

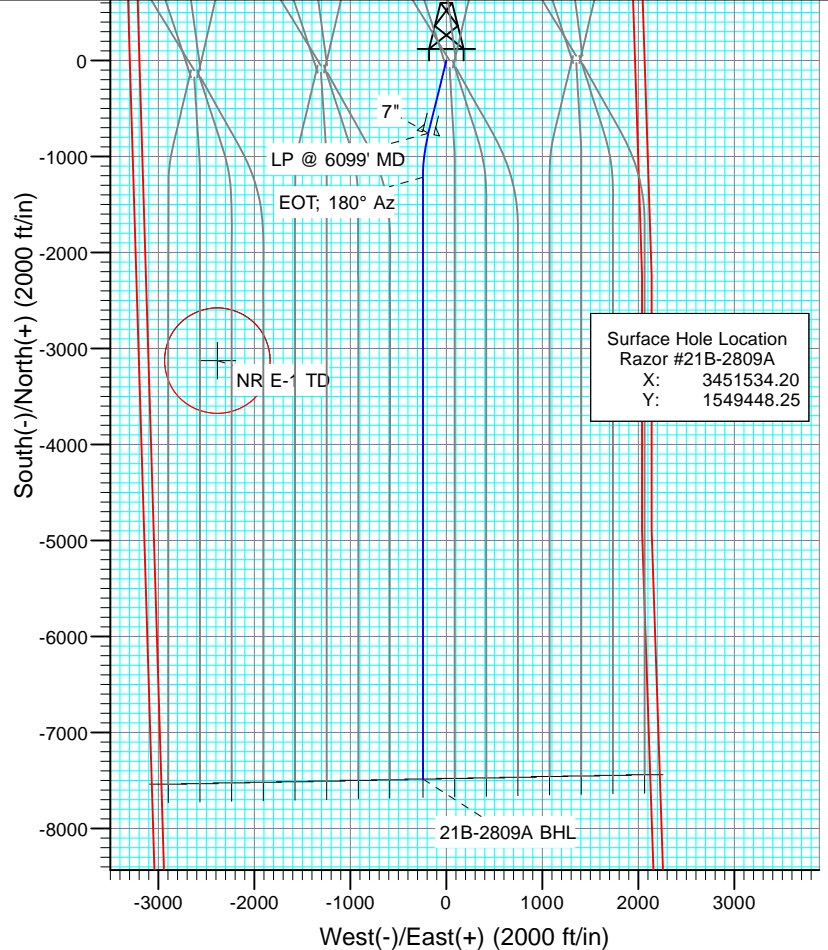
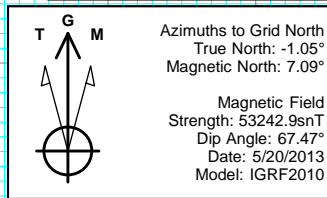


Project: Weld County, CO
Site: S21-T10N-R58W
Well: Razor #21B-2809A
Wellbore: HZ
Design: Plan #1



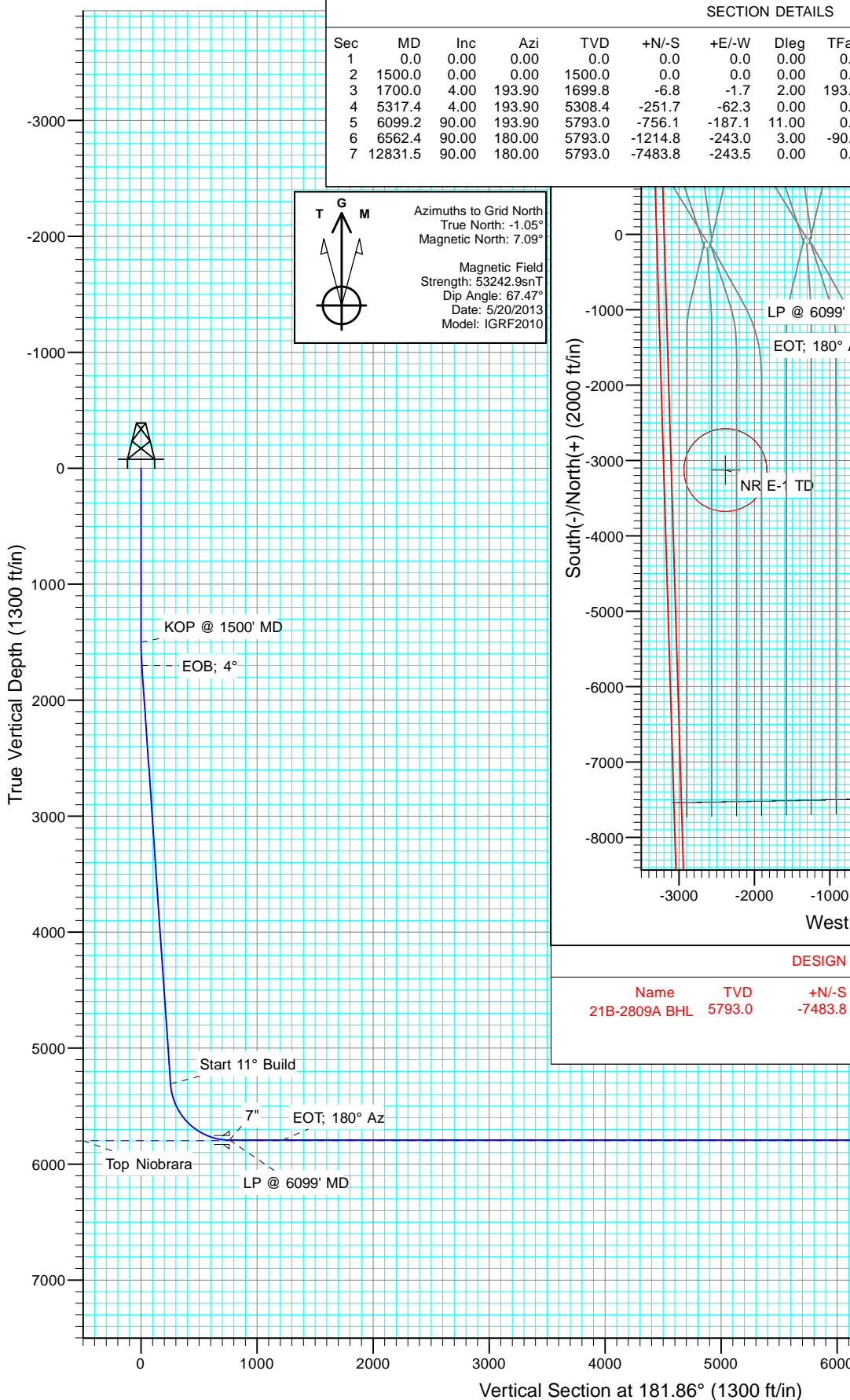
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0		KOP @ 1500' MD
3	1700.0	4.00	193.90	1699.8	-6.8	-1.7	2.00	193.90	6.8		EOB; 4°
4	5317.4	4.00	193.90	5308.4	-251.7	-62.3	0.00	0.00	253.6		Start 11° Build
5	6099.2	90.00	193.90	5793.0	-756.1	-187.1	11.00	0.00	761.8		LP @ 6099' MD
6	6562.4	90.00	180.00	5793.0	-1214.8	-243.0	3.00	-90.00	1222.0		EOT; 180° Az
7	12831.5	90.00	180.00	5793.0	-7483.8	-243.5	0.00	0.00	7487.8	21B-2809A BHL	PBHL @ 12831' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
21B-2809A BHL	5793.0	-7483.8	-243.5	1541964.42	3451290.67



Plan #1
Razor #21B-2809A
WELL @ 4853.8ft (Original Well Elev)
Ground Elevation @ 4837.3
North American Datum 1983
Well Razor #21B-2809A, Grid North

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-2809A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21B-2809A	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		S21-T10N-R58W			
Site Position:		Northing:	1,549,497.72 ft	Latitude:	40° 49' 48.98 N
From:	Lat/Long	Easting:	3,452,853.58 ft	Longitude:	103° 51' 48.82 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.06 °

Well	Razor #21B-2809A					
Well Position	+N/-S	0.0 ft	Northing:	1,549,448.25 ft	Latitude:	40° 49' 48.73 N
	+E/-W	0.0 ft	Easting:	3,451,534.20 ft	Longitude:	103° 52' 5.99 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,837.3 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2013	8.14	67.47	53,243

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	181.86

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,700.0	4.00	193.90	1,699.8	-6.8	-1.7	2.00	2.00	0.00	193.90	
5,317.4	4.00	193.90	5,308.4	-251.7	-62.3	0.00	0.00	0.00	0.00	
6,099.2	90.00	193.90	5,793.0	-756.1	-187.1	11.00	11.00	0.00	0.00	
6,562.4	90.00	180.00	5,793.0	-1,214.8	-243.0	3.00	0.00	-3.00	-90.00	
12,831.5	90.00	180.00	5,793.0	-7,483.8	-243.5	0.00	0.00	0.00	0.00	21B-2809A BHL

