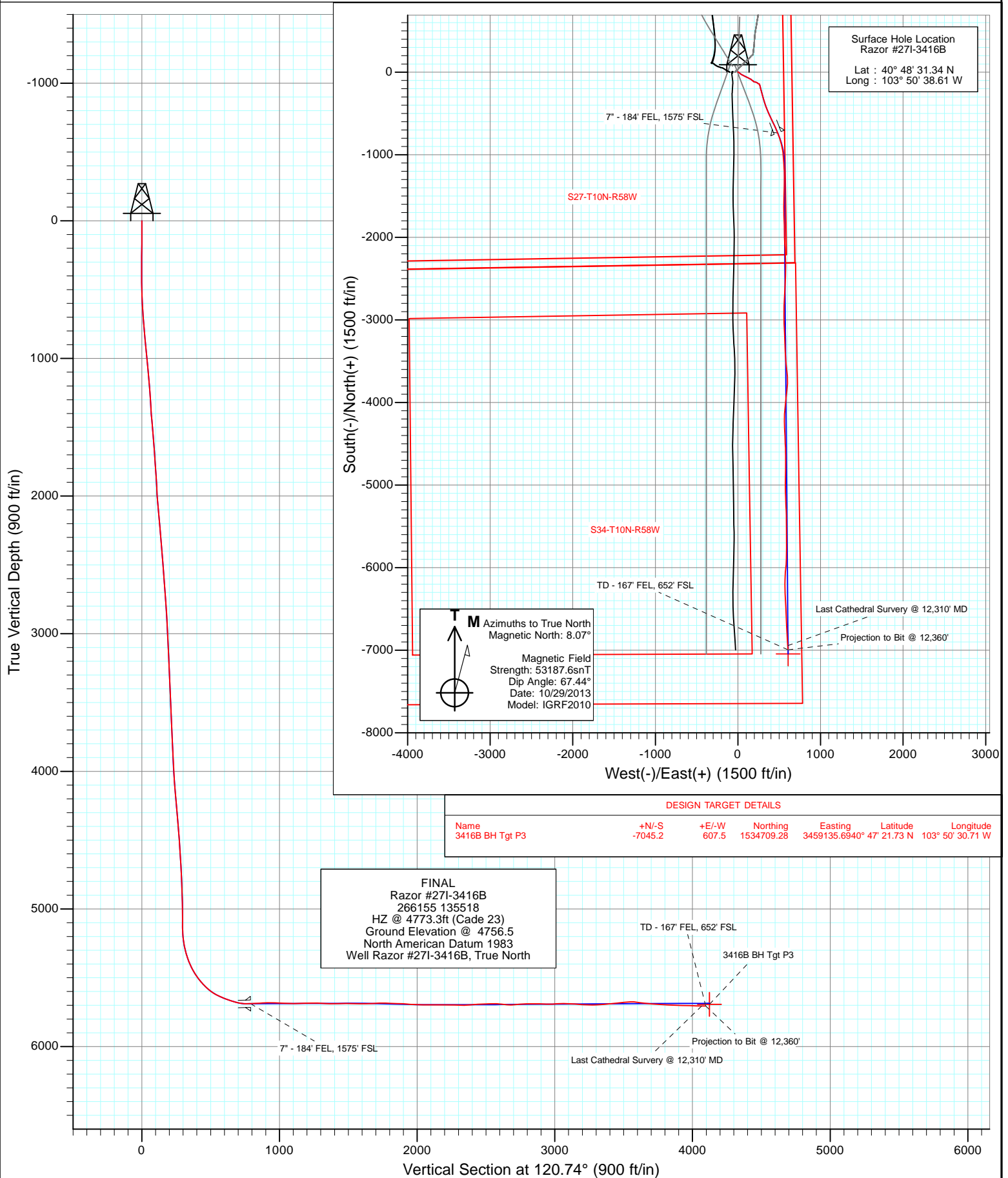


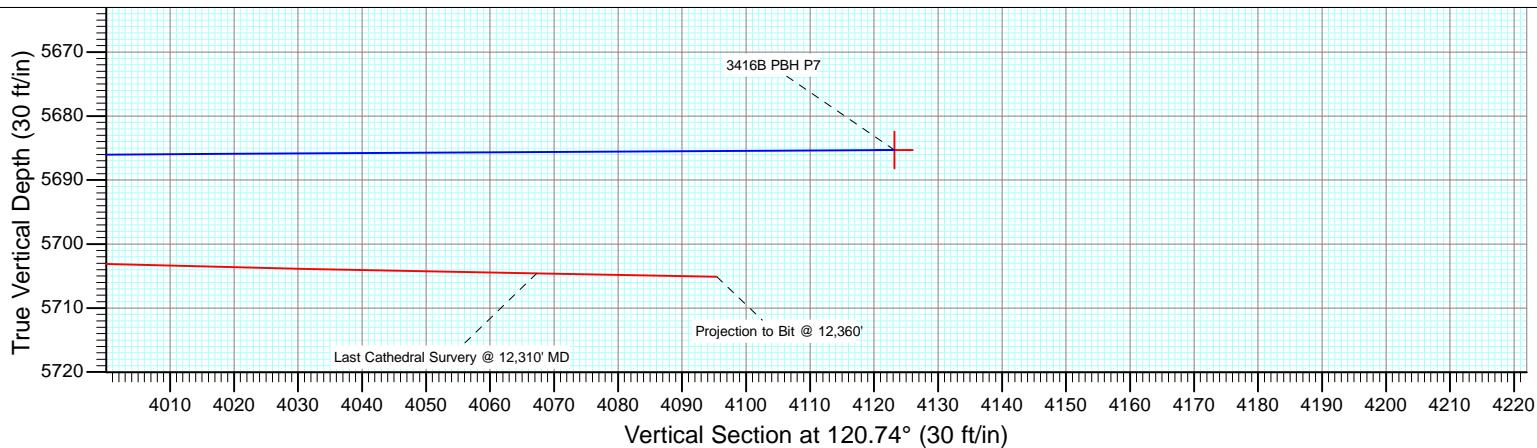
