



# **Whiting Petroleum Corp.**

**Weld County, CO**

**Sec 7-T10N-R57W**

**Horsetail #07H-0648**

**Hz**

**APD**

## **Anticollision Report**

**27 January, 2016**



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,550.00 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.79 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	1/27/2016		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	13,558.09	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
Sec 7-T10N-R57W						
Horsetail #07H-0613 - Hz - Design #1	300.00	300.00	149.94	148.43	99.831	CC, ES
Horsetail #07H-0613 - Hz - Design #1	13,556.94	13,364.30	838.03	632.72	4.082	SF
Horsetail #07H-0614 - Hz - Design #1	300.00	300.00	89.96	88.46	59.898	CC, ES
Horsetail #07H-0614 - Hz - Design #1	13,556.94	13,431.62	500.13	294.33	2.430	SF
Horsetail #07H-0615 - Hz - APD	300.00	300.00	29.99	28.49	19.966	CC
Horsetail #07H-0615 - Hz - APD	400.00	400.10	30.37	28.32	14.763	ES
Horsetail #07H-0615 - Hz - APD	13,556.94	13,347.11	264.82	120.11	1.830	SF
Horsetail #07H-0646 - Hz - Design #1	300.00	300.00	119.98	118.48	79.886	CC, ES
Horsetail #07H-0646 - Hz - Design #1	13,556.94	13,559.59	648.42	437.15	3.069	SF
Horsetail #07H-0647 - Hz - Design #1	300.00	300.00	59.97	58.47	39.932	CC, ES
Horsetail #07H-0647 - Hz - Design #1	13,556.94	13,624.03	330.08	122.68	1.592	SF
Horsetail #07H-1813 - Hz - Design #1	300.00	300.00	158.06	156.56	105.241	CC, ES
Horsetail #07H-1813 - Hz - Design #1	5,770.46	6,297.66	684.02	647.81	18.890	SF
Horsetail #07H-1814 - Hz - Design #1	300.00	300.00	102.85	101.35	68.479	CC, ES
Horsetail #07H-1814 - Hz - Design #1	5,886.42	6,281.38	358.18	321.96	9.887	SF
Horsetail #07H-1815 - Hz - Design #1	5,777.35	6,267.55	44.25	8.09	1.224	Level 2, CC, ES, SF
Horsetail #07H-1816 - Hz - Design #1	300.00	300.00	58.77	57.27	39.130	CC, ES
Horsetail #07H-1816 - Hz - Design #1	5,902.18	6,270.11	243.67	207.34	6.707	SF
Horsetail #07H-1846 - Hz - Design #1	300.00	300.00	129.96	128.46	86.529	CC, ES
Horsetail #07H-1846 - Hz - Design #1	6,200.00	6,131.82	525.60	488.98	14.355	SF
Horsetail #07H-1847 - Hz - Design #1	300.00	300.00	78.61	77.10	52.338	CC, ES
Horsetail #07H-1847 - Hz - Design #1	6,315.31	6,061.11	212.54	175.50	5.738	SF
Horsetail #07H-1848 - Hz - Design #1	300.00	300.00	50.63	49.12	33.709	CC, ES
Horsetail #07H-1848 - Hz - Design #1	6,166.68	6,150.76	86.91	50.32	2.375	SF

<b>Offset Design</b> Sec 7-T10N-R57W - Horsetail #07H-0613 - Hz - Design #1													<b>Offset Site Error:</b>	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													<b>Offset Well Error:</b>	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	-88.07	5.06	-149.85	149.94					
100.00	100.00	100.00	100.00	0.12	0.12	-88.07	5.06	-149.85	149.94	149.69	0.25	605.304		
200.00	200.00	200.00	200.00	0.44	0.44	-88.07	5.06	-149.85	149.94	149.06	0.87	171.394		
300.00	300.00	300.00	300.00	0.75	0.75	-88.07	5.06	-149.85	149.94	148.43	1.50	99.831	CC, ES	

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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		
400.00	399.98	396.12	396.10	1.03	1.03	109.00	4.06	-151.12	151.78	149.69	2.09	72.598		
500.00	499.84	492.04	491.89	1.31	1.30	109.49	1.07	-154.90	157.32	154.62	2.70	58.267		
600.00	599.49	587.55	587.07	1.61	1.59	110.19	-3.88	-161.17	166.43	163.07	3.35	49.619		
700.00	699.10	682.61	681.48	1.90	1.89	110.34	-10.76	-169.87	178.18	174.15	4.03	44.245		
800.00	798.71	779.79	777.64	2.22	2.22	109.93	-19.43	-180.86	191.97	187.31	4.66	41.218		
900.00	898.32	878.79	875.57	2.55	2.57	109.51	-28.44	-192.27	205.98	200.71	5.27	39.097		
1,000.00	997.94	977.80	973.50	2.88	2.93	109.15	-37.45	-203.67	219.99	214.10	5.89	37.322		
1,100.00	1,097.55	1,076.80	1,071.43	3.21	3.29	108.83	-46.46	-215.08	234.02	227.49	6.53	35.835		
1,200.00	1,197.16	1,175.80	1,169.36	3.55	3.65	108.55	-55.47	-226.49	248.05	240.87	7.18	34.566		
1,300.00	1,296.77	1,274.81	1,267.29	3.88	4.02	108.30	-64.48	-237.90	262.09	254.26	7.83	33.481		
1,400.00	1,396.38	1,373.81	1,365.22	4.22	4.39	108.07	-73.49	-249.31	276.13	267.65	8.48	32.546		
1,500.00	1,495.99	1,472.81	1,463.15	4.56	4.76	107.87	-82.51	-260.72	290.17	281.03	9.14	31.733		
1,600.00	1,595.60	1,571.82	1,561.08	4.90	5.13	107.68	-91.52	-272.13	304.22	294.42	9.81	31.021		
1,700.00	1,695.22	1,670.82	1,659.01	5.23	5.50	107.51	-100.53	-283.53	318.28	307.80	10.47	30.392		
1,800.00	1,794.83	1,769.83	1,756.94	5.57	5.87	107.36	-109.54	-294.94	332.33	321.19	11.14	29.834		
1,900.00	1,894.44	1,868.83	1,854.87	5.91	6.24	107.22	-118.55	-306.35	346.39	334.58	11.81	29.335		
2,000.00	1,994.05	1,967.83	1,952.80	6.25	6.61	107.08	-127.56	-317.76	360.44	347.97	12.48	28.886		
2,100.00	2,093.66	2,066.84	2,050.73	6.59	6.98	106.96	-136.57	-329.17	374.50	361.35	13.15	28.481		
2,200.00	2,193.27	2,165.84	2,148.66	6.93	7.36	106.85	-145.58	-340.58	388.56	374.74	13.82	28.113		
2,300.00	2,292.89	2,264.84	2,246.60	7.27	7.73	106.75	-154.59	-351.98	402.63	388.13	14.49	27.778		
2,400.00	2,392.50	2,363.85	2,344.53	7.61	8.10	106.65	-163.60	-363.39	416.69	401.52	15.17	27.471		
2,500.00	2,492.11	2,462.85	2,442.46	7.95	8.48	106.56	-172.61	-374.80	430.76	414.91	15.84	27.190		
2,600.00	2,591.72	2,561.85	2,540.39	8.29	8.85	106.47	-181.62	-386.21	444.82	428.31	16.52	26.930		
2,700.00	2,691.33	2,660.86	2,638.32	8.63	9.22	106.39	-190.63	-397.62	458.89	441.70	17.19	26.691		
2,800.00	2,790.94	2,759.86	2,736.25	8.98	9.60	106.32	-199.64	-409.03	472.96	455.09	17.87	26.469		
2,900.00	2,890.56	2,858.87	2,834.18	9.32	9.97	106.24	-208.65	-420.44	487.03	468.48	18.54	26.262		
3,000.00	2,990.17	2,957.87	2,932.11	9.66	10.35	106.18	-217.66	-431.84	501.10	481.87	19.22	26.070		
3,100.00	3,089.78	3,056.87	3,030.04	10.00	10.72	106.11	-226.67	-443.25	515.17	495.27	19.90	25.890		
3,200.00	3,189.39	3,155.88	3,127.97	10.34	11.10	106.05	-235.68	-454.66	529.24	508.66	20.58	25.722		
3,300.00	3,288.90	3,254.88	3,225.90	10.68	11.47	106.00	-244.69	-466.07	543.31	522.05	21.25	25.564		
3,400.00	3,388.61	3,353.88	3,323.83	11.02	11.85	105.94	-253.70	-477.48	557.38	535.45	21.93	25.416		
3,500.00	3,488.23	3,452.89	3,421.76	11.36	12.22	105.89	-262.71	-488.89	571.45	548.84	22.61	25.277		
3,600.00	3,587.84	3,551.89	3,519.69	11.71	12.59	105.84	-271.72	-500.30	585.52	562.24	23.29	25.145		
3,700.00	3,687.45	3,650.90	3,617.62	12.05	12.97	105.80	-280.74	-511.70	599.60	575.63	23.96	25.021		
3,800.00	3,787.06	3,749.90	3,715.55	12.39	13.34	105.75	-289.75	-523.11	613.67	589.03	24.64	24.903		
3,900.00	3,886.67	3,848.90	3,813.48	12.73	13.72	105.71	-298.76	-534.52	627.74	602.42	25.32	24.792		
4,000.00	3,986.28	3,947.91	3,911.41	13.07	14.09	105.67	-307.77	-545.93	641.82	615.82	26.00	24.686		
4,100.00	4,085.89	4,046.91	4,009.34	13.41	14.47	105.63	-316.78	-557.34	655.89	629.21	26.68	24.585		
4,200.00	4,185.51	4,145.91	4,107.28	13.75	14.84	105.59	-325.79	-568.75	669.97	642.61	27.36	24.490		
4,300.00	4,285.12	4,244.92	4,205.21	14.10	15.22	105.56	-334.80	-580.16	684.04	656.00	28.04	24.399		
4,400.00	4,384.73	4,343.92	4,303.14	14.44	15.59	105.52	-343.81	-591.56	698.11	669.40	28.71	24.312		
4,500.00	4,484.34	4,442.92	4,401.07	14.78	15.97	105.49	-352.82	-602.97	712.19	682.80	29.39	24.229		
4,600.00	4,583.95	4,541.93	4,499.00	15.12	16.34	105.46	-361.83	-614.38	726.27	696.19	30.07	24.150		
4,700.00	4,683.56	4,641.35	4,597.34	15.46	16.72	105.43	-370.88	-625.84	740.34	709.59	30.75	24.073		
4,800.00	4,783.18	4,766.59	4,721.60	15.80	17.06	105.52	-380.54	-638.07	752.64	721.16	31.48	23.909		
4,900.00	4,882.79	4,892.61	4,847.19	16.15	17.35	105.86	-386.85	-646.07	761.47	729.33	32.14	23.690		
5,000.00	4,982.40	5,018.93	4,973.41	16.48	17.63	106.46	-389.74	-649.72	766.85	734.08	32.77	23.400		
