

Whiting Oil & Gas

Well Name: **Razor 22-2712H**

Surface Location: Razor 22-2712H Pad Sec.22-T10N-R58W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

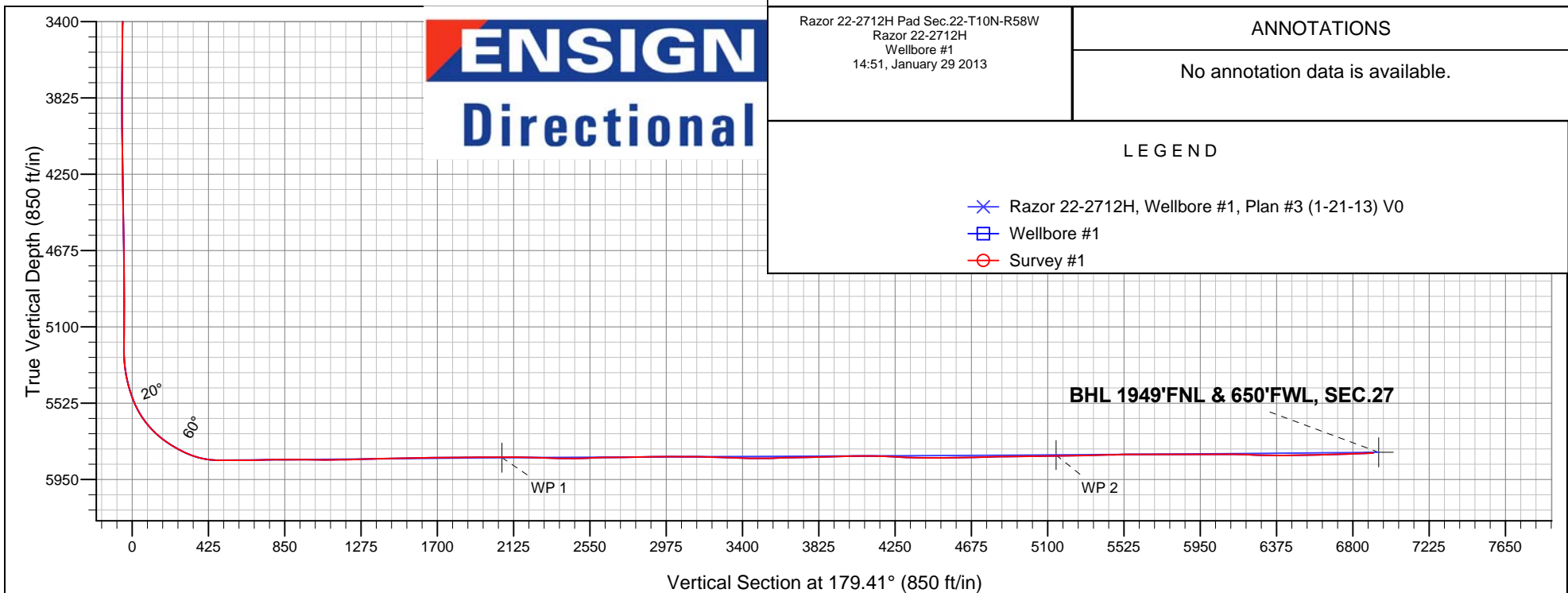
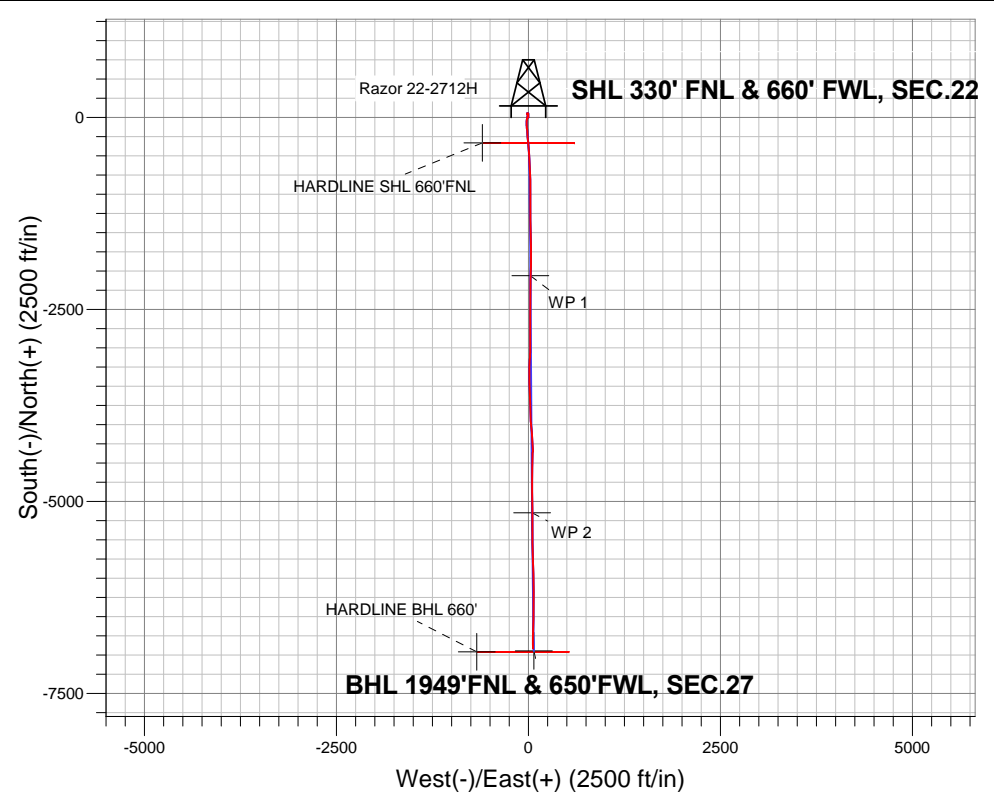
Ground Elevation: 4833.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1549545.83	3454198.12	40.830344	-103.858675	

