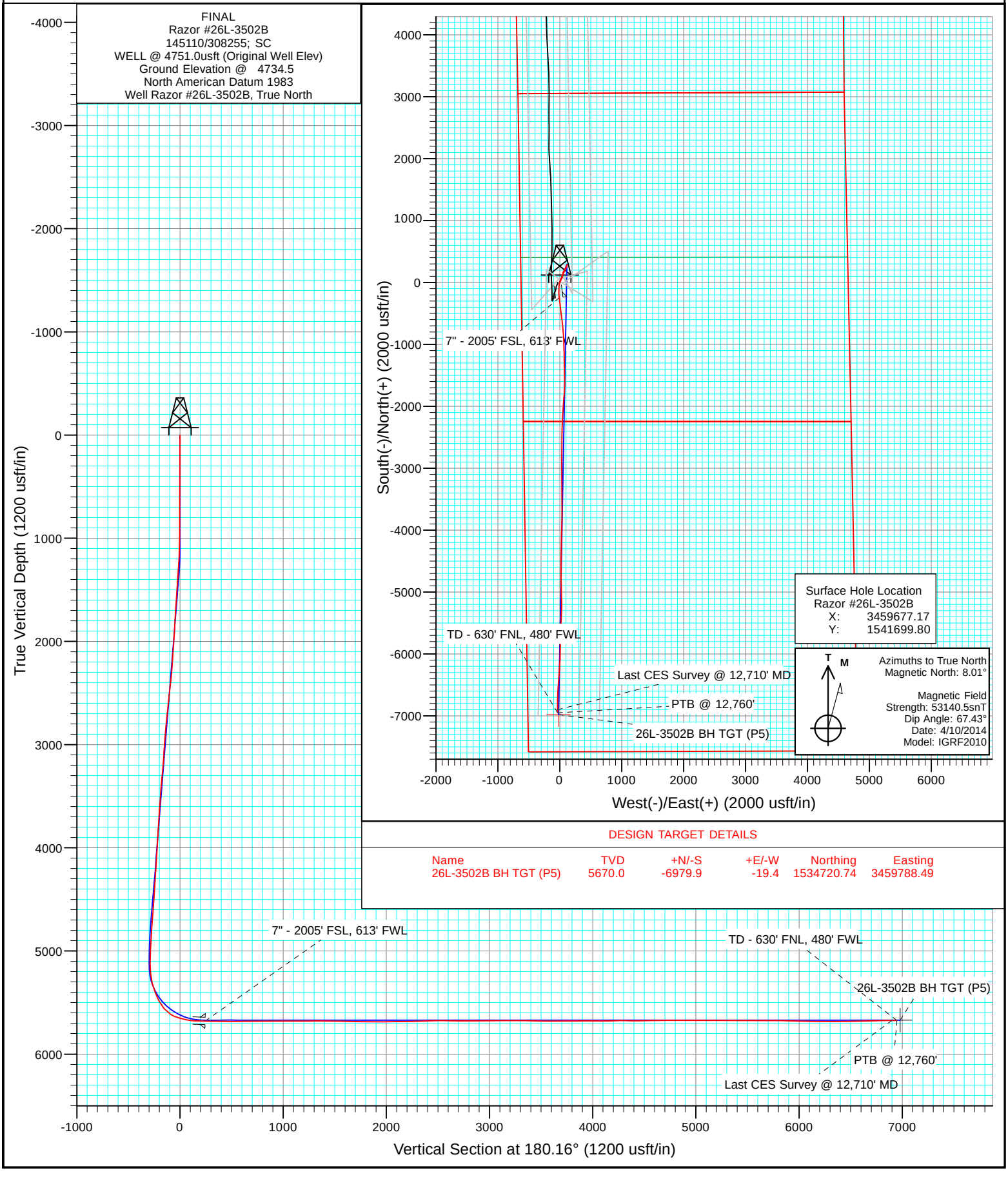
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor #26L-3502B
Wellbore: HZ
Design: FINAL

CATHEDRAL

FINAL
Razor #26L-3502B
145110/308255; SC
WELL @ 4751.0usft (Original Well Elev)
Ground Elevation @ 4734.5
North American Datum 1983
Well Razor #26L-3502B, True North