5,100.00	5,082.17	5,127.69	5,082.17	16.71	17.88	107.01	-389.94	-649.97	768.97	735.69	33.27	23.110		
5,200.00	5,182.12	5,227.63	5,182.12	16.94	18.11	107.25	-389.94	-649.97	769.90	736.16	33.74	22.817		
5,300.00	5,282.12	5,326.65	5,280.97	17.20	18.32	-89.32	-385.87	-649.97	770.03	735.79	34.24	22.492		
5,400.00	5,382.12	5,420.87	5,372.88	17.42	18.49	-87.83	-365.76	-649.97	770.58	735.90	34.68	22.220		
5,500.00	5,481.99	5,506.76	5,452.29	17.64	18.61	-85.75	-333.28	-649.97	772.77	737.70	35.07	22.033		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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		
5,600.00	5,579.66	5,588.17	5,521.67	17.83	18.69	-83.35	-290.85	-649.97	776.42	741.08	35.33	21.973		
5,700.00	5,671.57	5,666.52	5,581.43	17.98	18.74	-81.16	-240.29	-649.97	780.96	745.49	35.47	22.019		
5,800.00	5,754.35	5,742.56	5,631.55	18.10	18.76	-79.24	-183.19	-649.97	785.84	750.34	35.50	22.133		
5,900.00	5,824.96	5,816.87	5,672.00	18.23	18.76	-77.63	-120.94	-649.97	790.55	755.04	35.51	22.264		
6,000.00	5,880.81	5,889.93	5,702.75	18.37	18.75	-76.39	-54.73	-649.97	794.63	759.09	35.55	22.355		
6,100.00	5,919.85	5,962.13	5,723.75	18.55	18.72	-75.53	14.30	-649.97	797.73	762.03	35.69	22.351		
6,200.00	5,940.63	6,033.86	5,734.97	18.79	18.68	-75.07	85.08	-649.97	799.58	763.58	35.99	22.216		
6,300.00	5,944.00	6,115.57	5,737.00	19.10	18.64	-75.01	166.73	-649.97	800.23	763.73	36.50	21.924		
6,400.00	5,944.00	6,215.57	5,737.00	19.49	18.68	-75.02	266.73	-649.97	800.75	763.50	37.25	21.498		
6,500.00	5,944.00	6,315.56	5,737.00	19.97	19.09	-75.03	366.73	-649.97	801.27	763.10	38.17	20.994		
6,600.00	5,944.00	6,415.56	5,737.00	20.54	19.66	-75.04	466.72	-649.97	801.79	762.55	39.24	20.431		
6,700.00	5,944.00	6,515.56	5,737.00	21.18	20.30	-75.05	566.72	-649.97	802.31	761.84	40.47	19.827		
6,800.00	5,944.00	6,615.56	5,737.00	21.88	21.01	-75.06	666.72	-649.97	802.83	761.01	41.82	19.196		
6,900.00	5,944.00	6,715.56	5,737.00	22.65	21.78	-75.07	766.72	-649.97	803.35	760.05	43.30	18.553		
7,000.00	5,944.00	6,815.56	5,737.00	23.47	22.61	-75.08	866.72	-649.97	803.87	758.98	44.89	17.909		
7,100.00	5,944.00	6,915.56	5,737.00	24.34	23.48	-75.09	966.72	-649.96	804.39	757.82	46.57	17.273		
7,200.00	5,944.00	7,015.55	5,737.00	25.26	24.40	-75.10	1,066.72	-649.96	804.91	756.56	48.34	16.650		
7,300.00	5,944.00	7,115.55	5,737.00	26.21	25.36	-75.11	1,166.71	-649.96	805.43	755.23	50.19	16.047		
7,400.00	5,944.00	7,215.55	5,737.00	27.20	26.35	-75.12	1,266.71	-649.96	805.95	753.83	52.11	15.465		
7,500.00	5,944.00	7,315.55	5,737.00	28.22	27.38	-75.13	1,366.71	-649.96	806.47	752.37	54.10	14.908		
7,600.00	5,944.00	7,415.55	5,737.00	29.27	28.43	-75.14	1,466.71	-649.96	806.99	750.85	56.13	14.376		
7,700.00	5,944.00	7,515.55	5,737.00	30.35	29.51	-75.15	1,566.71	-649.96	807.51	749.28	58.22	13.869		
7,800.00	5,944.00	7,615.55	5,737.00	31.45	30.61	-75.16	1,666.71	-649.96	808.03	747.67	60.36	13.387		
7,900.00	5,944.00	7,715.54	5,737.00	32.57	31.73	-75.17	1,766.71	-649.96	808.55	746.01	62.53	12.930		
8,000.00	5,944.00	7,815.54	5,737.00	33.70	32.87	-75.18	1,866.70	-649.96	809.07	744.32	64.74	12.496		
8,100.00	5,944.00	7,915.54	5,737.00	34.86	34.02	-75.19	1,966.70	-649.96	809.59	742.60	66.99	12.086		
8,200.00	5,944.00	8,015.54	5,737.00	36.03	35.19	-75.20	2,066.70	-649.96	810.11	740.84	69.26	11.696		
8,300.00	5,944.00	8,115.54	5,737.00	37.21	36.38	-75.20	2,166.70	-649.96	810.63	739.06	71.56	11.328		
8,400.00	5,944.00	8,215.54	5,737.00	38.40	37.57	-75.21	2,266.70	-649.96	811.15	737.26	73.89	10.978		
8,500.00	5,944.00	8,315.54	5,737.00	39.61	38.78	-75.22	2,366.70	-649.96	811.67	735.43	76.23	10.647		
8,600.00	5,944.00	8,415.53	5,737.00	40.82	40.00	-75.23	2,466.70	-649.96	812.19	733.59	78.60	10.333		
8,700.00	5,944.00	8,515.53	5,737.00	42.05	41.23	-75.24	2,566.69	-649.95	812.71	731.72	80.99	10.035		
8,800.00	5,944.00	8,615.53	5,737.00	43.28	42.46	-75.25	2,666.69	-649.95	813.23	729.84	83.39	9.752		
8,900.00	5,944.00	8,715.53	5,737.00	44.53	43.71	-75.26	2,766.69	-649.95	813.75	727.94	85.81	9.484		
9,000.00	5,944.00	8,815.53	5,737.00	45.78	44.96	-75.27	2,866.69	-649.95	814.27	726.03	88.24	9.228		
9,100.00	5,944.00	8,915.53	5,737.00	47.03	46.22	-75.28	2,966.69	-649.95	814.79	724.10	90.68	8.985		
9,200.00	5,944.00	9,015.53	5,737.00	48.29	47.48	-75.29	3,066.69	-649.95	815.31	722.17	93.14	8.754		
9,300.00	5,944.00	9,115.52	5,737.00	49.56	48.75	-75.30	3,166.69	-649.95	815.83	720.22	95.61	8.533		
9,400.00	5,944.00	9,215.52	5,737.00	50.83	50.02	-75.31	3,266.68	-649.95	816.35	718.26	98.09	8.323		
9,500.00	5,944.00	9,315.52	5,737.00	52.11	51.30	-75.32	3,366.68	-649.95	816.87	716.29	100.57	8.122		
9,600.00	5,944.00	9,415.52	5,737.00	53.39	52.59	-75.33	3,466.68	-649.95	817.39	714.32	103.07	7.930		
9,700.00	5,944.00	9,515.52	5,737.00	54.68	53.88	-75.34	3,566.68	-649.95	817.91	712.33	105.58	7.747		
9,800.00	5,944.00	9,615.52	5,737.00	55.97	55.17	-75.35	3,666.68	-649.95	818.43	710.34	108.09	7.572		
9,900.00	5,944.00	9,715.52	5,737.00	57.27	56.46	-75.36	3,766.68	-649.95	818.95	708.34	110.61	7.404		
10,000.00	5,944.00	9,815.51	5,737.00	58.56	57.76	-75.37	3,866.68	-649.95	819.47	706.33	113.14	7.243		
10,100.00	5,944.00	9,915.51	5,737.00	59.86	59.06	-75.38	3,966.67	-649.95	819.99	704.32	115.67	7.089		
10,200.00	5,944.00	10,015.51	5,737.00	61.17	60.37	-75.39	4,066.67	-649.95	820.51	702.30	118.21	6.941		
10,300.00	5,944.00	10,115.51	5,737.00	62.47	61.68	-75.40	4,166.67	-649.95	821.03	700.28	120.75	6.799		
10,400.00	5,944.00	10,215.51	5,737.00	63.78	62.99	-75.41	4,266.67	-649.94	821.55	698.25	123.30	6.663		
10,500.00	5,944.00	10,315.51	5,737.00	65.09	64.30	-75.42	4,366.67	-649.94	822.07	696.21	125.86	6.532		
10,600.00	5,944.00	10,415.51	5,737.00	66.41	65.61	-75.42	4,466.67	-649.94	822.59	694.17	128.42	6.406		
10,700.00	5,944.00	10,515.50	5,737.00	67.72	66.93	-75.43	4,566.67	-649.94	823.11	692.13	130.98	6.284		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	
10,800.00	5,944.00	10,615.50	5,737.00	69.04	68.25	-75.44	4,666.66	-649.94	823.63	690.08	133.55	6.167	
10,900.00	5,944.00	10,715.50	5,737.00	70.36	69.57	-75.45	4,766.66	-649.94	824.15	688.03	136.12	6.055	
11,000.00	5,944.00	10,815.50	5,737.00	71.68	70.90	-75.46	4,866.66	-649.94	824.67	685.98	138.70	5.946	
11,100.00	5,944.00	10,915.50	5,737.00	73.01	72.22	-75.47	4,966.66	-649.94	825.19	683.92	141.28	5.841	
11,200.00	5,944.00	11,015.50	5,737.00	74.33	73.55	-75.48	5,066.66	-649.94	825.71	681.86	143.86	5.740	
11,300.00	5,944.00	11,115.50	5,737.00	75.66	74.87	-75.49	5,166.66	-649.94	826.23	679.79	146.44	5.642	
11,400.00	5,944.00	11,215.49	5,737.00	76.99	76.20	-75.50	5,266.66	-649.94	826.76	677.72	149.03	5.547	
11,500.00	5,944.00	11,315.49	5,737.00	78.32	77.53	-75.51	5,366.65	-649.94	827.28	675.65	151.62	5.456	
11,600.00	5,944.00	11,415.49	5,737.00	79.65	78.87	-75.52	5,466.65	-649.94	827.80	673.58	154.22	5.368	
11,700.00	5,944.00	11,515.49	5,737.00	80.98	80.20	-75.53	5,566.65	-649.94	828.32	671.50	156.82	5.282	
11,800.00	5,944.00	11,615.49	5,737.00	82.31	81.53	-75.54	5,666.65	-649.94	828.84	669.42	159.41	5.199	
11,900.00	5,944.00	11,715.49	5,737.00	83.65	82.87	-75.55	5,766.65	-649.94	829.36	667.34	162.02	5.119	
12,000.00	5,944.00	11,815.49	5,737.00	84.98	84.21	-75.56	5,866.65	-649.93	829.88	665.26	164.62	5.041	
12,100.00	5,944.00	11,915.48	5,737.00	86.32	85.54	-75.57	5,966.65	-649.93	830.40	663.17	167.23	4.966	
12,200.00	5,944.00	12,015.48	5,737.00	87.66	86.88	-75.57	6,066.64	-649.93	830.92	661.09	169.83	4.893	
12,300.00	5,944.00	12,115.48	5,737.00	88.99	88.22	-75.58	6,166.64	-649.93	831.44	659.00	172.44	4.821	
12,400.00	5,944.00	12,215.48	5,737.00	90.33	89.56	-75.59	6,266.64	-649.93	831.96	656.91	175.06	4.753	
