.94	105.5	-69.4	60.1	48.9	11.23	5.352	
2,500.0	2,495.7	2,499.2	2,495.2	5.9	5.9	-96.94	112.1	-71.7	61.8	50.1	11.74	5.264	
2,600.0	2,595.5	2,599.2	2,594.9	6.2	6.1	-96.94	118.7	-73.9	63.5	51.2	12.25	5.184	
2,700.0	2,695.2	2,699.2	2,694.7	6.4	6.4	-96.94	125.3	-76.2	65.2	52.4	12.76	5.109	
2,800.0	2,795.0	2,799.2	2,794.4	6.7	6.6	-96.94	131.9	-78.5	66.9	53.6	13.27	5.040	
2,900.0	2,894.7	2,899.2	2,894.2	6.9	6.9	-96.94	138.4	-80.8	68.6	54.8	13.77	4.977	
3,000.0	2,994.5	2,999.2	2,993.9	7.2	7.1	-96.94	145.0	-83.0	70.2	56.0	14.28	4.917	
3,100.0	3,094.2	3,099.2	3,093.6	7.4	7.4	-96.94	151.6	-85.3	71.9	57.1	14.79	4.862	
3,200.0	3,194.0	3,199.1	3,193.4	7.7	7.6	-96.94	158.2	-87.6	73.6	58.3	15.30	4.810	
3,300.0	3,293.7	3,299.1	3,293.1	7.9	7.9	-96.94	164.8	-89.9	75.3	59.5	15.81	4.761	
3,400.0	3,393.5	3,399.1	3,392.9	8.2	8.2	-96.94	171.4	-92.1	77.0	60.7	16.32	4.716	
3,500.0	3,493.3	3,499.1	3,492.6	8.4	8.4	-96.94	178.0	-94.4	78.7	61.8	16.83	4.673	
3,600.0	3,593.0	3,599.1	3,592.4	8.7	8.7	-96.94	184.6	-96.7	80.4	63.0	17.34	4.633	
3,700.0	3,692.8	3,699.1	3,692.1	9.0	8.9	-96.94	191.2	-99.0	82.0	64.2	17.85	4.595	
3,800.0	3,792.5	3,799.1	3,791.8	9.2	9.2	-96.94	197.8	-101.2	83.7	65.4	18.36	4.559	
3,900.0	3,892.3	3,899.0	3,891.6	9.5	9.4	-96.94	204.4	-103.5	85.4	66.5	18.88	4.525	
4,000.0	3,992.0	3,999.0	3,991.3	9.7	9.7	-96.94	211.0	-105.8	87.1	67.7	19.39	4.492	
4,100.0	4,091.8	4,099.0	4,091.1	10.0	9.9	-96.94	217.6	-108.0	88.8	68.9	19.90	4.462	
4,200.0	4,191.6	4,199.0	4,190.8	10.2	10.2	-96.94	224.2	-110.3	90.5	70.1	20.41	4.433	
4,300.0	4,291.3	4,299.0	4,290.5	10.5	10.5	-96.94	230.8	-112.6	92.1	71.2	20.92	4.405	
4,400.0	4,391.1	4,399.0	4,390.3	10.8	10.7	-96.94	237.4	-114.9	93.8	72.4	21.43	4.379	
4,500.0	4,490.8	4,499.0	4,490.0	11.0	11.0	-96.94	243.9	-117.1	95.5	73.6	21.94	4.353	
4,600.0	4,590.6	4,598.9	4,589.8	11.3	11.2	-96.94	250.5	-119.4	97.2	74.8	22.45	4.329	
4,700.0	4,690.3	4,698.9	4,689.5	11.5	11.5	-96.94	257.1	-121.7	98.9	75.9	22.96	4.306	
4,800.0	4,790.1	4,798.9	4,789.3	11.8	11.7	-96.94	263.7	-124.0	100.6	77.1	23.48	4.284	
4,900.0	4,889.9	4,898.9	4,889.0	12.0	12.0	-96.94	270.3	-126.2	102.3	78.3	23.99	4.263	
5,000.0	4,989.6	4,998.9	4,988.7	12.3	12.2	-96.94	276.9	-128.5	103.9	79.5	24.50	4.243	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0202B - 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	5,089.4	5,098.9	5,088.5	12.5	12.5	-96.93	283.5	-130.8	105.6	80.6	25.01	4.224	
5,200.0	5,189.1	5,198.9	5,188.2	12.8	12.8	-96.93	290.1	-133.0	107.3	81.8	25.52	4.205	
5,300.0	5,288.9	5,298.8	5,288.0	13.1	13.0	-96.93	296.7	-135.3	109.0	83.0	26.03	4.187	
5,400.0	5,388.6	5,398.8	5,387.7	13.3	13.3	-96.93	303.3	-137.6	110.7	84.1	26.55	4.170	
5,500.0	5,488.0	5,498.7	5,487.3	13.6	13.5	-98.56	309.9	-139.9	112.9	85.8	27.08	4.168	
5,600.0	5,583.9	5,597.1	5,585.2	14.0	13.8	-106.33	319.3	-143.1	119.3	91.7	27.64	4.316	
5,700.0	5,672.7	5,698.0	5,682.0	14.6	14.2	-112.87	345.3	-152.1	132.6	104.4	28.16	4.707	
5,800.0	5,751.1	5,802.2	5,774.7	15.4	14.9	-116.92	390.1	-167.5	151.2	122.5	28.72	5.266	
5,900.0	5,816.4	5,909.8	5,858.5	16.4	15.7	-118.63	453.7	-189.4	173.6	144.1	29.57	5.871	
6,000.0	5,866.0	6,020.9	5,928.5	17.5	16.8	-118.47	534.9	-217.4	198.4	167.3	31.05	6.389	
6,100.0	5,898.1	6,135.3	5,980.0	18.8	18.2	-116.90	631.2	-250.6	224.2	190.9	33.34	6.725	
6,200.0	5,911.7	6,252.9	6,008.5	20.3	19.9	-114.30	738.8	-287.7	250.1	213.7	36.42	6.867	
6,300.0	5,912.1	6,368.9	6,013.1	21.7	21.7	-112.26	848.5	-324.9	274.5	234.9	39.61	6.931	
6,400.0	5,912.1	6,481.5	6,013.1	23.1	23.3	-110.37	956.7	-355.8	298.2	255.6	42.63	6.995	
6,500.0	5,912.1	6,596.7	6,013.1	24.7	25.0	-108.79	1,069.2	-380.7	318.6	272.5	46.15	6.904	
6,600.0	5,912.1	6,714.6	6,013.1	26.3	26.8	-107.76	1,185.7	-399.2	333.5	283.8	49.72	6.709	
6,700.0	5,912.1	6,834.4	6,013.1	28.0	28.7	-107.18	1,304.9	-410.5	342.6	289.3	53.30	6.428	
6,800.0	5,912.1	6,955.2	6,013.1	29.7	30.6	-106.99	1,425.6	-414.4	345.7	288.8	56.85	6.080	
6,900.0	5,912.1	7,055.3	6,013.1	31.4	32.2	-106.99	1,525.7	-414.4	345.6	285.5	60.12	5.749	
7,000.0	5,912.1	7,155.3	6,013.1	33.2	33.9	-106.99	1,625.7	-414.4	345.6	282.2	63.44	5.449	
7,100.0	5,912.1	7,255.3	6,013.1	34.9	35.6	-106.99	1,725.7	-414.4	345.6	278.8	66.79	5.175	
7,200.0	5,912.1	7,355.3	6,013.1	36.7	37.3	-106.99	1,825.7	-414.4	345.6	275.5	70.18	4.925	
7,300.0	5,912.1	7,455.3	6,013.1	38.5	39.0	-106.99	1,925.7	-414.4	345.6	272.0	73.60	4.696	
7,400.0	5,912.1	7,555.3	6,013.1	40.3	40.7	-106.99	2,025.7	-414.4	345.6	268.6	77.05	4.486	
7,500.0	5,912.1	7,655.3	6,013.1	42.1	42.5	-106.99	2,125.7	-414.4	345.6	265.1	80.52	4.292	
7,600.0	5,912.1	7,755.3	6,013.1	43.9	44.3	-106.99	2,225.7	-414.4	345.6	261.6	84.01	4.114	
7,700.0	5,912.1	7,855.3	6,013.1	45.8	46.1	-106.99	2,325.7	-414.4	345.6	258.1	87.52	3.949	
7,800.0	5,912.1	7,955.3	6,013.1	47.6	47.9	-106.99	2,425.7	-414.3	345.6	254.6	91.04	3.796	
7,900.0	5,912.1	8,055.3	6,013.1	49.5	49.7	-106.99	2,525.7	-414.3	345.6	251.0	94.58	3.654	
8,000.0	5,912.1	8,155.3	6,013.1	51.3	51.5	-106.99	2,625.7	-414.3	345.6	247.5	98.12	3.522	
8,100.0	5,912.1	8,255.3	6,013.1	53.2	53.3	-106.99	2,725.7	-414.3	345.6	243.9	101.68	3.399	
8,200.0	5,912.1	8,355.3	6,013.1	55.0	55.1	-106.99	2,825.7	-414.3	345.6	240.3	105.25	3.284	
8,300.0	5,912.1	8,455.3	6,013.1	56.9	57.0	-106.99	2,925.7	-414.3	345.6	236.8	108.83	3.176	
8,400.0	5,912.1	8,555.3	6,013.1	58.8	58.8	-106.99	3,025.7	-414.3	345.6	233.2	112.41	3.074	
8,500.0	5,912.0	8,655.3	6,013.1	60.7	60.6	-106.99	3,125.7	-414.3	345.6	229.6	116.01	2.979	