Original Well Elev WELL @ 4849.5ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
12568' MD 5803' TVD 6913' S & 61' E of SHL
92.2 degree Incl @ 179.2 degree AZM



Razor 22-2712H Pad Sec.22-T10N-R58W
Razor 22-2712H
Wellbore #1
14:51, January 29 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- ✕ Razor 22-2712H, Wellbore #1, Plan #3 (1-21-13) V0
- Wellbore #1
- Survey #1



Whiting Oil & Gas

SEC.22-T10N-R58W

Razor 22-2712H Pad Sec.22-T10N-R58W

Razor 22-2712H

Wellbore #1

Survey: Survey #1

Standard Survey Report

29 January, 2013

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.22-T10N-R58W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Razor 22-2712H Pad Sec.22-T10N-R58W				
Site Position:		Northing:	1,549,545.84 ft	Latitude:	40.830344
From:	Lat/Long	Easting:	3,454,198.12 ft	Longitude:	-103.858675
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	1.06 °

Well	Razor 22-2712H					
Well Position	+N/-S	0.0 ft	Northing:	1,549,545.83 ft	Latitude:	40.830344
	+E/-W	0.0 ft	Easting:	3,454,198.12 ft	Longitude:	-103.858675
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,833.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/15/2013	8.19	67.49	53,280