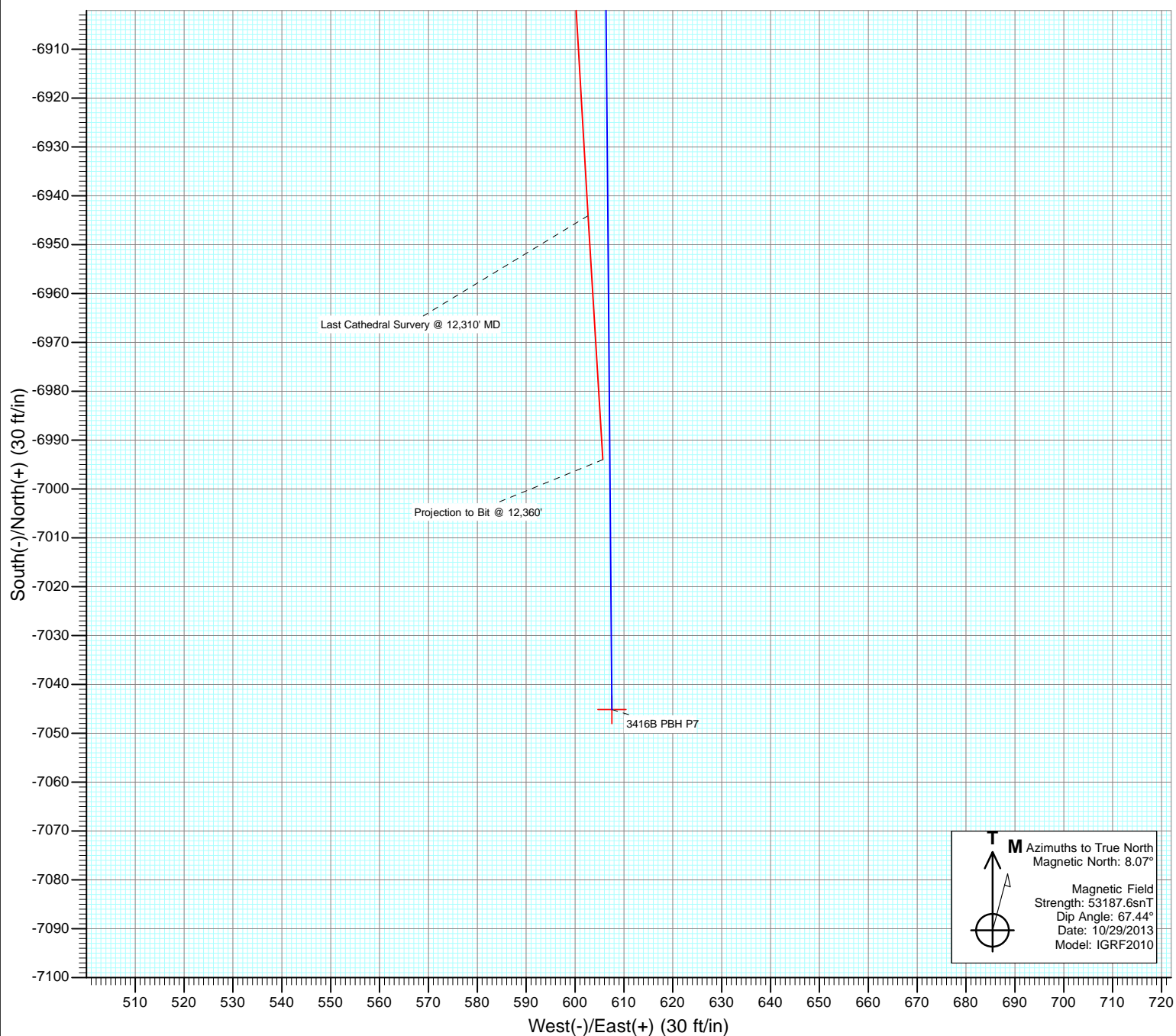


Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27I-3416B
Wellbore: HZ
Design: FINAL





Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27I-3416B
Wellbore: HZ
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27I-3416B
Project:	Weld County, CO	TVD Reference:	HZ @ 4773.3ft (Cade 23)
Site:	S27-T10N-R58W	MD Reference:	HZ @ 4773.3ft (Cade 23)
Well:	Razor #27I-3416B	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		S27-T10N-R58W			
Site Position:		Northing:	1,541,650.73 ft	Latitude:	40° 48' 30.94 N
From:	Lat/Long	Easting:	3,455,691.89 ft	Longitude:	103° 51' 13.80 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.06 °

Well	Razor #27I-3416B					
Well Position	+N/-S	0.0 ft	Northing:	1,541,741.86 ft	Latitude:	40° 48' 31.34 N
	+E/-W	0.0 ft	Easting:	3,458,396.70 ft	Longitude:	103° 50' 38.61 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,756.5 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/29/2013	8.07	67.44	53,188

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	120.74	

Survey Program	Date	11/18/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
170.0	12,360.0	Survey #1 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
170.0	0.40	346.00	170.0	0.6	-0.1	-0.4	0.24	0.24		
260.0	0.40	37.30	260.0	1.1	0.0	-0.6	0.38	0.00		
355.0	0.10	358.30	355.0	1.5	0.2	-0.6	0.35	-0.32		
447.0	0.90	26.70	447.0	2.2	0.5	-0.7	0.88	0.87		
538.0	1.60	100.60	538.0	2.6	2.1	0.4	1.76	0.77		
629.0	3.40	120.10	628.9	1.0	5.6	4.3	2.16	1.98		
721.0	5.10	126.50	720.6	-2.8	11.3	11.1	1.92	1.85		
813.0	5.40	129.40	812.2	-8.0	17.9	19.5	0.44	0.33		
904.0	6.00	135.60	902.8	-14.1	24.6	28.3	0.94	0.66		
995.0	5.30	131.70	993.4	-20.3	31.0	37.0	0.88	-0.77		
1,087.0	5.10	126.00	1,085.0	-25.5	37.5	45.3	0.60	-0.22		
1,178.0	4.60	120.80	1,175.6	-29.7	43.9	52.9	0.73	-0.55		