8,600.0	5,912.0	8,755.3	6,013.1	62.5	62.5	-106.99	3,225.7	-414.3	345.6	226.0	119.61	2.889	
8,700.0	5,912.0	8,855.3	6,013.1	64.4	64.3	-106.99	3,325.7	-414.3	345.6	222.4	123.21	2.805	
8,800.0	5,912.0	8,955.3	6,013.1	66.3	66.2	-106.99	3,425.7	-414.3	345.6	218.8	126.82	2.725	
8,900.0	5,912.0	9,055.3	6,013.1	68.2	68.1	-106.99	3,525.7	-414.3	345.6	215.1	130.44	2.649	
9,000.0	5,912.0	9,155.3	6,013.1	70.1	69.9	-106.99	3,625.7	-414.3	345.6	211.5	134.06	2.578	
9,100.0	5,912.0	9,255.3	6,013.1	71.9	71.8	-106.99	3,725.7	-414.3	345.6	207.9	137.68	2.510	
9,200.0	5,912.0	9,355.3	6,013.1	73.8	73.7	-106.99	3,825.7	-414.3	345.6	204.2	141.31	2.445	
9,300.0	5,912.0	9,455.3	6,013.0	75.7	75.5	-106.99	3,925.7	-414.3	345.6	200.6	144.95	2.384	
9,400.0	5,912.0	9,555.3	6,013.0	77.6	77.4	-106.99	4,025.7	-414.3	345.6	197.0	148.58	2.326	
9,500.0	5,912.0	9,655.3	6,013.0	79.5	79.3	-107.00	4,125.7	-414.2	345.5	193.3	152.22	2.270	
9,600.0	5,912.0	9,755.3	6,013.0	81.4	81.2	-107.00	4,225.7	-414.2	345.5	189.7	155.86	2.217	
9,700.0	5,912.0	9,855.3	6,013.0	83.3	83.0	-107.00	4,325.7	-414.2	345.5	186.0	159.51	2.166	
9,800.0	5,912.0	9,955.3	6,013.0	85.2	84.9	-107.00	4,425.7	-414.2	345.5	182.4	163.15	2.118	
9,900.0	5,912.0	10,055.3	6,013.0	87.1	86.8	-107.00	4,525.7	-414.2	345.5	178.7	166.80	2.071	
10,000.0	5,912.0	10,155.3	6,013.0	89.0	88.7	-107.00	4,625.7	-414.2	345.5	175.1	170.46	2.027	
10,100.0	5,912.0	10,255.3	6,013.0	90.9	90.6	-107.00	4,725.7	-414.2	345.5	171.4	174.11	1.985	
10,200.0	5,912.0	10,355.3	6,013.0	92.8	92.5	-107.00	4,825.7	-414.2	345.5	167.8	177.77	1.944	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0202B - 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
10,300.0	5,912.0	10,455.3	6,013.0	94.7	94.4	-107.00	4,925.7	-414.2	345.5	164.1	181.42	1.904	
10,400.0	5,912.0	10,555.3	6,013.0	96.6	96.3	-107.00	5,025.7	-414.2	345.5	160.4	185.08	1.867	
10,500.0	5,912.0	10,655.3	6,013.0	98.5	98.1	-107.00	5,125.7	-414.2	345.5	156.8	188.74	1.831	
10,600.0	5,912.0	10,755.3	6,013.0	100.4	100.0	-107.00	5,225.7	-414.2	345.5	153.1	192.41	1.796	
10,700.0	5,912.0	10,855.3	6,013.0	102.3	101.9	-107.00	5,325.7	-414.2	345.5	149.4	196.07	1.762	
10,800.0	5,912.0	10,955.3	6,013.0	104.2	103.8	-107.00	5,425.7	-414.2	345.5	145.8	199.73	1.730	
10,900.0	5,912.0	11,055.3	6,013.0	106.1	105.7	-107.00	5,525.7	-414.2	345.5	142.1	203.40	1.699	
11,000.0	5,912.0	11,155.3	6,013.0	108.0	107.6	-107.00	5,625.7	-414.2	345.5	138.4	207.07	1.668	
11,100.0	5,912.0	11,255.3	6,013.0	109.9	109.5	-107.00	5,725.7	-414.2	345.5	134.8	210.74	1.639	
11,200.0	5,912.0	11,355.3	6,013.0	111.8	111.4	-107.00	5,825.7	-414.2	345.5	131.1	214.41	1.611	
11,300.0	5,912.0	11,455.3	6,013.0	113.8	113.3	-107.00	5,925.7	-414.1	345.5	127.4	218.08	1.584	
11,400.0	5,912.0	11,555.3	6,013.0	115.7	115.2	-107.00	6,025.7	-414.1	345.5	123.7	221.75	1.558	
11,500.0	5,912.0	11,655.3	6,013.0	117.6	117.1	-107.00	6,125.7	-414.1	345.5	120.0	225.42	1.533	
11,600.0	5,912.0	11,755.3	6,013.0	119.5	119.0	-107.00	6,225.7	-414.1	345.5	116.4	229.10	1.508	
11,700.0	5,912.0	11,855.3	6,013.0	121.4	120.9	-107.00	6,325.7	-414.1	345.5	112.7	232.77	1.484	Level 3
11,800.0	5,912.0	11,955.3	6,013.0	123.3	122.8	-107.00	6,425.7	-414.1	345.5	109.0	236.45	1.461	Level 3
11,900.0	5,912.0	12,055.3	6,013.0	125.2	124.7	-107.00	6,525.7	-414.1	345.5	105.3	240.12	1.439	Level 3
12,000.0	5,912.0	12,155.3	6,013.0	127.1	126.6	-107.00	6,625.7	-414.1	345.5	101.7	243.80	1.417	Level 3
12,100.0	5,912.0	12,255.3	6,013.0	129.0	128.5	-107.00	6,725.7	-414.1	345.4	98.0	247.48	1.396	Level 3
12,200.0	5,912.0	12,355.3	6,013.0	130.9	130.5	-107.00	6,825.7	-414.1	345.4	94.3	251.16	1.375	Level 3
12,300.0	5,912.0	12,455.3	6,013.0	132.9	132.4	-107.00	6,925.7	-414.1	345.4	90.6	254.84	1.356	Level 3
12,400.0	5,912.0	12,555.3	6,013.0	134.8	134.3	-107.00	7,025.7	-414.1	345.4	86.9	258.52	1.336	Level 3
12,414.2	5,912.0	12,569.5	6,013.0	135.0	134.5	-107.00	7,040.0	-414.1	345.4	86.4	259.04	1.334	Level 3
12,416.2	5,912.0	12,569.6	6,013.0	135.1	134.5	-107.00	7,040.0	-414.1	345.4	86.4	259.07	1.333	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0204B - 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	88.23	1.0	33.0	33.1				
100.0	100.0	100.0	100.0	0.1	0.1	88.23	1.0	33.0	33.1	32.9	0.19	176.751	
200.0	200.0	200.0	200.0	0.3	0.3	88.23	1.0	33.0	33.1	32.4	0.64	51.934	
300.0	300.0	300.0	300.0	0.5	0.5	88.23	1.0	33.0	33.1	32.0	1.09	30.439	
400.0	400.0	400.0	400.0	0.8	0.8	88.23	1.0	33.0	33.1	31.5	1.54	21.528	
466.7	466.7	466.7	466.7	0.9	0.9	88.23	1.0	33.0	33.1	31.2	1.84	18.013	CC
500.0	500.0	500.0	500.0	1.0	1.0	88.23	1.0	33.0	33.1	31.1	1.99	16.653	
600.0	600.0	599.7	599.7	1.2	1.2	85.34	2.7	33.4	33.5	31.1	2.43	13.771	ES
700.0	700.0	699.3	699.1	1.4	1.4	85.14	7.8	34.4	35.1	32.2	2.88	12.189	
800.0	799.8	799.2	798.8	1.7	1.7	83.14	14.6	35.8	37.3	33.9	3.34	11.160	
900.0	899.6	899.2	898.5	1.9	1.9	83.92	21.5	37.2	39.2	35.4	3.81	10.298	
1,000.0	999.4	999.2	998.3	2.1	2.2	84.63	28.3	38.6	41.2	36.9	4.29	9.606	
1,100.0	1,099.1	1,099.2	1,098.0	2.4	2.4	85.26	35.1	40.0	43.2	38.4	4.78	9.043	
1,200.0	1,198.9	1,199.1	1,197.8	2.6	2.7	85.85	42.0	41.4	45.2	39.9	5.27	8.576	
1,300.0	1,298.6	1,299.1	1,297.5	2.9	2.9	86.38	48.8	42.9	47.2	41.4	5.76	8.185	
1,400.0	1,398.4	1,399.1	1,397.2	3.1	3.2	86.87	55.6	44.3	49.1	42.9	6.26	7.853	
1,500.0	1,498.1	1,499.1	1,497.0	3.4	3.4	87.33	62.5	45.7	51.1	44.4	6.76	7.568	
1,600.0	1,597.9	1,599.0	1,596.7	3.6	3.7	87.74	69.3	47.1	53.1	45.9	7.26	7.321	
