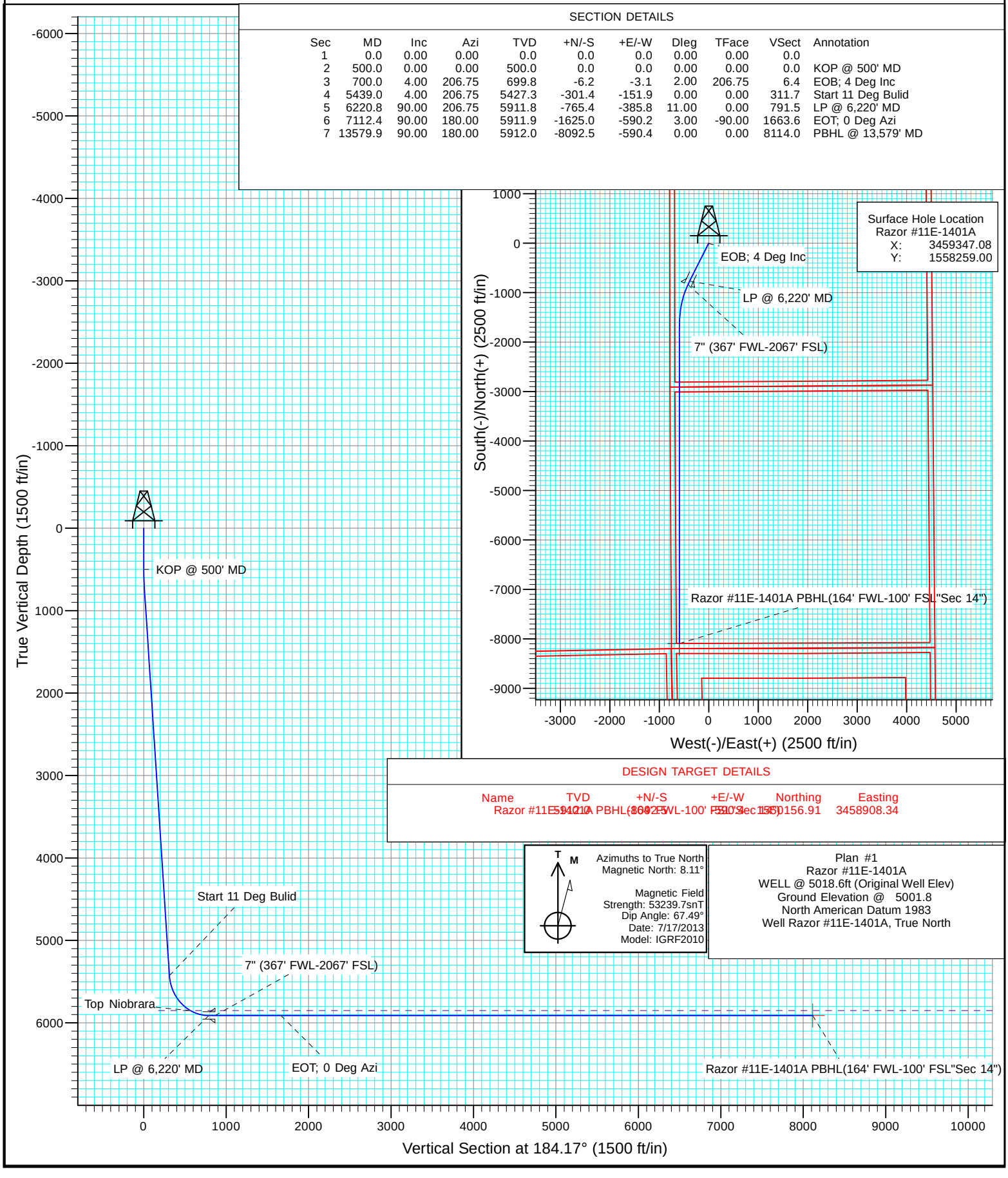
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11E-1401A
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	KOP @ 500' MD
3	700.0	4.00	206.75	699.8	-6.2	-3.1	2.00	206.75	6.4	EOB; 4 Deg Inc
4	5439.0	4.00	206.75	5427.3	-301.4	-151.9	0.00	0.00	311.7	Start 11 Deg Bulid
5	6220.8	90.00	206.75	5911.8	-765.4	-385.8	11.00	0.00	791.5	LP @ 6,220' MD
6	7112.4	90.00	180.00	5911.9	-1625.0	-590.2	3.00	-90.00	1663.6	EOT; 0 Deg Azi
7	13579.9	90.00	180.00	5912.0	-8092.5	-590.4	0.00	0.00	8114.0	PBHL @ 13,579' MD



Surface Hole Location
Razor #11E-1401A
X: 3459347.08
Y: 1558259.00

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor #11E-1401A PBHL(164' FWL-100' FSL"Sec 14")	5912.0	-8092.5	-590.4	1550156.91	3458908.34

Azimuths to True North
Magnetic North: 8.11°

Magnetic Field
Strength: 53239.7snT
Dip Angle: 67.49°
Date: 7/17/2013
Model: IGRF2010

Plan #1
Razor #11E-1401A
WELL @ 5018.6ft (Original Well Elev)
Ground Elevation @ 5001.8
North American Datum 1983
Well Razor #11E-1401A, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
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-1401A	**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-1401A				
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,558,259.00 ft	**Latitude:**	40.853983
	+E/-W	0.0 ft	**Easting:**	3,459,347.08 ft	**Longitude:**	-103.839508
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	7/17/2013	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	184.17

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	206.75	699.8	-6.2	-3.1	2.00	2.00	0.00	206.75	
5,439.0	4.00	206.75	5,427.3	-301.4	-151.9	0.00	0.00	0.00	0.00	
6,220.8	90.00	206.75	5,911.8	-765.4	-385.8	11.00	11.00	0.00	0.00	
7,112.4	90.00	180.00	5,911.9	-1,625.0	-590.2	3.00	0.00	-3.00	-90.00	
13,579.9	90.00	180.00	5,912.0	-8,092.5	-590.4	0.00	0.00	0.00	0.00	Razor #11E-1401A PI

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
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-1401A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500' MD
600.0	2.00	206.75	600.0	-1.6	-0.8	1.6	2.00	2.00	
700.0	4.00	206.75	699.8	-6.2	-3.1	6.4	2.00	2.00	EOB; 4 Deg Inc
800.0	4.00	206.75	799.6	-12.5	-6.3	12.9	0.00	0.00	
900.0	4.00	206.75	899.4	-18.7	-9.4	19.3	0.00	0.00	
1,000.0	4.00	206.75	999.1	-24.9	-12.6	25.8	0.00	0.00	
1,100.0	4.00	206.75	1,098.9	-31.1	-15.7	32.2	0.00	0.00	
1,200.0	4.00	206.75	1,198.6	-37.4	-18.8	38.6	0.00	0.00	
1,300.0	4.00	206.75	1,298.4	-43.6	-22.0	45.1	0.00	0.00	
1,400.0	4.00	206.75	1,398.1	-49.8	-25.1	51.5	0.00	0.00	
1,500.0	4.00	206.75	1,497.9	-56.1	-28.3	58.0	0.00	0.00	
1,600.0	4.00	206.75	1,597.6	-62.3	-31.4	64.4	0.00	0.00	
1,700.0	4.00	206.75	1,697.4	-68.5	-34.5	70.9	0.00	0.00	
1,800.0	4.00	206.75	1,797.2	-74.8	-37.7	77.3	0.00	0.00	
1,900.0	4.00	206.75	1,896.9	-81.0	-40.8	83.7	0.00	0.00	
2,000.0	4.00	206.75	1,996.7	-87.2	-44.0	90.2	0.00	0.00	
2,100.0	4.00	206.75	2,096.4	-93.4	-47.1	96.6	0.00	0.00	
2,200.0	4.00	206.75	2,196.2	-99.7	-50.2	103.1	0.00	0.00	
2,300.0	4.00	206.75	2,295.9	-105.9	-53.4	109.5	0.00	0.00	
2,400.0	4.00	206.75	2,395.7	-112.1	-56.5	115.9	0.00	0.00	
2,500.0	4.00	206.75	2,495.5	-118.4	-59.7	122.4	0.00	0.00	
2,600.0	4.00	206.75	2,595.2	-124.6	-62.8	128.8	0.00	0.00	
2,700.0	4.00	206.75	2,695.0	-130.8	-65.9	135.3	0.00	0.00	
2,800.0	4.00	206.75	2,794.7	-137.0	-69.1	141.7	0.00	0.00	
2,900.0	4.00	206.75	2,894.5	-143.3	-72.2	148.1	0.00	0.00	
3,000.0	4.00	206.75	2,994.2	-149.5	-75.4	154.6	0.00	0.00	
3,100.0	4.00	206.75	3,094.0	-155.7	-78.5	161.0	0.00	0.00	
3,200.0	4.00	206.75	3,193.7	-162.0	-81.6	167.5	0.00	0.00	
3,300.0	4.00	206.75	3,293.5	-168.2	-84.8	173.9	0.00	0.00	
3,400.0	4.00	206.75	3,393.3	-174.4	-87.9	180.4	0.00	0.00	
3,500.0	4.00	206.75	3,493.0	-180.6	-91.1	186.8	0.00	0.00	
3,600.0	4.00	206.75	3,592.8	-186.9	-94.2	193.2	0.00	0.00	
3,700.0	4.00	206.75	3,692.5	-193.1	-97.3	199.7	0.00	0.00	
3,800.0	4.00	206.75	3,792.3	-199.3	-100.5	206.1	0.00	0.00	
3,900.0	4.00	206.75	3,892.0	-205.6	-103.6	212.6	0.00	0.00	
4,000.0	4.00	206.75	3,991.8	-211.8	-106.8	219.0	0.00	0.00	
4,100.0	4.00	206.75	4,091.6	-218.0	-109.9	225.4	0.00	0.00	
4,200.0	4.00	206.75	4,191.3	-224.3	-113.0	231.9	0.00	0.00	
4,300.0	4.00	206.75	4,291.1	-230.5	-116.2	238.3	0.00	0.00	
4,400.0	4.00	206.75	4,390.8	-236.7	-119.3	244.8	0.00	0.00	
4,500.0	4.00	206.75	4,490.6	-242.9	-122.5	251.2	0.00	0.00	
4,600.0	4.00	206.75	4,590.3	-249.2	-125.6	257.6	0.00	0.00	
4,700.0	4.00	206.75	4,690.1	-255.4	-128.7	264.1	0.00	0.00	
4,800.0	4.00	206.75	4,789.9	-261.6	-131.9	270.5	0.00	0.00	
4,900.0	4.00	206.75	4,889.6	-267.9	-135.0	277.0	0.00	0.00	
5,000.0	4.00	206.75	4,989.4	-274.1	-138.1	283.4	0.00	0.00	
5,100.0	4.00	206.75	5,089.1	-280.3	-141.3	289.8	0.00	0.00	

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Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11E-1401A	**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	206.75	5,188.9	-286.5	-144.4	296.3	0.00	0.00	
5,300.0	4.00	206.75	5,288.6	-292.8	-147.6	302.7	0.00	0.00	
5,400.0	4.00	206.75	5,388.4	-299.0	-150.7	309.2	0.00	0.00	
5,439.0	4.00	206.75	5,427.3	-301.4	-151.9	311.7	0.00	0.00	Start 11 Deg Bulid
5,450.0	5.21	206.75	5,438.3	-302.2	-152.3	312.5	11.00	11.00	
5,500.0	10.71	206.75	5,487.8	-308.4	-155.4	318.9	11.00	11.00	
5,550.0	16.21	206.75	5,536.4	-318.8	-160.7	329.6	11.00	11.00	
5,600.0	21.71	206.75	5,583.6	-333.3	-168.0	344.6	11.00	11.00	
5,650.0	27.21	206.75	5,629.1	-351.8	-177.3	363.7	11.00	11.00	
5,700.0	32.71	206.75	5,672.4	-374.1	-188.5	386.8	11.00	11.00	
5,750.0	38.21	206.75	5,713.1	-399.9	-201.6	413.6	11.00	11.00	
5,800.0	43.71	206.75	5,750.9	-429.2	-216.3	443.8	11.00	11.00	
5,850.0	49.21	206.75	5,785.3	-461.6	-232.6	477.3	11.00	11.00	
5,900.0	54.71	206.75	5,816.1	-496.7	-250.4	513.6	11.00	11.00	
5,950.0	60.21	206.75	5,843.0	-534.3	-269.3	552.5	11.00	11.00	
5,968.7	62.27	206.75	5,852.0	-549.0	-276.7	567.6	11.00	11.00	Top Niobrara
6,000.0	65.71	206.75	5,865.7	-574.1	-289.4	593.6	11.00	11.00	
6,050.0	71.21	206.75	5,884.1	-615.6	-310.3	636.5	11.00	11.00	
6,100.0	76.71	206.75	5,897.9	-658.5	-331.9	680.9	11.00	11.00	
6,150.0	82.21	206.75	5,907.0	-702.4	-354.0	726.3	11.00	11.00	
6,200.0	87.71	206.75	5,911.4	-746.8	-376.4	772.2	11.00	11.00	
6,220.8	90.00	206.75	5,911.8	-765.4	-385.8	791.5	11.00	11.00	LP @ 6,220' MD
6,300.0	90.00	204.37	5,911.8	-836.8	-420.0	865.2	3.00	0.00	7" (367' FWL-2067' FSL)
6,400.0	90.00	201.37	5,911.8	-929.0	-458.8	959.9	3.00	0.00	
6,500.0	90.00	198.37	5,911.8	-1,023.0	-492.8	1,056.1	3.00	0.00	
6,600.0	90.00	195.37	5,911.8	-1,118.7	-521.8	1,153.7	3.00	0.00	
6,700.0	90.00	192.37	5,911.8	-1,215.8	-545.8	1,252.2	3.00	0.00	
6,800.0	90.00	189.37	5,911.8	-1,313.9	-564.7	1,351.5	3.00	0.00	
6,900.0	90.00	186.37	5,911.8	-1,413.0	-578.4	1,451.3	3.00	0.00	
7,000.0	90.00	183.37	5,911.9	-1,512.6	-586.9	1,551.3	3.00	0.00	
7,100.0	90.00	180.37	5,911.9	-1,612.6	-590.2	1,651.2	3.00	0.00	
7,112.4	90.00	180.00	5,911.9	-1,625.0	-590.2	1,663.6	3.00	0.00	EOT; 0 Deg Azi
7,200.0	90.00	180.00	5,911.9	-1,712.6	-590.2	1,751.0	0.00	0.00	
7,300.0	90.00	180.00	5,911.9	-1,812.6	-590.2	1,850.7	0.00	0.00	
7,400.0	90.00	180.00	5,911.9	-1,912.6	-590.2	1,950.4	0.00	0.00	
7,500.0	90.00	180.00	5,911.9	-2,012.6	-590.2	2,050.2	0.00	0.00	
7,600.0	90.00	180.00	5,911.9	-2,112.6	-590.2	2,149.9	0.00	0.00	
7,700.0	90.00	180.00	5,911.9	-2,212.6	-590.2	2,249.6	0.00	0.00	
7,800.0	90.00	180.00	5,911.9	-2,312.6	-590.2	2,349.4	0.00	0.00	
7,900.0	90.00	180.00	5,911.9	-2,412.6	-590.2	2,449.1	0.00	0.00	
8,000.0	90.00	180.00	5,911.9	-2,512.6	-590.2	2,548.8	0.00	0.00	
8,100.0	90.00	180.00	5,911.9	-2,612.6	-590.2	2,648.6	0.00	0.00	
8,200.0	90.00	180.00	5,911.9	-2,712.6	-590.2	2,748.3	0.00	0.00	
8,300.0	90.00	180.00	5,911.9	-2,812.6	-590.2	2,848.0	0.00	0.00	
8,400.0	90.00	180.00	5,911.9	-2,912.6	-590.2	2,947.8	0.00	0.00	
8,500.0	90.00	180.00	5,911.9	-3,012.6	-590.2	3,047.5	0.00	0.00	
8,600.0	90.00	180.00	5,911.9	-3,112.6	-590.2	3,147.2	0.00	0.00	
8,700.0	90.00	180.00	5,911.9	-3,212.6	-590.2	3,247.0	0.00	0.00	
8,800.0	90.00	180.00	5,911.9	-3,312.6	-590.2	3,346.7	0.00	0.00	
8,900.0	90.00	180.00	5,911.9	-3,412.6	-590.2	3,446.5	0.00	0.00	
9,000.0	90.00	180.00	5,911.9	-3,512.6	-590.3	3,546.2	0.00	0.00	
9,100.0	90.00	180.00	5,911.9	-3,612.6	-590.3	3,645.9	0.00	0.00	

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Well:	Razor #11E-1401A	**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	180.00	5,911.9	-3,712.6	-590.3	3,745.7	0.00	0.00	
9,300.0	90.00	180.00	5,911.9	-3,812.6	-590.3	3,845.4	0.00	0.00	
9,400.0	90.00	180.00	5,911.9	-3,912.6	-590.3	3,945.1	0.00	0.00	
9,500.0	90.00	180.00	5,911.9	-4,012.6	-590.3	4,044.9	0.00	0.00	
9,600.0	90.00	180.00	5,911.9	-4,112.6	-590.3	4,144.6	0.00	0.00	
9,700.0	90.00	180.00	5,911.9	-4,212.6	-590.3	4,244.3	0.00	0.00	
9,800.0	90.00	180.00	5,911.9	-4,312.6	-590.3	4,344.1	0.00	0.00	
9,900.0	90.00	180.00	5,911.9	-4,412.6	-590.3	4,443.8	0.00	0.00	
10,000.0	90.00	180.00	5,911.9	-4,512.6	-590.3	4,543.5	0.00	0.00	
10,100.0	90.00	180.00	5,911.9	-4,612.6	-590.3	4,643.3	0.00	0.00	
10,200.0	90.00	180.00	5,911.9	-4,712.6	-590.3	4,743.0	0.00	0.00	
10,300.0	90.00	180.00	5,911.9	-4,812.6	-590.3	4,842.7	0.00	0.00	
10,400.0	90.00	180.00	5,911.9	-4,912.6	-590.3	4,942.5	0.00	0.00	
10,500.0	90.00	180.00	5,911.9	-5,012.6	-590.3	5,042.2	0.00	0.00	
10,600.0	90.00	180.00	5,911.9	-5,112.6	-590.3	5,142.0	0.00	0.00	
10,700.0	90.00	180.00	5,911.9	-5,212.6	-590.3	5,241.7	0.00	0.00	
10,800.0	90.00	180.00	5,911.9	-5,312.6	-590.3	5,341.4	0.00	0.00	
10,900.0	90.00	180.00	5,911.9	-5,412.6	-590.3	5,441.2	0.00	0.00	
11,000.0	90.00	180.00	5,911.9	-5,512.6	-590.3	5,540.9	0.00	0.00	
11,100.0	90.00	180.00	5,912.0	-5,612.6	-590.3	5,640.6	0.00	0.00	
11,200.0	90.00	180.00	5,912.0	-5,712.6	-590.3	5,740.4	0.00	0.00	
11,300.0	90.00	180.00	5,912.0	-5,812.6	-590.3	5,840.1	0.00	0.00	
11,400.0	90.00	180.00	5,912.0	-5,912.6	-590.3	5,939.8	0.00	0.00	
11,500.0	90.00	180.00	5,912.0	-6,012.6	-590.3	6,039.6	0.00	0.00	
11,600.0	90.00	180.00	5,912.0	-6,112.6	-590.3	6,139.3	0.00	0.00	
11,700.0	90.00	180.00	5,912.0	-6,212.6	-590.3	6,239.0	0.00	0.00	
11,800.0	90.00	180.00	5,912.0	-6,312.6	-590.3	6,338.8	0.00	0.00	
11,900.0	90.00	180.00	5,912.0	-6,412.6	-590.3	6,438.5	0.00	0.00	
12,000.0	90.00	180.00	5,912.0	-6,512.6	-590.3	6,538.2	0.00	0.00	
12,100.0	90.00	180.00	5,912.0	-6,612.6	-590.3	6,638.0	0.00	0.00	
12,200.0	90.00	180.00	5,912.0	-6,712.6	-590.3	6,737.7	0.00	0.00	
12,300.0	90.00	180.00	5,912.0	-6,812.6	-590.3	6,837.4	0.00	0.00	
12,400.0	90.00	180.00	5,912.0	-6,912.6	-590.3	6,937.2	0.00	0.00	
12,500.0	90.00	180.00	5,912.0	-7,012.6	-590.3	7,036.9	0.00	0.00	
12,600.0	90.00	180.00	5,912.0	-7,112.6	-590.3	7,136.7	0.00	0.00	
12,700.0	90.00	180.00	5,912.0	-7,212.6	-590.3	7,236.4	0.00	0.00	
12,800.0	90.00	180.00	5,912.0	-7,312.6	-590.4	7,336.1	0.00	0.00	
12,900.0	90.00	180.00	5,912.0	-7,412.6	-590.4	7,435.9	0.00	0.00	
13,000.0	90.00	180.00	5,912.0	-7,512.6	-590.4	7,535.6	0.00	0.00	
13,100.0	90.00	180.00	5,912.0	-7,612.6	-590.4	7,635.3	0.00	0.00	
13,200.0	90.00	180.00	5,912.0	-7,712.6	-590.4	7,735.1	0.00	0.00	
13,300.0	90.00	180.00	5,912.0	-7,812.6	-590.4	7,834.8	0.00	0.00	
13,400.0	90.00	180.00	5,912.0	-7,912.6	-590.4	7,934.5	0.00	0.00	
13,500.0	90.00	180.00	5,912.0	-8,012.6	-590.4	8,034.3	0.00	0.00	
13,579.9	90.00	180.00	5,912.0	-8,092.5	-590.4	8,114.0	0.00	0.00	PBHL @ 13,579' MD

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
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-1401A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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-1401A PBH - plan hits target center - Point	0.00	0.00	5,912.0	-8,092.5	-590.4	1,550,156.91	3,458,908.34	40.831772	-103.841642

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,300.0	5,911.8	7" (367' FWL-2067' FSL)	7.000	7.500

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,968.7	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
500.0	500.0	0.0	0.0	KOP @ 500' MD
700.0	699.8	-6.2	-3.1	EOB; 4 Deg Inc
5,439.0	5,427.3	-301.4	-151.9	Start 11 Deg Bulid
6,220.8	5,911.8	-765.4	-385.8	LP @ 6,220' MD
7,112.4	5,911.9	-1,625.0	-590.2	EOT; 0 Deg Azi
13,579.9	5,912.0	-8,092.5	-590.4	PBHL @ 13,579' MD