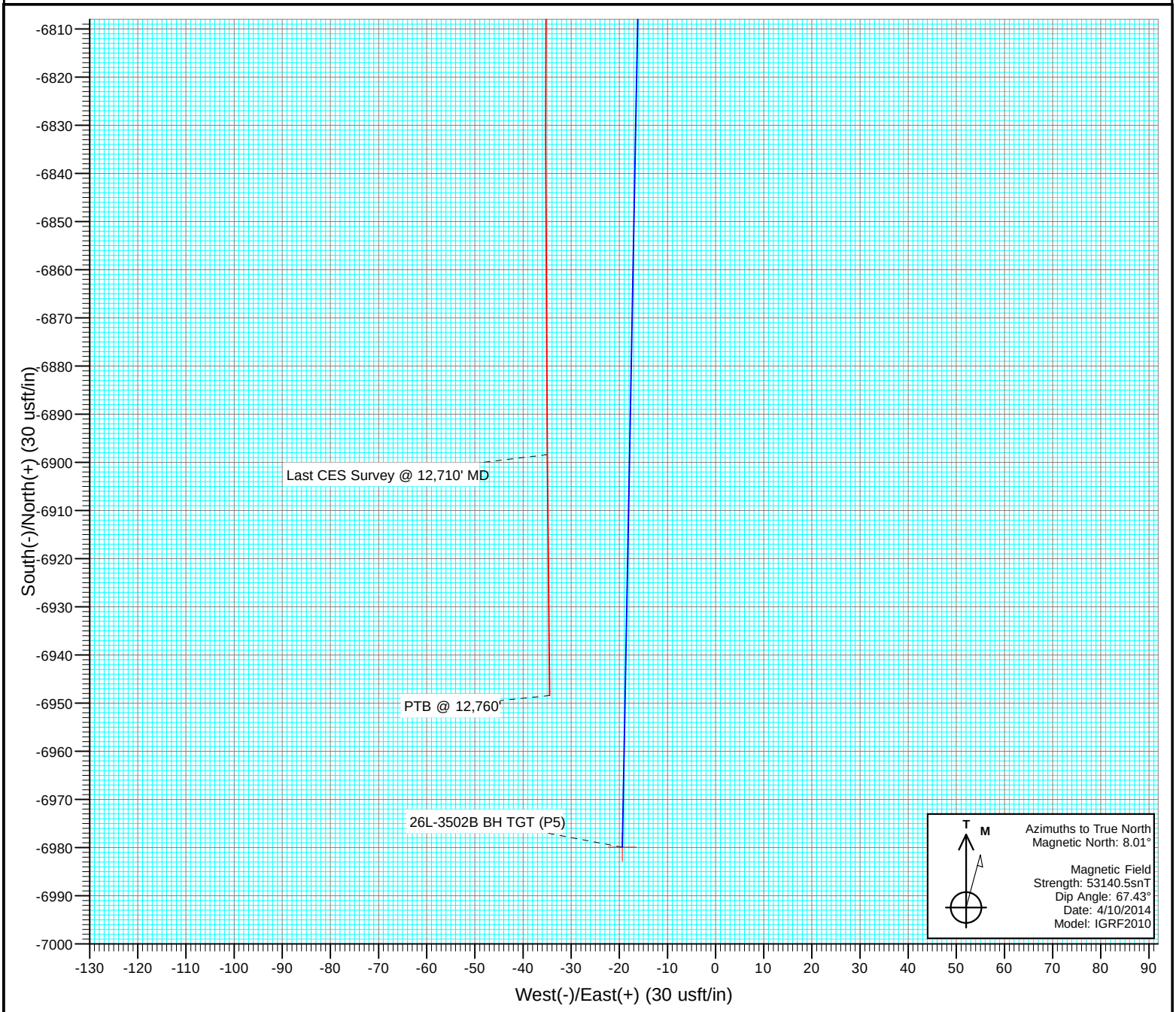
DESIGN TARGET DETAILS

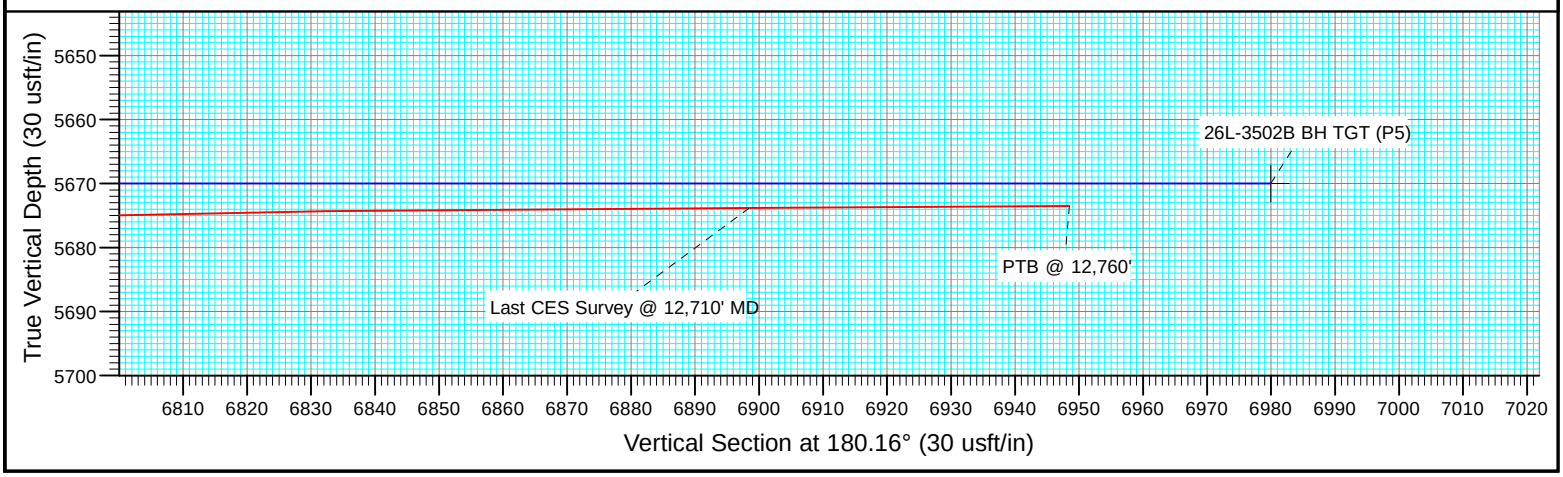
Name	TVD	+N/-S	+E/-W	Northing	Easting
26L-3502B BH TGT (P5)	5670.0	-6979.9	-19.4	1534720.74	3459788.49

WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S26-T10N-R58W
Well: Razor #26L-3502B
Wellbore: HZ
Design: FINAL

CATHEDRAL





Survey Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

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 S26-T10N-R58W

Site Position:		**Northing:**	1,541,774.28 usft	**Latitude:**	40.808739
From:	Lat/Long	**Easting:**	3,459,642.55 usft	**Longitude:**	-103.839531
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	1.07 °

Well Razor #26L-3502B

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,541,699.80 usft	**Latitude:**	40.808533
	+E/-W	0.0 usft	**Easting:**	3,459,677.17 usft	**Longitude:**	-103.839411
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,734.5 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/10/2014	8.00	67.43	53,141

Design FINAL

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.16

Survey Program **Date** 5/2/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
507.0	12,760.0	Survey #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf	Build Rate (°/100u	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
507.0	0.44	346.16	507.0	1.9	-0.5	-1.9	0.09	0.09	
965.0	0.53	92.03	965.0	3.5	1.2	-3.5	0.17	0.02	
1,056.0	1.14	17.97	1,056.0	4.4	1.9	-4.4	1.23	0.67	
1,148.0	2.64	24.56	1,147.9	7.2	3.1	-7.2	1.64	1.63	
1,239.0	4.44	23.45	1,238.7	12.3	5.4	-12.3	1.98	1.98	
1,740.0	4.04	29.32	1,738.4	45.5	21.7	-45.5	0.12	-0.08	
1,853.0	3.08	24.53	1,851.2	51.7	24.9	-51.8	0.89	-0.85	
1,944.0	3.43	24.17	1,942.0	56.4	27.1	-56.5	0.39	0.38	
2,036.0	5.14	28.43	2,033.7	62.6	30.2	-62.6	1.89	1.86	
2,127.0	4.35	23.65	2,124.4	69.3	33.5	-69.4	0.97	-0.87	
2,219.0	3.74	25.12	2,216.2	75.2	36.2	-75.3	0.67	-0.66	
2,310.0	5.32	24.72	2,306.9	81.7	39.2	-81.8	1.74	1.74	