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-2809A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1500' MD
1,600.0	2.00	193.90	1,600.0	-1.7	-0.4	1.7	2.00	2.00	
1,700.0	4.00	193.90	1,699.8	-6.8	-1.7	6.8	2.00	2.00	EOB; 4°
1,800.0	4.00	193.90	1,799.6	-13.5	-3.4	13.6	0.00	0.00	
1,900.0	4.00	193.90	1,899.4	-20.3	-5.0	20.5	0.00	0.00	
2,000.0	4.00	193.90	1,999.1	-27.1	-6.7	27.3	0.00	0.00	
2,100.0	4.00	193.90	2,098.9	-33.9	-8.4	34.1	0.00	0.00	
2,200.0	4.00	193.90	2,198.6	-40.6	-10.1	40.9	0.00	0.00	
2,300.0	4.00	193.90	2,298.4	-47.4	-11.7	47.8	0.00	0.00	
2,400.0	4.00	193.90	2,398.1	-54.2	-13.4	54.6	0.00	0.00	
2,500.0	4.00	193.90	2,497.9	-60.9	-15.1	61.4	0.00	0.00	
2,600.0	4.00	193.90	2,597.6	-67.7	-16.8	68.2	0.00	0.00	
2,700.0	4.00	193.90	2,697.4	-74.5	-18.4	75.0	0.00	0.00	
2,800.0	4.00	193.90	2,797.2	-81.3	-20.1	81.9	0.00	0.00	
2,900.0	4.00	193.90	2,896.9	-88.0	-21.8	88.7	0.00	0.00	
3,000.0	4.00	193.90	2,996.7	-94.8	-23.5	95.5	0.00	0.00	
3,100.0	4.00	193.90	3,096.4	-101.6	-25.1	102.3	0.00	0.00	
3,200.0	4.00	193.90	3,196.2	-108.3	-26.8	109.2	0.00	0.00	
3,300.0	4.00	193.90	3,295.9	-115.1	-28.5	116.0	0.00	0.00	
3,400.0	4.00	193.90	3,395.7	-121.9	-30.2	122.8	0.00	0.00	
3,500.0	4.00	193.90	3,495.5	-128.7	-31.8	129.6	0.00	0.00	
3,600.0	4.00	193.90	3,595.2	-135.4	-33.5	136.4	0.00	0.00	
3,700.0	4.00	193.90	3,695.0	-142.2	-35.2	143.3	0.00	0.00	
3,800.0	4.00	193.90	3,794.7	-149.0	-36.9	150.1	0.00	0.00	
3,900.0	4.00	193.90	3,894.5	-155.7	-38.5	156.9	0.00	0.00	
4,000.0	4.00	193.90	3,994.2	-162.5	-40.2	163.7	0.00	0.00	
4,100.0	4.00	193.90	4,094.0	-169.3	-41.9	170.6	0.00	0.00	
4,200.0	4.00	193.90	4,193.7	-176.1	-43.6	177.4	0.00	0.00	
4,300.0	4.00	193.90	4,293.5	-182.8	-45.2	184.2	0.00	0.00	
4,400.0	4.00	193.90	4,393.3	-189.6	-46.9	191.0	0.00	0.00	
4,500.0	4.00	193.90	4,493.0	-196.4	-48.6	197.8	0.00	0.00	
4,600.0	4.00	193.90	4,592.8	-203.1	-50.3	204.7	0.00	0.00	
4,700.0	4.00	193.90	4,692.5	-209.9	-51.9	211.5	0.00	0.00	
4,800.0	4.00	193.90	4,792.3	-216.7	-53.6	218.3	0.00	0.00	
4,900.0	4.00	193.90	4,892.0	-223.5	-55.3	225.1	0.00	0.00	
5,000.0	4.00	193.90	4,991.8	-230.2	-57.0	232.0	0.00	0.00	
5,100.0	4.00	193.90	5,091.6	-237.0	-58.7	238.8	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-2809A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21B-2809A	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	193.90	5,191.3	-243.8	-60.3	245.6	0.00	0.00	
5,300.0	4.00	193.90	5,291.1	-250.5	-62.0	252.4	0.00	0.00	
5,317.4	4.00	193.90	5,308.4	-251.7	-62.3	253.6	0.00	0.00	Start 11° Build
5,400.0	13.08	193.90	5,390.0	-263.6	-65.2	265.6	11.00	11.00	
5,500.0	24.08	193.90	5,484.7	-294.5	-72.9	296.7	11.00	11.00	
5,600.0	35.08	193.90	5,571.5	-342.4	-84.7	344.9	11.00	11.00	
5,700.0	46.08	193.90	5,647.3	-405.4	-100.3	408.5	11.00	11.00	
5,800.0	57.08	193.90	5,709.4	-481.4	-119.1	485.0	11.00	11.00	
5,900.0	68.08	193.90	5,755.3	-567.4	-140.4	571.7	11.00	11.00	
6,000.0	79.08	193.90	5,783.6	-660.4	-163.4	665.3	11.00	11.00	
6,099.2	90.00	193.90	5,793.0	-756.1	-187.1	761.8	11.00	11.00	LP @ 6099' MD - 7"
6,100.0	90.00	193.88	5,793.0	-756.9	-187.3	762.5	2.92	0.42	
6,200.0	90.00	190.88	5,793.0	-854.5	-208.7	860.9	3.00	0.00	
6,300.0	90.00	187.88	5,793.0	-953.2	-225.0	960.0	3.00	0.00	
6,400.0	90.00	184.88	5,793.0	-1,052.5	-236.1	1,059.7	3.00	0.00	
6,500.0	90.00	181.88	5,793.0	-1,152.4	-242.0	1,159.6	3.00	0.00	
6,562.4	90.00	180.00	5,793.0	-1,214.8	-243.0	1,222.0	3.00	0.00	EOT; 180° Az
6,600.0	90.00	180.00	5,793.0	-1,252.3	-243.0	1,259.6	0.00	0.00	
6,700.0	90.00	180.00	5,793.0	-1,352.3	-243.1	1,359.5	0.00	0.00	
6,800.0	90.00	180.00	5,793.0	-1,452.3	-243.1	1,459.5	0.00	0.00	
6,900.0	90.00	180.00	5,793.0	-1,552.3	-243.1	1,559.4	0.00	0.00	
7,000.0	90.00	180.00	5,793.0	-1,652.3	-243.1	1,659.4	0.00	0.00	
7,100.0	90.00	180.00	5,793.0	-1,752.3	-243.1	1,759.3	0.00	0.00	
7,200.0	90.00	180.00	5,793.0	-1,852.3	-243.1	1,859.3	0.00	0.00	
7,300.0	90.00	180.00	5,793.0	-1,952.3	-243.1	1,959.2	0.00	0.00	
7,400.0	90.00	180.00	5,793.0	-2,052.3	-243.1	2,059.2	0.00	0.00	
7,500.0	90.00	180.00	5,793.0	-2,152.3	-243.1	2,159.1	0.00	0.00	
7,600.0	90.00	180.00	5,793.0	-2,252.3	-243.1	2,259.1	0.00	0.00	
7,700.0	90.00	180.00	5,793.0	-2,352.3	-243.1	2,359.0	0.00	0.00	
7,800.0	90.00	180.00	5,793.0	-2,452.3	-243.1	2,459.0	0.00	0.00	
7,900.0	90.00	180.00	5,793.0	-2,552.3	-243.1	2,558.9	0.00	0.00	
8,000.0	90.00	180.00	5,793.0	-2,652.3	-243.2	2,658.9	0.00	0.00	
8,100.0	90.00	180.00	5,793.0	-2,752.3	-243.2	2,758.8	0.00	0.00	
8,200.0	90.00	180.00	5,793.0	-2,852.3	-243.2	2,858.7	0.00	0.00	
8,300.0	90.00	180.00	5,793.0	-2,952.3	-243.2	2,958.7	0.00	0.00	
8,400.0	90.00	180.00	5,793.0	-3,052.3	-243.2	3,058.6	0.00	0.00	
8,500.0	90.00	180.00	5,793.0	-3,152.3	-243.2	3,158.6	0.00	0.00	
8,600.0	90.00	180.00	5,793.0	-3,252.3	-243.2	3,258.5	0.00	0.00	
8,700.0	90.00	180.00	5,793.0	-3,352.3	-243.2	3,358.5	0.00	0.00	
8,800.0	90.00	180.00	5,793.0	-3,452.3	-243.2	3,458.4	0.00	0.00	
8,900.0	90.00	180.00	5,793.0	-3,552.3	-243.2	3,558.4	0.00	0.00	
9,000.0	90.00	180.00	5,793.0	-3,652.3	-243.2	3,658.3	0.00	0.00	
9,100.0	90.00	180.00	5,793.0	-3,752.3	-243.2	3,758.3	0.00	0.00	
9,200.0	90.00	180.00	5,793.0	-3,852.3	-243.3	3,858.2	0.00	0.00	
9,300.0	90.00	180.00	5,793.0	-3,952.3	-243.3	3,958.2	0.00	0.00	
9,400.0	90.00	180.00	5,793.0	-4,052.3	-243.3	4,058.1	0.00	0.00	
9,500.0	90.00	180.00	5,793.0	-4,152.3	-243.3	4,158.1	0.00	0.00	
9,600.0	90.00	180.00	5,793.0	-4,252.3	-243.3	4,258.0	0.00	0.00	
9,700.0	90.00	180.00	5,793.0	-4,352.3	-243.3	4,358.0	0.00	0.00	
9,800.0	90.00	180.00	5,793.0	-4,452.3	-243.3	4,457.9	0.00	0.00	
9,900.0	90.00	180.00	5,793.0	-4,552.3	-243.3	4,557.9	0.00	0.00	
10,000.0	90.00	180.00	5,793.0	-4,652.3	-243.3	4,657.8	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-2809A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site:	S21-T10N-R58W	North Reference:	Grid
Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,100.0	90.00	180.00	5,793.0	-4,752.3	-243.3	4,757.7	0.00	0.00	
10,200.0	90.00	180.00	5,793.0	-4,852.3	-243.3	4,857.7	0.00	0.00	
10,300.0	90.00	180.00	5,793.0	-4,952.3	-243.3	4,957.6	0.00	0.00	
10,400.0	90.00	180.00	5,793.0	-5,052.3	-243.3	5,057.6	0.00	0.00	
10,500.0	90.00	180.00	5,793.0	-5,152.3	-243.4	5,157.5	0.00	0.00	
10,600.0	90.00	180.00	5,793.0	-5,252.3	-243.4	5,257.5	0.00	0.00	
10,700.0	90.00	180.00	5,793.0	-5,352.3	-243.4	5,357.4	0.00	0.00	
10,800.0	90.00	180.00	5,793.0	-5,452.3	-243.4	5,457.4	0.00	0.00	
10,900.0	90.00	180.00	5,793.0	-5,552.3	-243.4	5,557.3	0.00	0.00	
11,000.0	90.00	180.00	5,793.0	-5,652.3	-243.4	5,657.3	0.00	0.00	
11,100.0	90.00	180.00	5,793.0	-5,752.3	-243.4	5,757.2	0.00	0.00	
11,200.0	90.00	180.00	5,793.0	-5,852.3	-243.4	5,857.2	0.00	0.00	
11,300.0	90.00	180.00	5,793.0	-5,952.3	-243.4	5,957.1	0.00	0.00	
11,400.0	90.00	180.00	5,793.0	-6,052.3	-243.4	6,057.1	0.00	0.00	
11,500.0	90.00	180.00	5,793.0	-6,152.3	-243.4	6,157.0	0.00	0.00	
11,600.0	90.00	180.00	5,793.0	-6,252.3	-243.4	6,257.0	0.00	0.00	
11,700.0	90.00	180.00	5,793.0	-6,352.3	-243.4	6,356.9	0.00	0.00	
11,800.0	90.00	180.00	5,793.0	-6,452.3	-243.5	6,456.9	0.00	0.00	
11,900.0	90.00	180.00	5,793.0	-6,552.3	-243.5	6,556.8	0.00	0.00	
12,000.0	90.00	180.00	5,793.0	-6,652.3	-243.5	6,656.7	0.00	0.00	
12,100.0	90.00	180.00	5,793.0	-6,752.3	-243.5	6,756.7	0.00	0.00	
12,200.0	90.00	180.00	5,793.0	-6,852.3	-243.5	6,856.6	0.00	0.00	
12,300.0	90.00	180.00	5,793.0	-6,952.3	-243.5	6,956.6	0.00	0.00	
12,400.0	90.00	180.00	5,793.0	-7,052.3	-243.5	7,056.5	0.00	0.00	
12,500.0	90.00	180.00	5,793.0	-7,152.3	-243.5	7,156.5	0.00	0.00	
12,600.0	90.00	180.00	5,793.0	-7,252.3	-243.5	7,256.4	0.00	0.00	
12,700.0	90.00	180.00	5,793.0	-7,352.3	-243.5	7,356.4	0.00	0.00	
12,800.0	90.00	180.00	5,793.0	-7,452.3	-243.5	7,456.3	0.00	0.00	
12,831.5	90.00	180.00	5,793.0	-7,483.8	-243.5	7,487.8	0.00	0.00	PBHL @ 12831' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
21B-2809A BHL	0.00	0.00	5,793.0	-7,483.8	-243.5	1,541,964.42	3,451,290.67	40° 48' 34.84 N	103° 52' 10.95 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,099.2	5,793.0	7"	0.000	0.000	

Database: USA EDM 5000 Multi Users DB
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Site: S21-T10N-R58W
Well: Razor #21B-2809A
Wellbore: HZ
Design: Plan #1

Local Co-ordinate Reference: Well Razor #21B-2809A
TVD Reference: WELL @ 4853.8ft (Original Well Elev)
MD Reference: WELL @ 4853.8ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP @ 1500' MD
1,700.0	1,699.8	-6.8	-1.7	EOB; 4°
5,317.4	5,308.4	-251.7	-62.3	Start 11° Build
6,099.2	5,793.0	-756.1	-187.1	LP @ 6099' MD
6,562.4	5,793.0	-1,214.8	-243.0	EOT; 180° Az
12,831.5	5,793.0	-7,483.8	-243.5	PBHL @ 12831' MD



WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21B-2809A

HZ

Plan #1

Anticollision Report

28 May, 2013

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	5/22/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,831.1	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
S21-T10N-R58W						
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Nelson Ranches E-1 (Existing) - Existing - ASSUMED VE						Out of range
Razor #21A-0913A - HZ - Plan #1						Out of range
Razor #21A-0914B - HZ - Plan #1						Out of range
Razor #21A-0915A - HZ - Plan #1						Out of range
Razor #21A-0916B - HZ - Plan #1						Out of range
Razor #21A-2813A - HZ - Plan #1						Out of range
Razor #21A-2814B - HZ - Plan #1						Out of range
Razor #21A-2815A - HZ - Plan #1						Out of range
Razor #21A-2816B - HZ - Plan #1						Out of range
Razor #21B-0909A - HZ - Plan #1	839.4	839.9	28.7	25.2	8.130	CC, ES
Razor #21B-0909A - HZ - Plan #1	1,100.0	1,099.9	34.0	29.2	7.185	SF
Razor #21B-0910B - HZ - Plan #1	1,758.9	1,760.5	16.0	8.4	2.087	CC, ES, SF
Razor #21B-0911A - HZ - Plan #1	1,162.0	1,162.3	98.7	93.7	19.883	CC
Razor #21B-0911A - HZ - Plan #1	1,300.0	1,300.0	99.2	93.6	17.723	ES
Razor #21B-0911A - HZ - Plan #1	1,700.0	1,698.4	110.4	103.0	14.998	SF
Razor #21B-0912B - HZ - Plan #1	1,800.2	1,801.2	82.8	75.0	10.678	CC, ES
Razor #21B-0912B - HZ - Plan #1	2,000.0	1,999.1	87.3	78.7	10.144	SF
Razor #21B-2810B - HZ - Plan #1	700.0	700.0	83.1	80.2	28.796	CC
Razor #21B-2810B - HZ - Plan #1	12,831.5	12,750.2	340.5	62.5	1.225	Level 2, ES, SF
Razor #21B-2811A - HZ - Plan #1	500.0	500.0	66.1	64.2	33.307	CC, ES
Razor #21B-2811A - HZ - Plan #1	5,350.0	5,338.9	237.9	212.6	9.389	SF
Razor #21B-2812B - HZ - Plan #1	900.0	900.0	125.2	121.4	33.081	CC, ES
Razor #21B-2812B - HZ - Plan #1	5,450.0	5,425.1	327.8	302.4	12.920	SF
Razor #21C-0905A - HZ - Plan #1						Out of range
Razor #21C-0906B - HZ - Plan #1						Out of range
Razor #21C-0907A - HZ - Plan #1						Out of range
Razor #21C-0908B - HZ - Plan #1						Out of range
Razor #21C-2805A - HZ - Plan #1						Out of range
Razor #21C-2806B - HZ - Plan #1						Out of range
Razor #21C-2807A - HZ - Plan #1						Out of range
Razor #21C-2808B - HZ - Plan #1	12,831.5	12,873.9	356.7	81.9	1.298	Level 3, CC, ES, SF
Razor #21D-0901A - HZ - Plan #1						Out of range
Razor #21D-0902B - HZ - Plan #1						Out of range
Razor #21D-0903A - HZ - Plan #1						Out of range
Razor #21D-0904B - HZ - Plan #1						Out of range
Razor #21D-2801A - HZ - Plan #1						Out of range
Razor #21D-2802B - HZ - Plan #1						Out of range
Razor #21D-2803A - HZ - Plan #1						Out of range
Razor #21D-2804B - HZ - Plan #1						Out of range