Whiting Petroleum Corporation

Weld County, CO
S11-T10N-R58W
Razor #11E-1401A
HZ
Plan #1

Anticollision Report

19 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

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

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,579.9	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S11-T10N-R58W						
Razor #11E-0201A - HZ - Plan #1	500.0	500.0	75.9	73.9	38.238	CC, ES
Razor #11E-0201A - HZ - Plan #1	1,000.0	993.4	107.0	102.9	26.052	SF
Razor #11E-0202B - HZ - Plan #1	500.0	500.0	81.9	79.9	41.235	CC, ES
Razor #11E-0202B - HZ - Plan #1	5,439.0	5,395.3	685.5	660.9	27.843	SF
Razor #11E-0203A - HZ - Plan #1	500.0	500.0	99.9	97.9	50.313	CC, ES
Razor #11E-0203A - HZ - Plan #1	5,439.0	5,390.9	728.7	704.3	29.862	SF
Razor #11E-0204B - HZ - Plan #1	466.7	466.7	124.9	123.0	68.031	CC
Razor #11E-0204B - HZ - Plan #1	500.0	500.0	124.9	122.9	62.896	ES
Razor #11E-0204B - HZ - Plan #1	5,439.0	5,386.2	774.7	750.5	31.964	SF
Razor #11E-1402B - HZ - Plan #1	500.0	500.0	33.0	31.1	16.645	CC, ES
Razor #11E-1402B - HZ - Plan #1	13,579.9	13,593.4	344.9	47.6	1.160	Level 2, SF
Razor #11E-1403A - HZ - Plan #1	500.0	500.0	66.1	64.1	33.291	CC, ES
Razor #11E-1403A - HZ - Plan #1	13,579.9	13,470.0	660.3	349.4	2.124	SF
Razor #11E-1404B - HZ - Plan #1	500.0	500.0	99.1	97.1	49.936	CC, ES
Razor #11E-1404B - HZ - Plan #1	13,579.9	13,609.2	995.2	685.8	3.216	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	75.9	0.0	75.9				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	75.9	0.0	75.9	75.7	0.19	405.869	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	75.9	0.0	75.9	75.3	0.64	119.249	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	75.9	0.0	75.9	74.8	1.09	69.892	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	75.9	0.0	75.9	74.4	1.54	49.432	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	75.9	0.0	75.9	73.9	1.99	38.238	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	153.82	75.9	0.0	77.5	75.1	2.41	32.128	
700.0	699.8	699.8	699.8	1.4	1.4	155.39	75.9	0.0	82.2	79.4	2.83	29.093	
800.0	799.6	799.6	799.6	1.6	1.7	157.27	75.9	0.0	88.6	85.3	3.25	27.281	
900.0	899.4	896.7	896.7	1.8	1.9	158.28	77.3	-0.8	96.4	92.8	3.67	26.252	
1,000.0	999.1	993.4	993.2	2.1	2.1	158.10	81.6	-3.3	107.0	102.9	4.11	26.052	SF
1,100.0	1,098.9	1,092.4	1,092.0	2.3	2.3	157.43	87.5	-6.7	119.2	114.6	4.55	26.178	
1,200.0	1,198.6	1,191.6	1,191.0	2.5	2.6	156.88	93.5	-10.2	131.4	126.4	5.00	26.274	
1,300.0	1,298.4	1,290.9	1,290.0	2.8	2.8	156.42	99.5	-13.7	143.6	138.1	5.45	26.337	
1,400.0	1,398.1	1,390.1	1,389.0	3.0	3.0	156.04	105.5	-17.2	155.8	149.9	5.91	26.376	
1,500.0	1,497.9	1,489.4	1,488.0	3.3	3.3	155.71	111.5	-20.6	168.0	161.6	6.36	26.399	
1,600.0	1,597.6	1,588.6	1,587.0	3.5	3.5	155.42	117.5	-24.1	180.2	173.4	6.82	26.412	
1,700.0	1,697.4	1,687.9	1,686.0	3.8	3.8	155.17	123.4	-27.6	192.4	185.1	7.28	26.418	
1,800.0	1,797.2	1,787.1	1,785.1	4.1	4.0	154.95	129.4	-31.1	204.7	196.9	7.75	26.418	
1,900.0	1,896.9	1,886.4	1,884.1	4.3	4.3	154.76	135.4	-34.5	216.9	208.7	8.21	26.415	
2,000.0	1,996.7	1,985.6	1,983.1	4.6	4.5	154.58	141.4	-38.0	229.1	220.4	8.67	26.410	
2,100.0	2,096.4	2,084.9	2,082.1	4.8	4.8	154.43	147.4	-41.5	241.3	232.2	9.14	26.403	
2,200.0	2,196.2	2,184.1	2,181.1	5.1	5.0	154.29	153.4	-45.0	253.6	244.0	9.61	26.395	
2,300.0	2,295.9	2,283.4	2,280.1	5.4	5.3	154.16	159.4	-48.4	265.8	255.7	10.07	26.387	
2,400.0	2,395.7	2,382.6	2,379.1	5.6	5.5	154.04	165.4	-51.9	278.0	267.5	10.54	26.378	
2,500.0	2,495.5	2,481.9	2,478.1	5.9	5.8	153.93	171.3	-55.4	290.3	279.2	11.01	26.369	
2,600.0	2,595.2	2,581.1	2,577.1	6.1	6.0	153.83	177.3	-58.9	302.5	291.0	11.48	26.359	
2,700.0	2,695.0	2,680.4	2,676.1	6.4	6.3	153.74	183.3	-62.3	314.7	302.8	11.94	26.350	
2,800.0	2,794.7	2,779.6	2,775.1	6.7	6.5	153.66	189.3	-65.8	327.0	314.5	12.41	26.341	
2,900.0	2,894.5	2,878.9	2,874.1	6.9	6.8	153.58	195.3	-69.3	339.2	326.3	12.88	26.332	
3,000.0	2,994.2	2,978.1	2,973.1	7.2	7.0	153.51	201.3	-72.8	351.4	338.1	13.35	26.323	
3,100.0	3,094.0	3,077.3	3,072.1	7.5	7.3	153.44	207.3	-76.2	363.7	349.8	13.82	26.314	
3,200.0	3,193.7	3,176.6	3,171.1	7.7	7.5	153.38	213.3	-79.7	375.9	361.6	14.29	26.306	
3,300.0	3,293.5	3,275.8	3,270.1	8.0	7.8	153.32	219.2	-83.2	388.1	373.4	14.76	26.298	
3,400.0	3,393.3	3,375.1	3,369.1	8.3	8.0	153.26	225.2	-86.7	400.4	385.2	15.23	26.290	
3,500.0	3,493.0	3,474.3	3,468.1	8.5	8.3	153.21	231.2	-90.1	412.6	396.9	15.70	26.282	
3,600.0	3,592.8	3,573.6	3,567.2	8.8	8.6	153.16	237.2	-93.6	424.9	408.7	16.17	26.275	
3,700.0	3,692.5	3,672.8	3,666.2	9.0	8.8	153.12	243.2	-97.1	437.1	420.5	16.64	26.268	
3,800.0	3,792.3	3,772.1	3,765.2	9.3	9.1	153.07	249.2	-100.6	449.3	432.2	17.11	26.261	
3,900.0	3,892.0	3,871.3	3,864.2	9.6	9.3	153.03	255.2	-104.0	461.6	444.0	17.58	26.254	
4,000.0	3,991.8	3,970.6	3,963.2	9.8	9.6	152.99	261.2	-107.5	473.8	455.8	18.05	26.248	
4,100.0	4,091.6	4,069.8	4,062.2	10.1	9.8	152.95	267.2	-111.0	486.1	467.5	18.52	26.242	
4,200.0	4,191.3	4,169.1	4,161.2	10.4	10.1	152.92	273.1	-114.5	498.3	479.3	18.99	26.236	
4,300.0	4,291.1	4,268.3	4,260.2	10.6	10.3	152.88	279.1	-117.9	510.5	491.1	19.46	26.230	
4,400.0	4,390.8	4,367.6	4,359.2	10.9	10.6	152.85	285.1	-121.4	522.8	502.9	19.94	26.224	
4,500.0	4,490.6	4,466.8	4,458.2	11.2	10.8	152.82	291.1	-124.9	535.0	514.6	20.41	26.219	
4,600.0	4,590.3	4,566.1	4,557.2	11.4	11.1	152.79	297.1	-128.4	547.3	526.4	20.88	26.213	
4,700.0	4,690.1	4,665.3	4,656.2	11.7	11.4	152.76	303.1	-131.8	559.5	538.2	21.35	26.208	
4,800.0	4,789.9	4,764.6	4,755.2	11.9	11.6	152.74	309.1	-135.3	571.8	549.9	21.82	26.203	
4,900.0	4,889.6	4,863.8	4,854.2	12.2	11.9	152.71	315.1	-138.8	584.0	561.7	22.29	26.198	
5,000.0	4,989.4	4,963.1	4,953.2	12.5	12.1	152.68	321.0	-142.3	596.2	573.5	22.76	26.194	
5,100.0	5,089.1	5,062.3	5,052.2	12.7	12.4	152.66	327.0	-145.7	608.5	585.2	23.23	26.189	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,161.5	5,151.2	13.0	12.6	152.64	333.0	-149.2	620.7	597.0	23.71	26.185	
5,300.0	5,288.6	5,260.8	5,250.3	13.3	12.9	152.62	339.0	-152.7	633.0	608.8	24.18	26.181	
5,400.0	5,388.4	5,360.0	5,349.3	13.5	13.1	152.60	345.0	-156.2	645.2	620.6	24.65	26.177	
5,439.0	5,427.3	5,398.7	5,387.9	13.6	13.2	152.59	347.3	-157.5	650.0	625.1	24.83	26.175	
5,450.0	5,438.3	5,409.7	5,398.7	13.7	13.3	152.52	348.0	-157.9	651.4	626.6	24.85	26.209	
5,500.0	5,487.8	5,450.0	5,439.0	13.8	13.4	152.12	350.5	-159.4	660.8	635.9	24.85	26.594	
5,550.0	5,536.4	5,470.4	5,459.3	14.0	13.4	151.41	352.5	-160.5	675.7	651.1	24.66	27.406	
5,600.0	5,583.6	5,500.0	5,488.5	14.3	13.5	150.43	356.6	-162.9	696.4	672.1	24.37	28.578	
5,650.0	5,629.1	5,500.0	5,488.5	14.6	13.5	148.74	356.6	-162.9	722.4	698.4	23.95	30.163	
5,700.0	5,672.4	5,528.8	5,516.6	14.9	13.6	146.90	362.0	-166.0	752.7	729.1	23.58	31.924	
5,750.0	5,713.1	5,550.0	5,537.0	15.3	13.7	144.37	366.7	-168.8	787.3	764.1	23.28	33.827	
5,800.0	5,750.9	5,550.0	5,537.0	15.8	13.7	140.38	366.7	-168.8	825.6	802.3	23.25	35.503	
5,850.0	5,785.3	5,569.2	5,555.4	16.3	13.8	135.82	371.7	-171.7	866.6	842.9	23.66	36.632	
5,900.0	5,816.1	5,578.3	5,564.0	16.8	13.9	129.21	374.3	-173.2	910.0	885.2	24.81	36.676	
5,950.0	5,843.0	5,600.0	5,584.3	17.4	14.0	121.53	380.9	-177.0	955.5	928.9	26.60	35.921	
6,000.0	5,865.7	5,600.0	5,584.3	18.0	14.0	109.25	380.9	-177.0	1,001.9	972.6	29.32	34.171	
6,050.0	5,884.1	5,600.0	5,584.3	18.7	14.0	93.84	380.9	-177.0	1,049.1	1,017.5	31.59	33.209	
6,100.0	5,897.9	5,600.0	5,584.3	19.4	14.0	77.04	380.9	-177.0	1,096.7	1,064.8	31.87	34.414	
6,150.0	5,907.0	5,600.0	5,584.3	20.2	14.0	61.64	380.9	-177.0	1,144.1	1,114.3	29.83	38.354	
6,200.0	5,911.4	5,600.0	5,584.3	20.9	14.0	49.33	380.9	-177.0	1,191.0	1,164.4	26.66	44.668	
6,220.8	5,911.8	5,600.0	5,584.3	21.3	14.0	45.17	380.9	-177.0	1,210.3	1,185.0	25.32	47.799	
6,300.0	5,911.8	5,600.0	5,584.3	22.4	14.0	40.65	380.9	-177.0	1,284.2	1,259.8	24.39	52.654	
6,400.0	5,911.8	5,578.5	5,564.2	23.8	13.9	31.02	374.3	-173.2	1,378.8	1,357.8	20.97	65.763	
6,500.0	5,911.8	5,571.7	5,557.7	25.2	13.8	20.94	372.4	-172.1	1,474.9	1,458.1	16.88	87.403	
6,600.0	5,911.8	5,550.0	5,537.0	26.7	13.7	8.11	366.7	-168.8	1,572.1	1,560.2	11.98	131.235	
6,700.0	5,911.8	5,550.0	5,537.0	28.2	13.7	-4.45	366.7	-168.8	1,669.4	1,658.3	11.16	149.618	
6,800.0	5,911.8	5,550.0	5,537.0	29.7	13.7	-17.32	366.7	-168.8	1,766.9	1,750.8	16.11	109.680	
6,900.0	5,911.8	5,550.0	5,537.0	31.2	13.7	-29.20	366.7	-168.8	1,864.3	1,841.2	23.14	80.573	
7,000.0	5,911.8	5,550.0	5,537.0	32.7	13.7	-39.30	366.7	-168.8	1,961.5	1,931.9	29.54	66.410	
7,100.0	5,911.8	5,550.0	5,537.0	34.2	13.7	-47.46	366.7	-168.8	2,058.1	2,023.5	34.60	59.490	
7,112.4	5,911.8	5,550.0	5,537.0	34.4	13.7	-48.35	366.7	-168.8	2,070.1	2,034.9	35.13	58.919	
7,200.0	5,911.8	5,529.1	5,516.9	35.8	13.6	-47.04	362.0	-166.1	2,154.0	2,118.5	35.47	60.721	
7,300.0	5,911.8	5,524.2	5,512.2	37.4	13.6	-46.74	361.0	-165.5	2,250.5	2,213.9	36.56	61.562	
7,400.0	5,911.8	5,519.7	5,507.7	39.1	13.6	-46.46	360.1	-165.0	2,347.2	2,309.5	37.66	62.325	
7,500.0	5,911.9	5,500.0	5,488.5	40.7	13.5	-45.26	356.6	-162.9	2,444.3	2,406.1	38.24	63.919	
7,600.0	5,911.9	5,500.0	5,488.5	42.4	13.5	-45.26	356.6	-162.9	2,541.4	2,501.8	39.58	64.212	
7,700.0	5,911.9	5,500.0	5,488.5	44.1	13.5	-45.26	356.6	-162.9	2,638.7	2,597.7	40.93	64.473	
7,800.0	5,911.9	5,500.0	5,488.5	45.8	13.5	-45.26	356.6	-162.9	2,736.1	2,693.8	42.28	64.708	
7,900.0	5,911.9	5,500.0	5,488.5	47.6	13.5	-45.26	356.6	-162.9	2,833.8	2,790.1	43.65	64.919	
8,000.0	5,911.9	5,500.0	5,488.5	49.3	13.5	-45.26	356.6	-162.9	2,931.6	2,886.5	45.02	65.111	
8,100.0	5,911.9	5,500.0	5,488.5	51.1	13.5	-45.26	356.6	-162.9	3,029.5	2,983.1	46.40	65.285	
8,200.0	5,911.9	5,500.0	5,488.5	52.8	13.5	-45.26	356.6	-162.9	3,127.6	3,079.8	47.79	65.443	
8,300.0	5,911.9	5,500.0	5,488.5	54.6	13.5	-45.26	356.6	-162.9	3,225.8	3,176.6	49.18	65.588	
8,400.0	5,911.9	5,500.0	5,488.5	56.4	13.5	-45.26	356.6	-162.9	3,324.1	3,273.5	50.58	65.721	
8,500.0	5,911.9	5,500.0	5,488.5	58.2	13.5	-45.26	356.6	-162.9	3,422.5	3,370.5	51.98	65.843	
8,600.0	5,911.9	5,500.0	5,488.5	60.0	13.5	-45.26	356.6	-162.9	3,520.9	3,467.6	53.38	65.956	
8,700.0	5,911.9	5,500.0	5,488.5	61.8	13.5	-45.26	356.6	-162.9	3,619.5	3,564.7	54.79	66.060	
8,800.0	5,911.9	5,500.0	5,488.5	63.7	13.5	-45.26	356.6	-162.9	3,718.2	3,662.0	56.20	66.156	
8,900.0	5,911.9	5,477.4	5,466.2	65.5	13.5	-43.92	353.4	-161.0	3,816.4	3,759.9	56.48	67.576	
9,000.0	5,911.9	5,475.6	5,464.4	67.3	13.5	-43.82	353.1	-160.9	3,915.1	3,857.3	57.78	67.762	
9,100.0	5,911.9	5,473.9	5,462.8	69.2	13.4	-43.72	352.9	-160.8	4,013.9	3,954.8	59.08	67.938	
9,200.0	5,911.9	5,472.3	5,461.2	71.0	13.4	-43.62	352.7	-160.7	4,112.7	4,052.3	60.39	68.104	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0201A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	5,450.0	5,439.0	72.8	13.4	-42.33	350.5	-159.4	4,212.0	4,151.4	60.57	69.537	
9,400.0	5,911.9	5,450.0	5,439.0	74.7	13.4	-42.33	350.5	-159.4	4,310.8	4,248.9	61.94	69.594	
9,500.0	5,911.9	5,450.0	5,439.0	76.5	13.4	-42.33	350.5	-159.4	4,409.8	4,346.4	63.32	69.647	
9,600.0	5,911.9	5,450.0	5,439.0	78.4	13.4	-42.33	350.5	-159.4	4,508.7	4,444.0	64.69	69.697	
9,700.0	5,911.9	5,450.0	5,439.0	80.3	13.4	-42.33	350.5	-159.4	4,607.7	4,541.7	66.07	69.744	
9,800.0	5,911.9	5,450.0	5,439.0	82.1	13.4	-42.33	350.5	-159.4	4,706.8	4,639.3	67.44	69.789	
9,900.0	5,911.9	5,450.0	5,439.0	84.0	13.4	-42.33	350.5	-159.4	4,805.9	4,737.1	68.82	69.831	
10,000.0	5,911.9	5,450.0	5,439.0	85.9	13.4	-42.33	350.5	-159.4	4,905.0	4,834.8	70.20	69.871	
10,100.0	5,911.9	5,450.0	5,439.0	87.7	13.4	-42.33	350.5	-159.4	5,004.2	4,932.6	71.58	69.908	
10,200.0	5,911.9	5,450.0	5,439.0	89.6	13.4	-42.33	350.5	-159.4	5,103.4	5,030.4	72.96	69.944	
10,300.0	5,911.9	5,450.0	5,439.0	91.5	13.4	-42.33	350.5	-159.4	5,202.6	5,128.2	74.35	69.978	
10,400.0	5,911.9	5,450.0	5,439.0	93.4	13.4	-42.33	350.5	-159.4	5,301.8	5,226.1	75.73	70.010	
10,500.0	5,911.9	5,450.0	5,439.0	95.2	13.4	-42.33	350.5	-159.4	5,401.1	5,324.0	77.11	70.041	
10,600.0	5,911.9	5,450.0	5,439.0	97.1	13.4	-42.33	350.5	-159.4	5,500.4	5,421.9	78.50	70.070	
10,700.0	5,911.9	5,450.0	5,439.0	99.0	13.4	-42.33	350.5	-159.4	5,599.8	5,519.9	79.89	70.098	
10,800.0	5,911.9	5,450.0	5,439.0	100.9	13.4	-42.33	350.5	-159.4	5,699.1	5,617.9	81.27	70.124	
10,900.0	5,911.9	5,450.0	5,439.0	102.8	13.4	-42.33	350.5	-159.4	5,798.5	5,715.9	82.66	70.150	
11,000.0	5,911.9	5,450.0	5,439.0	104.6	13.4	-42.33	350.5	-159.4	5,897.9	5,813.9	84.05	70.174	
11,100.0	5,911.9	5,450.0	5,439.0	106.5	13.4	-42.33	350.5	-159.4	5,997.3	5,911.9	85.44	70.197	
11,200.0	5,911.9	5,450.0	5,439.0	108.4	13.4	-42.33	350.5	-159.4	6,096.8	6,009.9	86.82	70.219	
11,300.0	5,911.9	5,450.0	5,439.0	110.3	13.4	-42.33	350.5	-159.4	6,196.2	6,108.0	88.21	70.241	
11,400.0	5,911.9	5,450.0	5,439.0	112.2	13.4	-42.33	350.5	-159.4	6,295.7	6,206.1	89.60	70.261	
11,500.0	5,911.9	5,450.0	5,439.0	114.1	13.4	-42.33	350.5	-159.4	6,395.2	6,304.2	90.99	70.281	
11,600.0	5,912.0	5,450.0	5,439.0	116.0	13.4	-42.33	350.5	-159.4	6,494.7	6,402.3	92.39	70.300	
11,700.0	5,912.0	5,450.0	5,439.0	117.9	13.4	-42.33	350.5	-159.4	6,594.2	6,500.4	93.78	70.318	
11,800.0	5,912.0	5,450.0	5,439.0	119.8	13.4	-42.33	350.5	-159.4	6,693.8	6,598.6	95.17	70.336	
11,900.0	5,912.0	5,450.0	5,439.0	121.7	13.4	-42.33	350.5	-159.4	6,793.3	6,696.7	96.56	70.352	
12,000.0	5,912.0	5,450.0	5,439.0	123.6	13.4	-42.33	350.5	-159.4	6,892.9	6,794.9	97.95	70.369	
12,100.0	5,912.0	5,444.5	5,433.5	125.5	13.4	-42.02	350.1	-159.1	6,992.4	6,893.5	98.88	70.715	
12,200.0	5,912.0	5,443.9	5,432.9	127.4	13.4	-41.99	350.1	-159.1	7,092.0	6,991.8	100.22	70.764	
12,300.0	5,912.0	5,438.0	5,427.0	129.3	13.3	-41.66	349.7	-158.9	7,191.6	7,090.5	101.10	71.133	
12,400.0	5,912.0	5,438.0	5,427.0	131.2	13.3	-41.66	349.7	-158.9	7,291.2	7,188.7	102.48	71.147	
12,500.0	5,912.0	5,438.0	5,427.0	133.1	13.3	-41.66	349.7	-158.9	7,390.8	7,287.0	103.86	71.160	
12,600.0	5,912.0	5,438.0	5,427.0	135.0	13.3	-41.66	349.7	-158.9	7,490.4	7,385.2	105.24	71.172	
12,700.0	5,912.0	5,438.0	5,427.0	136.9	13.3	-41.66	349.7	-158.9	7,590.1	7,483.4	106.63	71.185	
12,800.0	5,912.0	5,438.0	5,427.0	138.8	13.3	-41.66	349.7	-158.9	7,689.7	7,581.7	108.01	71.196	
12,900.0	5,912.0	5,438.0	5,427.0	140.7	13.3	-41.66	349.7	-158.9	7,789.4	7,680.0	109.39	71.208	
13,000.0	5,912.0	5,438.0	5,427.0	142.6	13.3	-41.66	349.7	-158.9	7,889.0	7,778.2	110.77	71.219	
13,100.0	5,912.0	5,438.0	5,427.0	144.5	13.3	-41.66	349.7	-158.9	7,988.7	7,876.5	112.15	71.230	