Cathedral Energy Services

Survey Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27I-3416B
Project:	Weld County, CO	TVD Reference:	HZ @ 4773.3ft (Cade 23)
Site:	S27-T10N-R58W	MD Reference:	HZ @ 4773.3ft (Cade 23)
Well:	Razor #27I-3416B	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,270.0	3.40	109.50	1,267.4	-32.5	49.7	59.3	1.55	-1.30	
1,362.0	4.10	108.50	1,359.2	-34.5	55.3	65.2	0.76	0.76	
1,453.0	5.10	114.60	1,449.9	-37.2	62.1	72.4	1.22	1.10	
1,560.0	4.60	124.30	1,556.6	-41.6	70.0	81.4	0.90	-0.47	
1,675.0	4.40	122.50	1,671.2	-46.6	77.5	90.4	0.21	-0.17	
1,766.0	4.00	118.60	1,762.0	-50.0	83.2	97.1	0.54	-0.44	
1,857.0	3.90	111.30	1,852.7	-52.6	88.9	103.3	0.56	-0.11	
1,949.0	2.80	101.00	1,944.6	-54.2	94.0	108.5	1.36	-1.20	
2,040.0	4.60	113.50	2,035.4	-56.1	99.6	114.2	2.16	1.98	
2,132.0	5.20	121.90	2,127.1	-59.7	106.5	122.1	1.01	0.65	
2,224.0	5.10	120.70	2,218.7	-64.0	113.5	130.3	0.16	-0.11	
2,315.0	5.00	112.80	2,309.3	-67.6	120.7	138.3	0.77	-0.11	
2,406.0	4.70	117.10	2,400.0	-70.9	127.6	145.9	0.52	-0.33	
2,497.0	4.20	117.90	2,490.7	-74.1	133.9	153.0	0.55	-0.55	
2,589.0	4.40	119.20	2,582.5	-77.4	140.0	159.9	0.24	0.22	
2,681.0	4.30	114.70	2,674.2	-80.6	146.2	166.8	0.39	-0.11	
2,772.0	4.30	112.00	2,764.9	-83.3	152.4	173.6	0.22	0.00	
2,863.0	3.60	129.60	2,855.7	-86.4	157.8	179.8	1.53	-0.77	
2,954.0	2.80	136.70	2,946.6	-89.8	161.5	184.8	0.98	-0.88	
3,045.0	2.80	128.00	3,037.5	-92.8	164.8	189.1	0.47	0.00	
3,137.0	2.50	132.50	3,129.4	-95.6	168.1	193.3	0.40	-0.33	
3,228.0	2.30	133.70	3,220.3	-98.2	170.8	197.0	0.23	-0.22	
3,320.0	2.50	135.70	3,312.2	-100.9	173.6	200.7	0.24	0.22	
3,412.0	2.70	120.80	3,404.1	-103.4	176.8	204.9	0.76	0.22	
3,503.0	2.90	115.20	3,495.0	-105.5	180.8	209.3	0.37	0.22	
3,595.0	2.60	109.80	3,586.9	-107.2	184.8	213.7	0.43	-0.33	
3,687.0	2.60	135.70	3,678.8	-109.4	188.3	217.7	1.27	0.00	
3,778.0	2.40	152.80	3,769.7	-112.6	190.6	221.3	0.85	-0.22	
3,870.0	2.20	129.80	3,861.7	-115.4	192.8	224.7	1.02	-0.22	
3,962.0	4.20	105.80	3,953.5	-117.5	197.4	229.7	2.57	2.17	
4,054.0	3.10	90.50	4,045.3	-118.4	203.1	235.1	1.59	-1.20	
4,145.0	4.90	104.70	4,136.1	-119.4	209.4	241.0	2.24	1.98	
4,236.0	5.10	110.10	4,226.8	-121.8	216.9	248.7	0.56	0.22	
4,327.0	5.80	107.70	4,317.4	-124.6	225.1	257.1	0.81	0.77	
4,418.0	5.00	125.70	4,408.0	-128.3	232.7	265.6	2.05	-0.88	
4,509.0	3.90	132.80	4,498.7	-132.7	238.2	272.5	1.35	-1.21	
4,600.0	3.60	128.10	4,589.5	-136.6	242.7	278.4	0.47	-0.33	
4,691.0	3.00	121.90	4,680.3	-139.6	247.0	283.6	0.77	-0.66	
4,783.0	2.60	111.60	4,772.2	-141.6	251.0	288.1	0.70	-0.43	
4,874.0	2.40	99.60	4,863.1	-142.7	254.8	291.9	0.61	-0.22	
4,966.0	1.90	89.50	4,955.1	-143.0	258.2	295.0	0.68	-0.54	
5,057.0	0.10	238.90	5,046.1	-143.0	259.6	296.3	2.18	-1.98	
5,148.0	0.60	191.10	5,137.1	-143.5	259.5	296.4	0.59	0.55	
5,179.0	2.60	177.00	5,168.0	-144.4	259.5	296.8	6.53	6.45	
5,209.0	6.00	164.60	5,198.0	-146.6	259.9	298.3	11.68	11.33	
5,240.0	9.90	158.50	5,228.7	-150.6	261.3	301.6	12.85	12.58	
5,270.0	14.30	156.10	5,258.0	-156.4	263.8	306.7	14.76	14.67	
5,301.0	17.80	162.10	5,287.8	-164.4	266.8	313.3	12.48	11.29	
5,331.0	21.10	168.40	5,316.1	-174.1	269.3	320.4	13.02	11.00	
5,361.0	23.70	167.20	5,343.8	-185.3	271.7	328.2	8.80	8.67	
5,392.0	27.30	166.00	5,371.8	-198.2	274.8	337.5	11.73	11.61	
5,422.0	31.20	165.90	5,397.9	-212.5	278.4	347.8	13.00	13.00	
5,453.0	34.60	165.30	5,424.0	-228.8	282.5	359.8	11.02	10.97	