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.96	0.6	33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	88.96	0.6	33.2	33.2	33.0	0.19	176.946		
200.0	200.0	200.0	200.0	0.3	0.3	88.96	0.6	33.2	33.2	32.6	0.64	52.116		
300.0	300.0	300.0	300.0	0.5	0.5	88.96	0.6	33.2	33.2	32.1	1.09	30.558		
400.0	400.0	400.0	400.0	0.8	0.8	88.96	0.6	33.2	33.2	31.7	1.54	21.617		
500.0	500.0	500.0	500.0	1.0	1.0	88.96	0.6	33.2	33.2	31.2	1.99	16.723		
600.0	600.0	600.5	600.5	1.2	1.2	86.26	2.1	32.3	32.4	29.9	2.43	13.293		
700.0	700.0	700.8	700.7	1.4	1.4	77.38	6.6	29.5	30.3	27.4	2.89	10.498		
800.0	800.0	800.6	800.2	1.7	1.7	64.15	12.6	25.9	28.8	25.5	3.35	8.614		
839.4	839.4	839.9	839.4	1.8	1.8	58.70	14.9	24.5	28.7	25.2	3.53	8.130	CC, ES	
900.0	900.0	900.4	899.7	1.9	1.9	50.33	18.5	22.3	29.0	25.2	3.81	7.610		
1,000.0	1,000.0	1,000.1	999.2	2.1	2.2	37.41	24.5	18.7	30.8	26.5	4.27	7.209		
1,100.0	1,100.0	1,099.9	1,098.7	2.3	2.4	26.39	30.4	15.1	34.0	29.2	4.73	7.185	SF	
1,200.0	1,200.0	1,199.6	1,198.2	2.6	2.7	17.52	36.3	11.5	38.2	33.0	5.18	7.366		
1,300.0	1,300.0	1,299.4	1,297.8	2.8	2.9	10.52	42.3	7.9	43.1	37.4	5.63	7.650		
1,400.0	1,400.0	1,399.1	1,397.3	3.0	3.2	5.03	48.2	4.2	48.5	42.4	6.08	7.976		
1,500.0	1,500.0	1,498.9	1,496.8	3.2	3.4	0.66	54.2	0.6	54.3	47.8	6.53	8.311		
1,600.0	1,600.0	1,598.5	1,596.2	3.4	3.7	163.68	60.1	-3.0	62.0	55.0	6.97	8.890		
1,700.0	1,699.8	1,697.9	1,695.3	3.6	3.9	162.13	66.0	-6.6	73.1	65.8	7.36	9.931		
1,800.0	1,799.6	1,797.1	1,794.2	3.8	4.2	161.41	72.0	-10.2	85.9	78.2	7.77	11.058		
1,900.0	1,899.4	1,896.2	1,893.2	4.0	4.4	160.88	77.9	-13.8	98.8	90.6	8.19	12.065		
2,000.0	1,999.1	1,995.4	1,992.1	4.2	4.7	160.48	83.8	-17.4	111.6	103.0	8.61	12.968		
2,100.0	2,098.9	2,094.6	2,091.0	4.4	4.9	160.15	89.7	-21.0	124.4	115.4	9.03	13.780		
2,200.0	2,198.6	2,193.8	2,190.0	4.6	5.2	159.89	95.6	-24.6	137.3	127.8	9.46	14.513		
2,300.0	2,298.4	2,292.9	2,288.9	4.8	5.4	159.67	101.5	-28.1	150.1	140.2	9.89	15.177		
2,400.0	2,398.1	2,392.1	2,387.8	5.0	5.7	159.49	107.4	-31.7	163.0	152.6	10.33	15.781		
2,500.0	2,497.9	2,491.3	2,486.7	5.3	5.9	159.34	113.3	-35.3	175.8	165.0	10.76	16.333		
2,600.0	2,597.7	2,590.4	2,585.7	5.5	6.2	159.20	119.2	-38.9	188.7	177.4	11.20	16.837		
2,700.0	2,697.4	2,689.6	2,684.6	5.7	6.5	159.08	125.2	-42.5	201.5	189.9	11.65	17.301		
2,800.0	2,797.2	2,788.8	2,783.5	6.0	6.7	158.98	131.1	-46.1	214.3	202.3	12.09	17.728		
2,900.0	2,896.9	2,888.0	2,882.5	6.2	7.0	158.89	137.0	-49.7	227.2	214.7	12.54	18.122		
3,000.0	2,996.7	2,987.1	2,981.4	6.4	7.2	158.80	142.9	-53.3	240.0	227.1	12.98	18.487		
3,100.0	3,096.4	3,086.3	3,080.3	6.7	7.5	158.73	148.8	-56.9	252.9	239.5	13.43	18.826		
3,200.0	3,196.2	3,185.5	3,179.2	6.9	7.7	158.66	154.7	-60.5	265.7	251.9	13.88	19.141		
3,300.0	3,295.9	3,284.6	3,278.2	7.2	8.0	158.60	160.6	-64.1	278.6	264.3	14.33	19.435		
3,400.0	3,395.7	3,383.8	3,377.1	7.4	8.2	158.55	166.5	-67.7	291.4	276.7	14.79	19.709		
3,500.0	3,495.5	3,483.0	3,476.0	7.7	8.5	158.50	172.4	-71.3	304.3	289.1	15.24	19.966		
3,600.0	3,595.2	3,582.1	3,575.0	7.9	8.7	158.45	178.4	-74.9	317.1	301.5	15.69	20.207		
3,700.0	3,695.0	3,681.3	3,673.9	8.2	9.0	158.41	184.3	-78.5	330.0	313.8	16.15	20.434		
3,800.0	3,794.7	3,780.5	3,772.8	8.4	9.3	158.37	190.2	-82.1	342.8	326.2	16.60	20.647		
3,900.0	3,894.5	3,879.7	3,871.8	8.7	9.5	158.33	196.1	-85.7	355.7	338.6	17.06	20.849		
4,000.0	3,994.2	3,978.8	3,970.7	8.9	9.8	158.30	202.0	-89.2	368.5	351.0	17.52	21.039		
4,100.0	4,094.0	4,078.0	4,069.6	9.2	10.0	158.27	207.9	-92.8	381.4	363.4	17.98	21.218		
4,200.0	4,193.8	4,177.2	4,168.5	9.4	10.3	158.24	213.8	-96.4	394.3	375.8	18.43	21.388		
4,300.0	4,293.5	4,276.3	4,267.5	9.7	10.5	158.21	219.7	-100.0	407.1	388.2	18.89	21.550		
4,400.0	4,393.3	4,375.5	4,366.4	9.9	10.8	158.18	225.6	-103.6	420.0	400.6	19.35	21.703		
4,500.0	4,493.0	4,474.7	4,465.3	10.2	11.0	158.16	231.6	-107.2	432.8	413.0	19.81	21.849		
4,600.0	4,592.8	4,573.9	4,564.3	10.4	11.3	158.13	237.5	-110.8	445.7	425.4	20.27	21.988		
4,700.0	4,692.5	4,673.0	4,663.2	10.7	11.5	158.11	243.4	-114.4	458.5	437.8	20.73	22.120		
4,800.0	4,792.3	4,772.2	4,762.1	11.0	11.8	158.09	249.3	-118.0	471.4	450.2	21.19	22.246		
4,900.0	4,892.1	4,871.4	4,861.0	11.2	12.1	158.07	255.2	-121.6	484.2	462.6	21.65	22.366		
5,000.0	4,991.8	4,970.5	4,960.0	11.5	12.3	158.05	261.1	-125.2	497.1	475.0	22.11	22.481		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0910B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	178.31	-75.0	2.2	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	178.31	-75.0	2.2	75.1	74.9	0.19	399.909		
200.0	200.0	200.0	200.0	0.3	0.3	178.31	-75.0	2.2	75.1	74.4	0.64	117.787		
300.0	300.0	300.0	300.0	0.5	0.5	178.31	-75.0	2.2	75.1	74.0	1.09	69.064		
400.0	400.0	400.0	400.0	0.8	0.8	178.31	-75.0	2.2	75.1	73.5	1.54	48.855		
500.0	500.0	500.0	500.0	1.0	1.0	178.31	-75.0	2.2	75.1	73.1	1.99	37.796		
600.0	600.0	600.0	600.0	1.2	1.2	178.31	-75.0	2.2	75.1	72.6	2.44	30.819		
700.0	700.0	700.0	700.0	1.4	1.4	178.31	-75.0	2.2	75.1	72.2	2.88	26.017		
800.0	800.0	802.5	802.5	1.7	1.7	178.72	-73.3	1.6	73.3	70.0	3.34	21.955		
900.0	900.0	904.7	904.5	1.9	1.9	-179.94	-68.1	-0.1	68.2	64.4	3.80	17.961		
1,000.0	1,000.0	1,004.5	1,004.0	2.1	2.1	-177.92	-61.5	-2.2	61.6	57.4	4.25	14.502		
1,100.0	1,100.0	1,104.2	1,103.6	2.3	2.4	-175.41	-54.9	-4.4	55.1	50.4	4.70	11.733		
1,200.0	1,200.0	1,204.0	1,203.1	2.6	2.6	-172.24	-48.2	-6.6	48.8	43.6	5.15	9.469		
1,300.0	1,300.0	1,303.7	1,302.6	2.8	2.9	-168.13	-41.6	-8.7	42.6	37.0	5.61	7.602		
1,400.0	1,400.0	1,403.5	1,402.1	3.0	3.1	-162.69	-35.0	-10.9	36.7	30.7	6.06	6.059		
1,500.0	1,500.0	1,503.2	1,501.6	3.2	3.3	-155.27	-28.4	-13.1	31.3	24.8	6.53	4.797		
1,600.0	1,600.0	1,602.9	1,601.0	3.4	3.6	22.56	-21.8	-15.3	25.0	18.0	7.00	3.571		
1,700.0	1,699.8	1,702.2	1,700.1	3.6	3.8	47.97	-15.2	-17.4	17.9	10.4	7.44	2.400		
1,758.9	1,758.6	1,760.5	1,758.3	3.7	4.0	73.93	-11.4	-18.7	16.0	8.4	7.68	2.087 CC, ES, SF		
1,800.0	1,799.6	1,801.3	1,798.9	3.8	4.1	92.71	-8.7	-19.6	17.0	9.1	7.82	2.168		
1,900.0	1,899.4	1,900.4	1,897.8	4.0	4.3	123.33	-2.1	-21.7	24.8	16.6	8.16	3.036		
2,000.0	1,999.1	1,999.5	1,996.6	4.2	4.6	137.29	4.5	-23.9	36.0	27.5	8.55	4.212		
2,100.0	2,098.9	2,098.6	2,095.5	4.4	4.8	144.41	11.0	-26.0	48.4	39.4	8.97	5.393		
2,200.0	2,198.6	2,197.7	2,194.4	4.6	5.1	148.60	17.6	-28.2	61.2	51.8	9.39	6.511		
2,300.0	2,298.4	2,296.8	2,293.2	4.8	5.3	151.33	24.2	-30.3	74.1	64.3	9.82	7.550		
2,400.0	2,398.1	2,395.9	2,392.1	5.0	5.6	153.24	30.8	-32.5	87.3	77.0	10.25	8.511		
2,500.0	2,497.9	2,495.0	2,490.9	5.3	5.8	154.66	37.3	-34.7	100.4	89.8	10.69	9.398		
2,600.0	2,597.7	2,594.1	2,589.8	5.5	6.1	155.75	43.9	-36.8	113.7	102.5	11.12	10.218		
2,700.0	2,697.4	2,693.2	2,688.7	5.7	6.3	156.60	50.5	-39.0	126.9	115.4	11.56	10.977		
2,800.0	2,797.2	2,792.3	2,787.5	6.0	6.6	157.30	57.0	-41.1	140.2	128.2	12.00	11.681		
2,900.0	2,896.9	2,891.4	2,886.4	6.2	6.9	157.88	63.6	-43.3	153.5	141.1	12.45	12.334		
3,000.0	2,996.7	2,990.5	2,985.2	6.4	7.1	158.36	70.2	-45.4	166.8	153.9	12.89	12.943		
3,100.0	3,096.4	3,089.6	3,084.1	6.7	7.4	158.77	76.7	-47.6	180.1	166.8	13.33	13.510		
3,200.0	3,196.2	3,188.7	3,183.0	6.9	7.6	159.13	83.3	-49.8	193.5	179.7	13.78	14.040		
3,300.0	3,295.9	3,287.8	3,281.8	7.2	7.9	159.44	89.9	-51.9	206.8	192.6	14.23	14.537		
3,400.0	3,395.7	3,386.9	3,380.7	7.4	8.1	159.71	96.4	-54.1	220.1	205.5	14.67	15.002		
3,500.0	3,495.5	3,486.0	3,479.5	7.7	8.4	159.95	103.0	-56.2	233.5	218.4	15.12	15.440		
3,600.0	3,595.2	3,585.1	3,578.4	7.9	8.6	160.17	109.6	-58.4	246.8	231.3	15.57	15.851		
3,700.0	3,695.0	3,684.2	3,677.3	8.2	8.9	160.36	116.1	-60.5	260.2	244.2	16.02	16.239		
3,800.0	3,794.7	3,783.3	3,776.1	8.4	9.1	160.54	122.7	-62.7	273.5	257.1	16.47	16.606		
3,900.0	3,894.5	3,882.4	3,875.0	8.7	9.4	160.69	129.3	-64.8	286.9	270.0	16.92	16.952		
4,000.0	3,994.2	3,981.5	3,973.8	8.9	9.6	160.84	135.8	-67.0	300.3	282.9	17.38	17.280		
4,100.0	4,094.0	4,080.6	4,072.7	9.2	9.9	160.97	142.4	-69.2	313.6	295.8	17.83	17.591		
4,200.0	4,193.8	4,179.7	4,171.6	9.4	10.1	161.09	149.0	-71.3	327.0	308.7	18.28	17.886		
4,300.0	4,293.5	4,278.8	4,270.4	9.7	10.4	161.20	155.5	-73.5	340.3	321.6	18.73	18.166		
4,400.0	4,393.3	4,377.9	4,369.3	9.9	10.7	161.31	162.1	-75.6	353.7	334.5	19.19	18.433		
4,500.0	4,493.0	4,477.0	4,468.1	10.2	10.9	161.40	168.7	-77.8	367.1	347.4	19.64	18.687		
4,600.0	4,592.8	4,576.1	4,567.0	10.4	11.2	161.49	175.3	-79.9	380.4	360.3	20.10	18.930		
4,700.0	4,692.5	4,675.2	4,665.9	10.7	11.4	161.57	181.8	-82.1	393.8	373.2	20.55	19.161		
4,800.0	4,792.3	4,774.3	4,764.7	11.0	11.7	161.65	188.4	-84.2	407.2	386.2	21.01	19.382		
4,900.0	4,892.1	4,873.4	4,863.6	11.2	11.9	161.72	195.0	-86.4	420.5	399.1	21.46	19.594		
5,000.0	4,991.8	4,972.5	4,962.4	11.5	12.2	161.79	201.5	-88.6	433.9	412.0	21.92	19.796		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S21-T10N-R58W - Razor #21B-0910B - HZ - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-ISCSWA MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Centre +E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)							
5,100.0	5,091.6	5,071.6	5,061.3	11.7	12.4	161.85	208.1	-90.7	447.3	424.9	22.37	19.991					
5,200.0	5,191.3	5,170.7	5,160.2	12.0	12.7	161.91	214.7	-92.9	460.6	437.8	22.83	20.177					
5,300.0	5,291.1	5,269.8	5,259.0	12.2	12.9	161.97	221.2	-95.0	474.0	450.7	23.29	20.355					
5,317.4	5,308.4	5,287.1	5,276.2	12.3	13.0	161.98	222.4	-95.4	476.3	453.0	23.37	20.386					
5,350.0	5,340.9	5,319.2	5,308.3	12.4	13.1	161.85	224.5	-96.1	481.7	458.3	23.38	20.597					
5,400.0	5,390.0	5,367.7	5,356.7	12.5	13.2	161.66	227.7	-97.2	493.5	470.2	23.27	21.210					