13,200.0	5,912.0	5,438.0	5,427.0	146.4	13.3	-41.66	349.7	-158.9	8,088.3	7,974.8	113.54	71.240	
13,300.0	5,912.0	5,438.0	5,427.0	148.3	13.3	-41.66	349.7	-158.9	8,188.0	8,073.1	114.92	71.250	
13,400.0	5,912.0	5,438.0	5,427.0	150.2	13.3	-41.66	349.7	-158.9	8,287.7	8,171.4	116.30	71.260	
13,500.0	5,912.0	5,432.4	5,421.4	152.1	13.3	-41.34	349.4	-158.7	8,387.4	8,270.3	117.14	71.604	
13,579.9	5,912.0	5,427.6	5,416.6	153.6	13.3	-41.08	349.1	-158.5	8,467.1	8,349.3	117.76	71.899	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	23.81	74.9	33.0	81.9				
100.0	100.0	100.0	100.0	0.1	0.1	23.81	74.9	33.0	81.9	81.7	0.19	437.681	
200.0	200.0	200.0	200.0	0.3	0.3	23.81	74.9	33.0	81.9	81.2	0.64	128.595	
300.0	300.0	300.0	300.0	0.5	0.5	23.81	74.9	33.0	81.9	80.8	1.09	75.370	
400.0	400.0	400.0	400.0	0.8	0.8	23.81	74.9	33.0	81.9	80.3	1.54	53.306	
500.0	500.0	500.0	500.0	1.0	1.0	23.81	74.9	33.0	81.9	79.9	1.99	41.235	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	177.12	74.9	33.0	83.6	81.2	2.41	34.666	
700.0	699.8	699.8	699.8	1.4	1.4	177.28	74.9	33.0	88.8	86.0	2.83	31.442	
800.0	799.6	797.2	797.2	1.6	1.7	176.81	76.5	32.5	97.0	93.8	3.24	29.936	
900.0	899.4	894.0	893.9	1.8	1.9	175.22	81.1	30.9	107.8	104.1	3.67	29.367	
1,000.0	999.1	993.0	992.6	2.1	2.1	173.32	87.6	28.7	120.0	115.9	4.11	29.215	
1,100.0	1,098.9	1,092.2	1,091.5	2.3	2.3	171.77	94.2	26.4	132.4	127.8	4.55	29.098	
1,200.0	1,198.6	1,191.4	1,190.5	2.5	2.6	170.48	100.7	24.1	144.8	139.9	5.00	28.992	
1,300.0	1,298.4	1,290.5	1,289.4	2.8	2.8	169.40	107.2	21.9	157.4	151.9	5.45	28.896	
1,400.0	1,398.1	1,389.7	1,388.3	3.0	3.1	168.47	113.8	19.6	169.9	164.0	5.90	28.809	
1,500.0	1,497.9	1,488.9	1,487.3	3.3	3.3	167.68	120.3	17.4	182.5	176.2	6.35	28.732	
1,600.0	1,597.6	1,588.0	1,586.2	3.5	3.6	166.98	126.9	15.1	195.1	188.3	6.81	28.660	
1,700.0	1,697.4	1,687.2	1,685.1	3.8	3.8	166.38	133.4	12.9	207.8	200.5	7.27	28.598	
1,800.0	1,797.2	1,786.4	1,784.1	4.1	4.1	165.84	139.9	10.6	220.5	212.7	7.72	28.540	
1,900.0	1,896.9	1,885.6	1,883.0	4.3	4.3	165.36	146.5	8.4	233.1	225.0	8.18	28.488	
2,000.0	1,996.7	1,984.7	1,981.9	4.6	4.6	164.92	153.0	6.1	245.8	237.2	8.64	28.441	
2,100.0	2,096.4	2,083.9	2,080.9	4.8	4.8	164.54	159.6	3.9	258.6	249.5	9.10	28.398	
2,200.0	2,196.2	2,183.1	2,179.8	5.1	5.1	164.18	166.1	1.6	271.3	261.7	9.57	28.358	
2,300.0	2,295.9	2,282.3	2,278.7	5.4	5.3	163.86	172.6	-0.7	284.0	274.0	10.03	28.322	
2,400.0	2,395.7	2,381.4	2,377.7	5.6	5.6	163.57	179.2	-2.9	296.8	286.3	10.49	28.288	
2,500.0	2,495.5	2,480.6	2,476.6	5.9	5.8	163.30	185.7	-5.2	309.5	298.6	10.95	28.257	
2,600.0	2,595.2	2,579.8	2,575.5	6.1	6.1	163.05	192.3	-7.4	322.3	310.8	11.42	28.228	
2,700.0	2,695.0	2,679.0	2,674.5	6.4	6.3	162.82	198.8	-9.7	335.0	323.1	11.88	28.201	
2,800.0	2,794.7	2,778.1	2,773.4	6.7	6.6	162.61	205.4	-11.9	347.8	335.4	12.34	28.176	
2,900.0	2,894.5	2,877.3	2,872.3	6.9	6.8	162.42	211.9	-14.2	360.6	347.7	12.81	28.153	
3,000.0	2,994.2	2,976.5	2,971.3	7.2	7.1	162.23	218.4	-16.4	373.3	360.1	13.27	28.131	
3,100.0	3,094.0	3,075.7	3,070.2	7.5	7.3	162.06	225.0	-18.7	386.1	372.4	13.74	28.111	
3,200.0	3,193.7	3,174.8	3,169.1	7.7	7.6	161.90	231.5	-20.9	398.9	384.7	14.20	28.092	
3,300.0	3,293.5	3,274.0	3,268.1	8.0	7.8	161.75	238.1	-23.2	411.7	397.0	14.66	28.074	
3,400.0	3,393.3	3,373.2	3,367.0	8.3	8.1	161.61	244.6	-25.5	424.5	409.3	15.13	28.056	
3,500.0	3,493.0	3,472.4	3,465.9	8.5	8.3	161.48	251.1	-27.7	437.2	421.6	15.59	28.040	
3,600.0	3,592.8	3,571.5	3,564.9	8.8	8.6	161.35	257.7	-30.0	450.0	434.0	16.06	28.025	
3,700.0	3,692.5	3,670.7	3,663.8	9.0	8.8	161.23	264.2	-32.2	462.8	446.3	16.52	28.011	
3,800.0	3,792.3	3,769.9	3,762.7	9.3	9.1	161.12	270.8	-34.5	475.6	458.6	16.99	27.997	
3,900.0	3,892.0	3,869.1	3,861.7	9.6	9.4	161.01	277.3	-36.7	488.4	471.0	17.45	27.984	
4,000.0	3,991.8	3,968.2	3,960.6	9.8	9.6	160.91	283.8	-39.0	501.2	483.3	17.92	27.972	
4,100.0	4,091.6	4,067.4	4,059.5	10.1	9.9	160.82	290.4	-41.2	514.0	495.6	18.38	27.960	
4,200.0	4,191.3	4,166.6	4,158.5	10.4	10.1	160.72	296.9	-43.5	526.8	508.0	18.85	27.949	
4,300.0	4,291.1	4,265.7	4,257.4	10.6	10.4	160.64	303.5	-45.7	539.6	520.3	19.31	27.938	
4,400.0	4,390.8	4,364.9	4,356.3	10.9	10.6	160.55	310.0	-48.0	552.4	532.6	19.78	27.928	
4,500.0	4,490.6	4,464.1	4,455.2	11.2	10.9	160.48	316.5	-50.3	565.2	545.0	20.25	27.918	
4,600.0	4,590.3	4,563.3	4,554.2	11.4	11.1	160.40	323.1	-52.5	578.0	557.3	20.71	27.909	
4,700.0	4,690.1	4,662.4	4,653.1	11.7	11.4	160.33	329.6	-54.8	590.8	569.7	21.18	27.900	
4,800.0	4,789.9	4,761.6	4,752.0	11.9	11.6	160.26	336.2	-57.0	603.6	582.0	21.64	27.891	
4,900.0	4,889.6	4,860.8	4,851.0	12.2	11.9	160.19	342.7	-59.3	616.4	594.3	22.11	27.883	
5,000.0	4,989.4	4,960.0	4,949.9	12.5	12.1	160.13	349.2	-61.5	629.3	606.7	22.57	27.875	
5,100.0	5,089.1	5,059.1	5,048.8	12.7	12.4	160.07	355.8	-63.8	642.1	619.0	23.04	27.867	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,158.3	5,147.8	13.0	12.7	160.01	362.3	-66.0	654.9	631.4	23.51	27.860	
5,300.0	5,288.6	5,257.5	5,246.7	13.3	12.9	159.95	368.9	-68.3	667.7	643.7	23.97	27.853	
5,400.0	5,388.4	5,356.7	5,345.6	13.5	13.2	159.90	375.4	-70.5	680.5	656.1	24.44	27.846	
5,439.0	5,427.3	5,395.3	5,384.2	13.6	13.3	159.88	377.9	-71.4	685.5	660.9	24.62	27.843	SF
5,450.0	5,438.3	5,406.2	5,395.1	13.7	13.3	159.82	378.7	-71.7	687.0	662.4	24.64	27.884	
5,500.0	5,487.8	5,455.3	5,444.0	13.8	13.4	159.52	381.9	-72.8	696.6	672.0	24.61	28.301	
5,550.0	5,536.4	5,503.2	5,491.8	14.0	13.5	159.16	385.1	-73.9	710.6	686.2	24.41	29.106	
5,600.0	5,583.6	5,544.2	5,532.8	14.3	13.6	158.68	387.8	-74.8	728.8	704.8	24.03	30.327	
5,650.0	5,629.1	5,550.0	5,538.5	14.6	13.7	157.63	388.2	-75.0	752.5	729.1	23.45	32.091	
5,700.0	5,672.4	5,581.1	5,569.4	14.9	13.8	156.51	391.7	-76.2	780.8	758.0	22.82	34.211	
5,750.0	5,713.1	5,600.0	5,588.0	15.3	13.8	154.81	394.7	-77.2	814.0	791.8	22.15	36.748	
5,800.0	5,750.9	5,600.0	5,588.0	15.8	13.8	152.04	394.7	-77.2	851.3	829.7	21.59	39.433	
5,850.0	5,785.3	5,621.7	5,609.3	16.3	13.9	148.89	398.9	-78.6	891.7	870.4	21.30	41.858	
5,900.0	5,816.1	5,631.0	5,618.3	16.8	13.9	144.01	400.9	-79.4	935.0	913.3	21.66	43.173	
5,950.0	5,843.0	5,650.0	5,636.6	17.4	14.0	137.69	405.6	-81.0	980.6	957.7	22.89	42.834	
6,000.0	5,865.7	5,650.0	5,636.6	18.0	14.0	126.65	405.6	-81.0	1,027.5	1,001.6	25.89	39.682	
6,050.0	5,884.1	5,650.0	5,636.6	18.7	14.0	109.99	405.6	-81.0	1,075.5	1,045.4	30.11	35.724	
6,100.0	5,897.9	5,650.0	5,636.6	19.4	14.0	87.79	405.6	-81.0	1,124.1	1,091.3	32.78	34.288	
6,150.0	5,907.0	5,650.0	5,636.6	20.2	14.0	65.32	405.6	-81.0	1,172.7	1,141.8	30.96	37.885	
6,200.0	5,911.4	5,650.0	5,636.6	20.9	14.0	48.17	405.6	-81.0	1,221.0	1,194.6	26.47	46.126	
6,220.8	5,911.8	5,650.0	5,636.6	21.3	14.0	42.80	405.6	-81.0	1,241.0	1,216.4	24.59	50.457	
6,300.0	5,911.8	5,650.0	5,636.6	22.4	14.0	36.54	405.6	-81.0	1,316.9	1,294.2	22.78	57.814	
6,400.0	5,911.8	5,650.0	5,636.6	23.8	14.0	26.05	405.6	-81.0	1,414.1	1,395.4	18.71	75.574	
6,500.0	5,911.8	5,628.5	5,615.9	25.2	13.9	10.73	400.4	-79.2	1,511.5	1,499.2	12.30	122.839	
6,600.0	5,911.8	5,623.1	5,610.6	26.7	13.9	-4.71	399.2	-78.7	1,609.7	1,599.0	10.63	151.449	
6,700.0	5,911.8	5,600.0	5,588.0	28.2	13.8	-19.18	394.7	-77.2	1,708.2	1,691.7	16.51	103.454	
6,800.0	5,911.8	5,600.0	5,588.0	29.7	13.8	-32.04	394.7	-77.2	1,806.1	1,781.8	24.26	74.449	
6,900.0	5,911.8	5,600.0	5,588.0	31.2	13.8	-42.57	394.7	-77.2	1,903.6	1,872.9	30.77	61.857	
7,000.0	5,911.8	5,600.0	5,588.0	32.7	13.8	-50.77	394.7	-77.2	2,000.6	1,964.9	35.69	56.052	
7,100.0	5,911.8	5,600.0	5,588.0	34.2	13.8	-57.06	394.7	-77.2	2,096.9	2,057.6	39.32	53.328	
7,112.4	5,911.8	5,600.0	5,588.0	34.4	13.8	-57.74	394.7	-77.2	2,108.8	2,069.1	39.70	53.117	
7,200.0	5,911.8	5,600.0	5,588.0	35.8	13.8	-57.74	394.7	-77.2	2,192.8	2,151.9	40.90	53.615	
7,300.0	5,911.8	5,600.0	5,588.0	37.4	13.8	-57.74	394.7	-77.2	2,289.1	2,246.8	42.31	54.109	
7,400.0	5,911.8	5,600.0	5,588.0	39.1	13.8	-57.74	394.7	-77.2	2,385.7	2,342.0	43.73	54.554	
7,500.0	5,911.9	5,600.0	5,588.0	40.7	13.8	-57.74	394.7	-77.2	2,482.5	2,437.4	45.17	54.956	
7,600.0	5,911.9	5,600.0	5,588.0	42.4	13.8	-57.74	394.7	-77.2	2,579.6	2,533.0	46.63	55.321	
7,700.0	5,911.9	5,600.0	5,588.0	44.1	13.8	-57.74	394.7	-77.2	2,676.9	2,628.8	48.10	55.652	
7,800.0	5,911.9	5,578.4	5,566.7	45.8	13.8	-56.13	391.4	-76.0	2,773.9	2,725.1	48.79	56.852	
7,900.0	5,911.9	5,576.1	5,564.4	47.6	13.7	-55.96	391.0	-75.9	2,871.5	2,821.3	50.23	57.162	
8,000.0	5,911.9	5,573.9	5,562.2	49.3	13.7	-55.80	390.8	-75.8	2,969.2	2,917.5	51.69	57.447	
8,100.0	5,911.9	5,571.8	5,560.2	51.1	13.7	-55.65	390.5	-75.8	3,067.0	3,013.9	53.15	57.710	
8,200.0	5,911.9	5,550.0	5,538.5	52.8	13.7	-54.07	388.2	-75.0	3,165.4	3,111.7	53.73	58.911	
8,300.0	5,911.9	5,550.0	5,538.5	54.6	13.7	-54.07	388.2	-75.0	3,263.4	3,208.2	55.27	59.047	
8,400.0	5,911.9	5,550.0	5,538.5	56.4	13.7	-54.07	388.2	-75.0	3,361.6	3,304.8	56.81	59.172	
8,500.0	5,911.9	5,550.0	5,538.5	58.2	13.7	-54.07	388.2	-75.0	3,459.8	3,401.5	58.36	59.288	
8,600.0	5,911.9	5,550.0	5,538.5	60.0	13.7	-54.07	388.2	-75.0	3,558.2	3,498.3	59.91	59.394	
8,700.0	5,911.9	5,550.0	5,538.5	61.8	13.7	-54.07	388.2	-75.0	3,656.6	3,595.1	61.46	59.493	
8,800.0	5,911.9	5,550.0	5,538.5	63.7	13.7	-54.07	388.2	-75.0	3,755.1	3,692.1	63.02	59.585	
8,900.0	5,911.9	5,550.0	5,538.5	65.5	13.7	-54.07	388.2	-75.0	3,853.7	3,789.1	64.58	59.670	
9,000.0	5,911.9	5,550.0	5,538.5	67.3	13.7	-54.07	388.2	-75.0	3,952.4	3,886.2	66.15	59.750	
9,100.0	5,911.9	5,550.0	5,538.5	69.2	13.7	-54.07	388.2	-75.0	4,051.1	3,983.4	67.72	59.824	
9,200.0	5,911.9	5,550.0	5,538.5	71.0	13.7	-54.07	388.2	-75.0	4,149.9	4,080.6	69.29	59.894	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0202B - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	5,550.0	5,538.5	72.8	13.7	-54.07	388.2	-75.0	4,248.7	4,177.9	70.86	59.959	
9,400.0	5,911.9	5,550.0	5,538.5	74.7	13.7	-54.07	388.2	-75.0	4,347.6	4,275.2	72.44	60.021	
9,500.0	5,911.9	5,550.0	5,538.5	76.5	13.7	-54.07	388.2	-75.0	4,446.6	4,372.6	74.01	60.079	
9,600.0	5,911.9	5,550.0	5,538.5	78.4	13.7	-54.07	388.2	-75.0	4,545.6	4,470.0	75.59	60.133	
9,700.0	5,911.9	5,550.0	5,538.5	80.3	13.7	-54.07	388.2	-75.0	4,644.6	4,567.4	77.17	60.185	
9,800.0	5,911.9	5,550.0	5,538.5	82.1	13.7	-54.07	388.2	-75.0	4,743.7	4,664.9	78.75	60.234	
9,900.0	5,911.9	5,550.0	5,538.5	84.0	13.7	-54.07	388.2	-75.0	4,842.8	4,762.5	80.34	60.280	
10,000.0	5,911.9	5,550.0	5,538.5	85.9	13.7	-54.07	388.2	-75.0	4,941.9	4,860.0	81.92	60.324	
10,100.0	5,911.9	5,550.0	5,538.5	87.7	13.7	-54.07	388.2	-75.0	5,041.1	4,957.6	83.51	60.365	
10,200.0	5,911.9	5,550.0	5,538.5	89.6	13.7	-54.07	388.2	-75.0	5,140.3	5,055.2	85.10	60.405	
10,300.0	5,911.9	5,545.1	5,533.6	91.5	13.7	-53.72	387.8	-74.8	5,239.6	5,153.2	86.35	60.675	
10,400.0	5,911.9	5,540.0	5,528.5	93.4	13.6	-53.37	387.5	-74.7	5,338.9	5,251.3	87.59	60.951	
10,500.0	5,911.9	5,540.0	5,528.5	95.2	13.6	-53.37	387.5	-74.7	5,438.1	5,349.0	89.17	60.984	
10,600.0	5,911.9	5,540.0	5,528.5	97.1	13.6	-53.37	387.5	-74.7	5,537.5	5,446.7	90.75	61.016	
10,700.0	5,911.9	5,540.0	5,528.5	99.0	13.6	-53.37	387.5	-74.7	5,636.8	5,544.5	92.34	61.047	
10,800.0	5,911.9	5,540.0	5,528.5	100.9	13.6	-53.37	387.5	-74.7	5,736.2	5,642.2	93.92	61.076	
10,900.0	5,911.9	5,540.0	5,528.5	102.8	13.6	-53.37	387.5	-74.7	5,835.5	5,740.0	95.50	61.104	
11,000.0	5,911.9	5,540.0	5,528.5	104.6	13.6	-53.37	387.5	-74.7	5,934.9	5,837.8	97.09	61.131	
11,100.0	5,911.9	5,538.5	5,527.0	106.5	13.6	-53.26	387.4	-74.7	6,034.4	5,935.8	98.56	61.227	
11,200.0	5,911.9	5,531.9	5,520.5	108.4	13.6	-52.80	387.0	-74.5	6,133.8	6,034.2	99.63	61.565	
11,300.0	5,911.9	5,525.3	5,513.9	110.3	13.6	-52.35	386.5	-74.4	6,233.2	6,132.5	100.69	61.904	
11,400.0	5,911.9	5,518.7	5,507.3	112.2	13.6	-51.90	386.1	-74.2	6,332.7	6,231.0	101.74	62.243	
11,500.0	5,911.9	5,512.1	5,500.7	114.1	13.6	-51.46	385.7	-74.1	6,432.2	6,329.4	102.78	62.582	
11,600.0	5,912.0	5,505.5	5,494.2	116.0	13.5	-51.03	385.2	-73.9	6,531.6	6,427.8	103.81	62.922	
11,700.0	5,912.0	5,499.0	5,487.6	117.9	13.5	-50.60	384.8	-73.8	6,631.1	6,526.3	104.82	63.262	
11,800.0	5,912.0	5,492.4	5,481.0	119.8	13.5	-50.17	384.3	-73.6	6,730.6	6,624.8	105.82	63.603	
11,900.0	5,912.0	5,485.8	5,474.4	121.7	13.5	-49.75	383.9	-73.5	6,830.1	6,723.3	106.81	63.944	
12,000.0	5,912.0	5,479.2	5,467.9	123.6	13.5	-49.34	383.5	-73.3	6,929.6	6,821.8	107.80	64.285	
12,100.0	5,912.0	5,472.6	5,461.3	125.5	13.5	-48.93	383.0	-73.2	7,029.2	6,920.4	108.77	64.627	
12,200.0	5,912.0	5,466.0	5,454.7	127.4	13.4	-48.53	382.6	-73.0	7,128.7	7,019.0	109.73	64.968	
12,300.0	5,912.0	5,459.4	5,448.1	129.3	13.4	-48.13	382.2	-72.9	7,228.2	7,117.5	110.68	65.310	
12,400.0	5,912.0	5,452.8	5,441.6	131.2	13.4	-47.73	381.7	-72.7	7,327.8	7,216.1	111.62	65.652	
12,500.0	5,912.0	5,446.2	5,435.0	133.1	13.4	-47.35	381.3	-72.6	7,427.3	7,314.8	112.55	65.994	
12,600.0	5,912.0	5,439.6	5,428.4	135.0	13.4	-46.96	380.9	-72.4	7,526.9	7,413.4	113.47	66.336	
12,700.0	5,912.0	5,433.0	5,421.8	136.9	13.4	-46.59	380.4	-72.3	7,626.4	7,512.0	114.38	66.678	
12,800.0	5,912.0	5,426.4	5,415.3	138.8	13.3	-46.21	380.0	-72.1	7,726.0	7,610.7	115.28	67.020	
12,900.0	5,912.0	5,419.8	5,408.7	140.7	13.3	-45.84	379.6	-72.0	7,825.6	7,709.4	116.17	67.362	
13,000.0	5,912.0	5,413.3	5,402.1	142.6	13.3	-45.48	379.1	-71.8	7,925.1	7,808.1	117.06	67.704	
13,100.0	5,912.0	5,406.7	5,395.5	144.5	13.3	-45.12	378.7	-71.7	8,024.7	7,906.8	117.93	68.045	
13,200.0	5,912.0	5,400.1	5,388.9	146.4	13.3	-44.77	378.3	-71.5	8,124.3	8,005.5	118.80	68.387	
13,300.0	5,912.0	5,393.5	5,382.4	148.3	13.3	-44.42	377.8	-71.4	8,223.9	8,104.2	119.66	68.728	
13,400.0	5,912.0	5,386.9	5,375.8	150.2	13.2	-44.07	377.4	-71.2	8,323.5	8,203.0	120.51	69.068	
13,500.0	5,912.0	5,380.3	5,369.2	152.1	13.2	-43.73	377.0	-71.1	8,423.1	8,301.7	121.35	69.409	
13,579.9	5,912.0	5,375.0	5,364.0	153.6	13.2	-43.46	376.6	-71.0	8,502.7	8,380.6	122.02	69.681	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0203A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	41.43	74.9	66.1	99.9				
100.0	100.0	100.0	100.0	0.1	0.1	41.43	74.9	66.1	99.9	99.7	0.19	534.066	
200.0	200.0	200.0	200.0	0.3	0.3	41.43	74.9	66.1	99.9	99.2	0.64	156.908	
300.0	300.0	300.0	300.0	0.5	0.5	41.43	74.9	66.1	99.9	98.8	1.09	91.963	
400.0	400.0	400.0	400.0	0.8	0.8	41.43	74.9	66.1	99.9	98.3	1.54	65.042	
500.0	500.0	500.0	500.0	1.0	1.0	41.43	74.9	66.1	99.9	97.9	1.99	50.313	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-165.56	74.9	66.1	101.6	99.2	2.41	42.123	
700.0	699.8	697.3	697.2	1.4	1.4	-166.85	76.5	65.9	107.8	105.0	2.82	38.220	
