



Whiting Petroleum Corp.

Weld County, CO

Sec 25-T10N-R58W

Razor #25P-2445

Hz

APD

Anticollision Report

27 May, 2015



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	3.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	5/27/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,902.83	APD (Hz)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 25-T10N-R58W						
Razor #25P-2413 - Hz - APD	1,381.17	1,383.27	34.97	25.87	3.845	CC
Razor #25P-2413 - Hz - APD	1,500.00	1,502.01	35.30	25.48	3.596	ES
Razor #25P-2413 - Hz - APD	15,902.83	15,722.97	258.19	48.00	1.228	Level 2, SF
Razor #25P-2414 - Hz - APD	617.77	622.04	55.39	51.76	15.258	CC, ES
Razor #25P-2414 - Hz - APD	15,902.83	15,713.22	510.35	215.73	1.732	SF
Razor #25P-2415 - Hz - APD	300.00	300.00	77.89	76.28	48.233	CC
Razor #25P-2415 - Hz - APD	400.00	402.10	78.05	75.81	34.860	ES
Razor #25P-2415 - Hz - APD	15,902.83	15,628.63	848.50	553.23	2.874	SF
Razor #25P-2416 - Hz - APD	300.00	300.00	102.56	100.95	63.509	CC, ES
Razor #25P-2416 - Hz - APD	15,902.83	15,752.11	1,161.25	859.75	3.851	SF
Razor #25P-2446 - Hz - APD	300.00	300.00	29.99	28.38	18.572	CC
Razor #25P-2446 - Hz - APD	600.00	602.87	31.06	27.55	8.844	ES
Razor #25P-2446 - Hz - APD	15,902.83	16,034.43	345.49	53.08	1.182	Level 2, SF
Razor #25P-2447 - Hz - APD	300.00	300.00	59.98	58.37	37.144	CC
Razor #25P-2447 - Hz - APD	400.00	401.62	60.35	58.11	26.881	ES
Razor #25P-2447 - Hz - APD	15,902.83	15,738.32	671.11	372.23	2.245	SF
Razor #25P-2448 - Hz - APD	300.00	300.00	89.98	88.37	55.719	CC, ES
Razor #25P-2448 - Hz - APD	15,902.83	15,971.84	994.69	692.18	3.288	SF

Offset Design Sec 25-T10N-R58W - Razor #25P-2413 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)		
0.00	0.00	0.00	0.00	0.00	0.00	-0.89	49.59	-0.77	49.60				
100.00	100.00	100.00	100.00	0.13	0.13	-0.89	49.59	-0.77	49.60	49.33	0.27	186.209	
200.00	200.00	200.00	200.00	0.47	0.47	-0.89	49.59	-0.77	49.60	48.66	0.94	52.726	
300.00	300.00	300.00	300.00	0.81	0.81	-0.89	49.59	-0.77	49.60	47.98	1.61	30.711	
400.00	399.98	400.57	400.55	1.13	1.12	99.19	48.99	-2.43	49.30	47.05	2.25	21.944	
500.00	499.84	501.13	500.97	1.45	1.44	99.44	47.18	-7.40	48.40	45.53	2.87	16.852	
600.00	599.45	601.68	601.12	1.78	1.78	99.88	44.16	-15.68	46.92	43.38	3.54	13.259	
700.00	698.70	702.21	700.89	2.13	2.13	100.54	39.95	-27.26	44.84	40.60	4.24	10.570	
800.00	797.47	802.57	800.02	2.51	2.50	101.64	34.60	-41.96	42.24	37.26	4.99	8.473	
900.00	895.71	902.50	898.58	2.91	2.90	105.90	28.96	-57.46	40.03	34.29	5.74	6.972	

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



WOG

Anticollision Report

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Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Sec 25-T10N-R58W - Razor #25P-2413 - Hz - APD		Offset Site Error:		0.00 usft	
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:		0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor						
1,000.00	993.87	1,002.42	997.12	3.32	3.29	111.21	23.32	-72.96	38.22	31.73	6.49	5.887						
1,100.00	1,092.03	1,102.33	1,095.67	3.74	3.70	116.99	17.67	-88.46	36.77	29.55	7.22	5.092						
1,200.00	1,190.20	1,202.25	1,194.22	4.17	4.11	123.18	12.03	-103.95	35.73	27.81	7.92	4.512						
1,300.00	1,288.36	1,302.17	1,292.77	4.60	4.52	129.65	6.39	-119.45	35.12	26.54	8.58	4.093						
1,381.17	1,368.04	1,383.27	1,372.76	4.95	4.85	135.02	1.82	-132.03	34.97	25.87	9.09	3.845	CC					
1,400.00	1,386.52	1,402.09	1,391.31	5.03	4.93	136.27	0.75	-134.95	34.97	25.77	9.21	3.798						
1,500.00	1,484.69	1,502.01	1,489.86	5.46	5.34	142.86	-4.89	-150.44	35.30	25.48	9.81	3.596	ES					
1,600.00	1,582.85	1,601.92	1,588.41	5.90	5.75	149.24	-10.53	-165.94	36.07	25.66	10.41	3.464						
1,700.00	1,681.01	1,701.84	1,686.96	6.33	6.17	155.28	-16.17	-181.44	37.28	26.26	11.02	3.383						
1,800.00	1,779.17	1,801.76	1,785.50	6.77	6.58	160.89	-21.81	-196.93	38.87	27.22	11.64	3.339						
1,900.00	1,877.34	1,901.68	1,884.05	7.21	7.00	166.02	-27.45	-212.43	40.80	28.51	12.29	3.319						
2,000.00	1,975.50	2,001.60	1,982.60	7.64	7.42	170.64	-33.09	-227.93	43.03	30.06	12.97	3.318						
2,100.00	2,073.66	2,101.51	2,081.15	8.08	7.83	174.79	-38.73	-243.42	45.51	31.83	13.67	3.329						
2,200.00	2,171.82	2,201.43	2,179.69	8.52	8.25	178.49	-44.37	-258.92	48.20	33.80	14.40	3.347						
2,300.00	2,269.99	2,301.35	2,278.24	8.96	8.67	-178.21	-50.01	-274.42	51.07	35.93	15.15	3.372						
2,400.00	2,368.15	2,401.27	2,376.79	9.40	9.09	-175.27	-55.65	-289.91	54.10	38.19	15.91	3.400						
2,500.00	2,466.31	2,501.18	2,475.34	9.84	9.51	-172.65	-61.29	-305.41	57.25	40.56	16.69	3.431						
2,600.00	2,564.48	2,601.10	2,573.89	10.28	9.92	-170.30	-66.93	-320.91	60.51	43.03	17.47	3.463						
2,700.00	2,662.64	2,701.02	2,672.43	10.72	10.34	-168.20	-72.57	-336.40	63.86	45.59	18.27	3.495						
2,800.00	2,760.80	2,800.94	2,770.98	11.16	10.76	-166.31	-78.21	-351.90	67.28	48.22	19.07	3.528						
2,900.00	2,858.96	2,900.86	2,869.53	11.60	11.18	-164.60	-83.85	-367.40	70.78	50.90	19.87	3.561						
3,000.00	2,957.13	3,000.77	2,968.08	12.04	11.60	-163.06	-89.49	-382.89	74.33	53.64	20.68	3.594						
3,100.00	3,055.29	3,100.69	3,066.62	12.48	12.02	-161.66	-95.13	-398.39	77.93	56.43	21.49	3.626						
3,200.00	3,153.45	3,200.61	3,165.17	12.93	12.44	-160.38	-100.77	-413.89	81.57	59.26	22.31	3.657						
3,300.00	3,251.61	3,300.53	3,263.72	13.37	12.86	-159.21	-106.41	-429.38	85.24	62.12	23.12	3.687						
3,400.00	3,349.78	3,400.45	3,362.27	13.81	13.28	-158.14	-112.05	-444.88	88.96	65.02	23.93	3.717						
3,500.00	3,447.94	3,500.36	3,460.81	14.25	13.70	-157.16	-117.69	-460.38	92.69	67.94	24.75	3.745						
3,600.00	3,546.10	3,600.28	3,559.36	14.69	14.11	-156.25	-123.33	-475.87	96.46	70.89	25.57	3.773						
3,700.00	3,644.27	3,700.20	3,657.91	15.13	14.53	-155.41	-128.97	-491.37	100.25	73.86	26.38	3.800						
3,800.00	3,742.43	3,800.12	3,756.46	15.58	14.95	-154.63	-134.61	-506.87	104.05	76.85	27.20	3.825						
3,900.00	3,840.59	3,900.04	3,855.00	16.02	15.37	-153.91	-140.25	-522.36	107.88	79.86	28.02	3.850						
4,000.00	3,938.75	3,999.95	3,953.55	16.46	15.79	-153.23	-145.89	-537.86	111.72	82.88	28.83	3.875						
4,100.00	4,036.92	4,099.87	4,052.10	16.90	16.21	-152.60	-151.53	-553.36	115.57	85.92	29.65	3.898						
4,200.00	4,135.08	4,199.79	4,150.65	17.34	16.63	-152.01	-157.18	-568.85	119.44	88.97	30.47	3.920						
4,300.00	4,233.24	4,299.71	4,249.19	17.78	17.05	-151.46	-162.82	-584.35	123.32	92.04	31.28	3.942						
4,400.00	4,331.40	4,398.80	4,346.95	18.23	17.45	-150.98	-168.38	-599.63	127.29	95.21	32.08	3.968						
4,500.00	4,429.57	4,495.22	4,442.41	18.67	17.72	-151.17	-173.00	-612.33	133.14	100.45	32.69	4.073						
4,600.00	4,527.85	4,591.27	4,537.90	19.07	17.97	-152.09	-176.51	-621.97	141.08	107.89	33.18	4.251						
4,700.00	4,626.66	4,687.07	4,633.44	19.35	18.20	-153.15	-178.92	-628.59	148.86	115.30	33.57	4.435						
4,800.00	4,725.95	4,782.65	4,728.94	19.62	18.43	-154.25	-180.23	-632.20	156.26	122.34	33.92	4.607						
4,900.00	4,825.60	4,879.32	4,825.60	19.87	18.66	-155.38	-180.50	-632.95	163.16	128.89	34.26	4.762						
5,000.00	4,925.47	4,979.19	4,925.47	20.10	18.91	-156.11	-180.50	-632.95	167.61	132.97	34.64	4.838						
5,100.00	5,025.46	5,080.53	5,026.81	20.33	19.17	103.59	-180.20	-632.95	168.84	133.77	35.07	4.814						
5,200.00	5,125.46	5,186.47	5,131.60	20.58	19.42	98.78	-165.90	-632.95	166.17	131.04	35.13	4.730						
5,286.76	5,212.21	5,271.46	5,212.21	20.80	19.60	90.00	-139.28	-632.95	164.11	129.26	34.85	4.709						
5,300.00	5,225.46	5,283.15	5,222.92	20.83	19.62	88.01	-134.61	-632.95	164.23	129.44	34.79	4.721						
5,400.00	5,324.47	5,371.82	5,300.30	21.08	19.77	76.19	-91.52	-632.95	169.71	135.05	34.66	4.896						
5,500.00	5,419.21	5,455.86	5,365.90	21.30	19.89	65.89	-39.14	-632.95	181.63	146.97	34.66	5.240						
5,600.00	5,506.19	5,536.33	5,420.04	21.50	19.96	57.56	20.28	-632.96	197.12	162.79	34.33	5.741						
5,700.00	5,582.22	5,614.07	5,463.07	21.66	20.02	51.14	84.94	-632.96	213.60	180.18	33.42	6.392						
5,800.00	5,644.50	5,689.74	5,495.27	21.79	20.05	46.39	153.35	-632.96	229.13	197.11	32.02	7.156						
5,900.00	5,690.75	5,763.88	5,516.88	21.89	20.07	42.99	224.20	-632.96	242.38	211.88	30.50	7.947						