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0911A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.96	1.8	99.3	99.4					
100.0	100.0	100.0	100.0	0.1	0.1	88.96	1.8	99.3	99.4	99.2	0.19	529.362		
200.0	200.0	200.0	200.0	0.3	0.3	88.96	1.8	99.3	99.4	98.7	0.64	155.915		
300.0	300.0	300.0	300.0	0.5	0.5	88.96	1.8	99.3	99.4	98.3	1.09	91.421		
400.0	400.0	400.0	400.0	0.8	0.8	88.96	1.8	99.3	99.4	97.8	1.54	64.670		
500.0	500.0	500.0	500.0	1.0	1.0	88.96	1.8	99.3	99.4	97.4	1.99	50.030		
600.0	600.0	600.0	600.0	1.2	1.2	88.96	1.8	99.3	99.4	96.9	2.44	40.795		
700.0	700.0	700.0	700.0	1.4	1.4	88.96	1.8	99.3	99.4	96.5	2.88	34.439		
800.0	800.0	800.0	800.0	1.7	1.7	88.96	1.8	99.3	99.4	96.0	3.33	29.796		
900.0	900.0	900.0	900.0	1.9	1.9	88.96	1.8	99.3	99.4	95.6	3.78	26.256		
1,000.0	1,000.0	1,000.4	1,000.3	2.1	2.1	87.95	3.5	99.1	99.2	94.9	4.23	23.425		
1,100.0	1,100.0	1,100.5	1,100.3	2.3	2.3	84.92	8.7	98.4	98.8	94.1	4.68	21.097		
1,162.0	1,162.0	1,162.3	1,162.0	2.5	2.5	82.42	13.0	97.8	98.7	93.7	4.96	19.883 CC		
1,200.0	1,200.0	1,200.2	1,199.8	2.6	2.6	80.88	15.6	97.5	98.7	93.6	5.14	19.220		
1,300.0	1,300.0	1,300.0	1,299.3	2.8	2.8	76.86	22.5	96.6	99.2	93.6	5.60	17.723 ES		
1,400.0	1,400.0	1,399.7	1,398.8	3.0	3.0	72.89	29.4	95.7	100.1	94.0	6.06	16.524		
1,500.0	1,500.0	1,499.5	1,498.4	3.2	3.3	69.02	36.3	94.7	101.5	95.0	6.52	15.564		
1,600.0	1,600.0	1,599.1	1,597.7	3.4	3.5	-129.33	43.2	93.8	104.4	97.5	6.96	15.012		
1,700.0	1,699.8	1,698.4	1,696.8	3.6	3.8	-134.77	50.1	92.9	110.4	103.0	7.36	14.998 SF		
1,800.0	1,799.6	1,797.5	1,795.6	3.8	4.0	-140.22	56.9	92.0	118.6	110.9	7.77	15.260		
1,900.0	1,899.4	1,896.5	1,894.4	4.0	4.3	-144.93	63.8	91.1	127.8	119.6	8.19	15.601		
2,000.0	1,999.1	1,995.6	1,993.2	4.2	4.5	-149.00	70.6	90.2	137.7	129.1	8.61	15.991		
2,100.0	2,098.9	2,094.6	2,092.0	4.4	4.7	-152.51	77.5	89.3	148.3	139.2	9.04	16.405		
2,200.0	2,198.6	2,193.7	2,190.9	4.6	5.0	-155.55	84.3	88.4	159.3	149.8	9.46	16.829		
2,300.0	2,298.4	2,292.8	2,289.7	4.8	5.2	-158.19	91.2	87.4	170.6	160.7	9.89	17.253		
2,400.0	2,398.1	2,391.8	2,388.5	5.0	5.5	-160.50	98.0	86.5	182.3	172.0	10.32	17.669		
2,500.0	2,497.9	2,490.9	2,487.3	5.3	5.7	-162.53	104.9	85.6	194.3	183.5	10.75	18.073		
2,600.0	2,597.7	2,589.9	2,586.1	5.5	6.0	-164.32	111.7	84.7	206.5	195.3	11.18	18.462		
2,700.0	2,697.4	2,689.0	2,685.0	5.7	6.2	-165.91	118.6	83.8	218.8	207.2	11.62	18.835		
2,800.0	2,797.2	2,788.1	2,783.8	6.0	6.5	-167.33	125.4	82.9	231.3	219.3	12.05	19.191		
2,900.0	2,896.9	2,887.1	2,882.6	6.2	6.7	-168.61	132.3	82.0	243.9	231.5	12.49	19.530		
3,000.0	2,996.7	2,986.2	2,981.4	6.4	7.0	-169.76	139.1	81.1	256.7	243.8	12.93	19.853		
3,100.0	3,096.4	3,085.2	3,080.2	6.7	7.2	-170.80	146.0	80.1	269.5	256.1	13.37	20.160		
3,200.0	3,196.2	3,184.3	3,179.1	6.9	7.5	-171.75	152.8	79.2	282.4	268.6	13.81	20.451		
3,300.0	3,295.9	3,283.4	3,277.9	7.2	7.7	-172.61	159.7	78.3	295.4	281.1	14.25	20.728		
3,400.0	3,395.7	3,382.4	3,376.7	7.4	8.0	-173.40	166.5	77.4	308.4	293.7	14.69	20.991		
3,500.0	3,495.5	3,481.5	3,475.5	7.7	8.3	-174.13	173.4	76.5	321.5	306.4	15.14	21.241		
3,600.0	3,595.2	3,580.5	3,574.3	7.9	8.5	-174.80	180.2	75.6	334.6	319.1	15.58	21.478		
3,700.0	3,695.0	3,679.6	3,673.2	8.2	8.8	-175.42	187.1	74.7	347.8	331.8	16.03	21.704		
3,800.0	3,794.7	3,778.7	3,772.0	8.4	9.0	-175.99	193.9	73.8	361.0	344.6	16.47	21.920		
3,900.0	3,894.5	3,877.7	3,870.8	8.7	9.3	-176.52	200.8	72.9	374.3	357.4	16.92	22.124		
4,000.0	3,994.2	3,976.8	3,969.6	8.9	9.5	-177.02	207.6	71.9	387.6	370.2	17.36	22.320		
4,100.0	4,094.0	4,075.9	4,068.4	9.2	9.8	-177.49	214.5	71.0	400.9	383.0	17.81	22.506		
4,200.0	4,193.8	4,174.9	4,167.3	9.4	10.0	-177.92	221.3	70.1	414.2	395.9	18.26	22.684		
4,300.0	4,293.5	4,274.0	4,266.1	9.7	10.3	-178.33	228.2	69.2	427.5	408.8	18.71	22.854		
4,400.0	4,393.3	4,373.0	4,364.9	9.9	10.5	-178.71	235.0	68.3	440.9	421.7	19.16	23.016		
4,500.0	4,493.0	4,472.1	4,463.7	10.2	10.8	-179.07	241.9	67.4	454.3	434.7	19.61	23.172		
4,600.0	4,592.8	4,571.2	4,562.5	10.4	11.0	-179.41	248.7	66.5	467.7	447.6	20.06	23.320		
4,700.0	4,692.5	4,670.2	4,661.4	10.7	11.3	-179.73	255.6	65.6	481.1	460.6	20.51	23.463		
4,800.0	4,792.3	4,769.3	4,760.2	11.0	11.5	179.97	262.4	64.7	494.5	473.6	20.96	23.600		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	137.56	-73.8	67.5	100.0					
100.0	100.0	100.0	100.0	0.1	0.1	137.56	-73.8	67.5	100.0	99.8	0.19	533.016		
200.0	200.0	200.0	200.0	0.3	0.3	137.56	-73.8	67.5	100.0	99.4	0.64	156.991		
300.0	300.0	300.0	300.0	0.5	0.5	137.56	-73.8	67.5	100.0	98.9	1.09	92.051		
400.0	400.0	400.0	400.0	0.8	0.8	137.56	-73.8	67.5	100.0	98.5	1.54	65.116		
500.0	500.0	500.0	500.0	1.0	1.0	137.56	-73.8	67.5	100.0	98.1	1.99	50.376		
600.0	600.0	600.0	600.0	1.2	1.2	137.56	-73.8	67.5	100.0	97.6	2.44	41.077		
700.0	700.0	700.0	700.0	1.4	1.4	137.56	-73.8	67.5	100.0	97.2	2.88	34.676		
800.0	800.0	800.0	800.0	1.7	1.7	137.56	-73.8	67.5	100.0	96.7	3.33	30.001		
900.0	900.0	900.0	900.0	1.9	1.9	137.56	-73.8	67.5	100.0	96.3	3.78	26.437		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	137.56	-73.8	67.5	100.0	95.8	4.23	23.630		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	137.56	-73.8	67.5	100.0	95.4	4.68	21.362		
1,200.0	1,200.0	1,202.0	1,201.9	2.6	2.6	136.69	-72.1	67.9	99.0	93.9	5.14	19.285		
1,300.0	1,300.0	1,303.6	1,303.4	2.8	2.8	133.99	-66.8	69.2	96.2	90.6	5.59	17.216		
1,400.0	1,400.0	1,403.4	1,403.0	3.0	3.0	130.30	-60.0	70.8	92.8	86.8	6.04	15.369		
1,500.0	1,500.0	1,503.1	1,502.5	3.2	3.3	126.34	-53.2	72.4	89.9	83.4	6.50	13.835		
1,600.0	1,600.0	1,602.7	1,601.8	3.4	3.5	-72.90	-46.5	74.0	86.8	79.9	6.93	12.534		
1,700.0	1,699.8	1,702.0	1,700.8	3.6	3.7	-80.85	-39.7	75.5	84.0	76.6	7.34	11.446		
1,800.0	1,799.6	1,801.0	1,799.6	3.8	4.0	-90.30	-33.0	77.1	82.8	75.0	7.75	10.679		
1,800.2	1,799.8	1,801.2	1,799.9	3.8	4.0	-90.33	-33.0	77.1	82.8	75.0	7.75	10.678 CC, ES		
1,900.0	1,899.4	1,900.0	1,898.4	4.0	4.2	-99.76	-26.3	78.7	84.0	75.8	8.18	10.263		
2,000.0	1,999.1	1,999.1	1,997.2	4.2	4.4	-108.72	-19.6	80.3	87.3	78.7	8.61	10.144 SF		
2,100.0	2,098.9	2,098.1	2,096.0	4.4	4.7	-116.84	-12.8	81.9	92.7	83.7	9.04	10.256		
2,200.0	2,198.6	2,197.1	2,194.8	4.6	4.9	-123.97	-6.1	83.5	99.8	90.3	9.47	10.536		
2,300.0	2,298.4	2,296.2	2,293.6	4.8	5.2	-130.08	0.6	85.0	108.1	98.2	9.90	10.928		
2,400.0	2,398.1	2,395.2	2,392.3	5.0	5.4	-135.28	7.3	86.6	117.6	107.2	10.32	11.390		
2,500.0	2,497.9	2,494.2	2,491.1	5.3	5.7	-139.68	14.1	88.2	127.8	117.1	10.75	11.892		
2,600.0	2,597.7	2,593.2	2,589.9	5.5	5.9	-143.41	20.8	89.8	138.7	127.5	11.18	12.412		
2,700.0	2,697.4	2,692.3	2,688.7	5.7	6.2	-146.60	27.5	91.4	150.1	138.5	11.61	12.935		
2,800.0	2,797.2	2,791.3	2,787.5	6.0	6.4	-149.32	34.2	93.0	161.9	149.9	12.04	13.452		
2,900.0	2,896.9	2,890.3	2,886.3	6.2	6.7	-151.68	41.0	94.5	174.0	161.5	12.47	13.957		
3,000.0	2,996.7	2,989.3	2,985.1	6.4	6.9	-153.73	47.7	96.1	186.4	173.5	12.90	14.446		
3,100.0	3,096.4	3,088.4	3,083.8	6.7	7.2	-155.52	54.4	97.7	198.9	185.6	13.34	14.917		
3,200.0	3,196.2	3,187.4	3,182.6	6.9	7.4	-157.10	61.1	99.3	211.7	197.9	13.77	15.369		
3,300.0	3,295.9	3,286.4	3,281.4	7.2	7.7	-158.50	67.8	100.9	224.5	210.3	14.21	15.802		
3,400.0	3,395.7	3,385.4	3,380.2	7.4	7.9	-159.74	74.6	102.5	237.5	222.9	14.65	16.216		
3,500.0	3,495.5	3,484.5	3,479.0	7.7	8.2	-160.86	81.3	104.0	250.6	235.5	15.09	16.612		
3,600.0	3,595.2	3,583.5	3,577.8	7.9	8.4	-161.87	88.0	105.6	263.8	248.3	15.53	16.989		
3,700.0	3,695.0	3,682.5	3,676.6	8.2	8.7	-162.78	94.7	107.2	277.1	261.1	15.97	17.349		
3,800.0	3,794.7	3,781.6	3,775.3	8.4	8.9	-163.60	101.5	108.8	290.4	274.0	16.41	17.693		
3,900.0	3,894.5	3,880.6	3,874.1	8.7	9.2	-164.36	108.2	110.4	303.7	286.9	16.85	18.021		
4,000.0	3,994.2	3,979.6	3,972.9	8.9	9.4	-165.05	114.9	112.0	317.1	299.8	17.30	18.334		
4,100.0	4,094.0	4,078.6	4,071.7	9.2	9.7	-165.69	121.6	113.5	330.6	312.9	17.74	18.633		
4,200.0	4,193.8	4,177.7	4,170.5	9.4	9.9	-166.27	128.4	115.1	344.1	325.9	18.19	18.919		
4,300.0	4,293.5	4,276.7	4,269.3	9.7	10.2	-166.81	135.1	116.7	357.6	339.0	18.63	19.192		
4,400.0	4,393.3	4,375.7	4,368.1	9.9	10.4	-167.31	141.8	118.3	371.2	352.1	19.08	19.454		
4,500.0	4,493.0	4,474.7	4,466.8	10.2	10.7	-167.78	148.5	119.9	384.7	365.2	19.53	19.705		
4,600.0	4,592.8	4,573.8	4,565.6	10.4	10.9	-168.22	155.3	121.5	398.3	378.4	19.97	19.945		
4,700.0	4,692.5	4,672.8	4,664.4	10.7	11.2	-168.62	162.0	123.0	412.0	391.5	20.42	20.175		
4,800.0	4,792.3	4,771.8	4,763.2	11.0	11.4	-169.00	168.7	124.6	425.6	404.7	20.87	20.396		
4,900.0	4,892.1	4,870.9	4,862.0	11.2	11.7	-169.36	175.4	126.2	439.3	418.0	21.32	20.608		
5,000.0	4,991.8	4,969.9	4,960.8	11.5	11.9	-169.69	182.2	127.8	452.9	431.2	21.76	20.811		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												S21-T10N-R58W - Razor #21B-0912B - HZ - Plan #1		Offset Site Error:		0.0 ft	
Survey Program:												0-ISCWSA MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
5,100.0	5,091.6	5,068.9	5,059.6	11.7	12.2	-170.01	188.9	129.4	466.6	444.4	22.21	21.007					
5,200.0	5,191.3	5,167.9	5,158.4	12.0	12.4	-170.30	195.6	131.0	480.3	457.7	22.66	21.195					
5,300.0	5,291.1	5,267.0	5,257.1	12.2	12.7	-170.59	202.3	132.5	494.1	470.9	23.11	21.377					
5,317.4	5,308.4	5,284.2	5,274.3	12.3	12.7	-170.63	203.5	132.8	496.4	473.3	23.19	21.408					