800.0	799.6	793.8	793.7	1.6	1.7	-169.29	81.4	65.5	118.3	115.1	3.24	36.495	
900.0	899.4	892.8	892.4	1.8	1.9	-171.92	88.3	64.9	130.4	126.8	3.68	35.487	
1,000.0	999.1	991.9	991.2	2.1	2.1	-174.10	95.2	64.3	142.8	138.7	4.11	34.721	
1,100.0	1,098.9	1,091.0	1,090.1	2.3	2.4	-175.94	102.1	63.6	155.3	150.7	4.55	34.104	
1,200.0	1,198.6	1,190.1	1,188.9	2.5	2.6	-177.51	108.9	63.0	167.9	162.9	5.00	33.600	
1,300.0	1,298.4	1,289.2	1,287.8	2.8	2.8	-178.85	115.8	62.4	180.7	175.2	5.45	33.181	
1,400.0	1,398.1	1,388.3	1,386.7	3.0	3.1	179.98	122.7	61.8	193.5	187.6	5.90	32.829	
1,500.0	1,497.9	1,487.4	1,485.5	3.3	3.3	178.96	129.6	61.2	206.4	200.1	6.35	32.529	
1,600.0	1,597.6	1,586.5	1,584.4	3.5	3.6	178.06	136.5	60.5	219.4	212.6	6.80	32.273	
1,700.0	1,697.4	1,685.6	1,683.2	3.8	3.8	177.26	143.4	59.9	232.4	225.2	7.25	32.050	
1,800.0	1,797.2	1,784.7	1,782.1	4.1	4.1	176.55	150.2	59.3	245.5	237.8	7.71	31.855	
1,900.0	1,896.9	1,883.8	1,881.0	4.3	4.3	175.90	157.1	58.7	258.6	250.4	8.16	31.684	
2,000.0	1,996.7	1,982.9	1,979.8	4.6	4.6	175.32	164.0	58.1	271.7	263.1	8.62	31.531	
2,100.0	2,096.4	2,082.0	2,078.7	4.8	4.8	174.79	170.9	57.5	284.8	275.7	9.07	31.395	
2,200.0	2,196.2	2,181.1	2,177.5	5.1	5.1	174.31	177.8	56.8	298.0	288.5	9.53	31.273	
2,300.0	2,295.9	2,280.2	2,276.4	5.4	5.3	173.87	184.7	56.2	311.2	301.2	9.99	31.162	
2,400.0	2,395.7	2,379.3	2,375.2	5.6	5.6	173.47	191.6	55.6	324.4	313.9	10.44	31.062	
2,500.0	2,495.5	2,478.4	2,474.1	5.9	5.8	173.09	198.4	55.0	337.6	326.7	10.90	30.971	
2,600.0	2,595.2	2,577.5	2,573.0	6.1	6.1	172.75	205.3	54.4	350.8	339.4	11.36	30.887	
2,700.0	2,695.0	2,676.6	2,671.8	6.4	6.3	172.43	212.2	53.7	364.0	352.2	11.82	30.810	
2,800.0	2,794.7	2,775.7	2,770.7	6.7	6.6	172.13	219.1	53.1	377.3	365.0	12.27	30.740	
2,900.0	2,894.5	2,874.8	2,869.5	6.9	6.9	171.86	226.0	52.5	390.5	377.8	12.73	30.674	
3,000.0	2,994.2	2,973.9	2,968.4	7.2	7.1	171.60	232.9	51.9	403.8	390.6	13.19	30.614	
3,100.0	3,094.0	3,073.0	3,067.3	7.5	7.4	171.35	239.8	51.3	417.1	403.4	13.65	30.558	
3,200.0	3,193.7	3,172.1	3,166.1	7.7	7.6	171.13	246.6	50.6	430.4	416.3	14.11	30.505	
3,300.0	3,293.5	3,271.2	3,265.0	8.0	7.9	170.91	253.5	50.0	443.7	429.1	14.57	30.456	
3,400.0	3,393.3	3,370.3	3,363.8	8.3	8.1	170.71	260.4	49.4	456.9	441.9	15.03	30.410	
3,500.0	3,493.0	3,469.4	3,462.7	8.5	8.4	170.52	267.3	48.8	470.2	454.8	15.49	30.367	
3,600.0	3,592.8	3,568.5	3,561.6	8.8	8.6	170.34	274.2	48.2	483.5	467.6	15.94	30.327	
3,700.0	3,692.5	3,667.6	3,660.4	9.0	8.9	170.17	281.1	47.5	496.8	480.4	16.40	30.289	
3,800.0	3,792.3	3,766.7	3,759.3	9.3	9.1	170.01	288.0	46.9	510.2	493.3	16.86	30.253	
3,900.0	3,892.0	3,865.8	3,858.1	9.6	9.4	169.86	294.8	46.3	523.5	506.2	17.32	30.219	
4,000.0	3,991.8	3,964.9	3,957.0	9.8	9.6	169.71	301.7	45.7	536.8	519.0	17.78	30.187	
4,100.0	4,091.6	4,064.0	4,055.8	10.1	9.9	169.57	308.6	45.1	550.1	531.9	18.24	30.156	
4,200.0	4,191.3	4,163.1	4,154.7	10.4	10.1	169.44	315.5	44.4	563.4	544.7	18.70	30.127	
4,300.0	4,291.1	4,262.2	4,253.6	10.6	10.4	169.32	322.4	43.8	576.8	557.6	19.16	30.100	
4,400.0	4,390.8	4,361.3	4,352.4	10.9	10.7	169.20	329.3	43.2	590.1	570.5	19.62	30.074	
4,500.0	4,490.6	4,460.4	4,451.3	11.2	10.9	169.08	336.1	42.6	603.4	583.3	20.08	30.049	
4,600.0	4,590.3	4,559.5	4,550.1	11.4	11.2	168.97	343.0	42.0	616.8	596.2	20.54	30.025	
4,700.0	4,690.1	4,658.6	4,649.0	11.7	11.4	168.87	349.9	41.3	630.1	609.1	21.00	30.003	
4,800.0	4,789.9	4,757.7	4,747.9	11.9	11.7	168.77	356.8	40.7	643.4	622.0	21.46	29.981	
4,900.0	4,889.6	4,856.8	4,846.7	12.2	11.9	168.67	363.7	40.1	656.8	634.9	21.92	29.960	
5,000.0	4,989.4	4,955.9	4,945.6	12.5	12.2	168.58	370.6	39.5	670.1	647.7	22.38	29.940	
5,100.0	5,089.1	5,055.0	5,044.4	12.7	12.4	168.49	377.5	38.9	683.5	660.6	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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0203A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,154.1	5,143.3	13.0	12.7	168.40	384.3	38.3	696.8	673.5	23.30	29.903	
5,300.0	5,288.6	5,253.2	5,242.2	13.3	12.9	168.32	391.2	37.6	710.1	686.4	23.76	29.886	
5,400.0	5,388.4	5,352.3	5,341.0	13.5	13.2	168.24	398.1	37.0	723.5	699.3	24.22	29.869	
5,439.0	5,427.3	5,390.9	5,379.6	13.6	13.3	168.21	400.8	36.8	728.7	704.3	24.40	29.862	SF
5,450.0	5,438.3	5,401.8	5,390.4	13.7	13.3	168.17	401.6	36.7	730.3	705.9	24.42	29.909	
5,500.0	5,487.8	5,444.0	5,432.6	13.8	13.4	167.94	404.5	36.4	740.3	716.0	24.35	30.404	
5,550.0	5,536.4	5,450.0	5,438.5	14.0	13.4	167.55	405.0	36.4	756.5	732.5	24.01	31.509	
5,600.0	5,583.6	5,483.1	5,471.3	14.3	13.5	167.03	409.1	36.0	778.0	754.5	23.55	33.034	
5,650.0	5,629.1	5,500.0	5,488.0	14.6	13.6	166.25	411.9	35.8	805.3	782.4	22.89	35.185	
5,700.0	5,672.4	5,515.8	5,503.4	14.9	13.7	165.18	415.1	35.5	837.5	815.4	22.08	37.924	
5,750.0	5,713.1	5,529.2	5,516.5	15.3	13.7	163.70	418.1	35.2	874.1	852.9	21.19	41.254	
5,800.0	5,750.9	5,550.0	5,536.6	15.8	13.8	161.75	423.5	34.7	914.4	894.1	20.29	45.055	
5,850.0	5,785.3	5,550.0	5,536.6	16.3	13.8	158.57	423.5	34.7	957.4	937.9	19.57	48.915	
5,900.0	5,816.1	5,550.0	5,536.6	16.8	13.8	153.54	423.5	34.7	1,003.1	983.6	19.48	51.486	
5,950.0	5,843.0	5,550.0	5,536.6	17.4	13.8	144.89	423.5	34.7	1,050.6	1,029.7	20.95	50.151	
6,000.0	5,865.7	5,550.0	5,536.6	18.0	13.8	128.39	423.5	34.7	1,099.3	1,073.8	25.54	43.038	
6,050.0	5,884.1	5,567.6	5,553.4	18.7	13.9	102.92	428.7	34.3	1,148.3	1,116.9	31.37	36.608	
6,100.0	5,897.9	5,567.7	5,553.5	19.4	13.9	65.48	428.7	34.3	1,197.8	1,167.3	30.52	39.241	
6,150.0	5,907.0	5,550.0	5,536.6	20.2	13.8	37.63	423.5	34.7	1,247.4	1,225.3	22.08	56.481	
6,200.0	5,911.4	5,550.0	5,536.6	20.9	13.8	26.13	423.5	34.7	1,295.9	1,278.7	17.16	75.536	
6,220.8	5,911.8	5,550.0	5,536.6	21.3	13.8	23.04	423.5	34.7	1,315.7	1,300.0	15.77	83.436	
6,300.0	5,911.8	5,550.0	5,536.6	22.4	13.8	15.77	423.5	34.7	1,391.4	1,378.4	13.01	106.931	
6,400.0	5,911.8	5,550.0	5,536.6	23.8	13.8	5.07	423.5	34.7	1,487.8	1,478.0	9.77	152.308	
6,500.0	5,911.8	5,550.0	5,536.6	25.2	13.8	-6.79	423.5	34.7	1,584.8	1,574.3	10.45	151.725	
6,600.0	5,911.8	5,550.0	5,536.6	26.7	13.8	-18.81	423.5	34.7	1,681.9	1,666.2	15.77	106.651	
6,700.0	5,911.8	5,530.3	5,517.6	28.2	13.7	-28.87	418.4	35.2	1,778.6	1,756.8	21.76	81.746	
6,800.0	5,911.8	5,524.9	5,512.4	29.7	13.7	-37.81	417.1	35.3	1,875.1	1,847.7	27.43	68.357	
6,900.0	5,911.8	5,519.8	5,507.4	31.2	13.7	-45.18	416.0	35.4	1,971.1	1,939.0	32.09	61.417	
7,000.0	5,911.8	5,500.0	5,488.0	32.7	13.6	-50.18	411.9	35.8	2,066.7	2,031.4	35.29	58.556	
7,100.0	5,911.8	5,500.0	5,488.0	34.2	13.6	-55.33	411.9	35.8	2,161.0	2,122.6	38.43	56.232	
7,112.4	5,911.8	5,500.0	5,488.0	34.4	13.6	-55.90	411.9	35.8	2,172.7	2,133.9	38.77	56.037	
7,200.0	5,911.8	5,500.0	5,488.0	35.8	13.6	-55.90	411.9	35.8	2,255.0	2,215.0	39.95	56.443	
7,300.0	5,911.8	5,500.0	5,488.0	37.4	13.6	-55.90	411.9	35.8	2,349.4	2,308.1	41.33	56.839	
7,400.0	5,911.8	5,500.0	5,488.0	39.1	13.6	-55.90	411.9	35.8	2,444.3	2,401.6	42.74	57.195	
7,500.0	5,911.9	5,500.0	5,488.0	40.7	13.6	-55.90	411.9	35.8	2,539.6	2,495.4	44.20	57.453	
7,600.0	5,911.9	5,500.0	5,488.0	42.4	13.6	-55.90	411.9	35.8	2,635.2	2,589.5	45.70	57.660	
7,700.0	5,911.9	5,500.0	5,488.0	44.1	13.6	-55.90	411.9	35.8	2,731.2	2,684.0	47.22	57.844	
7,800.0	5,911.9	5,500.0	5,488.0	45.8	13.6	-55.90	411.9	35.8	2,827.4	2,778.7	48.74	58.009	
7,900.0	5,911.9	5,500.0	5,488.0	47.6	13.6	-55.90	411.9	35.8	2,923.9	2,873.6	50.27	58.158	
8,000.0	5,911.9	5,500.0	5,488.0	49.3	13.6	-55.90	411.9	35.8	3,020.6	2,968.8	51.82	58.293	
8,100.0	5,911.9	5,500.0	5,488.0	51.1	13.6	-55.90	411.9	35.8	3,117.5	3,064.2	53.37	58.416	
8,200.0	5,911.9	5,478.1	5,466.4	52.8	13.5	-54.58	408.3	36.1	3,214.1	3,160.0	54.11	59.397	
8,300.0	5,911.9	5,476.1	5,464.4	54.6	13.5	-54.46	408.0	36.1	3,311.3	3,255.7	55.58	59.578	
8,400.0	5,911.9	5,474.2	5,462.5	56.4	13.5	-54.35	407.8	36.1	3,408.6	3,351.6	57.05	59.746	
8,500.0	5,911.9	5,472.4	5,460.7	58.2	13.5	-54.24	407.5	36.2	3,506.1	3,447.6	58.53	59.902	
8,600.0	5,911.9	5,450.0	5,438.5	60.0	13.4	-52.93	405.0	36.4	3,604.2	3,545.0	59.17	60.910	
8,700.0	5,911.9	5,450.0	5,438.5	61.8	13.4	-52.93	405.0	36.4	3,701.8	3,641.1	60.71	60.976	
8,800.0	5,911.9	5,450.0	5,438.5	63.7	13.4	-52.93	405.0	36.4	3,799.6	3,737.4	62.25	61.038	
8,900.0	5,911.9	5,450.0	5,438.5	65.5	13.4	-52.93	405.0	36.4	3,897.5	3,833.7	63.79	61.095	
9,000.0	5,911.9	5,450.0	5,438.5	67.3	13.4	-52.93	405.0	36.4	3,995.5	3,930.2	65.34	61.148	
9,100.0	5,911.9	5,450.0	5,438.5	69.2	13.4	-52.93	405.0	36.4	4,093.6	4,026.7	66.89	61.197	
9,200.0	5,911.9	5,450.0	5,438.5	71.0	13.4	-52.93	405.0	36.4	4,191.8	4,123.4	68.44	61.244	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0203A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	5,450.0	5,438.5	72.8	13.4	-52.93	405.0	36.4	4,290.1	4,220.1	70.00	61.287	
9,400.0	5,911.9	5,450.0	5,438.5	74.7	13.4	-52.93	405.0	36.4	4,388.4	4,316.9	71.56	61.328	
9,500.0	5,911.9	5,450.0	5,438.5	76.5	13.4	-52.93	405.0	36.4	4,486.8	4,413.7	73.12	61.366	
9,600.0	5,911.9	5,450.0	5,438.5	78.4	13.4	-52.93	405.0	36.4	4,585.3	4,510.7	74.68	61.402	
9,700.0	5,911.9	5,450.0	5,438.5	80.3	13.4	-52.93	405.0	36.4	4,683.9	4,607.7	76.24	61.437	
9,800.0	5,911.9	5,450.0	5,438.5	82.1	13.4	-52.93	405.0	36.4	4,782.5	4,704.7	77.80	61.469	
9,900.0	5,911.9	5,450.0	5,438.5	84.0	13.4	-52.93	405.0	36.4	4,881.2	4,801.8	79.37	61.499	
10,000.0	5,911.9	5,450.0	5,438.5	85.9	13.4	-52.93	405.0	36.4	4,979.9	4,899.0	80.94	61.528	
10,100.0	5,911.9	5,450.0	5,438.5	87.7	13.4	-52.93	405.0	36.4	5,078.7	4,996.2	82.51	61.556	
10,200.0	5,911.9	5,450.0	5,438.5	89.6	13.4	-52.93	405.0	36.4	5,177.5	5,093.4	84.07	61.582	
10,300.0	5,911.9	5,450.0	5,438.5	91.5	13.4	-52.93	405.0	36.4	5,276.4	5,190.7	85.65	61.607	
10,400.0	5,911.9	5,450.0	5,438.5	93.4	13.4	-52.93	405.0	36.4	5,375.3	5,288.1	87.22	61.631	
10,500.0	5,911.9	5,450.0	5,438.5	95.2	13.4	-52.93	405.0	36.4	5,474.2	5,385.4	88.79	61.653	
10,600.0	5,911.9	5,450.0	5,438.5	97.1	13.4	-52.93	405.0	36.4	5,573.2	5,482.8	90.36	61.675	
10,700.0	5,911.9	5,450.0	5,438.5	99.0	13.4	-52.93	405.0	36.4	5,672.2	5,580.3	91.94	61.696	
10,800.0	5,911.9	5,450.0	5,438.5	100.9	13.4	-52.93	405.0	36.4	5,771.3	5,677.8	93.51	61.716	
10,900.0	5,911.9	5,450.0	5,438.5	102.8	13.4	-52.93	405.0	36.4	5,870.4	5,775.3	95.09	61.735	
11,000.0	5,911.9	5,450.0	5,438.5	104.6	13.4	-52.93	405.0	36.4	5,969.5	5,872.8	96.67	61.753	
11,100.0	5,911.9	5,444.6	5,433.1	106.5	13.4	-52.62	404.6	36.4	6,068.6	5,970.7	97.90	61.988	
11,200.0	5,911.9	5,439.0	5,427.5	108.4	13.4	-52.30	404.1	36.5	6,167.8	6,068.7	99.11	62.229	
11,300.0	5,911.9	5,439.0	5,427.5	110.3	13.4	-52.30	404.1	36.5	6,267.0	6,166.3	100.68	62.244	
11,400.0	5,911.9	5,439.0	5,427.5	112.2	13.4	-52.30	404.1	36.5	6,366.2	6,263.9	102.25	62.259	
11,500.0	5,911.9	5,439.0	5,427.5	114.1	13.4	-52.30	404.1	36.5	6,465.4	6,361.6	103.82	62.274	
11,600.0	5,912.0	5,439.0	5,427.5	116.0	13.4	-52.30	404.1	36.5	6,564.7	6,459.3	105.39	62.288	
11,700.0	5,912.0	5,439.0	5,427.5	117.9	13.4	-52.30	404.1	36.5	6,664.0	6,557.0	106.96	62.301	
11,800.0	5,912.0	5,439.0	5,427.5	119.8	13.4	-52.30	404.1	36.5	6,763.3	6,654.7	108.54	62.314	
11,900.0	5,912.0	5,439.0	5,427.5	121.7	13.4	-52.30	404.1	36.5	6,862.6	6,752.5	110.11	62.326	
12,000.0	5,912.0	5,439.0	5,427.5	123.6	13.4	-52.30	404.1	36.5	6,961.9	6,850.2	111.68	62.338	
12,100.0	5,912.0	5,438.7	5,427.2	125.5	13.4	-52.28	404.1	36.5	7,061.3	6,948.0	113.23	62.363	
12,200.0	5,912.0	5,431.7	5,420.3	127.4	13.4	-51.89	403.6	36.5	7,160.7	7,046.4	114.29	62.653	
12,300.0	5,912.0	5,424.8	5,413.4	129.3	13.4	-51.50	403.2	36.6	7,260.0	7,144.7	115.34	62.944	
12,400.0	5,912.0	5,417.8	5,406.4	131.2	13.4	-51.12	402.7	36.6	7,359.4	7,243.0	116.38	63.235	
12,500.0	5,912.0	5,410.9	5,399.5	133.1	13.3	-50.74	402.2	36.6	7,458.8	7,341.4	117.41	63.528	
12,600.0	5,912.0	5,403.9	5,392.6	135.0	13.3	-50.36	401.7	36.7	7,558.2	7,439.8	118.43	63.820	
12,700.0	5,912.0	5,397.0	5,385.6	136.9	13.3	-49.99	401.2	36.7	7,657.7	7,538.2	119.44	64.114	
12,800.0	5,912.0	5,390.1	5,378.7	138.8	13.3	-49.63	400.7	36.8	7,757.1	7,636.7	120.44	64.407	
12,900.0	5,912.0	5,383.1	5,371.8	140.7	13.3	-49.26	400.3	36.8	7,856.5	7,735.1	121.43	64.702	
13,000.0	5,912.0	5,376.2	5,364.9	142.6	13.3	-48.90	399.8	36.9	7,956.0	7,833.6	122.41	64.997	
13,100.0	5,912.0	5,369.2	5,357.9	144.5	13.2	-48.55	399.3	36.9	8,055.4	7,932.1	123.38	65.292	
13,200.0	5,912.0	5,362.3	5,351.0	146.4	13.2	-48.19	398.8	36.9	8,154.9	8,030.6	124.34	65.587	
13,300.0	5,912.0	5,355.3	5,344.1	148.3	13.2	-47.85	398.3	37.0	8,254.4	8,129.1	125.29	65.883	
13,400.0	5,912.0	5,348.4	5,337.1	150.2	13.2	-47.50	397.8	37.0	8,353.9	8,227.6	126.23	66.180	
13,500.0	5,912.0	5,341.4	5,330.2	152.1	13.2	-47.16	397.4	37.1	8,453.3	8,326.2	127.16	66.476	
13,579.9	5,912.0	5,335.9	5,324.7	153.6	13.1	-46.89	397.0	37.1	8,532.8	8,404.9	127.90	66.713	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0204B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	52.56	75.9	99.1	124.9				
100.0	100.0	100.0	100.0	0.1	0.1	52.56	75.9	99.1	124.9	124.7	0.19	667.581	
200.0	200.0	200.0	200.0	0.3	0.3	52.56	75.9	99.1	124.9	124.2	0.64	196.142	
300.0	300.0	300.0	300.0	0.5	0.5	52.56	75.9	99.1	124.9	123.8	1.09	114.959	
400.0	400.0	400.0	400.0	0.8	0.8	52.56	75.9	99.1	124.9	123.3	1.54	81.307	
466.7	466.7	466.7	466.7	0.9	0.9	52.56	75.9	99.1	124.9	123.0	1.84	68.031	CC
500.0	500.0	500.0	500.0	1.0	1.0	52.56	75.9	99.1	124.9	122.9	1.99	62.896	ES
600.0	600.0	596.7	596.7	1.2	1.2	-154.98	77.5	99.5	127.7	125.3	2.41	53.104	
700.0	699.8	692.7	692.6	1.4	1.4	-157.13	82.3	100.4	136.4	133.6	2.82	48.377	
800.0	799.6	791.5	791.1	1.6	1.7	-159.81	89.0	101.8	148.5	145.3	3.25	45.755	
900.0	899.4	890.6	889.9	1.8	1.9	-162.10	95.8	103.2	160.9	157.2	3.68	43.757	
1,000.0	999.1	989.6	988.7	2.1	2.1	-164.06	102.5	104.6	173.4	169.3	4.11	42.170	
1,100.0	1,098.9	1,088.7	1,087.5	2.3	2.4	-165.75	109.3	106.0	186.2	181.6	4.55	40.887	
1,200.0	1,198.6	1,187.7	1,186.3	2.5	2.6	-167.23	116.1	107.4	199.1	194.1	5.00	39.835	
1,300.0	1,298.4	1,286.7	1,285.1	2.8	2.9	-168.52	122.8	108.8	212.1	206.6	5.44	38.962	
1,400.0	1,398.1	1,385.8	1,383.9	3.0	3.1	-169.67	129.6	110.2	225.2	219.3	5.89	38.227	
1,500.0	1,497.9	1,484.8	1,482.8	3.3	3.4	-170.69	136.4	111.5	238.3	232.0	6.34	37.599	
1,600.0	1,597.6	1,583.9	1,581.6	3.5	3.6	-171.60	143.1	112.9	251.6	244.8	6.79	37.060	
1,700.0	1,697.4	1,682.9	1,680.4	3.8	3.9	-172.42	149.9	114.3	264.9	257.6	7.24	36.592	
1,800.0	1,797.2	1,782.0	1,779.2	4.1	4.1	-173.17	156.7	115.7	278.2	270.5	7.69	36.182	
1,900.0	1,896.9	1,881.0	1,878.0	4.3	4.4	-173.84	163.4	117.1	291.6	283.5	8.14	35.821	