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	179.41	

Survey Program	Date	1/29/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
190.0	12,568.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
190.0	0.90	321.70	190.0	1.2	-0.9	-1.2	0.47	0.47	0.00	
280.0	1.00	348.70	280.0	2.5	-1.5	-2.5	0.50	0.11	30.00	
371.0	0.80	341.50	371.0	3.9	-1.9	-3.9	0.25	-0.22	-7.91	
461.0	0.70	12.80	461.0	5.0	-2.0	-5.0	0.46	-0.11	34.78	
554.0	0.70	352.60	554.0	6.1	-1.9	-6.1	0.26	0.00	-21.72	
649.0	0.60	2.30	648.9	7.2	-2.0	-7.2	0.16	-0.11	10.21	
745.0	0.80	13.20	744.9	8.4	-1.8	-8.4	0.25	0.21	11.35	
839.0	1.10	358.60	838.9	9.9	-1.7	-9.9	0.41	0.32	-15.53	
934.0	0.90	357.20	933.9	11.6	-1.7	-11.6	0.21	-0.21	-1.47	
1,029.0	1.30	1.90	1,028.9	13.4	-1.7	-13.4	0.43	0.42	4.95	
1,123.0	1.80	4.60	1,122.9	15.9	-1.6	-15.9	0.54	0.53	2.87	
1,217.0	2.30	5.30	1,216.8	19.3	-1.3	-19.3	0.53	0.53	0.74	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,312.0	2.00	7.00	1,311.7	22.8	-0.9	-22.8	0.32	-0.32	1.79	
1,407.0	1.80	358.80	1,406.7	25.9	-0.7	-25.9	0.35	-0.21	-8.63	
1,501.0	2.40	3.20	1,500.6	29.4	-0.6	-29.4	0.66	0.64	4.68	
1,575.0	2.90	5.10	1,574.5	32.8	-0.4	-32.8	0.69	0.68	2.57	
1,639.0	3.20	2.40	1,638.4	36.2	-0.2	-36.2	0.52	0.47	-4.22	
1,727.0	3.40	336.00	1,726.3	41.0	-1.1	-41.0	1.73	0.23	-30.00	
1,821.0	0.90	276.40	1,820.2	43.7	-3.0	-43.7	3.24	-2.66	-63.40	
1,913.0	0.80	228.30	1,912.2	43.3	-4.2	-43.4	0.76	-0.11	-52.28	
2,005.0	0.40	252.70	2,004.2	42.8	-5.0	-42.8	0.51	-0.43	26.52	
2,098.0	0.10	60.70	2,097.2	42.7	-5.2	-42.8	0.54	-0.32	180.65	
2,190.0	0.40	208.80	2,189.2	42.5	-5.3	-42.5	0.53	0.33	160.98	
2,285.0	0.10	304.20	2,284.2	42.2	-5.5	-42.3	0.44	-0.32	100.42	
2,380.0	0.10	226.50	2,379.2	42.2	-5.7	-42.3	0.13	0.00	-81.79	
2,475.0	0.40	342.90	2,474.2	42.5	-5.8	-42.6	0.48	0.32	122.53	
2,570.0	0.70	346.90	2,569.2	43.4	-6.0	-43.4	0.32	0.32	4.21	
2,665.0	0.80	11.20	2,664.2	44.6	-6.0	-44.7	0.35	0.11	25.58	
2,760.0	1.00	28.40	2,759.2	46.0	-5.5	-46.0	0.35	0.21	18.11	
2,855.0	1.10	27.90	2,854.2	47.5	-4.7	-47.6	0.11	0.11	-0.53	
2,950.0	1.10	26.80	2,949.2	49.1	-3.9	-49.2	0.02	0.00	-1.16	
3,045.0	0.70	27.40	3,044.2	50.5	-3.2	-50.5	0.42	-0.42	0.63	
3,140.0	0.70	7.70	3,139.1	51.5	-2.8	-51.6	0.25	0.00	-20.74	
3,235.0	0.20	44.60	3,234.1	52.2	-2.6	-52.3	0.58	-0.53	38.84	
3,330.0	0.30	37.90	3,329.1	52.6	-2.4	-52.6	0.11	0.11	-7.05	
3,424.0	0.50	14.50	3,423.1	53.1	-2.1	-53.2	0.27	0.21	-24.89	
3,520.0	0.60	3.40	3,519.1	54.1	-2.0	-54.1	0.15	0.10	-11.56	
3,615.0	0.60	339.70	3,614.1	55.0	-2.1	-55.0	0.26	0.00	-24.95	
3,710.0	0.80	310.50	3,709.1	55.9	-2.8	-55.9	0.42	0.21	-30.74	
3,805.0	1.10	276.40	3,804.1	56.4	-4.2	-56.5	0.66	0.32	-35.89	
3,900.0	1.60	259.90	3,899.1	56.3	-6.4	-56.4	0.66	0.53	-17.37	
3,995.0	1.90	267.10	3,994.0	56.0	-9.3	-56.1	0.39	0.32	7.58	
4,090.0	2.20	264.70	4,089.0	55.8	-12.7	-55.9	0.33	0.32	-2.53	
4,185.0	2.60	216.00	4,183.9	53.8	-15.8	-54.0	2.12	0.42	-51.26	
4,279.0	0.50	155.10	4,277.9	51.7	-16.9	-51.9	2.55	-2.23	-64.79	
4,374.0	0.80	148.50	4,372.9	50.8	-16.3	-51.0	0.32	0.32	-6.95	
4,469.0	0.90	175.00	4,467.9	49.5	-15.9	-49.7	0.42	0.11	27.89	
4,564.0	1.30	148.30	4,562.8	47.8	-15.3	-48.0	0.67	0.42	-28.11	
4,659.0	1.70	133.70	4,657.8	45.9	-13.7	-46.1	0.58	0.42	-15.37	
4,754.0	1.20	113.10	4,752.8	44.6	-11.8	-44.7	0.75	-0.53	-21.68	
4,848.0	1.00	84.50	4,846.8	44.3	-10.1	-44.4	0.61	-0.21	-30.43	
4,943.0	1.10	84.50	4,941.7	44.4	-8.3	-44.5	0.11	0.11	0.00	
5,038.0	0.90	81.70	5,036.7	44.6	-6.7	-44.7	0.22	-0.21	-2.95	
5,133.0	1.00	60.90	5,131.7	45.1	-5.2	-45.2	0.38	0.11	-21.89	
5,197.0	0.70	52.30	5,195.7	45.7	-4.4	-45.7	0.51	-0.47	-13.44	
5,229.0	0.10	139.50	5,227.7	45.8	-4.2	-45.8	2.19	-1.88	272.50	
5,260.0	2.00	199.80	5,258.7	45.2	-4.4	-45.3	6.30	6.13	194.52	
5,292.0	4.40	198.00	5,290.6	43.5	-5.0	-43.6	7.51	7.50	-5.63	
5,324.0	7.00	193.30	5,322.5	40.5	-5.8	-40.5	8.25	8.13	-14.69	
5,355.0	9.50	193.60	5,353.2	36.1	-6.8	-36.2	8.07	8.06	0.97	