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: O-ISCWSA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	155.38	-75.5	34.6	83.1					
100.0	100.0	100.0	100.0	0.1	0.1	155.38	-75.5	34.6	83.1	82.9	0.19	442.636		
200.0	200.0	200.0	200.0	0.3	0.3	155.38	-75.5	34.6	83.1	82.4	0.64	130.371		
300.0	300.0	300.0	300.0	0.5	0.5	155.38	-75.5	34.6	83.1	82.0	1.09	76.443		
400.0	400.0	400.0	400.0	0.8	0.8	155.38	-75.5	34.6	83.1	81.5	1.54	54.075		
500.0	500.0	500.0	500.0	1.0	1.0	155.38	-75.5	34.6	83.1	81.1	1.99	41.834		
600.0	600.0	600.0	600.0	1.2	1.2	155.38	-75.5	34.6	83.1	80.6	2.44	34.112		
700.0	700.0	700.0	700.0	1.4	1.4	155.38	-75.5	34.6	83.1	80.2	2.88	28.796	CC	
800.0	800.0	797.3	797.3	1.7	1.6	155.79	-77.2	34.7	84.7	81.4	3.30	25.640		
900.0	900.0	894.4	894.3	1.9	1.8	156.92	-82.1	35.0	89.4	85.7	3.70	24.140		
1,000.0	1,000.0	994.0	993.6	2.1	2.0	158.33	-89.0	35.4	96.0	91.9	4.12	23.292		
1,100.0	1,100.0	1,093.8	1,093.2	2.3	2.2	159.55	-96.0	35.8	102.7	98.1	4.55	22.576		
1,200.0	1,200.0	1,193.5	1,192.7	2.6	2.4	160.63	-102.9	36.2	109.4	104.4	4.98	21.960		
1,300.0	1,300.0	1,293.3	1,292.2	2.8	2.7	161.58	-109.9	36.6	116.1	110.7	5.42	21.428		
1,400.0	1,400.0	1,393.1	1,391.7	3.0	2.9	162.43	-116.8	37.0	122.8	117.0	5.86	20.966		
1,500.0	1,500.0	1,492.8	1,491.2	3.2	3.1	163.19	-123.8	37.4	129.6	123.3	6.30	20.563		
1,600.0	1,600.0	1,592.7	1,590.8	3.4	3.4	-30.34	-130.7	37.8	134.9	128.2	6.68	20.183		
1,700.0	1,699.8	1,692.6	1,690.5	3.6	3.6	-30.76	-137.7	38.2	137.2	130.1	7.07	19.401		
1,800.0	1,799.6	1,792.6	1,790.3	3.8	3.9	-31.56	-144.7	38.6	138.0	130.5	7.47	18.463		
1,900.0	1,899.4	1,892.6	1,890.0	4.0	4.1	-32.35	-151.6	39.0	138.8	130.9	7.88	17.606		
2,000.0	1,999.1	1,992.6	1,989.7	4.2	4.4	-33.14	-158.6	39.4	139.7	131.3	8.30	16.822		
2,100.0	2,098.9	2,092.5	2,089.5	4.4	4.6	-33.91	-165.5	39.8	140.5	131.8	8.73	16.103		
2,200.0	2,198.6	2,192.5	2,189.2	4.6	4.9	-34.67	-172.5	40.2	141.4	132.3	9.16	15.445		
2,300.0	2,298.4	2,292.5	2,289.0	4.8	5.2	-35.43	-179.5	40.6	142.4	132.8	9.59	14.839		
2,400.0	2,398.1	2,392.5	2,388.7	5.0	5.4	-36.17	-186.4	41.0	143.3	133.3	10.04	14.282		
2,500.0	2,497.9	2,492.5	2,488.4	5.3	5.7	-36.91	-193.4	41.4	144.3	133.8	10.48	13.768		
2,600.0	2,597.7	2,592.4	2,588.2	5.5	5.9	-37.63	-200.4	41.8	145.3	134.4	10.93	13.292		
2,700.0	2,697.4	2,692.4	2,687.9	5.7	6.2	-38.34	-207.3	42.2	146.3	134.9	11.39	12.852		
2,800.0	2,797.2	2,792.4	2,787.6	6.0	6.4	-39.05	-214.3	42.6	147.4	135.5	11.84	12.444		
2,900.0	2,896.9	2,892.4	2,887.4	6.2	6.7	-39.74	-221.2	43.0	148.4	136.1	12.30	12.065		
3,000.0	2,996.7	2,992.4	2,987.1	6.4	7.0	-40.43	-228.2	43.4	149.5	136.8	12.77	11.711		
3,100.0	3,096.4	3,092.3	3,086.8	6.7	7.2	-41.10	-235.2	43.8	150.6	137.4	13.24	11.382		
3,200.0	3,196.2	3,192.3	3,186.6	6.9	7.5	-41.76	-242.1	44.2	151.8	138.1	13.71	11.074		
3,300.0	3,295.9	3,292.3	3,286.3	7.2	7.7	-42.42	-249.1	44.6	152.9	138.7	14.18	10.786		
3,400.0	3,395.7	3,392.3	3,386.0	7.4	8.0	-43.06	-256.1	45.0	154.1	139.4	14.65	10.516		
3,500.0	3,495.5	3,492.2	3,485.8	7.7	8.3	-43.70	-263.0	45.4	155.3	140.2	15.13	10.263		
3,600.0	3,595.2	3,592.2	3,585.5	7.9	8.5	-44.32	-270.0	45.8	156.5	140.9	15.61	10.025		
3,700.0	3,695.0	3,692.2	3,685.2	8.2	8.8	-44.94	-276.9	46.2	157.7	141.6	16.09	9.800		
3,800.0	3,794.7	3,792.2	3,785.0	8.4	9.1	-45.54	-283.9	46.6	159.0	142.4	16.58	9.589		
3,900.0	3,894.5	3,892.2	3,884.7	8.7	9.3	-46.14	-290.9	47.0	160.2	143.2	17.06	9.390		
4,000.0	3,994.2	3,992.1	3,984.4	8.9	9.6	-46.72	-297.8	47.4	161.5	144.0	17.55	9.202		
4,100.0	4,094.0	4,092.1	4,084.2	9.2	9.8	-47.30	-304.8	47.8	162.8	144.8	18.04	9.024		
4,200.0	4,193.8	4,192.1	4,183.9	9.4	10.1	-47.87	-311.8	48.2	164.1	145.6	18.53	8.855		
4,300.0	4,293.5	4,292.1	4,283.6	9.7	10.4	-48.43	-318.7	48.6	165.5	146.4	19.03	8.695		
4,400.0	4,393.3	4,392.1	4,383.4	9.9	10.6	-48.98	-325.7	49.0	166.8	147.3	19.52	8.543		
4,500.0	4,493.0	4,492.0	4,483.1	10.2	10.9	-49.52	-332.6	49.4	168.2	148.1	20.02	8.399		
4,600.0	4,592.8	4,592.0	4,582.9	10.4	11.2	-50.05	-339.6	49.8	169.5	149.0	20.52	8.262		
4,700.0	4,692.5	4,692.0	4,682.6	10.7	11.4	-50.58	-346.6	50.2	170.9	149.9	21.02	8.132		
4,800.0	4,792.3	4,792.0	4,782.3	11.0	11.7	-51.09	-353.5	50.6	172.3	150.8	21.52	8.008		
4,900.0	4,892.1	4,891.9	4,882.1	11.2	11.9	-51.60	-360.5	51.0	173.7	151.7	22.02	7.890		
5,000.0	4,991.8	4,991.9	4,981.8	11.5	12.2	-52.10	-367.5	51.4	175.2	152.6	22.53	7.777		
5,100.0	5,091.6	5,091.9	5,081.5	11.7	12.5	-52.59	-374.4	51.8	176.6	153.6	23.03	7.669		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,200.0	5,191.3	5,191.9	5,181.3	12.0	12.7	-53.07	-381.4	52.2	178.1	154.5	23.54	7.566			
5,300.0	5,291.1	5,291.9	5,281.0	12.2	13.0	-53.55	-388.3	52.6	179.5	155.5	24.04	7.467			
5,317.4	5,308.4	5,309.3	5,298.4	12.3	13.0	-53.63	-389.6	52.7	179.8	155.7	24.13	7.451			
5,350.0	5,340.9	5,341.8	5,330.8	12.4	13.1	-54.05	-391.8	52.8	179.7	155.4	24.30	7.394			
5,400.0	5,390.0	5,391.5	5,380.4	12.5	13.3	-55.94	-395.3	53.0	177.3	152.7	24.59	7.208			
5,450.0	5,438.1	5,433.2	5,422.0	12.8	13.4	-58.68	-399.0	53.3	173.2	148.3	24.91	6.952			
5,500.0	5,484.7	5,472.5	5,460.7	13.0	13.5	-61.77	-405.3	53.6	169.9	144.6	25.30	6.713			
5,550.0	5,529.3	5,512.2	5,499.3	13.3	13.7	-65.28	-414.7	54.2	167.6	141.8	25.81	6.496			
5,596.8	5,568.9	5,550.0	5,535.2	13.6	13.9	-68.90	-426.3	54.8	166.8	140.4	26.41	6.316			
5,600.0	5,571.5	5,550.0	5,535.2	13.6	13.9	-68.90	-426.3	54.8	166.8	140.4	26.42	6.314			
5,650.0	5,611.0	5,592.8	5,574.8	14.0	14.1	-73.19	-442.5	55.8	167.7	140.5	27.24	6.156			
5,700.0	5,647.3	5,633.7	5,611.3	14.4	14.4	-77.35	-461.0	56.8	170.6	142.4	28.16	6.057			
5,750.0	5,680.2	5,675.2	5,646.6	14.9	14.7	-81.46	-482.6	58.1	175.6	146.4	29.16	6.020			
5,800.0	5,709.4	5,717.3	5,680.6	15.4	15.0	-85.38	-507.4	59.5	182.8	152.6	30.21	6.051			
5,850.0	5,734.5	5,760.1	5,713.1	16.0	15.4	-89.00	-535.3	61.1	192.2	160.9	31.26	6.148			
5,900.0	5,755.3	5,803.7	5,743.6	16.6	15.8	-92.25	-566.3	62.9	203.7	171.4	32.30	6.305			
5,950.0	5,771.7	5,848.2	5,772.0	17.3	16.2	-95.09	-600.5	64.9	217.0	183.7	33.35	6.508			
6,000.0	5,783.6	5,893.9	5,798.0	18.0	16.7	-97.51	-638.0	67.0	232.0	197.6	34.40	6.744			
6,050.0	5,790.7	5,940.8	5,821.2	18.7	17.3	-99.52	-678.7	69.4	248.4	212.9	35.48	7.001			
6,099.2	5,793.0	5,988.5	5,840.8	19.4	17.9	-101.13	-722.0	71.9	265.6	229.0	36.58	7.260			
6,200.0	5,793.0	6,095.2	5,870.0	20.8	19.4	-105.62	-824.4	77.8	298.2	259.4	38.86	7.674			
6,300.0	5,793.0	6,210.8	5,878.0	22.2	21.1	-105.61	-939.3	84.3	321.1	279.1	41.96	7.651			
6,400.0	5,793.0	6,324.1	5,878.0	23.6	22.7	-104.83	-1,052.6	86.2	333.3	288.2	45.10	7.391			
6,500.0	5,793.0	6,423.9	5,878.0	25.1	24.3	-104.53	-1,152.4	86.2	339.0	290.9	48.16	7.039			
6,562.4	5,793.0	6,486.3	5,878.0	26.0	25.3	-104.48	-1,214.8	86.2	340.0	290.0	50.04	6.796			
6,600.0	5,793.0	6,523.9	5,878.0	26.6	25.9	-104.48	-1,252.4	86.2	340.0	288.8	51.23	6.637			
6,700.0	5,793.0	6,623.9	5,878.0	28.2	27.6	-104.48	-1,352.4	86.2	340.0	285.5	54.50	6.239			
6,800.0	5,793.0	6,723.9	5,878.0	29.9	29.3	-104.48	-1,452.4	86.2	340.0	282.2	57.82	5.881			
6,900.0	5,793.0	6,823.9	5,878.0	31.6	31.1	-104.48	-1,552.4	86.2	340.0	278.9	61.19	5.557			
7,000.0	5,793.0	6,923.9	5,878.0	33.4	32.8	-104.48	-1,652.4	86.2	340.0	275.4	64.60	5.264			
7,100.0	5,793.0	7,023.9	5,878.0	35.1	34.6	-104.48	-1,752.4	86.2	340.1	272.0	68.05	4.997			
7,200.0	5,793.0	7,123.9	5,878.0	36.9	36.4	-104.48	-1,852.4	86.2	340.1	268.5	71.52	4.755			
7,300.0	5,793.0	7,223.9	5,878.0	38.7	38.2	-104.48	-1,952.4	86.2	340.1	265.0	75.02	4.533			
7,400.0	5,793.0	7,323.9	5,878.0	40.5	40.0	-104.48	-2,052.4	86.2	340.1	261.5	78.54	4.330			
7,500.0	5,793.0	7,423.9	5,878.0	42.3	41.8	-104.48	-2,152.4	86.2	340.1	258.0	82.08	4.143			
7,600.0	5,793.0	7,523.9	5,878.0	44.1	43.6	-104.48	-2,252.4	86.2	340.1	254.5	85.64	3.971			
7,700.0	5,793.0	7,623.9	5,878.0	45.9	45.5	-104.48	-2,352.4	86.2	340.1	250.9	89.21	3.812			
7,800.0	5,793.0	7,723.9	5,878.0	47.7	47.3	-104.48	-2,452.4	86.2	340.1	247.3	92.79	3.665			
7,900.0	5,793.0	7,823.9	5,878.0	49.6	49.2	-104.48	-2,552.4	86.2	340.1	243.7	96.38	3.529			
8,000.0	5,793.0	7,923.9	5,878.0	51.4	51.0	-104.48	-2,652.4	86.2	340.1	240.1	99.99	3.402			
8,100.0	5,793.0	8,023.9	5,878.0	53.2	52.9	-104.48	-2,752.4	86.2	340.1	236.5	103.60	3.283			
8,200.0	5,793.0	8,123.9	5,878.0	55.1	54.7	-104.48	-2,852.4	86.2	340.1	232.9	107.22	3.172			
8,300.0	5,793.0	8,223.9	5,878.0	57.0	56.6	-104.48	-2,952.4	86.2	340.1	229.3	110.85	3.068			
8,400.0	5,793.0	8,323.9	5,878.0	58.8	58.5	-104.48	-3,052.4	86.2	340.1	225.7	114.48	2.971			
8,500.0	5,793.0	8,423.9	5,878.0	60.7	60.4	-104.48	-3,152.4	86.2	340.1	222.0	118.12	2.880			
8,600.0	5,793.0	8,523.9	5,878.0	62.5	62.2	-104.48	-3,252.4	86.2	340.2	218.4	121.77	2.793			
8,700.0	5,793.0	8,623.9	5,878.0	64.4	64.1	-104.47	-3,352.4	86.2	340.2	214.7	125.42	2.712			
8,800.0	5,793.0	8,723.9	5,878.0	66.3	66.0	-104.47	-3,452.4	86.1	340.2	211.1	129.08	2.635			
8,900.0	5,793.0	8,823.9	5,878.0	68.2	67.9	-104.47	-3,552.4	86.1	340.2	207.4	132.74	2.563			
9,000.0	5,793.0	8,923.9	5,878.0	70.0	69.8	-104.47	-3,652.4	86.1	340.2	203.8	136.40	2.494			
9,100.0	5,793.0	9,023.9	5,878.0	71.9	71.6	-104.47	-3,752.4	86.1	340.2	200.1	140.07	2.429			
9,200.0	5,793.0	9,123.9	5,878.0	73.8	73.5	-104.47	-3,852.4	86.1	340.2	196.5	143.74	2.367			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2810B - HZ - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,793.0	9,223.9	5,878.0	75.7	75.4	-104.47	-3,952.4	86.1	340.2	192.8	147.41	2.308	
9,400.0	5,793.0	9,323.9	5,878.0	77.6	77.3	-104.47	-4,052.4	86.1	340.2	189.1	151.09	2.252	
9,500.0	5,793.0	9,423.9	5,878.0	79.5	79.2	-104.47	-4,152.4	86.1	340.2	185.4	154.77	2.198	
9,600.0	5,793.0	9,523.9	5,878.0	81.3	81.1	-104.47	-4,252.4	86.1	340.2	181.8	158.45	2.147	
9,700.0	5,793.0	9,623.9	5,878.0	83.2	83.0	-104.47	-4,352.4	86.1	340.2	178.1	162.14	2.098	
9,800.0	5,793.0	9,723.9	5,878.0	85.1	84.9	-104.47	-4,452.4	86.1	340.2	174.4	165.82	2.052	
9,900.0	5,793.0	9,823.9	5,878.0	87.0	86.8	-104.47	-4,552.4	86.1	340.2	170.7	169.51	2.007	
10,000.0	5,793.0	9,923.9	5,878.0	88.9	88.7	-104.47	-4,652.4	86.1	340.2	167.0	173.20	1.964	