2,000.0	1,996.7	1,980.0	1,976.8	4.6	4.6	-174.46	170.2	118.5	305.0	296.5	8.59	35.499	
2,100.0	2,096.4	2,079.1	2,075.6	4.8	4.9	-175.02	177.0	119.9	318.5	309.5	9.05	35.212	
2,200.0	2,196.2	2,178.1	2,174.4	5.1	5.1	-175.54	183.7	121.3	332.0	322.5	9.50	34.953	
2,300.0	2,295.9	2,277.2	2,273.2	5.4	5.4	-176.02	190.5	122.7	345.5	335.5	9.95	34.720	
2,400.0	2,395.7	2,376.2	2,372.0	5.6	5.6	-176.46	197.3	124.0	359.0	348.6	10.40	34.508	
2,500.0	2,495.5	2,475.3	2,470.8	5.9	5.9	-176.87	204.1	125.4	372.6	361.7	10.86	34.315	
2,600.0	2,595.2	2,574.3	2,569.6	6.1	6.1	-177.25	210.8	126.8	386.1	374.8	11.31	34.138	
2,700.0	2,695.0	2,673.4	2,668.4	6.4	6.4	-177.60	217.6	128.2	399.7	388.0	11.77	33.975	
2,800.0	2,794.7	2,772.4	2,767.2	6.7	6.6	-177.94	224.4	129.6	413.3	401.1	12.22	33.826	
2,900.0	2,894.5	2,871.4	2,866.0	6.9	6.9	-178.25	231.1	131.0	426.9	414.3	12.67	33.687	
3,000.0	2,994.2	2,970.5	2,964.8	7.2	7.1	-178.54	237.9	132.4	440.6	427.4	13.13	33.559	
3,100.0	3,094.0	3,069.5	3,063.6	7.5	7.4	-178.81	244.7	133.8	454.2	440.6	13.58	33.439	
3,200.0	3,193.7	3,168.6	3,162.4	7.7	7.6	-179.07	251.4	135.2	467.8	453.8	14.04	33.328	
3,300.0	3,293.5	3,267.6	3,261.2	8.0	7.9	-179.31	258.2	136.5	481.5	467.0	14.49	33.224	
3,400.0	3,393.3	3,366.7	3,360.0	8.3	8.2	-179.54	265.0	137.9	495.1	480.2	14.95	33.127	
3,500.0	3,493.0	3,465.7	3,458.8	8.5	8.4	-179.76	271.7	139.3	508.8	493.4	15.40	33.035	
3,600.0	3,592.8	3,564.7	3,557.6	8.8	8.7	-179.97	278.5	140.7	522.5	506.6	15.86	32.950	
3,700.0	3,692.5	3,663.8	3,656.4	9.0	8.9	179.84	285.3	142.1	536.2	519.9	16.31	32.869	
3,800.0	3,792.3	3,762.8	3,755.2	9.3	9.2	179.65	292.0	143.5	549.9	533.1	16.77	32.793	
3,900.0	3,892.0	3,861.9	3,854.0	9.6	9.4	179.48	298.8	144.9	563.5	546.3	17.22	32.720	
4,000.0	3,991.8	3,960.9	3,952.8	9.8	9.7	179.31	305.6	146.3	577.2	559.6	17.68	32.652	
4,100.0	4,091.6	4,060.0	4,051.6	10.1	9.9	179.15	312.3	147.7	590.9	572.8	18.13	32.588	
4,200.0	4,191.3	4,159.0	4,150.4	10.4	10.2	178.99	319.1	149.1	604.6	586.1	18.59	32.526	
4,300.0	4,291.1	4,258.0	4,249.2	10.6	10.4	178.85	325.9	150.4	618.4	599.3	19.04	32.468	
4,400.0	4,390.8	4,357.1	4,348.0	10.9	10.7	178.71	332.6	151.8	632.1	612.6	19.50	32.413	
4,500.0	4,490.6	4,456.1	4,446.8	11.2	10.9	178.57	339.4	153.2	645.8	625.8	19.96	32.360	
4,600.0	4,590.3	4,555.2	4,545.6	11.4	11.2	178.44	346.2	154.6	659.5	639.1	20.41	32.309	
4,700.0	4,690.1	4,654.2	4,644.4	11.7	11.4	178.32	352.9	156.0	673.2	652.4	20.87	32.261	
4,800.0	4,789.9	4,753.3	4,743.2	11.9	11.7	178.20	359.7	157.4	687.0	665.6	21.32	32.215	
4,900.0	4,889.6	4,852.3	4,842.0	12.2	12.0	178.09	366.5	158.8	700.7	678.9	21.78	32.171	
5,000.0	4,989.4	4,951.4	4,940.8	12.5	12.2	177.98	373.2	160.2	714.4	692.2	22.24	32.129	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0204B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,089.1	5,050.4	5,039.6	12.7	12.5	177.87	380.0	161.6	728.1	705.5	22.69	32.089	
5,200.0	5,188.9	5,149.4	5,138.4	13.0	12.7	177.77	386.8	162.9	741.9	718.7	23.15	32.050	
5,300.0	5,288.6	5,248.5	5,237.2	13.3	13.0	177.67	393.6	164.3	755.6	732.0	23.60	32.013	
5,400.0	5,388.4	5,347.5	5,336.0	13.5	13.2	177.58	400.3	165.7	769.4	745.3	24.06	31.977	
5,439.0	5,427.3	5,386.2	5,374.6	13.6	13.3	177.54	403.0	166.3	774.7	750.5	24.24	31.964	SF
5,450.0	5,438.3	5,397.0	5,385.4	13.7	13.4	177.53	403.7	166.4	776.3	752.1	24.25	32.014	
5,500.0	5,487.8	5,445.9	5,434.2	13.8	13.5	177.44	407.0	167.1	786.6	762.4	24.18	32.528	
5,550.0	5,536.4	5,493.7	5,481.8	14.0	13.6	177.35	410.3	167.8	801.5	777.6	23.91	33.528	
5,600.0	5,583.6	5,539.7	5,527.8	14.3	13.7	177.24	413.5	168.4	820.9	797.5	23.42	35.051	
5,650.0	5,629.1	5,550.0	5,538.0	14.6	13.7	177.08	414.2	168.6	845.4	822.7	22.67	37.300	
5,700.0	5,672.4	5,572.3	5,560.2	14.9	13.8	176.87	416.7	169.1	875.1	853.3	21.75	40.229	
5,750.0	5,713.1	5,600.0	5,587.5	15.3	13.9	176.57	420.9	170.0	909.8	889.1	20.67	44.004	
5,800.0	5,750.9	5,600.0	5,587.5	15.8	13.9	176.16	420.9	170.0	948.0	928.6	19.39	48.893	
5,850.0	5,785.3	5,600.0	5,587.5	16.3	13.9	175.54	420.9	170.0	990.0	972.0	17.98	55.054	
5,900.0	5,816.1	5,600.0	5,587.5	16.8	13.9	174.56	420.9	170.0	1,034.9	1,018.4	16.50	62.715	
5,950.0	5,843.0	5,620.7	5,607.8	17.4	14.0	173.09	425.1	170.8	1,081.4	1,066.4	15.06	71.790	
6,000.0	5,865.7	5,624.8	5,611.8	18.0	14.0	169.99	426.0	171.0	1,129.8	1,115.9	13.93	81.087	
6,050.0	5,884.1	5,627.1	5,614.0	18.7	14.0	161.01	426.5	171.1	1,179.3	1,164.3	14.98	78.747	
6,100.0	5,897.9	5,627.9	5,614.8	19.4	14.0	88.97	426.7	171.1	1,229.1	1,195.8	33.37	36.833	
6,150.0	5,907.0	5,627.2	5,614.1	20.2	14.0	17.87	426.5	171.1	1,279.0	1,265.4	13.68	93.478	
6,200.0	5,911.4	5,625.2	5,612.2	20.9	14.0	8.98	426.1	171.0	1,328.5	1,318.6	9.90	134.176	
6,220.8	5,911.8	5,624.0	5,611.0	21.3	14.0	7.38	425.8	170.9	1,348.9	1,339.5	9.33	144.587	
6,300.0	5,911.8	5,619.2	5,606.3	22.4	14.0	-3.26	424.7	170.7	1,426.1	1,417.4	8.73	163.418	
6,400.0	5,911.8	5,600.0	5,587.5	23.8	13.9	-16.09	420.9	170.0	1,524.1	1,510.7	13.42	113.576	
6,500.0	5,911.8	5,600.0	5,587.5	25.2	13.9	-28.19	420.9	170.0	1,621.6	1,601.4	20.18	80.356	
6,600.0	5,911.8	5,600.0	5,587.5	26.7	13.9	-38.60	420.9	170.0	1,718.8	1,692.3	26.47	64.945	
6,700.0	5,911.8	5,600.0	5,587.5	28.2	13.9	-47.05	420.9	170.0	1,815.6	1,784.0	31.54	57.556	
6,800.0	5,911.8	5,600.0	5,587.5	29.7	13.9	-53.75	420.9	170.0	1,911.7	1,876.2	35.49	53.860	
6,900.0	5,911.8	5,600.0	5,587.5	31.2	13.9	-59.02	420.9	170.0	2,007.1	1,968.6	38.56	52.047	
7,000.0	5,911.8	5,600.0	5,587.5	32.7	13.9	-63.19	420.9	170.0	2,101.6	2,060.6	40.98	51.283	
7,100.0	5,911.8	5,600.0	5,587.5	34.2	13.9	-66.53	420.9	170.0	2,195.0	2,152.1	42.91	51.149	
7,112.4	5,911.8	5,600.0	5,587.5	34.4	13.9	-66.90	420.9	170.0	2,206.5	2,163.4	43.13	51.164	
7,200.0	5,911.8	5,600.0	5,587.5	35.8	13.9	-66.90	420.9	170.0	2,288.0	2,243.6	44.41	51.523	
7,300.0	5,911.8	5,600.0	5,587.5	37.4	13.9	-66.90	420.9	170.0	2,381.5	2,335.6	45.91	51.875	
7,400.0	5,911.8	5,577.3	5,565.1	39.1	13.8	-65.46	417.3	169.2	2,474.9	2,428.1	46.86	52.810	
7,500.0	5,911.9	5,575.0	5,562.8	40.7	13.8	-65.32	417.0	169.1	2,569.3	2,521.0	48.34	53.153	
7,600.0	5,911.9	5,572.8	5,560.7	42.4	13.8	-65.18	416.7	169.1	2,664.0	2,614.1	49.90	53.390	
7,700.0	5,911.9	5,550.0	5,538.0	44.1	13.7	-63.77	414.2	168.6	2,759.7	2,708.7	50.92	54.197	
7,800.0	5,911.9	5,550.0	5,538.0	45.8	13.7	-63.77	414.2	168.6	2,855.0	2,802.5	52.54	54.336	
7,900.0	5,911.9	5,550.0	5,538.0	47.6	13.7	-63.77	414.2	168.6	2,950.7	2,896.5	54.18	54.462	
8,000.0	5,911.9	5,550.0	5,538.0	49.3	13.7	-63.77	414.2	168.6	3,046.6	2,990.8	55.82	54.577	
8,100.0	5,911.9	5,550.0	5,538.0	51.1	13.7	-63.77	414.2	168.6	3,142.8	3,085.3	57.48	54.681	
8,200.0	5,911.9	5,550.0	5,538.0	52.8	13.7	-63.77	414.2	168.6	3,239.2	3,180.1	59.14	54.776	
8,300.0	5,911.9	5,550.0	5,538.0	54.6	13.7	-63.77	414.2	168.6	3,335.8	3,275.0	60.80	54.864	
8,400.0	5,911.9	5,550.0	5,538.0	56.4	13.7	-63.77	414.2	168.6	3,432.7	3,370.2	62.48	54.945	
8,500.0	5,911.9	5,550.0	5,538.0	58.2	13.7	-63.77	414.2	168.6	3,529.7	3,465.5	64.15	55.019	
8,600.0	5,911.9	5,550.0	5,538.0	60.0	13.7	-63.77	414.2	168.6	3,626.8	3,561.0	65.84	55.089	
8,700.0	5,911.9	5,550.0	5,538.0	61.8	13.7	-63.77	414.2	168.6	3,724.2	3,656.6	67.52	55.153	
8,800.0	5,911.9	5,550.0	5,538.0	63.7	13.7	-63.77	414.2	168.6	3,821.6	3,752.4	69.22	55.213	
8,900.0	5,911.9	5,550.0	5,538.0	65.5	13.7	-63.77	414.2	168.6	3,919.2	3,848.3	70.91	55.269	
9,000.0	5,911.9	5,550.0	5,538.0	67.3	13.7	-63.77	414.2	168.6	4,016.9	3,944.3	72.61	55.322	
9,100.0	5,911.9	5,550.0	5,538.0	69.2	13.7	-63.77	414.2	168.6	4,114.7	4,040.4	74.31	55.371	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-0204B - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,911.9	5,550.0	5,538.0	71.0	13.7	-63.77	414.2	168.6	4,212.6	4,136.6	76.02	55.417	
9,300.0	5,911.9	5,550.0	5,538.0	72.8	13.7	-63.77	414.2	168.6	4,310.6	4,232.9	77.72	55.461	
9,400.0	5,911.9	5,550.0	5,538.0	74.7	13.7	-63.77	414.2	168.6	4,408.7	4,329.3	79.43	55.502	
9,500.0	5,911.9	5,550.0	5,538.0	76.5	13.7	-63.77	414.2	168.6	4,506.9	4,425.8	81.15	55.541	
9,600.0	5,911.9	5,550.0	5,538.0	78.4	13.7	-63.77	414.2	168.6	4,605.2	4,522.3	82.86	55.578	
9,700.0	5,911.9	5,550.0	5,538.0	80.3	13.7	-63.77	414.2	168.6	4,703.5	4,618.9	84.58	55.613	
9,800.0	5,911.9	5,544.8	5,532.9	82.1	13.7	-63.46	413.8	168.5	4,801.9	4,715.8	86.08	55.785	
9,900.0	5,911.9	5,540.0	5,528.0	84.0	13.7	-63.17	413.5	168.4	4,900.4	4,812.8	87.59	55.948	
10,000.0	5,911.9	5,540.0	5,528.0	85.9	13.7	-63.17	413.5	168.4	4,998.9	4,909.6	89.30	55.977	
10,100.0	5,911.9	5,540.0	5,528.0	87.7	13.7	-63.17	413.5	168.4	5,097.5	5,006.4	91.02	56.005	
10,200.0	5,911.9	5,540.0	5,528.0	89.6	13.7	-63.17	413.5	168.4	5,196.1	5,103.3	92.73	56.032	
10,300.0	5,911.9	5,540.0	5,528.0	91.5	13.7	-63.17	413.5	168.4	5,294.8	5,200.3	94.45	56.058	
10,400.0	5,911.9	5,540.0	5,528.0	93.4	13.7	-63.17	413.5	168.4	5,393.5	5,297.3	96.17	56.082	
10,500.0	5,911.9	5,540.0	5,528.0	95.2	13.7	-63.17	413.5	168.4	5,492.3	5,394.4	97.89	56.106	
10,600.0	5,911.9	5,534.7	5,522.8	97.1	13.7	-62.85	413.1	168.3	5,591.1	5,491.7	99.36	56.272	
10,700.0	5,911.9	5,527.9	5,516.0	99.0	13.7	-62.44	412.6	168.3	5,689.9	5,589.2	100.74	56.480	
10,800.0	5,911.9	5,521.0	5,509.1	100.9	13.7	-62.03	412.2	168.2	5,788.8	5,686.7	102.11	56.690	
10,900.0	5,911.9	5,514.2	5,502.3	102.8	13.7	-61.63	411.7	168.1	5,887.7	5,784.2	103.47	56.900	
11,000.0	5,911.9	5,507.4	5,495.5	104.6	13.6	-61.23	411.2	168.0	5,986.6	5,881.8	104.82	57.111	
11,100.0	5,911.9	5,500.6	5,488.7	106.5	13.6	-60.83	410.8	167.9	6,085.6	5,979.4	106.16	57.323	
11,200.0	5,911.9	5,493.7	5,481.9	108.4	13.6	-60.44	410.3	167.8	6,184.6	6,077.1	107.49	57.536	
11,300.0	5,911.9	5,486.9	5,475.1	110.3	13.6	-60.05	409.8	167.7	6,283.6	6,174.8	108.81	57.750	
11,400.0	5,911.9	5,480.1	5,468.3	112.2	13.6	-59.66	409.4	167.6	6,382.6	6,272.5	110.11	57.965	
11,500.0	5,911.9	5,473.2	5,461.4	114.1	13.5	-59.27	408.9	167.5	6,481.7	6,370.3	111.41	58.181	
11,600.0	5,912.0	5,466.4	5,454.6	116.0	13.5	-58.89	408.4	167.4	6,580.8	6,468.1	112.69	58.398	
11,700.0	5,912.0	5,459.6	5,447.8	117.9	13.5	-58.51	408.0	167.3	6,679.9	6,565.9	113.96	58.616	
11,800.0	5,912.0	5,452.7	5,441.0	119.8	13.5	-58.13	407.5	167.2	6,779.0	6,663.8	115.22	58.835	
11,900.0	5,912.0	5,445.9	5,434.2	121.7	13.5	-57.76	407.0	167.1	6,878.2	6,761.7	116.47	59.055	
12,000.0	5,912.0	5,439.1	5,427.4	123.6	13.5	-57.39	406.6	167.0	6,977.3	6,859.6	117.71	59.275	
12,100.0	5,912.0	5,432.2	5,420.6	125.5	13.4	-57.02	406.1	166.9	7,076.5	6,957.5	118.94	59.497	
12,200.0	5,912.0	5,425.4	5,413.7	127.4	13.4	-56.66	405.6	166.8	7,175.7	7,055.5	120.15	59.720	
12,300.0	5,912.0	5,418.6	5,406.9	129.3	13.4	-56.29	405.2	166.7	7,274.9	7,153.5	121.36	59.944	
12,400.0	5,912.0	5,411.8	5,400.1	131.2	13.4	-55.94	404.7	166.6	7,374.1	7,251.5	122.56	60.169	
12,500.0	5,912.0	5,404.9	5,393.3	133.1	13.4	-55.58	404.2	166.5	7,473.3	7,349.6	123.74	60.394	
12,600.0	5,912.0	5,398.1	5,386.5	135.0	13.4	-55.23	403.8	166.4	7,572.6	7,447.7	124.92	60.621	
12,700.0	5,912.0	5,391.3	5,379.7	136.9	13.3	-54.88	403.3	166.3	7,671.9	7,545.8	126.08	60.848	
12,800.0	5,912.0	5,384.4	5,372.9	138.8	13.3	-54.53	402.8	166.2	7,771.1	7,643.9	127.24	61.077	
12,900.0	5,912.0	5,377.6	5,366.0	140.7	13.3	-54.18	402.4	166.1	7,870.4	7,742.0	128.38	61.306	
13,000.0	5,912.0	5,370.8	5,359.2	142.6	13.3	-53.84	401.9	166.0	7,969.7	7,840.2	129.51	61.536	
13,100.0	5,912.0	5,363.9	5,352.4	144.5	13.3	-53.50	401.4	166.0	8,069.0	7,938.4	130.64	61.767	
13,200.0	5,912.0	5,357.1	5,345.6	146.4	13.2	-53.17	401.0	165.9	8,168.4	8,036.6	131.75	61.999	
13,300.0	5,912.0	5,350.3	5,338.8	148.3	13.2	-52.84	400.5	165.8	8,267.7	8,134.8	132.85	62.231	
13,400.0	5,912.0	5,343.4	5,332.0	150.2	13.2	-52.51	400.0	165.7	8,367.0	8,233.1	133.95	62.465	
13,500.0	5,912.0	5,336.6	5,325.2	152.1	13.2	-52.18	399.6	165.6	8,466.4	8,331.4	135.03	62.699	
13,579.9	5,912.0	5,331.2	5,319.7	153.6	13.2	-51.92	399.2	165.5	8,545.8	8,409.9	135.89	62.886	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1402B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	33.0	33.0				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	33.0	33.0	32.9	0.19	176.678	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	33.0	33.0	32.4	0.64	51.910	
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	33.0	33.0	32.0	1.09	30.424	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	33.0	33.0	31.5	1.54	21.518	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	33.0	33.0	31.1	1.99	16.645	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-119.36	0.0	33.0	33.9	31.5	2.41	14.057	
700.0	699.8	700.4	700.3	1.4	1.4	-123.96	-1.7	32.6	36.0	33.2	2.79	12.886	
800.0	799.6	800.8	800.7	1.6	1.6	-125.37	-6.8	31.2	37.9	34.7	3.18	11.910	
900.0	899.4	900.8	900.4	1.8	1.8	-124.37	-13.5	29.3	39.1	35.5	3.60	10.859	
1,000.0	999.1	1,000.8	1,000.2	2.1	2.0	-123.42	-20.3	27.5	40.4	36.3	4.05	9.972	
1,100.0	1,098.9	1,100.8	1,099.9	2.3	2.2	-122.53	-27.0	25.7	41.6	37.1	4.51	9.229	
1,200.0	1,198.6	1,200.8	1,199.7	2.5	2.5	-121.69	-33.7	23.8	42.8	37.9	4.98	8.603	
1,300.0	1,298.4	1,300.8	1,299.4	2.8	2.7	-120.89	-40.4	22.0	44.1	38.6	5.46	8.074	
1,400.0	1,398.1	1,400.8	1,399.2	3.0	3.0	-120.15	-47.2	20.1	45.4	39.4	5.95	7.622	
1,500.0	1,497.9	1,500.8	1,498.9	3.3	3.2	-119.44	-53.9	18.3	46.6	40.2	6.45	7.234	
1,600.0	1,597.6	1,600.8	1,598.7	3.5	3.5	-118.77	-60.6	16.5	47.9	41.0	6.95	6.897	
1,700.0	1,697.4	1,700.8	1,698.4	3.8	3.7	-118.13	-67.3	14.6	49.2	41.7	7.45	6.603	
1,800.0	1,797.2	1,800.7	1,798.1	4.1	4.0	-117.53	-74.1	12.8	50.5	42.5	7.96	6.344	
1,900.0	1,896.9	1,900.7	1,897.9	4.3	4.2	-116.96	-80.8	10.9	51.8	43.3	8.47	6.115	
2,000.0	1,996.7	2,000.7	1,997.6	4.6	4.5	-116.41	-87.5	9.1	53.1	44.1	8.98	5.911	
2,100.0	2,096.4	2,100.7	2,097.4	4.8	4.7	-115.90	-94.3	7.3	54.4	44.9	9.49	5.729	
2,200.0	2,196.2	2,200.7	2,197.1	5.1	5.0	-115.40	-101.0	5.4	55.7	45.7	10.01	5.564	
2,300.0	2,295.9	2,300.7	2,296.9	5.4	5.3	-114.93	-107.7	3.6	57.0	46.5	10.52	5.415	
2,400.0	2,395.7	2,400.7	2,396.6	5.6	5.5	-114.48	-114.4	1.7	58.3	47.3	11.04	5.280	
2,500.0	2,495.5	2,500.7	2,496.4	5.9	5.8	-114.05	-121.2	-0.1	59.6	48.1	11.56	5.157	
2,600.0	2,595.2	2,600.7	2,596.1	6.1	6.0	-113.64	-127.9	-1.9	61.0	48.9	12.08	5.045	
2,700.0	2,695.0	2,700.7	2,695.9	6.4	6.3	-113.24	-134.6	-3.8	62.3	49.7	12.60	4.941	
2,800.0	2,794.7	2,800.6	2,795.6	6.7	6.6	-112.87	-141.4	-5.6	63.6	50.5	13.13	4.846	
2,900.0	2,894.5	2,900.6	2,895.4	6.9	6.8	-112.50	-148.1	-7.5	64.9	51.3	13.65	4.758	
3,000.0	2,994.2	3,000.6	2,995.1	7.2	7.1	-112.16	-154.8	-9.3	66.3	52.1	14.17	4.676	