1,700.0	1,697.6	1,699.0	1,696.4	3.9	3.9	88.13	76.1	48.5	55.1	47.4	7.76	7.104	
1,800.0	1,797.4	1,799.0	1,796.2	4.1	4.2	88.49	83.0	49.9	57.1	48.9	8.26	6.913	
1,900.0	1,897.2	1,899.0	1,895.9	4.4	4.4	88.83	89.8	51.3	59.1	50.4	8.77	6.744	
2,000.0	1,996.9	1,999.0	1,995.6	4.6	4.7	89.15	96.6	52.7	61.1	51.9	9.27	6.593	
2,100.0	2,096.7	2,098.9	2,095.4	4.9	4.9	89.44	103.4	54.1	63.1	53.4	9.78	6.457	
2,200.0	2,196.4	2,198.9	2,195.1	5.1	5.2	89.72	110.3	55.5	65.1	54.9	10.28	6.334	
2,300.0	2,296.2	2,298.9	2,294.8	5.4	5.4	89.98	117.1	56.9	67.2	56.4	10.79	6.222	
2,400.0	2,395.9	2,398.9	2,394.6	5.6	5.7	90.22	123.9	58.3	69.2	57.9	11.30	6.121	
2,500.0	2,495.7	2,498.9	2,494.3	5.9	5.9	90.45	130.8	59.7	71.2	59.4	11.81	6.028	
2,600.0	2,595.5	2,598.8	2,594.1	6.2	6.2	90.67	137.6	61.1	73.2	60.9	12.31	5.943	
2,700.0	2,695.2	2,698.8	2,693.8	6.4	6.5	90.88	144.4	62.5	75.2	62.4	12.82	5.864	
2,800.0	2,795.0	2,798.8	2,793.5	6.7	6.7	91.07	151.3	63.9	77.2	63.9	13.33	5.791	
2,900.0	2,894.7	2,898.8	2,893.3	6.9	7.0	91.26	158.1	65.3	79.2	65.4	13.84	5.724	
3,000.0	2,994.5	2,998.8	2,993.0	7.2	7.2	91.44	164.9	66.7	81.2	66.9	14.35	5.661	
3,100.0	3,094.2	3,098.7	3,092.7	7.4	7.5	91.61	171.8	68.1	83.3	68.4	14.86	5.603	
3,200.0	3,194.0	3,198.7	3,192.5	7.7	7.7	91.77	178.6	69.5	85.3	69.9	15.37	5.549	
3,300.0	3,293.7	3,298.7	3,292.2	7.9	8.0	91.92	185.4	70.9	87.3	71.4	15.88	5.498	
3,400.0	3,393.5	3,398.7	3,391.9	8.2	8.2	92.06	192.3	72.3	89.3	72.9	16.39	5.450	
3,500.0	3,493.3	3,498.7	3,491.7	8.4	8.5	92.20	199.1	73.7	91.3	74.4	16.90	5.405	
3,600.0	3,593.0	3,598.6	3,591.4	8.7	8.7	92.34	205.9	75.1	93.3	75.9	17.41	5.362	
3,700.0	3,692.8	3,698.6	3,691.1	9.0	9.0	92.47	212.8	76.5	95.4	77.4	17.92	5.323	
3,800.0	3,792.5	3,798.6	3,790.9	9.2	9.3	92.59	219.6	77.9	97.4	79.0	18.43	5.285	
3,900.0	3,892.3	3,898.6	3,890.6	9.5	9.5	92.71	226.4	79.3	99.4	80.5	18.94	5.249	
4,000.0	3,992.0	3,998.6	3,990.4	9.7	9.8	92.82	233.3	80.7	101.4	82.0	19.45	5.215	
4,100.0	4,091.8	4,098.5	4,090.1	10.0	10.0	92.93	240.1	82.1	103.5	83.5	19.96	5.183	
4,200.0	4,191.6	4,198.5	4,189.8	10.2	10.3	93.03	246.9	83.5	105.5	85.0	20.47	5.153	
4,300.0	4,291.3	4,298.5	4,289.6	10.5	10.5	93.13	253.7	84.9	107.5	86.5	20.98	5.124	
4,400.0	4,391.1	4,398.5	4,389.3	10.8	10.8	93.23	260.6	86.3	109.5	88.0	21.49	5.096	
4,500.0	4,490.8	4,498.4	4,489.0	11.0	11.1	93.32	267.4	87.7	111.5	89.5	22.00	5.070	
4,600.0	4,590.6	4,598.4	4,588.8	11.3	11.3	93.41	274.2	89.1	113.6	91.1	22.51	5.045	
4,700.0	4,690.3	4,698.4	4,688.5	11.5	11.6	93.50	281.1	90.5	115.6	92.6	23.02	5.021	
4,800.0	4,790.1	4,798.4	4,788.2	11.8	11.8	93.58	287.9	91.9	117.6	94.1	23.53	4.998	
4,900.0	4,889.9	4,898.4	4,888.0	12.0	12.1	93.66	294.7	93.3	119.6	95.6	24.04	4.976	
5,000.0	4,989.6	4,998.3	4,987.7	12.3	12.3	93.74	301.6	94.7	121.7	97.1	24.55	4.955	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0204B - 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	5,089.4	5,098.3	5,087.4	12.5	12.6	93.82	308.4	96.1	123.7	98.6	25.06	4.934	
5,200.0	5,189.1	5,198.3	5,187.2	12.8	12.8	93.89	315.2	97.5	125.7	100.1	25.58	4.915	
5,300.0	5,288.9	5,298.3	5,286.9	13.1	13.1	93.96	322.1	98.9	127.7	101.6	26.09	4.896	
5,400.0	5,388.6	5,398.3	5,386.7	13.3	13.4	94.03	328.9	100.3	129.8	103.2	26.60	4.878	
5,500.0	5,488.0	5,498.1	5,486.2	13.6	13.6	95.47	335.7	101.7	132.1	104.9	27.14	4.867	
5,600.0	5,583.9	5,594.8	5,582.4	14.0	13.9	102.20	345.1	103.7	137.9	110.1	27.76	4.968	
5,700.0	5,672.7	5,692.4	5,676.3	14.6	14.3	108.11	370.5	108.9	151.2	122.7	28.43	5.317	
5,800.0	5,751.1	5,792.8	5,766.3	15.4	14.9	112.02	414.0	117.8	171.0	141.8	29.18	5.861	
5,900.0	5,816.4	5,896.3	5,848.2	16.4	15.7	113.89	475.6	130.5	196.0	165.8	30.20	6.488	
6,000.0	5,866.0	6,002.9	5,918.0	17.5	16.7	114.04	554.3	146.6	224.5	192.7	31.75	7.071	
6,100.0	5,898.1	6,112.9	5,971.3	18.8	18.0	112.84	648.4	165.9	255.2	221.3	33.96	7.515	
6,200.0	5,911.7	6,226.6	6,003.9	20.3	19.5	110.65	754.8	187.8	286.8	250.0	36.82	7.789	
6,300.0	5,912.1	6,343.8	6,012.6	21.7	21.1	109.14	869.2	211.1	314.6	274.5	40.10	7.846	
6,400.0	5,912.1	6,461.0	6,012.6	23.1	22.8	107.77	984.8	229.8	331.9	288.5	43.41	7.646	
6,500.0	5,912.1	6,580.7	6,012.6	24.7	24.5	107.17	1,103.9	241.5	341.3	294.6	46.70	7.308	
6,600.0	5,912.1	6,701.4	6,012.6	26.3	26.2	106.96	1,224.5	245.8	344.6	294.6	50.06	6.885	
6,700.0	5,912.1	6,802.6	6,012.6	28.0	27.8	106.96	1,325.7	245.8	344.7	291.4	53.21	6.477	
6,800.0	5,912.1	6,902.6	6,012.6	29.7	29.5	106.96	1,425.7	245.8	344.7	288.2	56.44	6.106	
6,900.0	5,912.1	7,002.6	6,012.6	31.4	31.1	106.96	1,525.7	245.8	344.7	284.9	59.73	5.771	
7,000.0	5,912.1	7,102.6	6,012.6	33.2	32.8	106.96	1,625.7	245.8	344.7	281.6	63.06	5.466	
7,100.0	5,912.1	7,202.6	6,012.6	34.9	34.6	106.97	1,725.7	245.8	344.7	278.2	66.43	5.189	
7,200.0	5,912.1	7,302.6	6,012.7	36.7	36.3	106.97	1,825.7	245.8	344.7	274.8	69.83	4.936	
7,300.0	5,912.1	7,402.6	6,012.7	38.5	38.1	106.97	1,925.7	245.8	344.7	271.4	73.26	4.705	
7,400.0	5,912.1	7,502.6	6,012.7	40.3	39.8	106.97	2,025.7	245.8	344.7	267.9	76.72	4.493	
7,500.0	5,912.1	7,602.6	6,012.7	42.1	41.6	106.97	2,125.7	245.8	344.7	264.5	80.20	4.298	
7,600.0	5,912.1	7,702.6	6,012.7	43.9	43.4	106.97	2,225.7	245.8	344.7	261.0	83.69	4.118	
7,700.0	5,912.1	7,802.6	6,012.7	45.8	45.2	106.97	2,325.7	245.8	344.7	257.5	87.21	3.952	
7,800.0	5,912.1	7,902.6	6,012.7	47.6	47.0	106.97	2,425.7	245.8	344.7	253.9	90.73	3.799	
7,900.0	5,912.1	8,002.6	6,012.7	49.5	48.9	106.98	2,525.7	245.8	344.7	250.4	94.28	3.656	