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



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Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,000.00	5,719.26	5,836.94	5,528.13	22.00	20.10	40.72	296.33	-632.97	252.45	223.18	29.27	8.625		
6,099.99	5,729.00	5,920.14	5,530.00	22.14	20.17	39.52	379.47	-632.97	257.95	229.09	28.86	8.939		
6,200.00	5,729.00	6,020.15	5,530.00	22.36	20.41	39.52	479.49	-632.98	257.95	228.54	29.41	8.771		
6,300.00	5,729.00	6,120.15	5,530.00	22.71	20.85	39.52	579.49	-632.98	257.96	227.86	30.09	8.572		
6,400.00	5,729.00	6,220.15	5,530.00	23.19	21.46	39.52	679.49	-632.99	257.96	227.06	30.90	8.348		
6,500.00	5,729.00	6,320.15	5,530.00	23.79	22.19	39.52	779.49	-632.99	257.96	226.14	31.82	8.107		
6,600.00	5,729.00	6,420.15	5,530.00	24.50	23.00	39.52	879.49	-633.00	257.96	225.12	32.84	7.855		
6,700.00	5,729.00	6,520.15	5,530.00	25.29	23.88	39.52	979.49	-633.00	257.97	224.01	33.96	7.597		
6,800.00	5,729.00	6,620.15	5,530.00	26.16	24.82	39.52	1,079.49	-633.00	257.97	222.81	35.16	7.338		
6,900.00	5,729.00	6,720.15	5,530.00	27.09	25.81	39.52	1,179.49	-633.01	257.97	221.54	36.43	7.081		
7,000.00	5,729.00	6,820.15	5,530.00	28.07	26.84	39.52	1,279.49	-633.01	257.97	220.20	37.78	6.829		
7,100.00	5,729.00	6,920.15	5,530.00	29.10	27.91	39.52	1,379.49	-633.02	257.98	218.79	39.18	6.584		
7,200.00	5,729.00	7,020.15	5,530.00	30.16	29.02	39.52	1,479.49	-633.02	257.98	217.33	40.64	6.347		
7,300.00	5,729.00	7,120.15	5,530.00	31.26	30.16	39.52	1,579.49	-633.03	257.98	215.82	42.16	6.120		
7,400.00	5,729.00	7,220.15	5,530.00	32.40	31.32	39.52	1,679.49	-633.03	257.98	214.27	43.71	5.902		
7,500.00	5,729.00	7,320.15	5,530.00	33.55	32.51	39.52	1,779.49	-633.04	257.98	212.68	45.31	5.694		
7,600.00	5,729.00	7,420.15	5,530.00	34.74	33.73	39.53	1,879.49	-633.04	257.99	211.05	46.94	5.496		
7,700.00	5,729.00	7,520.15	5,530.00	35.94	34.96	39.53	1,979.49	-633.05	257.99	209.39	48.60	5.308		
7,800.00	5,729.00	7,620.15	5,530.00	37.16	36.21	39.53	2,079.49	-633.05	257.99	207.70	50.29	5.130		
7,900.00	5,729.00	7,720.15	5,530.00	38.40	37.47	39.53	2,179.49	-633.05	257.99	205.99	52.01	4.961		
8,000.00	5,729.00	7,820.15	5,530.00	39.66	38.75	39.53	2,279.49	-633.06	258.00	204.25	53.75	4.800		
8,100.00	5,729.00	7,920.15	5,530.00	40.93	40.05	39.53	2,379.49	-633.06	258.00	202.49	55.51	4.648		
8,200.00	5,729.00	8,020.15	5,530.00	42.22	41.35	39.53	2,479.49	-633.07	258.00	200.71	57.30	4.503		
8,300.00	5,729.00	8,120.15	5,530.00	43.51	42.66	39.53	2,579.49	-633.07	258.00	198.91	59.10	4.366		
8,400.00	5,729.00	8,220.15	5,530.00	44.82	43.99	39.53	2,679.49	-633.08	258.01	197.09	60.91	4.236		
8,500.00	5,729.00	8,320.15	5,530.00	46.13	45.32	39.53	2,779.49	-633.08	258.01	195.27	62.74	4.112		
8,600.00	5,729.00	8,420.15	5,530.00	47.46	46.67	39.53	2,879.49	-633.09	258.01	193.42	64.59	3.995		
8,700.00	5,729.00	8,520.15	5,530.00	48.79	48.02	39.53	2,979.49	-633.09	258.01	191.57	66.44	3.883		
8,800.00	5,729.00	8,620.15	5,530.00	50.14	49.37	39.53	3,079.49	-633.10	258.02	189.71	68.31	3.777		
8,900.00	5,729.00	8,720.15	5,530.00	51.49	50.73	39.53	3,179.49	-633.10	258.02	187.83	70.19	3.676		
9,000.00	5,729.00	8,820.15	5,530.00	52.84	52.10	39.53	3,279.49	-633.11	258.02	185.94	72.08	3.580		
9,100.00	5,729.00	8,920.15	5,530.00	54.20	53.48	39.53	3,379.49	-633.11	258.02	184.05	73.98	3.488		
9,200.00	5,729.00	9,020.15	5,530.00	55.57	54.86	39.54	3,479.49	-633.11	258.03	182.15	75.88	3.400		
9,300.00	5,729.00	9,120.15	5,530.00	56.94	56.24	39.54	3,579.49	-633.12	258.03	180.24	77.79	3.317		
9,400.00	5,729.00	9,220.15	5,530.00	58.32	57.63	39.54	3,679.49	-633.12	258.03	178.32	79.71	3.237		
9,500.00	5,729.00	9,320.15	5,530.00	59.70	59.02	39.54	3,779.49	-633.13	258.03	176.39	81.64	3.161		
9,600.00	5,729.00	9,420.15	5,530.00	61.08	60.42	39.54	3,879.49	-633.13	258.04	174.46	83.57	3.088		
9,700.00	5,729.00	9,520.15	5,530.00	62.47	61.81	39.54	3,979.49	-633.14	258.04	172.53	85.51	3.018		
9,800.00	5,729.00	9,620.15	5,530.00	63.87	63.22	39.54	4,079.49	-633.14	258.04	170.59	87.45	2.951		
9,900.00	5,729.00	9,720.15	5,530.00	65.26	64.62	39.54	4,179.49	-633.15	258.04	168.64	89.40	2.886		
10,000.00	5,729.00	9,820.15	5,530.00	66.66	66.03	39.54	4,279.49	-633.15	258.05	166.69	91.36	2.825		
10,100.00	5,729.00	9,920.15	5,530.00	68.07	67.44	39.54	4,379.49	-633.16	258.05	164.73	93.31	2.765		
10,200.00	5,729.00	10,020.15	5,530.00	69.47	68.86	39.54	4,479.49	-633.16	258.05	162.77	95.28	2.708		
10,300.00	5,729.00	10,120.15	5,530.00	70.88	70.27	39.54	4,579.49	-633.17	258.05	160.81	97.24	2.654		
10,400.00	5,729.00	10,220.15	5,530.00	72.29	71.69	39.54	4,679.49	-633.17	258.06	158.84	99.21	2.601		
10,500.00	5,729.00	10,320.15	5,530.00	73.70	73.11	39.54	4,779.49	-633.17	258.06	156.87	101.18	2.550		
10,600.00	5,729.00	10,420.15	5,530.00	75.12	74.53	39.54	4,879.49	-633.18	258.06	154.90	103.16	2.502		
10,700.00	5,729.00	10,520.15	5,530.00	76.54	75.96	39.55	4,979.49	-633.18	258.06	152.92	105.14	2.454		
10,800.00	5,729.00	10,620.15	5,530.00	77.96	77.38	39.55	5,079.49	-633.19	258.07	150.94	107.12	2.409		
10,900.00	5,729.00	10,720.15	5,530.00	79.38	78.81	39.55	5,179.49	-633.19	258.07	148.96	109.11	2.365		
11,000.00	5,729.00	10,820.15	5,530.00	80.80	80.24	39.55	5,279.49	-633.20	258.07	146.98	111.09	2.323		
11,100.00	5,729.00	10,920.15	5,530.00	82.23	81.67	39.55	5,379.49	-633.20	258.07	144.99	113.08	2.282		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,200.00	5,729.00	11,020.15	5,530.00	83.65	83.10	39.55	5,479.49	-633.21	258.08	143.00	115.08	2.243		
11,300.00	5,729.00	11,120.15	5,530.00	85.08	84.53	39.55	5,579.49	-633.21	258.08	141.01	117.07	2.204		
11,400.00	5,729.00	11,220.15	5,530.00	86.51	85.97	39.55	5,679.49	-633.22	258.08	139.01	119.07	2.168		
11,500.00	5,729.00	11,320.15	5,530.00	87.94	87.41	39.55	5,779.49	-633.22	258.08	137.02	121.07	2.132		
11,600.00	5,729.00	11,420.15	5,530.00	89.37	88.84	39.55	5,879.49	-633.23	258.09	135.02	123.07	2.097		
11,700.00	5,729.00	11,520.15	5,530.00	90.81	90.28	39.55	5,979.49	-633.23	258.09	133.02	125.07	2.064		
11,800.00	5,729.00	11,620.15	5,530.00	92.24	91.72	39.55	6,079.49	-633.23	258.09	131.02	127.07	2.031		
11,900.00	5,729.00	11,720.15	5,530.00	93.68	93.16	39.55	6,179.49	-633.24	258.09	129.01	129.08	2.000		
12,000.00	5,729.00	11,820.15	5,530.00	95.11	94.60	39.55	6,279.49	-633.24	258.09	127.01	131.09	1.969		
12,100.00	5,729.00	11,920.15	5,530.00	96.55	96.04	39.55	6,379.49	-633.25	258.10	125.00	133.09	1.939		
12,200.00	5,729.00	12,020.15	5,530.00	97.99	97.49	39.56	6,479.49	-633.25	258.10	123.00	135.10	1.910		
12,300.00	5,729.00	12,120.15	5,530.00	99.43	98.93	39.56	6,579.49	-633.26	258.10	120.99	137.12	1.882		
12,400.00	5,729.00	12,220.15	5,530.00	100.87	100.37	39.56	6,679.49	-633.26	258.10	118.98	139.13	1.855		
12,500.00	5,729.00	12,320.15	5,530.00	102.31	101.82	39.56	6,779.49	-633.27	258.11	116.96	141.14	1.829		
12,600.00	5,729.00	12,420.15	5,530.00	103.76	103.27	39.56	6,879.49	-633.27	258.11	114.95	143.16	1.803		
12,700.00	5,729.00	12,520.15	5,530.00	105.20	104.71	39.56	6,979.49	-633.28	258.11	112.94	145.17	1.778		
12,800.00	5,729.00	12,620.15	5,530.00	106.64	106.16	39.56	7,079.49	-633.28	258.11	110.92	147.19	1.754		
12,900.00	5,729.00	12,720.15	5,530.00	108.09	107.61	39.56	7,179.49	-633.29	258.12	108.91	149.21	1.730		
13,000.00	5,729.00	12,820.15	5,530.00	109.53	109.06	39.56	7,279.49	-633.29	258.12	106.89	151.23	1.707		
13,100.00	5,729.00	12,920.15	5,530.00	110.98	110.51	39.56	7,379.49	-633.29	258.12	104.87	153.25	1.684		
13,200.00	5,729.00	13,020.15	5,530.00	112.43	111.96	39.56	7,479.49	-633.30	258.12	102.85	155.27	1.662		
13,300.00	5,729.00	13,120.15	5,530.00	113.87	113.41	39.56	7,579.49	-633.30	258.13	100.83	157.30	1.641		
13,400.00	5,729.00	13,220.15	5,530.00	115.32	114.86	39.56	7,679.49	-633.31	258.13	98.81	159.32	1.620		
13,500.00	5,729.00	13,320.15	5,530.00	116.77	116.31	39.56	7,779.49	-633.31	258.13	96.79	161.34	1.600		
13,600.00	5,729.00	13,420.15	5,530.00	118.22	117.76	39.56	7,879.49	-633.32	258.13	94.76	163.37	1.580		
13,700.00	5,729.00	13,520.15	5,530.00	119.67	119.21	39.57	7,979.49	-633.32	258.14	92.74	165.40	1.561		
13,800.00	5,729.00	13,620.15	5,530.00	121.12	120.67	39.57	8,079.49	-633.33	258.14	90.72	167.42	1.542		
13,900.00	5,729.00	13,720.15	5,530.00	122.57	122.12	39.57	8,179.49	-633.33	258.14	88.69	169.45	1.523		
14,000.00	5,729.00	13,820.15	5,530.00	124.02	123.57	39.57	8,279.49	-633.34	258.14	86.66	171.48	1.505		
14,100.00	5,729.00	13,920.15	5,530.00	125.47	125.03	39.57	8,379.49	-633.34	258.15	84.64	173.51	1.488 Level 3		
14,200.00	5,729.00	14,020.15	5,530.00	126.93	126.48	39.57	8,479.49	-633.34	258.15	82.61	175.54	1.471 Level 3		
14,300.00	5,729.00	14,120.15	5,530.00	128.38	127.94	39.57	8,579.49	-633.35	258.15	80.58	177.57	1.454 Level 3		
14,400.00	5,729.00	14,220.15	5,530.00	129.83	129.39	39.57	8,679.49	-633.35	258.15	78.55	179.60	1.437 Level 3		
14,500.00	5,729.00	14,320.15	5,530.00	131.29	130.85	39.57	8,779.49	-633.36	258.16	76.52	181.63	1.421 Level 3		
14,600.00	5,729.00	14,420.15	5,530.00	132.74	132.31	39.57	8,879.49	-633.36	258.16	74.49	183.66	1.406 Level 3		
14,700.00	5,729.00	14,520.15	5,530.00	134.19	133.76	39.57	8,979.49	-633.37	258.16	72.46	185.70	1.390 Level 3		
14,800.00	5,729.00	14,620.15	5,530.00	135.65	135.22	39.57	9,079.49	-633.37	258.16	70.43	187.73	1.375 Level 3		
14,900.00	5,729.00	14,720.15	5,530.00	137.10	136.68	39.57	9,179.49	-633.38	258.17	68.40	189.76	1.360 Level 3		
15,000.00	5,729.00	14,820.15	5,530.00	138.56	138.13	39.57	9,279.49	-633.38	258.17	66.37	191.80	1.346 Level 3		
15,100.00	5,729.00	14,920.15	5,530.00	140.02	139.59	39.57	9,379.49	-633.39	258.17	64.34	193.83	1.332 Level 3		
15,200.00	5,729.00	15,020.15	5,530.00	141.47	141.05	39.57	9,479.49	-633.39	258.17	62.30	195.87	1.318 Level 3		
15,300.00	5,729.00	15,120.15	5,530.00	142.93	142.51	39.58	9,579.49	-633.40	258.18	60.27	197.90	1.305 Level 3		
15,400.00	5,729.00	15,220.15	5,530.00	144.38	143.97	39.58	9,679.49	-633.40	258.18	58.24	199.94	1.291 Level 3		
15,500.00	5,729.00	15,320.15	5,530.00	145.84	145.43	39.58	9,779.49	-633.40	258.18	56.20	201.98	1.278 Level 3		
15,600.00	5,729.00	15,420.15	5,530.00	147.30	146.89	39.58	9,879.49	-633.41	258.18	54.17	204.02	1.266 Level 3		
15,700.00	5,729.00	15,520.15	5,530.00	148.76	148.34	39.58	9,979.49	-633.41	258.19	52.13	206.05	1.253 Level 3		
15,800.00	5,729.00	15,620.15	5,530.00	150.21	149.80	39.58	10,079.49	-633.42	258.19	50.10	208.09	1.241 Level 2		
15,899.97	5,729.00	15,720.12	5,530.00	151.67	151.26	39.58	10,179.45	-633.42	258.19	48.06	210.13	1.229 Level 2		
15,902.83	5,729.00	15,722.97	5,530.00	151.71	151.30	39.58	10,182.31	-633.42	258.19	48.00	210.19	1.228 Level 2, SF		