5,387.0	12.00	193.10	5,384.6	30.3	-8.2	-30.4	7.82	7.81	-1.56	
5,419.0	14.60	191.90	5,415.7	23.1	-9.8	-23.2	8.17	8.13	-3.75	
5,450.0	16.90	191.20	5,445.6	14.9	-11.5	-15.0	7.44	7.42	-2.26	
5,484.0	19.20	190.80	5,477.9	4.6	-13.5	-4.7	6.77	6.76	-1.18	
5,515.0	21.50	189.90	5,507.0	-6.0	-15.4	5.9	7.49	7.42	-2.90	
5,547.0	24.80	188.70	5,536.4	-18.5	-17.5	18.3	10.42	10.31	-3.75	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,578.0	28.50	186.80	5,564.1	-32.2	-19.3	32.0	12.25	11.94	-6.13
5,610.0	32.20	182.90	5,591.7	-48.3	-20.6	48.1	13.09	11.56	-12.19
5,641.0	35.20	179.90	5,617.5	-65.5	-21.0	65.3	11.06	9.68	-9.68
5,673.0	38.90	178.50	5,643.0	-84.8	-20.8	84.6	11.86	11.56	-4.38
5,705.0	42.80	177.50	5,667.2	-105.7	-20.0	105.5	12.36	12.19	-3.13
5,736.0	46.70	176.20	5,689.2	-127.5	-18.8	127.3	12.92	12.58	-4.19
5,768.0	50.60	175.00	5,710.4	-151.4	-17.0	151.3	12.51	12.19	-3.75
5,800.0	53.40	174.70	5,730.1	-176.6	-14.7	176.4	8.78	8.75	-0.94
5,831.0	56.00	175.40	5,748.0	-201.8	-12.5	201.6	8.59	8.39	2.26
5,863.0	58.60	176.60	5,765.3	-228.6	-10.7	228.5	8.72	8.13	3.75
5,894.0	61.50	175.70	5,780.7	-255.4	-8.8	255.3	9.69	9.35	-2.90
5,926.0	63.80	174.50	5,795.4	-283.7	-6.4	283.7	7.92	7.19	-3.75
5,958.0	67.00	173.80	5,808.8	-312.7	-3.5	312.6	10.20	10.00	-2.19
5,989.0	71.30	173.60	5,819.8	-341.5	-0.3	341.4	13.88	13.87	-0.65
6,021.0	75.50	174.80	5,828.9	-372.0	2.8	372.0	13.61	13.13	3.75
6,053.0	79.30	176.40	5,835.9	-403.1	5.2	403.1	12.84	11.88	5.00
6,085.0	83.70	176.60	5,840.6	-434.7	7.1	434.7	13.76	13.75	0.63
6,105.0	86.40	177.30	5,842.4	-454.6	8.2	454.6	13.94	13.50	3.50
6,150.0	90.60	177.30	5,843.5	-499.5	10.3	499.6	9.33	9.33	0.00
6,180.0	90.20	176.60	5,843.3	-529.5	11.9	529.5	2.69	-1.33	-2.33
6,211.0	89.90	176.10	5,843.3	-560.4	13.9	560.5	1.88	-0.97	-1.61
6,243.0	90.00	176.60	5,843.3	-592.3	15.9	592.5	1.59	0.31	1.56
6,275.0	90.20	176.80	5,843.3	-624.3	17.8	624.4	0.88	0.63	0.63
6,307.0	91.10	177.50	5,842.9	-656.2	19.4	656.4	3.56	2.81	2.19
6,338.0	91.50	177.10	5,842.2	-687.2	20.8	687.4	1.82	1.29	-1.29
6,370.0	91.70	177.10	5,841.3	-719.1	22.4	719.3	0.63	0.63	0.00
6,401.0	91.10	177.80	5,840.6	-750.1	23.8	750.3	2.97	-1.94	2.26
6,433.0	90.60	178.90	5,840.1	-782.1	24.7	782.3	3.78	-1.56	3.44
6,464.0	90.30	179.60	5,839.8	-813.1	25.1	813.3	2.46	-0.97	2.26
6,496.0	90.10	179.40	5,839.7	-845.1	25.4	845.3	0.88	-0.63	-0.63
6,528.0	90.00	179.60	5,839.7	-877.1	25.7	877.3	0.70	-0.31	0.63
6,559.0	89.30	180.60	5,839.9	-908.1	25.7	908.3	3.94	-2.26	3.23
6,591.0	89.70	180.60	5,840.2	-940.1	25.3	940.3	1.25	1.25	0.00
6,622.0	90.00	179.80	5,840.3	-971.1	25.2	971.3	2.76	0.97	-2.58
6,654.0	89.50	179.60	5,840.4	-1,003.1	25.4	1,003.3	1.68	-1.56	-0.63
6,686.0	88.80	179.80	5,840.9	-1,035.1	25.5	1,035.3	2.28	-2.19	0.63
6,717.0	89.50	179.90	5,841.3	-1,066.1	25.6	1,066.3	2.28	2.26	0.32
6,749.0	90.50	179.60	5,841.3	-1,098.1	25.8	1,098.3	3.26	3.13	-0.94
6,780.0	91.30	179.40	5,840.8	-1,129.0	26.0	1,129.3	2.66	2.58	-0.65
6,812.0	90.90	179.40	5,840.2	-1,161.0	26.4	1,161.2	1.25	-1.25	0.00
6,844.0	90.80	179.60	5,839.8	-1,193.0	26.7	1,193.2	0.70	-0.31	0.63
6,876.0	91.70	179.60	5,839.1	-1,225.0	26.9	1,225.2	2.81	2.81	0.00
6,907.0	91.80	179.20	5,838.1	-1,256.0	27.2	1,256.2	1.33	0.32	-1.29
6,939.0	91.60	179.60	5,837.2	-1,288.0	27.5	1,288.2	1.40	-0.63	1.25
6,970.0	91.50	179.40	5,836.3	-1,319.0	27.8	1,319.2	0.72	-0.32	-0.65
7,002.0	91.30	179.00	5,835.5	-1,351.0	28.2	1,351.2	1.40	-0.63	-1.25
7,033.0	91.40	179.20	5,834.8	-1,382.0	28.7	1,382.2	0.72	0.32	0.65
7,065.0	91.20	179.20	5,834.1	-1,413.9	29.2	1,414.2	0.63	-0.63	0.00
7,096.0	91.40	179.00	5,833.4	-1,444.9	29.7	1,445.2	0.91	0.65	-0.65
7,128.0	91.50	179.00	5,832.6	-1,476.9	30.2	1,477.2	0.31	0.31	0.00
7,160.0	91.50	178.70	5,831.7	-1,508.9	30.9	1,509.1	0.94	0.00	-0.94
7,191.0	91.50	178.90	5,830.9	-1,539.9	31.5	1,540.1	0.64	0.00	0.65
7,223.0	90.90	178.50	5,830.3	-1,571.9	32.2	1,572.1	2.25	-1.88	-1.25
7,254.0	90.30	179.20	5,829.9	-1,602.9	32.9	1,603.1	2.97	-1.94	2.26