8,000.0	5,912.1	8,102.6	6,012.7	51.3	50.7	106.98	2,625.7	245.8	344.7	246.8	97.83	3.523	
8,100.0	5,912.1	8,202.6	6,012.7	53.2	52.5	106.98	2,725.7	245.8	344.7	243.3	101.39	3.399	
8,200.0	5,912.1	8,302.6	6,012.7	55.0	54.4	106.98	2,825.7	245.8	344.7	239.7	104.97	3.284	
8,300.0	5,912.1	8,402.6	6,012.7	56.9	56.2	106.98	2,925.7	245.8	344.7	236.1	108.55	3.175	
8,400.0	5,912.1	8,502.6	6,012.7	58.8	58.1	106.98	3,025.7	245.8	344.7	232.5	112.14	3.074	
8,500.0	5,912.0	8,602.6	6,012.7	60.7	59.9	106.98	3,125.7	245.8	344.7	228.9	115.73	2.978	
8,600.0	5,912.0	8,702.6	6,012.7	62.5	61.8	106.99	3,225.7	245.8	344.7	225.3	119.34	2.888	
8,700.0	5,912.0	8,802.6	6,012.8	64.4	63.7	106.99	3,325.7	245.8	344.7	221.7	122.94	2.803	
8,800.0	5,912.0	8,902.6	6,012.8	66.3	65.5	106.99	3,425.7	245.8	344.7	218.1	126.56	2.723	
8,900.0	5,912.0	9,002.6	6,012.8	68.2	67.4	106.99	3,525.7	245.8	344.7	214.5	130.18	2.648	
9,000.0	5,912.0	9,102.6	6,012.8	70.1	69.3	106.99	3,625.7	245.8	344.7	210.9	133.80	2.576	
9,100.0	5,912.0	9,202.6	6,012.8	71.9	71.2	106.99	3,725.7	245.8	344.7	207.2	137.42	2.508	
9,200.0	5,912.0	9,302.6	6,012.8	73.8	73.1	106.99	3,825.7	245.8	344.7	203.6	141.05	2.444	
9,300.0	5,912.0	9,402.6	6,012.8	75.7	74.9	107.00	3,925.7	245.8	344.7	200.0	144.69	2.382	
9,400.0	5,912.0	9,502.6	6,012.8	77.6	76.8	107.00	4,025.7	245.8	344.7	196.4	148.33	2.324	
9,500.0	5,912.0	9,602.6	6,012.8	79.5	78.7	107.00	4,125.7	245.8	344.7	192.7	151.97	2.268	
9,600.0	5,912.0	9,702.6	6,012.8	81.4	80.6	107.00	4,225.7	245.8	344.7	189.1	155.61	2.215	
9,700.0	5,912.0	9,802.6	6,012.8	83.3	82.5	107.00	4,325.7	245.8	344.7	185.4	159.25	2.164	
9,800.0	5,912.0	9,902.6	6,012.8	85.2	84.4	107.00	4,425.7	245.8	344.7	181.8	162.90	2.116	
9,900.0	5,912.0	10,002.6	6,012.8	87.1	86.3	107.00	4,525.7	245.8	344.7	178.1	166.55	2.070	
10,000.0	5,912.0	10,102.6	6,012.8	89.0	88.2	107.01	4,625.7	245.8	344.7	174.5	170.20	2.025	
10,100.0	5,912.0	10,202.6	6,012.9	90.9	90.0	107.01	4,725.7	245.8	344.7	170.8	173.85	1.983	
10,200.0	5,912.0	10,302.6	6,012.9	92.8	91.9	107.01	4,825.7	245.8	344.7	167.2	177.51	1.942	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-0204B - 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
10,300.0	5,912.0	10,402.6	6,012.9	94.7	93.8	107.01	4,925.7	245.8	344.7	163.5	181.17	1.903	
10,400.0	5,912.0	10,502.6	6,012.9	96.6	95.7	107.01	5,025.7	245.8	344.7	159.9	184.83	1.865	
10,500.0	5,912.0	10,602.6	6,012.9	98.5	97.6	107.01	5,125.7	245.8	344.7	156.2	188.49	1.829	
10,600.0	5,912.0	10,702.6	6,012.9	100.4	99.5	107.01	5,225.7	245.8	344.7	152.5	192.15	1.794	
10,700.0	5,912.0	10,802.6	6,012.9	102.3	101.4	107.01	5,325.7	245.8	344.7	148.9	195.81	1.760	
10,800.0	5,912.0	10,902.6	6,012.9	104.2	103.3	107.02	5,425.7	245.8	344.7	145.2	199.48	1.728	
10,900.0	5,912.0	11,002.6	6,012.9	106.1	105.2	107.02	5,525.7	245.8	344.7	141.5	203.14	1.697	
11,000.0	5,912.0	11,102.6	6,012.9	108.0	107.1	107.02	5,625.7	245.8	344.7	137.9	206.81	1.667	
11,100.0	5,912.0	11,202.6	6,012.9	109.9	109.0	107.02	5,725.7	245.8	344.7	134.2	210.48	1.638	
11,200.0	5,912.0	11,302.6	6,012.9	111.8	110.9	107.02	5,825.7	245.8	344.7	130.5	214.14	1.610	
11,300.0	5,912.0	11,402.6	6,012.9	113.8	112.9	107.02	5,925.7	245.8	344.7	126.9	217.81	1.583	
11,400.0	5,912.0	11,502.6	6,012.9	115.7	114.8	107.02	6,025.7	245.8	344.7	123.2	221.48	1.556	
11,500.0	5,912.0	11,602.6	6,012.9	117.6	116.7	107.03	6,125.7	245.8	344.7	119.5	225.16	1.531	
11,600.0	5,912.0	11,702.6	6,013.0	119.5	118.6	107.03	6,225.7	245.8	344.7	115.9	228.83	1.506	
11,700.0	5,912.0	11,802.6	6,013.0	121.4	120.5	107.03	6,325.7	245.8	344.7	112.2	232.50	1.483	Level 3
11,800.0	5,912.0	11,902.6	6,013.0	123.3	122.4	107.03	6,425.7	245.8	344.7	108.5	236.17	1.460	Level 3
11,900.0	5,912.0	12,002.6	6,013.0	125.2	124.3	107.03	6,525.7	245.8	344.7	104.9	239.85	1.437	Level 3
12,000.0	5,912.0	12,102.6	6,013.0	127.1	126.2	107.03	6,625.7	245.8	344.7	101.2	243.52	1.415	Level 3
12,100.0	5,912.0	12,202.6	6,013.0	129.0	128.1	107.03	6,725.7	245.8	344.7	97.5	247.20	1.394	Level 3
12,200.0	5,912.0	12,302.6	6,013.0	130.9	130.0	107.04	6,825.7	245.8	344.7	93.8	250.87	1.374	Level 3
12,300.0	5,912.0	12,402.6	6,013.0	132.9	131.9	107.04	6,925.7	245.8	344.7	90.2	254.55	1.354	Level 3
12,400.0	5,912.0	12,502.6	6,013.0	134.8	133.8	107.04	7,025.7	245.8	344.7	86.5	258.23	1.335	Level 3
12,416.2	5,912.0	12,518.8	6,013.0	135.1	134.1	107.04	7,041.9	245.8	344.7	85.9	258.82	1.332	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1401A - 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	-138.57	-74.9	-66.1	99.9				
100.0	100.0	100.0	100.0	0.1	0.1	-138.57	-74.9	-66.1	99.9	99.7	0.19	534.068	
200.0	200.0	200.0	200.0	0.3	0.3	-138.57	-74.9	-66.1	99.9	99.2	0.64	156.908	
300.0	300.0	300.0	300.0	0.5	0.5	-138.57	-74.9	-66.1	99.9	98.8	1.09	91.963	
400.0	400.0	400.0	400.0	0.8	0.8	-138.57	-74.9	-66.1	99.9	98.3	1.54	65.042	
500.0	500.0	500.0	500.0	1.0	1.0	-138.57	-74.9	-66.1	99.9	97.9	1.99	50.314	CC, ES
600.0	600.0	596.7	596.7	1.2	1.2	-138.81	-76.3	-66.8	101.5	99.1	2.40	42.240	
700.0	700.0	693.1	692.9	1.4	1.4	-134.88	-80.7	-69.0	107.6	104.8	2.82	38.204	
800.0	799.8	792.1	791.7	1.7	1.6	-137.29	-86.9	-72.1	118.2	115.0	3.25	36.393	
900.0	899.6	891.2	890.6	1.9	1.8	-139.93	-93.0	-75.2	130.3	126.7	3.68	35.445	
1,000.0	999.4	990.3	989.4	2.1	2.0	-142.13	-99.2	-78.3	142.7	138.6	4.11	34.689	
1,100.0	1,099.1	1,089.4	1,088.3	2.4	2.3	-143.97	-105.4	-81.5	155.2	150.6	4.55	34.078	
1,200.0	1,198.9	1,188.5	1,187.2	2.6	2.5	-145.53	-111.6	-84.6	167.8	162.8	5.00	33.578	