Survey Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf	Build Rate (°/100u	Formations / Comments
2,402.0	6.77	15.94	2,398.4	90.8	42.5	-90.9	1.86	1.58	
2,493.0	6.64	14.07	2,488.8	101.1	45.2	-101.2	0.28	-0.14	
2,584.0	6.42	11.42	2,579.2	111.2	47.5	-111.3	0.41	-0.24	
2,676.0	5.89	10.94	2,670.7	120.9	49.4	-121.0	0.58	-0.58	
2,767.0	5.41	8.39	2,761.2	129.7	50.9	-129.8	0.60	-0.53	
2,858.0	5.98	14.90	2,851.8	138.5	52.8	-138.7	0.95	0.63	
2,950.0	4.57	3.93	2,943.4	146.8	54.2	-146.9	1.88	-1.53	
3,041.0	3.03	352.19	3,034.2	152.8	54.2	-152.9	1.89	-1.69	
3,133.0	4.09	0.95	3,126.0	158.5	53.9	-158.6	1.29	1.15	
3,225.0	5.10	11.56	3,217.7	165.8	54.8	-165.9	1.43	1.10	
3,316.0	5.19	30.32	3,308.3	173.3	57.7	-173.4	1.84	0.10	
3,408.0	5.54	33.16	3,399.9	180.6	62.2	-180.8	0.48	0.38	
3,499.0	5.58	31.22	3,490.5	188.1	66.9	-188.2	0.21	0.04	
3,590.0	5.23	34.56	3,581.1	195.3	71.5	-195.5	0.52	-0.38	
3,682.0	4.88	30.59	3,672.8	202.1	75.9	-202.3	0.54	-0.38	
3,773.0	4.31	33.47	3,763.5	208.3	79.7	-208.5	0.68	-0.63	
3,864.0	2.99	41.13	3,854.3	212.9	83.2	-213.1	1.54	-1.45	
3,956.0	3.96	31.47	3,946.1	217.4	86.4	-217.7	1.23	1.05	
4,048.0	3.43	29.24	4,037.9	222.5	89.4	-222.8	0.60	-0.58	
4,139.0	4.44	20.19	4,128.7	228.2	92.0	-228.5	1.30	1.11	
4,231.0	5.05	30.37	4,220.4	235.0	95.3	-235.3	1.13	0.66	
4,323.0	3.43	29.08	4,312.1	240.9	98.6	-241.2	1.76	-1.76	
4,414.0	3.82	30.36	4,402.9	245.9	101.5	-246.2	0.44	0.43	
4,506.0	5.63	41.27	4,494.6	252.0	106.0	-252.3	2.19	1.97	
4,597.0	5.67	26.34	4,585.2	259.4	111.0	-259.7	1.61	0.04	
4,688.0	4.57	17.20	4,675.8	266.9	114.0	-267.2	1.50	-1.21	
4,780.0	3.78	13.11	4,767.6	273.3	115.8	-273.6	0.92	-0.86	
4,871.0	2.99	4.61	4,858.4	278.6	116.7	-278.9	1.03	-0.87	
4,963.0	2.59	3.34	4,950.3	283.1	117.0	-283.4	0.44	-0.43	
5,055.0	2.55	2.10	5,042.2	287.2	117.2	-287.5	0.07	-0.04	
5,146.0	0.62	6.96	5,133.2	289.7	117.3	-290.0	2.12	-2.12	
5,237.0	7.38	188.22	5,224.0	284.4	116.5	-284.7	8.79	7.43	
5,328.0	14.51	197.43	5,313.2	267.7	112.3	-268.0	8.04	7.84	
5,419.0	21.85	202.59	5,399.6	241.2	102.3	-241.4	8.25	8.07	
5,510.0	30.15	204.63	5,481.4	204.7	86.3	-204.9	9.17	9.12	
5,603.0	42.33	206.07	5,556.2	155.1	62.7	-155.3	13.13	13.10	
5,695.0	59.56	204.14	5,614.0	90.6	32.6	-90.7	18.80	18.73	
5,726.0	66.55	202.59	5,628.0	65.3	21.7	-65.3	22.98	22.55	
5,756.0	70.95	200.16	5,638.9	39.2	11.5	-39.3	16.49	14.67	
5,786.0	73.70	197.84	5,648.0	12.2	2.2	-12.2	11.76	9.17	
5,817.0	75.70	192.53	5,656.2	-16.6	-5.6	16.6	17.74	6.45	
5,846.0	76.88	186.76	5,663.1	-44.4	-10.3	44.4	19.75	4.07	
5,876.0	78.99	182.82	5,669.4	-73.6	-12.8	73.7	14.64	7.03	
5,907.0	83.21	181.42	5,674.1	-104.2	-13.9	104.3	14.33	13.61	
5,937.0	87.56	181.06	5,676.6	-134.1	-14.5	134.1	14.55	14.50	
5,968.0	89.23	178.71	5,677.4	-165.1	-14.5	165.1	9.30	5.39	
6,008.0	88.97	174.23	5,678.1	-205.0	-12.0	205.0	11.22	-0.65	
6,084.0	88.22	172.23	5,679.9	-280.4	-3.1	280.4	2.81	-0.99	
6,179.0	88.70	173.23	5,682.5	-374.6	9.0	374.6	1.17	0.51	
6,274.0	90.59	173.56	5,683.1	-469.0	19.9	468.9	2.02	1.99	
6,369.0	90.64	173.32	5,682.0	-563.4	30.7	563.3	0.26	0.05	
6,464.0	90.37	172.86	5,681.2	-657.7	42.2	657.6	0.56	-0.28	
6,558.0	90.20	174.62	5,680.7	-751.1	52.4	751.0	1.88	-0.18	

