



# WHITING PETROLEUM CORP.

Project: Weld County, CO

Site: Sec 26-T10N-R58W

Well: Razor #26I-2347

Wellbore: Original Hole

Design: Original Hole



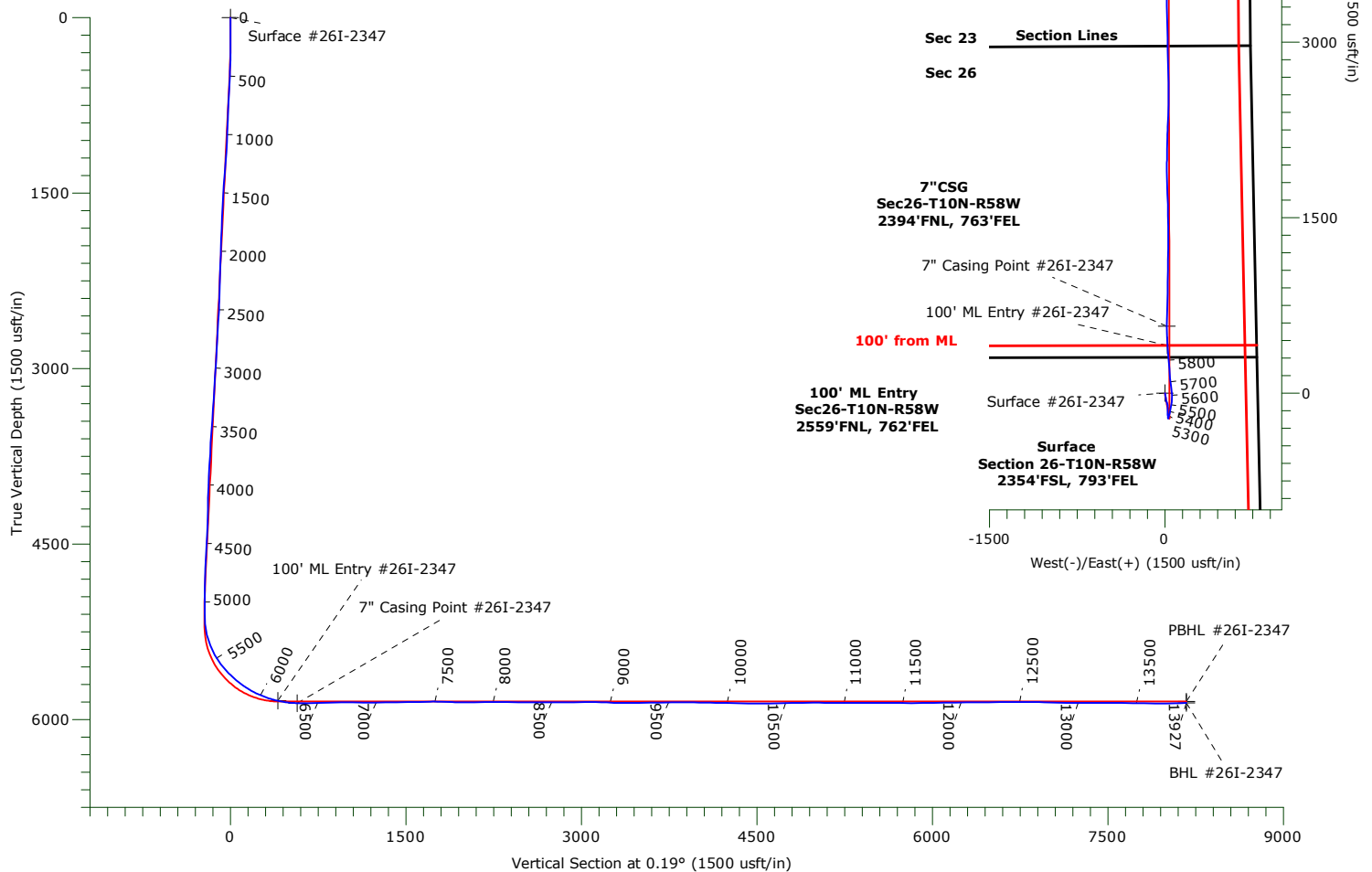
**Precision**  
Directional Services

		ANNOTATIONS			
TVD	MD	+N/-S	+E/-W	Annotation	
5838.75	6156.00	405.84	22.46	100' ML Entry	
5859.31	6323.00	571.09	17.38	7" Casing Point	