3,100.0	3,094.0	3,100.6	3,094.9	7.5	7.3	-111.82	-161.5	-11.1	67.6	52.9	14.70	4.601	
3,200.0	3,193.7	3,200.6	3,194.6	7.7	7.6	-111.50	-168.3	-13.0	68.9	53.7	15.22	4.530	
3,300.0	3,293.5	3,300.6	3,294.3	8.0	7.9	-111.19	-175.0	-14.8	70.3	54.5	15.74	4.464	
3,400.0	3,393.3	3,400.6	3,394.1	8.3	8.1	-110.90	-181.7	-16.7	71.6	55.4	16.27	4.403	
3,500.0	3,493.0	3,500.6	3,493.8	8.5	8.4	-110.61	-188.4	-18.5	73.0	56.2	16.79	4.345	
3,600.0	3,592.8	3,600.6	3,593.6	8.8	8.7	-110.33	-195.2	-20.3	74.3	57.0	17.32	4.291	
3,700.0	3,692.5	3,700.6	3,693.3	9.0	8.9	-110.07	-201.9	-22.2	75.7	57.8	17.85	4.240	
3,800.0	3,792.3	3,800.6	3,793.1	9.3	9.2	-109.81	-208.6	-24.0	77.0	58.6	18.37	4.192	
3,900.0	3,892.0	3,900.5	3,892.8	9.6	9.4	-109.56	-215.4	-25.9	78.4	59.5	18.90	4.146	
4,000.0	3,991.8	4,000.5	3,992.6	9.8	9.7	-109.32	-222.1	-27.7	79.7	60.3	19.43	4.104	
4,100.0	4,091.6	4,100.5	4,092.3	10.1	10.0	-109.09	-228.8	-29.5	81.1	61.1	19.95	4.063	
4,200.0	4,191.3	4,200.5	4,192.1	10.4	10.2	-108.87	-235.5	-31.4	82.4	61.9	20.48	4.025	
4,300.0	4,291.1	4,300.5	4,291.8	10.6	10.5	-108.65	-242.3	-33.2	83.8	62.8	21.01	3.988	
4,400.0	4,390.8	4,400.5	4,391.6	10.9	10.8	-108.44	-249.0	-35.1	85.1	63.6	21.53	3.953	
4,500.0	4,490.6	4,500.5	4,491.3	11.2	11.0	-108.24	-255.7	-36.9	86.5	64.4	22.06	3.920	
4,600.0	4,590.3	4,600.5	4,591.1	11.4	11.3	-108.04	-262.5	-38.8	87.9	65.3	22.59	3.889	
4,700.0	4,690.1	4,700.5	4,690.8	11.7	11.6	-107.85	-269.2	-40.6	89.2	66.1	23.12	3.859	
4,800.0	4,789.9	4,800.5	4,790.5	11.9	11.8	-107.67	-275.9	-42.4	90.6	66.9	23.65	3.830	
4,900.0	4,889.6	4,900.4	4,890.3	12.2	12.1	-107.49	-282.6	-44.3	91.9	67.8	24.17	3.803	
5,000.0	4,989.4	5,000.4	4,990.0	12.5	12.3	-107.31	-289.4	-46.1	93.3	68.6	24.70	3.777	
5,100.0	5,089.1	5,100.4	5,089.8	12.7	12.6	-107.14	-296.1	-48.0	94.7	69.4	25.23	3.752	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1402B - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,200.4	5,189.5	13.0	12.9	-106.98	-302.8	-49.8	96.0	70.3	25.76	3.728	
5,300.0	5,288.6	5,300.4	5,289.3	13.3	13.1	-106.82	-309.5	-51.6	97.4	71.1	26.29	3.705	
5,400.0	5,388.4	5,400.4	5,389.0	13.5	13.4	-106.66	-316.3	-53.5	98.8	71.9	26.81	3.683	
5,439.0	5,427.3	5,439.4	5,427.9	13.6	13.5	-106.60	-318.9	-54.2	99.3	72.3	27.02	3.675	
5,450.0	5,438.3	5,450.4	5,438.9	13.7	13.5	-106.63	-319.6	-54.4	99.5	72.4	27.08	3.674	
5,500.0	5,487.8	5,500.2	5,488.6	13.8	13.7	-108.24	-323.0	-55.3	101.2	73.9	27.32	3.704	
5,550.0	5,536.4	5,549.9	5,538.2	14.0	13.8	-112.01	-326.4	-56.3	104.7	77.2	27.50	3.809	
5,600.0	5,583.6	5,601.4	5,589.2	14.3	14.0	-116.07	-333.3	-58.1	110.0	82.4	27.63	3.981	
5,650.0	5,629.1	5,653.8	5,640.1	14.6	14.2	-119.39	-345.2	-61.4	116.6	88.9	27.75	4.203	
5,700.0	5,672.4	5,707.2	5,690.4	14.9	14.5	-121.94	-362.3	-66.1	124.3	96.5	27.86	4.462	
5,750.0	5,713.1	5,761.6	5,739.5	15.3	14.8	-123.76	-384.8	-72.2	132.9	104.9	28.00	4.745	
5,800.0	5,750.9	5,816.8	5,786.6	15.8	15.2	-124.91	-412.6	-79.8	142.1	113.9	28.21	5.036	
5,850.0	5,785.3	5,873.0	5,831.1	16.3	15.6	-125.45	-445.6	-88.8	151.8	123.2	28.54	5.318	
5,900.0	5,816.1	5,930.0	5,872.3	16.8	16.2	-125.46	-483.6	-99.2	161.7	132.7	29.04	5.571	
5,950.0	5,843.0	5,987.8	5,909.4	17.4	16.8	-125.01	-526.3	-110.9	171.9	142.2	29.75	5.778	
6,000.0	5,865.7	6,046.4	5,941.7	18.0	17.4	-124.17	-573.4	-123.8	182.1	151.4	30.71	5.931	
6,050.0	5,884.1	6,105.6	5,968.6	18.7	18.2	-122.98	-624.2	-137.7	192.3	160.4	31.93	6.024	
6,100.0	5,897.9	6,165.3	5,989.5	19.4	19.0	-121.51	-678.2	-152.5	202.4	169.0	33.40	6.061	
6,150.0	5,907.0	6,225.5	6,003.9	20.2	19.8	-119.80	-734.5	-167.9	212.3	177.2	35.10	6.049	
6,200.0	5,911.4	6,286.1	6,011.6	20.9	20.7	-117.89	-792.4	-183.7	221.9	184.9	36.99	5.999	
6,220.8	5,911.8	6,311.4	6,012.7	21.3	21.1	-117.04	-816.8	-190.4	225.8	188.0	37.83	5.970	
6,300.0	5,911.8	6,384.2	6,012.8	22.4	22.1	-115.33	-887.3	-208.6	239.6	199.1	40.53	5.911	
6,400.0	5,911.8	6,472.0	6,012.8	23.8	23.3	-113.53	-973.2	-227.1	256.7	213.0	43.64	5.881	
6,500.0	5,911.8	6,559.2	6,012.8	25.2	24.5	-112.00	-1,059.1	-241.4	273.3	226.6	46.68	5.856	
6,600.0	5,911.8	6,645.8	6,012.8	26.7	25.7	-110.69	-1,145.1	-251.8	289.5	239.9	49.65	5.831	
6,700.0	5,911.8	6,731.8	6,012.8	28.2	27.0	-109.56	-1,230.8	-258.2	305.2	252.7	52.54	5.809	
6,800.0	5,911.8	6,817.3	6,012.8	29.7	28.3	-108.59	-1,316.3	-260.8	320.3	264.9	55.32	5.789	
6,900.0	5,911.8	6,914.0	6,012.8	31.2	29.8	-107.74	-1,413.0	-260.8	333.2	275.0	58.24	5.722	
7,000.0	5,911.8	7,013.6	6,012.8	32.7	31.5	-107.24	-1,512.6	-260.8	341.3	280.3	61.07	5.589	
7,100.0	5,911.8	7,113.5	6,012.8	34.2	33.2	-107.05	-1,612.5	-260.8	344.5	280.8	63.70	5.407	
7,112.4	5,911.8	7,126.0	6,012.8	34.4	33.4	-107.04	-1,625.0	-260.8	344.5	280.5	64.01	5.382	
7,200.0	5,911.8	7,213.5	6,012.8	35.8	34.9	-107.04	-1,712.5	-260.8	344.5	277.6	66.87	5.152	
7,300.0	5,911.8	7,313.5	6,012.8	37.4	36.6	-107.04	-1,812.5	-260.8	344.5	274.3	70.19	4.908	
7,400.0	5,911.8	7,413.5	6,012.8	39.1	38.4	-107.04	-1,912.5	-260.8	344.5	271.0	73.55	4.684	
7,500.0	5,911.9	7,513.5	6,012.8	40.7	40.1	-107.04	-2,012.5	-260.8	344.5	267.6	76.94	4.478	
7,600.0	5,911.9	7,613.5	6,012.8	42.4	41.9	-107.04	-2,112.5	-260.8	344.5	264.2	80.36	4.287	
7,700.0	5,911.9	7,713.5	6,012.8	44.1	43.7	-107.04	-2,212.5	-260.8	344.5	260.7	83.80	4.111	
7,800.0	5,911.9	7,813.5	6,012.8	45.8	45.5	-107.04	-2,312.5	-260.8	344.5	257.3	87.26	3.948	
7,900.0	5,911.9	7,913.5	6,012.9	47.6	47.3	-107.04	-2,412.5	-260.8	344.5	253.8	90.74	3.797	
8,000.0	5,911.9	8,013.5	6,012.9	49.3	49.1	-107.04	-2,512.5	-260.8	344.6	250.3	94.24	3.656	
8,100.0	5,911.9	8,113.5	6,012.9	51.1	51.0	-107.04	-2,612.5	-260.8	344.6	246.8	97.76	3.525	
8,200.0	5,911.9	8,213.5	6,012.9	52.8	52.8	-107.04	-2,712.5	-260.8	344.6	243.3	101.28	3.402	
8,300.0	5,911.9	8,313.5	6,012.9	54.6	54.7	-107.04	-2,812.5	-260.8	344.6	239.8	104.82	3.287	
8,400.0	5,911.9	8,413.5	6,012.9	56.4	56.5	-107.04	-2,912.5	-260.8	344.6	236.2	108.37	3.180	
8,500.0	5,911.9	8,513.5	6,012.9	58.2	58.4	-107.04	-3,012.5	-260.8	344.6	232.7	111.93	3.079	
8,600.0	5,911.9	8,613.5	6,012.9	60.0	60.2	-107.04	-3,112.5	-260.8	344.6	229.1	115.50	2.984	
8,700.0	5,911.9	8,713.5	6,012.9	61.8	62.1	-107.04	-3,212.5	-260.8	344.6	225.5	119.07	2.894	
8,800.0	5,911.9	8,813.5	6,012.9	63.7	63.9	-107.04	-3,312.5	-260.8	344.6	221.9	122.66	2.809	
8,900.0	5,911.9	8,913.5	6,012.9	65.5	65.8	-107.04	-3,412.5	-260.8	344.6	218.4	126.25	2.730	
9,000.0	5,911.9	9,013.5	6,012.9	67.3	67.7	-107.04	-3,512.5	-260.8	344.6	214.8	129.84	2.654	
9,100.0	5,911.9	9,113.5	6,012.9	69.2	69.5	-107.04	-3,612.5	-260.8	344.6	211.2	133.45	2.582	
9,200.0	5,911.9	9,213.5	6,012.9	71.0	71.4	-107.04	-3,712.5	-260.8	344.6	207.6	137.05	2.515	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1402B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	9,313.5	6,012.9	72.8	73.3	-107.04	-3,812.5	-260.8	344.6	204.0	140.67	2.450	
9,400.0	5,911.9	9,413.5	6,012.9	74.7	75.2	-107.04	-3,912.5	-260.7	344.6	200.4	144.28	2.389	
9,500.0	5,911.9	9,513.5	6,012.9	76.5	77.1	-107.04	-4,012.5	-260.7	344.6	196.7	147.90	2.330	
9,600.0	5,911.9	9,613.5	6,012.9	78.4	78.9	-107.04	-4,112.5	-260.7	344.6	193.1	151.53	2.275	
9,700.0	5,911.9	9,713.5	6,012.9	80.3	80.8	-107.04	-4,212.5	-260.7	344.7	189.5	155.16	2.221	
9,800.0	5,911.9	9,813.5	6,012.9	82.1	82.7	-107.04	-4,312.5	-260.7	344.7	185.9	158.79	2.171	
9,900.0	5,911.9	9,913.5	6,012.9	84.0	84.6	-107.04	-4,412.5	-260.7	344.7	182.2	162.42	2.122	
10,000.0	5,911.9	10,013.5	6,012.9	85.9	86.5	-107.04	-4,512.5	-260.7	344.7	178.6	166.06	2.076	
10,100.0	5,911.9	10,113.5	6,012.9	87.7	88.4	-107.04	-4,612.5	-260.7	344.7	175.0	169.70	2.031	
10,200.0	5,911.9	10,213.5	6,012.9	89.6	90.3	-107.04	-4,712.5	-260.7	344.7	171.3	173.34	1.988	
10,300.0	5,911.9	10,313.5	6,012.9	91.5	92.2	-107.03	-4,812.5	-260.7	344.7	167.7	176.99	1.948	
10,400.0	5,911.9	10,413.5	6,012.9	93.4	94.1	-107.03	-4,912.5	-260.7	344.7	164.1	180.63	1.908	
10,500.0	5,911.9	10,513.5	6,012.9	95.2	96.0	-107.03	-5,012.5	-260.7	344.7	160.4	184.28	1.871	
10,600.0	5,911.9	10,613.5	6,012.9	97.1	97.9	-107.03	-5,112.5	-260.7	344.7	156.8	187.93	1.834	
10,700.0	5,911.9	10,713.5	6,012.9	99.0	99.8	-107.03	-5,212.5	-260.7	344.7	153.1	191.59	1.799	
10,800.0	5,911.9	10,813.5	6,012.9	100.9	101.7	-107.03	-5,312.5	-260.7	344.7	149.5	195.24	1.766	
10,900.0	5,911.9	10,913.5	6,012.9	102.8	103.6	-107.03	-5,412.5	-260.7	344.7	145.8	198.90	1.733	
11,000.0	5,911.9	11,013.5	6,012.9	104.6	105.5	-107.03	-5,512.5	-260.7	344.7	142.2	202.56	1.702	
11,100.0	5,911.9	11,113.5	6,012.9	106.5	107.4	-107.03	-5,612.5	-260.7	344.7	138.5	206.22	1.672	
11,200.0	5,911.9	11,213.5	6,012.9	108.4	109.3	-107.03	-5,712.5	-260.7	344.7	134.9	209.88	1.643	
11,300.0	5,911.9	11,313.5	6,012.9	110.3	111.2	-107.03	-5,812.5	-260.7	344.8	131.2	213.54	1.614	
11,400.0	5,911.9	11,413.5	6,012.9	112.2	113.1	-107.03	-5,912.5	-260.7	344.8	127.6	217.20	1.587	
11,500.0	5,911.9	11,513.5	6,012.9	114.1	115.0	-107.03	-6,012.5	-260.7	344.8	123.9	220.87	1.561	
11,600.0	5,912.0	11,613.5	6,012.9	116.0	116.9	-107.03	-6,112.5	-260.7	344.8	120.2	224.53	1.535	
11,700.0	5,912.0	11,713.5	6,012.9	117.9	118.8	-107.03	-6,212.5	-260.7	344.8	116.6	228.20	1.511	
11,800.0	5,912.0	11,813.5	6,012.9	119.8	120.7	-107.03	-6,312.5	-260.7	344.8	112.9	231.87	1.487	Level 3
11,900.0	5,912.0	11,913.5	6,012.9	121.7	122.6	-107.03	-6,412.5	-260.7	344.8	109.2	235.54	1.464	Level 3
12,000.0	5,912.0	12,013.5	6,012.9	123.6	124.5	-107.03	-6,512.5	-260.7	344.8	105.6	239.21	1.441	Level 3
12,100.0	5,912.0	12,113.5	6,013.0	125.5	126.4	-107.03	-6,612.5	-260.6	344.8	101.9	242.88	1.420	Level 3
12,200.0	5,912.0	12,213.5	6,013.0	127.4	128.3	-107.03	-6,712.5	-260.6	344.8	98.3	246.55	1.399	Level 3
12,300.0	5,912.0	12,313.5	6,013.0	129.3	130.2	-107.03	-6,812.5	-260.6	344.8	94.6	250.23	1.378	Level 3
12,400.0	5,912.0	12,413.5	6,013.0	131.2	132.1	-107.03	-6,912.5	-260.6	344.8	90.9	253.90	1.358	Level 3
12,500.0	5,912.0	12,513.5	6,013.0	133.1	134.1	-107.03	-7,012.5	-260.6	344.8	87.3	257.57	1.339	Level 3
12,600.0	5,912.0	12,613.5	6,013.0	135.0	136.0	-107.03	-7,112.5	-260.6	344.8	83.6	261.25	1.320	Level 3
12,700.0	5,912.0	12,713.5	6,013.0	136.9	137.9	-107.03	-7,212.5	-260.6	344.8	79.9	264.92	1.302	Level 3
12,800.0	5,912.0	12,813.5	6,013.0	138.8	139.8	-107.03	-7,312.5	-260.6	344.8	76.2	268.60	1.284	Level 3
12,900.0	5,912.0	12,913.5	6,013.0	140.7	141.7	-107.03	-7,412.5	-260.6	344.8	72.6	272.28	1.267	Level 3
13,000.0	5,912.0	13,013.5	6,013.0	142.6	143.6	-107.03	-7,512.5	-260.6	344.9	68.9	275.95	1.250	Level 2
13,100.0	5,912.0	13,113.5	6,013.0	144.5	145.5	-107.03	-7,612.5	-260.6	344.9	65.2	279.63	1.233	Level 2
13,200.0	5,912.0	13,213.5	6,013.0	146.4	147.4	-107.03	-7,712.5	-260.6	344.9	61.6	283.31	1.217	Level 2
13,300.0	5,912.0	13,313.5	6,013.0	148.3	149.3	-107.03	-7,812.5	-260.6	344.9	57.9	286.99	1.202	Level 2
13,400.0	5,912.0	13,413.5	6,013.0	150.2	151.2	-107.03	-7,912.5	-260.6	344.9	54.2	290.67	1.186	Level 2
13,500.0	5,912.0	13,513.5	6,013.0	152.1	153.2	-107.02	-8,012.5	-260.6	344.9	50.5	294.35	1.172	Level 2
13,579.9	5,912.0	13,593.4	6,013.0	153.6	154.7	-107.02	-8,092.4	-260.6	344.9	47.6	297.29	1.160	Level 2, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1403A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	66.1	66.1				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	66.1	66.1	65.9	0.19	353.355	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	66.1	66.1	65.5	0.64	103.820	
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	66.1	66.1	65.0	1.09	60.849	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	66.1	66.1	64.6	1.54	43.036	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	66.1	66.1	64.1	1.99	33.291	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-118.06	0.0	66.1	66.9	64.5	2.41	27.767	
700.0	699.8	699.8	699.8	1.4	1.4	-121.82	0.0	66.1	69.5	66.7	2.82	24.630	
800.0	799.6	800.0	800.0	1.6	1.6	-125.11	-1.8	66.1	73.2	69.9	3.22	22.699	
900.0	899.4	900.3	900.2	1.8	1.8	-125.50	-7.0	66.1	76.4	72.8	3.62	21.109	
1,000.0	999.1	1,000.3	999.9	2.1	2.0	-124.62	-14.0	66.1	79.5	75.4	4.05	19.638	
1,100.0	1,098.9	1,100.2	1,099.6	2.3	2.2	-123.81	-21.0	66.2	82.5	78.0	4.49	18.367	
1,200.0	1,198.6	1,200.2	1,199.3	2.5	2.5	-123.05	-27.9	66.2	85.6	80.6	4.95	17.275	
1,300.0	1,298.4	1,300.1	1,299.0	2.8	2.7	-122.34	-34.9	66.2	88.6	83.2	5.43	16.337	
1,400.0	1,398.1	1,400.1	1,398.7	3.0	2.9	-121.68	-41.9	66.3	91.7	85.8	5.91	15.528	
1,500.0	1,497.9	1,500.0	1,498.4	3.3	3.2	-121.07	-48.8	66.3	94.8	88.4	6.40	14.827	
1,600.0	1,597.6	1,599.9	1,598.1	3.5	3.4	-120.49	-55.8	66.3	97.9	91.1	6.89	14.216	
1,700.0	1,697.4	1,699.9	1,697.8	3.8	3.6	-119.95	-62.8	66.4	101.1	93.7	7.39	13.679	
1,800.0	1,797.2	1,799.8	1,797.5	4.1	3.9	-119.45	-69.8	66.4	104.2	96.3	7.89	13.205	
1,900.0	1,896.9	1,899.8	1,897.2	4.3	4.1	-118.97	-76.7	66.4	107.3	98.9	8.39	12.785	
2,000.0	1,996.7	1,999.7	1,996.9	4.6	4.4	-118.52	-83.7	66.5	110.5	101.6	8.90	12.409	
2,100.0	2,096.4	2,099.7	2,096.6	4.8	4.7	-118.09	-90.7	66.5	113.6	104.2	9.41	12.072	
2,200.0	2,196.2	2,199.6	2,196.3	5.1	4.9	-117.69	-97.7	66.5	116.8	106.8	9.92	11.767	
2,300.0	2,295.9	2,299.6	2,296.0	5.4	5.2	-117.30	-104.6	66.5	119.9	109.5	10.44	11.491	
2,400.0	2,395.7	2,399.5	2,395.7	5.6	5.4	-116.94	-111.6	66.6	123.1	112.1	10.95	11.240	
2,500.0	2,495.5	2,499.5	2,495.4	5.9	5.7	-116.60	-118.6	66.6	126.3	114.8	11.47	11.011	
2,600.0	2,595.2	2,599.4	2,595.1	6.1	5.9	-116.27	-125.5	66.6	129.4	117.5	11.98	10.801	
2,700.0	2,695.0	2,699.4	2,694.8	6.4	6.2	-115.96	-132.5	66.7	132.6	120.1	12.50	10.608	
2,800.0	2,794.7	2,799.3	2,794.5	6.7	6.5	-115.66	-139.5	66.7	135.8	122.8	13.02	10.430	
2,900.0	2,894.5	2,899.3	2,894.2	6.9	6.7	-115.38	-146.5	66.7	139.0	125.4	13.54	10.266	
3,000.0	2,994.2	2,999.2	2,993.9	7.2	7.0	-115.11	-153.4	66.8	142.2	128.1	14.06	10.113	
3,100.0	3,094.0	3,099.2	3,093.6	7.5	7.2	-114.85	-160.4	66.8	145.4	130.8	14.58	9.971	
3,200.0	3,193.7	3,199.1	3,193.3	7.7	7.5	-114.60	-167.4	66.8	148.6	133.5	15.10	9.839	
3,300.0	3,293.5	3,299.0	3,293.0	8.0	7.8	-114.36	-174.3	66.8	151.7	136.1	15.62	9.715	
3,400.0	3,393.3	3,399.0	3,392.7	8.3	8.0	-114.13	-181.3	66.9	154.9	138.8	16.14	9.599	
3,500.0	3,493.0	3,498.9	3,492.4	8.5	8.3	-113.92	-188.3	66.9	158.1	141.5	16.66	9.491	
3,600.0	3,592.8	3,598.9	3,592.1	8.8	8.5	-113.71	-195.3	66.9	161.4	144.2	17.19	9.389	
3,700.0	3,692.5	3,698.8	3,691.9	9.0	8.8	-113.51	-202.2	67.0	164.6	146.8	17.71	9.293	
3,800.0	3,792.3	3,798.8	3,791.6	9.3	9.1	-113.31	-209.2	67.0	167.8	149.5	18.23	9.202	
3,900.0	3,892.0	3,898.7	3,891.3	9.6	9.3	-113.12	-216.2	67.0	171.0	152.2	18.75	9.117	