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	30.01	50.60	29.22	58.43					
100.00	100.00	100.00	100.00	0.13	0.13	30.01	50.60	29.22	58.43	58.17	0.27	219.392		
200.00	200.00	200.00	200.00	0.47	0.47	30.01	50.60	29.22	58.43	57.49	0.94	62.122		
300.00	300.00	300.00	300.00	0.81	0.81	30.01	50.60	29.22	58.43	56.82	1.61	36.184		
400.00	399.98	401.78	401.75	1.13	1.12	130.44	49.73	27.64	58.04	55.79	2.25	25.813		
500.00	499.84	503.53	503.36	1.45	1.44	131.76	47.10	22.90	56.86	53.99	2.87	19.811		
600.00	599.45	604.29	603.76	1.78	1.77	134.31	43.02	15.55	55.43	51.92	3.51	15.776		
617.77	617.12	622.04	621.45	1.84	1.83	135.00	42.27	14.20	55.39	51.76	3.63	15.258	CC, ES	
700.00	698.70	704.16	703.26	2.13	2.11	139.19	38.80	7.94	56.38	52.21	4.17	13.530		
800.00	797.47	803.84	802.56	2.51	2.45	145.77	34.59	0.34	60.57	55.75	4.82	12.554		
900.00	895.71	903.25	901.59	2.91	2.80	152.67	30.39	-7.24	68.16	62.68	5.48	12.437		
1,000.00	993.87	1,002.61	1,000.57	3.32	3.16	158.27	26.19	-14.81	76.95	70.81	6.14	12.536		
1,100.00	1,092.03	1,101.97	1,099.55	3.74	3.51	162.70	21.99	-22.39	86.32	79.52	6.80	12.694		
1,200.00	1,190.20	1,201.33	1,198.54	4.17	3.87	166.25	17.80	-29.96	96.10	88.63	7.47	12.871		
1,300.00	1,288.36	1,300.70	1,297.52	4.60	4.23	169.14	13.60	-37.54	106.18	98.04	8.14	13.048		
1,400.00	1,386.52	1,400.06	1,396.50	5.03	4.58	171.52	9.40	-45.11	116.48	107.67	8.81	13.216		
1,500.00	1,484.69	1,499.42	1,495.49	5.46	4.94	173.51	5.20	-52.68	126.95	117.45	9.49	13.373		
1,600.00	1,582.85	1,598.78	1,594.47	5.90	5.30	175.20	1.00	-60.26	137.54	127.37	10.18	13.516		
1,700.00	1,681.01	1,698.14	1,693.46	6.33	5.66	176.64	-3.20	-67.83	148.24	137.38	10.86	13.648		
1,800.00	1,779.17	1,797.50	1,792.44	6.77	6.02	177.89	-7.39	-75.41	159.02	147.47	11.55	13.768		
1,900.00	1,877.34	1,896.86	1,891.42	7.21	6.38	178.98	-11.59	-82.98	169.86	157.62	12.24	13.877		
2,000.00	1,975.50	1,996.23	1,990.41	7.64	6.75	179.94	-15.79	-90.55	180.76	167.83	12.93	13.977		
2,100.00	2,073.66	2,095.59	2,089.39	8.08	7.11	-179.20	-19.99	-98.13	191.70	178.08	13.63	14.069		
2,200.00	2,171.82	2,194.95	2,188.37	8.52	7.47	-178.45	-24.19	-105.70	202.68	188.36	14.32	14.152		
2,300.00	2,269.99	2,294.31	2,287.36	8.96	7.83	-177.76	-28.39	-113.28	213.69	198.67	15.02	14.230		
2,400.00	2,368.15	2,393.67	2,386.34	9.40	8.19	-177.15	-32.59	-120.85	224.73	209.01	15.71	14.301		
2,500.00	2,466.31	2,493.03	2,485.32	9.84	8.55	-176.59	-36.78	-128.43	235.79	219.38	16.41	14.366		
2,600.00	2,564.48	2,592.40	2,584.31	10.28	8.91	-176.09	-40.98	-136.00	246.87	229.76	17.11	14.427		
2,700.00	2,662.64	2,691.76	2,683.29	10.72	9.28	-175.62	-45.18	-143.57	257.97	240.16	17.81	14.484		
2,800.00	2,760.80	2,791.12	2,782.27	11.16	9.64	-175.20	-49.38	-151.15	269.08	250.57	18.51	14.536		
2,900.00	2,858.96	2,890.48	2,881.26	11.60	10.00	-174.81	-53.58	-158.72	280.21	261.00	19.21	14.585		
3,000.00	2,957.13	2,989.84	2,980.24	12.04	10.36	-174.45	-57.78	-166.30	291.35	271.43	19.91	14.631		
3,100.00	3,055.29	3,089.20	3,079.22	12.48	10.73	-174.11	-61.97	-173.87	302.49	281.88	20.61	14.674		
3,200.00	3,153.45	3,188.57	3,178.21	12.93	11.09	-173.80	-66.17	-181.44	313.65	292.34	21.32	14.714		
3,300.00	3,251.61	3,287.93	3,277.19	13.37	11.45	-173.51	-70.37	-189.02	324.82	302.80	22.02	14.752		
3,400.00	3,349.78	3,387.29	3,376.17	13.81	11.81	-173.24	-74.57	-196.59	335.99	313.27	22.72	14.788		
3,500.00	3,447.94	3,486.65	3,475.16	14.25	12.17	-172.99	-78.77	-204.17	347.18	323.75	23.42	14.821		
3,600.00	3,546.10	3,586.01	3,574.14	14.69	12.54	-172.75	-82.97	-211.74	358.36	334.24	24.13	14.853		
3,700.00	3,644.27	3,685.37	3,673.12	15.13	12.90	-172.53	-87.16	-219.31	369.56	344.73	24.83	14.883		
3,800.00	3,742.43	3,784.73	3,772.11	15.58	13.26	-172.32	-91.36	-226.89	380.76	355.22	25.54	14.911		
3,900.00	3,840.59	3,884.10	3,871.09	16.02	13.62	-172.12	-95.56	-234.46	391.96	365.72	26.24	14.938		
4,000.00	3,938.75	3,983.46	3,970.08	16.46	13.99	-171.93	-99.76	-242.04	403.17	376.23	26.94	14.964		
4,100.00	4,036.92	4,082.82	4,069.06	16.90	14.35	-171.76	-103.96	-249.61	414.38	386.73	27.65	14.988		
4,200.00	4,135.08	4,182.18	4,168.04	17.34	14.71	-171.59	-108.16	-257.19	425.60	397.24	28.35	15.011		
4,300.00	4,233.24	4,281.54	4,267.03	17.78	15.07	-171.43	-112.36	-264.76	436.82	407.76	29.06	15.033		
4,400.00	4,331.40	4,380.90	4,366.01	18.23	15.44	-171.28	-116.55	-272.33	448.04	418.27	29.76	15.054		
4,500.00	4,429.57	4,480.27	4,464.99	18.67	15.80	-171.14	-120.75	-279.91	459.26	428.79	30.47	15.074		
4,600.00	4,527.85	4,579.69	4,564.04	19.07	16.16	-171.01	-124.95	-287.49	469.87	438.70	31.17	15.075		
4,700.00	4,626.66	4,676.63	4,659.62	19.35	16.50	-170.84	-128.95	-294.70	477.45	445.66	31.78	15.023		
4,800.00	4,725.95	4,762.57	4,746.39	19.62	16.73	-170.75	-131.61	-299.50	483.59	451.32	32.27	14.984		
4,900.00	4,825.60	4,849.43	4,833.20	19.87	16.95	-170.75	-132.99	-301.99	488.97	456.23	32.74	14.935		
5,000.00	4,925.47	4,941.71	4,925.47	20.10	17.20	-170.82	-133.21	-302.38	493.34	460.13	33.20	14.857		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,025.46	5,041.70	5,025.46	20.33	17.48	89.15	-133.21	-302.38	494.73	461.04	33.70	14.682		
5,146.54	5,072.00	5,088.24	5,072.00	20.45	17.60	89.15	-133.21	-302.38	494.73	460.78	33.95	14.570		
5,200.00	5,125.46	5,141.04	5,124.76	20.58	17.74	88.97	-131.62	-302.38	494.76	460.52	34.24	14.450		
5,300.00	5,225.46	5,236.62	5,218.83	20.83	17.99	87.12	-115.49	-302.38	495.34	460.66	34.68	14.285		
5,400.00	5,324.47	5,327.79	5,304.40	21.08	18.20	84.64	-84.34	-302.38	496.95	461.93	35.02	14.191		
5,500.00	5,419.21	5,416.03	5,380.83	21.30	18.38	82.38	-40.45	-302.39	499.25	463.93	35.32	14.136		
5,600.00	5,506.19	5,500.00	5,445.69	21.50	18.52	80.43	12.72	-302.39	501.91	466.33	35.58	14.108		
5,700.00	5,582.22	5,585.93	5,502.36	21.66	18.64	78.73	77.19	-302.39	504.58	468.75	35.83	14.082		
5,800.00	5,644.50	5,668.55	5,546.15	21.79	18.73	77.43	147.15	-302.39	506.96	470.85	36.10	14.041		
5,900.00	5,690.75	5,750.00	5,577.97	21.89	18.79	76.51	222.04	-302.40	508.77	472.33	36.45	13.959		
6,000.00	5,719.26	5,831.19	5,597.69	22.00	18.90	76.01	300.71	-302.40	509.83	472.91	36.92	13.809		
6,099.99	5,729.00	5,911.95	5,604.96	22.14	19.24	75.92	381.06	-302.41	510.01	472.46	37.55	13.582		
6,135.97	5,729.04	5,946.36	5,605.00	22.21	19.41	75.92	415.47	-302.41	510.01	472.13	37.88	13.463		
6,200.00	5,729.00	6,010.39	5,605.00	22.36	19.75	75.93	479.50	-302.41	510.00	471.50	38.50	13.247		
6,300.00	5,729.00	6,110.39	5,605.00	22.71	20.37	75.93	579.50	-302.42	510.01	470.37	39.64	12.866		
6,400.00	5,729.00	6,210.39	5,605.00	23.19	21.07	75.93	679.50	-302.42	510.01	469.06	40.95	12.455		
6,500.00	5,729.00	6,310.39	5,605.00	23.79	21.84	75.93	779.50	-302.42	510.01	467.60	42.41	12.026		
6,600.00	5,729.00	6,410.39	5,605.00	24.50	22.68	75.93	879.50	-302.43	510.02	466.01	44.01	11.588		
6,700.00	5,729.00	6,510.39	5,605.00	25.29	23.58	75.93	979.50	-302.43	510.02	464.28	45.74	11.151		
6,800.00	5,729.00	6,610.39	5,605.00	26.16	24.54	75.93	1,079.50	-302.44	510.02	462.45	47.57	10.721		
6,900.00	5,729.00	6,710.39	5,605.00	27.09	25.54	75.93	1,179.50	-302.44	510.03	460.52	49.51	10.302		
7,000.00	5,729.00	6,810.39	5,605.00	28.07	26.59	75.93	1,279.50	-302.45	510.03	458.50	51.53	9.898		
7,100.00	5,729.00	6,910.39	5,605.00	29.10	27.68	75.93	1,379.50	-302.45	510.03	456.41	53.63	9.511		
7,200.00	5,729.00	7,010.39	5,605.00	30.16	28.80	75.93	1,479.50	-302.46	510.04	454.24	55.79	9.142		
7,300.00	5,729.00	7,110.39	5,605.00	31.26	29.95	75.93	1,579.50	-302.46	510.04	452.02	58.02	8.791		
7,400.00	5,729.00	7,210.39	5,605.00	32.40	31.12	75.93	1,679.50	-302.47	510.04	449.74	60.30	8.458		
7,500.00	5,729.00	7,310.39	5,605.00	33.55	32.32	75.93	1,779.50	-302.47	510.05	447.41	62.63	8.143		
7,600.00	5,729.00	7,410.39	5,605.00	34.74	33.55	75.93	1,879.50	-302.48	510.05	445.04	65.01	7.846		
7,700.00	5,729.00	7,510.39	5,605.00	35.94	34.79	75.93	1,979.50	-302.48	510.06	442.64	67.42	7.565		
7,800.00	5,729.00	7,610.39	5,605.00	37.16	36.05	75.93	2,079.50	-302.49	510.06	440.19	69.87	7.300		
7,900.00	5,729.00	7,710.39	5,605.00	38.40	37.32	75.93	2,179.50	-302.49	510.06	437.72	72.34	7.051		
8,000.00	5,729.00	7,810.39	5,605.00	39.66	38.61	75.93	2,279.50	-302.50	510.07	435.22	74.85	6.815		
8,100.00	5,729.00	7,910.39	5,605.00	40.93	39.91	75.93	2,379.50	-302.50	510.07	432.69	77.38	6.592		