Survey Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf	Build Rate (°/100u	Formations / Comments
6,653.0	89.71	176.69	5,680.8	-845.8	59.6	845.7	2.24	-0.52	
6,748.0	90.73	177.99	5,680.4	-940.7	64.0	940.6	1.74	1.07	
6,843.0	90.15	177.24	5,679.7	-1,035.6	68.0	1,035.5	1.00	-0.61	
6,937.0	90.33	180.03	5,679.3	-1,129.6	70.2	1,129.4	2.97	0.19	
7,032.0	89.71	178.92	5,679.3	-1,224.6	71.1	1,224.4	1.34	-0.65	
7,127.0	90.11	179.02	5,679.4	-1,319.6	72.8	1,319.4	0.43	0.42	
7,222.0	89.80	178.34	5,679.5	-1,414.6	75.0	1,414.3	0.79	-0.33	
7,317.0	89.80	178.06	5,679.8	-1,509.5	78.0	1,509.3	0.29	0.00	
7,412.0	88.22	179.08	5,681.5	-1,604.5	80.3	1,604.2	1.98	-1.66	
7,507.0	88.18	182.85	5,684.5	-1,699.4	78.7	1,699.2	3.97	-0.04	
7,602.0	89.01	184.32	5,686.8	-1,794.2	72.8	1,794.0	1.78	0.87	
7,694.0	90.86	184.43	5,686.9	-1,885.9	65.8	1,885.7	2.01	2.01	
7,787.0	90.73	184.00	5,685.6	-1,978.6	58.9	1,978.5	0.48	-0.14	
7,879.0	90.59	183.75	5,684.6	-2,070.4	52.7	2,070.3	0.31	-0.15	
7,972.0	90.86	183.03	5,683.4	-2,163.3	47.2	2,163.1	0.83	0.29	
8,064.0	91.34	183.32	5,681.6	-2,255.1	42.1	2,255.0	0.61	0.52	
8,156.0	91.43	180.94	5,679.4	-2,347.0	38.7	2,346.9	2.59	0.10	
8,248.0	92.09	181.04	5,676.6	-2,438.9	37.1	2,438.8	0.73	0.72	
8,339.0	89.23	180.89	5,675.5	-2,529.9	35.6	2,529.8	3.15	-3.14	
8,431.0	89.49	180.75	5,676.5	-2,621.9	34.3	2,621.8	0.32	0.28	
8,522.0	89.71	180.32	5,677.2	-2,712.9	33.4	2,712.8	0.53	0.24	
8,613.0	90.02	180.27	5,677.4	-2,803.9	33.0	2,803.8	0.35	0.34	
8,705.0	90.33	180.58	5,677.1	-2,895.9	32.3	2,895.8	0.48	0.34	
8,796.0	91.08	180.38	5,676.0	-2,986.9	31.5	2,986.8	0.85	0.82	
8,888.0	90.20	179.46	5,675.0	-3,078.9	31.6	3,078.8	1.38	-0.96	
8,979.0	89.71	179.34	5,675.0	-3,169.9	32.6	3,169.8	0.55	-0.54	
9,071.0	89.63	179.57	5,675.6	-3,261.9	33.5	3,261.7	0.26	-0.09	
9,162.0	89.49	179.44	5,676.3	-3,352.8	34.3	3,352.7	0.21	-0.15	
9,253.0	88.92	179.13	5,677.5	-3,443.8	35.4	3,443.7	0.71	-0.63	
9,345.0	88.53	179.50	5,679.6	-3,535.8	36.5	3,535.7	0.58	-0.42	
9,436.0	90.73	179.93	5,680.2	-3,626.8	36.9	3,626.7	2.46	2.42	
9,527.0	90.77	179.79	5,679.0	-3,717.8	37.2	3,717.7	0.16	0.04	
9,619.0	90.24	179.36	5,678.2	-3,809.8	37.9	3,809.7	0.74	-0.58	
9,711.0	90.20	181.87	5,677.8	-3,901.8	36.9	3,901.6	2.73	-0.04	
9,803.0	89.63	182.45	5,677.9	-3,993.7	33.4	3,993.6	0.88	-0.62	
9,894.0	89.49	182.49	5,678.6	-4,084.6	29.5	4,084.5	0.16	-0.15	
9,986.0	92.00	182.17	5,677.4	-4,176.5	25.7	4,176.4	2.75	2.73	
10,077.0	90.59	180.82	5,675.4	-4,267.5	23.4	4,267.4	2.14	-1.55	
10,168.0	89.01	179.72	5,675.7	-4,358.5	22.9	4,358.4	2.12	-1.74	
10,260.0	91.03	180.80	5,675.7	-4,450.4	22.5	4,450.4	2.49	2.20	
10,351.0	90.55	180.11	5,674.4	-4,541.4	21.8	4,541.4	0.92	-0.53	
10,442.0	90.42	179.80	5,673.7	-4,632.4	21.9	4,632.4	0.37	-0.14	
10,534.0	90.59	179.33	5,672.8	-4,724.4	22.6	4,724.3	0.54	0.18	
10,625.0	91.03	179.27	5,671.6	-4,815.4	23.7	4,815.3	0.49	0.48	
10,717.0	89.19	178.75	5,671.4	-4,907.4	25.3	4,907.3	2.08	-2.00	
10,809.0	89.05	178.28	5,672.8	-4,999.3	27.7	4,999.3	0.53	-0.15	
10,901.0	89.71	179.04	5,673.8	-5,091.3	29.8	5,091.2	1.09	0.72	
10,992.0	89.85	180.16	5,674.1	-5,182.3	30.4	5,182.2	1.24	0.15	
11,083.0	89.89	180.25	5,674.3	-5,273.3	30.1	5,273.2	0.11	0.04	
11,174.0	90.15	183.26	5,674.3	-5,364.3	27.3	5,364.2	3.32	0.29	
11,266.0	89.98	182.79	5,674.2	-5,456.1	22.5	5,456.0	0.54	-0.18	
11,358.0	89.89	182.01	5,674.3	-5,548.0	18.6	5,548.0	0.85	-0.10	
11,449.0	89.98	181.63	5,674.4	-5,639.0	15.7	5,638.9	0.43	0.10	