4,000.0	3,991.8	3,998.7	3,991.0	9.8	9.6	-112.94	-223.1	67.1	174.2	154.9	19.28	9.036	
4,100.0	4,091.6	4,098.6	4,090.7	10.1	9.9	-112.77	-230.1	67.1	177.4	157.6	19.80	8.959	
4,200.0	4,191.3	4,198.6	4,190.4	10.4	10.1	-112.60	-237.1	67.1	180.6	160.3	20.32	8.887	
4,300.0	4,291.1	4,298.5	4,290.1	10.6	10.4	-112.44	-244.1	67.2	183.8	163.0	20.85	8.818	
4,400.0	4,390.8	4,398.5	4,389.8	10.9	10.6	-112.29	-251.0	67.2	187.0	165.7	21.37	8.752	
4,500.0	4,490.6	4,498.4	4,489.5	11.2	10.9	-112.14	-258.0	67.2	190.3	168.4	21.90	8.690	
4,600.0	4,590.3	4,598.4	4,589.2	11.4	11.2	-111.99	-265.0	67.2	193.5	171.1	22.42	8.630	
4,700.0	4,690.1	4,698.3	4,688.9	11.7	11.4	-111.85	-271.9	67.3	196.7	173.8	22.94	8.573	
4,800.0	4,789.9	4,798.2	4,788.6	11.9	11.7	-111.72	-278.9	67.3	199.9	176.5	23.47	8.519	
4,900.0	4,889.6	4,898.2	4,888.3	12.2	12.0	-111.58	-285.9	67.3	203.2	179.2	23.99	8.467	
5,000.0	4,989.4	4,998.1	4,988.0	12.5	12.2	-111.46	-292.9	67.4	206.4	181.9	24.52	8.417	
5,100.0	5,089.1	5,098.1	5,087.7	12.7	12.5	-111.33	-299.8	67.4	209.6	184.6	25.04	8.370	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1403A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,198.0	5,187.4	13.0	12.8	-111.21	-306.8	67.4	212.8	187.3	25.57	8.324	
5,300.0	5,288.6	5,298.0	5,287.1	13.3	13.0	-111.10	-313.8	67.5	216.1	190.0	26.09	8.280	
5,400.0	5,388.4	5,397.9	5,386.8	13.5	13.3	-110.98	-320.8	67.5	219.3	192.7	26.62	8.238	
5,439.0	5,427.3	5,436.9	5,425.7	13.6	13.4	-110.94	-323.5	67.5	220.5	193.7	26.82	8.222	
5,450.0	5,438.3	5,447.5	5,436.3	13.7	13.4	-110.90	-324.3	67.5	220.9	194.1	26.88	8.221	
5,500.0	5,487.8	5,495.3	5,483.6	13.8	13.6	-110.55	-330.6	67.5	224.1	197.0	27.16	8.251	
5,550.0	5,536.4	5,542.8	5,529.9	14.0	13.8	-109.97	-341.1	67.6	229.4	201.9	27.50	8.342	
5,600.0	5,583.6	5,590.0	5,574.8	14.3	14.0	-109.18	-355.7	67.6	236.9	208.9	27.91	8.486	
5,650.0	5,629.1	5,636.8	5,617.8	14.6	14.3	-108.18	-374.1	67.7	246.3	217.9	28.39	8.675	
5,700.0	5,672.4	5,683.2	5,658.6	14.9	14.6	-107.01	-396.1	67.8	257.7	228.7	28.96	8.899	
5,750.0	5,713.1	5,729.0	5,696.9	15.3	14.9	-105.68	-421.3	67.9	270.9	241.2	29.61	9.147	
5,800.0	5,750.9	5,774.3	5,732.3	15.8	15.3	-104.22	-449.4	68.0	285.7	255.3	30.39	9.402	
5,850.0	5,785.3	5,819.0	5,764.9	16.3	15.7	-102.65	-480.1	68.2	302.1	270.8	31.28	9.656	
5,900.0	5,816.1	5,863.3	5,794.4	16.8	16.1	-100.98	-513.1	68.3	319.9	287.6	32.29	9.907	
5,950.0	5,843.0	5,907.2	5,820.7	17.4	16.6	-99.23	-548.2	68.5	338.8	305.4	33.39	10.149	
6,000.0	5,865.7	5,950.0	5,843.5	18.0	17.1	-97.41	-584.4	68.6	358.8	324.3	34.57	10.381	
6,050.0	5,884.1	5,993.9	5,863.7	18.7	17.6	-95.58	-623.4	68.8	379.7	343.9	35.84	10.595	
6,100.0	5,897.9	6,037.1	5,880.2	19.4	18.2	-93.71	-663.2	69.0	401.3	364.1	37.17	10.798	
6,150.0	5,907.0	6,080.2	5,893.4	20.2	18.8	-91.83	-704.3	69.2	423.4	384.9	38.54	10.987	
6,200.0	5,911.4	6,123.5	5,903.2	20.9	19.4	-89.98	-746.4	69.3	445.9	405.9	39.94	11.162	
6,220.8	5,911.8	6,141.6	5,906.3	21.3	19.7	-89.22	-764.3	69.4	455.3	414.7	40.53	11.231	
6,300.0	5,911.8	6,212.3	5,912.2	22.4	20.7	-90.05	-834.7	69.7	489.7	446.8	42.92	11.410	
6,400.0	5,911.8	6,306.6	5,912.3	23.8	22.1	-90.06	-929.0	69.8	528.6	482.7	45.87	11.523	
6,500.0	5,911.8	6,400.6	5,912.3	25.2	23.6	-90.05	-1,023.0	69.8	562.6	513.6	49.00	11.483	
6,600.0	5,911.8	6,496.3	5,912.3	26.7	25.1	-90.05	-1,118.7	69.8	591.6	539.5	52.19	11.337	
6,700.0	5,911.8	6,593.4	5,912.3	28.2	26.7	-90.04	-1,215.7	69.8	615.6	560.2	55.39	11.114	
6,800.0	5,911.8	6,691.5	5,912.3	29.7	28.4	-90.04	-1,313.9	69.8	634.5	575.9	58.58	10.831	
6,900.0	5,911.8	6,790.6	5,912.3	31.2	30.1	-90.04	-1,413.0	69.8	648.2	586.5	61.72	10.503	
7,000.0	5,911.8	6,890.2	5,912.3	32.7	31.9	-90.04	-1,512.6	69.8	656.7	591.9	64.76	10.140	
7,100.0	5,911.8	6,990.2	5,912.3	34.2	33.6	-90.04	-1,612.5	69.8	660.0	592.3	67.69	9.750	
7,112.4	5,911.8	7,002.6	5,912.3	34.4	33.9	-90.04	-1,625.0	69.8	660.0	592.0	68.04	9.700	
7,200.0	5,911.8	7,090.2	5,912.3	35.8	35.4	-90.04	-1,712.5	69.8	660.0	589.0	71.05	9.290	
7,300.0	5,911.8	7,190.2	5,912.3	37.4	37.2	-90.04	-1,812.5	69.8	660.0	585.5	74.53	8.855	
7,400.0	5,911.8	7,290.2	5,912.3	39.1	39.0	-90.04	-1,912.5	69.8	660.0	582.0	78.06	8.456	
7,500.0	5,911.9	7,390.2	5,912.3	40.7	40.8	-90.04	-2,012.5	69.8	660.0	578.4	81.61	8.088	
7,600.0	5,911.9	7,490.2	5,912.3	42.4	42.7	-90.03	-2,112.5	69.8	660.0	574.8	85.19	7.748	
7,700.0	5,911.9	7,590.2	5,912.3	44.1	44.5	-90.03	-2,212.5	69.8	660.0	571.2	88.79	7.434	
7,800.0	5,911.9	7,690.2	5,912.3	45.8	46.4	-90.03	-2,312.5	69.8	660.0	567.6	92.41	7.143	
7,900.0	5,911.9	7,790.2	5,912.2	47.6	48.2	-90.03	-2,412.5	69.8	660.0	564.0	96.04	6.872	
8,000.0	5,911.9	7,890.2	5,912.2	49.3	50.1	-90.03	-2,512.5	69.8	660.0	560.4	99.70	6.621	
8,100.0	5,911.9	7,990.2	5,912.2	51.1	51.9	-90.03	-2,612.5	69.8	660.1	556.7	103.36	6.386	
8,200.0	5,911.9	8,090.2	5,912.2	52.8	53.8	-90.03	-2,712.5	69.8	660.1	553.0	107.05	6.166	
8,300.0	5,911.9	8,190.2	5,912.2	54.6	55.7	-90.03	-2,812.5	69.8	660.1	549.3	110.74	5.961	
8,400.0	5,911.9	8,290.2	5,912.2	56.4	57.5	-90.03	-2,912.5	69.8	660.1	545.6	114.44	5.768	
8,500.0	5,911.9	8,390.2	5,912.2	58.2	59.4	-90.03	-3,012.5	69.8	660.1	541.9	118.15	5.587	
8,600.0	5,911.9	8,490.2	5,912.2	60.0	61.3	-90.03	-3,112.5	69.8	660.1	538.2	121.87	5.416	
8,700.0	5,911.9	8,590.2	5,912.2	61.8	63.2	-90.03	-3,212.5	69.8	660.1	534.5	125.60	5.256	
8,800.0	5,911.9	8,690.2	5,912.2	63.7	65.0	-90.03	-3,312.5	69.8	660.1	530.8	129.33	5.104	
8,900.0	5,911.9	8,790.2	5,912.2	65.5	66.9	-90.03	-3,412.5	69.8	660.1	527.0	133.07	4.961	
9,000.0	5,911.9	8,890.2	5,912.2	67.3	68.8	-90.03	-3,512.5	69.8	660.1	523.3	136.82	4.825	
9,100.0	5,911.9	8,990.2	5,912.2	69.2	70.7	-90.03	-3,612.5	69.9	660.1	519.5	140.57	4.696	
9,200.0	5,911.9	9,090.2	5,912.2	71.0	72.6	-90.03	-3,712.5	69.9	660.1	515.8	144.32	4.574	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1403A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	9,190.2	5,912.2	72.8	74.5	-90.02	-3,812.5	69.9	660.1	512.0	148.08	4.458	
9,400.0	5,911.9	9,290.2	5,912.2	74.7	76.4	-90.02	-3,912.5	69.9	660.1	508.3	151.85	4.347	
9,500.0	5,911.9	9,390.2	5,912.2	76.5	78.3	-90.02	-4,012.5	69.9	660.1	504.5	155.62	4.242	
9,600.0	5,911.9	9,490.2	5,912.2	78.4	80.2	-90.02	-4,112.5	69.9	660.1	500.7	159.39	4.142	
9,700.0	5,911.9	9,590.2	5,912.2	80.3	82.1	-90.02	-4,212.5	69.9	660.1	497.0	163.17	4.046	
9,800.0	5,911.9	9,690.2	5,912.2	82.1	84.0	-90.02	-4,312.5	69.9	660.1	493.2	166.95	3.954	
9,900.0	5,911.9	9,790.2	5,912.2	84.0	85.9	-90.02	-4,412.5	69.9	660.1	489.4	170.73	3.867	
10,000.0	5,911.9	9,890.2	5,912.2	85.9	87.8	-90.02	-4,512.5	69.9	660.1	485.6	174.51	3.783	
10,100.0	5,911.9	9,990.2	5,912.2	87.7	89.7	-90.02	-4,612.5	69.9	660.2	481.9	178.30	3.703	
10,200.0	5,911.9	10,090.2	5,912.1	89.6	91.6	-90.02	-4,712.5	69.9	660.2	478.1	182.09	3.625	
10,300.0	5,911.9	10,190.2	5,912.1	91.5	93.5	-90.02	-4,812.5	69.9	660.2	474.3	185.88	3.552	
10,400.0	5,911.9	10,290.2	5,912.1	93.4	95.4	-90.02	-4,912.5	69.9	660.2	470.5	189.67	3.481	
10,500.0	5,911.9	10,390.2	5,912.1	95.2	97.3	-90.02	-5,012.5	69.9	660.2	466.7	193.47	3.412	
10,600.0	5,911.9	10,490.2	5,912.1	97.1	99.2	-90.02	-5,112.5	69.9	660.2	462.9	197.27	3.347	
10,700.0	5,911.9	10,590.2	5,912.1	99.0	101.1	-90.02	-5,212.5	69.9	660.2	459.1	201.07	3.283	
10,800.0	5,911.9	10,690.2	5,912.1	100.9	103.0	-90.02	-5,312.5	69.9	660.2	455.3	204.87	3.222	
10,900.0	5,911.9	10,790.2	5,912.1	102.8	104.9	-90.02	-5,412.5	69.9	660.2	451.5	208.67	3.164	
11,000.0	5,911.9	10,890.2	5,912.1	104.6	106.8	-90.01	-5,512.5	69.9	660.2	447.7	212.47	3.107	
11,100.0	5,911.9	10,990.2	5,912.1	106.5	108.7	-90.01	-5,612.5	69.9	660.2	443.9	216.28	3.053	
11,200.0	5,911.9	11,090.2	5,912.1	108.4	110.6	-90.01	-5,712.5	69.9	660.2	440.1	220.09	3.000	
11,300.0	5,911.9	11,190.2	5,912.1	110.3	112.5	-90.01	-5,812.5	69.9	660.2	436.3	223.90	2.949	
11,400.0	5,911.9	11,290.2	5,912.1	112.2	114.4	-90.01	-5,912.5	69.9	660.2	432.5	227.70	2.899	
11,500.0	5,911.9	11,390.2	5,912.1	114.1	116.4	-90.01	-6,012.5	69.9	660.2	428.7	231.52	2.852	
11,600.0	5,912.0	11,490.2	5,912.1	116.0	118.3	-90.01	-6,112.5	69.9	660.2	424.9	235.33	2.806	
11,700.0	5,912.0	11,590.2	5,912.1	117.9	120.2	-90.01	-6,212.5	69.9	660.2	421.1	239.14	2.761	
11,800.0	5,912.0	11,690.2	5,912.1	119.8	122.1	-90.01	-6,312.5	69.9	660.2	417.3	242.95	2.718	
11,900.0	5,912.0	11,790.2	5,912.1	121.7	124.0	-90.01	-6,412.5	69.9	660.2	413.5	246.77	2.676	
12,000.0	5,912.0	11,890.2	5,912.1	123.6	125.9	-90.01	-6,512.5	69.9	660.2	409.7	250.58	2.635	
12,100.0	5,912.0	11,990.2	5,912.1	125.5	127.8	-90.01	-6,612.5	69.9	660.3	405.9	254.40	2.595	
12,200.0	5,912.0	12,090.2	5,912.1	127.4	129.7	-90.01	-6,712.5	69.9	660.3	402.0	258.22	2.557	
12,300.0	5,912.0	12,190.2	5,912.1	129.3	131.6	-90.01	-6,812.5	69.9	660.3	398.2	262.03	2.520	
12,400.0	5,912.0	12,290.2	5,912.1	131.2	133.6	-90.01	-6,912.5	69.9	660.3	394.4	265.85	2.484	
12,500.0	5,912.0	12,390.2	5,912.0	133.1	135.5	-90.01	-7,012.5	69.9	660.3	390.6	269.67	2.448	
12,600.0	5,912.0	12,490.2	5,912.0	135.0	137.4	-90.00	-7,112.5	69.9	660.3	386.8	273.49	2.414	
12,700.0	5,912.0	12,590.2	5,912.0	136.9	139.3	-90.00	-7,212.5	69.9	660.3	383.0	277.31	2.381	
12,800.0	5,912.0	12,690.2	5,912.0	138.8	141.2	-90.00	-7,312.5	69.9	660.3	379.2	281.13	2.349	
12,900.0	5,912.0	12,790.2	5,912.0	140.7	143.1	-90.00	-7,412.5	69.9	660.3	375.3	284.96	2.317	
13,000.0	5,912.0	12,890.2	5,912.0	142.6	145.0	-90.00	-7,512.5	69.9	660.3	371.5	288.78	2.287	
13,100.0	5,912.0	12,990.2	5,912.0	144.5	147.0	-90.00	-7,612.5	69.9	660.3	367.7	292.60	2.257	
13,200.0	5,912.0	13,090.2	5,912.0	146.4	148.9	-90.00	-7,712.5	69.9	660.3	363.9	296.42	2.228	
13,300.0	5,912.0	13,190.2	5,912.0	148.3	150.8	-90.00	-7,812.5	69.9	660.3	360.1	300.25	2.199	
13,400.0	5,912.0	13,290.2	5,912.0	150.2	152.7	-90.00	-7,912.5	69.9	660.3	356.2	304.07	2.172	
13,500.0	5,912.0	13,390.2	5,912.0	152.1	154.6	-90.00	-8,012.5	70.0	660.3	352.4	307.90	2.145	
13,579.9	5,912.0	13,470.0	5,912.0	153.6	156.1	-90.00	-8,092.4	70.0	660.3	349.4	310.95	2.124	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1404B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	99.1	99.1				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	99.1	99.1	98.9	0.19	530.033	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	99.1	99.1	98.5	0.64	155.729	
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	99.1	99.1	98.0	1.09	91.273	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	99.1	99.1	97.6	1.54	64.554	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	99.1	99.1	97.1	1.99	49.936	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-117.62	0.0	99.1	99.9	97.5	2.41	41.482	
700.0	699.8	699.8	699.8	1.4	1.4	-120.16	0.0	99.1	102.5	99.6	2.82	36.308	
800.0	799.6	799.6	799.6	1.6	1.7	-123.41	0.0	99.1	106.1	102.9	3.25	32.643	
900.0	899.4	898.9	898.9	1.8	1.9	-125.55	-1.7	99.6	110.3	106.7	3.66	30.113	
1,000.0	999.1	998.4	998.2	2.1	2.0	-125.81	-6.6	101.0	115.0	111.0	4.07	28.268	
1,100.0	1,098.9	1,098.2	1,097.8	2.3	2.2	-125.20	-13.3	102.9	119.9	115.4	4.50	26.663	
1,200.0	1,198.6	1,198.1	1,197.5	2.5	2.4	-124.64	-20.0	104.8	124.8	119.9	4.94	25.251	
1,300.0	1,298.4	1,298.0	1,297.1	2.8	2.7	-124.12	-26.7	106.7	129.8	124.4	5.40	24.015	
1,400.0	1,398.1	1,397.8	1,396.7	3.0	2.9	-123.64	-33.4	108.6	134.7	128.8	5.87	22.935	
1,500.0	1,497.9	1,497.7	1,496.3	3.3	3.1	-123.19	-40.2	110.4	139.6	133.3	6.35	21.988	
1,600.0	1,597.6	1,597.6	1,596.0	3.5	3.4	-122.78	-46.9	112.3	144.6	137.7	6.83	21.155	
1,700.0	1,697.4	1,697.5	1,695.6	3.8	3.6	-122.39	-53.6	114.2	149.5	142.2	7.32	20.419	
1,800.0	1,797.2	1,797.3	1,795.2	4.1	3.8	-122.02	-60.3	116.1	154.5	146.7	7.82	19.765	
1,900.0	1,896.9	1,897.2	1,894.9	4.3	4.1	-121.68	-67.0	118.0	159.5	151.1	8.31	19.182	
2,000.0	1,996.7	1,997.1	1,994.5	4.6	4.3	-121.36	-73.7	119.9	164.4	155.6	8.81	18.658	
2,100.0	2,096.4	2,096.9	2,094.1	4.8	4.6	-121.06	-80.4	121.8	169.4	160.1	9.32	18.186	
2,200.0	2,196.2	2,196.8	2,193.7	5.1	4.8	-120.78	-87.1	123.7	174.4	164.6	9.82	17.759	
2,300.0	2,295.9	2,296.7	2,293.4	5.4	5.1	-120.51	-93.8	125.6	179.4	169.1	10.33	17.371	
2,400.0	2,395.7	2,396.6	2,393.0	5.6	5.3	-120.25	-100.5	127.5	184.4	173.5	10.83	17.018	
2,500.0	2,495.5	2,496.4	2,492.6	5.9	5.6	-120.01	-107.2	129.4	189.4	178.0	11.34	16.694	
2,600.0	2,595.2	2,596.3	2,592.3	6.1	5.9	-119.78	-113.9	131.3	194.4	182.5	11.85	16.397	
2,700.0	2,695.0	2,696.2	2,691.9	6.4	6.1	-119.57	-120.6	133.1	199.4	187.0	12.36	16.124	
2,800.0	2,794.7	2,796.0	2,791.5	6.7	6.4	-119.36	-127.3	135.0	204.4	191.5	12.88	15.871	
2,900.0	2,894.5	2,895.9	2,891.1	6.9	6.6	-119.17	-134.0	136.9	209.4	196.0	13.39	15.637	
3,000.0	2,994.2	2,995.8	2,990.8	7.2	6.9	-118.98	-140.7	138.8	214.4	200.5	13.90	15.420	
3,100.0	3,094.0	3,095.7	3,090.4	7.5	7.1	-118.80	-147.4	140.7	219.4	205.0	14.42	15.217	
3,200.0	3,193.7	3,195.5	3,190.0	7.7	7.4	-118.63	-154.1	142.6	224.4	209.5	14.93	15.028	
3,300.0	3,293.5	3,295.4	3,289.7	8.0	7.7	-118.47	-160.8	144.5	229.4	214.0	15.45	14.852	
3,400.0	3,393.3	3,395.3	3,389.3	8.3	7.9	-118.31	-167.6	146.4	234.4	218.5	15.96	14.686	
3,500.0	3,493.0	3,495.2	3,488.9	8.5	8.2	-118.16	-174.3	148.3	239.4	223.0	16.48	14.531	
3,600.0	3,592.8	3,595.0	3,588.5	8.8	8.4	-118.02	-181.0	150.2	244.5	227.5	17.00	14.384	
3,700.0	3,692.5	3,694.9	3,688.2	9.0	8.7	-117.88	-187.7	152.1	249.5	232.0	17.51	14.247	
3,800.0	3,792.3	3,794.8	3,787.8	9.3	9.0	-117.75	-194.4	153.9	254.5	236.5	18.03	14.116	
3,900.0	3,892.0	3,894.6	3,887.4	9.6	9.2	-117.62	-201.1	155.8	259.5	241.0	18.55	13.994	
4,000.0	3,991.8	3,994.5	3,987.1	9.8	9.5	-117.50	-207.8	157.7	264.6	245.5	19.06	13.877	
4,100.0	4,091.6	4,094.4	4,086.7	10.1	9.8	-117.38	-214.5	159.6	269.6	250.0	19.58	13.767	
4,200.0	4,191.3	4,194.3	4,186.3	10.4	10.0	-117.27	-221.2	161.5	274.6	254.5	20.10	13.662	
4,300.0	4,291.1	4,294.1	4,285.9	10.6	10.3	-117.16	-227.9	163.4	279.6	259.0	20.62	13.563	
4,400.0	4,390.8	4,394.0	4,385.6	10.9	10.5	-117.05	-234.6	165.3	284.7	263.5	21.14	13.468	
4,500.0	4,490.6	4,493.9	4,485.2	11.2	10.8	-116.95	-241.3	167.2	289.7	268.0	21.65	13.378	
4,600.0	4,590.3	4,593.7	4,584.8	11.4	11.1	-116.85	-248.0	169.1	294.7	272.5	22.17	13.291	
4,700.0	4,690.1	4,693.6	4,684.5	11.7	11.3	-116.76	-254.7	171.0	299.7	277.1	22.69	13.209	
4,800.0	4,789.9	4,793.5	4,784.1	11.9	11.6	-116.66	-261.4	172.9	304.8	281.6	23.21	13.131	
4,900.0	4,889.6	4,893.4	4,883.7	12.2	11.9	-116.57	-268.1	174.7	309.8	286.1	23.73	13.056	
5,000.0	4,989.4	4,993.2	4,983.3	12.5	12.1	-116.49	-274.8	176.6	314.8	290.6	24.25	12.984	
5,100.0	5,089.1	5,093.1	5,083.0	12.7	12.4	-116.41	-281.5	178.5	319.9	295.1	24.77	12.915	