12,500.00	5,944.00	12,315.48	5,737.00	91.67	90.90	-75.60	6,366.64	-649.93	832.48	654.81	177.67	4.686	
12,600.00	5,944.00	12,415.48	5,737.00	93.02	92.25	-75.61	6,466.64	-649.93	833.01	652.72	180.29	4.620	
12,700.00	5,944.00	12,515.47	5,737.00	94.36	93.59	-75.62	6,566.64	-649.93	833.53	650.62	182.90	4.557	
12,800.00	5,944.00	12,615.47	5,737.00	95.70	94.93	-75.63	6,666.64	-649.93	834.05	648.52	185.52	4.496	
12,900.00	5,944.00	12,715.47	5,737.00	97.04	96.28	-75.64	6,766.63	-649.93	834.57	646.42	188.14	4.436	
13,000.00	5,944.00	12,815.47	5,737.00	98.39	97.62	-75.65	6,866.63	-649.93	835.09	644.32	190.77	4.378	
13,100.00	5,944.00	12,915.47	5,737.00	99.73	98.97	-75.66	6,966.63	-649.93	835.61	642.22	193.39	4.321	
13,200.00	5,944.00	13,015.47	5,737.00	101.08	100.31	-75.67	7,066.63	-649.93	836.13	640.12	196.01	4.266	
13,300.00	5,944.00	13,115.47	5,737.00	102.42	101.66	-75.68	7,166.63	-649.93	836.65	638.01	198.64	4.212	
13,400.00	5,944.00	13,215.46	5,737.00	103.77	103.01	-75.68	7,266.63	-649.93	837.17	635.91	201.27	4.159	
13,500.00	5,944.00	13,315.46	5,737.00	105.12	104.36	-75.69	7,366.62	-649.93	837.69	633.80	203.90	4.108	
13,556.94	5,944.00	13,364.30	5,737.00	105.88	105.01	-75.70	7,415.46	-649.93	838.03	632.72	205.31	4.082 SF	



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-88.08	3.02	-89.91	89.96					
100.00	100.00	100.00	100.00	0.12	0.12	-88.08	3.02	-89.91	89.96	89.71	0.25	363.181		
200.00	200.00	200.00	200.00	0.44	0.44	-88.08	3.02	-89.91	89.96	89.09	0.87	102.836		
300.00	300.00	300.00	300.00	0.75	0.75	-88.08	3.02	-89.91	89.96	88.46	1.50	59.898 CC, ES		
400.00	399.98	398.50	398.48	1.03	1.03	108.88	1.56	-90.77	91.35	89.28	2.07	44.108		
500.00	499.84	496.89	496.73	1.31	1.31	109.06	-2.81	-93.34	95.50	92.86	2.64	36.185		
600.00	599.49	595.14	594.62	1.61	1.61	109.17	-10.06	-97.62	102.29	99.03	3.26	31.421		
700.00	699.10	694.85	693.81	1.90	1.90	108.85	-18.75	-102.74	109.96	106.10	3.86	28.484		
800.00	798.71	794.55	793.01	2.22	2.23	108.57	-27.44	-107.86	117.64	113.15	4.49	26.216		
900.00	898.32	894.25	892.20	2.55	2.56	108.33	-36.13	-112.98	125.31	120.19	5.13	24.437		
1,000.00	997.94	993.96	991.39	2.88	2.89	108.12	-44.82	-118.10	132.99	127.22	5.78	23.017		
1,100.00	1,097.55	1,093.66	1,090.58	3.21	3.23	107.92	-53.51	-123.22	140.68	134.24	6.43	21.862		
1,200.00	1,197.16	1,193.36	1,189.77	3.55	3.57	107.75	-62.19	-128.34	148.36	141.26	7.10	20.907		
1,300.00	1,296.77	1,293.07	1,288.97	3.88	3.91	107.60	-70.88	-133.46	156.04	148.28	7.76	20.107		
1,400.00	1,396.38	1,392.77	1,388.16	4.22	4.25	107.46	-79.57	-138.58	163.73	155.30	8.43	19.426		
1,500.00	1,495.99	1,492.47	1,487.35	4.56	4.60	107.33	-88.26	-143.70	171.42	162.32	9.10	18.842		
1,600.00	1,595.60	1,592.18	1,586.54	4.90	4.94	107.21	-96.95	-148.82	179.10	169.34	9.77	18.334		
1,700.00	1,695.22	1,691.88	1,685.73	5.23	5.29	107.11	-105.64	-153.94	186.79	176.35	10.44	17.889		
1,800.00	1,794.83	1,791.58	1,784.93	5.57	5.63	107.01	-114.32	-159.06	194.48	183.37	11.12	17.497		
1,900.00	1,894.44	1,891.29	1,884.12	5.91	5.98	106.92	-123.01	-164.18	202.17	190.38	11.79	17.148		
2,000.00	1,994.05	1,990.99	1,983.31	6.25	6.32	106.83	-131.70	-169.30	209.86	197.39	12.46	16.836		
2,100.00	2,093.66	2,090.69	2,082.50	6.59	6.67	106.75	-140.39	-174.42	217.55	204.41	13.14	16.556		
2,200.00	2,193.27	2,190.40	2,181.69	6.93	7.02	106.68	-149.08	-179.54	225.24	211.42	13.82	16.302		
2,300.00	2,292.89	2,290.10	2,280.89	7.27	7.36	106.61	-157.77	-184.66	232.93	218.44	14.49	16.071		
2,400.00	2,392.50	2,389.80	2,380.08	7.61	7.71	106.55	-166.46	-189.78	240.62	225.45	15.17	15.861		
2,500.00	2,492.11	2,489.51	2,479.27	7.95	8.06	106.49	-175.14	-194.90	248.31	232.46	15.85	15.668		
2,600.00	2,591.72	2,589.21	2,578.46	8.29	8.40	106.43	-183.83	-200.02	256.00	239.48	16.53	15.491		
2,700.00	2,691.33	2,688.92	2,677.66	8.63	8.75	106.38	-192.52	-205.14	263.70	246.49	17.20	15.327		
2,800.00	2,790.94	2,788.62	2,776.85	8.98	9.10	106.33	-201.21	-210.26	271.39	253.51	17.88	15.176		
2,900.00	2,890.56	2,888.32	2,876.04	9.32	9.45	106.28	-209.90	-215.38	279.08	260.52	18.56	15.035		
3,000.00	2,990.17	2,988.03	2,975.23	9.66	9.79	106.24	-218.59	-220.50	286.77	267.53	19.24	14.905		
3,100.00	3,089.78	3,087.73	3,074.42	10.00	10.14	106.19	-227.28	-225.62	294.47	274.55	19.92	14.783		
3,200.00	3,189.39	3,187.43	3,173.62	10.34	10.49	106.15	-235.96	-230.74	302.16	281.56	20.60	14.669		
3,300.00	3,289.00	3,287.14	3,272.81	10.68	10.84	106.11	-244.65	-235.86	309.85	288.57	21.28	14.562		
3,400.00	3,388.61	3,386.84	3,372.00	11.02	11.18	106.08	-253.34	-240.98	317.54	295.59	21.96	14.462		
3,500.00	3,488.23	3,486.54	3,471.19	11.36	11.53	106.04	-262.03	-246.10	325.24	302.60	22.64	14.368		
3,600.00	3,587.84	3,586.25	3,570.38	11.71	11.88	106.01	-270.72	-251.22	332.93	309.61	23.32	14.279		
3,700.00	3,687.45	3,685.95	3,669.58	12.05	12.23	105.98	-279.41	-256.34	340.62	316.63	24.00	14.195		
3,800.00	3,787.06	3,785.65	3,768.77	12.39	12.58	105.95	-288.10	-261.46	348.32	323.64	24.68	14.116		
3,900.00	3,886.67	3,885.36	3,867.96	12.73	12.92	105.92	-296.78	-266.58	356.01	330.66	25.36	14.041		
4,000.00	3,986.28	3,985.06	3,967.15	13.07	13.27	105.89	-305.47	-271.70	363.70	337.67	26.04	13.970		
4,100.00	4,085.89	4,084.76	4,066.34	13.41	13.62	105.87	-314.16	-276.82	371.40	344.68	26.72	13.902		
4,200.00	4,185.51	4,184.47	4,165.54	13.75	13.97	105.84	-322.85	-281.94	379.09	351.70	27.40	13.838		
4,300.00	4,285.12	4,284.17	4,264.73	14.10	14.31	105.82	-331.54	-287.06	386.79	358.71	28.08	13.777		
4,400.00	4,384.73	4,383.87	4,363.92	14.44	14.66	105.79	-340.23	-292.18	394.48	365.72	28.76	13.718		
4,500.00	4,484.34	4,483.58	4,463.11	14.78	15.01	105.77	-348.92	-297.30	402.17	372.74	29.44	13.663		
4,600.00	4,583.95	4,583.28	4,562.31	15.12	15.36	105.75	-357.60	-302.43	409.87	379.75	30.12	13.609		
4,700.00	4,683.56	4,682.98	4,661.50	15.46	15.71	105.73	-366.29	-307.55	417.56	386.76	30.80	13.559		
4,800.00	4,783.18	4,782.69	4,760.69	15.80	16.06	105.71	-374.98	-312.67	425.26	393.78	31.48	13.510		
4,900.00	4,882.79	4,882.67	4,864.19	16.15	16.39	105.74	-383.60	-317.75	432.70	400.55	32.15	13.458		
5,000.00	4,982.40	4,982.31	4,962.31	16.48	16.64	105.79	-392.22	-322.82	440.12	407.37	32.82	13.410		
5,100.00	5,082.01	5,082.01	5,062.01	16.81	16.88	105.84	-399.84	-327.95	447.54	414.04	33.49	13.364		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	5,204.87	5,182.12	16.94	17.14	107.25	-391.98	-322.68	442.61	408.88	33.73	13.123		
5,300.00	5,282.12	5,304.87	5,282.12	17.20	17.36	-89.61	-391.98	-322.68	442.69	408.48	34.21	12.939		
5,306.64	5,288.76	5,311.51	5,288.76	17.21	17.38	-89.61	-391.98	-322.68	442.69	408.45	34.24	12.927		
5,400.00	5,382.12	5,403.74	5,380.66	17.42	17.57	-88.80	-385.70	-322.68	442.78	408.12	34.66	12.775		
5,500.00	5,481.99	5,497.94	5,471.91	17.64	17.74	-86.45	-362.80	-322.68	443.75	408.70	35.06	12.659		
5,600.00	5,579.66	5,588.48	5,554.36	17.83	17.87	-83.76	-325.67	-322.68	445.83	410.50	35.33	12.620		
5,700.00	5,671.57	5,676.24	5,626.99	17.98	17.96	-81.31	-276.59	-322.68	448.68	413.21	35.47	12.650		
5,800.00	5,754.35	5,761.78	5,688.88	18.10	18.05	-79.17	-217.69	-322.68	451.91	416.41	35.50	12.728		
5,900.00	5,824.96	5,845.57	5,739.39	18.23	18.12	-77.41	-150.94	-322.68	455.16	419.66	35.49	12.824		
6,000.00	5,880.81	5,928.07	5,778.04	18.37	18.21	-76.04	-78.16	-322.68	458.05	422.54	35.52	12.896		
6,100.00	5,919.85	6,009.66	5,804.50	18.55	18.32	-75.11	-1.06	-322.68	460.32	424.66	35.66	12.909		
6,200.00	5,940.63	6,090.74	5,818.56	18.79	18.47	-74.63	78.70	-322.68	461.75	425.77	35.98	12.832		
6,300.00	5,944.00	6,178.84	5,821.00	19.10	18.70	-74.57	166.73	-322.68	462.37	425.83	36.53	12.655		