Cathedral Energy Services

Survey Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27I-3416B
Project:	Weld County, CO	TVD Reference:	HZ @ 4773.3ft (Cade 23)
Site:	S27-T10N-R58W	MD Reference:	HZ @ 4773.3ft (Cade 23)
Well:	Razor #27I-3416B	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,483.0	37.90	163.40	5,448.2	-245.8	287.3	372.6	11.62	11.00	
5,514.0	41.40	165.00	5,472.0	-264.9	292.7	387.0	11.76	11.29	
5,544.0	45.80	165.20	5,493.7	-284.9	298.0	401.8	14.67	14.67	
5,575.0	47.70	163.00	5,515.0	-306.6	304.2	418.2	8.02	6.13	
5,605.0	49.50	164.20	5,534.8	-328.2	310.6	434.7	6.71	6.00	
5,635.0	53.60	163.90	5,553.5	-350.7	317.0	451.8	13.69	13.67	
5,666.0	55.70	162.40	5,571.4	-374.9	324.4	470.4	7.84	6.77	
5,696.0	56.40	161.10	5,588.2	-398.6	332.2	489.2	4.29	2.33	
5,727.0	60.50	158.30	5,604.4	-423.3	341.3	509.8	15.30	13.23	
5,757.0	65.00	157.00	5,618.1	-448.0	351.5	531.1	15.49	15.00	
5,788.0	69.50	157.30	5,630.1	-474.3	362.6	554.1	14.54	14.52	
5,818.0	70.40	156.70	5,640.4	-500.3	373.6	576.8	3.54	3.00	
5,848.0	71.90	156.10	5,650.1	-526.3	385.0	599.9	5.35	5.00	
5,879.0	74.20	155.60	5,659.1	-553.3	397.1	624.1	7.58	7.42	
5,909.0	75.10	154.30	5,667.1	-579.6	409.3	648.1	5.14	3.00	
5,940.0	76.30	153.20	5,674.7	-606.5	422.6	673.2	5.18	3.87	
5,970.0	78.30	153.50	5,681.3	-632.6	435.8	697.9	6.74	6.67	
6,001.0	83.30	155.80	5,686.3	-660.3	448.8	723.3	17.71	16.13	
6,032.0	87.30	157.00	5,688.8	-688.6	461.2	748.4	13.47	12.90	
6,050.0	90.30	156.90	5,689.2	-705.2	468.3	762.9	16.68	16.67	
6,170.0	93.90	162.10	5,684.8	-817.4	510.2	856.4	5.27	3.00	
6,265.0	90.20	168.60	5,681.4	-909.2	534.2	923.9	7.87	-3.89	
6,360.0	88.40	175.60	5,682.5	-1,003.2	547.3	983.2	7.61	-1.89	
6,454.0	88.00	175.30	5,685.5	-1,096.9	554.7	1,037.4	0.53	-0.43	
6,549.0	90.50	177.00	5,686.7	-1,191.7	561.1	1,091.4	3.18	2.63	