## LEGEND

- Razor #26I-2347, Original Hole, Plan #1 V0
- Original Hole

**MWD CORRECTION**  
**WILL BE PROVIDED BY MAGVAR**



## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Surface #26I-2347	0.00	0.00	0.00	1541879.87	3463537.00	40.808828°N	103.825458°W	Point
100' ML Entry #26I-2347	5838.75	405.84	22.46	1542286.07	3463551.79	40.809942°N	103.825377°W	Point
PBHL #26I-2347	5846.00	8173.37	26.91	1550052.29	3463409.57	40.831261°N	103.825361°W	Point
BHL #26I-2347	5858.15	8172.65	17.56	1550051.39	3463400.24	40.831259°N	103.825395°W	Point
7" Casing Point #26I-2347	5859.31	571.09	17.38	1542451.18	3463543.60	40.810395°N	103.825396°W	Point

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #26I-2347
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Site:</b>	Sec 26-T10N-R58W	<b>MD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Well:</b>	Razor #26I-2347	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Local Database

<b>Project</b>	Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Sec 26-T10N-R58W		
<b>Site Position:</b>		<b>Northing:</b>	1,541,850.52 usft
<b>From:</b>	Map	<b>Easting:</b>	3,463,537.56 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	40.808747°N
		<b>Longitude:</b>	103.825459°W
		<b>Grid Convergence:</b>	1.08 °

<b>Well</b>	Razor #26I-2347		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft
		<b>Latitude:</b>	40.808828°N
		<b>Longitude:</b>	103.825459°W
		<b>Ground Level:</b>	4,711.00 usft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	05/13/17	7.74	67.32	52,710

<b>Design</b>	Original Hole				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00		0.19

<b>Survey Program</b>	<b>Date</b>	06/01/17			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
225.00	13,870.00	Survey #1 (Original Hole)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag OWSG BLIND	
13,927.00	13,927.00	Survey #2 (Original Hole)	BLIND		

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
225.00	0.25	77.14	225.00	0.11	0.48	0.11	0.11	0.11	0.00	
318.00	0.34	63.67	318.00	0.28	0.92	0.28	0.12	0.10	-14.48	
410.00	1.62	155.56	409.99	-0.79	1.71	-0.78	1.81	1.39	99.88	
504.00	2.85	172.53	503.91	-4.31	2.56	-4.30	1.47	1.31	18.05	
597.00	2.56	174.33	596.81	-8.67	3.07	-8.66	0.32	-0.31	1.94	
690.00	2.59	169.64	689.72	-12.81	3.65	-12.79	0.23	0.03	-5.04	
783.00	2.43	169.85	782.63	-16.81	4.37	-16.80	0.17	-0.17	0.23	
876.00	2.34	171.01	875.55	-20.63	5.02	-20.61	0.11	-0.10	1.25	
969.00	2.40	167.73	968.47	-24.41	5.73	-24.39	0.16	0.06	-3.53	

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #26I-2347
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Site:</b>	Sec 26-T10N-R58W	<b>MD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Well:</b>	Razor #26I-2347	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Local Database