6,400.00	5,944.00	6,278.84	5,821.00	19.49	19.07	-74.59	266.72	-322.68	462.88	425.57	37.31	12.406		
6,500.00	5,944.00	6,378.84	5,821.00	19.97	19.54	-74.61	366.72	-322.68	463.40	425.15	38.26	12.113		
6,600.00	5,944.00	6,478.83	5,821.00	20.54	20.10	-74.63	466.72	-322.68	463.92	424.56	39.36	11.788		
6,700.00	5,944.00	6,578.83	5,821.00	21.18	20.73	-74.64	566.72	-322.68	464.44	423.84	40.60	11.439		
6,800.00	5,944.00	6,678.83	5,821.00	21.88	21.44	-74.66	666.72	-322.68	464.96	422.98	41.98	11.077		
6,900.00	5,944.00	6,778.83	5,821.00	22.65	22.21	-74.68	766.72	-322.68	465.48	422.01	43.47	10.708		
7,000.00	5,944.00	6,878.83	5,821.00	23.47	23.04	-74.70	866.72	-322.68	466.00	420.93	45.07	10.339		
7,100.00	5,944.00	6,978.83	5,821.00	24.34	23.92	-74.71	966.71	-322.68	466.52	419.75	46.77	9.975		
7,200.00	5,944.00	7,078.83	5,821.00	25.26	24.84	-74.73	1,066.71	-322.68	467.04	418.48	48.55	9.619		
7,300.00	5,944.00	7,178.82	5,821.00	26.21	25.80	-74.75	1,166.71	-322.68	467.55	417.14	50.41	9.274		
7,400.00	5,944.00	7,278.82	5,821.00	27.20	26.79	-74.76	1,266.71	-322.68	468.07	415.73	52.34	8.943		
7,500.00	5,944.00	7,378.82	5,821.00	28.22	27.82	-74.78	1,366.71	-322.68	468.59	414.26	54.33	8.624		
7,600.00	5,944.00	7,478.82	5,821.00	29.27	28.88	-74.80	1,466.71	-322.68	469.11	412.73	56.38	8.321		
7,700.00	5,944.00	7,578.82	5,821.00	30.35	29.96	-74.82	1,566.71	-322.68	469.63	411.16	58.48	8.031		
7,800.00	5,944.00	7,678.82	5,821.00	31.45	31.06	-74.83	1,666.70	-322.68	470.15	409.54	60.62	7.756		
7,900.00	5,944.00	7,778.82	5,821.00	32.57	32.19	-74.85	1,766.70	-322.68	470.67	407.88	62.80	7.495		
8,000.00	5,944.00	7,878.81	5,821.00	33.70	33.33	-74.87	1,866.70	-322.67	471.19	406.18	65.01	7.248		
8,100.00	5,944.00	7,978.81	5,821.00	34.86	34.49	-74.88	1,966.70	-322.67	471.71	404.45	67.26	7.013		
8,200.00	5,944.00	8,078.81	5,821.00	36.03	35.66	-74.90	2,066.70	-322.67	472.23	402.69	69.54	6.791		
8,300.00	5,944.00	8,178.81	5,821.00	37.21	36.85	-74.92	2,166.70	-322.67	472.75	400.91	71.84	6.581		
8,400.00	5,944.00	8,278.81	5,821.00	38.40	38.05	-74.94	2,266.70	-322.67	473.27	399.10	74.17	6.381		
8,500.00	5,944.00	8,378.81	5,821.00	39.61	39.26	-74.95	2,366.69	-322.67	473.79	397.27	76.52	6.192		
8,600.00	5,944.00	8,478.81	5,821.00	40.82	40.48	-74.97	2,466.69	-322.67	474.31	395.42	78.89	6.012		
8,700.00	5,944.00	8,578.80	5,821.00	42.05	41.71	-74.99	2,566.69	-322.67	474.83	393.55	81.27	5.842		
8,800.00	5,944.00	8,678.80	5,821.00	43.28	42.95	-75.00	2,666.69	-322.67	475.35	391.67	83.68	5.681		
8,900.00	5,944.00	8,778.80	5,821.00	44.53	44.19	-75.02	2,766.69	-322.67	475.87	389.77	86.10	5.527		
9,000.00	5,944.00	8,878.80	5,821.00	45.78	45.45	-75.04	2,866.69	-322.67	476.39	387.85	88.53	5.381		
9,100.00	5,944.00	8,978.80	5,821.00	47.03	46.71	-75.05	2,966.69	-322.67	476.91	385.92	90.98	5.242		
9,200.00	5,944.00	9,078.80	5,821.00	48.29	47.97	-75.07	3,066.68	-322.67	477.43	383.99	93.44	5.109		
9,300.00	5,944.00	9,178.80	5,821.00	49.56	49.24	-75.09	3,166.68	-322.67	477.95	382.03	95.91	4.983		
9,400.00	5,944.00	9,278.79	5,821.00	50.83	50.52	-75.10	3,266.68	-322.67	478.47	380.07	98.39	4.863		
9,500.00	5,944.00	9,378.79	5,821.00	52.11	51.80	-75.12	3,366.68	-322.67	478.99	378.10	100.88	4.748		
9,600.00	5,944.00	9,478.79	5,821.00	53.39	53.09	-75.14	3,466.68	-322.67	479.51	376.12	103.38	4.638		
9,700.00	5,944.00	9,578.79	5,821.00	54.68	54.38	-75.15	3,566.68	-322.67	480.03	374.14	105.89	4.533		
9,800.00	5,944.00	9,678.79	5,821.00	55.97	55.67	-75.17	3,666.67	-322.67	480.55	372.14	108.40	4.433		
9,900.00	5,944.00	9,778.79	5,821.00	57.27	56.97	-75.19	3,766.67	-322.67	481.07	370.14	110.93	4.337		
10,000.00	5,944.00	9,878.79	5,821.00	58.56	58.27	-75.20	3,866.67	-322.67	481.59	368.13	113.46	4.245		
10,100.00	5,944.00	9,978.78	5,821.00	59.86	59.57	-75.22	3,966.67	-322.67	482.11	366.11	115.99	4.156		
10,200.00	5,944.00	10,078.78	5,821.00	61.17	60.88	-75.23	4,066.67	-322.67	482.63	364.09	118.53	4.072		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,944.00	10,178.78	5,821.00	62.47	62.18	-75.25	4,166.67	-322.67	483.15	362.07	121.08	3.990		
10,400.00	5,944.00	10,278.78	5,821.00	63.78	63.50	-75.27	4,266.67	-322.67	483.67	360.03	123.63	3.912		
10,500.00	5,944.00	10,378.78	5,821.00	65.09	64.81	-75.28	4,366.66	-322.67	484.19	358.00	126.19	3.837		
10,600.00	5,944.00	10,478.78	5,821.00	66.41	66.13	-75.30	4,466.66	-322.67	484.71	355.96	128.75	3.765		
10,700.00	5,944.00	10,578.78	5,821.00	67.72	67.44	-75.32	4,566.66	-322.67	485.23	353.91	131.32	3.695		
10,800.00	5,944.00	10,678.77	5,821.00	69.04	68.76	-75.33	4,666.66	-322.67	485.75	351.86	133.89	3.628		
10,900.00	5,944.00	10,778.77	5,821.00	70.36	70.09	-75.35	4,766.66	-322.67	486.27	349.80	136.47	3.563		
11,000.00	5,944.00	10,878.77	5,821.00	71.68	71.41	-75.36	4,866.66	-322.67	486.79	347.75	139.05	3.501		
11,100.00	5,944.00	10,978.77	5,821.00	73.01	72.74	-75.38	4,966.66	-322.67	487.31	345.68	141.63	3.441		
11,200.00	5,944.00	11,078.77	5,821.00	74.33	74.06	-75.40	5,066.65	-322.67	487.83	343.62	144.21	3.383		
11,300.00	5,944.00	11,178.77	5,821.00	75.66	75.39	-75.41	5,166.65	-322.66	488.35	341.55	146.80	3.327		
11,400.00	5,944.00	11,278.77	5,821.00	76.99	76.72	-75.43	5,266.65	-322.66	488.87	339.48	149.40	3.272		
11,500.00	5,944.00	11,378.76	5,821.00	78.32	78.05	-75.44	5,366.65	-322.66	489.40	337.40	151.99	3.220		
11,600.00	5,944.00	11,478.76	5,821.00	79.65	79.39	-75.46	5,466.65	-322.66	489.92	335.33	154.59	3.169		
11,700.00	5,944.00	11,578.76	5,821.00	80.98	80.72	-75.48	5,566.65	-322.66	490.44	333.25	157.19	3.120		
11,800.00	5,944.00	11,678.76	5,821.00	82.31	82.05	-75.49	5,666.65	-322.66	490.96	331.17	159.79	3.072		
11,900.00	5,944.00	11,778.76	5,821.00	83.65	83.39	-75.51	5,766.64	-322.66	491.48	329.08	162.40	3.026		
12,000.00	5,944.00	11,878.76	5,821.00	84.98	84.73	-75.52	5,866.64	-322.66	492.00	326.99	165.01	2.982		
12,100.00	5,944.00	11,978.76	5,821.00	86.32	86.07	-75.54	5,966.64	-322.66	492.52	324.90	167.62	2.938		
12,200.00	5,944.00	12,078.75	5,821.00	87.66	87.40	-75.55	6,066.64	-322.66	493.04	322.81	170.23	2.896		
12,300.00	5,944.00	12,178.75	5,821.00	88.99	88.74	-75.57	6,166.64	-322.66	493.56	320.72	172.84	2.856		
12,400.00	5,944.00	12,278.75	5,821.00	90.33	90.09	-75.58	6,266.64	-322.66	494.08	318.62	175.46	2.816		
12,500.00	5,944.00	12,378.75	5,821.00	91.67	91.43	-75.60	6,366.64	-322.66	494.61	316.53	178.08	2.777		
12,600.00	5,944.00	12,478.75	5,821.00	93.02	92.77	-75.62	6,466.63	-322.66	495.13	314.43	180.70	2.740		
12,700.00	5,944.00	12,578.75	5,821.00	94.36	94.11	-75.63	6,566.63	-322.66	495.65	312.33	183.32	2.704		
12,800.00	5,944.00	12,678.75	5,821.00	95.70	95.46	-75.65	6,666.63	-322.66	496.17	310.22	185.95	2.668		
12,900.00	5,944.00	12,778.74	5,821.00	97.04	96.80	-75.66	6,766.63	-322.66	496.69	308.12	188.57	2.634		
13,000.00	5,944.00	12,878.74	5,821.00	98.39	98.15	-75.68	6,866.63	-322.66	497.21	306.01	191.20	2.601		
13,100.00	5,944.00	12,978.74	5,821.00	99.73	99.49	-75.69	6,966.63	-322.66	497.73	303.91	193.83	2.568		
13,200.00	5,944.00	13,078.74	5,821.00	101.08	100.84	-75.71	7,066.63	-322.66	498.25	301.80	196.46	2.536		
13,300.00	5,944.00	13,178.74	5,821.00	102.42	102.19	-75.72	7,166.62	-322.66	498.78	299.69	199.09	2.505		
13,400.00	5,944.00	13,278.74	5,821.00	103.77	103.54	-75.74	7,266.62	-322.66	499.30	297.58	201.72	2.475		
13,500.00	5,944.00	13,378.74	5,821.00	105.12	104.88	-75.75	7,366.62	-322.66	499.82	295.46	204.36	2.446		
13,556.94	5,944.00	13,431.62	5,821.00	105.88	105.60	-75.76	7,419.51	-322.66	500.13	294.33	205.80	2.430 SF		

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



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<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-88.07	1.01	-29.97	29.99					