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,286.0	90.40	179.90	5,829.7	-1,634.9	33.1	1,635.1	2.21	0.31	2.19
7,318.0	90.60	179.60	5,829.5	-1,666.9	33.3	1,667.1	1.13	0.63	-0.94
7,349.0	90.70	179.20	5,829.1	-1,697.9	33.6	1,698.1	1.33	0.32	-1.29
7,381.0	90.90	178.90	5,828.7	-1,729.8	34.1	1,730.1	1.13	0.63	-0.94
7,413.0	90.60	180.10	5,828.2	-1,761.8	34.4	1,762.1	3.87	-0.94	3.75
7,444.0	90.50	180.10	5,827.9	-1,792.8	34.3	1,793.1	0.32	-0.32	0.00
7,476.0	90.30	179.90	5,827.7	-1,824.8	34.3	1,825.1	0.88	-0.63	-0.63
7,508.0	90.70	180.30	5,827.4	-1,856.8	34.3	1,857.1	1.77	1.25	1.25
7,539.0	91.00	180.10	5,827.0	-1,887.8	34.2	1,888.1	1.16	0.97	-0.65
7,569.0	90.70	180.60	5,826.5	-1,917.8	34.0	1,918.1	1.94	-1.00	1.67
7,600.0	90.50	181.30	5,826.2	-1,948.8	33.5	1,949.1	2.35	-0.65	2.26
7,631.0	90.20	180.50	5,826.0	-1,979.8	33.0	1,980.1	2.76	-0.97	-2.58
7,662.0	89.90	181.50	5,826.0	-2,010.8	32.4	2,011.0	3.37	-0.97	3.23
7,692.0	89.70	181.70	5,826.1	-2,040.8	31.6	2,041.0	0.94	-0.67	0.67
7,723.0	89.80	181.70	5,826.2	-2,071.8	30.7	2,072.0	0.32	0.32	0.00
7,754.0	90.10	182.00	5,826.3	-2,102.8	29.7	2,103.0	1.37	0.97	0.97
7,785.0	90.00	182.00	5,826.2	-2,133.8	28.6	2,133.9	0.32	-0.32	0.00
7,816.0	89.10	181.50	5,826.5	-2,164.7	27.7	2,164.9	3.32	-2.90	-1.61
7,847.0	88.60	181.30	5,827.1	-2,195.7	26.9	2,195.9	1.74	-1.61	-0.65
7,877.0	88.60	181.20	5,827.8	-2,225.7	26.3	2,225.9	0.33	0.00	-0.33
7,908.0	88.40	181.30	5,828.6	-2,256.7	25.6	2,256.8	0.72	-0.65	0.32
7,939.0	88.30	181.50	5,829.5	-2,287.7	24.8	2,287.8	0.72	-0.32	0.65
7,970.0	87.60	181.00	5,830.6	-2,318.6	24.1	2,318.8	2.77	-2.26	-1.61
8,001.0	87.70	179.60	5,831.9	-2,349.6	24.0	2,349.7	4.52	0.32	-4.52
8,032.0	88.00	178.90	5,833.1	-2,380.6	24.4	2,380.7	2.46	0.97	-2.26
8,063.0	89.10	178.70	5,833.9	-2,411.6	25.0	2,411.7	3.61	3.55	-0.65
8,094.0	90.70	179.00	5,833.9	-2,442.6	25.7	2,442.7	5.25	5.16	0.97
8,125.0	91.60	179.80	5,833.3	-2,473.6	26.0	2,473.7	3.88	2.90	2.58
8,156.0	92.60	179.80	5,832.2	-2,504.5	26.1	2,504.7	3.23	3.23	0.00
8,187.0	92.20	180.10	5,830.9	-2,535.5	26.1	2,535.6	1.61	-1.29	0.97
8,218.0	91.50	180.60	5,829.9	-2,566.5	25.9	2,566.6	2.77	-2.26	1.61
8,249.0	92.10	181.00	5,828.9	-2,597.5	25.5	2,597.6	2.33	1.94	1.29
8,280.0	91.50	180.80	5,827.9	-2,628.4	25.0	2,628.6	2.04	-1.94	-0.65
8,310.0	90.40	180.30	5,827.4	-2,658.4	24.7	2,658.6	4.03	-3.67	-1.67
8,341.0	90.50	180.30	5,827.2	-2,689.4	24.6	2,689.6	0.32	0.32	0.00
8,372.0	90.50	180.10	5,826.9	-2,720.4	24.4	2,720.5	0.65	0.00	-0.65
8,402.0	90.60	179.90	5,826.6	-2,750.4	24.4	2,750.5	0.75	0.33	-0.67
8,433.0	90.70	180.10	5,826.3	-2,781.4	24.4	2,781.5	0.72	0.32	0.65
8,464.0	90.70	179.60	5,825.9	-2,812.4	24.5	2,812.5	1.61	0.00	-1.61
8,495.0	90.50	180.50	5,825.6	-2,843.4	24.5	2,843.5	2.97	-0.65	2.90
8,526.0	91.50	180.80	5,825.0	-2,874.4	24.2	2,874.5	3.37	3.23	0.97
8,556.0	92.40	180.60	5,824.0	-2,904.4	23.8	2,904.5	3.07	3.00	-0.67
8,587.0	91.10	179.90	5,823.0	-2,935.4	23.7	2,935.5	4.76	-4.19	-2.26
8,618.0	89.50	180.30	5,822.9	-2,966.4	23.6	2,966.5	5.32	-5.16	1.29
8,649.0	89.30	180.80	5,823.2	-2,997.4	23.3	2,997.5	1.74	-0.65	1.61
8,680.0	89.60	180.50	5,823.5	-3,028.4	22.9	3,028.5	1.37	0.97	-0.97
8,711.0	89.30	180.80	5,823.8	-3,059.4	22.6	3,059.4	1.37	-0.97	0.97
8,742.0	89.90	181.90	5,824.0	-3,090.4	21.9	3,090.4	4.04	1.94	3.55
8,772.0	90.90	183.10	5,823.8	-3,120.3	20.6	3,120.4	5.21	3.33	4.00
8,803.0	90.60	183.80	5,823.4	-3,151.3	18.7	3,151.3	2.46	-0.97	2.26
8,833.0	89.10	182.90	5,823.5	-3,181.2	16.9	3,181.2	5.83	-5.00	-3.00
8,864.0	88.00	182.00	5,824.3	-3,212.2	15.6	3,212.2	4.58	-3.55	-2.90
8,895.0	87.20	182.00	5,825.6	-3,243.1	14.5	3,243.1	2.58	-2.58	0.00
8,926.0	87.10	181.70	5,827.1	-3,274.1	13.5	3,274.1	1.02	-0.32	-0.97