Survey Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf	Build Rate (°/100u	Formations / Comments
11,541.0	89.76	181.02	5,674.6	-5,731.0	13.6	5,730.9	0.70	-0.24	
11,632.0	89.32	182.13	5,675.4	-5,821.9	11.1	5,821.9	1.31	-0.48	
11,723.0	88.88	181.39	5,676.8	-5,912.9	8.3	5,912.8	0.95	-0.48	
11,814.0	88.26	181.01	5,679.1	-6,003.8	6.4	6,003.8	0.80	-0.68	
11,905.0	88.44	181.99	5,681.7	-6,094.8	4.0	6,094.7	1.09	0.20	
11,997.0	89.67	183.24	5,683.2	-6,186.7	-0.2	6,186.6	1.91	1.34	
12,088.0	90.46	185.42	5,683.1	-6,277.4	-7.0	6,277.4	2.55	0.87	
12,180.0	89.98	183.20	5,682.7	-6,369.1	-14.0	6,369.1	2.47	-0.52	
12,271.0	90.24	184.55	5,682.6	-6,459.9	-20.1	6,459.9	1.51	0.29	
12,363.0	91.30	182.84	5,681.3	-6,551.7	-26.0	6,551.8	2.19	1.15	
12,454.0	91.65	183.09	5,679.0	-6,642.6	-30.7	6,642.6	0.47	0.38	
12,549.0	91.74	181.29	5,676.2	-6,737.4	-34.4	6,737.5	1.90	0.09	
12,644.0	90.51	179.85	5,674.3	-6,832.4	-35.3	6,832.5	1.99	-1.29	
12,710.0	90.33	179.48	5,673.8	-6,898.4	-34.9	6,898.5	0.62	-0.27	**Last CES Survey @ 12,710' MD**
12,760.0	90.33	179.48	5,673.5	-6,948.4	-34.5	6,948.5	0.00	0.00	**PTB @ 12,760' - TD - 630' FNL, 480' FWL**

Survey Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
26L-3502B VP (P5)	0.00	1.07	5,049.1	297.9	116.9	1,541,999.80	3,459,788.49	40.809350	-103.838989
- actual wellpath misses target center by 10.4usft at 5062.2usft MD (5049.4 TVD, 287.5 N, 117.2 E)									
- Point									
26L-3502B BH TGT	0.00	1.07	5,675.0	-6,979.9	-19.4	1,534,720.74	3,459,788.49	40.789375	-103.839481
- actual wellpath misses target center by 35.0usft at 12760.0usft MD (5673.5 TVD, -6948.4 N, -34.5 E)									
- Point									
26L-3502B BH TGT (P5	0.00	1.07	5,670.0	-6,979.9	-19.4	1,534,720.74	3,459,788.49	40.789375	-103.839481
- actual wellpath misses target center by 35.1usft at 12760.0usft MD (5673.5 TVD, -6948.4 N, -34.5 E)									
- Point									
26L-3502B BHL	0.00	1.07	5,675.0	-7,479.8	-11.6	1,534,221.10	3,459,805.61	40.788003	-103.839453
- actual wellpath misses target center by 531.9usft at 12760.0usft MD (5673.5 TVD, -6948.4 N, -34.5 E)									
- Point									
26L-3502B VP	0.00	1.07	5,054.1	297.9	116.9	1,541,999.80	3,459,788.49	40.809350	-103.838989
- actual wellpath misses target center by 10.2usft at 5067.2usft MD (5054.4 TVD, 287.7 N, 117.2 E)									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,047.0	5,678.9	7" - 2005' FSL, 613' FWL	0	0

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
12,710.0	5,673.8	-6,898.4	-34.9	Last CES Survey @ 12,710' MD
12,760.0	5,673.5	-6,948.4	-34.5	PTB @ 12,760'
12,760.0	5,673.5	-6,948.4	-34.5	TD - 630' FNL, 480' FWL

Checked By: _____ Approved By: _____ Date: _____

Whiting Petroleum Corporation

Weld County, CO
S26-T10N-R58W
Razor #26L-3502B

HZ

Design: FINAL

Survey Report - Geographic

02 May, 2014

Survey Report - Geographic

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

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 S26-T10N-R58W

Site Position:		**Northing:**	1,541,774.28 usft	**Latitude:**	40.808739
From:	Lat/Long	**Easting:**	3,459,642.55 usft	**Longitude:**	-103.839531
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.07 °

Well Razor #26L-3502B

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,541,699.80 usft	**Latitude:**	40.808533
	+E/-W	0.0 usft	**Easting:**	3,459,677.17 usft	**Longitude:**	-103.839411
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,734.5 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/10/2014	8.00	67.43	53,141

Design FINAL

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.16

Survey Program **Date** 5/2/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
507.0	12,760.0	Survey #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,541,699.80	3,459,677.17	40.808533	-103.839411
507.0	0.44	346.16	507.0	1.9	-0.5	1,541,701.68	3,459,676.67	40.808538	-103.839413
965.0	0.53	92.03	965.0	3.5	1.2	1,541,703.35	3,459,678.33	40.808543	-103.839407
1,056.0	1.14	17.97	1,056.0	4.4	1.9	1,541,704.21	3,459,679.02	40.808545	-103.839404
1,148.0	2.64	24.56	1,147.9	7.2	3.1	1,541,707.03	3,459,680.13	40.808553	-103.839400
1,239.0	4.44	23.45	1,238.7	12.3	5.4	1,541,712.21	3,459,682.30	40.808567	-103.839392
1,740.0	4.04	29.32	1,738.4	45.5	21.7	1,541,745.68	3,459,698.04	40.808658	-103.839333
1,853.0	3.08	24.53	1,851.2	51.7	24.9	1,541,751.98	3,459,701.13	40.808675	-103.839321
1,944.0	3.43	24.17	1,942.0	56.4	27.1	1,541,756.72	3,459,703.17	40.808688	-103.839313
2,036.0	5.14	28.43	2,033.7	62.6	30.2	1,541,762.92	3,459,706.15	40.808705	-103.839302
2,127.0	4.35	23.65	2,124.4	69.3	33.5	1,541,769.72	3,459,709.34	40.808723	-103.839290
2,219.0	3.74	25.12	2,216.2	75.2	36.2	1,541,775.68	3,459,711.91	40.808739	-103.839281