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,063.00	3.19	171.63	1,062.35	-28.92	6.53	-28.90	0.86	0.84	4.15
1,156.00	3.69	174.56	1,155.19	-34.46	7.19	-34.43	0.57	0.54	3.15
1,249.00	4.09	175.27	1,247.97	-40.74	7.75	-40.72	0.43	0.43	0.76
1,343.00	4.71	176.42	1,341.69	-47.93	8.26	-47.91	0.67	0.66	1.22
1,434.00	4.47	172.27	1,432.40	-55.18	8.97	-55.15	0.45	-0.26	-4.56
1,527.00	3.06	163.43	1,525.20	-61.15	10.17	-61.11	1.64	-1.52	-9.51
1,621.00	2.62	160.66	1,619.08	-65.58	11.60	-65.54	0.49	-0.47	-2.95
1,714.00	2.12	155.98	1,712.00	-69.16	13.00	-69.11	0.58	-0.54	-5.03
1,807.00	2.88	161.55	1,804.92	-72.94	14.44	-72.90	0.86	0.82	5.99
1,900.00	2.34	148.37	1,897.82	-76.78	16.17	-76.72	0.86	-0.58	-14.17
1,993.00	1.88	172.76	1,990.76	-79.91	17.36	-79.85	1.07	-0.49	26.23
2,032.00	2.05	170.62	2,029.74	-81.23	17.56	-81.17	0.47	0.44	-5.49
2,123.00	2.02	162.88	2,120.68	-84.37	18.29	-84.31	0.30	-0.03	-8.51
2,218.00	1.84	161.70	2,215.62	-87.42	19.27	-87.35	0.19	-0.19	-1.24
2,313.00	1.87	168.74	2,310.57	-90.39	20.05	-90.32	0.24	0.03	7.41
2,408.00	1.71	153.72	2,405.53	-93.18	20.98	-93.11	0.52	-0.17	-15.81
2,502.00	3.29	171.53	2,499.44	-97.10	22.00	-97.03	1.85	1.68	18.95
2,597.00	3.43	176.73	2,594.27	-102.64	22.56	-102.56	0.35	0.15	5.47
2,692.00	3.54	172.82	2,689.10	-108.38	23.09	-108.31	0.28	0.12	-4.12
2,787.00	3.25	170.00	2,783.93	-113.94	23.92	-113.86	0.35	-0.31	-2.97
2,881.00	3.02	172.42	2,877.79	-119.02	24.71	-118.94	0.28	-0.24	2.57
2,976.00	3.05	181.59	2,972.66	-124.03	24.97	-123.95	0.51	0.03	9.65
3,071.00	3.57	185.89	3,067.50	-129.50	24.60	-129.42	0.61	0.55	4.53
3,166.00	3.64	189.92	3,162.31	-135.41	23.78	-135.33	0.28	0.07	4.24
3,261.00	3.55	191.22	3,257.13	-141.27	22.68	-141.19	0.13	-0.09	1.37
3,355.00	4.20	170.41	3,350.91	-147.52	22.69	-147.44	1.64	0.69	-22.14
3,450.00	4.14	167.53	3,445.66	-154.29	24.01	-154.21	0.23	-0.06	-3.03
3,544.00	3.86	177.48	3,539.44	-160.77	24.88	-160.69	0.79	-0.30	10.59
3,639.00	3.40	178.30	3,634.24	-166.78	25.11	-166.70	0.49	-0.48	0.86
3,734.00	3.56	181.83	3,729.07	-172.54	25.10	-172.46	0.28	0.17	3.72
3,828.00	2.74	177.64	3,822.93	-177.70	25.10	-177.62	0.91	-0.87	-4.46
3,923.00	2.39	185.08	3,917.83	-181.95	25.01	-181.86	0.51	-0.37	7.83
4,018.00	2.19	189.47	4,012.76	-185.71	24.54	-185.63	0.28	-0.21	4.62
4,112.00	2.34	153.21	4,106.69	-189.19	25.11	-189.11	1.51	0.16	-38.57
4,207.00	1.74	133.21	4,201.63	-191.91	27.03	-191.82	0.97	-0.63	-21.05
4,302.00	1.25	180.09	4,296.60	-193.94	28.08	-193.84	1.34	-0.52	49.35
4,325.00	1.33	174.91	4,319.59	-194.45	28.11	-194.36	0.61	0.35	-22.52
4,430.00	2.98	194.44	4,424.52	-198.31	27.53	-198.22	1.70	1.57	18.60
4,525.00	3.35	185.03	4,519.37	-203.47	26.68	-203.38	0.67	0.39	-9.91
4,620.00	3.03	169.38	4,614.23	-208.70	26.89	-208.61	0.97	-0.34	-16.47
4,714.00	2.24	172.89	4,708.13	-212.97	27.58	-212.87	0.86	-0.84	3.73
4,809.00	1.47	168.82	4,803.08	-216.00	28.05	-215.91	0.82	-0.81	-4.28
4,904.00	1.39	141.08	4,898.05	-218.10	29.01	-218.00	0.73	-0.08	-29.20

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #26I-2347
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Site:</b>	Sec 26-T10N-R58W	<b>MD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Well:</b>	Razor #26I-2347	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Local Database