10,100.0	5,793.0	10,023.9	5,878.0	90.8	90.6	-104.47	-4,752.4	86.1	340.3	163.4	176.89	1.924	
10,200.0	5,793.0	10,123.9	5,878.0	92.7	92.5	-104.47	-4,852.4	86.1	340.3	159.7	180.58	1.884	
10,300.0	5,793.0	10,223.9	5,878.0	94.6	94.4	-104.47	-4,952.4	86.1	340.3	156.0	184.28	1.846	
10,400.0	5,793.0	10,323.9	5,878.0	96.5	96.3	-104.47	-5,052.4	86.1	340.3	152.3	187.97	1.810	
10,500.0	5,793.0	10,423.9	5,878.0	98.4	98.2	-104.47	-5,152.4	86.1	340.3	148.6	191.67	1.775	
10,600.0	5,793.0	10,523.9	5,878.0	100.3	100.1	-104.47	-5,252.4	86.1	340.3	144.9	195.37	1.742	
10,700.0	5,793.0	10,623.9	5,878.0	102.2	102.0	-104.47	-5,352.4	86.1	340.3	141.2	199.07	1.709	
10,800.0	5,793.0	10,723.9	5,878.0	104.1	103.9	-104.47	-5,452.4	86.1	340.3	137.5	202.77	1.678	
10,900.0	5,793.0	10,823.9	5,878.0	106.0	105.8	-104.47	-5,552.4	86.1	340.3	133.8	206.47	1.648	
11,000.0	5,793.0	10,923.9	5,878.0	107.9	107.7	-104.47	-5,652.4	86.1	340.3	130.1	210.18	1.619	
11,100.0	5,793.0	11,023.9	5,878.0	109.8	109.6	-104.47	-5,752.4	86.1	340.3	126.4	213.88	1.591	
11,200.0	5,793.0	11,123.9	5,878.0	111.7	111.5	-104.47	-5,852.4	86.1	340.3	122.7	217.59	1.564	
11,300.0	5,793.0	11,223.9	5,878.0	113.6	113.4	-104.46	-5,952.4	86.1	340.3	119.0	221.29	1.538	
11,400.0	5,793.0	11,323.9	5,878.0	115.5	115.3	-104.46	-6,052.4	86.1	340.3	115.3	225.00	1.513	
11,500.0	5,793.0	11,423.9	5,878.0	117.4	117.2	-104.46	-6,152.4	86.1	340.3	111.6	228.71	1.488	Level 3
11,600.0	5,793.0	11,523.9	5,878.0	119.3	119.1	-104.46	-6,252.4	86.1	340.3	107.9	232.42	1.464	Level 3
11,700.0	5,793.0	11,623.9	5,878.0	121.2	121.0	-104.46	-6,352.4	86.1	340.4	104.2	236.12	1.441	Level 3
11,800.0	5,793.0	11,723.9	5,878.0	123.1	122.9	-104.46	-6,452.4	86.1	340.4	100.5	239.83	1.419	Level 3
11,900.0	5,793.0	11,823.9	5,878.0	125.0	124.8	-104.46	-6,552.4	86.1	340.4	96.8	243.54	1.398	Level 3
12,000.0	5,793.0	11,923.9	5,878.0	126.9	126.7	-104.46	-6,652.4	86.1	340.4	93.1	247.26	1.377	Level 3
12,100.0	5,793.0	12,023.9	5,878.0	128.8	128.7	-104.46	-6,752.4	86.1	340.4	89.4	250.97	1.356	Level 3
12,200.0	5,793.0	12,123.9	5,878.0	130.7	130.6	-104.46	-6,852.4	86.1	340.4	85.7	254.68	1.337	Level 3
12,300.0	5,793.0	12,223.9	5,878.0	132.6	132.5	-104.46	-6,952.4	86.1	340.4	82.0	258.39	1.317	Level 3
12,400.0	5,793.0	12,323.9	5,878.0	134.5	134.4	-104.46	-7,052.4	86.1	340.4	78.3	262.11	1.299	Level 3
12,500.0	5,793.0	12,423.9	5,878.0	136.5	136.3	-104.46	-7,152.4	86.1	340.4	74.6	265.82	1.281	Level 3
12,600.0	5,793.0	12,523.9	5,878.0	138.4	138.2	-104.46	-7,252.4	86.1	340.4	70.9	269.53	1.263	Level 3
12,700.0	5,793.0	12,623.9	5,878.0	140.3	140.1	-104.46	-7,352.4	86.1	340.4	67.2	273.25	1.246	Level 2
12,800.0	5,793.0	12,723.9	5,878.0	142.2	142.0	-104.46	-7,452.4	86.1	340.4	63.5	276.96	1.229	Level 2
12,813.3	5,793.0	12,737.2	5,878.0	142.4	142.3	-104.46	-7,465.6	86.1	340.4	63.0	277.40	1.227	Level 2
12,831.5	5,793.0	12,750.2	5,878.0	142.7	142.5	-104.46	-7,478.7	86.1	340.5	62.5	277.92	1.225	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.97	1.2	66.1	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	88.97	1.2	66.1	66.1	66.0	0.19	352.417		
200.0	200.0	200.0	200.0	0.3	0.3	88.97	1.2	66.1	66.1	65.5	0.64	103.798		
300.0	300.0	300.0	300.0	0.5	0.5	88.97	1.2	66.1	66.1	65.1	1.09	60.862		
400.0	400.0	400.0	400.0	0.8	0.8	88.97	1.2	66.1	66.1	64.6	1.54	43.053		
500.0	500.0	500.0	500.0	1.0	1.0	88.97	1.2	66.1	66.1	64.2	1.99	33.307 CC, ES		
600.0	600.0	599.3	599.3	1.2	1.2	90.38	-0.4	66.7	66.7	64.3	2.41	27.694		
700.0	700.0	698.4	698.2	1.4	1.4	94.48	-5.3	68.2	68.5	65.6	2.82	24.294		
800.0	800.0	798.1	797.7	1.7	1.6	99.66	-12.0	70.3	71.4	68.1	3.25	21.964		
900.0	900.0	897.9	897.2	1.9	1.8	104.39	-18.6	72.5	74.9	71.2	3.70	20.257		
1,000.0	1,000.0	997.6	996.7	2.1	2.0	108.69	-25.2	74.6	78.8	74.7	4.15	18.996		
1,100.0	1,100.0	1,097.4	1,096.2	2.3	2.3	112.55	-31.9	76.7	83.1	78.5	4.61	18.054		
1,200.0	1,200.0	1,197.1	1,195.8	2.6	2.5	116.02	-38.5	78.8	87.8	82.8	5.06	17.343		
1,300.0	1,300.0	1,296.9	1,295.3	2.8	2.8	119.13	-45.1	81.0	92.8	87.3	5.52	16.800		
1,400.0	1,400.0	1,396.6	1,394.8	3.0	3.0	121.91	-51.7	83.1	98.0	92.0	5.98	16.378		
1,500.0	1,500.0	1,496.4	1,494.3	3.2	3.3	124.41	-58.4	85.2	103.4	97.0	6.44	16.048		
1,600.0	1,600.0	1,596.2	1,593.9	3.4	3.5	-68.00	-65.0	87.3	108.4	101.5	6.82	15.894		
1,700.0	1,699.8	1,696.2	1,693.6	3.6	3.8	-68.30	-71.6	89.4	112.0	104.8	7.23	15.499		
1,800.0	1,799.6	1,796.1	1,793.3	3.8	4.0	-69.45	-78.3	91.6	115.1	107.4	7.65	15.036		
1,900.0	1,899.4	1,896.0	1,892.9	4.0	4.3	-70.54	-84.9	93.7	118.1	110.1	8.09	14.607		
2,000.0	1,999.1	1,996.0	1,992.6	4.2	4.6	-71.58	-91.6	95.8	121.3	112.7	8.53	14.211		
2,100.0	2,098.9	2,095.9	2,092.3	4.4	4.8	-72.56	-98.2	97.9	124.4	115.5	8.99	13.847		
2,200.0	2,198.6	2,195.8	2,192.0	4.6	5.1	-73.50	-104.8	100.1	127.6	118.2	9.45	13.510		
2,300.0	2,298.4	2,295.7	2,291.7	4.8	5.3	-74.39	-111.5	102.2	130.9	121.0	9.91	13.200		
2,400.0	2,398.1	2,395.7	2,391.4	5.0	5.6	-75.23	-118.1	104.3	134.1	123.7	10.39	12.913		
2,500.0	2,497.9	2,495.6	2,491.1	5.3	5.9	-76.04	-124.7	106.4	137.4	126.6	10.87	12.648		
2,600.0	2,597.7	2,595.5	2,590.7	5.5	6.1	-76.81	-131.4	108.6	140.7	129.4	11.35	12.403		
2,700.0	2,697.4	2,695.4	2,690.4	5.7	6.4	-77.54	-138.0	110.7	144.1	132.2	11.83	12.176		
2,800.0	2,797.2	2,795.4	2,790.1	6.0	6.7	-78.24	-144.7	112.8	147.4	135.1	12.32	11.965		
2,900.0	2,896.9	2,895.3	2,889.8	6.2	6.9	-78.91	-151.3	114.9	150.8	138.0	12.82	11.769		
3,000.0	2,996.7	2,995.2	2,989.5	6.4	7.2	-79.55	-157.9	117.1	154.2	140.9	13.31	11.587		
3,100.0	3,096.4	3,095.2	3,089.2	6.7	7.4	-80.16	-164.6	119.2	157.7	143.8	13.81	11.417		
3,200.0	3,196.2	3,195.1	3,188.8	6.9	7.7	-80.74	-171.2	121.3	161.1	146.8	14.31	11.258		
3,300.0	3,295.9	3,295.0	3,288.5	7.2	8.0	-81.30	-177.9	123.4	164.5	149.7	14.81	11.110		
3,400.0	3,395.7	3,394.9	3,388.2	7.4	8.2	-81.84	-184.5	125.6	168.0	152.7	15.31	10.971		
3,500.0	3,495.5	3,494.9	3,487.9	7.7	8.5	-82.36	-191.1	127.7	171.5	155.7	15.82	10.841		
3,600.0	3,595.2	3,594.8	3,587.6	7.9	8.8	-82.85	-197.8	129.8	175.0	158.7	16.33	10.718		
3,700.0	3,695.0	3,694.7	3,687.3	8.2	9.0	-83.33	-204.4	131.9	178.5	161.7	16.84	10.603		
3,800.0	3,794.7	3,794.7	3,787.0	8.4	9.3	-83.79	-211.0	134.1	182.0	164.7	17.35	10.494		
3,900.0	3,894.5	3,894.6	3,886.6	8.7	9.5	-84.23	-217.7	136.2	185.6	167.7	17.86	10.392		
4,000.0	3,994.2	3,994.5	3,986.3	8.9	9.8	-84.65	-224.3	138.3	189.1	170.7	18.37	10.295		
4,100.0	4,094.0	4,094.4	4,086.0	9.2	10.1	-85.06	-231.0	140.4	192.7	173.8	18.88	10.204		
4,200.0	4,193.8	4,194.4	4,185.7	9.4	10.3	-85.45	-237.6	142.6	196.2	176.8	19.39	10.117		
4,300.0	4,293.5	4,294.3	4,285.4	9.7	10.6	-85.83	-244.2	144.7	199.8	179.9	19.91	10.035		
4,400.0	4,393.3	4,394.2	4,385.1	9.9	10.9	-86.20	-250.9	146.8	203.4	182.9	20.42	9.958		
4,500.0	4,493.0	4,494.1	4,484.7	10.2	11.1	-86.55	-257.5	148.9	207.0	186.0	20.94	9.884		
4,600.0	4,592.8	4,594.1	4,584.4	10.4	11.4	-86.89	-264.2	151.1	210.6	189.1	21.46	9.813		
4,700.0	4,692.5	4,694.0	4,684.1	10.7	11.7	-87.22	-270.8	153.2	214.2	192.2	21.97	9.746		
4,800.0	4,792.3	4,793.9	4,783.8	11.0	11.9	-87.54	-277.4	155.3	217.8	195.3	22.49	9.683		
4,900.0	4,892.1	4,893.9	4,883.5	11.2	12.2	-87.85	-284.1	157.4	221.4	198.4	23.01	9.622		
5,000.0	4,991.8	4,993.8	4,983.2	11.5	12.4	-88.14	-290.7	159.6	225.0	201.5	23.53	9.564		
5,100.0	5,091.6	5,093.7	5,082.8	11.7	12.7	-88.43	-297.4	161.7	228.6	204.6	24.05	9.508		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2811A - HZ - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,200.0	5,191.3	5,193.6	5,182.5	12.0	13.0	-88.71	-304.0	163.8	232.3	207.7	24.56	9.455	
5,300.0	5,291.1	5,293.6	5,282.2	12.2	13.2	-88.99	-310.6	165.9	235.9	210.8	25.08	9.405	
5,317.4	5,308.4	5,311.0	5,299.6	12.3	13.3	-89.03	-311.8	166.3	236.5	211.4	25.17	9.396	
5,350.0	5,340.9	5,338.9	5,327.4	12.4	13.4	-89.08	-314.0	167.0	237.9	212.6	25.34	9.389 SF	
5,400.0	5,390.0	5,378.9	5,367.0	12.5	13.5	-89.22	-319.5	168.8	241.7	216.0	25.65	9.424	
5,450.0	5,438.1	5,418.7	5,405.8	12.8	13.7	-89.41	-327.8	171.4	247.4	221.4	26.01	9.513	
5,500.0	5,484.7	5,458.3	5,443.6	13.0	13.8	-89.62	-338.8	175.0	255.1	228.7	26.43	9.652	
5,550.0	5,529.3	5,500.0	5,482.4	13.3	14.1	-89.90	-353.4	179.6	264.8	237.8	26.93	9.832	
5,600.0	5,571.5	5,536.3	5,515.1	13.6	14.3	-89.96	-368.4	184.5	276.3	248.8	27.46	10.059	
5,650.0	5,611.0	5,574.8	5,548.4	14.0	14.6	-90.02	-386.7	190.3	289.6	261.5	28.08	10.315	
5,700.0	5,647.3	5,612.8	5,579.9	14.4	14.9	-89.97	-407.0	196.8	304.7	275.9	28.75	10.597	
5,750.0	5,680.2	5,650.0	5,609.1	14.9	15.2	-89.79	-429.0	203.8	321.4	291.9	29.51	10.893	
5,800.0	5,709.4	5,687.6	5,636.9	15.4	15.5	-89.50	-453.1	211.5	339.7	309.3	30.36	11.189	
5,850.0	5,734.5	5,724.5	5,662.3	16.0	15.9	-89.05	-478.6	219.7	359.4	328.1	31.28	11.490	
5,900.0	5,755.3	5,761.1	5,685.6	16.6	16.3	-88.46	-505.5	228.3	380.4	348.1	32.26	11.790	
5,950.0	5,771.7	5,800.0	5,708.1	17.3	16.7	-87.87	-535.7	238.0	402.5	369.1	33.33	12.075	
6,000.0	5,783.6	5,834.0	5,725.7	18.0	17.2	-86.90	-563.3	246.8	425.5	391.1	34.41	12.368	
6,050.0	5,790.7	5,870.5	5,742.5	18.7	17.6	-85.96	-594.2	256.7	449.5	413.9	35.56	12.640	
6,099.2	5,793.0	5,906.6	5,756.9	19.4	18.1	-84.96	-625.7	266.8	473.7	436.9	36.73	12.894	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2812B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	126.41	-74.3	100.7	125.2					
100.0	100.0	100.0	100.0	0.1	0.1	126.41	-74.3	100.7	125.2	125.0	0.19	666.965		
200.0	200.0	200.0	200.0	0.3	0.3	126.41	-74.3	100.7	125.2	124.5	0.64	196.443		
300.0	300.0	300.0	300.0	0.5	0.5	126.41	-74.3	100.7	125.2	124.1	1.09	115.184		
400.0	400.0	400.0	400.0	0.8	0.8	126.41	-74.3	100.7	125.2	123.6	1.54	81.480		
500.0	500.0	500.0	500.0	1.0	1.0	126.41	-74.3	100.7	125.2	123.2	1.99	63.035		
600.0	600.0	600.0	600.0	1.2	1.2	126.41	-74.3	100.7	125.2	122.7	2.44	51.400		
700.0	700.0	700.0	700.0	1.4	1.4	126.41	-74.3	100.7	125.2	122.3	2.88	43.390		
800.0	800.0	800.0	800.0	1.7	1.7	126.41	-74.3	100.7	125.2	121.8	3.33	37.541		
900.0	900.0	900.0	900.0	1.9	1.9	126.41	-74.3	100.7	125.2	121.4	3.78	33.081 CC, ES		
1,000.0	1,000.0	996.1	996.1	2.1	2.1	126.72	-75.7	101.5	126.7	122.5	4.20	30.172		