Survey Report - Geographic

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,310.0	5.32	24.72	2,306.9	81.7	39.2	1,541,782.26	3,459,714.81	40.808757	-103.839270
2,402.0	6.77	15.94	2,398.4	90.8	42.5	1,541,791.41	3,459,717.91	40.808782	-103.839258
2,493.0	6.64	14.07	2,488.8	101.1	45.2	1,541,801.72	3,459,720.47	40.808810	-103.839248
2,584.0	6.42	11.42	2,579.2	111.2	47.5	1,541,811.85	3,459,722.57	40.808838	-103.839240
2,676.0	5.89	10.94	2,670.7	120.9	49.4	1,541,821.56	3,459,724.30	40.808865	-103.839233
2,767.0	5.41	8.39	2,761.2	129.7	50.9	1,541,830.42	3,459,725.65	40.808889	-103.839227
2,858.0	5.98	14.90	2,851.8	138.5	52.8	1,541,839.27	3,459,727.33	40.808913	-103.839221
2,950.0	4.57	3.93	2,943.4	146.8	54.2	1,541,847.59	3,459,728.65	40.808936	-103.839215
3,041.0	3.03	352.19	3,034.2	152.8	54.2	1,541,853.59	3,459,728.46	40.808952	-103.839216
3,133.0	4.09	0.95	3,126.0	158.5	53.9	1,541,859.27	3,459,728.08	40.808968	-103.839217
3,225.0	5.10	11.56	3,217.7	165.8	54.8	1,541,866.57	3,459,728.82	40.808988	-103.839213
3,316.0	5.19	30.32	3,308.3	173.3	57.7	1,541,874.14	3,459,731.56	40.809009	-103.839203
3,408.0	5.54	33.16	3,399.9	180.6	62.2	1,541,881.53	3,459,735.96	40.809029	-103.839187
3,499.0	5.58	31.22	3,490.5	188.1	66.9	1,541,889.08	3,459,740.51	40.809049	-103.839170
3,590.0	5.23	34.56	3,581.1	195.3	71.5	1,541,896.37	3,459,745.02	40.809069	-103.839153
3,682.0	4.88	30.59	3,672.8	202.1	75.9	1,541,903.27	3,459,749.26	40.809088	-103.839137
3,773.0	4.31	33.47	3,763.5	208.3	79.7	1,541,909.52	3,459,753.00	40.809105	-103.839123
3,864.0	2.99	41.13	3,854.3	212.9	83.2	1,541,914.23	3,459,756.36	40.809117	-103.839111
3,956.0	3.96	31.47	3,946.1	217.4	86.4	1,541,918.80	3,459,759.51	40.809130	-103.839099
4,048.0	3.43	29.24	4,037.9	222.5	89.4	1,541,923.97	3,459,762.42	40.809144	-103.839088
4,139.0	4.44	20.19	4,128.7	228.2	92.0	1,541,929.70	3,459,764.86	40.809159	-103.839079
4,231.0	5.05	30.37	4,220.4	235.0	95.3	1,541,936.59	3,459,768.01	40.809178	-103.839067
4,323.0	3.43	29.08	4,312.1	240.9	98.6	1,541,942.56	3,459,771.28	40.809194	-103.839055
4,414.0	3.82	30.36	4,402.9	245.9	101.5	1,541,947.60	3,459,774.04	40.809208	-103.839045
4,506.0	5.63	41.27	4,494.6	252.0	106.0	1,541,953.72	3,459,778.45	40.809225	-103.839028
4,597.0	5.67	26.34	4,585.2	259.4	111.0	1,541,961.20	3,459,783.25	40.809245	-103.839010
4,688.0	4.57	17.20	4,675.8	266.9	114.0	1,541,968.75	3,459,786.18	40.809265	-103.838999
4,780.0	3.78	13.11	4,767.6	273.3	115.8	1,541,975.23	3,459,787.83	40.809283	-103.838993
4,871.0	2.99	4.61	4,858.4	278.6	116.7	1,541,980.54	3,459,788.60	40.809298	-103.838990
4,963.0	2.59	3.34	4,950.3	283.1	117.0	1,541,985.01	3,459,788.83	40.809310	-103.838989
5,055.0	2.55	2.10	5,042.2	287.2	117.2	1,541,989.13	3,459,788.95	40.809321	-103.838988
5,146.0	0.62	6.96	5,133.2	289.7	117.3	1,541,991.65	3,459,789.04	40.809328	-103.838987
5,237.0	7.38	188.22	5,224.0	284.4	116.5	1,541,986.33	3,459,788.36	40.809314	-103.838990
5,328.0	14.51	197.43	5,313.2	267.7	112.3	1,541,969.57	3,459,784.42	40.809268	-103.839006
5,419.0	21.85	202.59	5,399.6	241.2	102.3	1,541,942.84	3,459,774.98	40.809195	-103.839042
5,510.0	30.15	204.63	5,481.4	204.7	86.3	1,541,906.07	3,459,759.61	40.809095	-103.839100
5,603.0	42.33	206.07	5,556.2	155.1	62.7	1,541,856.09	3,459,736.96	40.808959	-103.839185
5,695.0	59.56	204.14	5,614.0	90.6	32.6	1,541,791.03	3,459,708.11	40.808782	-103.839293
5,726.0	66.55	202.59	5,628.0	65.3	21.7	1,541,765.47	3,459,697.64	40.808712	-103.839333
5,756.0	70.95	200.16	5,638.9	39.2	11.5	1,541,739.25	3,459,687.95	40.808641	-103.839370
5,786.0	73.70	197.84	5,648.0	12.2	2.2	1,541,712.06	3,459,679.16	40.808566	-103.839403
5,817.0	75.70	192.53	5,656.2	-16.6	-5.6	1,541,683.07	3,459,671.88	40.808487	-103.839431
5,846.0	76.88	186.76	5,663.1	-44.4	-10.3	1,541,655.23	3,459,667.69	40.808411	-103.839449
5,876.0	78.99	182.82	5,669.4	-73.6	-12.8	1,541,625.96	3,459,665.79	40.808331	-103.839457
5,907.0	83.21	181.42	5,674.1	-104.2	-13.9	1,541,595.35	3,459,665.23	40.808247	-103.839461
5,937.0	87.56	181.06	5,676.6	-134.1	-14.5	1,541,565.45	3,459,665.15	40.808165	-103.839464
5,968.0	89.23	178.71	5,677.4	-165.1	-14.5	1,541,534.47	3,459,665.79	40.808080	-103.839464
6,008.0	88.97	174.23	5,678.1	-205.0	-12.0	1,541,494.62	3,459,669.00	40.807970	-103.839455
6,084.0	88.22	172.23	5,679.9	-280.4	-3.1	1,541,419.35	3,459,679.36	40.807763	-103.839422
6,179.0	88.70	173.23	5,682.5	-374.6	9.0	1,541,325.40	3,459,693.14	40.807505	-103.839379
6,274.0	90.59	173.56	5,683.1	-469.0	19.9	1,541,231.25	3,459,705.83	40.807246	-103.839339
6,369.0	90.64	173.32	5,682.0	-563.4	30.7	1,541,137.10	3,459,718.45	40.806987	-103.839300
6,464.0	90.37	172.86	5,681.2	-657.7	42.2	1,541,043.03	3,459,731.65	40.806728	-103.839259
6,558.0	90.20	174.62	5,680.7	-751.1	52.4	1,540,949.80	3,459,743.64	40.806471	-103.839222
6,653.0	89.71	176.69	5,680.8	-845.8	59.6	1,540,855.23	3,459,752.61	40.806211	-103.839196