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,998.00	0.22	300.25	4,992.04	-218.89	29.57	-218.79	1.70	-1.24	169.33
5,093.00	0.28	68.77	5,087.04	-218.72	29.63	-218.62	0.47	0.06	135.28
5,188.00	4.56	10.40	5,181.93	-214.92	30.52	-214.81	4.65	4.51	-61.44
5,282.00	13.67	13.65	5,274.65	-200.42	33.83	-200.30	9.70	9.69	3.46
5,377.00	21.99	15.03	5,365.01	-172.28	41.10	-172.14	8.77	8.76	1.45
5,471.00	29.89	12.60	5,449.47	-132.36	50.79	-132.19	8.48	8.40	-2.59
5,566.00	38.05	6.23	5,528.22	-80.05	59.15	-79.85	9.36	8.59	-6.71
5,661.00	44.27	356.02	5,599.79	-17.74	60.02	-17.54	9.62	6.55	-10.75
5,756.00	49.96	352.74	5,664.42	51.48	53.12	51.66	6.50	5.99	-3.45
5,850.00	56.34	354.50	5,720.77	126.20	44.82	126.34	6.95	6.79	1.87
5,945.00	63.60	355.74	5,768.28	208.09	37.86	208.21	7.72	7.64	1.31
6,039.00	69.71	355.76	5,805.51	294.12	31.46	294.22	6.50	6.50	0.02
6,134.00	75.85	355.05	5,833.62	384.52	24.19	384.60	6.50	6.46	-0.75
6,156.00	77.17	355.68	5,838.75	405.85	22.46	405.92	6.62	6.01	2.84
<b>100' ML Entry</b>									
6,228.00	81.51	357.68	5,852.07	476.46	18.37	476.52	6.62	6.02	2.78
6,323.00	89.74	1.11	5,859.31	571.09	17.38	571.14	9.38	8.66	3.61
<b>7" Casing Point</b>									
6,417.00	90.27	1.53	5,859.30	665.06	19.55	665.12	0.72	0.56	0.45
6,512.00	90.95	1.16	5,858.29	760.03	21.78	760.10	0.81	0.72	-0.39
6,607.00	92.02	1.01	5,855.83	854.98	23.58	855.05	1.14	1.13	-0.16
6,702.00	90.41	1.20	5,853.82	949.94	25.41	950.01	1.71	-1.69	0.20
6,797.00	89.83	0.74	5,853.62	1,044.92	27.02	1,045.01	0.78	-0.61	-0.48
6,891.00	89.02	0.84	5,854.56	1,138.91	28.31	1,138.99	0.87	-0.86	0.11
6,986.00	90.45	0.13	5,855.00	1,233.90	29.12	1,233.99	1.68	1.51	-0.75
7,081.00	91.43	359.93	5,853.44	1,328.89	29.17	1,328.97	1.05	1.03	-0.21
7,175.00	90.47	0.01	5,851.88	1,422.87	29.12	1,422.96	1.02	-1.02	0.09
7,270.00	90.88	358.91	5,850.76	1,517.86	28.22	1,517.94	1.24	0.43	-1.16
7,365.00	91.58	357.84	5,848.73	1,612.80	25.53	1,612.87	1.35	0.74	-1.13
7,459.00	90.48	358.39	5,847.04	1,706.73	22.44	1,706.79	1.31	-1.17	0.59
7,554.00	88.36	358.01	5,848.00	1,801.67	19.46	1,801.73	2.27	-2.23	-0.40
7,649.00	87.94	359.46	5,851.06	1,896.60	17.36	1,896.64	1.59	-0.44	1.53
7,743.00	90.23	1.55	5,852.57	1,990.57	18.19	1,990.62	3.30	2.44	2.22
7,838.00	90.70	0.83	5,851.79	2,085.54	20.16	2,085.60	0.91	0.49	-0.76
7,933.00	91.06	0.90	5,850.34	2,180.52	21.59	2,180.58	0.39	0.38	0.07
8,028.00	89.35	3.04	5,850.00	2,275.46	24.86	2,275.53	2.88	-1.80	2.25
8,122.00	89.22	1.91	5,851.17	2,369.36	28.92	2,369.44	1.21	-0.14	-1.20
8,217.00	88.84	1.20	5,852.78	2,464.31	31.50	2,464.40	0.85	-0.40	-0.75
8,311.00	89.84	0.15	5,853.86	2,558.30	32.60	2,558.39	1.54	1.06	-1.12
8,406.00	89.83	359.17	5,854.13	2,653.29	32.04	2,653.38	1.03	-0.01	-1.03
8,501.00	90.63	358.00	5,853.75	2,748.26	29.69	2,748.34	1.49	0.84	-1.23
8,595.00	90.70	357.19	5,852.66	2,842.17	25.75	2,842.24	0.86	0.07	-0.86
8,690.00	90.37	359.74	5,851.77	2,937.12	23.21	2,937.18	2.71	-0.35	2.68
8,785.00	91.40	359.91	5,850.31	3,032.11	22.92	3,032.17	1.10	1.08	0.18