1,100.0	1,100.0	1,092.1	1,091.9	2.3	2.3	127.58	-79.9	103.9	131.3	126.7	4.60	28.551		
1,200.0	1,200.0	1,191.5	1,191.1	2.6	2.5	128.72	-86.0	107.2	137.7	132.7	5.01	27.472		
1,300.0	1,300.0	1,291.2	1,290.6	2.8	2.7	129.76	-92.0	110.6	144.2	138.8	5.44	26.533		
1,400.0	1,400.0	1,391.0	1,390.1	3.0	2.9	130.71	-98.1	114.0	150.8	144.9	5.86	25.707		
1,500.0	1,500.0	1,490.8	1,489.6	3.2	3.1	131.59	-104.2	117.4	157.3	151.0	6.30	24.978		
1,600.0	1,600.0	1,590.6	1,589.2	3.4	3.3	-61.95	-110.3	120.8	163.1	156.4	6.69	24.393		
1,700.0	1,699.8	1,690.5	1,688.9	3.6	3.6	-62.68	-116.4	124.2	167.3	160.2	7.07	23.657		
1,800.0	1,799.6	1,790.3	1,788.5	3.8	3.8	-63.97	-122.4	127.6	170.7	163.2	7.47	22.852		
1,900.0	1,899.4	1,890.2	1,888.1	4.0	4.0	-65.22	-128.5	131.0	174.2	166.3	7.88	22.105		
2,000.0	1,999.1	1,990.1	1,987.7	4.2	4.3	-66.41	-134.6	134.4	177.8	169.5	8.30	21.415		
2,100.0	2,098.9	2,089.9	2,087.4	4.4	4.5	-67.55	-140.7	137.8	181.4	172.7	8.73	20.778		
2,200.0	2,198.6	2,189.8	2,187.0	4.6	4.8	-68.65	-146.8	141.2	185.1	176.0	9.17	20.190		
2,300.0	2,298.4	2,289.7	2,286.6	4.8	5.0	-69.71	-152.9	144.6	188.9	179.3	9.62	19.648		
2,400.0	2,398.1	2,389.5	2,386.2	5.0	5.3	-70.72	-158.9	148.0	192.8	182.7	10.07	19.147		
2,500.0	2,497.9	2,489.4	2,485.9	5.3	5.5	-71.69	-165.0	151.4	196.7	186.2	10.53	18.684		
2,600.0	2,597.7	2,589.3	2,585.5	5.5	5.8	-72.63	-171.1	154.8	200.7	189.7	10.99	18.256		
2,700.0	2,697.4	2,689.2	2,685.1	5.7	6.0	-73.53	-177.2	158.2	204.7	193.2	11.46	17.859		
2,800.0	2,797.2	2,789.0	2,784.7	6.0	6.3	-74.39	-183.3	161.6	208.7	196.8	11.93	17.492		
2,900.0	2,896.9	2,888.9	2,884.4	6.2	6.6	-75.22	-189.4	165.0	212.8	200.4	12.41	17.150		
3,000.0	2,996.7	2,988.8	2,984.0	6.4	6.8	-76.02	-195.4	168.4	217.0	204.1	12.89	16.833		
3,100.0	3,096.4	3,088.6	3,083.6	6.7	7.1	-76.79	-201.5	171.7	221.2	207.8	13.37	16.538		
3,200.0	3,196.2	3,188.5	3,183.2	6.9	7.3	-77.53	-207.6	175.1	225.4	211.5	13.86	16.262		
3,300.0	3,295.9	3,288.4	3,282.9	7.2	7.6	-78.24	-213.7	178.5	229.7	215.3	14.35	16.005		
3,400.0	3,395.7	3,388.2	3,382.5	7.4	7.8	-78.93	-219.8	181.9	234.0	219.1	14.84	15.765		
3,500.0	3,495.5	3,488.1	3,482.1	7.7	8.1	-79.59	-225.9	185.3	238.3	223.0	15.34	15.539		
3,600.0	3,595.2	3,588.0	3,581.7	7.9	8.4	-80.23	-231.9	188.7	242.7	226.8	15.83	15.328		
3,700.0	3,695.0	3,687.8	3,681.4	8.2	8.6	-80.85	-238.0	192.1	247.1	230.7	16.33	15.130		
3,800.0	3,794.7	3,787.7	3,781.0	8.4	8.9	-81.44	-244.1	195.5	251.5	234.7	16.83	14.944		
3,900.0	3,894.5	3,887.6	3,880.6	8.7	9.1	-82.01	-250.2	198.9	255.9	238.6	17.33	14.768		
4,000.0	3,994.2	3,987.4	3,980.3	8.9	9.4	-82.57	-256.3	202.3	260.4	242.6	17.83	14.603		
4,100.0	4,094.0	4,087.3	4,079.9	9.2	9.7	-83.10	-262.4	205.7	264.9	246.6	18.34	14.447		
4,200.0	4,193.8	4,187.2	4,179.5	9.4	9.9	-83.62	-268.4	209.1	269.4	250.6	18.84	14.300		
4,300.0	4,293.5	4,287.1	4,279.1	9.7	10.2	-84.12	-274.5	212.5	273.9	254.6	19.35	14.160		
4,400.0	4,393.3	4,386.9	4,378.8	9.9	10.4	-84.61	-280.6	215.9	278.5	258.6	19.85	14.028		
4,500.0	4,493.0	4,486.8	4,478.4	10.2	10.7	-85.07	-286.7	219.3	283.1	262.7	20.36	13.903		
4,600.0	4,592.8	4,586.7	4,578.0	10.4	11.0	-85.53	-292.8	222.7	287.7	266.8	20.87	13.784		
4,700.0	4,692.5	4,686.5	4,677.6	10.7	11.2	-85.97	-298.9	226.1	292.3	270.9	21.38	13.671		
4,800.0	4,792.3	4,786.4	4,777.3	11.0	11.5	-86.39	-304.9	229.5	296.9	275.0	21.89	13.564		
4,900.0	4,892.1	4,886.3	4,876.9	11.2	11.8	-86.80	-311.0	232.9	301.6	279.2	22.40	13.462		
5,000.0	4,991.8	4,986.1	4,976.5	11.5	12.0	-87.20	-317.1	236.3	306.2	283.3	22.91	13.365		
5,100.0	5,091.6	5,086.0	5,076.1	11.7	12.3	-87.59	-323.2	239.7	310.9	287.5	23.42	13.272		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-2812B - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,191.3	5,185.9	5,175.8	12.0	12.5	-87.97	-329.3	243.1	315.6	291.6	23.94	13.184		
5,300.0	5,291.1	5,285.7	5,275.4	12.2	12.8	-88.33	-335.4	246.4	320.3	295.8	24.45	13.099		
5,317.4	5,308.4	5,303.1	5,292.7	12.3	12.8	-88.40	-336.4	247.0	321.1	296.6	24.54	13.085		
5,350.0	5,340.9	5,335.6	5,325.2	12.4	12.9	-88.53	-338.4	248.1	322.6	297.9	24.72	13.053		
5,400.0	5,390.0	5,385.1	5,374.5	12.5	13.1	-89.41	-341.4	249.8	324.9	299.9	25.03	12.979		
5,450.0	5,438.1	5,425.1	5,414.4	12.8	13.2	-90.58	-344.2	251.4	327.8	302.4	25.37	12.920 SF		
5,500.0	5,484.7	5,459.2	5,448.1	13.0	13.3	-91.55	-348.4	253.8	333.1	307.3	25.73	12.943		
5,550.0	5,529.3	5,492.9	5,481.1	13.3	13.4	-92.41	-354.5	257.1	341.0	314.9	26.15	13.044		
5,600.0	5,571.5	5,526.1	5,513.1	13.6	13.6	-93.13	-362.3	261.5	351.7	325.1	26.61	13.218		
5,650.0	5,611.0	5,558.8	5,543.9	14.0	13.7	-93.64	-371.7	266.7	365.0	337.9	27.11	13.464		
5,700.0	5,647.3	5,590.8	5,573.4	14.4	13.9	-93.91	-382.5	272.8	381.0	353.4	27.67	13.770		
5,750.0	5,680.2	5,622.1	5,601.5	14.9	14.1	-93.89	-394.6	279.5	399.6	371.3	28.29	14.127		
5,800.0	5,709.4	5,650.0	5,625.8	15.4	14.3	-93.38	-406.6	286.2	420.6	391.6	28.94	14.531		
5,850.0	5,734.5	5,682.3	5,652.9	16.0	14.5	-92.93	-421.9	294.8	443.8	414.1	29.70	14.945		
5,900.0	5,755.3	5,711.2	5,676.2	16.6	14.8	-91.96	-436.8	303.1	469.0	438.5	30.51	15.371		
5,950.0	5,771.7	5,739.2	5,697.9	17.3	15.0	-90.66	-452.3	311.7	496.2	464.8	31.38	15.809		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2808B - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,400.0	5,793.0	6,577.4	5,892.0	23.6	27.0	102.09	-1,197.1	-681.3	477.0	430.5	46.50	10.258	
6,500.0	5,793.0	6,653.3	5,892.0	25.1	28.2	102.60	-1,269.7	-659.3	443.1	393.8	49.32	8.986	
6,562.4	5,793.0	6,700.0	5,892.0	26.0	29.0	102.87	-1,314.8	-647.2	426.4	375.4	51.08	8.349	
6,600.0	5,793.0	6,732.4	5,892.0	26.6	29.5	103.12	-1,346.3	-639.4	417.7	365.6	52.12	8.014	
6,700.0	5,793.0	6,813.4	5,892.0	28.2	30.8	103.68	-1,425.5	-622.4	397.2	342.3	54.90	7.236	
6,800.0	5,793.0	6,900.0	5,892.0	29.9	32.2	104.20	-1,510.9	-608.0	380.9	323.1	57.81	6.589	
6,900.0	5,793.0	6,979.0	5,892.0	31.6	33.5	104.58	-1,589.3	-598.2	368.8	308.1	60.66	6.079	
7,000.0	5,793.0	7,063.2	5,892.0	33.4	34.8	104.85	-1,673.1	-591.3	360.9	297.2	63.63	5.671	
7,100.0	5,793.0	7,147.7	5,892.0	35.1	36.1	104.98	-1,757.6	-588.1	357.2	290.6	66.67	5.358	
7,151.2	5,793.0	7,193.7	5,892.0	36.0	36.8	104.99	-1,803.6	-587.9	357.0	288.7	68.29	5.227	
7,200.0	5,793.0	7,242.4	5,892.0	36.9	37.6	104.99	-1,852.4	-587.9	357.0	287.0	69.94	5.104	
7,300.0	5,793.0	7,342.4	5,892.0	38.7	39.2	104.99	-1,952.4	-587.9	357.0	283.6	73.35	4.866	
7,400.0	5,793.0	7,442.4	5,892.0	40.5	40.9	104.99	-2,052.4	-587.9	357.0	280.2	76.79	4.648	
7,500.0	5,793.0	7,542.4	5,892.0	42.3	42.5	104.99	-2,152.4	-587.9	357.0	276.7	80.26	4.448	
7,600.0	5,793.0	7,642.4	5,892.0	44.1	44.2	104.99	-2,252.4	-587.9	357.0	273.2	83.74	4.263	
7,700.0	5,793.0	7,742.4	5,892.0	45.9	45.9	104.99	-2,352.4	-587.9	357.0	269.7	87.25	4.091	
7,800.0	5,793.0	7,842.4	5,892.0	47.7	47.7	104.99	-2,452.4	-587.9	357.0	266.2	90.77	3.932	
7,900.0	5,793.0	7,942.4	5,892.0	49.6	49.4	104.99	-2,552.4	-587.9	356.9	262.6	94.31	3.785	
8,000.0	5,793.0	8,042.4	5,892.0	51.4	51.1	104.99	-2,652.4	-588.0	356.9	259.1	97.87	3.647	
8,100.0	5,793.0	8,142.4	5,892.0	53.2	52.9	104.99	-2,752.4	-588.0	356.9	255.5	101.43	3.519	
8,200.0	5,793.0	8,242.4	5,892.0	55.1	54.7	104.99	-2,852.4	-588.0	356.9	251.9	105.01	3.399	
8,300.0	5,793.0	8,342.4	5,892.0	57.0	56.5	104.99	-2,952.4	-588.0	356.9	248.3	108.59	3.287	
8,400.0	5,793.0	8,442.4	5,892.0	58.8	58.2	104.99	-3,052.4	-588.0	356.9	244.7	112.19	3.181	
8,500.0	5,793.0	8,542.4	5,892.0	60.7	60.0	104.99	-3,152.4	-588.0	356.9	241.1	115.79	3.082	
8,600.0	5,793.0	8,642.4	5,892.0	62.5	61.8	104.99	-3,252.4	-588.0	356.9	237.5	119.40	2.989	
8,700.0	5,793.0	8,742.4	5,892.0	64.4	63.7	104.99	-3,352.4	-588.0	356.9	233.9	123.02	2.901	
8,800.0	5,793.0	8,842.4	5,892.0	66.3	65.5	104.99	-3,452.4	-588.0	356.9	230.3	126.65	2.818	
8,900.0	5,793.0	8,942.4	5,892.0	68.2	67.3	104.99	-3,552.4	-588.0	356.9	226.6	130.27	2.740	
9,000.0	5,793.0	9,042.4	5,892.0	70.0	69.1	104.99	-3,652.4	-588.0	356.9	223.0	133.91	2.665	
9,100.0	5,793.0	9,142.4	5,892.0	71.9	71.0	104.99	-3,752.4	-588.0	356.9	219.3	137.55	2.595	
9,200.0	5,793.0	9,242.4	5,892.0	73.8	72.8	104.99	-3,852.4	-588.0	356.9	215.7	141.19	2.528	
9,300.0	5,793.0	9,342.4	5,892.0	75.7	74.6	104.99	-3,952.4	-588.0	356.9	212.0	144.84	2.464	
9,400.0	5,793.0	9,442.4	5,892.0	77.6	76.5	104.99	-4,052.4	-588.0	356.9	208.4	148.49	2.403	
9,500.0	5,793.0	9,542.5	5,892.0	79.5	78.3	104.99	-4,152.4	-588.0	356.9	204.7	152.15	2.346	
9,600.0	5,793.0	9,642.5	5,892.0	81.3	80.2	104.99	-4,252.4	-588.0	356.9	201.1	155.80	2.290	
9,700.0	5,793.0	9,742.5	5,892.0	83.2	82.0	104.99	-4,352.4	-588.0	356.9	197.4	159.47	2.238	
9,800.0	5,793.0	9,842.5	5,892.0	85.1	83.9	104.99	-4,452.4	-588.0	356.9	193.7	163.13	2.188	
9,900.0	5,793.0	9,942.5	5,892.0	87.0	85.8	104.99	-4,552.4	-588.0	356.9	190.1	166.80	2.139	
10,000.0	5,793.0	10,042.5	5,892.0	88.9	87.6	104.99	-4,652.4	-588.0	356.9	186.4	170.47	2.093	
10,100.0	5,793.0	10,142.5	5,892.0	90.8	89.5	104.99	-4,752.4	-588.0	356.8	182.7	174.14	2.049	
10,200.0	5,793.0	10,242.5	5,892.0	92.7	91.3	104.99	-4,852.4	-588.0	356.8	179.0	177.81	2.007	
10,300.0	5,793.0	10,342.5	5,892.0	94.6	93.2	104.99	-4,952.4	-588.0	356.8	175.3	181.49	1.966	
10,400.0	5,793.0	10,442.5	5,892.0	96.5	95.1	104.99	-5,052.4	-588.0	356.8	171.7	185.17	1.927	
10,500.0	5,793.0	10,542.5	5,892.0	98.4	97.0	104.99	-5,152.4	-588.0	356.8	168.0	188.85	1.890	
10,600.0	5,793.0	10,642.5	5,892.0	100.3	98.8	104.99	-5,252.4	-588.0	356.8	164.3	192.53	1.853	
10,700.0	5,793.0	10,742.5	5,892.0	102.2	100.7	104.99	-5,352.4	-588.0	356.8	160.6	196.21	1.819	
10,800.0	5,793.0	10,842.5	5,892.0	104.1	102.6	104.99	-5,452.4	-588.0	356.8	156.9	199.89	1.785	
10,900.0	5,793.0	10,942.5	5,892.0	106.0	104.5	104.99	-5,552.4	-588.0	356.8	153.2	203.58	1.753	
11,000.0	5,793.0	11,042.5	5,892.0	107.9	106.3	104.99	-5,652.4	-588.0	356.8	149.5	207.27	1.721	
11,100.0	5,793.0	11,142.5	5,892.0	109.8	108.2	104.99	-5,752.4	-588.1	356.8	145.8	210.96	1.691	
11,200.0	5,793.0	11,242.5	5,892.0	111.7	110.1	104.99	-5,852.4	-588.1	356.8	142.2	214.64	1.662	
11,300.0	5,793.0	11,342.5	5,892.0	113.6	112.0	104.99	-5,952.4	-588.1	356.8	138.5	218.34	1.634	