6,644.0	90.50	181.10	5,685.9	-1,286.6	562.7	1,141.3	4.32	0.00	
6,739.0	90.60	181.70	5,685.0	-1,381.6	560.4	1,187.8	0.64	0.11	
6,833.0	90.50	181.70	5,684.1	-1,475.5	557.6	1,233.4	0.11	-0.11	
6,928.0	88.80	180.20	5,684.7	-1,570.5	556.0	1,280.6	2.39	-1.79	
7,023.0	88.20	179.90	5,687.2	-1,665.5	555.9	1,329.1	0.71	-0.63	
7,118.0	90.20	178.10	5,688.5	-1,760.5	557.6	1,379.1	2.83	2.11	
7,213.0	90.50	177.70	5,687.9	-1,855.4	561.0	1,430.6	0.53	0.32	
7,305.0	90.20	179.20	5,687.3	-1,947.4	563.5	1,479.7	1.66	-0.33	
7,397.0	89.20	177.90	5,687.8	-2,039.3	565.9	1,528.7	1.78	-1.09	
7,488.0	89.10	175.90	5,689.2	-2,130.2	570.8	1,579.4	2.20	-0.11	
7,579.0	91.30	179.20	5,688.9	-2,221.1	574.7	1,629.2	4.36	2.42	
7,671.0	91.40	178.50	5,686.7	-2,313.0	576.5	1,677.8	0.77	0.11	
7,763.0	91.10	181.30	5,684.7	-2,405.0	576.7	1,724.9	3.06	-0.33	
7,854.0	89.30	182.10	5,684.4	-2,496.0	574.0	1,769.1	2.16	-1.98	
7,945.0	88.90	181.70	5,685.8	-2,586.9	571.0	1,813.0	0.62	-0.44	
8,037.0	88.90	183.90	5,687.6	-2,678.8	566.5	1,856.1	2.39	0.00	
8,128.0	89.10	183.90	5,689.1	-2,769.5	560.3	1,897.2	0.22	0.22	
8,220.0	87.40	180.20	5,692.0	-2,861.4	557.0	1,941.3	4.42	-1.85	
8,312.0	88.40	179.10	5,695.3	-2,953.3	557.6	1,988.8	1.62	1.09	
8,403.0	89.90	178.60	5,696.7	-3,044.3	559.4	2,036.8	1.74	1.65	
8,494.0	89.80	176.80	5,696.9	-3,135.2	563.0	2,086.4	1.98	-0.11	
8,585.0	90.00	178.40	5,697.1	-3,226.2	566.8	2,136.2	1.77	0.22	
8,677.0	89.90	177.70	5,697.2	-3,318.1	570.0	2,185.9	0.77	-0.11	
8,769.0	89.80	176.80	5,697.4	-3,410.0	574.4	2,236.6	0.98	-0.11	
8,860.0	88.30	174.90	5,698.9	-3,500.7	581.0	2,288.7	2.66	-1.65	
8,951.0	91.10	174.90	5,699.4	-3,591.4	589.1	2,341.9	3.08	3.08	
9,042.0	93.30	173.90	5,695.9	-3,681.9	597.9	2,395.8	2.66	2.42	
9,133.0	91.10	184.60	5,692.4	-3,772.6	599.1	2,443.2	11.99	-2.42	