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #26I-2347
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Site:</b>	Sec 26-T10N-R58W	<b>MD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Well:</b>	Razor #26I-2347	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Local Database

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,878.00	88.38	358.71	5,850.48	3,125.09	21.80	3,125.15	3.49	-3.25	-1.29
8,970.00	87.33	357.74	5,853.93	3,216.98	18.95	3,217.03	1.55	-1.14	-1.05
9,063.00	89.32	358.73	5,856.65	3,309.89	16.09	3,309.93	2.39	2.14	1.06
9,156.00	90.17	0.39	5,857.06	3,402.88	15.37	3,402.92	2.01	0.91	1.78
9,249.00	90.71	0.55	5,856.35	3,495.88	16.13	3,495.91	0.61	0.58	0.17
9,343.00	90.28	359.14	5,855.53	3,589.87	15.88	3,589.90	1.57	-0.46	-1.50
9,436.00	90.73	358.96	5,854.71	3,682.85	14.34	3,682.88	0.52	0.48	-0.19
9,528.00	90.78	0.69	5,853.50	3,774.84	14.06	3,774.87	1.88	0.05	1.88
9,622.00	89.51	1.93	5,853.26	3,868.81	16.21	3,868.85	1.89	-1.35	1.32
9,715.00	89.04	359.84	5,854.44	3,961.79	17.64	3,961.83	2.30	-0.51	-2.25
9,808.00	90.13	0.60	5,855.11	4,054.78	18.00	4,054.82	1.43	1.17	0.82
9,902.00	88.35	0.28	5,856.36	4,148.77	18.72	4,148.81	1.92	-1.89	-0.34
9,995.00	88.60	359.39	5,858.84	4,241.73	18.45	4,241.77	0.99	0.27	-0.96
10,088.00	89.05	357.90	5,860.74	4,334.69	16.26	4,334.72	1.67	0.48	-1.60
10,180.00	89.15	359.16	5,862.19	4,426.64	13.90	4,426.66	1.37	0.11	1.37
10,273.00	89.39	0.18	5,863.37	4,519.63	13.36	4,519.65	1.13	0.26	1.10
10,366.00	91.25	1.14	5,862.85	4,612.62	14.43	4,612.64	2.25	2.00	1.03
10,459.00	92.30	0.99	5,859.97	4,705.56	16.16	4,705.59	1.14	1.13	-0.16
10,552.00	90.69	1.27	5,857.55	4,798.50	17.99	4,798.54	1.76	-1.73	0.30
10,645.00	90.96	0.79	5,856.21	4,891.48	19.66	4,891.52	0.59	0.29	-0.52
10,739.00	90.14	1.51	5,855.31	4,985.46	21.55	4,985.50	1.16	-0.87	0.77
10,832.00	89.00	1.12	5,856.00	5,078.43	23.68	5,078.48	1.30	-1.23	-0.42
10,924.00	89.02	0.44	5,857.59	5,170.40	24.94	5,170.46	0.74	0.02	-0.74
11,018.00	90.09	0.31	5,858.32	5,264.40	25.55	5,264.45	1.15	1.14	-0.14
11,110.00	90.52	359.37	5,857.83	5,356.39	25.30	5,356.45	1.12	0.47	-1.02
11,203.00	90.84	358.33	5,856.73	5,449.37	23.43	5,449.42	1.17	0.34	-1.12
11,296.00	89.35	359.49	5,856.58	5,542.35	21.66	5,542.39	2.03	-1.60	1.25
11,389.00	89.12	359.01	5,857.82	5,635.33	20.44	5,635.37	0.57	-0.25	-0.52
11,482.00	89.48	358.49	5,858.95	5,728.30	18.41	5,728.33	0.68	0.39	-0.56
11,576.00	90.24	359.17	5,859.18	5,822.28	16.49	5,822.30	1.08	0.81	0.72
11,670.00	90.46	358.33	5,858.61	5,916.25	14.44	5,916.27	0.92	0.23	-0.89
11,765.00	90.90	357.70	5,857.48	6,011.19	11.15	6,011.19	0.81	0.46	-0.66
11,860.00	90.96	0.79	5,855.94	6,106.16	9.90	6,106.16	3.25	0.06	3.25
11,954.00	90.78	0.06	5,854.51	6,200.14	10.60	6,200.14	0.80	-0.19	-0.78
12,049.00	89.85	0.21	5,853.99	6,295.14	10.82	6,295.14	0.99	-0.98	0.16
12,144.00	90.62	0.89	5,853.60	6,390.13	11.74	6,390.14	1.08	0.81	0.72
12,239.00	90.93	0.06	5,852.32	6,485.12	12.52	6,485.13	0.93	0.33	-0.87
12,333.00	91.05	359.72	5,850.69	6,579.11	12.34	6,579.11	0.38	0.13	-0.36
12,427.00	89.85	359.42	5,849.95	6,673.10	11.64	6,673.10	1.32	-1.28	-0.32
12,522.00	89.39	2.11	5,850.58	6,768.08	12.90	6,768.09	2.87	-0.48	2.83
12,617.00	89.96	1.54	5,851.12	6,863.03	15.93	6,863.04	0.85	0.60	-0.60
12,712.00	88.57	2.09	5,852.34	6,957.97	18.94	6,958.00	1.57	-1.46	0.58
12,807.00	88.52	0.54	5,854.75	7,052.91	21.12	7,052.94	1.63	-0.05	-1.63