1,300.0	1,298.6	1,287.6	1,286.0	2.9	2.8	-146.88	-117.7	-87.7	180.6	175.2	5.45	33.162	
1,400.0	1,398.4	1,386.7	1,384.9	3.1	3.0	-148.04	-123.9	-90.8	193.4	187.5	5.89	32.814	
1,500.0	1,498.1	1,485.8	1,483.7	3.4	3.3	-149.07	-130.1	-93.9	206.3	200.0	6.35	32.516	
1,600.0	1,597.9	1,584.9	1,582.6	3.6	3.5	-149.97	-136.2	-97.0	219.3	212.5	6.80	32.261	
1,700.0	1,697.6	1,684.0	1,681.5	3.9	3.8	-150.77	-142.4	-100.1	232.3	225.1	7.25	32.040	
1,800.0	1,797.4	1,783.1	1,780.3	4.1	4.0	-151.49	-148.6	-103.2	245.4	237.7	7.70	31.847	
1,900.0	1,897.2	1,882.2	1,879.2	4.4	4.3	-152.13	-154.8	-106.3	258.5	250.3	8.16	31.676	
2,000.0	1,996.9	1,981.3	1,978.0	4.6	4.5	-152.71	-160.9	-109.5	271.6	263.0	8.61	31.524	
2,100.0	2,096.7	2,080.4	2,076.9	4.9	4.8	-153.24	-167.1	-112.6	284.7	275.6	9.07	31.389	
2,200.0	2,196.4	2,179.5	2,175.8	5.1	5.0	-153.72	-173.3	-115.7	297.9	288.4	9.53	31.267	
2,300.0	2,296.2	2,278.6	2,274.6	5.4	5.3	-154.16	-179.5	-118.8	311.1	301.1	9.98	31.157	
2,400.0	2,395.9	2,377.7	2,373.5	5.6	5.6	-154.57	-185.6	-121.9	324.3	313.8	10.44	31.058	
2,500.0	2,495.7	2,476.8	2,472.3	5.9	5.8	-154.94	-191.8	-125.0	337.5	326.6	10.90	30.967	
2,600.0	2,595.5	2,575.9	2,571.2	6.2	6.1	-155.28	-198.0	-128.1	350.7	339.3	11.36	30.884	
2,700.0	2,695.2	2,675.0	2,670.0	6.4	6.3	-155.60	-204.1	-131.2	363.9	352.1	11.81	30.807	
2,800.0	2,795.0	2,774.1	2,768.9	6.7	6.6	-155.90	-210.3	-134.4	377.2	364.9	12.27	30.737	
2,900.0	2,894.7	2,873.2	2,867.8	6.9	6.9	-156.18	-216.5	-137.5	390.4	377.7	12.73	30.672	
3,000.0	2,994.5	2,972.3	2,966.6	7.2	7.1	-156.44	-222.7	-140.6	403.7	390.5	13.19	30.611	
3,100.0	3,094.2	3,071.4	3,065.5	7.4	7.4	-156.68	-228.8	-143.7	417.0	403.3	13.65	30.555	
3,200.0	3,194.0	3,170.5	3,164.3	7.7	7.6	-156.91	-235.0	-146.8	430.3	416.2	14.11	30.503	
3,300.0	3,293.7	3,269.6	3,263.2	7.9	7.9	-157.12	-241.2	-149.9	443.5	429.0	14.56	30.454	
3,400.0	3,393.5	3,368.7	3,362.1	8.2	8.2	-157.32	-247.4	-153.0	456.8	441.8	15.02	30.409	
3,500.0	3,493.3	3,467.8	3,460.9	8.4	8.4	-157.51	-253.5	-156.1	470.1	454.7	15.48	30.366	
3,600.0	3,593.0	3,566.9	3,559.8	8.7	8.7	-157.69	-259.7	-159.2	483.4	467.5	15.94	30.325	
3,700.0	3,692.8	3,666.0	3,658.6	9.0	9.0	-157.86	-265.9	-162.4	496.7	480.3	16.40	30.287	
3,800.0	3,792.5	3,765.1	3,757.5	9.2	9.2	-158.02	-272.1	-165.5	510.1	493.2	16.86	30.252	
3,900.0	3,892.3	3,864.2	3,856.4	9.5	9.5	-158.18	-278.2	-168.6	523.4	506.1	17.32	30.218	
4,000.0	3,992.0	3,963.3	3,955.2	9.7	9.7	-158.32	-284.4	-171.7	536.7	518.9	17.78	30.186	
4,100.0	4,091.8	4,062.4	4,054.1	10.0	10.0	-158.46	-290.6	-174.8	550.0	531.8	18.24	30.155	
4,200.0	4,191.6	4,161.5	4,152.9	10.2	10.3	-158.59	-296.7	-177.9	563.3	544.6	18.70	30.126	
4,300.0	4,291.3	4,260.6	4,251.8	10.5	10.5	-158.72	-302.9	-181.0	576.7	557.5	19.16	30.099	
4,400.0	4,391.1	4,359.7	4,350.6	10.8	10.8	-158.84	-309.1	-184.1	590.0	570.4	19.62	30.073	
4,500.0	4,490.8	4,458.8	4,449.5	11.0	11.0	-158.95	-315.3	-187.2	603.3	583.2	20.08	30.048	
4,600.0	4,590.6	4,557.9	4,548.4	11.3	11.3	-159.06	-321.4	-190.4	616.7	596.1	20.54	30.025	
4,700.0	4,690.3	4,657.0	4,647.2	11.5	11.6	-159.17	-327.6	-193.5	630.0	609.0	21.00	30.002	
4,800.0	4,790.1	4,756.1	4,746.1	11.8	11.8	-159.27	-333.8	-196.6	643.3	621.9	21.46	29.980	
4,900.0	4,889.9	4,855.2	4,844.9	12.0	12.1	-159.37	-340.0	-199.7	656.7	634.8	21.92	29.960	
5,000.0	4,989.6	4,954.3	4,943.8	12.3	12.4	-159.46	-346.1	-202.8	670.0	647.6	22.38	29.940	
5,100.0	5,089.4	5,053.4	5,042.7	12.5	12.6	-159.55	-352.3	-205.9	683.4	660.5	22.84	29.921	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1401A - 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
5,200.0	5,189.1	5,152.5	5,141.5	12.8	12.9	-159.63	-358.5	-209.0	696.7	673.4	23.30	29.903	
5,300.0	5,288.9	5,251.6	5,240.4	13.1	13.1	-159.72	-364.6	-212.1	710.0	686.3	23.76	29.885	
5,400.0	5,388.6	5,350.7	5,339.2	13.3	13.4	-159.80	-370.8	-215.2	723.4	699.2	24.22	29.868	SF
5,500.0	5,488.0	5,443.3	5,431.6	13.6	13.6	-159.50	-376.6	-218.2	740.1	715.7	24.37	30.366	
5,600.0	5,583.9	5,481.5	5,469.5	14.0	13.8	-158.15	-380.5	-220.1	776.9	753.2	23.70	32.779	
5,700.0	5,672.7	5,500.0	5,487.8	14.6	13.8	-155.17	-383.3	-221.5	835.5	812.9	22.56	37.041	
5,800.0	5,751.1	5,550.0	5,536.4	15.4	14.0	-150.56	-393.7	-226.8	910.5	889.0	21.56	42.227	
5,900.0	5,816.4	5,550.0	5,536.4	16.4	14.0	-139.30	-393.7	-226.8	997.4	974.9	22.55	44.231	
6,000.0	5,866.0	5,550.0	5,536.4	17.5	14.0	-113.60	-393.7	-226.8	1,091.9	1,063.1	28.83	37.877	
6,100.0	5,898.1	5,550.0	5,536.4	18.8	14.0	-69.30	-393.7	-226.8	1,189.1	1,158.1	30.96	38.403	
6,200.0	5,911.7	5,550.0	5,536.4	20.3	14.0	-38.61	-393.7	-226.8	1,285.2	1,262.9	22.36	57.478	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1402B - 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	-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	437.675	
200.0	200.0	200.0	200.0	0.3	0.3	-156.19	-74.9	-33.0	81.9	81.2	0.64	128.599	
300.0	300.0	300.0	300.0	0.5	0.5	-156.19	-74.9	-33.0	81.9	80.8	1.09	75.373	
400.0	400.0	400.0	400.0	0.8	0.8	-156.19	-74.9	-33.0	81.9	80.3	1.54	53.309	
500.0	500.0	500.0	500.0	1.0	1.0	-156.19	-74.9	-33.0	81.9	79.9	1.99	41.237	
566.7	566.7	566.7	566.7	1.1	1.1	-156.19	-74.9	-33.0	81.9	79.6	2.28	35.828	CC
600.0	600.0	600.0	600.0	1.2	1.2	-156.19	-74.9	-33.0	81.9	79.4	2.43	33.623	ES
700.0	700.0	697.2	697.1	1.4	1.4	-151.74	-76.5	-33.5	85.1	82.2	2.86	29.792	
800.0	799.8	793.6	793.5	1.7	1.6	-153.51	-81.2	-34.8	94.8	91.5	3.27	28.966	SF