8,200.00	5,729.00	8,010.39	5,605.00	42.22	41.22	75.93	2,479.50	-302.51	510.07	430.14	79.93	6.381		
8,300.00	5,729.00	8,110.39	5,605.00	43.51	42.55	75.93	2,579.50	-302.51	510.08	427.57	82.51	6.182		
8,400.00	5,729.00	8,210.39	5,605.00	44.82	43.88	75.93	2,679.50	-302.52	510.08	424.98	85.10	5.994		
8,500.00	5,729.00	8,310.39	5,605.00	46.13	45.22	75.93	2,779.50	-302.52	510.08	422.37	87.71	5.815		
8,600.00	5,729.00	8,410.39	5,605.00	47.46	46.57	75.93	2,879.50	-302.53	510.09	419.75	90.34	5.646		
8,700.00	5,729.00	8,510.39	5,605.00	48.79	47.92	75.93	2,979.50	-302.53	510.09	417.11	92.98	5.486		
8,800.00	5,729.00	8,610.39	5,605.00	50.14	49.28	75.93	3,079.50	-302.53	510.09	414.46	95.63	5.334		
8,900.00	5,729.00	8,710.39	5,605.00	51.49	50.65	75.93	3,179.50	-302.54	510.10	411.80	98.30	5.189		
9,000.00	5,729.00	8,810.39	5,605.00	52.84	52.03	75.93	3,279.50	-302.54	510.10	409.13	100.97	5.052		
9,100.00	5,729.00	8,910.39	5,605.00	54.20	53.41	75.93	3,379.50	-302.55	510.11	406.44	103.66	4.921		
9,200.00	5,729.00	9,010.39	5,605.00	55.57	54.79	75.93	3,479.50	-302.55	510.11	403.75	106.36	4.796		
9,300.00	5,729.00	9,110.39	5,605.00	56.94	56.18	75.93	3,579.50	-302.56	510.11	401.05	109.06	4.677		
9,400.00	5,729.00	9,210.39	5,605.00	58.32	57.57	75.93	3,679.50	-302.56	510.12	398.34	111.78	4.564		
9,500.00	5,729.00	9,310.39	5,605.00	59.70	58.97	75.93	3,779.50	-302.57	510.12	395.62	114.50	4.455		
9,600.00	5,729.00	9,410.39	5,605.00	61.08	60.37	75.93	3,879.50	-302.57	510.12	392.90	117.23	4.352		
9,700.00	5,729.00	9,510.39	5,605.00	62.47	61.77	75.93	3,979.50	-302.58	510.13	390.17	119.96	4.252		
9,800.00	5,729.00	9,610.39	5,605.00	63.87	63.18	75.93	4,079.50	-302.58	510.13	387.43	122.70	4.158		
9,900.00	5,729.00	9,710.39	5,605.00	65.26	64.59	75.93	4,179.50	-302.59	510.13	384.69	125.45	4.067		
10,000.00	5,729.00	9,810.39	5,605.00	66.66	66.00	75.93	4,279.50	-302.59	510.14	381.94	128.20	3.979		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,100.00	5,729.00	9,910.39	5,605.00	68.07	67.41	75.93	4,379.50	-302.60	510.14	379.18	130.96	3.896		
10,200.00	5,729.00	10,010.39	5,605.00	69.47	68.83	75.93	4,479.50	-302.60	510.14	376.43	133.72	3.815		
10,300.00	5,729.00	10,110.39	5,605.00	70.88	70.25	75.93	4,579.50	-302.61	510.15	373.66	136.48	3.738		
10,400.00	5,729.00	10,210.39	5,605.00	72.29	71.67	75.93	4,679.50	-302.61	510.15	370.90	139.25	3.663		
10,500.00	5,729.00	10,310.39	5,605.00	73.70	73.09	75.93	4,779.50	-302.62	510.15	368.13	142.03	3.592		
10,600.00	5,729.00	10,410.39	5,605.00	75.12	74.52	75.93	4,879.50	-302.62	510.16	365.35	144.81	3.523		
10,700.00	5,729.00	10,510.39	5,605.00	76.54	75.95	75.93	4,979.50	-302.63	510.16	362.57	147.59	3.457		
10,800.00	5,729.00	10,610.39	5,605.00	77.96	77.38	75.93	5,079.50	-302.63	510.17	359.79	150.37	3.393		
10,900.00	5,729.00	10,710.39	5,605.00	79.38	78.81	75.93	5,179.50	-302.64	510.17	357.01	153.16	3.331		
11,000.00	5,729.00	10,810.39	5,605.00	80.80	80.24	75.93	5,279.50	-302.64	510.17	354.22	155.95	3.271		
11,100.00	5,729.00	10,910.39	5,605.00	82.23	81.67	75.93	5,379.50	-302.64	510.18	351.43	158.74	3.214		
11,200.00	5,729.00	11,010.39	5,605.00	83.65	83.10	75.93	5,479.50	-302.65	510.18	348.64	161.54	3.158		
11,300.00	5,729.00	11,110.39	5,605.00	85.08	84.54	75.93	5,579.50	-302.65	510.18	345.85	164.34	3.104		
11,400.00	5,729.00	11,210.39	5,605.00	86.51	85.98	75.93	5,679.50	-302.66	510.19	343.05	167.14	3.052		
11,500.00	5,729.00	11,310.39	5,605.00	87.94	87.42	75.93	5,779.50	-302.66	510.19	340.25	169.94	3.002		
11,600.00	5,729.00	11,410.39	5,605.00	89.37	88.85	75.93	5,879.50	-302.67	510.19	337.45	172.75	2.953		
11,700.00	5,729.00	11,510.39	5,605.00	90.81	90.30	75.93	5,979.50	-302.67	510.20	334.64	175.55	2.906		
11,800.00	5,729.00	11,610.39	5,605.00	92.24	91.74	75.93	6,079.50	-302.68	510.20	331.84	178.36	2.860		
11,900.00	5,729.00	11,710.39	5,605.00	93.68	93.18	75.93	6,179.50	-302.68	510.20	329.03	181.18	2.816		
12,000.00	5,729.00	11,810.39	5,605.00	95.11	94.62	75.93	6,279.50	-302.69	510.21	326.22	183.99	2.773		
12,100.00	5,729.00	11,910.39	5,605.00	96.55	96.07	75.93	6,379.50	-302.69	510.21	323.41	186.80	2.731		
12,200.00	5,729.00	12,010.39	5,605.00	97.99	97.51	75.93	6,479.50	-302.70	510.21	320.60	189.62	2.691		
12,300.00	5,729.00	12,110.39	5,605.00	99.43	98.96	75.94	6,579.50	-302.70	510.22	317.78	192.44	2.651		
12,400.00	5,729.00	12,210.39	5,605.00	100.87	100.40	75.94	6,679.50	-302.71	510.22	314.97	195.26	2.613		
12,500.00	5,729.00	12,310.39	5,605.00	102.31	101.85	75.94	6,779.50	-302.71	510.23	312.15	198.08	2.576		
12,600.00	5,729.00	12,410.39	5,605.00	103.76	103.30	75.94	6,879.50	-302.72	510.23	309.33	200.90	2.540		
12,700.00	5,729.00	12,510.39	5,605.00	105.20	104.75	75.94	6,979.50	-302.72	510.23	306.51	203.72	2.505		
12,800.00	5,729.00	12,610.39	5,605.00	106.64	106.19	75.94	7,079.50	-302.73	510.24	303.69	206.55	2.470		
12,900.00	5,729.00	12,710.39	5,605.00	108.09	107.64	75.94	7,179.50	-302.73	510.24	300.87	209.37	2.437		
13,000.00	5,729.00	12,810.39	5,605.00	109.53	109.09	75.94	7,279.50	-302.74	510.24	298.04	212.20	2.405		
13,100.00	5,729.00	12,910.39	5,605.00	110.98	110.55	75.94	7,379.50	-302.74	510.25	295.22	215.03	2.373		
13,200.00	5,729.00	13,010.39	5,605.00	112.43	112.00	75.94	7,479.50	-302.75	510.25	292.39	217.86	2.342		
13,300.00	5,729.00	13,110.39	5,605.00	113.87	113.45	75.94	7,579.50	-302.75	510.25	289.57	220.69	2.312		
13,400.00	5,729.00	13,210.39	5,605.00	115.32	114.90	75.94	7,679.50	-302.75	510.26	286.74	223.52	2.283		
13,500.00	5,729.00	13,310.39	5,605.00	116.77	116.35	75.94	7,779.50	-302.76	510.26	283.91	226.35	2.254		
13,600.00	5,729.00	13,410.39	5,605.00	118.22	117.81	75.94	7,879.50	-302.76	510.26	281.08	229.18	2.226		
13,700.00	5,729.00	13,510.39	5,605.00	119.67	119.26	75.94	7,979.50	-302.77	510.27	278.25	232.02	2.199		
13,800.00	5,729.00	13,610.39	5,605.00	121.12	120.72	75.94	8,079.50	-302.77	510.27	275.42	234.85	2.173		
13,900.00	5,729.00	13,710.39	5,605.00	122.57	122.17	75.94	8,179.50	-302.78	510.28	272.59	237.69	2.147		
14,000.00	5,729.00	13,810.39	5,605.00	124.02	123.63	75.94	8,279.50	-302.78	510.28	269.75	240.53	2.122		
14,100.00	5,729.00	13,910.39	5,605.00	125.47	125.08	75.94	8,379.50	-302.79	510.28	266.92	243.36	2.097		
14,200.00	5,729.00	14,010.39	5,605.00	126.93	126.54	75.94	8,479.50	-302.79	510.29	264.09	246.20	2.073		
14,300.00	5,729.00	14,110.39	5,605.00	128.38	127.99	75.94	8,579.50	-302.80	510.29	261.25	249.04	2.049		
14,400.00	5,729.00	14,210.39	5,605.00	129.83	129.45	75.94	8,679.50	-302.80	510.29	258.41	251.88	2.026		
14,500.00	5,729.00	14,310.39	5,605.00	131.29	130.91	75.94	8,779.50	-302.81	510.30	255.58	254.72	2.003		
14,600.00	5,729.00	14,410.39	5,605.00	132.74	132.36	75.94	8,879.50	-302.81	510.30	252.74	257.56	1.981		
14,700.00	5,729.00	14,510.39	5,605.00	134.19	133.82	75.94	8,979.50	-302.82	510.30	249.90	260.40	1.960		
14,800.00	5,729.00	14,610.39	5,605.00	135.65	135.28	75.94	9,079.50	-302.82	510.31	247.06	263.24	1.939		
14,900.00	5,729.00	14,710.39	5,605.00	137.10	136.74	75.94	9,179.50	-302.83	510.31	244.23	266.08	1.918		
15,000.00	5,729.00	14,810.39	5,605.00	138.56	138.20	75.94	9,279.50	-302.83	510.31	241.39	268.93	1.898		
15,100.00	5,729.00	14,910.39	5,605.00	140.02	139.65	75.94	9,379.50	-302.84	510.32	238.55	271.77	1.878		
15,200.00	5,729.00	15,010.39	5,605.00	141.47	141.11	75.94	9,479.50	-302.84	510.32	235.71	274.62	1.858		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2414 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,300.00	5,729.00	15,110.39	5,605.00	142.93	142.57	75.94	9,579.50	-302.85	510.32	232.86	277.46	1.839	
15,400.00	5,729.00	15,210.39	5,605.00	144.38	144.03	75.94	9,679.50	-302.85	510.33	230.02	280.30	1.821	
15,500.00	5,729.00	15,310.39	5,605.00	145.84	145.49	75.94	9,779.50	-302.86	510.33	227.18	283.15	1.802	
15,600.00	5,729.00	15,410.39	5,605.00	147.30	146.95	75.94	9,879.50	-302.86	510.34	224.34	286.00	1.784	
15,700.00	5,729.00	15,510.39	5,605.00	148.76	148.41	75.94	9,979.50	-302.86	510.34	221.50	288.84	1.767	
15,800.00	5,729.00	15,610.39	5,605.00	150.21	149.87	75.94	10,079.50	-302.87	510.34	218.65	291.69	1.750	
15,899.97	5,729.00	15,710.36	5,605.00	151.67	151.33	75.94	10,179.47	-302.87	510.35	215.81	294.54	1.733	
15,902.83	5,729.00	15,713.22	5,605.00	151.71	151.37	75.94	10,182.34	-302.87	510.35	215.73	294.62	1.732 SF	