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #26I-2347
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Site:</b>	Sec 26-T10N-R58W	<b>MD Reference:</b>	4711'GL+21'KB @ 4732.00usft (Unit 406)
<b>Well:</b>	Razor #26I-2347	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Local Database

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,901.00	88.15	359.73	5,857.48	7,146.87	21.34	7,146.90	0.95	-0.39	-0.86
12,996.00	90.07	0.66	5,858.96	7,241.85	21.66	7,241.89	2.25	2.02	0.98
13,091.00	90.65	0.29	5,858.36	7,336.85	22.45	7,336.88	0.72	0.61	-0.39
13,185.00	91.35	359.62	5,856.72	7,430.83	22.38	7,430.87	1.03	0.74	-0.71
13,280.00	88.85	359.94	5,856.56	7,525.82	22.01	7,525.86	2.65	-2.63	0.34
13,375.00	88.87	359.54	5,858.45	7,620.80	21.58	7,620.83	0.42	0.02	-0.42
13,470.00	88.96	359.04	5,860.25	7,715.78	20.40	7,715.81	0.53	0.09	-0.53
13,564.00	89.09	358.40	5,861.85	7,809.74	18.30	7,809.76	0.69	0.14	-0.68
13,659.00	89.49	0.66	5,863.02	7,904.73	17.53	7,904.74	2.42	0.42	2.38
13,754.00	90.70	0.34	5,862.87	7,999.72	18.35	7,999.74	1.32	1.27	-0.34
13,848.00	91.78	359.47	5,860.83	8,093.70	18.20	8,093.71	1.48	1.15	-0.93
13,870.00	91.97	359.55	5,860.11	8,115.68	18.01	8,115.70	0.94	0.86	0.36
13,927.00	91.97	359.55	5,858.15	8,172.65	17.56	8,172.66	0.00	0.00	0.00

### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Surface #26I-2347 - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,541,879.87	3,463,537.00	40.808828°N	103.825459°W
100' ML Entry #26I-23 - actual wellpath hits target center - Point	0.00	0.00	5,838.75	405.85	22.46	1,542,286.07	3,463,551.79	40.809942°N	103.825377°W
PBHL #26I-2347 - actual wellpath misses target center by 15.35usft at 13927.00usft MD (5858.15 TVD, 8172.65 N, 17.56 E) - Point	0.00	0.00	5,846.00	8,173.37	26.91	1,550,052.30	3,463,409.57	40.831261°N	103.825361°W
BHL #26I-2347 - actual wellpath hits target center - Point	0.00	0.00	5,858.15	8,172.65	17.56	1,550,051.40	3,463,400.23	40.831259°N	103.825395°W
7" Casing Point #26I-23 - actual wellpath hits target center - Point	0.00	0.00	5,859.31	571.09	17.38	1,542,451.19	3,463,543.60	40.810395°N	103.825396°W

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
6,156.00	5,838.75	405.85	100' ML Entry
6,323.00	5,859.31	571.09	7" Casing Point