900.0	899.6	892.5	892.1	1.9	1.8	-155.54	-87.9	-36.6	108.0	104.3	3.69	29.247	
1,000.0	999.4	991.5	990.9	2.1	2.0	-157.13	-94.5	-38.4	121.3	117.2	4.11	29.482	
1,100.0	1,099.1	1,090.6	1,089.7	2.4	2.2	-158.40	-101.2	-40.2	134.7	130.2	4.54	29.647	
1,200.0	1,198.9	1,189.6	1,188.5	2.6	2.5	-159.44	-107.8	-42.1	148.2	143.2	4.98	29.764	
1,300.0	1,298.6	1,288.7	1,287.4	2.9	2.7	-160.31	-114.5	-43.9	161.7	156.2	5.42	29.848	
1,400.0	1,398.4	1,387.8	1,386.2	3.1	2.9	-161.05	-121.2	-45.7	175.2	169.3	5.86	29.910	
1,500.0	1,498.1	1,486.8	1,485.0	3.4	3.2	-161.68	-127.8	-47.5	188.7	182.4	6.30	29.955	
1,600.0	1,597.9	1,585.9	1,583.8	3.6	3.4	-162.22	-134.5	-49.4	202.3	195.6	6.75	29.987	
1,700.0	1,697.6	1,684.9	1,682.6	3.9	3.7	-162.70	-141.2	-51.2	215.9	208.7	7.19	30.013	
1,800.0	1,797.4	1,784.0	1,781.4	4.1	3.9	-163.12	-147.8	-53.0	229.5	221.9	7.64	30.032	
1,900.0	1,897.2	1,883.1	1,880.3	4.4	4.2	-163.49	-154.5	-54.8	243.1	235.0	8.09	30.046	
2,000.0	1,996.9	1,982.1	1,979.1	4.6	4.4	-163.83	-161.2	-56.6	256.7	248.2	8.54	30.057	
2,100.0	2,096.7	2,081.2	2,077.9	4.9	4.7	-164.12	-167.8	-58.5	270.4	261.4	8.99	30.064	
2,200.0	2,196.4	2,180.2	2,176.7	5.1	4.9	-164.40	-174.5	-60.3	284.0	274.6	9.45	30.070	
2,300.0	2,296.2	2,279.3	2,275.5	5.4	5.2	-164.64	-181.2	-62.1	297.7	287.8	9.90	30.073	
2,400.0	2,395.9	2,378.3	2,374.3	5.6	5.5	-164.87	-187.8	-63.9	311.3	300.9	10.35	30.076	
2,500.0	2,495.7	2,477.4	2,473.1	5.9	5.7	-165.07	-194.5	-65.8	324.9	314.1	10.80	30.077	
2,600.0	2,595.5	2,576.5	2,572.0	6.2	6.0	-165.26	-201.2	-67.6	338.6	327.3	11.26	30.078	
2,700.0	2,695.2	2,675.5	2,670.8	6.4	6.2	-165.44	-207.8	-69.4	352.3	340.6	11.71	30.077	
2,800.0	2,795.0	2,774.6	2,769.6	6.7	6.5	-165.60	-214.5	-71.2	365.9	353.8	12.17	30.077	
2,900.0	2,894.7	2,873.6	2,868.4	6.9	6.8	-165.75	-221.2	-73.1	379.6	367.0	12.62	30.076	
3,000.0	2,994.5	2,972.7	2,967.2	7.2	7.0	-165.89	-227.8	-74.9	393.3	380.2	13.08	30.074	
3,100.0	3,094.2	3,071.7	3,066.0	7.4	7.3	-166.02	-234.5	-76.7	406.9	393.4	13.53	30.073	
3,200.0	3,194.0	3,170.8	3,164.9	7.7	7.5	-166.14	-241.1	-78.5	420.6	406.6	13.99	30.071	
3,300.0	3,293.7	3,269.9	3,263.7	7.9	7.8	-166.25	-247.8	-80.3	434.3	419.8	14.44	30.069	
3,400.0	3,393.5	3,368.9	3,362.5	8.2	8.1	-166.36	-254.5	-82.2	447.9	433.0	14.90	30.067	
3,500.0	3,493.3	3,468.0	3,461.3	8.4	8.3	-166.46	-261.1	-84.0	461.6	446.3	15.35	30.065	
3,600.0	3,593.0	3,567.0	3,560.1	8.7	8.6	-166.56	-267.8	-85.8	475.3	459.5	15.81	30.063	
3,700.0	3,692.8	3,666.1	3,658.9	9.0	8.8	-166.65	-274.5	-87.6	489.0	472.7	16.27	30.061	
3,800.0	3,792.5	3,765.1	3,757.8	9.2	9.1	-166.73	-281.1	-89.5	502.6	485.9	16.72	30.058	
3,900.0	3,892.3	3,864.2	3,856.6	9.5	9.4	-166.81	-287.8	-91.3	516.3	499.1	17.18	30.056	
4,000.0	3,992.0	3,963.3	3,955.4	9.7	9.6	-166.89	-294.5	-93.1	530.0	512.4	17.63	30.054	
4,100.0	4,091.8	4,062.3	4,054.2	10.0	9.9	-166.96	-301.1	-94.9	543.7	525.6	18.09	30.052	
4,200.0	4,191.6	4,161.4	4,153.0	10.2	10.1	-167.03	-307.8	-96.8	557.4	538.8	18.55	30.049	
4,300.0	4,291.3	4,260.4	4,251.8	10.5	10.4	-167.09	-314.5	-98.6	571.0	552.0	19.00	30.047	
4,400.0	4,391.1	4,359.5	4,350.7	10.8	10.7	-167.16	-321.1	-100.4	584.7	565.3	19.46	30.045	
4,500.0	4,490.8	4,458.5	4,449.5	11.0	10.9	-167.21	-327.8	-102.2	598.4	578.5	19.92	30.043	
4,600.0	4,590.6	4,557.6	4,548.3	11.3	11.2	-167.27	-334.5	-104.1	612.1	591.7	20.38	30.041	
4,700.0	4,690.3	4,656.7	4,647.1	11.5	11.4	-167.33	-341.1	-105.9	625.8	605.0	20.83	30.039	
4,800.0	4,790.1	4,755.7	4,745.9	11.8	11.7	-167.38	-347.8	-107.7	639.5	618.2	21.29	30.037	
4,900.0	4,889.9	4,854.8	4,844.7	12.0	12.0	-167.43	-354.5	-109.5	653.2	631.4	21.75	30.035	
5,000.0	4,989.6	4,953.8	4,943.6	12.3	12.2	-167.48	-361.1	-111.3	666.8	644.6	22.20	30.033	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1402B - 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	5,089.4	5,052.9	5,042.4	12.5	12.5	-167.52	-367.8	-113.2	680.5	657.9	22.66	30.031	
5,200.0	5,189.1	5,151.9	5,141.2	12.8	12.7	-167.57	-374.4	-115.0	694.2	671.1	23.12	30.029	
5,300.0	5,288.9	5,251.0	5,240.0	13.1	13.0	-167.61	-381.1	-116.8	707.9	684.3	23.58	30.027	
5,400.0	5,388.6	5,350.1	5,338.8	13.3	13.3	-167.65	-387.8	-118.6	721.6	697.6	24.03	30.025	
5,500.0	5,488.0	5,448.5	5,437.0	13.6	13.5	-167.46	-394.4	-120.4	738.7	714.5	24.17	30.560	
5,600.0	5,583.9	5,540.0	5,528.3	14.0	13.8	-166.96	-400.6	-122.1	772.5	749.1	23.48	32.901	
5,700.0	5,672.7	5,574.3	5,562.4	14.6	13.9	-165.55	-403.9	-123.1	826.1	804.1	22.01	37.541	
5,800.0	5,751.1	5,600.0	5,587.8	15.4	14.0	-162.73	-407.9	-124.1	898.4	878.3	20.14	44.599	
5,900.0	5,816.4	5,618.1	5,605.5	16.4	14.0	-156.73	-411.4	-125.1	984.3	965.5	18.86	52.189	
6,000.0	5,866.0	5,628.2	5,615.3	17.5	14.1	-140.66	-413.6	-125.7	1,078.8	1,056.7	22.02	48.984	
6,100.0	5,898.1	5,631.4	5,618.4	18.8	14.1	-85.78	-414.4	-125.9	1,177.2	1,144.2	32.99	35.679	
6,200.0	5,911.7	5,628.6	5,615.8	20.3	14.1	-33.36	-413.7	-125.7	1,275.6	1,255.4	20.19	63.186	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1403A - 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	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	400.477	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-74.9	0.0	74.9	74.3	0.64	117.669	
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-74.9	0.0	74.9	73.8	1.09	68.967	
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-74.9	0.0	74.9	73.4	1.54	48.778	
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-74.9	0.0	74.9	72.9	1.99	37.732	