Cathedral Energy Services

Survey Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27I-3416B
Project:	Weld County, CO	TVD Reference:	HZ @ 4773.3ft (Cade 23)
Site:	S27-T10N-R58W	MD Reference:	HZ @ 4773.3ft (Cade 23)
Well:	Razor #27I-3416B	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,225.0	90.80	186.60	5,690.9	-3,864.2	590.1	2,482.3	2.20	-0.33	
9,316.0	90.20	184.70	5,690.1	-3,954.7	581.2	2,520.9	2.19	-0.66	
9,408.0	91.00	186.10	5,689.1	-4,046.3	572.5	2,560.3	1.75	0.87	
9,500.0	87.30	184.10	5,690.5	-4,137.9	564.3	2,600.1	4.57	-4.02	
9,591.0	86.40	178.20	5,695.5	-4,228.7	562.5	2,644.9	6.55	-0.99	
9,683.0	92.40	177.90	5,696.4	-4,320.6	565.7	2,694.6	6.53	6.52	
9,774.0	92.70	177.60	5,692.4	-4,411.5	569.2	2,744.1	0.47	0.33	
9,866.0	90.30	177.30	5,690.0	-4,503.3	573.3	2,794.5	2.63	-2.61	
9,958.0	90.30	178.80	5,689.5	-4,595.3	576.4	2,844.2	1.63	0.00	
10,050.0	89.40	180.10	5,689.7	-4,687.3	577.3	2,892.0	1.72	-0.98	
10,141.0	88.60	180.20	5,691.3	-4,778.3	577.1	2,938.3	0.89	-0.88	
10,232.0	91.80	180.90	5,691.0	-4,869.2	576.2	2,984.1	3.60	3.52	
10,324.0	91.90	180.70	5,688.0	-4,961.2	574.9	3,030.0	0.24	0.11	
10,415.0	88.80	179.00	5,687.5	-5,052.2	575.2	3,076.7	3.89	-3.41	
10,506.0	88.10	178.50	5,689.9	-5,143.1	577.2	3,124.9	0.95	-0.77	
10,597.0	87.50	177.50	5,693.4	-5,234.0	580.3	3,174.0	1.28	-0.66	
10,688.0	89.10	177.70	5,696.1	-5,324.9	584.1	3,223.8	1.77	1.76	
10,779.0	89.10	179.00	5,697.6	-5,415.8	586.8	3,272.5	1.43	0.00	
10,871.0	92.40	180.20	5,696.4	-5,507.8	587.4	3,320.1	3.82	3.59	
10,962.0	92.60	179.90	5,692.4	-5,598.7	587.3	3,366.5	0.40	0.22	
11,054.0	92.80	179.50	5,688.1	-5,690.6	587.8	3,413.8	0.49	0.22	
11,145.0	93.50	178.80	5,683.1	-5,781.5	589.1	3,461.4	1.09	0.77	
11,236.0	93.10	182.10	5,677.8	-5,872.3	588.4	3,507.3	3.65	-0.44	
11,328.0	90.40	185.10	5,675.0	-5,964.0	582.7	3,549.2	4.39	-2.93	
11,419.0	87.50	184.70	5,676.7	-6,054.7	574.9	3,588.8	3.22	-3.19	
11,510.0	86.00	181.20	5,681.8	-6,145.4	570.2	3,631.2	4.18	-1.65	
11,602.0	86.00	180.00	5,688.3	-6,237.2	569.2	3,677.3	1.30	0.00	
11,692.0	88.80	177.40	5,692.3	-6,327.0	571.3	3,725.0	4.24	3.11	
11,784.0	88.70	176.80	5,694.3	-6,418.9	575.9	3,775.9	0.66	-0.11	
11,876.0	88.20	176.60	5,696.8	-6,510.7	581.2	3,827.4	0.59	-0.54	
11,967.0	88.30	178.10	5,699.6	-6,601.6	585.4	3,877.4	1.65	0.11	
12,058.0	89.50	177.40	5,701.4	-6,692.5	589.0	3,927.0	1.53	1.32	
12,150.0	89.00	176.80	5,702.6	-6,784.4	593.7	3,977.9	0.85	-0.54	
12,245.0	89.40	176.90	5,703.9	-6,879.2	598.9	4,030.9	0.43	0.42	
12,310.0	89.40	176.50	5,704.6	-6,944.1	602.6	4,067.3	0.62	0.00	Last Cathedral Survey @ 12,310' MD
12,360.0	89.40	176.50	5,705.1	-6,994.0	605.7	4,095.4	0.00	0.00	Projection to Bit @ 12,360'