Survey Report - Geographic

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,748.0	90.73	177.99	5,680.4	-940.7	64.0	1,540,760.43	3,459,758.80	40.805951	-103.839180
6,843.0	90.15	177.24	5,679.7	-1,035.6	68.0	1,540,665.61	3,459,764.53	40.805690	-103.839166
6,937.0	90.33	180.03	5,679.3	-1,129.6	70.2	1,540,571.71	3,459,768.52	40.805432	-103.839158
7,032.0	89.71	178.92	5,679.3	-1,224.6	71.1	1,540,476.75	3,459,771.17	40.805172	-103.839154
7,127.0	90.11	179.02	5,679.4	-1,319.6	72.8	1,540,381.81	3,459,774.66	40.804911	-103.839148
7,222.0	89.80	178.34	5,679.5	-1,414.6	75.0	1,540,286.89	3,459,778.63	40.804650	-103.839140
7,317.0	89.80	178.06	5,679.8	-1,509.5	78.0	1,540,192.01	3,459,783.39	40.804390	-103.839130
7,412.0	88.22	179.08	5,681.5	-1,604.5	80.3	1,540,097.12	3,459,787.54	40.804129	-103.839121
7,507.0	88.18	182.85	5,684.5	-1,699.4	78.7	1,540,002.19	3,459,787.71	40.803869	-103.839127
7,602.0	89.01	184.32	5,686.8	-1,794.2	72.8	1,539,907.31	3,459,783.55	40.803608	-103.839148
7,694.0	90.86	184.43	5,686.9	-1,885.9	65.8	1,539,815.47	3,459,778.25	40.803357	-103.839174
7,787.0	90.73	184.00	5,685.6	-1,978.6	58.9	1,539,722.62	3,459,773.16	40.803102	-103.839198
7,879.0	90.59	183.75	5,684.6	-2,070.4	52.7	1,539,630.73	3,459,768.66	40.802850	-103.839221
7,972.0	90.86	183.03	5,683.4	-2,163.3	47.2	1,539,537.82	3,459,764.90	40.802595	-103.839241
8,064.0	91.34	183.32	5,681.6	-2,255.1	42.1	1,539,445.90	3,459,761.53	40.802343	-103.839259
8,156.0	91.43	180.94	5,679.4	-2,347.0	38.7	1,539,353.94	3,459,759.83	40.802091	-103.839271
8,248.0	92.09	181.04	5,676.6	-2,438.9	37.1	1,539,261.99	3,459,759.96	40.801839	-103.839277
8,339.0	89.23	180.89	5,675.5	-2,529.9	35.6	1,539,171.00	3,459,760.13	40.801589	-103.839283
8,431.0	89.49	180.75	5,676.5	-2,621.9	34.3	1,539,079.01	3,459,760.54	40.801337	-103.839287
8,522.0	89.71	180.32	5,677.2	-2,712.9	33.4	1,538,988.02	3,459,761.39	40.801087	-103.839291
8,613.0	90.02	180.27	5,677.4	-2,803.9	33.0	1,538,897.03	3,459,762.63	40.800837	-103.839292
8,705.0	90.33	180.58	5,677.1	-2,895.9	32.3	1,538,805.03	3,459,763.67	40.800585	-103.839295
8,796.0	91.08	180.38	5,676.0	-2,986.9	31.5	1,538,714.04	3,459,764.61	40.800335	-103.839297
8,888.0	90.20	179.46	5,675.0	-3,078.9	31.6	1,538,622.07	3,459,766.46	40.800082	-103.839297
8,979.0	89.71	179.34	5,675.0	-3,169.9	32.6	1,538,531.11	3,459,769.12	40.799833	-103.839294
9,071.0	89.63	179.57	5,675.6	-3,261.9	33.5	1,538,439.15	3,459,771.72	40.799580	-103.839290
9,162.0	89.49	179.44	5,676.3	-3,352.8	34.3	1,538,348.19	3,459,774.21	40.799330	-103.839288
9,253.0	88.92	179.13	5,677.5	-3,443.8	35.4	1,538,257.24	3,459,777.05	40.799081	-103.839283
9,345.0	88.53	179.50	5,679.6	-3,535.8	36.5	1,538,165.31	3,459,779.87	40.798828	-103.839279
9,436.0	90.73	179.93	5,680.2	-3,626.8	36.9	1,538,074.34	3,459,782.02	40.798578	-103.839278
9,527.0	90.77	179.79	5,679.0	-3,717.8	37.2	1,537,983.37	3,459,783.95	40.798329	-103.839277
9,619.0	90.24	179.36	5,678.2	-3,809.8	37.9	1,537,891.40	3,459,786.36	40.798076	-103.839275
9,711.0	90.20	181.87	5,677.8	-3,901.8	36.9	1,537,799.41	3,459,787.09	40.797824	-103.839278
9,803.0	89.63	182.45	5,677.9	-3,993.7	33.4	1,537,707.43	3,459,785.35	40.797571	-103.839291
9,894.0	89.49	182.49	5,678.6	-4,084.6	29.5	1,537,616.46	3,459,783.13	40.797322	-103.839305
9,986.0	92.00	182.17	5,677.4	-4,176.5	25.7	1,537,524.50	3,459,781.11	40.797070	-103.839318
10,077.0	90.59	180.82	5,675.4	-4,267.5	23.4	1,537,433.53	3,459,780.44	40.796820	-103.839327
10,168.0	89.01	179.72	5,675.7	-4,358.5	22.9	1,537,342.54	3,459,781.71	40.796570	-103.839328
10,260.0	91.03	180.80	5,675.7	-4,450.4	22.5	1,537,250.56	3,459,783.02	40.796318	-103.839330
10,351.0	90.55	180.11	5,674.4	-4,541.4	21.8	1,537,159.57	3,459,784.00	40.796068	-103.839333
10,442.0	90.42	179.80	5,673.7	-4,632.4	21.9	1,537,068.59	3,459,785.78	40.795818	-103.839332
10,534.0	90.59	179.33	5,672.8	-4,724.4	22.6	1,536,976.63	3,459,788.20	40.795566	-103.839330
10,625.0	91.03	179.27	5,671.6	-4,815.4	23.7	1,536,885.68	3,459,791.01	40.795316	-103.839326
10,717.0	89.19	178.75	5,671.4	-4,907.4	25.3	1,536,793.75	3,459,794.32	40.795064	-103.839320
10,809.0	89.05	178.28	5,672.8	-4,999.3	27.7	1,536,701.85	3,459,798.43	40.794811	-103.839311
10,901.0	89.71	179.04	5,673.8	-5,091.3	29.8	1,536,609.94	3,459,802.30	40.794559	-103.839304
10,992.0	89.85	180.16	5,674.1	-5,182.3	30.4	1,536,518.97	3,459,804.64	40.794309	-103.839301
11,083.0	89.89	180.25	5,674.3	-5,273.3	30.1	1,536,427.98	3,459,806.02	40.794059	-103.839303
11,174.0	90.15	183.26	5,674.3	-5,364.3	27.3	1,536,337.00	3,459,804.94	40.793810	-103.839313
11,266.0	89.98	182.79	5,674.2	-5,456.1	22.5	1,536,245.05	3,459,801.80	40.793557	-103.839330
11,358.0	89.89	182.01	5,674.3	-5,548.0	18.6	1,536,153.08	3,459,799.67	40.793305	-103.839344
11,449.0	89.98	181.63	5,674.4	-5,639.0	15.7	1,536,062.08	3,459,798.49	40.793056	-103.839354
11,541.0	89.76	181.02	5,674.6	-5,731.0	13.6	1,535,970.08	3,459,798.08	40.792803	-103.839362
11,632.0	89.32	182.13	5,675.4	-5,821.9	11.1	1,535,879.09	3,459,797.28	40.792553	-103.839371
11,723.0	88.88	181.39	5,676.8	-5,912.9	8.3	1,535,788.11	3,459,796.19	40.792304	-103.839381