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,957.0	87.10	180.60	5,828.7	-3,305.0	12.9	3,305.0	3.54	0.00	-3.55
8,987.0	87.80	179.60	5,830.0	-3,335.0	12.9	3,335.0	4.07	2.33	-3.33
9,018.0	87.80	180.30	5,831.2	-3,366.0	12.9	3,365.9	2.26	0.00	2.26
9,049.0	88.20	179.00	5,832.3	-3,397.0	13.1	3,396.9	4.39	1.29	-4.19
9,080.0	89.00	179.00	5,833.0	-3,428.0	13.6	3,427.9	2.58	2.58	0.00
9,111.0	90.60	178.20	5,833.1	-3,458.9	14.4	3,458.9	5.77	5.16	-2.58
9,142.0	91.30	178.20	5,832.6	-3,489.9	15.3	3,489.9	2.26	2.26	0.00
9,173.0	91.50	178.30	5,831.9	-3,520.9	16.3	3,520.9	0.72	0.65	0.32
9,204.0	91.30	178.20	5,831.1	-3,551.9	17.2	3,551.9	0.72	-0.65	-0.32
9,234.0	91.40	178.30	5,830.4	-3,581.9	18.2	3,581.8	0.47	0.33	0.33
9,265.0	91.40	178.30	5,829.7	-3,612.8	19.1	3,612.8	0.00	0.00	0.00
9,296.0	91.00	177.80	5,829.0	-3,643.8	20.1	3,643.8	2.07	-1.29	-1.61
9,327.0	90.60	177.10	5,828.6	-3,674.8	21.5	3,674.8	2.60	-1.29	-2.26
9,358.0	90.30	176.90	5,828.3	-3,705.7	23.1	3,705.8	1.16	-0.97	-0.65
9,388.0	91.00	177.10	5,828.0	-3,735.7	24.7	3,735.7	2.43	2.33	0.67
9,419.0	91.50	177.50	5,827.3	-3,766.6	26.2	3,766.7	2.07	1.61	1.29
9,450.0	91.60	178.70	5,826.5	-3,797.6	27.2	3,797.7	3.88	0.32	3.87
9,481.0	92.10	178.90	5,825.5	-3,828.6	27.8	3,828.7	1.74	1.61	0.65
9,512.0	92.40	179.70	5,824.3	-3,859.6	28.2	3,859.6	2.75	0.97	2.58
9,543.0	92.20	178.30	5,823.0	-3,890.5	28.8	3,890.6	4.56	-0.65	-4.52
9,574.0	92.00	177.80	5,821.9	-3,921.5	29.8	3,921.6	1.74	-0.65	-1.61
9,605.0	90.80	176.20	5,821.1	-3,952.4	31.4	3,952.6	6.45	-3.87	-5.16
9,636.0	91.20	175.40	5,820.6	-3,983.4	33.7	3,983.5	2.88	1.29	-2.58
9,667.0	90.80	175.00	5,820.0	-4,014.2	36.3	4,014.4	1.82	-1.29	-1.29
9,698.0	90.00	174.30	5,819.8	-4,045.1	39.2	4,045.3	3.43	-2.58	-2.26
9,727.0	89.60	174.00	5,819.9	-4,073.9	42.1	4,074.2	1.72	-1.38	-1.03
9,757.0	89.10	174.50	5,820.3	-4,103.8	45.1	4,104.0	2.36	-1.67	1.67
9,788.0	89.10	176.10	5,820.8	-4,134.7	47.7	4,135.0	5.16	0.00	5.16
9,818.0	88.40	176.10	5,821.4	-4,164.6	49.7	4,164.9	2.33	-2.33	0.00
9,848.0	88.60	176.10	5,822.2	-4,194.5	51.8	4,194.8	0.67	0.67	0.00
9,879.0	87.70	176.40	5,823.2	-4,225.4	53.8	4,225.8	3.06	-2.90	0.97
9,910.0	86.70	176.90	5,824.7	-4,256.4	55.6	4,256.7	3.61	-3.23	1.61
9,940.0	87.10	178.50	5,826.3	-4,286.3	56.8	4,286.6	5.49	1.33	5.33
9,971.0	87.90	179.00	5,827.7	-4,317.3	57.5	4,317.6	3.04	2.58	1.61
10,002.0	88.90	180.50	5,828.5	-4,348.2	57.6	4,348.6	5.81	3.23	4.84
10,032.0	89.50	181.90	5,829.0	-4,378.2	57.0	4,378.6	5.08	2.00	4.67
10,063.0	89.00	182.40	5,829.4	-4,409.2	55.8	4,409.5	2.28	-1.61	1.61
10,094.0	89.40	182.40	5,829.8	-4,440.2	54.5	4,440.5	1.29	1.29	0.00
10,125.0	90.00	181.90	5,830.0	-4,471.1	53.4	4,471.5	2.52	1.94	-1.61
10,155.0	90.80	181.70	5,829.8	-4,501.1	52.4	4,501.4	2.75	2.67	-0.67
10,186.0	90.70	181.20	5,829.4	-4,532.1	51.6	4,532.4	1.64	-0.32	-1.61
10,217.0	90.50	181.20	5,829.0	-4,563.1	51.0	4,563.4	0.65	-0.65	0.00
10,248.0	90.10	181.00	5,828.9	-4,594.1	50.4	4,594.4	1.44	-1.29	-0.65
10,278.0	91.10	180.50	5,828.5	-4,624.1	50.0	4,624.4	3.73	3.33	-1.67
10,309.0	91.50	180.50	5,827.8	-4,655.1	49.7	4,655.4	1.29	1.29	0.00
10,340.0	91.50	180.60	5,827.0	-4,686.1	49.4	4,686.3	0.32	0.00	0.32
10,371.0	91.50	180.50	5,826.2	-4,717.1	49.1	4,717.3	0.32	0.00	-0.32
10,401.0	91.20	179.40	5,825.5	-4,747.1	49.2	4,747.3	3.80	-1.00	-3.67
10,431.0	92.20	179.20	5,824.6	-4,777.0	49.5	4,777.3	3.40	3.33	-0.67
10,462.0	91.00	180.30	5,823.8	-4,808.0	49.7	4,808.3	5.25	-3.87	3.55
10,494.0	90.80	180.10	5,823.3	-4,840.0	49.6	4,840.3	0.88	-0.63	-0.63
10,525.0	91.00	180.10	5,822.8	-4,871.0	49.5	4,871.3	0.65	0.65	0.00
10,557.0	90.90	180.30	5,822.2	-4,903.0	49.4	4,903.3	0.70	-0.31	0.63
10,589.0	90.70	179.90	5,821.8	-4,935.0	49.3	4,935.3	1.40	-0.63	-1.25