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-2809A
Project:	Weld County, CO	TVD Reference:	WELL @ 4853.8ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	MD Reference:	WELL @ 4853.8ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor #21B-2809A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

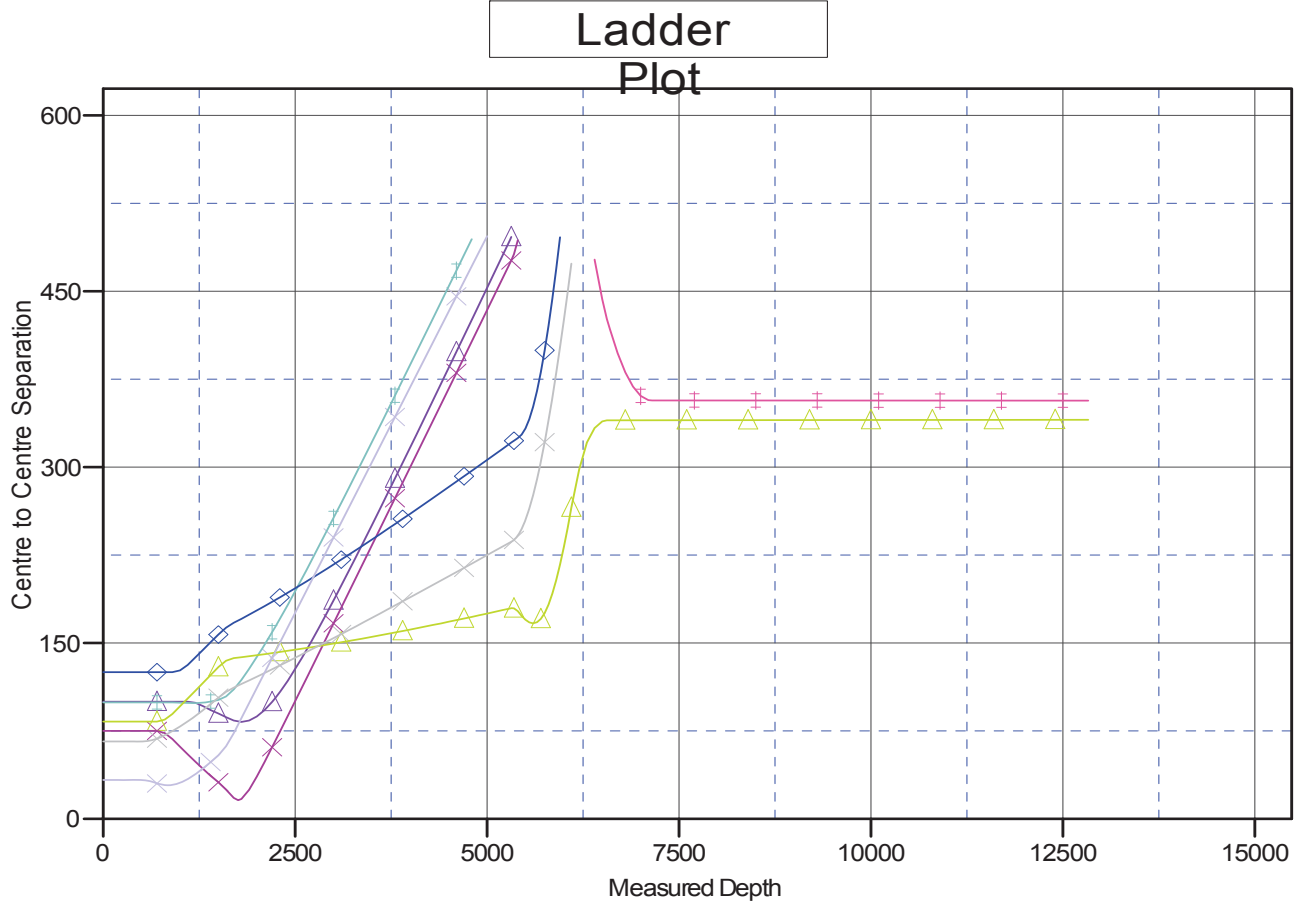
Offset Design S21-T10N-R58W - Razor #21C-2808B - HZ - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,400.0	5,793.0	11,442.5	5,892.0	115.5	113.9	104.99	-6,052.4	-588.1	356.8	134.8	222.03	1.607	
11,500.0	5,793.0	11,542.5	5,892.0	117.4	115.8	104.99	-6,152.4	-588.1	356.8	131.1	225.72	1.581	
11,600.0	5,793.0	11,642.5	5,892.0	119.3	117.7	104.99	-6,252.4	-588.1	356.8	127.4	229.41	1.555	
11,700.0	5,793.0	11,742.5	5,892.0	121.2	119.5	104.99	-6,352.4	-588.1	356.8	123.7	233.11	1.530	
11,800.0	5,793.0	11,842.5	5,892.0	123.1	121.4	104.99	-6,452.4	-588.1	356.8	120.0	236.81	1.507	
11,900.0	5,793.0	11,942.5	5,892.0	125.0	123.3	104.99	-6,552.4	-588.1	356.8	116.3	240.50	1.483	Level 3
12,000.0	5,793.0	12,042.5	5,892.0	126.9	125.2	104.99	-6,652.4	-588.1	356.8	112.6	244.20	1.461	Level 3
12,100.0	5,793.0	12,142.5	5,892.0	128.8	127.1	104.99	-6,752.4	-588.1	356.8	108.9	247.90	1.439	Level 3
12,200.0	5,793.0	12,242.5	5,892.0	130.7	129.0	104.99	-6,852.4	-588.1	356.7	105.2	251.60	1.418	Level 3
12,300.0	5,793.0	12,342.5	5,892.0	132.6	130.9	105.00	-6,952.4	-588.1	356.7	101.4	255.30	1.397	Level 3
12,400.0	5,793.0	12,442.5	5,892.0	134.5	132.8	105.00	-7,052.4	-588.1	356.7	97.7	259.00	1.377	Level 3
12,500.0	5,793.0	12,542.5	5,892.0	136.5	134.7	105.00	-7,152.4	-588.1	356.7	94.0	262.70	1.358	Level 3
12,600.0	5,793.0	12,642.5	5,892.0	138.4	136.6	105.00	-7,252.4	-588.1	356.7	90.3	266.40	1.339	Level 3
12,700.0	5,793.0	12,742.5	5,892.0	140.3	138.5	105.00	-7,352.4	-588.1	356.7	86.6	270.10	1.321	Level 3
12,800.0	5,793.0	12,842.5	5,892.0	142.2	140.4	105.00	-7,452.4	-588.1	356.7	82.9	273.80	1.303	Level 3
12,831.5	5,793.0	12,873.9	5,892.0	142.7	141.0	105.00	-7,483.8	-588.1	356.7	81.9	274.86	1.298	Level 3, CC, ES, SF

Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S21-T10N-R58W
Site Error: 0.0ft
Reference Well: Razor #21B-2809A
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #1

Local Co-ordinate Reference: Well Razor #21B-2809A
TVD Reference: WELL @ 4853.8ft (Original Well Elev)
MD Reference: WELL @ 4853.8ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4853.8ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #21B-2809A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.05°



LEGEND

▲ Razor #21B-0912B, HZ, Plan #1 V0	◆ Razor #21B-2812B, HZ, Plan #1 V0	✕ Razor #21B-2811A, HZ, Plan #1 V0
◆ Razor #21B-0911A, HZ, Plan #1 V0	▲ Razor #21B-2810B, HZ, Plan #1 V0	✕ Razor #21B-0909A, HZ, Plan #1 V0
✕ Razor #21B-0910B, HZ, Plan #1 V0	◆ Razor #21C-2808B, HZ, Plan #1 V0	