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-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1404B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,188.9	5,193.0	5,182.6	13.0	12.6	-116.32	-288.2	180.4	324.9	299.6	25.29	12.848	
5,300.0	5,288.6	5,292.9	5,282.2	13.3	12.9	-116.25	-295.0	182.3	329.9	304.1	25.81	12.785	
5,400.0	5,388.4	5,392.7	5,381.9	13.5	13.2	-116.17	-301.7	184.2	335.0	308.7	26.33	12.724	
5,439.0	5,427.3	5,431.7	5,420.7	13.6	13.3	-116.14	-304.3	184.9	336.9	310.4	26.53	12.701	
5,450.0	5,438.3	5,442.7	5,431.7	13.7	13.3	-116.09	-305.0	185.1	337.6	311.0	26.58	12.699	
5,500.0	5,487.8	5,492.4	5,481.3	13.8	13.4	-116.17	-308.3	186.1	341.6	314.8	26.81	12.741	
5,550.0	5,536.4	5,541.3	5,530.0	14.0	13.6	-116.72	-311.6	187.0	347.8	320.8	27.02	12.872	
5,600.0	5,583.6	5,582.9	5,571.4	14.3	13.7	-117.08	-316.1	188.3	356.9	329.7	27.22	13.110	
5,650.0	5,629.1	5,624.2	5,612.0	14.6	13.8	-117.11	-323.7	190.4	369.2	341.7	27.45	13.448	
5,700.0	5,672.4	5,665.3	5,651.5	14.9	14.0	-116.80	-334.3	193.4	384.6	356.8	27.73	13.869	
5,750.0	5,713.1	5,705.7	5,689.5	15.3	14.2	-116.13	-347.6	197.2	402.9	374.8	28.07	14.351	
5,800.0	5,750.9	5,745.6	5,725.8	15.8	14.5	-115.11	-363.4	201.6	423.9	395.3	28.51	14.866	
5,850.0	5,785.3	5,784.7	5,760.0	16.3	14.7	-113.74	-381.5	206.7	447.3	418.2	29.07	15.386	
5,900.0	5,816.1	5,823.0	5,792.1	16.8	15.0	-112.02	-401.6	212.4	473.0	443.2	29.82	15.863	
5,950.0	5,843.0	5,860.5	5,822.0	17.4	15.3	-109.96	-423.4	218.5	500.8	470.0	30.72	16.300	
6,000.0	5,865.7	5,897.2	5,849.6	18.0	15.6	-107.57	-446.8	225.1	530.3	498.5	31.77	16.689	
6,050.0	5,884.1	5,933.2	5,875.0	18.7	16.0	-104.89	-471.4	232.1	561.3	528.3	32.96	17.028	
6,100.0	5,897.9	5,968.7	5,898.1	19.4	16.3	-101.93	-497.2	239.4	593.6	559.4	34.24	17.334	
6,150.0	5,907.0	6,003.6	5,919.1	20.2	16.7	-98.75	-524.1	246.9	627.0	591.4	35.58	17.620	
6,200.0	5,911.4	6,038.3	5,938.0	20.9	17.1	-95.39	-552.1	254.8	661.2	624.2	36.94	17.899	
6,220.8	5,911.8	6,052.7	5,945.3	21.3	17.3	-93.96	-564.0	258.2	675.6	638.1	37.50	18.018	
6,300.0	5,911.8	6,111.9	5,971.6	22.4	18.1	-96.32	-615.1	272.6	729.7	690.4	39.31	18.564	
6,400.0	5,911.8	6,199.1	5,998.9	23.8	19.3	-98.04	-694.6	295.0	794.2	752.5	41.77	19.014	
6,500.0	5,911.8	6,297.8	6,012.8	25.2	20.8	-98.22	-788.5	321.5	853.4	808.7	44.70	19.090	
6,600.0	5,911.8	6,444.4	6,013.3	26.7	22.9	-97.25	-930.6	357.5	904.9	856.5	48.46	18.674	
6,700.0	5,911.8	6,621.5	6,013.3	28.2	25.5	-96.53	-1,105.3	386.5	944.3	891.5	52.74	17.906	
6,800.0	5,911.8	6,814.3	6,013.3	29.7	28.4	-96.10	-1,297.5	399.5	969.6	912.2	57.45	16.878	
6,900.0	5,911.8	6,929.8	6,013.3	31.2	30.2	-95.96	-1,413.0	399.7	983.4	922.3	61.04	16.111	
7,000.0	5,911.8	7,029.4	6,013.3	32.7	31.9	-95.88	-1,512.6	399.7	991.8	927.5	64.35	15.414	
7,100.0	5,911.8	7,129.3	6,013.3	34.2	33.6	-95.85	-1,612.6	399.7	995.1	927.5	67.54	14.733	
7,112.4	5,911.8	7,141.8	6,013.3	34.4	33.8	-95.85	-1,625.0	399.7	995.1	927.2	67.93	14.649	
7,200.0	5,911.8	7,229.3	6,013.3	35.8	35.3	-95.85	-1,712.6	399.7	995.1	924.2	70.90	14.036	
7,300.0	5,911.8	7,329.3	6,013.3	37.4	37.1	-95.85	-1,812.6	399.7	995.1	920.8	74.35	13.384	
7,400.0	5,911.8	7,429.3	6,013.3	39.1	38.9	-95.85	-1,912.6	399.7	995.1	917.3	77.84	12.785	
7,500.0	5,911.9	7,529.3	6,013.3	40.7	40.6	-95.85	-2,012.6	399.7	995.1	913.8	81.36	12.232	
7,600.0	5,911.9	7,629.3	6,013.3	42.4	42.4	-95.85	-2,112.6	399.7	995.1	910.2	84.90	11.721	
7,700.0	5,911.9	7,729.3	6,013.3	44.1	44.2	-95.85	-2,212.6	399.7	995.1	906.7	88.47	11.248	
7,800.0	5,911.9	7,829.3	6,013.2	45.8	46.1	-95.85	-2,312.6	399.7	995.1	903.1	92.06	10.809	
7,900.0	5,911.9	7,929.3	6,013.2	47.6	47.9	-95.85	-2,412.6	399.7	995.1	899.5	95.67	10.401	
8,000.0	5,911.9	8,029.3	6,013.2	49.3	49.7	-95.85	-2,512.6	399.7	995.1	895.8	99.30	10.022	
8,100.0	5,911.9	8,129.3	6,013.2	51.1	51.5	-95.85	-2,612.6	399.7	995.1	892.2	102.94	9.667	
8,200.0	5,911.9	8,229.3	6,013.2	52.8	53.4	-95.85	-2,712.6	399.7	995.1	888.5	106.59	9.336	
8,300.0	5,911.9	8,329.3	6,013.2	54.6	55.2	-95.85	-2,812.6	399.7	995.1	884.9	110.26	9.025	
8,400.0	5,911.9	8,429.3	6,013.2	56.4	57.1	-95.84	-2,912.6	399.7	995.1	881.2	113.94	8.734	
8,500.0	5,911.9	8,529.3	6,013.2	58.2	59.0	-95.84	-3,012.6	399.7	995.1	877.5	117.62	8.460	
8,600.0	5,911.9	8,629.3	6,013.2	60.0	60.8	-95.84	-3,112.6	399.7	995.1	873.8	121.32	8.203	
8,700.0	5,911.9	8,729.3	6,013.2	61.8	62.7	-95.84	-3,212.6	399.7	995.2	870.1	125.02	7.960	
8,800.0	5,911.9	8,829.3	6,013.2	63.7	64.5	-95.84	-3,312.6	399.7	995.2	866.4	128.73	7.730	
8,900.0	5,911.9	8,929.3	6,013.2	65.5	66.4	-95.84	-3,412.6	399.7	995.2	862.7	132.45	7.513	
9,000.0	5,911.9	9,029.3	6,013.2	67.3	68.3	-95.84	-3,512.6	399.7	995.2	859.0	136.18	7.308	
9,100.0	5,911.9	9,129.3	6,013.2	69.2	70.2	-95.84	-3,612.6	399.7	995.2	855.3	139.91	7.113	
9,200.0	5,911.9	9,229.3	6,013.2	71.0	72.1	-95.84	-3,712.6	399.7	995.2	851.5	143.64	6.928	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11E-1404B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,911.9	9,329.3	6,013.2	72.8	73.9	-95.84	-3,812.6	399.7	995.2	847.8	147.38	6.752	
9,400.0	5,911.9	9,429.3	6,013.2	74.7	75.8	-95.84	-3,912.6	399.7	995.2	844.0	151.12	6.585	
9,500.0	5,911.9	9,529.3	6,013.2	76.5	77.7	-95.84	-4,012.6	399.7	995.2	840.3	154.87	6.426	
9,600.0	5,911.9	9,629.3	6,013.2	78.4	79.6	-95.84	-4,112.6	399.7	995.2	836.5	158.62	6.274	
9,700.0	5,911.9	9,729.3	6,013.2	80.3	81.5	-95.84	-4,212.6	399.7	995.2	832.8	162.38	6.129	
9,800.0	5,911.9	9,829.3	6,013.2	82.1	83.4	-95.84	-4,312.6	399.7	995.2	829.0	166.14	5.990	
9,900.0	5,911.9	9,929.3	6,013.2	84.0	85.3	-95.84	-4,412.6	399.7	995.2	825.3	169.90	5.857	
10,000.0	5,911.9	10,029.3	6,013.1	85.9	87.2	-95.84	-4,512.6	399.7	995.2	821.5	173.66	5.731	
10,100.0	5,911.9	10,129.3	6,013.1	87.7	89.0	-95.84	-4,612.6	399.7	995.2	817.7	177.43	5.609	
10,200.0	5,911.9	10,229.3	6,013.1	89.6	90.9	-95.84	-4,712.6	399.7	995.2	814.0	181.20	5.492	
10,300.0	5,911.9	10,329.3	6,013.1	91.5	92.8	-95.84	-4,812.6	399.7	995.2	810.2	184.97	5.380	
10,400.0	5,911.9	10,429.3	6,013.1	93.4	94.7	-95.84	-4,912.6	399.7	995.2	806.4	188.75	5.273	
10,500.0	5,911.9	10,529.3	6,013.1	95.2	96.6	-95.84	-5,012.6	399.7	995.2	802.7	192.52	5.169	
10,600.0	5,911.9	10,629.3	6,013.1	97.1	98.5	-95.84	-5,112.6	399.7	995.2	798.9	196.30	5.070	
10,700.0	5,911.9	10,729.3	6,013.1	99.0	100.4	-95.84	-5,212.6	399.7	995.2	795.1	200.08	4.974	
10,800.0	5,911.9	10,829.3	6,013.1	100.9	102.3	-95.83	-5,312.6	399.7	995.2	791.3	203.86	4.882	
10,900.0	5,911.9	10,929.3	6,013.1	102.8	104.2	-95.83	-5,412.6	399.7	995.2	787.5	207.65	4.793	
11,000.0	5,911.9	11,029.3	6,013.1	104.6	106.1	-95.83	-5,512.6	399.7	995.2	783.8	211.43	4.707	
11,100.0	5,911.9	11,129.3	6,013.1	106.5	108.0	-95.83	-5,612.6	399.7	995.2	780.0	215.22	4.624	
11,200.0	5,911.9	11,229.3	6,013.1	108.4	109.9	-95.83	-5,712.6	399.7	995.2	776.2	219.01	4.544	
11,300.0	5,911.9	11,329.3	6,013.1	110.3	111.9	-95.83	-5,812.6	399.7	995.2	772.4	222.79	4.467	
11,400.0	5,911.9	11,429.3	6,013.1	112.2	113.8	-95.83	-5,912.6	399.7	995.2	768.6	226.59	4.392	
11,500.0	5,911.9	11,529.3	6,013.1	114.1	115.7	-95.83	-6,012.6	399.7	995.2	764.8	230.38	4.320	
11,600.0	5,912.0	11,629.3	6,013.1	116.0	117.6	-95.83	-6,112.6	399.7	995.2	761.0	234.17	4.250	
11,700.0	5,912.0	11,729.3	6,013.1	117.9	119.5	-95.83	-6,212.6	399.7	995.2	757.2	237.96	4.182	
11,800.0	5,912.0	11,829.3	6,013.1	119.8	121.4	-95.83	-6,312.6	399.7	995.2	753.4	241.76	4.117	
11,900.0	5,912.0	11,929.3	6,013.1	121.7	123.3	-95.83	-6,412.6	399.7	995.2	749.7	245.56	4.053	
12,000.0	5,912.0	12,029.3	6,013.1	123.6	125.2	-95.83	-6,512.6	399.7	995.2	745.9	249.35	3.991	
12,100.0	5,912.0	12,129.3	6,013.1	125.5	127.1	-95.83	-6,612.6	399.7	995.2	742.1	253.15	3.931	
12,200.0	5,912.0	12,229.3	6,013.1	127.4	129.0	-95.83	-6,712.6	399.7	995.2	738.3	256.95	3.873	
12,300.0	5,912.0	12,329.3	6,013.0	129.3	130.9	-95.83	-6,812.6	399.7	995.2	734.5	260.75	3.817	
12,400.0	5,912.0	12,429.3	6,013.0	131.2	132.8	-95.83	-6,912.6	399.7	995.2	730.7	264.55	3.762	
12,500.0	5,912.0	12,529.3	6,013.0	133.1	134.7	-95.83	-7,012.6	399.7	995.2	726.9	268.35	3.709	
12,600.0	5,912.0	12,629.3	6,013.0	135.0	136.7	-95.83	-7,112.6	399.7	995.2	723.1	272.15	3.657	
12,700.0	5,912.0	12,729.3	6,013.0	136.9	138.6	-95.83	-7,212.6	399.7	995.2	719.3	275.95	3.606	
12,800.0	5,912.0	12,829.3	6,013.0	138.8	140.5	-95.83	-7,312.6	399.7	995.2	715.5	279.76	3.557	
12,900.0	5,912.0	12,929.3	6,013.0	140.7	142.4	-95.83	-7,412.6	399.7	995.2	711.7	283.56	3.510	
13,000.0	5,912.0	13,029.3	6,013.0	142.6	144.3	-95.83	-7,512.6	399.7	995.2	707.9	287.37	3.463	
13,100.0	5,912.0	13,129.3	6,013.0	144.5	146.2	-95.83	-7,612.6	399.7	995.2	704.1	291.17	3.418	
13,200.0	5,912.0	13,229.3	6,013.0	146.4	148.1	-95.82	-7,712.6	399.7	995.2	700.3	294.98	3.374	
13,300.0	5,912.0	13,329.3	6,013.0	148.3	150.0	-95.82	-7,812.6	399.7	995.2	696.5	298.78	3.331	
13,400.0	5,912.0	13,429.3	6,013.0	150.2	151.9	-95.82	-7,912.6	399.7	995.2	692.6	302.59	3.289	
13,500.0	5,912.0	13,529.3	6,013.0	152.1	153.9	-95.82	-8,012.6	399.7	995.2	688.8	306.40	3.248	
13,579.9	5,912.0	13,609.2	6,013.0	153.6	155.4	-95.82	-8,092.5	399.7	995.2	685.8	309.44	3.216	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11E-1401A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 5018.6usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11E-1401A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0usft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5018.6usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #11E-1401A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°