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2415 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	5,729.00	15,225.80	5,530.00	145.84	145.41	76.44	9,779.46	26.89	848.45	564.68	283.78	2.990	
15,600.00	5,729.00	15,325.80	5,530.00	147.30	146.87	76.44	9,879.46	26.90	848.47	561.83	286.63	2.960	
15,700.00	5,729.00	15,425.80	5,530.00	148.76	148.33	76.44	9,979.46	26.90	848.48	558.99	289.48	2.931	
15,800.00	5,729.00	15,525.80	5,530.00	150.21	149.80	76.44	10,079.46	26.90	848.49	556.15	292.34	2.902	
15,899.97	5,729.00	15,625.76	5,530.00	151.67	151.26	76.44	10,179.42	26.90	848.50	553.31	295.19	2.874	
15,902.83	5,729.00	15,628.63	5,530.00	151.71	151.30	76.44	10,182.29	26.91	848.50	553.23	295.27	2.874 SF	



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2416 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	5,729.00	15,349.28	5,605.00	145.84	145.69	83.87	9,779.43	356.67	1,161.20	871.41	289.80	4.007	
15,600.00	5,729.00	15,449.28	5,605.00	147.30	147.15	83.87	9,879.43	356.67	1,161.21	868.51	292.70	3.967	
15,700.00	5,729.00	15,549.28	5,605.00	148.76	148.61	83.87	9,979.43	356.68	1,161.23	865.62	295.61	3.928	
15,800.00	5,729.00	15,649.28	5,605.00	150.21	150.07	83.87	10,079.43	356.68	1,161.24	862.72	298.52	3.890	
15,899.97	5,729.00	15,749.24	5,605.00	151.67	151.53	83.87	10,179.40	356.68	1,161.25	859.83	301.42	3.853	
15,902.83	5,729.00	15,752.11	5,605.00	151.71	151.57	83.87	10,182.27	356.68	1,161.25	859.75	301.51	3.851 SF	



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2446 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	5,729.00	15,431.59	5,832.00	142.93	143.37	107.35	9,579.48	-468.15	345.44	69.92	275.53	1.254	Level 3
15,400.00	5,729.00	15,531.59	5,832.00	144.38	144.82	107.35	9,679.48	-468.15	345.45	67.12	278.33	1.241	Level 2
15,500.00	5,729.00	15,631.59	5,832.00	145.84	146.28	107.35	9,779.48	-468.15	345.46	64.33	281.13	1.229	Level 2
15,600.00	5,729.00	15,731.59	5,832.00	147.30	147.74	107.35	9,879.48	-468.15	345.47	61.54	283.93	1.217	Level 2
15,700.00	5,729.00	15,831.59	5,832.00	148.76	149.20	107.35	9,979.48	-468.15	345.48	58.75	286.73	1.205	Level 2
15,800.00	5,729.00	15,931.59	5,832.00	150.21	150.66	107.35	10,079.48	-468.15	345.48	55.95	289.53	1.193	Level 2
15,899.97	5,729.00	16,031.56	5,832.00	151.67	152.12	107.35	10,179.45	-468.15	345.49	53.16	292.33	1.182	Level 2
15,902.83	5,729.00	16,034.43	5,832.00	151.71	152.16	107.35	10,182.31	-468.15	345.49	53.08	292.41	1.182	Level 2, SF



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,125.46	5,135.37	5,127.50	20.58	17.15	92.13	-164.97	-138.77	658.74	624.55	34.19	19.264		
5,300.00	5,225.46	5,236.98	5,227.30	20.83	17.42	90.57	-146.72	-138.77	658.32	623.66	34.67	18.991		
5,327.53	5,252.93	5,263.86	5,252.94	20.90	17.48	90.01	-138.66	-138.77	658.29	623.51	34.78	18.928		
5,400.00	5,324.47	5,333.09	5,316.75	21.08	17.65	88.55	-111.95	-138.77	658.51	623.45	35.06	18.780		
5,500.00	5,419.21	5,425.34	5,395.22	21.30	17.85	86.60	-63.67	-138.77	659.52	624.09	35.42	18.619		
5,600.00	5,506.19	5,514.40	5,461.76	21.50	18.03	84.80	-4.65	-138.77	661.14	625.38	35.76	18.487		
5,700.00	5,582.22	5,600.00	5,515.37	21.66	18.19	83.19	61.96	-138.76	663.16	627.05	36.11	18.365		
5,800.00	5,644.50	5,685.24	5,557.20	21.79	18.37	81.78	136.13	-138.76	665.30	628.79	36.50	18.226		
5,900.00	5,690.75	5,768.05	5,585.74	21.89	18.62	80.66	213.77	-138.76	667.30	630.34	36.96	18.057		
6,000.00	5,719.26	5,850.00	5,601.53	22.00	18.95	79.82	294.10	-138.75	668.93	631.42	37.50	17.836		
6,099.99	5,729.00	5,935.48	5,605.00	22.14	19.36	79.33	379.44	-138.75	669.93	631.72	38.21	17.534		
6,200.00	5,729.00	6,035.49	5,605.00	22.36	19.93	79.33	479.45	-138.75	669.94	630.70	39.24	17.073		
6,300.00	5,729.00	6,135.49	5,605.00	22.71	20.58	79.33	579.45	-138.74	669.95	629.50	40.45	16.561		
6,400.00	5,729.00	6,235.49	5,605.00	23.19	21.32	79.33	679.45	-138.74	669.96	628.13	41.83	16.014		
6,500.00	5,729.00	6,335.49	5,605.00	23.79	22.14	79.33	779.45	-138.74	669.97	626.61	43.37	15.449		
6,600.00	5,729.00	6,435.49	5,605.00	24.50	23.01	79.33	879.45	-138.73	669.99	624.96	45.03	14.878		
6,700.00	5,729.00	6,535.49	5,605.00	25.29	23.95	79.33	979.45	-138.73	670.00	623.18	46.82	14.311		
6,800.00	5,729.00	6,635.49	5,605.00	26.16	24.94	79.34	1,079.45	-138.72	670.01	621.30	48.71	13.755		
6,900.00	5,729.00	6,735.49	5,605.00	27.09	25.97	79.34	1,179.45	-138.72	670.02	619.32	50.70	13.216		
7,000.00	5,729.00	6,835.49	5,605.00	28.07	27.05	79.34	1,279.45	-138.72	670.03	617.26	52.77	12.697		
7,100.00	5,729.00	6,935.49	5,605.00	29.10	28.16	79.34	1,379.45	-138.71	670.05	615.13	54.92	12.200		
7,200.00	5,729.00	7,035.49	5,605.00	30.16	29.30	79.34	1,479.45	-138.71	670.06	612.92	57.14	11.727		
7,300.00	5,729.00	7,135.49	5,605.00	31.26	30.47	79.34	1,579.45	-138.70	670.07	610.66	59.41	11.279		
7,400.00	5,729.00	7,235.49	5,605.00	32.40	31.66	79.34	1,679.45	-138.70	670.08	608.35	61.74	10.854		
7,500.00	5,729.00	7,335.49	5,605.00	33.55	32.88	79.34	1,779.45	-138.70	670.10	605.98	64.11	10.452		
7,600.00	5,729.00	7,435.49	5,605.00	34.74	34.12	79.34	1,879.45	-138.69	670.11	603.58	66.53	10.073		
7,700.00	5,729.00	7,535.49	5,605.00	35.94	35.37	79.34	1,979.45	-138.69	670.12	601.14	68.98	9.715		
7,800.00	5,729.00	7,635.49	5,605.00	37.16	36.64	79.34	2,079.45	-138.68	670.13	598.67	71.47	9.377		
7,900.00	5,729.00	7,735.49	5,605.00	38.40	37.93	79.34	2,179.45	-138.68	670.14	596.16	73.98	9.058		
8,000.00	5,729.00	7,835.49	5,605.00	39.66	39.23	79.34	2,279.45	-138.68	670.16	593.63	76.53	8.757		
8,100.00	5,729.00	7,935.49	5,605.00	40.93	40.54	79.34	2,379.45	-138.67	670.17	591.07	79.09	8.473		
8,200.00	5,729.00	8,035.49	5,605.00	42.22	41.86	79.34	2,479.45	-138.67	670.18	588.50	81.68	8.205		
8,300.00	5,729.00	8,135.49	5,605.00	43.51	43.19	79.34	2,579.45	-138.67	670.19	585.90	84.30	7.951		
8,400.00	5,729.00	8,235.49	5,605.00	44.82	44.53	79.34	2,679.45	-138.66	670.20	583.28	86.92	7.710		
8,500.00	5,729.00	8,335.49	5,605.00	46.13	45.88	79.34	2,779.45	-138.66	670.22	580.65	89.57	7.483		
8,600.00	5,729.00	8,435.49	5,605.00	47.46	47.24	79.34	2,879.45	-138.65	670.23	578.00	92.23	7.267		
8,700.00	5,729.00	8,535.49	5,605.00	48.79	48.60	79.34	2,979.45	-138.65	670.24	575.33	94.91	7.062		
8,800.00	5,729.00	8,635.49	5,605.00	50.14	49.97	79.34	3,079.45	-138.65	670.25	572.66	97.60	6.868		
8,900.00	5,729.00	8,735.49	5,605.00	51.49	51.34	79.34	3,179.45	-138.64	670.27	569.97	100.30	6.683		
9,000.00	5,729.00	8,835.49	5,605.00	52.84	52.72	79.34	3,279.45	-138.64	670.28	567.27	103.01	6.507		
9,100.00	5,729.00	8,935.49	5,605.00	54.20	54.11	79.34	3,379.45	-138.63	670.29	564.56	105.73	6.340		
9,200.00	5,729.00	9,035.49	5,605.00	55.57	55.49	79.34	3,479.45	-138.63	670.30	561.84	108.46	6.180		
9,300.00	5,729.00	9,135.49	5,605.00	56.94	56.89	79.34	3,579.45	-138.63	670.31	559.12	111.20	6.028		
9,400.00	5,729.00	9,235.49	5,605.00	58.32	58.28	79.34	3,679.45	-138.62	670.33	556.38	113.94	5.883		
9,500.00	5,729.00	9,335.49	5,605.00	59.70	59.68	79.34	3,779.45	-138.62	670.34	553.64	116.70	5.744		
9,600.00	5,729.00	9,435.49	5,605.00	61.08	61.09	79.34	3,879.45	-138.61	670.35	550.89	119.46	5.612		
9,700.00	5,729.00	9,535.49	5,605.00	62.47	62.49	79.34	3,979.45	-138.61	670.36	548.13	122.23	5.485		
9,800.00	5,729.00	9,635.49	5,605.00	63.87	63.90	79.34	4,079.45	-138.61	670.37	545.37	125.00	5.363		
9,900.00	5,729.00	9,735.49	5,605.00	65.26	65.32	79.34	4,179.45	-138.60	670.39	542.61	127.78	5.246		
10,000.00	5,729.00	9,835.49	5,605.00	66.66	66.73	79.34	4,279.45	-138.60	670.40	539.83	130.57	5.135		
10,100.00	5,729.00	9,935.49	5,605.00	68.07	68.15	79.34	4,379.45	-138.60	670.41	537.05	133.36	5.027		
10,200.00	5,729.00	10,035.49	5,605.00	69.47	69.57	79.34	4,479.45	-138.59	670.42	534.27	136.15	4.924		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.00	5,729.00	10,135.49	5,605.00	70.88	70.99	79.34	4,579.45	-138.59	670.43	531.49	138.95	4.825		
10,400.00	5,729.00	10,235.49	5,605.00	72.29	72.42	79.34	4,679.45	-138.58	670.45	528.69	141.75	4.730		
10,500.00	5,729.00	10,335.49	5,605.00	73.70	73.84	79.34	4,779.45	-138.58	670.46	525.90	144.56	4.638		
10,600.00	5,729.00	10,435.49	5,605.00	75.12	75.27	79.34	4,879.45	-138.58	670.47	523.10	147.37	4.550		
10,700.00	5,729.00	10,535.49	5,605.00	76.54	76.70	79.34	4,979.45	-138.57	670.48	520.30	150.18	4.464		
10,800.00	5,729.00	10,635.49	5,605.00	77.96	78.13	79.34	5,079.45	-138.57	670.50	517.50	153.00	4.382		
10,900.00	5,729.00	10,735.49	5,605.00	79.38	79.56	79.34	5,179.45	-138.56	670.51	514.69	155.82	4.303		
11,000.00	5,729.00	10,835.49	5,605.00	80.80	80.99	79.34	5,279.45	-138.56	670.52	511.88	158.64	4.227		
11,100.00	5,729.00	10,935.49	5,605.00	82.23	82.43	79.34	5,379.45	-138.56	670.53	509.06	161.47	4.153		
11,200.00	5,729.00	11,035.49	5,605.00	83.65	83.87	79.34	5,479.45	-138.55	670.54	506.25	164.30	4.081		
11,300.00	5,729.00	11,135.49	5,605.00	85.08	85.30	79.34	5,579.45	-138.55	670.56	503.43	167.13	4.012		
11,400.00	5,729.00	11,235.49	5,605.00	86.51	86.74	79.34	5,679.45	-138.54	670.57	500.61	169.96	3.945		
11,500.00	5,729.00	11,335.49	5,605.00	87.94	88.18	79.34	5,779.45	-138.54	670.58	497.78	172.80	3.881		
11,600.00	5,729.00	11,435.49	5,605.00	89.37	89.62	79.34	5,879.45	-138.54	670.59	494.96	175.63	3.818		
11,700.00	5,729.00	11,535.49	5,605.00	90.81	91.06	79.34	5,979.45	-138.53	670.60	492.13	178.47	3.757		
11,800.00	5,729.00	11,635.49	5,605.00	92.24	92.51	79.34	6,079.45	-138.53	670.62	489.30	181.32	3.699		
11,900.00	5,729.00	11,735.49	5,605.00	93.68	93.95	79.34	6,179.45	-138.53	670.63	486.47	184.16	3.642		
12,000.00	5,729.00	11,835.49	5,605.00	95.11	95.39	79.35	6,279.45	-138.52	670.64	483.64	187.00	3.586		
12,100.00	5,729.00	11,935.49	5,605.00	96.55	96.84	79.35	6,379.45	-138.52	670.65	480.80	189.85	3.533		
12,200.00	5,729.00	12,035.49	5,605.00	97.99	98.29	79.35	6,479.45	-138.51	670.67	477.96	192.70	3.480		
12,300.00	5,729.00	12,135.49	5,605.00	99.43	99.73	79.35	6,579.45	-138.51	670.68	475.13	195.55	3.430		
12,400.00	5,729.00	12,235.49	5,605.00	100.87	101.18	79.35	6,679.45	-138.51	670.69	472.29	198.40	3.380		
12,500.00	5,729.00	12,335.49	5,605.00	102.31	102.63	79.35	6,779.45	-138.50	670.70	469.45	201.25	3.333		
12,600.00	5,729.00	12,435.49	5,605.00	103.76	104.08	79.35	6,879.45	-138.50	670.71	466.60	204.11	3.286		
12,700.00	5,729.00	12,535.49	5,605.00	105.20	105.53	79.35	6,979.45	-138.49	670.73	463.76	206.96	3.241		
12,800.00	5,729.00	12,635.49	5,605.00	106.64	106.98	79.35	7,079.45	-138.49	670.74	460.92	209.82	3.197		
12,900.00	5,729.00	12,735.49	5,605.00	108.09	108.43	79.35	7,179.45	-138.49	670.75	458.07	212.68	3.154		
13,000.00	5,729.00	12,835.49	5,605.00	109.53	109.88	79.35	7,279.45	-138.48	670.76	455.22	215.54	3.112		
13,100.00	5,729.00	12,935.49	5,605.00	110.98	111.33	79.35	7,379.45	-138.48	670.77	452.37	218.40	3.071		
13,200.00	5,729.00	13,035.49	5,605.00	112.43	112.78	79.35	7,479.45	-138.47	670.79	449.53	221.26	3.032		
13,300.00	5,729.00	13,135.49	5,605.00	113.87	114.23	79.35	7,579.45	-138.47	670.80	446.68	224.12	2.993		
13,400.00	5,729.00	13,235.49	5,605.00	115.32	115.69	79.35	7,679.45	-138.47	670.81	443.82	226.99	2.955		
13,500.00	5,729.00	13,335.49	5,605.00	116.77	117.14	79.35	7,779.45	-138.46	670.82	440.97	229.85	2.919		
13,600.00	5,729.00	13,435.49	5,605.00	118.22	118.60	79.35	7,879.45	-138.46	670.83	438.12	232.72	2.883		
13,700.00	5,729.00	13,535.49	5,605.00	119.67	120.05	79.35	7,979.45	-138.46	670.85	435.26	235.58	2.848		
13,800.00	5,729.00	13,635.49	5,605.00	121.12	121.51	79.35	8,079.45	-138.45	670.86	432.41	238.45	2.813		
13,900.00	5,729.00	13,735.49	5,605.00	122.57	122.96	79.35	8,179.45	-138.45	670.87	429.55	241.32	2.780		
14,000.00	5,729.00	13,835.49	5,605.00	124.02	124.42	79.35	8,279.45	-138.44	670.88	426.70	244.19	2.747		
14,100.00	5,729.00	13,935.49	5,605.00	125.47	125.87	79.35	8,379.45	-138.44	670.90	423.84	247.05	2.716		
14,200.00	5,729.00	14,035.49	5,605.00	126.93	127.33	79.35	8,479.45	-138.44	670.91	420.98	249.92	2.684		
14,300.00	5,729.00	14,135.49	5,605.00	128.38	128.79	79.35	8,579.45	-138.43	670.92	418.12	252.80	2.654		
14,400.00	5,729.00	14,235.49	5,605.00	129.83	130.24	79.35	8,679.45	-138.43	670.93	415.27	255.67	2.624		
14,500.00	5,729.00	14,335.49	5,605.00	131.29	131.70	79.35	8,779.45	-138.42	670.94	412.41	258.54	2.595		
14,600.00	5,729.00	14,435.49	5,605.00	132.74	133.16	79.35	8,879.45	-138.42	670.96	409.54	261.41	2.567		
14,700.00	5,729.00	14,535.49	5,605.00	134.19	134.62	79.35	8,979.45	-138.42	670.97	406.68	264.28	2.539		
14,800.00	5,729.00	14,635.49	5,605.00	135.65	136.07	79.35	9,079.45	-138.41	670.98	403.82	267.16	2.512		
14,900.00	5,729.00	14,735.49	5,605.00	137.10	137.53	79.35	9,179.45	-138.41	670.99	400.96	270.03	2.485		
15,000.00	5,729.00	14,835.49	5,605.00	138.56	138.99	79.35	9,279.45	-138.40	671.00	398.10	272.91	2.459		
15,100.00	5,729.00	14,935.49	5,605.00	140.02	140.45	79.35	9,379.45	-138.40	671.02	395.23	275.78	2.433		
15,200.00	5,729.00	15,035.49	5,605.00	141.47	141.91	79.35	9,479.45	-138.40	671.03	392.37	278.66	2.408		
15,300.00	5,729.00	15,135.49	5,605.00	142.93	143.37	79.35	9,579.45	-138.39	671.04	389.50	281.54	2.383		
15,400.00	5,729.00	15,235.49	5,605.00	144.38	144.83	79.35	9,679.45	-138.39	671.05	386.64	284.41	2.359		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2447 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	5,729.00	15,335.49	5,605.00	145.84	146.29	79.35	9,779.45	-138.38	671.07	383.77	287.29	2.336	
15,600.00	5,729.00	15,435.49	5,605.00	147.30	147.75	79.35	9,879.45	-138.38	671.08	380.91	290.17	2.313	
15,700.00	5,729.00	15,535.49	5,605.00	148.76	149.21	79.35	9,979.45	-138.38	671.09	378.04	293.05	2.290	
15,800.00	5,729.00	15,635.49	5,605.00	150.21	150.67	79.35	10,079.45	-138.37	671.10	375.17	295.93	2.268	
15,899.97	5,729.00	15,735.46	5,605.00	151.67	152.13	79.35	10,179.42	-138.37	671.11	372.31	298.81	2.246	
15,902.83	5,729.00	15,738.32	5,605.00	151.71	152.17	79.35	10,182.29	-138.37	671.11	372.23	298.89	2.245 SF	