100.00	100.00	100.00	100.00	0.12	0.12	-88.07	1.01	-29.97	29.99	29.74	0.25	121.061		
200.00	200.00	200.00	200.00	0.44	0.44	-88.07	1.01	-29.97	29.99	29.11	0.87	34.279		
300.00	300.00	300.00	300.00	0.75	0.75	-88.07	1.01	-29.97	29.99	28.49	1.50	19.966 CC		
400.00	399.98	400.10	400.08	1.03	1.03	108.66	-0.73	-29.85	30.37	28.32	2.06	14.763 ES		
500.00	499.84	500.20	500.04	1.31	1.31	108.18	-5.96	-29.50	31.53	28.94	2.60	12.149		
600.00	599.49	600.23	599.72	1.61	1.61	107.47	-14.29	-28.93	33.38	30.19	3.18	10.482		
700.00	699.10	700.21	699.31	1.90	1.90	106.80	-23.11	-28.33	35.34	31.53	3.80	9.288		
800.00	798.71	800.19	798.90	2.22	2.22	106.20	-31.92	-27.73	37.30	32.85	4.44	8.393		
900.00	898.32	900.17	898.49	2.55	2.55	105.66	-40.74	-27.13	39.26	34.17	5.09	7.707		
1,000.00	997.94	1,000.15	998.08	2.88	2.88	105.18	-49.55	-26.53	41.23	35.48	5.75	7.167		
1,100.00	1,097.55	1,100.13	1,097.67	3.21	3.21	104.73	-58.37	-25.93	43.20	36.79	6.42	6.732		
1,200.00	1,197.16	1,200.11	1,197.25	3.55	3.54	104.33	-67.18	-25.33	45.18	38.09	7.09	6.376		
1,300.00	1,296.77	1,300.09	1,296.84	3.88	3.88	103.96	-76.00	-24.73	47.15	39.40	7.76	6.079		
1,400.00	1,396.38	1,400.07	1,396.43	4.22	4.22	103.62	-84.82	-24.13	49.13	40.70	8.43	5.829		
1,500.00	1,495.99	1,500.05	1,496.02	4.56	4.55	103.30	-93.63	-23.53	51.11	42.01	9.10	5.614		
1,600.00	1,595.60	1,600.03	1,595.61	4.90	4.89	103.01	-102.45	-22.93	53.09	43.31	9.78	5.429		
1,700.00	1,695.22	1,700.01	1,695.20	5.23	5.23	102.74	-111.26	-22.33	55.07	44.61	10.46	5.267		
1,800.00	1,794.83	1,799.99	1,794.79	5.57	5.57	102.49	-120.08	-21.73	57.05	45.92	11.13	5.124		
1,900.00	1,894.44	1,899.97	1,894.38	5.91	5.91	102.25	-128.89	-21.13	59.04	47.22	11.81	4.998		
2,000.00	1,994.05	1,999.95	1,993.96	6.25	6.25	102.04	-137.71	-20.53	61.02	48.53	12.49	4.885		
2,100.00	2,093.66	2,099.94	2,093.55	6.59	6.59	101.83	-146.52	-19.93	63.01	49.84	13.17	4.783		
2,200.00	2,193.27	2,199.92	2,193.14	6.93	6.93	101.64	-155.34	-19.33	65.00	51.14	13.85	4.692		
2,300.00	2,292.89	2,299.90	2,292.73	7.27	7.27	101.46	-164.15	-18.73	66.98	52.45	14.53	4.609		
2,400.00	2,392.50	2,399.88	2,392.32	7.61	7.61	101.29	-172.97	-18.13	68.97	53.76	15.21	4.533		
2,500.00	2,492.11	2,499.86	2,491.91	7.95	7.95	101.12	-181.79	-17.53	70.96	55.06	15.90	4.464		
2,600.00	2,591.72	2,599.84	2,591.50	8.29	8.29	100.97	-190.60	-16.93	72.95	56.37	16.58	4.401		
2,700.00	2,691.33	2,699.82	2,691.09	8.63	8.64	100.83	-199.42	-16.33	74.94	57.68	17.26	4.342		
2,800.00	2,790.94	2,799.80	2,790.68	8.98	8.98	100.69	-208.23	-15.73	76.93	58.99	17.94	4.288		
2,900.00	2,890.56	2,899.78	2,890.26	9.32	9.32	100.56	-217.05	-15.13	78.92	60.29	18.62	4.238		
3,000.00	2,990.17	2,999.76	2,989.85	9.66	9.66	100.44	-225.86	-14.53	80.91	61.60	19.30	4.191		
3,100.00	3,089.78	3,099.74	3,089.44	10.00	10.00	100.32	-234.68	-13.93	82.90	62.91	19.99	4.148		
3,200.00	3,189.39	3,199.72	3,189.03	10.34	10.34	100.21	-243.49	-13.33	84.89	64.22	20.67	4.107		
3,300.00	3,289.00	3,299.70	3,288.62	10.68	10.68	100.10	-252.31	-12.73	86.88	65.53	21.35	4.069		
3,400.00	3,388.61	3,399.68	3,388.21	11.02	11.03	100.00	-261.13	-12.13	88.87	66.84	22.03	4.033		
3,500.00	3,488.23	3,499.66	3,487.80	11.36	11.37	99.90	-269.94	-11.53	90.87	68.15	22.72	4.000		
3,600.00	3,587.84	3,599.64	3,587.39	11.71	11.71	99.81	-278.76	-10.93	92.86	69.46	23.40	3.968		
3,700.00	3,687.45	3,699.62	3,686.97	12.05	12.05	99.72	-287.57	-10.33	94.85	70.77	24.08	3.939		
3,800.00	3,787.06	3,799.60	3,786.56	12.39	12.39	99.63	-296.39	-9.73	96.84	72.08	24.77	3.910		
3,900.00	3,886.67	3,899.58	3,886.15	12.73	12.74	99.55	-305.20	-9.13	98.84	73.39	25.45	3.884		
4,000.00	3,986.28	3,999.56	3,985.74	13.07	13.08	99.47	-314.02	-8.53	100.83	74.70	26.13	3.859		
4,100.00	4,085.89	4,099.54	4,085.33	13.41	13.42	99.39	-322.83	-7.93	102.82	76.01	26.81	3.835		
4,200.00	4,185.51	4,199.52	4,184.92	13.75	13.76	99.32	-331.65	-7.33	104.82	77.32	27.50	3.812		
4,300.00	4,285.12	4,299.50	4,284.51	14.10	14.10	99.25	-340.46	-6.73	106.81	78.63	28.18	3.790		
4,400.00	4,384.73	4,399.48	4,384.10	14.44	14.45	99.18	-349.28	-6.13	108.80	79.94	28.86	3.770		
4,500.00	4,484.34	4,499.46	4,483.69	14.78	14.79	99.12	-358.10	-5.53	110.80	81.25	29.55	3.750		
4,600.00	4,583.95	4,599.44	4,583.27	15.12	15.13	99.05	-366.91	-4.93	112.79	82.56	30.23	3.731		
4,700.00	4,683.56	4,699.42	4,682.86	15.46	15.47	98.99	-375.73	-4.33	114.79	83.87	30.91	3.713		
4,800.00	4,783.18	4,799.45	4,782.51	15.80	15.80	98.97	-384.48	-3.73	116.78	85.19	31.59	3.697		
4,900.00	4,882.79	4,899.66	4,882.51	16.15	16.03	100.09	-393.23	-3.13	118.76	86.47	32.26	3.689		
5,000.00	4,982.40	4,999.59	4,982.40	16.48	16.26	102.82	-393.79	-3.10	120.45	87.74	32.71	3.683		
5,100.00	5,082.17	5,099.37	5,082.17	16.71	16.52	105.80	-393.99	-3.08	122.10	88.92	33.18	3.680		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	5,199.32	5,182.12	16.94	16.74	107.24	-393.99	-3.08	123.00	89.39	33.61	3.660		
5,300.00	5,282.12	5,298.84	5,281.47	17.20	16.96	-87.61	-389.86	-3.08	123.19	89.13	34.06	3.617		
5,400.00	5,382.12	5,393.71	5,373.99	17.42	17.13	-78.28	-369.46	-3.08	125.97	91.80	34.16	3.687		
5,500.00	5,481.99	5,480.08	5,453.75	17.64	17.25	-65.11	-336.58	-3.08	137.78	104.45	33.33	4.133		
5,600.00	5,579.66	5,561.86	5,523.29	17.83	17.36	-53.97	-293.72	-3.08	155.93	124.38	31.55	4.942		
5,700.00	5,671.57	5,640.49	5,583.06	17.98	17.46	-45.92	-242.73	-3.08	176.11	146.94	29.17	6.038		
5,800.00	5,754.35	5,716.75	5,633.06	18.10	17.56	-40.25	-185.25	-3.08	195.62	169.10	26.52	7.377		
5,900.00	5,824.96	5,791.21	5,673.28	18.23	17.68	-36.34	-122.65	-3.08	212.76	188.86	23.89	8.904		
6,000.00	5,880.81	5,864.38	5,703.73	18.37	17.82	-33.74	-56.19	-3.08	226.48	204.88	21.61	10.483		
6,100.00	5,919.85	5,936.67	5,724.38	18.55	17.99	-32.14	13.02	-3.08	236.14	216.15	20.00	11.809		
6,200.00	5,940.63	6,008.43	5,735.21	18.79	18.19	-31.39	83.91	-3.08	241.36	221.96	19.40	12.438		
6,300.00	5,944.00	6,091.30	5,737.00	19.10	18.46	-31.35	166.72	-3.08	242.39	222.54	19.84	12.215		
6,400.00	5,944.00	6,191.29	5,737.00	19.49	18.88	-31.46	266.72	-3.08	242.67	222.18	20.49	11.844		
6,500.00	5,944.00	6,291.29	5,737.00	19.97	19.38	-31.57	366.72	-3.08	242.95	221.70	21.25	11.433		
6,600.00	5,944.00	6,391.29	5,737.00	20.54	19.97	-31.67	466.72	-3.08	243.23	221.12	22.11	10.999		
6,700.00	5,944.00	6,491.29	5,737.00	21.18	20.62	-31.78	566.72	-3.08	243.51	220.44	23.07	10.554		
6,800.00	5,944.00	6,591.29	5,737.00	21.88	21.35	-31.89	666.72	-3.08	243.80	219.68	24.12	10.110		
6,900.00	5,944.00	6,691.29	5,737.00	22.65	22.14	-32.00	766.72	-3.08	244.08	218.85	25.23	9.673		
7,000.00	5,944.00	6,791.29	5,737.00	23.47	22.98	-32.10	866.71	-3.08	244.37	217.95	26.42	9.250		
7,100.00	5,944.00	6,891.28	5,737.00	24.34	23.87	-32.21	966.71	-3.08	244.66	216.99	27.66	8.844		
7,200.00	5,944.00	6,991.28	5,737.00	25.26	24.80	-32.32	1,066.71	-3.08	244.94	215.98	28.96	8.458		
7,300.00	5,944.00	7,091.28	5,737.00	26.21	25.78	-32.42	1,166.71	-3.08	245.23	214.93	30.30	8.092		
7,400.00	5,944.00	7,191.28	5,737.00	27.20	26.78	-32.53	1,266.71	-3.08	245.52	213.83	31.69	7.747		
7,500.00	5,944.00	7,291.28	5,737.00	28.22	27.82	-32.64	1,366.71	-3.08	245.81	212.69	33.12	7.423		
7,600.00	5,944.00	7,391.28	5,737.00	29.27	28.89	-32.74	1,466.71	-3.08	246.10	211.53	34.57	7.118		
7,700.00	5,944.00	7,491.27	5,737.00	30.35	29.98	-32.85	1,566.70	-3.08	246.39	210.33	36.06	6.832		
7,800.00	5,944.00	7,591.27	5,737.00	31.45	31.09	-32.95	1,666.70	-3.08	246.68	209.10	37.58	6.564		
7,900.00	5,944.00	7,691.27	5,737.00	32.57	32.23	-33.06	1,766.70	-3.08	246.98	207.85	39.12	6.313		
8,000.00	5,944.00	7,791.27	5,737.00	33.70	33.38	-33.16	1,866.70	-3.08	247.27	206.58	40.69	6.077		