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-74.9	0.0	74.9	72.5	2.43	30.766	CC, ES
700.0	700.0	700.0	700.0	1.4	1.4	-174.97	-74.9	0.0	76.6	73.8	2.89	26.558	
800.0	799.8	797.0	797.0	1.7	1.6	-175.27	-76.5	0.0	83.5	80.2	3.31	25.252	SF
900.0	899.6	893.3	893.2	1.9	1.8	-175.60	-81.4	0.0	95.5	91.8	3.72	25.712	
1,000.0	999.4	992.1	991.7	2.1	2.0	-175.84	-88.3	0.1	109.4	105.3	4.13	26.486	
1,100.0	1,099.1	1,091.1	1,090.5	2.4	2.2	-176.04	-95.2	0.1	123.3	118.8	4.55	27.107	
1,200.0	1,198.9	1,190.2	1,189.3	2.6	2.4	-176.19	-102.1	0.1	137.2	132.3	4.97	27.589	
1,300.0	1,298.6	1,289.2	1,288.1	2.9	2.7	-176.31	-109.0	0.1	151.1	145.7	5.40	27.969	
1,400.0	1,398.4	1,388.2	1,386.9	3.1	2.9	-176.42	-115.9	0.2	165.0	159.2	5.84	28.273	
1,500.0	1,498.1	1,487.3	1,485.7	3.4	3.1	-176.51	-122.8	0.2	178.9	172.7	6.27	28.521	
1,600.0	1,597.9	1,586.3	1,584.5	3.6	3.4	-176.58	-129.8	0.2	192.8	186.1	6.71	28.725	
1,700.0	1,697.6	1,685.3	1,683.2	3.9	3.6	-176.65	-136.7	0.3	206.7	199.6	7.16	28.895	
1,800.0	1,797.4	1,784.3	1,782.0	4.1	3.9	-176.70	-143.6	0.3	220.7	213.1	7.60	29.039	
1,900.0	1,897.2	1,883.4	1,880.8	4.4	4.1	-176.75	-150.5	0.3	234.6	226.5	8.04	29.162	
2,000.0	1,996.9	1,982.4	1,979.6	4.6	4.4	-176.80	-157.4	0.4	248.5	240.0	8.49	29.268	
2,100.0	2,096.7	2,081.4	2,078.4	4.9	4.6	-176.84	-164.3	0.4	262.4	253.4	8.94	29.360	
2,200.0	2,196.4	2,180.5	2,177.2	5.1	4.9	-176.87	-171.2	0.4	276.3	266.9	9.38	29.440	
2,300.0	2,296.2	2,279.5	2,276.0	5.4	5.1	-176.91	-178.1	0.5	290.2	280.3	9.83	29.510	
2,400.0	2,395.9	2,378.5	2,374.7	5.6	5.4	-176.94	-185.0	0.5	304.1	293.8	10.28	29.573	
2,500.0	2,495.7	2,477.5	2,473.5	5.9	5.6	-176.96	-191.9	0.5	318.0	307.2	10.73	29.628	
2,600.0	2,595.5	2,576.6	2,572.3	6.2	5.9	-176.99	-198.8	0.5	331.9	320.7	11.18	29.678	
2,700.0	2,695.2	2,675.6	2,671.1	6.4	6.1	-177.01	-205.7	0.6	345.8	334.2	11.63	29.723	
2,800.0	2,795.0	2,774.6	2,769.9	6.7	6.4	-177.03	-212.6	0.6	359.7	347.6	12.08	29.763	
2,900.0	2,894.7	2,873.7	2,868.7	6.9	6.7	-177.05	-219.6	0.6	373.6	361.1	12.54	29.800	
3,000.0	2,994.5	2,972.7	2,967.5	7.2	6.9	-177.07	-226.5	0.7	387.5	374.5	12.99	29.833	
3,100.0	3,094.2	3,071.7	3,066.3	7.4	7.2	-177.08	-233.4	0.7	401.4	388.0	13.44	29.864	
3,200.0	3,194.0	3,170.7	3,165.0	7.7	7.4	-177.10	-240.3	0.7	415.3	401.4	13.89	29.892	
3,300.0	3,293.7	3,269.8	3,263.8	7.9	7.7	-177.11	-247.2	0.8	429.2	414.9	14.35	29.918	
3,400.0	3,393.5	3,368.8	3,362.6	8.2	7.9	-177.13	-254.1	0.8	443.1	428.3	14.80	29.941	
3,500.0	3,493.3	3,467.8	3,461.4	8.4	8.2	-177.14	-261.0	0.8	457.0	441.8	15.25	29.963	
3,600.0	3,593.0	3,566.9	3,560.2	8.7	8.5	-177.15	-267.9	0.8	470.9	455.2	15.71	29.984	
3,700.0	3,692.8	3,665.9	3,659.0	9.0	8.7	-177.16	-274.8	0.9	484.8	468.7	16.16	30.002	
3,800.0	3,792.5	3,764.9	3,757.8	9.2	9.0	-177.18	-281.7	0.9	498.7	482.1	16.61	30.020	
3,900.0	3,892.3	3,863.9	3,856.6	9.5	9.2	-177.19	-288.6	0.9	512.6	495.6	17.07	30.036	
4,000.0	3,992.0	3,963.0	3,955.3	9.7	9.5	-177.19	-295.5	1.0	526.5	509.0	17.52	30.052	
4,100.0	4,091.8	4,062.0	4,054.1	10.0	9.8	-177.20	-302.5	1.0	540.4	522.5	17.98	30.066	
4,200.0	4,191.6	4,161.0	4,152.9	10.2	10.0	-177.21	-309.4	1.0	554.4	535.9	18.43	30.080	
4,300.0	4,291.3	4,260.1	4,251.7	10.5	10.3	-177.22	-316.3	1.1	568.3	549.4	18.88	30.092	
4,400.0	4,391.1	4,359.1	4,350.5	10.8	10.5	-177.23	-323.2	1.1	582.2	562.8	19.34	30.104	
4,500.0	4,490.8	4,458.1	4,449.3	11.0	10.8	-177.24	-330.1	1.1	596.1	576.3	19.79	30.116	
4,600.0	4,590.6	4,557.1	4,548.1	11.3	11.1	-177.24	-337.0	1.1	610.0	589.7	20.25	30.126	
4,700.0	4,690.3	4,656.2	4,646.9	11.5	11.3	-177.25	-343.9	1.2	623.9	603.2	20.70	30.136	
4,800.0	4,790.1	4,755.2	4,745.6	11.8	11.6	-177.26	-350.8	1.2	637.8	616.6	21.16	30.146	
4,900.0	4,889.9	4,854.2	4,844.4	12.0	11.8	-177.26	-357.7	1.2	651.7	630.1	21.61	30.155	
5,000.0	4,989.6	4,953.3	4,943.2	12.3	12.1	-177.27	-364.6	1.3	665.6	643.5	22.07	30.163	
5,100.0	5,089.4	5,052.3	5,042.0	12.5	12.4	-177.27	-371.5	1.3	679.5	657.0	22.52	30.172	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1403A - 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
5,200.0	5,189.1	5,151.3	5,140.8	12.8	12.6	-177.28	-378.4	1.3	693.4	670.4	22.98	30.179	
5,300.0	5,288.9	5,250.3	5,239.6	13.1	12.9	-177.29	-385.3	1.4	707.3	683.9	23.43	30.187	
5,400.0	5,388.6	5,349.4	5,338.4	13.3	13.1	-177.29	-392.3	1.4	721.2	697.3	23.89	30.194	
5,500.0	5,488.0	5,442.6	5,431.4	13.6	13.4	-177.24	-398.8	1.4	738.6	714.6	24.00	30.776	
5,600.0	5,583.9	5,480.2	5,468.7	14.0	13.5	-177.04	-403.0	1.4	777.1	754.0	23.14	33.578	
5,700.0	5,672.7	5,500.0	5,488.2	14.6	13.6	-176.59	-406.3	1.4	838.0	816.5	21.49	38.999	
5,800.0	5,751.1	5,550.0	5,536.9	15.4	13.8	-175.85	-417.9	1.5	916.2	897.0	19.23	47.641	
5,900.0	5,816.4	5,550.0	5,536.9	16.4	13.8	-173.78	-417.9	1.5	1,005.9	989.5	16.45	61.144	
6,000.0	5,866.0	5,550.0	5,536.9	17.5	13.8	-164.86	-417.9	1.5	1,103.2	1,088.2	15.01	73.486	
6,100.0	5,898.1	5,550.0	5,536.9	18.8	13.8	-22.23	-417.9	1.5	1,202.9	1,187.4	15.49	77.642	
6,200.0	5,911.7	5,550.0	5,536.9	20.3	13.8	-6.32	-417.9	1.5	1,301.4	1,292.4	8.97	145.046	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1404B - 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	156.20	-74.9	33.0	81.9				
100.0	100.0	100.0	100.0	0.1	0.1	156.20	-74.9	33.0	81.9	81.7	0.19	437.752	
200.0	200.0	200.0	200.0	0.3	0.3	156.20	-74.9	33.0	81.9	81.2	0.64	128.622	
300.0	300.0	300.0	300.0	0.5	0.5	156.20	-74.9	33.0	81.9	80.8	1.09	75.386	
400.0	400.0	400.0	400.0	0.8	0.8	156.20	-74.9	33.0	81.9	80.3	1.54	53.318	