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,620.0	90.80	179.80	5,821.4	-4,966.0	49.4	4,966.3	0.46	0.32	-0.32	
10,652.0	91.00	179.40	5,820.9	-4,998.0	49.6	4,998.3	1.40	0.63	-1.25	
10,684.0	90.80	179.00	5,820.4	-5,030.0	50.1	5,030.2	1.40	-0.63	-1.25	
10,715.0	90.40	178.30	5,820.1	-5,061.0	50.8	5,061.2	2.60	-1.29	-2.26	
10,747.0	90.00	177.60	5,819.9	-5,093.0	52.0	5,093.2	2.52	-1.25	-2.19	
10,779.0	89.70	178.30	5,820.0	-5,124.9	53.1	5,125.2	2.38	-0.94	2.19	
10,810.0	90.80	179.40	5,819.9	-5,155.9	53.7	5,156.2	5.02	3.55	3.55	
10,842.0	91.60	180.60	5,819.2	-5,187.9	53.7	5,188.2	4.51	2.50	3.75	
10,873.0	91.70	180.80	5,818.3	-5,218.9	53.3	5,219.2	0.72	0.32	0.65	
10,905.0	91.50	180.60	5,817.4	-5,250.9	53.0	5,251.2	0.88	-0.63	-0.63	
10,937.0	91.50	180.50	5,816.6	-5,282.9	52.6	5,283.2	0.31	0.00	-0.31	
10,969.0	91.30	179.90	5,815.8	-5,314.9	52.5	5,315.1	1.98	-0.63	-1.88	
11,000.0	91.40	180.10	5,815.1	-5,345.9	52.5	5,346.1	0.72	0.32	0.65	
11,032.0	91.40	180.10	5,814.3	-5,377.9	52.5	5,378.1	0.00	0.00	0.00	
11,063.0	91.20	179.80	5,813.6	-5,408.9	52.5	5,409.1	1.16	-0.65	-0.97	
11,095.0	91.20	179.80	5,812.9	-5,440.8	52.6	5,441.1	0.00	0.00	0.00	
11,127.0	91.00	179.60	5,812.3	-5,472.8	52.8	5,473.1	0.88	-0.63	-0.63	
11,158.0	91.00	179.40	5,811.8	-5,503.8	53.1	5,504.1	0.65	0.00	-0.65	
11,190.0	90.90	179.40	5,811.2	-5,535.8	53.4	5,536.1	0.31	-0.31	0.00	
11,221.0	90.70	179.20	5,810.8	-5,566.8	53.8	5,567.1	0.91	-0.65	-0.65	
11,253.0	90.20	178.70	5,810.6	-5,598.8	54.4	5,599.1	2.21	-1.56	-1.56	
11,285.0	89.60	178.20	5,810.6	-5,630.8	55.2	5,631.1	2.44	-1.88	-1.56	
11,316.0	89.40	177.60	5,810.9	-5,661.8	56.4	5,662.1	2.04	-0.65	-1.94	
11,348.0	89.80	177.80	5,811.1	-5,693.8	57.6	5,694.0	1.40	1.25	0.63	
11,380.0	90.20	179.00	5,811.1	-5,725.7	58.5	5,726.0	3.95	1.25	3.75	
11,411.0	90.40	179.40	5,811.0	-5,756.7	59.0	5,757.0	1.44	0.65	1.29	
11,443.0	90.40	179.00	5,810.7	-5,788.7	59.4	5,789.0	1.25	0.00	-1.25	
11,475.0	90.00	178.70	5,810.6	-5,820.7	60.1	5,821.0	1.56	-1.25	-0.94	
11,506.0	89.80	178.30	5,810.7	-5,851.7	60.9	5,852.0	1.44	-0.65	-1.29	
11,538.0	89.80	178.50	5,810.8	-5,883.7	61.8	5,884.0	0.62	0.00	0.63	
11,570.0	90.30	178.50	5,810.8	-5,915.7	62.6	5,916.0	1.56	1.56	0.00	
11,602.0	90.60	178.70	5,810.5	-5,947.7	63.4	5,948.0	1.13	0.94	0.63	
11,633.0	90.50	178.50	5,810.2	-5,978.7	64.1	5,979.0	0.72	-0.32	-0.65	
11,665.0	90.30	178.30	5,810.0	-6,010.7	65.0	6,011.0	0.88	-0.63	-0.63	
11,696.0	90.10	177.80	5,809.9	-6,041.6	66.1	6,042.0	1.74	-0.65	-1.61	
11,728.0	89.90	177.60	5,809.9	-6,073.6	67.4	6,074.0	0.88	-0.63	-0.63	
11,760.0	89.20	178.90	5,810.1	-6,105.6	68.3	6,106.0	4.61	-2.19	4.06	
11,791.0	89.20	179.20	5,810.6	-6,136.6	68.9	6,137.0	0.97	0.00	0.97	
11,822.0	89.00	178.90	5,811.0	-6,167.6	69.4	6,168.0	1.16	-0.65	-0.97	
11,854.0	88.70	178.70	5,811.7	-6,199.6	70.0	6,200.0	1.13	-0.94	-0.63	
11,886.0	88.80	178.30	5,812.4	-6,231.5	70.9	6,231.9	1.29	0.31	-1.25	
11,917.0	88.30	179.20	5,813.2	-6,262.5	71.6	6,262.9	3.32	-1.61	2.90	