Survey Report - Geographic

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #26L-3502B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Site:	S26-T10N-R58W	**MD Reference:**	WELL @ 4751.0usft (Original Well Elev)
Well:	Razor #26L-3502B	**North Reference:**	True
Wellbore:	HZ	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,814.0	88.26	181.01	5,679.1	-6,003.8	6.4	1,535,697.14	3,459,795.99	40.792054	-103.839388
11,905.0	88.44	181.99	5,681.7	-6,094.8	4.0	1,535,606.18	3,459,795.31	40.791805	-103.839397
11,997.0	89.67	183.24	5,683.2	-6,186.7	-0.2	1,535,514.23	3,459,792.84	40.791552	-103.839412
12,088.0	90.46	185.42	5,683.1	-6,277.4	-7.0	1,535,423.38	3,459,787.67	40.791303	-103.839437
12,180.0	89.98	183.20	5,682.7	-6,369.1	-14.0	1,535,331.54	3,459,782.47	40.791052	-103.839462
12,271.0	90.24	184.55	5,682.6	-6,459.9	-20.1	1,535,240.65	3,459,778.03	40.790802	-103.839484
12,363.0	91.30	182.84	5,681.3	-6,551.7	-26.0	1,535,148.76	3,459,773.82	40.790550	-103.839505
12,454.0	91.65	183.09	5,679.0	-6,642.6	-30.7	1,535,057.84	3,459,770.81	40.790301	-103.839522
12,549.0	91.74	181.29	5,676.2	-6,737.4	-34.4	1,534,962.90	3,459,768.96	40.790041	-103.839535
12,644.0	90.51	179.85	5,674.3	-6,832.4	-35.3	1,534,867.93	3,459,769.80	40.789780	-103.839539
12,710.0	90.33	179.48	5,673.8	-6,898.4	-34.9	1,534,801.95	3,459,771.42	40.789599	-103.839537
Last CES Survey @ 12,710' MD									
12,760.0	90.33	179.48	5,673.5	-6,948.4	-34.5	1,534,751.97	3,459,772.81	40.789462	-103.839536
PTB @ 12,760' - TD - 630' FNL, 480' FWL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
26L-3502B BH TGT (P5)	0.00	1.07	5,670.0	-6,979.9	-19.4	1,534,720.74	3,459,788.49	40.789375	-103.839481
- actual wellpath misses target center by 35.1usft at 12760.0usft MD (5673.5 TVD, -6948.4 N, -34.5 E)									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,047.0	5,678.9	7" - 2005' FSL, 613' FWL	0	0

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
12,710.0	5,673.8	-6,898.4	-34.9	Last CES Survey @ 12,710' MD
12,760.0	5,673.5	-6,948.4	-34.5	PTB @ 12,760'
12,760.0	5,673.5	-6,948.4	-34.5	TD - 630' FNL, 480' FWL

Checked By: _____ Approved By: _____ Date: _____