8,100.00	5,944.00	7,891.27	5,737.00	34.86	34.55	-33.27	1,966.70	-3.08	247.57	205.29	42.28	5.856		
8,200.00	5,944.00	7,991.27	5,737.00	36.03	35.73	-33.37	2,066.70	-3.08	247.86	203.98	43.89	5.648		
8,300.00	5,944.00	8,091.27	5,737.00	37.21	36.92	-33.47	2,166.70	-3.08	248.16	202.65	45.51	5.452		
8,400.00	5,944.00	8,191.26	5,737.00	38.40	38.13	-33.58	2,266.69	-3.08	248.46	201.30	47.16	5.269		
8,500.00	5,944.00	8,291.26	5,737.00	39.61	39.34	-33.68	2,366.69	-3.08	248.75	199.94	48.82	5.096		
8,600.00	5,944.00	8,391.26	5,737.00	40.82	40.57	-33.78	2,466.69	-3.08	249.05	198.56	50.49	4.932		
8,700.00	5,944.00	8,491.26	5,737.00	42.05	41.81	-33.89	2,566.69	-3.08	249.35	197.17	52.18	4.778		
8,800.00	5,944.00	8,591.26	5,737.00	43.28	43.05	-33.99	2,666.69	-3.08	249.65	195.77	53.89	4.633		
8,900.00	5,944.00	8,691.26	5,737.00	44.53	44.30	-34.09	2,766.69	-3.08	249.96	194.35	55.60	4.495		
9,000.00	5,944.00	8,791.26	5,737.00	45.78	45.56	-34.19	2,866.69	-3.08	250.26	192.92	57.33	4.365		
9,100.00	5,944.00	8,891.25	5,737.00	47.03	46.82	-34.29	2,966.68	-3.08	250.56	191.49	59.07	4.242		
9,200.00	5,944.00	8,991.25	5,737.00	48.29	48.09	-34.40	3,066.68	-3.08	250.86	190.04	60.82	4.124		
9,300.00	5,944.00	9,091.25	5,737.00	49.56	49.37	-34.50	3,166.68	-3.08	251.17	188.58	62.59	4.013		
9,400.00	5,944.00	9,191.25	5,737.00	50.83	50.65	-34.60	3,266.68	-3.08	251.47	187.11	64.36	3.907		
9,500.00	5,944.00	9,291.25	5,737.00	52.11	51.93	-34.70	3,366.68	-3.08	251.78	185.64	66.14	3.807		
9,600.00	5,944.00	9,391.25	5,737.00	53.39	53.22	-34.80	3,466.68	-3.08	252.09	184.15	67.94	3.711		
9,700.00	5,944.00	9,491.25	5,737.00	54.68	54.51	-34.90	3,566.68	-3.08	252.39	182.66	69.74	3.619		
9,800.00	5,944.00	9,591.24	5,737.00	55.97	55.81	-35.00	3,666.67	-3.08	252.70	181.15	71.55	3.532		
9,900.00	5,944.00	9,691.24	5,737.00	57.27	57.11	-35.10	3,766.67	-3.08	253.01	179.64	73.37	3.448		
10,000.00	5,944.00	9,791.24	5,737.00	58.56	58.41	-35.20	3,866.67	-3.08	253.32	178.12	75.20	3.369		
10,100.00	5,944.00	9,891.24	5,737.00	59.86	59.72	-35.30	3,966.67	-3.08	253.63	176.60	77.04	3.292		
10,200.00	5,944.00	9,991.24	5,737.00	61.17	61.03	-35.40	4,066.67	-3.08	253.94	175.06	78.88	3.219		
10,300.00	5,944.00	10,091.24	5,737.00	62.47	62.34	-35.50	4,166.67	-3.08	254.26	173.52	80.73	3.149		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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		
10,400.00	5,944.00	10,191.24	5,737.00	63.78	63.65	-35.60	4,266.67	-3.08	254.57	171.97	82.60	3.082		
10,500.00	5,944.00	10,291.23	5,737.00	65.09	64.97	-35.69	4,366.66	-3.08	254.88	170.42	84.46	3.018		
10,600.00	5,944.00	10,391.23	5,737.00	66.41	66.29	-35.79	4,466.66	-3.08	255.20	168.86	86.34	2.956		
10,700.00	5,944.00	10,491.23	5,737.00	67.72	67.61	-35.89	4,566.66	-3.08	255.51	167.29	88.22	2.896		
10,800.00	5,944.00	10,591.23	5,737.00	69.04	68.93	-35.99	4,666.66	-3.08	255.83	165.71	90.11	2.839		
10,900.00	5,944.00	10,691.23	5,737.00	70.36	70.26	-36.09	4,766.66	-3.08	256.14	164.13	92.01	2.784		
11,000.00	5,944.00	10,791.23	5,737.00	71.68	71.58	-36.18	4,866.66	-3.08	256.46	162.55	93.92	2.731		
11,100.00	5,944.00	10,891.23	5,737.00	73.01	72.91	-36.28	4,966.65	-3.08	256.78	160.95	95.83	2.680		
11,200.00	5,944.00	10,991.22	5,737.00	74.33	74.24	-36.38	5,066.65	-3.08	257.10	159.35	97.75	2.630		
11,300.00	5,944.00	11,091.22	5,737.00	75.66	75.57	-36.47	5,166.65	-3.08	257.42	157.75	99.67	2.583		
11,400.00	5,944.00	11,191.22	5,737.00	76.99	76.90	-36.57	5,266.65	-3.08	257.74	156.14	101.60	2.537		
11,500.00	5,944.00	11,291.22	5,737.00	78.32	78.24	-36.66	5,366.65	-3.08	258.06	154.52	103.54	2.492		
11,600.00	5,944.00	11,391.22	5,737.00	79.65	79.57	-36.76	5,466.65	-3.08	258.38	152.90	105.49	2.449		
11,700.00	5,944.00	11,491.22	5,737.00	80.98	80.91	-36.86	5,566.65	-3.08	258.70	151.27	107.44	2.408		
11,800.00	5,944.00	11,591.22	5,737.00	82.31	82.24	-36.95	5,666.64	-3.08	259.03	149.63	109.39	2.368		
11,900.00	5,944.00	11,691.21	5,737.00	83.65	83.58	-37.05	5,766.64	-3.07	259.35	147.99	111.36	2.329		
12,000.00	5,944.00	11,791.21	5,737.00	84.98	84.92	-37.14	5,866.64	-3.07	259.68	146.35	113.33	2.291		
12,100.00	5,944.00	11,891.21	5,737.00	86.32	86.26	-37.24	5,966.64	-3.07	260.00	144.70	115.30	2.255		
12,200.00	5,944.00	11,991.21	5,737.00	87.66	87.60	-37.33	6,066.64	-3.07	260.33	143.04	117.28	2.220		
12,300.00	5,944.00	12,091.21	5,737.00	88.99	88.94	-37.42	6,166.64	-3.07	260.65	141.38	119.27	2.185		
12,400.00	5,944.00	12,191.21	5,737.00	90.33	90.28	-37.52	6,266.64	-3.07	260.98	139.72	121.26	2.152		
12,500.00	5,944.00	12,291.21	5,737.00	91.67	91.63	-37.61	6,366.63	-3.07	261.31	138.05	123.26	2.120		
12,600.00	5,944.00	12,391.20	5,737.00	93.02	92.97	-37.70	6,466.63	-3.07	261.64	136.37	125.27	2.089		
12,700.00	5,944.00	12,491.20	5,737.00	94.36	94.32	-37.80	6,566.63	-3.07	261.97	134.69	127.28	2.058		
12,800.00	5,944.00	12,591.20	5,737.00	95.70	95.66	-37.89	6,666.63	-3.07	262.30	133.01	129.29	2.029		
12,900.00	5,944.00	12,691.20	5,737.00	97.04	97.01	-37.98	6,766.63	-3.07	262.63	131.32	131.31	2.000		
13,000.00	5,944.00	12,791.20	5,737.00	98.39	98.35	-38.08	6,866.63	-3.07	262.96	129.62	133.34	1.972		
13,100.00	5,944.00	12,891.20	5,737.00	99.73	99.70	-38.17	6,966.63	-3.07	263.29	127.92	135.37	1.945		
13,200.00	5,944.00	12,991.20	5,737.00	101.08	101.05	-38.26	7,066.62	-3.07	263.63	126.22	137.41	1.919		
13,300.00	5,944.00	13,091.19	5,737.00	102.42	102.40	-38.35	7,166.62	-3.07	263.96	124.51	139.45	1.893		
13,400.00	5,944.00	13,191.19	5,737.00	103.77	103.75	-38.44	7,266.62	-3.07	264.29	122.80	141.50	1.868		
13,500.00	5,944.00	13,291.19	5,737.00	105.12	105.10	-38.53	7,366.62	-3.07	264.63	121.08	143.55	1.843		
13,556.94	5,944.00	13,347.11	5,737.00	105.88	105.85	-38.59	7,422.54	-3.07	264.82	120.11	144.71	1.830 SF		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-88.07	4.04	-119.91	119.98					
100.00	100.00	100.00	100.00	0.12	0.12	-88.07	4.04	-119.91	119.98	119.73	0.25	484.370		
200.00	200.00	200.00	200.00	0.44	0.44	-88.07	4.04	-119.91	119.98	119.11	0.87	137.151		
300.00	300.00	300.00	300.00	0.75	0.75	-88.07	4.04	-119.91	119.98	118.48	1.50	79.886 CC, ES		
400.00	399.98	397.30	397.28	1.03	1.03	108.97	2.83	-121.04	121.66	119.57	2.08	58.411		
500.00	499.84	494.44	494.29	1.31	1.31	109.35	-0.79	-124.40	126.68	124.01	2.68	47.356		
600.00	599.49	591.25	590.75	1.61	1.60	109.86	-6.80	-129.97	134.93	131.62	3.31	40.706		
700.00	699.10	689.39	688.25	1.90	1.90	109.69	-14.95	-137.53	145.17	141.24	3.94	36.885		
800.00	798.71	788.84	787.03	2.22	2.23	109.44	-23.45	-145.42	155.64	151.09	4.55	34.227		
900.00	898.32	888.29	885.80	2.55	2.57	109.22	-31.96	-153.31	166.10	160.92	5.18	32.090		
1,000.00	997.94	987.74	984.57	2.88	2.91	109.03	-40.46	-161.20	176.57	170.75	5.82	30.355		
1,100.00	1,097.55	1,087.19	1,083.34	3.21	3.25	108.86	-48.97	-169.09	187.04	180.57	6.46	28.931		
1,200.00	1,197.16	1,186.63	1,182.11	3.55	3.60	108.71	-57.47	-176.98	197.51	190.39	7.12	27.740		
1,300.00	1,296.77	1,286.08	1,280.88	3.88	3.95	108.58	-65.97	-184.87	207.98	200.20	7.78	26.735		
1,400.00	1,396.38	1,385.53	1,379.65	4.22	4.30	108.45	-74.48	-192.75	218.45	210.01	8.44	25.877		
1,500.00	1,495.99	1,484.98	1,478.42	4.56	4.65	108.34	-82.98	-200.64	228.92	219.82	9.11	25.137		
1,600.00	1,595.60	1,584.43	1,577.19	4.90	5.01	108.24	-91.49	-208.53	239.40	229.62	9.77	24.492		
1,700.00	1,695.22	1,683.88	1,675.96	5.23	5.36	108.15	-99.99	-216.42	249.87	239.43	10.44	23.926		
1,800.00	1,794.83	1,783.33	1,774.73	5.57	5.71	108.06	-108.49	-224.31	260.35	249.24	11.11	23.425		
1,900.00	1,894.44	1,882.78	1,873.50	5.91	6.06	107.98	-117.00	-232.20	270.83	259.04	11.79	22.979		
2,000.00	1,994.05	1,982.23	1,972.27	6.25	6.42	107.91	-125.50	-240.09	281.30	268.84	12.46	22.579		