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Sec 25-T10N-R58W - Razor #25P-2448 - Hz - APD		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Distance								Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
0.00	0.00	0.00	0.00	0.00	0.00	89.35	1.02	89.98	89.98							
100.00	100.00	100.00	100.00	0.13	0.13	89.35	1.02	89.98	89.98	89.72	0.27	337.840				
200.00	200.00	200.00	200.00	0.47	0.47	89.35	1.02	89.98	89.98	89.04	0.94	95.661				
300.00	300.00	300.00	300.00	0.81	0.81	89.35	1.02	89.98	89.98	88.37	1.61	55.719	CC, ES			
400.00	399.98	398.40	398.39	1.13	1.11	-169.90	-0.45	90.82	92.55	90.32	2.24	41.359				
500.00	499.84	497.20	497.07	1.45	1.40	-168.05	-4.52	93.18	100.14	97.28	2.86	34.983				
600.00	599.45	596.52	596.25	1.78	1.71	-166.65	-9.02	95.77	111.45	107.95	3.51	31.775				
700.00	698.70	695.42	695.01	2.13	2.03	-165.87	-13.51	98.36	126.17	122.01	4.17	30.290				
800.00	797.47	793.76	793.22	2.51	2.35	-165.58	-17.96	100.94	144.24	139.41	4.83	29.870				
900.00	895.71	891.54	890.87	2.91	2.68	-165.64	-22.40	103.49	165.20	159.72	5.49	30.114				
1,000.00	993.87	989.23	988.42	3.32	3.01	-165.76	-26.82	106.05	186.59	180.44	6.14	30.372				
1,100.00	1,092.03	1,086.91	1,085.97	3.74	3.35	-165.86	-31.25	108.61	207.97	201.16	6.81	30.549				
1,200.00	1,190.20	1,184.60	1,183.52	4.17	3.68	-165.94	-35.68	111.16	229.35	221.87	7.48	30.674				
1,300.00	1,288.36	1,282.29	1,281.08	4.60	4.02	-166.00	-40.11	113.72	250.73	242.58	8.15	30.763				
1,400.00	1,386.52	1,379.97	1,378.63	5.03	4.36	-166.06	-44.53	116.28	272.12	263.29	8.83	30.828				
1,500.00	1,484.69	1,477.66	1,476.18	5.46	4.69	-166.10	-48.96	118.83	293.50	284.00	9.51	30.875				
1,600.00	1,582.85	1,575.35	1,573.74	5.90	5.03	-166.15	-53.39	121.39	314.89	304.70	10.19	30.911				
1,700.00	1,681.01	1,673.03	1,671.29	6.33	5.37	-166.18	-57.82	123.94	336.27	325.40	10.87	30.939				
1,800.00	1,779.17	1,770.72	1,768.84	6.77	5.71	-166.21	-62.24	126.50	357.65	346.10	11.55	30.959				
1,900.00	1,877.34	1,868.41	1,866.39	7.21	6.05	-166.24	-66.67	129.06	379.04	366.80	12.24	30.974				
2,000.00	1,975.50	1,966.09	1,963.95	7.64	6.39	-166.27	-71.10	131.61	400.42	387.50	12.92	30.986				
2,100.00	2,073.66	2,063.78	2,061.50	8.08	6.73	-166.29	-75.53	134.17	421.81	408.20	13.61	30.995				
2,200.00	2,171.82	2,161.47	2,159.05	8.52	7.07	-166.31	-79.95	136.73	443.19	428.90	14.30	31.001				
2,300.00	2,269.99	2,259.15	2,256.60	8.96	7.41	-166.33	-84.38	139.28	464.58	449.59	14.98	31.005				
2,400.00	2,368.15	2,356.84	2,354.16	9.40	7.75	-166.34	-88.81	141.84	485.96	470.29	15.67	31.008				
2,500.00	2,466.31	2,454.53	2,451.71	9.84	8.09	-166.36	-93.24	144.40	507.35	490.99	16.36	31.010				
2,600.00	2,564.48	2,552.21	2,549.26	10.28	8.43	-166.37	-97.66	146.95	528.73	511.68	17.05	31.011				
2,700.00	2,662.64	2,649.90	2,646.82	10.72	8.77	-166.38	-102.09	149.51	550.12	532.38	17.74	31.012				
2,800.00	2,760.80	2,747.59	2,744.37	11.16	9.11	-166.40	-106.52	152.06	571.50	553.07	18.43	31.011				
2,900.00	2,858.96	2,845.27	2,841.92	11.60	9.45	-166.41	-110.95	154.62	592.89	573.77	19.12	31.010				
3,000.00	2,957.13	2,942.96	2,939.47	12.04	9.79	-166.42	-115.38	157.18	614.27	594.46	19.81	31.009				
3,100.00	3,055.29	3,040.65	3,037.03	12.48	10.13	-166.43	-119.80	159.73	635.65	615.15	20.50	31.008				
3,200.00	3,153.45	3,138.33	3,134.58	12.93	10.48	-166.44	-124.23	162.29	657.04	635.85	21.19	31.006				
3,300.00	3,251.61	3,236.02	3,232.13	13.37	10.82	-166.45	-128.66	164.85	678.42	656.54	21.88	31.004				
3,400.00	3,349.78	3,333.71	3,329.69	13.81	11.16	-166.45	-133.09	167.40	699.81	677.24	22.57	31.002				
3,500.00	3,447.94	3,431.39	3,427.24	14.25	11.50	-166.46	-137.51	169.96	721.19	697.93	23.26	30.999				
3,600.00	3,546.10	3,529.08	3,524.79	14.69	11.84	-166.47	-141.94	172.51	742.58	718.62	23.96	30.997				
3,700.00	3,644.27	3,626.77	3,622.34	15.13	12.18	-166.47	-146.37	175.07	763.96	739.32	24.65	30.994				
3,800.00	3,742.43	3,724.45	3,719.90	15.58	12.52	-166.48	-150.80	177.63	785.35	760.01	25.34	30.992				
3,900.00	3,840.59	3,822.14	3,817.45	16.02	12.86	-166.49	-155.22	180.18	806.73	780.70	26.03	30.989				
4,000.00	3,938.75	3,919.83	3,915.00	16.46	13.20	-166.49	-159.65	182.74	828.12	801.39	26.73	30.986				
4,100.00	4,036.92	4,017.51	4,012.55	16.90	13.55	-166.50	-164.08	185.30	849.50	822.09	27.42	30.984				
4,200.00	4,135.08	4,115.20	4,110.11	17.34	13.89	-166.50	-168.51	187.85	870.89	842.78	28.11	30.981				
4,300.00	4,233.24	4,215.54	4,210.31	17.78	14.23	-166.51	-173.02	190.46	892.25	863.45	28.80	30.976				
4,400.00	4,331.40	4,333.88	4,328.60	18.23	14.58	-166.68	-175.71	192.01	912.25	882.74	29.50	30.922				
4,500.00	4,429.57	4,434.84	4,429.57	18.67	14.86	-166.96	-175.75	192.03	930.86	900.73	30.13	30.896				
4,600.00	4,527.85	4,533.12	4,527.85	19.07	15.11	-167.25	-175.75	192.03	948.87	918.13	30.74	30.868				
4,700.00	4,626.66	4,631.94	4,626.66	19.35	15.37	-167.52	-175.75	192.03	963.81	932.51	31.30	30.795				
4,800.00	4,725.95	4,731.23	4,725.95	19.62	15.64	-167.72	-175.75	192.03	975.38	943.54	31.84	30.634				
4,900.00	4,825.60	4,830.88	4,825.60	19.87	15.90	-167.86	-175.75	192.03	983.56	951.20	32.36	30.392				
5,000.00	4,925.47	4,930.75	4,925.47	20.10	16.17	-167.94	-175.75	192.03	988.34	955.47	32.87	30.072				
5,100.00	5,025.46	5,030.74	5,025.46	20.33	16.45	92.04	-175.75	192.03	989.72	956.34	33.38	29.654				