Cathedral Energy Services

Survey Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27I-3416B
Project:	Weld County, CO	TVD Reference:	HZ @ 4773.3ft (Cade 23)
Site:	S27-T10N-R58W	MD Reference:	HZ @ 4773.3ft (Cade 23)
Well:	Razor #27I-3416B	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	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Razor #27I-3416B 5200'	0.00	0.00	5,690.3	-5,168.3	591.7	1,536,585.50	3,459,084.78	40° 47' 40.27 N	103° 50' 30.92 W
- survey misses target center by 13.8ft at 10531.7ft MD (5690.8 TVD, -5168.8 N, 577.9 E)									
- Point									
3416B BH Tgt P6	0.00	0.00	5,690.3	-7,045.2	607.5	1,534,709.28	3,459,135.69	40° 47' 21.73 N	103° 50' 30.71 W
- survey misses target center by 53.3ft at 12360.0ft MD (5705.1 TVD, -6994.0 N, 605.7 E)									
- Point									
3416B BH Tgt P3	0.00	0.00	5,693.3	-7,045.2	607.5	1,534,709.28	3,459,135.69	40° 47' 21.73 N	103° 50' 30.71 W
- survey misses target center by 52.5ft at 12360.0ft MD (5705.1 TVD, -6994.0 N, 605.7 E)									
- Point									
Razor #27I-3416B 2200'	0.00	0.00	5,685.3	-2,159.3	566.2	1,539,593.49	3,459,003.15	40° 48' 10.01 N	103° 50' 31.25 W
- survey misses target center by 7.6ft at 7516.9ft MD (5689.5 TVD, -2159.1 N, 572.6 E)									
- Point									
3416B BHL	0.00	0.00	5,736.3	-7,545.0	615.3	1,534,209.64	3,459,152.79	40° 47' 16.79 N	103° 50' 30.61 W
- survey misses target center by 552.0ft at 12360.0ft MD (5705.1 TVD, -6994.0 N, 605.7 E)									
- Point									
Razor #27I-3416B 4000'	0.00	0.00	5,695.3	-3,964.7	581.5	1,537,788.76	3,459,052.13	40° 47' 52.17 N	103° 50' 31.05 W
- survey misses target center by 5.4ft at 9325.8ft MD (5690.0 TVD, -3964.5 N, 580.4 E)									
- Point									
3416B BH Tgt	0.00	0.00	5,736.3	-7,045.2	607.5	1,534,709.28	3,459,135.69	40° 47' 21.73 N	103° 50' 30.71 W
- survey misses target center by 60.0ft at 12360.0ft MD (5705.1 TVD, -6994.0 N, 605.7 E)									
- Point									
3416B PBH P7	0.00	0.00	5,685.3	-7,045.2	607.5	1,534,709.28	3,459,135.69	40° 47' 21.73 N	103° 50' 30.71 W
- survey misses target center by 54.9ft at 12360.0ft MD (5705.1 TVD, -6994.0 N, 605.7 E)									
- Point									
Razor #27I-3416B 6400'	0.00	0.00	5,687.3	-6,371.9	601.9	1,535,382.34	3,459,117.43	40° 47' 28.38 N	103° 50' 30.78 W
- survey misses target center by 29.0ft at 11738.2ft MD (5693.3 TVD, -6373.2 N, 573.5 E)									
- Point									
Razor #27I-3416B 3000'	0.00	0.00	5,695.3	-2,961.7	573.0	1,538,791.39	3,459,024.92	40° 48' 2.08 N	103° 50' 31.16 W
- survey misses target center by 15.3ft at 8320.7ft MD (5695.6 TVD, -2962.0 N, 557.7 E)									
- Point									

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
12,310.0	5,704.6	-6,944.1	602.6	Last Cathedral Survey @ 12,310' MD
12,360.0	5,705.1	-6,994.0	605.7	Projection to Bit @ 12,360'

Checked By: _____ Approved By: _____ Date: _____