2,100.00	2,093.66	2,081.68	2,071.04	6.59	6.77	107.84	-134.01	-247.98	291.78	278.65	13.13	22.219		
2,200.00	2,193.27	2,181.13	2,169.81	6.93	7.13	107.78	-142.51	-255.86	302.26	288.45	13.81	21.893		
2,300.00	2,292.89	2,280.57	2,268.58	7.27	7.48	107.72	-151.01	-263.75	312.73	298.25	14.48	21.597		
2,400.00	2,392.50	2,380.02	2,367.35	7.61	7.84	107.66	-159.52	-271.64	323.21	308.06	15.16	21.326		
2,500.00	2,492.11	2,479.47	2,466.12	7.95	8.19	107.61	-168.02	-279.53	333.69	317.86	15.83	21.078		
2,600.00	2,591.72	2,578.92	2,564.89	8.29	8.55	107.56	-176.53	-287.42	344.17	327.66	16.51	20.849		
2,700.00	2,691.33	2,678.37	2,663.66	8.63	8.90	107.52	-185.03	-295.31	354.65	337.46	17.18	20.639		
2,800.00	2,790.94	2,777.82	2,762.43	8.98	9.26	107.47	-193.53	-303.20	365.13	347.27	17.86	20.443		
2,900.00	2,890.56	2,877.27	2,861.20	9.32	9.61	107.43	-202.04	-311.09	375.61	357.07	18.54	20.262		
3,000.00	2,990.17	2,976.72	2,959.97	9.66	9.97	107.39	-210.54	-318.97	386.08	366.87	19.21	20.093		
3,100.00	3,089.78	3,076.17	3,058.74	10.00	10.32	107.36	-219.05	-326.86	396.56	376.67	19.89	19.936		
3,200.00	3,189.39	3,175.62	3,157.51	10.34	10.68	107.32	-227.55	-334.75	407.04	386.47	20.57	19.789		
3,300.00	3,289.00	3,275.07	3,256.28	10.68	11.04	107.29	-236.05	-342.64	417.52	396.28	21.25	19.650		
3,400.00	3,388.61	3,374.51	3,355.05	11.02	11.39	107.26	-244.56	-350.53	428.00	406.08	21.93	19.521		
3,500.00	3,488.23	3,473.96	3,453.82	11.36	11.75	107.23	-253.06	-358.42	438.48	415.88	22.60	19.399		
3,600.00	3,587.84	3,573.41	3,552.59	11.71	12.10	107.20	-261.57	-366.31	448.96	425.68	23.28	19.284		
3,700.00	3,687.45	3,672.86	3,651.36	12.05	12.46	107.17	-270.07	-374.20	459.44	435.48	23.96	19.175		
3,800.00	3,787.06	3,772.31	3,750.13	12.39	12.82	107.15	-278.58	-382.09	469.92	445.29	24.64	19.073		
3,900.00	3,886.67	3,871.76	3,848.90	12.73	13.17	107.12	-287.08	-389.97	480.40	455.09	25.32	18.975		
4,000.00	3,986.28	3,971.21	3,947.67	13.07	13.53	107.10	-295.58	-397.86	490.88	464.89	26.00	18.883		
4,100.00	4,085.89	4,070.66	4,046.44	13.41	13.88	107.08	-304.09	-405.75	501.37	474.69	26.67	18.795		
4,200.00	4,185.51	4,170.11	4,145.21	13.75	14.24	107.05	-312.59	-413.64	511.85	484.49	27.35	18.712		
4,300.00	4,285.12	4,269.56	4,243.98	14.10	14.60	107.03	-321.10	-421.53	522.33	494.29	28.03	18.633		
4,400.00	4,384.73	4,369.00	4,342.75	14.44	14.95	107.01	-329.60	-429.42	532.81	504.10	28.71	18.557		
4,500.00	4,484.34	4,468.45	4,441.53	14.78	15.31	106.99	-338.10	-437.31	543.29	513.90	29.39	18.485		
4,600.00	4,583.95	4,567.90	4,540.30	15.12	15.66	106.98	-346.61	-445.20	553.77	523.70	30.07	18.416		
4,700.00	4,683.56	4,667.35	4,639.07	15.46	16.02	106.96	-355.11	-453.08	564.25	533.50	30.75	18.350		
4,800.00	4,783.18	4,766.80	4,737.84	15.80	16.38	106.94	-363.62	-460.97	574.73	543.30	31.43	18.287		
4,900.00	4,882.79	4,866.25	4,836.61	16.15	16.73	106.92	-372.12	-468.86	585.21	553.10	32.11	18.226		
5,000.00	4,982.40	4,973.37	4,943.05	16.48	17.08	106.96	-380.90	-477.01	595.39	562.59	32.80	18.154		
5,100.00	5,082.17	5,089.52	5,058.85	16.71	17.36	107.17	-387.50	-483.13	602.59	569.26	33.33	18.079		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	5,206.07	5,175.31	16.94	17.62	107.27	-390.66	-486.06	606.03	572.21	33.82	17.917		
5,300.00	5,282.12	5,312.88	5,282.12	17.20	17.88	-89.62	-390.95	-486.33	606.35	572.00	34.35	17.653		
5,400.00	5,382.12	5,412.88	5,382.12	17.42	18.11	-89.62	-390.95	-486.33	606.35	571.54	34.81	17.421		
5,437.12	5,419.23	5,449.99	5,419.23	17.50	18.20	-90.00	-390.95	-486.33	606.35	571.37	34.97	17.308		
5,500.00	5,481.99	5,512.43	5,481.54	17.64	18.33	-89.93	-387.65	-486.33	606.37	571.12	35.25	17.202		
5,600.00	5,579.66	5,611.68	5,578.50	17.83	18.51	-89.93	-367.21	-486.33	606.48	570.86	35.62	17.028		
5,700.00	5,671.57	5,710.97	5,669.88	17.98	18.66	-89.93	-328.75	-486.33	606.68	570.78	35.90	16.897		
5,800.00	5,754.35	5,810.33	5,752.37	18.10	18.76	-89.94	-273.63	-486.33	606.98	570.84	36.15	16.793		
5,900.00	5,824.96	5,909.78	5,822.98	18.23	18.83	-89.95	-203.81	-486.33	607.36	570.98	36.38	16.694		
6,000.00	5,880.81	6,009.34	5,879.11	18.37	18.87	-89.96	-121.76	-486.33	607.80	571.14	36.66	16.579		
6,100.00	5,919.85	6,109.03	5,918.67	18.55	18.91	-89.98	-30.42	-486.33	608.29	571.27	37.02	16.431		
6,200.00	5,940.63	6,208.86	5,940.16	18.79	18.96	-89.99	66.91	-486.33	608.82	571.33	37.49	16.240		
6,300.00	5,944.00	6,308.83	5,944.00	19.10	19.09	-90.00	166.73	-486.33	609.36	571.28	38.07	16.005		
6,400.00	5,944.00	6,408.83	5,944.00	19.49	19.38	-90.00	266.73	-486.33	609.89	571.05	38.84	15.703		
6,500.00	5,944.00	6,508.83	5,944.00	19.97	19.81	-90.00	366.72	-486.33	610.43	570.65	39.78	15.345		
6,600.00	5,944.00	6,608.83	5,944.00	20.54	20.35	-90.00	466.72	-486.33	610.97	570.09	40.88	14.944		
6,700.00	5,944.00	6,708.83	5,944.00	21.18	20.97	-90.00	566.72	-486.33	611.51	569.37	42.14	14.513		
6,800.00	5,944.00	6,808.82	5,944.00	21.88	21.66	-90.00	666.72	-486.33	612.04	568.52	43.52	14.062		
6,900.00	5,944.00	6,908.82	5,944.00	22.65	22.41	-90.00	766.72	-486.33	612.58	567.55	45.04	13.602		
7,000.00	5,944.00	7,008.82	5,944.00	23.47	23.22	-90.00	866.72	-486.33	613.12	566.46	46.66	13.140		
7,100.00	5,944.00	7,108.82	5,944.00	24.34	24.08	-90.00	966.72	-486.33	613.66	565.27	48.39	12.682		
7,200.00	5,944.00	7,208.82	5,944.00	25.26	24.99	-90.00	1,066.71	-486.33	614.20	564.00	50.20	12.235		
7,300.00	5,944.00	7,308.82	5,944.00	26.21	25.94	-90.00	1,166.71	-486.33	614.73	562.64	52.10	11.800		
7,400.00	5,944.00	7,408.82	5,944.00	27.20	26.92	-90.00	1,266.71	-486.32	615.27	561.21	54.06	11.380		
7,500.00	5,944.00	7,508.81	5,944.00	28.22	27.93	-90.00	1,366.71	-486.32	615.81	559.71	56.10	10.978		
7,600.00	5,944.00	7,608.81	5,944.00	29.27	28.98	-90.00	1,466.71	-486.32	616.35	558.16	58.19	10.592		
7,700.00	5,944.00	7,708.81	5,944.00	30.35	30.04	-90.00	1,566.71	-486.32	616.89	556.56	60.33	10.225		
7,800.00	5,944.00	7,808.81	5,944.00	31.45	31.14	-90.00	1,666.71	-486.32	617.42	554.90	62.52	9.876		
7,900.00	5,944.00	7,908.81	5,944.00	32.57	32.25	-90.00	1,766.70	-486.32	617.96	553.21	64.75	9.544		
8,000.00	5,944.00	8,008.81	5,944.00	33.70	33.38	-90.00	1,866.70	-486.32	618.50	551.48	67.02	9.229		
8,100.00	5,944.00	8,108.81	5,944.00	34.86	34.53	-90.00	1,966.70	-486.32	619.04	549.72	69.32	8.930		
8,200.00	5,944.00	8,208.80	5,944.00	36.03	35.70	-90.00	2,066.70	-486.32	619.58	547.92	71.65	8.647		
8,300.00	5,944.00	8,308.80	5,944.00	37.21	36.87	-90.00	2,166.70	-486.32	620.11	546.10	74.01	8.378		
8,400.00	5,944.00	8,408.80	5,944.00	38.40	38.06	-90.00	2,266.70	-486.32	620.65	544.25	76.40	8.124		
8,500.00	5,944.00	8,508.80	5,944.00	39.61	39.27	-90.00	2,366.70	-486.32	621.19	542.38	78.81	7.882		
8,600.00	5,944.00	8,608.80	5,944.00	40.82	40.48	-90.00	2,466.69	-486.32	621.73	540.49	81.24	7.653		
8,700.00	5,944.00	8,708.80	5,944.00	42.05	41.70	-90.00	2,566.69	-486.32	622.26	538.58	83.69	7.436		
8,800.00	5,944.00	8,808.80	5,944.00	43.28	42.93	-90.00	2,666.69	-486.32	622.80	536.65	86.15	7.229		
8,900.00	5,944.00	8,908.79	5,944.00	44.53	44.17	-90.00	2,766.69	-486.32	623.34	534.71	88.63	7.033		
9,000.00	5,944.00	9,008.79	5,944.00	45.78	45.42	-90.00	2,866.69	-486.32	623.88	532.75	91.13	6.846		
9,100.00	5,944.00	9,108.79	5,944.00	47.03	46.67	-90.00	2,966.69	-486.32	624.42	530.77	93.64	6.668		
9,200.00	5,944.00	9,208.79	5,944.00	48.29	47.93	-90.00	3,066.69	-486.32	624.95	528.79	96.16	6.499		
9,300.00	5,944.00	9,308.79	5,944.00	49.56	49.20	-90.00	3,166.68	-486.31	625.49	526.79	98.70	6.337		
9,400.00	5,944.00	9,408.79	5,944.00	50.83	50.47	-90.00	3,266.68	-486.31	626.03	524.79	101.24	6.183		
9,500.00	5,944.00	9,508.79	5,944.00	52.11	51.75	-90.00	3,366.68	-486.31	626.57	522.77	103.80	6.036		