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,125.46	5,130.74	5,125.46	20.58	16.72	92.04	-175.75	192.03	989.72	955.79	33.93	29.168		
5,259.71	5,185.17	5,190.44	5,185.17	20.73	16.89	92.08	-175.75	192.03	989.74	955.47	34.27	28.883		
5,300.00	5,225.46	5,230.73	5,225.46	20.83	17.00	92.06	-175.75	192.03	989.73	955.24	34.49	28.694		
5,400.00	5,324.47	5,331.11	5,325.83	21.08	17.28	92.74	-175.54	192.03	990.27	955.20	35.07	28.240		
5,500.00	5,419.21	5,441.61	5,435.13	21.30	17.57	93.81	-160.77	192.03	991.35	955.72	35.63	27.825		
5,600.00	5,506.19	5,556.96	5,543.23	21.50	17.86	94.75	-121.18	192.03	992.58	956.44	36.14	27.464		
5,700.00	5,582.22	5,676.81	5,643.46	21.66	18.14	95.51	-55.96	192.03	993.74	957.10	36.64	27.125		
5,800.00	5,644.50	5,800.31	5,728.37	21.79	18.44	96.03	33.32	192.02	994.62	957.45	37.18	26.755		
5,900.00	5,690.75	5,926.08	5,790.82	21.89	18.82	96.27	142.13	192.01	995.05	957.21	37.84	26.296		
6,000.00	5,719.26	6,052.38	5,825.53	22.00	19.30	96.20	263.26	192.01	994.94	956.26	38.68	25.723		
6,099.99	5,729.00	6,169.00	5,832.00	22.14	19.84	95.95	379.53	192.00	994.45	954.79	39.66	25.076		
6,132.11	5,729.04	6,201.12	5,832.00	22.20	20.01	95.94	411.65	192.00	994.45	954.47	39.98	24.872		
6,200.00	5,729.00	6,269.01	5,832.00	22.36	20.41	95.95	479.54	191.99	994.45	953.73	40.72	24.422		
6,300.00	5,729.00	6,369.01	5,832.00	22.71	21.06	95.95	579.54	191.99	994.46	952.50	41.96	23.703		
6,400.00	5,729.00	6,469.01	5,832.00	23.19	21.78	95.95	679.54	191.98	994.46	951.10	43.35	22.938		
6,500.00	5,729.00	6,569.01	5,832.00	23.79	22.58	95.95	779.54	191.98	994.46	949.56	44.90	22.148		
6,600.00	5,729.00	6,669.01	5,832.00	24.50	23.45	95.95	879.54	191.97	994.46	947.88	46.58	21.349		
6,700.00	5,729.00	6,769.01	5,832.00	25.29	24.38	95.95	979.54	191.96	994.47	946.09	48.38	20.556		
6,800.00	5,729.00	6,869.01	5,832.00	26.16	25.35	95.95	1,079.54	191.96	994.47	944.18	50.28	19.777		
6,900.00	5,729.00	6,969.01	5,832.00	27.09	26.37	95.95	1,179.54	191.95	994.47	942.19	52.28	19.021		
7,000.00	5,729.00	7,069.01	5,832.00	28.07	27.44	95.95	1,279.54	191.95	994.47	940.10	54.37	18.292		
7,100.00	5,729.00	7,169.01	5,832.00	29.10	28.54	95.95	1,379.54	191.94	994.48	937.95	56.53	17.593		
7,200.00	5,729.00	7,269.01	5,832.00	30.16	29.67	95.95	1,479.54	191.93	994.48	935.72	58.75	16.926		
7,300.00	5,729.00	7,369.01	5,832.00	31.26	30.83	95.95	1,579.54	191.93	994.48	933.44	61.04	16.293		
7,400.00	5,729.00	7,469.01	5,832.00	32.40	32.01	95.95	1,679.54	191.92	994.48	931.11	63.38	15.692		
7,500.00	5,729.00	7,569.01	5,832.00	33.55	33.22	95.95	1,779.54	191.92	994.48	928.72	65.76	15.122		
7,600.00	5,729.00	7,669.01	5,832.00	34.74	34.45	95.95	1,879.54	191.91	994.49	926.30	68.19	14.584		
7,700.00	5,729.00	7,769.01	5,832.00	35.94	35.70	95.95	1,979.54	191.90	994.49	923.83	70.66	14.075		
7,800.00	5,729.00	7,869.01	5,832.00	37.16	36.96	95.95	2,079.54	191.90	994.49	921.34	73.16	13.594		
7,900.00	5,729.00	7,969.01	5,832.00	38.40	38.24	95.95	2,179.54	191.89	994.49	918.81	75.69	13.140		
8,000.00	5,729.00	8,069.01	5,832.00	39.66	39.54	95.95	2,279.54	191.89	994.50	916.25	78.25	12.710		
8,100.00	5,729.00	8,169.01	5,832.00	40.93	40.84	95.95	2,379.54	191.88	994.50	913.67	80.83	12.304		
8,200.00	5,729.00	8,269.01	5,832.00	42.22	42.16	95.95	2,479.54	191.87	994.50	911.07	83.44	11.919		
8,300.00	5,729.00	8,369.01	5,832.00	43.51	43.48	95.95	2,579.54	191.87	994.50	908.44	86.06	11.555		
8,400.00	5,729.00	8,469.01	5,832.00	44.82	44.82	95.95	2,679.54	191.86	994.51	905.80	88.71	11.211		
8,500.00	5,729.00	8,569.01	5,832.00	46.13	46.16	95.95	2,779.54	191.86	994.51	903.13	91.37	10.884		
8,600.00	5,729.00	8,669.01	5,832.00	47.46	47.51	95.95	2,879.54	191.85	994.51	900.46	94.05	10.574		
8,700.00	5,729.00	8,769.01	5,832.00	48.79	48.87	95.95	2,979.54	191.84	994.51	897.77	96.75	10.279		
8,800.00	5,729.00	8,869.01	5,832.00	50.14	50.23	95.95	3,079.54	191.84	994.52	895.06	99.45	10.000		
8,900.00	5,729.00	8,969.01	5,832.00	51.49	51.60	95.94	3,179.54	191.83	994.52	892.34	102.17	9.734		
9,000.00	5,729.00	9,069.01	5,832.00	52.84	52.98	95.94	3,279.54	191.83	994.52	889.62	104.90	9.480		
9,100.00	5,729.00	9,169.01	5,832.00	54.20	54.36	95.94	3,379.54	191.82	994.52	886.88	107.65	9.239		
9,200.00	5,729.00	9,269.01	5,832.00	55.57	55.74	95.94	3,479.54	191.81	994.53	884.13	110.40	9.009		
9,300.00	5,729.00	9,369.01	5,832.00	56.94	57.13	95.94	3,579.54	191.81	994.53	881.37	113.16	8.789		
9,400.00	5,729.00	9,469.01	5,832.00	58.32	58.53	95.94	3,679.54	191.80	994.53	878.61	115.92	8.579		
9,500.00	5,729.00	9,569.01	5,832.00	59.70	59.92	95.94	3,779.54	191.80	994.53	875.83	118.70	8.379		
9,600.00	5,729.00	9,669.01	5,832.00	61.08	61.32	95.94	3,879.54	191.79	994.54	873.05	121.48	8.187		
9,700.00	5,729.00	9,769.01	5,832.00	62.47	62.73	95.94	3,979.54	191.78	994.54	870.27	124.27	8.003		
9,800.00	5,729.00	9,869.01	5,832.00	63.87	64.14	95.94	4,079.54	191.78	994.54	867.47	127.07	7.827		
9,900.00	5,729.00	9,969.01	5,832.00	65.26	65.55	95.94	4,179.54	191.77	994.54	864.67	129.87	7.658		
10,000.00	5,729.00	10,069.01	5,832.00	66.66	66.96	95.94	4,279.54	191.77	994.55	861.87	132.68	7.496		
10,100.00	5,729.00	10,169.01	5,832.00	68.07	68.37	95.94	4,379.54	191.76	994.55	859.06	135.49	7.340		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	HZ	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	5,729.00	10,269.01	5,832.00	69.47	69.79	95.94	4,479.54	191.75	994.55	856.24	138.31	7.191		
10,300.00	5,729.00	10,369.01	5,832.00	70.88	71.21	95.94	4,579.54	191.75	994.55	853.42	141.13	7.047		
10,400.00	5,729.00	10,469.01	5,832.00	72.29	72.63	95.94	4,679.54	191.74	994.55	850.60	143.96	6.909		
10,500.00	5,729.00	10,569.01	5,832.00	73.70	74.06	95.94	4,779.54	191.74	994.56	847.77	146.79	6.776		
10,600.00	5,729.00	10,669.01	5,832.00	75.12	75.48	95.94	4,879.54	191.73	994.56	844.94	149.62	6.647		
10,700.00	5,729.00	10,769.01	5,832.00	76.54	76.91	95.94	4,979.54	191.72	994.56	842.10	152.46	6.524		
10,800.00	5,729.00	10,869.01	5,832.00	77.96	78.34	95.94	5,079.54	191.72	994.56	839.27	155.30	6.404		
10,900.00	5,729.00	10,969.01	5,832.00	79.38	79.77	95.94	5,179.54	191.71	994.57	836.42	158.14	6.289		
11,000.00	5,729.00	11,069.01	5,832.00	80.80	81.20	95.94	5,279.54	191.71	994.57	833.58	160.99	6.178		
11,100.00	5,729.00	11,169.01	5,832.00	82.23	82.63	95.94	5,379.54	191.70	994.57	830.73	163.84	6.070		
11,200.00	5,729.00	11,269.01	5,832.00	83.65	84.07	95.94	5,479.54	191.69	994.57	827.88	166.69	5.967		
11,300.00	5,729.00	11,369.01	5,832.00	85.08	85.50	95.94	5,579.54	191.69	994.58	825.03	169.55	5.866		
11,400.00	5,729.00	11,469.01	5,832.00	86.51	86.94	95.94	5,679.54	191.68	994.58	822.17	172.41	5.769		
11,500.00	5,729.00	11,569.01	5,832.00	87.94	88.38	95.94	5,779.54	191.68	994.58	819.31	175.27	5.675		
11,600.00	5,729.00	11,669.01	5,832.00	89.37	89.82	95.94	5,879.54	191.67	994.58	816.45	178.13	5.584		
11,700.00	5,729.00	11,769.01	5,832.00	90.81	91.26	95.94	5,979.54	191.66	994.59	813.59	180.99	5.495		
11,800.00	5,729.00	11,869.01	5,832.00	92.24	92.70	95.94	6,079.54	191.66	994.59	810.73	183.86	5.409		
11,900.00	5,729.00	11,969.01	5,832.00	93.68	94.14	95.94	6,179.54	191.65	994.59	807.86	186.73	5.326		
12,000.00	5,729.00	12,069.01	5,832.00	95.11	95.58	95.94	6,279.54	191.65	994.59	804.99	189.60	5.246		
12,100.00	5,729.00	12,169.01	5,832.00	96.55	97.03	95.94	6,379.54	191.64	994.60	802.12	192.47	5.167		
12,200.00	5,729.00	12,269.01	5,832.00	97.99	98.47	95.94	6,479.54	191.63	994.60	799.25	195.35	5.091		
12,300.00	5,729.00	12,369.01	5,832.00	99.43	99.92	95.94	6,579.54	191.63	994.60	796.38	198.22	5.018		
12,400.00	5,729.00	12,469.01	5,832.00	100.87	101.37	95.94	6,679.54	191.62	994.60	793.50	201.10	4.946		
12,500.00	5,729.00	12,569.01	5,832.00	102.31	102.81	95.94	6,779.54	191.62	994.61	790.63	203.98	4.876		
12,600.00	5,729.00	12,669.01	5,832.00	103.76	104.26	95.94	6,879.54	191.61	994.61	787.75	206.86	4.808		
12,700.00	5,729.00	12,769.01	5,832.00	105.20	105.71	95.94	6,979.54	191.60	994.61	784.87	209.74	4.742		
12,800.00	5,729.00	12,869.01	5,832.00	106.64	107.16	95.94	7,079.54	191.60	994.61	781.99	212.62	4.678		
12,900.00	5,729.00	12,969.01	5,832.00	108.09	108.61	95.94	7,179.54	191.59	994.62	779.11	215.50	4.615		
13,000.00	5,729.00	13,069.01	5,832.00	109.53	110.06	95.94	7,279.54	191.59	994.62	776.23	218.39	4.554		
13,100.00	5,729.00	13,169.01	5,832.00	110.98	111.51	95.94	7,379.54	191.58	994.62	773.34	221.28	4.495		
13,200.00	5,729.00	13,269.01	5,832.00	112.43	112.96	95.94	7,479.54	191.57	994.62	770.46	224.16	4.437		
13,300.00	5,729.00	13,369.01	5,832.00	113.87	114.41	95.94	7,579.54	191.57	994.62	767.57	227.05	4.381		
13,400.00	5,729.00	13,469.01	5,832.00	115.32	115.86	95.94	7,679.54	191.56	994.63	764.69	229.94	4.326		
13,500.00	5,729.00	13,569.01	5,832.00	116.77	117.32	95.94	7,779.54	191.56	994.63	761.80	232.83	4.272		
13,600.00	5,729.00	13,669.01	5,832.00	118.22	118.77	95.94	7,879.54	191.55	994.63	758.91	235.72	4.220		
13,700.00	5,729.00	13,769.01	5,832.00	119.67	120.22	95.94	7,979.54	191.54	994.63	756.02	238.61	4.168		
13,800.00	5,729.00	13,869.01	5,832.00	121.12	121.68	95.94	8,079.54	191.54	994.64	753.13	241.51	4.118		
13,900.00	5,729.00	13,969.01	5,832.00	122.57	123.13	95.94	8,179.54	191.53	994.64	750.24	244.40	4.070		
14,000.00	5,729.00	14,069.01	5,832.00	124.02	124.59	95.94	8,279.54	191.53	994.64	747.34	247.30	4.022		
14,100.00	5,729.00	14,169.01	5,832.00	125.47	126.04	95.94	8,379.54	191.52	994.64	744.45	250.19	3.976		
14,200.00	5,729.00	14,269.01	5,832.00	126.93	127.50	95.94	8,479.54	191.51	994.65	741.56	253.09	3.930		
14,300.00	5,729.00	14,369.01	5,832.00	128.38	128.96	95.94	8,579.54	191.51	994.65	738.66	255.99	3.886		
14,400.00	5,729.00	14,469.01	5,832.00	129.83	130.41	95.94	8,679.54	191.50	994.65	735.77	258.88	3.842		
14,500.00	5,729.00	14,569.01	5,832.00	131.29	131.87	95.94	8,779.54	191.50	994.65	732.87	261.78	3.800		
14,600.00	5,729.00	14,669.01	5,832.00	132.74	133.33	95.94	8,879.54	191.49	994.66	729.97	264.68	3.758		
14,700.00	5,729.00	14,769.01	5,832.00	134.19	134.78	95.94	8,979.54	191.48	994.66	727.08	267.58	3.717		
14,800.00	5,729.00	14,869.01	5,832.00	135.65	136.24	95.94	9,079.54	191.48	994.66	724.18	270.48	3.677		
14,900.00	5,729.00	14,969.01	5,832.00	137.10	137.70	95.94	9,179.54	191.47	994.66	721.28	273.38	3.638		
15,000.00	5,729.00	15,069.01	5,832.00	138.56	139.16	95.94	9,279.54	191.47	994.67	718.38	276.29	3.600		
15,100.00	5,729.00	15,169.01	5,832.00	140.02	140.62	95.94	9,379.54	191.46	994.67	715.48	279.19	3.563		
15,200.00	5,729.00	15,269.01	5,832.00	141.47	142.07	95.94	9,479.54	191.45	994.67	712.58	282.09	3.526		
15,300.00	5,729.00	15,369.01	5,832.00	142.93	143.53	95.94	9,579.54	191.45	994.67	709.68	284.99	3.490		