500.0	500.0	500.0	500.0	1.0	1.0	156.20	-74.9	33.0	81.9	79.9	1.99	41.244	
600.0	600.0	600.0	600.0	1.2	1.2	156.20	-74.9	33.0	81.9	79.4	2.43	33.629	CC, ES
700.0	700.0	700.0	700.0	1.4	1.4	161.71	-74.9	33.0	83.5	80.6	2.89	28.949	
800.0	799.8	799.8	799.8	1.7	1.7	162.74	-74.9	33.0	88.5	85.2	3.34	26.530	
900.0	899.6	896.4	896.4	1.9	1.9	164.04	-76.5	33.5	96.9	93.1	3.76	25.795	SF
1,000.0	999.4	992.2	992.1	2.1	2.0	165.26	-81.1	34.8	108.6	104.4	4.16	26.094	
1,100.0	1,099.1	1,091.0	1,090.6	2.4	2.2	166.32	-87.7	36.7	122.3	117.7	4.58	26.717	
1,200.0	1,198.9	1,190.0	1,189.4	2.6	2.4	167.17	-94.4	38.5	136.0	131.0	4.99	27.233	
1,300.0	1,298.6	1,289.1	1,288.2	2.9	2.6	167.86	-101.0	40.4	149.8	144.3	5.42	27.644	
1,400.0	1,398.4	1,388.1	1,387.0	3.1	2.9	168.44	-107.7	42.3	163.5	157.7	5.85	27.975	
1,500.0	1,498.1	1,487.1	1,485.8	3.4	3.1	168.92	-114.3	44.2	177.3	171.0	6.28	28.245	
1,600.0	1,597.9	1,586.2	1,584.6	3.6	3.3	169.34	-121.0	46.0	191.1	184.4	6.71	28.468	
1,700.0	1,697.6	1,685.2	1,683.4	3.9	3.6	169.70	-127.6	47.9	204.9	197.8	7.15	28.654	
1,800.0	1,797.4	1,784.2	1,782.2	4.1	3.8	170.02	-134.3	49.8	218.7	211.1	7.59	28.812	
1,900.0	1,897.2	1,883.3	1,880.9	4.4	4.1	170.29	-140.9	51.7	232.5	224.5	8.03	28.947	
2,000.0	1,996.9	1,982.3	1,979.7	4.6	4.3	170.54	-147.6	53.5	246.4	237.9	8.48	29.063	
2,100.0	2,096.7	2,081.3	2,078.5	4.9	4.5	170.76	-154.2	55.4	260.2	251.3	8.92	29.164	
2,200.0	2,196.4	2,180.4	2,177.3	5.1	4.8	170.96	-160.9	57.3	274.0	264.6	9.37	29.252	
2,300.0	2,296.2	2,279.4	2,276.1	5.4	5.1	171.14	-167.5	59.2	287.8	278.0	9.81	29.329	
2,400.0	2,395.9	2,378.4	2,374.9	5.6	5.3	171.30	-174.2	61.0	301.7	291.4	10.26	29.397	
2,500.0	2,495.7	2,477.5	2,473.7	5.9	5.6	171.45	-180.8	62.9	315.5	304.8	10.71	29.458	
2,600.0	2,595.5	2,576.5	2,572.5	6.2	5.8	171.59	-187.5	64.8	329.3	318.2	11.16	29.513	
2,700.0	2,695.2	2,675.5	2,671.3	6.4	6.1	171.71	-194.1	66.7	343.2	331.6	11.61	29.562	
2,800.0	2,795.0	2,774.6	2,770.1	6.7	6.3	171.83	-200.8	68.5	357.0	345.0	12.06	29.606	
2,900.0	2,894.7	2,873.6	2,868.9	6.9	6.6	171.93	-207.4	70.4	370.9	358.4	12.51	29.646	
3,000.0	2,994.5	2,972.6	2,967.7	7.2	6.8	172.03	-214.1	72.3	384.7	371.8	12.96	29.682	
3,100.0	3,094.2	3,071.7	3,066.5	7.4	7.1	172.12	-220.7	74.2	398.6	385.1	13.41	29.715	
3,200.0	3,194.0	3,170.7	3,165.3	7.7	7.3	172.21	-227.4	76.0	412.4	398.5	13.86	29.746	
3,300.0	3,293.7	3,269.8	3,264.1	7.9	7.6	172.29	-234.0	77.9	426.2	411.9	14.32	29.774	
3,400.0	3,393.5	3,368.8	3,362.9	8.2	7.9	172.36	-240.7	79.8	440.1	425.3	14.77	29.800	
3,500.0	3,493.3	3,467.8	3,461.7	8.4	8.1	172.44	-247.3	81.7	453.9	438.7	15.22	29.823	
3,600.0	3,593.0	3,566.9	3,560.4	8.7	8.4	172.50	-254.0	83.5	467.8	452.1	15.67	29.845	
3,700.0	3,692.8	3,665.9	3,659.2	9.0	8.6	172.56	-260.6	85.4	481.6	465.5	16.13	29.866	
3,800.0	3,792.5	3,764.9	3,758.0	9.2	8.9	172.62	-267.3	87.3	495.5	478.9	16.58	29.885	
3,900.0	3,892.3	3,864.0	3,856.8	9.5	9.2	172.68	-273.9	89.2	509.3	492.3	17.03	29.903	
4,000.0	3,992.0	3,963.0	3,955.6	9.7	9.4	172.73	-280.6	91.0	523.2	505.7	17.49	29.919	
4,100.0	4,091.8	4,062.0	4,054.4	10.0	9.7	172.78	-287.2	92.9	537.0	519.1	17.94	29.935	
4,200.0	4,191.6	4,161.1	4,153.2	10.2	9.9	172.83	-293.9	94.8	550.9	532.5	18.39	29.949	
4,300.0	4,291.3	4,260.1	4,252.0	10.5	10.2	172.88	-300.5	96.7	564.7	545.9	18.85	29.963	
4,400.0	4,391.1	4,359.1	4,350.8	10.8	10.4	172.92	-307.2	98.5	578.6	559.3	19.30	29.976	
4,500.0	4,490.8	4,458.2	4,449.6	11.0	10.7	172.96	-313.8	100.4	592.4	572.7	19.76	29.988	
4,600.0	4,590.6	4,557.2	4,548.4	11.3	11.0	173.00	-320.5	102.3	606.3	586.1	20.21	29.999	
4,700.0	4,690.3	4,656.2	4,647.2	11.5	11.2	173.04	-327.1	104.2	620.1	599.5	20.66	30.010	
4,800.0	4,790.1	4,755.3	4,746.0	11.8	11.5	173.07	-333.7	106.0	634.0	612.9	21.12	30.020	
4,900.0	4,889.9	4,854.3	4,844.8	12.0	11.8	173.11	-340.4	107.9	647.9	626.3	21.57	30.030	
5,000.0	4,989.6	4,953.4	4,943.6	12.3	12.0	173.14	-347.0	109.8	661.7	639.7	22.03	30.039	
5,100.0	5,089.4	5,052.4	5,042.4	12.5	12.3	173.17	-353.7	111.7	675.6	653.1	22.48	30.048	

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 #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 S11-T10N-R58W - Razor #11E-1404B - 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
5,200.0	5,189.1	5,151.4	5,141.1	12.8	12.5	173.20	-360.3	113.5	689.4	666.5	22.94	30.056	
5,300.0	5,288.9	5,250.5	5,239.9	13.1	12.8	173.23	-367.0	115.4	703.3	679.9	23.39	30.064	
5,400.0	5,388.6	5,349.5	5,338.7	13.3	13.1	173.26	-373.6	117.3	717.1	693.3	23.85	30.072	
5,500.0	5,488.0	5,447.9	5,436.9	13.6	13.3	173.16	-380.2	119.2	734.5	710.5	23.98	30.629	
5,600.0	5,583.9	5,540.0	5,528.8	14.0	13.6	172.89	-386.4	120.9	768.8	745.5	23.25	33.067	
5,700.0	5,672.7	5,573.8	5,562.4	14.6	13.7	172.10	-389.8	121.8	823.0	801.4	21.66	37.999	
5,800.0	5,751.1	5,600.0	5,588.3	15.4	13.7	170.50	-393.8	123.0	896.1	876.7	19.47	46.027	
5,900.0	5,816.4	5,617.0	5,605.0	16.4	13.8	166.97	-397.0	123.9	982.8	965.7	17.14	57.338	
6,000.0	5,866.0	5,626.9	5,614.5	17.5	13.9	156.25	-399.2	124.5	1,078.1	1,060.9	17.18	62.743	
6,100.0	5,898.1	5,629.8	5,617.4	18.8	13.9	82.76	-399.8	124.7	1,177.2	1,144.8	32.44	36.287	
6,200.0	5,911.7	5,626.8	5,614.5	20.3	13.9	19.62	-399.2	124.5	1,276.3	1,262.4	13.93	91.591	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-0203A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11E-0203A	**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 @ 5018.6ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor #11E-0203A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°