11,948.0	88.00	179.40	5,814.2	-6,293.5	71.9	6,293.9	1.16	-0.97	0.65	
11,979.0	88.60	180.30	5,815.1	-6,324.5	72.0	6,324.9	3.49	1.94	2.90	
12,011.0	88.40	181.30	5,815.9	-6,356.5	71.6	6,356.9	3.19	-0.63	3.13	
12,042.0	88.50	182.60	5,816.8	-6,387.5	70.5	6,387.8	4.20	0.32	4.19	
12,074.0	89.80	182.90	5,817.2	-6,419.4	69.0	6,419.8	4.17	4.06	0.94	
12,106.0	91.00	182.60	5,817.0	-6,451.4	67.4	6,451.7	3.87	3.75	-0.94	
12,137.0	91.90	182.40	5,816.2	-6,482.3	66.1	6,482.7	2.97	2.90	-0.65	
12,169.0	91.70	182.40	5,815.2	-6,514.3	64.8	6,514.6	0.63	-0.63	0.00	
12,201.0	91.50	181.90	5,814.3	-6,546.3	63.6	6,546.6	1.68	-0.63	-1.56	
12,233.0	91.40	182.00	5,813.5	-6,578.2	62.5	6,578.5	0.44	-0.31	0.31	
12,264.0	91.30	181.90	5,812.8	-6,609.2	61.4	6,609.5	0.46	-0.32	-0.32	
12,296.0	91.60	181.30	5,812.0	-6,641.2	60.5	6,641.4	2.10	0.94	-1.88	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 22-2712H
Project:	SEC.22-T10N-R58W	TVD Reference:	WELL @ 4849.5ft (Original Well Elev)
Site:	Razor 22-2712H Pad Sec.22-T10N-R58W	MD Reference:	WELL @ 4849.5ft (Original Well Elev)
Well:	Razor 22-2712H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,328.0	91.40	181.20	5,811.1	-6,673.2	59.8	6,673.4	0.70	-0.63	-0.31	
12,360.0	91.40	181.00	5,810.4	-6,705.1	59.2	6,705.4	0.62	0.00	-0.63	
12,391.0	91.80	180.60	5,809.5	-6,736.1	58.8	6,736.4	1.82	1.29	-1.29	
12,423.0	91.90	179.80	5,808.5	-6,768.1	58.7	6,768.4	2.52	0.31	-2.50	
12,455.0	92.00	179.60	5,807.4	-6,800.1	58.8	6,800.3	0.70	0.31	-0.63	
12,486.0	92.00	179.40	5,806.3	-6,831.1	59.1	6,831.3	0.64	0.00	-0.65	
12,518.0	92.20	179.20	5,805.1	-6,863.0	59.5	6,863.3	0.88	0.63	-0.63	
12,568.0	92.20	179.20	5,803.2	-6,913.0	60.2	6,913.3	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
HARDLINE BHL 660'	0.00	0.00	1.0	-6,956.6	-671.4	1,542,577.95	3,453,655.59	40.811250	-103.861100	
- survey misses target center by 5848.3ft at 12568.0ft MD (5803.2 TVD, -6913.0 N, 60.2 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,542,577.95	3,453,655.59			
Point 2			1.0	0.0	1,200.0	1,542,600.16	3,454,855.39			
HARDLINE SHL 660'f	0.00	0.00	1.0	-330.0	-600.0	1,549,204.78	3,453,604.33	40.829438	-103.860843	
- survey misses target center by 684.8ft at 1.9ft MD (1.9 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,549,204.78	3,453,604.33			
Point 2			1.0	0.0	1,200.0	1,549,226.99	3,454,804.13			
BHL 1980'FNL, 660'F'	0.00	0.00	5,799.0	-6,943.5	71.4	1,542,604.75	3,454,398.05	40.811286	-103.858417	
- survey misses target center by 32.8ft at 12568.0ft MD (5803.2 TVD, -6913.0 N, 60.2 E)										
- Point										
WP 2	0.00	0.00	5,814.0	-5,146.8	47.6	1,544,400.78	3,454,340.99	40.816218	-103.858503	
- survey misses target center by 8.5ft at 10800.7ft MD (5820.0 TVD, -5146.7 N, 53.6 E)										
- Point										
WP 1	0.00	0.00	5,829.0	-2,059.8	27.3	1,547,486.86	3,454,263.57	40.824690	-103.858576	
- survey misses target center by 4.7ft at 7711.1ft MD (5826.2 TVD, -2059.9 N, 31.0 E)										
- Point										

Checked By: _____ Approved By: _____ Date: _____