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



WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design Sec 25-T10N-R58W - Razor #25P-2448 - Hz - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,400.00	5,729.00	15,469.01	5,832.00	144.38	144.99	95.94	9,679.54	191.44	994.68	706.78	287.90	3.455	
15,500.00	5,729.00	15,569.01	5,832.00	145.84	146.45	95.94	9,779.54	191.44	994.68	703.88	290.80	3.420	
15,600.00	5,729.00	15,669.01	5,832.00	147.30	147.91	95.94	9,879.54	191.43	994.68	700.97	293.71	3.387	
15,700.00	5,729.00	15,769.01	5,832.00	148.76	149.37	95.94	9,979.54	191.42	994.68	698.07	296.61	3.353	
15,800.00	5,729.00	15,869.01	5,832.00	150.21	150.83	95.94	10,079.54	191.42	994.68	695.17	299.52	3.321	
15,899.97	5,729.00	15,968.98	5,832.00	151.67	152.29	95.94	10,179.51	191.41	994.69	692.26	302.42	3.289	
15,902.83	5,729.00	15,971.84	5,832.00	151.71	152.34	95.94	10,182.37	191.41	994.69	692.18	302.51	3.288 SF	



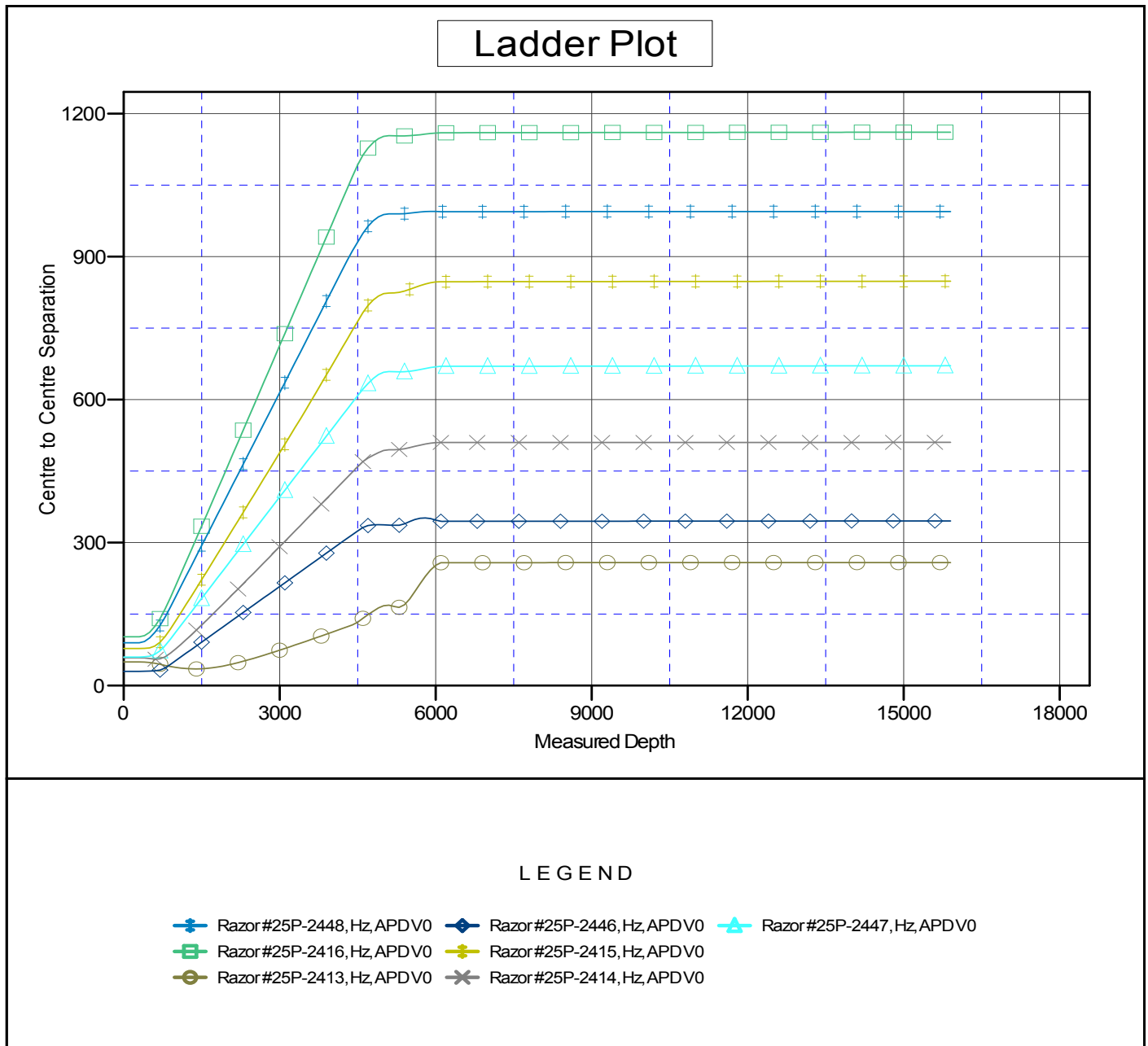
WOG

Anticollision Report

Company:	Whiting Petroleum Corp.	Local Co-ordinate Reference:	Well Razor #25P-2445
Project:	Weld County, CO	TVD Reference:	KBE @ 4762.00usft
Reference Site:	Sec 25-T10N-R58W	MD Reference:	KBE @ 4762.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Razor #25P-2445	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	3.00 sigma
Reference Wellbore	Hz	Database:	LandmarkEDM
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4762.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Razor #25P-2445
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.09°





WOG

Anticollision Report

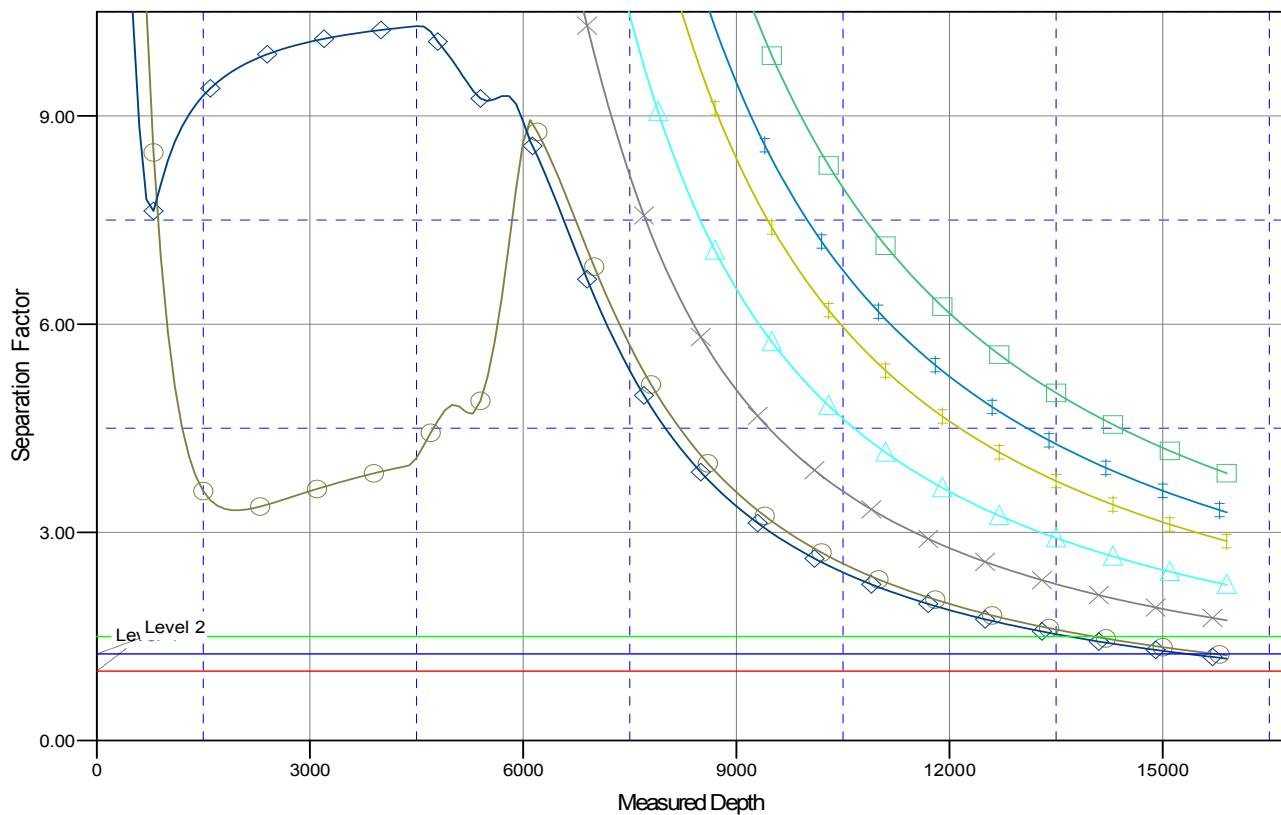
Company: Whiting Petroleum Corp.
Project: Weld County, CO
Reference Site: Sec 25-T10N-R58W
Site Error: 0.00 usft
Reference Well: Razor #25P-2445
Well Error: 0.00 usft
Reference Wellbore: Hz
Reference Design: APD

Local Co-ordinate Reference: Well Razor #25P-2445
TVD Reference: KBE @ 4762.00usft
MD Reference: KBE @ 4762.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: LandmarkEDM
Offset TVD Reference: Offset Datum

Reference Depths are relative to KBE @ 4762.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Razor #25P-2445
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.09°

Separation Factor Plot



LEGEND

● Razor#25P-2448,HZ,APDV0 ◆ Razor#25P-2446,HZ,APDV0 ▲ Razor#25P-2447,HZ,APDV0
■ Razor#25P-2416,HZ,APDV0 ★ Razor#25P-2415,HZ,APDV0
● Razor#25P-2413,HZ,APDV0 ✕ Razor#25P-2414,HZ,APDV0