9,600.00	5,944.00	9,608.78	5,944.00	53.39	53.03	-90.00	3,466.68	-486.31	627.11	520.74	106.36	5.896		
9,700.00	5,944.00	9,708.78	5,944.00	54.68	54.31	-90.00	3,566.68	-486.31	627.64	518.71	108.93	5.762		
9,800.00	5,944.00	9,808.78	5,944.00	55.97	55.60	-90.00	3,666.68	-486.31	628.18	516.67	111.51	5.633		
9,900.00	5,944.00	9,908.78	5,944.00	57.27	56.89	-90.00	3,766.68	-486.31	628.72	514.62	114.10	5.510		
10,000.00	5,944.00	10,008.78	5,944.00	58.56	58.19	-90.00	3,866.67	-486.31	629.26	512.56	116.70	5.392		
10,100.00	5,944.00	10,108.78	5,944.00	59.86	59.49	-90.00	3,966.67	-486.31	629.79	510.50	119.30	5.279		
10,200.00	5,944.00	10,208.78	5,944.00	61.17	60.79	-90.00	4,066.67	-486.31	630.33	508.43	121.90	5.171		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,944.00	10,308.77	5,944.00	62.47	62.10	-90.00	4,166.67	-486.31	630.87	506.36	124.52	5.067		
10,400.00	5,944.00	10,408.77	5,944.00	63.78	63.41	-90.00	4,266.67	-486.31	631.41	504.28	127.13	4.967		
10,500.00	5,944.00	10,508.77	5,944.00	65.09	64.72	-90.00	4,366.67	-486.31	631.95	502.19	129.76	4.870		
10,600.00	5,944.00	10,608.77	5,944.00	66.41	66.03	-90.00	4,466.67	-486.31	632.48	500.10	132.38	4.778		
10,700.00	5,944.00	10,708.77	5,944.00	67.72	67.34	-90.00	4,566.66	-486.31	633.02	498.01	135.01	4.689		
10,800.00	5,944.00	10,808.77	5,944.00	69.04	68.66	-90.00	4,666.66	-486.31	633.56	495.91	137.65	4.603		
10,900.00	5,944.00	10,908.77	5,944.00	70.36	69.98	-90.00	4,766.66	-486.31	634.10	493.81	140.29	4.520		
11,000.00	5,944.00	11,008.76	5,944.00	71.68	71.30	-90.00	4,866.66	-486.31	634.64	491.70	142.93	4.440		
11,100.00	5,944.00	11,108.76	5,944.00	73.01	72.63	-90.00	4,966.66	-486.30	635.17	489.59	145.58	4.363		
11,200.00	5,944.00	11,208.76	5,944.00	74.33	73.95	-90.00	5,066.66	-486.30	635.71	487.48	148.23	4.289		
11,300.00	5,944.00	11,308.76	5,944.00	75.66	75.28	-90.00	5,166.66	-486.30	636.25	485.36	150.88	4.217		
11,400.00	5,944.00	11,408.76	5,944.00	76.99	76.60	-90.00	5,266.65	-486.30	636.79	483.25	153.54	4.147		
11,500.00	5,944.00	11,508.76	5,944.00	78.32	77.93	-90.00	5,366.65	-486.30	637.32	481.13	156.20	4.080		
11,600.00	5,944.00	11,608.75	5,944.00	79.65	79.26	-90.00	5,466.65	-486.30	637.86	479.00	158.86	4.015		
11,700.00	5,944.00	11,708.75	5,944.00	80.98	80.60	-90.00	5,566.65	-486.30	638.40	476.87	161.53	3.952		
11,800.00	5,944.00	11,808.75	5,944.00	82.31	81.93	-90.00	5,666.65	-486.30	638.94	474.75	164.19	3.891		
11,900.00	5,944.00	11,908.75	5,944.00	83.65	83.26	-90.00	5,766.65	-486.30	639.48	472.61	166.86	3.832		
12,000.00	5,944.00	12,008.75	5,944.00	84.98	84.60	-90.00	5,866.65	-486.30	640.01	470.48	169.53	3.775		
12,100.00	5,944.00	12,108.75	5,944.00	86.32	85.93	-90.00	5,966.64	-486.30	640.55	468.35	172.21	3.720		
12,200.00	5,944.00	12,208.75	5,944.00	87.66	87.27	-90.00	6,066.64	-486.30	641.09	466.21	174.88	3.666		
12,300.00	5,944.00	12,308.74	5,944.00	88.99	88.61	-90.00	6,166.64	-486.30	641.63	464.07	177.56	3.614		
12,400.00	5,944.00	12,408.74	5,944.00	90.33	89.95	-90.00	6,266.64	-486.30	642.17	461.93	180.24	3.563		
12,500.00	5,944.00	12,508.74	5,944.00	91.67	91.29	-90.00	6,366.64	-486.30	642.70	459.78	182.92	3.514		
12,600.00	5,944.00	12,608.74	5,944.00	93.02	92.63	-90.00	6,466.64	-486.30	643.24	457.64	185.60	3.466		
12,700.00	5,944.00	12,708.74	5,944.00	94.36	93.97	-90.00	6,566.64	-486.30	643.78	455.49	188.29	3.419		
12,800.00	5,944.00	12,808.74	5,944.00	95.70	95.31	-90.00	6,666.63	-486.30	644.32	453.35	190.97	3.374		
12,900.00	5,944.00	12,908.74	5,944.00	97.04	96.66	-90.00	6,766.63	-486.30	644.86	451.20	193.66	3.330		
13,000.00	5,944.00	13,008.73	5,944.00	98.39	98.00	-90.00	6,866.63	-486.29	645.39	449.05	196.35	3.287		
13,100.00	5,944.00	13,108.73	5,944.00	99.73	99.35	-90.00	6,966.63	-486.29	645.93	446.89	199.04	3.245		
13,200.00	5,944.00	13,208.73	5,944.00	101.08	100.69	-90.00	7,066.63	-486.29	646.47	444.74	201.73	3.205		
13,300.00	5,944.00	13,308.73	5,944.00	102.42	102.04	-90.00	7,166.63	-486.29	647.01	442.59	204.42	3.165		
13,400.00	5,944.00	13,408.73	5,944.00	103.77	103.39	-90.00	7,266.62	-486.29	647.54	440.43	207.12	3.126		
13,500.00	5,944.00	13,508.73	5,944.00	105.12	104.73	-90.00	7,366.62	-486.29	648.08	438.27	209.81	3.089		
13,556.94	5,944.00	13,559.59	5,944.00	105.88	105.42	-90.00	7,417.49	-486.29	648.42	437.15	211.26	3.069 SF		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-88.08	2.01	-59.94	59.97					
100.00	100.00	100.00	100.00	0.12	0.12	-88.08	2.01	-59.94	59.97	59.73	0.25	242.120		
200.00	200.00	200.00	200.00	0.44	0.44	-88.08	2.01	-59.94	59.97	59.10	0.87	68.557		
300.00	300.00	300.00	300.00	0.75	0.75	-88.08	2.01	-59.94	59.97	58.47	1.50	39.932 CC, ES		
400.00	399.98	399.55	399.53	1.03	1.03	108.76	0.34	-60.36	60.91	58.85	2.06	29.575		
500.00	499.84	499.05	498.89	1.31	1.31	108.59	-4.69	-61.63	63.70	61.10	2.60	24.467		
600.00	599.49	598.72	598.23	1.61	1.61	108.47	-12.59	-63.63	68.12	64.93	3.19	21.329		
700.00	699.10	698.61	697.75	1.90	1.90	108.48	-20.86	-65.72	72.78	68.97	3.81	19.104		
800.00	798.71	798.51	797.28	2.22	2.22	108.48	-29.14	-67.82	77.43	72.99	4.44	17.424		
900.00	898.32	898.40	896.81	2.55	2.54	108.49	-37.41	-69.91	82.09	77.00	5.09	16.127		
1,000.00	997.94	998.29	996.33	2.88	2.87	108.50	-45.69	-72.00	86.74	81.00	5.74	15.101		
1,100.00	1,097.55	1,098.18	1,095.86	3.21	3.20	108.50	-53.96	-74.09	91.40	84.99	6.40	14.273		
1,200.00	1,197.16	1,198.07	1,195.39	3.55	3.53	108.50	-62.24	-76.19	96.05	88.99	7.07	13.592		
1,300.00	1,296.77	1,297.96	1,294.91	3.88	3.87	108.51	-70.51	-78.28	100.71	92.97	7.73	13.023		
1,400.00	1,396.38	1,397.86	1,394.44	4.22	4.20	108.51	-78.79	-80.37	105.36	96.96	8.40	12.541		
1,500.00	1,495.99	1,497.75	1,493.96	4.56	4.54	108.52	-87.06	-82.46	110.02	100.95	9.07	12.128		
1,600.00	1,595.60	1,597.64	1,593.49	4.90	4.88	108.52	-95.34	-84.55	114.67	104.93	9.74	11.770		
1,700.00	1,695.22	1,697.53	1,693.02	5.23	5.21	108.52	-103.61	-86.65	119.33	108.91	10.42	11.457		
1,800.00	1,794.83	1,797.42	1,792.54	5.57	5.55	108.52	-111.89	-88.74	123.98	112.89	11.09	11.181		
1,900.00	1,894.44	1,897.31	1,892.07	5.91	5.89	108.53	-120.16	-90.83	128.64	116.87	11.76	10.936		
2,000.00	1,994.05	1,997.21	1,991.60	6.25	6.23	108.53	-128.44	-92.92	133.29	120.85	12.44	10.717		
2,100.00	2,093.66	2,097.10	2,091.12	6.59	6.56	108.53	-136.71	-95.02	137.95	124.83	13.11	10.520		
2,200.00	2,193.27	2,196.99	2,190.65	6.93	6.90	108.53	-144.99	-97.11	142.60	128.81	13.79	10.342		
2,300.00	2,292.89	2,296.88	2,290.17	7.27	7.24	108.53	-153.26	-99.20	147.26	132.79	14.46	10.180		
2,400.00	2,392.50	2,396.77	2,389.70	7.61	7.58	108.54	-161.54	-101.29	151.91	136.77	15.14	10.033		
2,500.00	2,492.11	2,496.66	2,489.23	7.95	7.92	108.54	-169.81	-103.38	156.57	140.75	15.82	9.898		
2,600.00	2,591.72	2,596.56	2,588.75	8.29	8.26	108.54	-178.09	-105.48	161.22	144.73	16.49	9.774		
2,700.00	2,691.33	2,696.45	2,688.28	8.63	8.60	108.54	-186.36	-107.57	165.88	148.70	17.17	9.660		
2,800.00	2,790.94	2,796.34	2,787.81	8.98	8.94	108.54	-194.64	-109.66	170.53	152.68	17.85	9.554		
2,900.00	2,890.56	2,896.23	2,887.33	9.32	9.28	108.54	-202.91	-111.75	175.19	156.66	18.53	9.456		
3,000.00	2,990.17	2,996.12	2,986.86	9.66	9.62	108.54	-211.19	-113.85	179.84	160.64	19.20	9.364		
3,100.00	3,089.78	3,096.01	3,086.38	10.00	9.96	108.54	-219.47	-115.94	184.50	164.61	19.88	9.279		
3,200.00	3,189.39	3,195.90	3,185.91	10.34	10.30	108.55	-227.74	-118.03	189.15	168.59	20.56	9.200		
3,300.00	3,289.00	3,295.80	3,285.44	10.68	10.64	108.55	-236.02	-120.12	193.81	172.57	21.24	9.125		
3,400.00	3,388.61	3,395.69	3,384.96	11.02	10.98	108.55	-244.29	-122.21	198.46	176.54	21.92	9.055		
3,500.00	3,488.23	3,495.58	3,484.49	11.36	11.32	108.55	-252.57	-124.31	203.12	180.52	22.60	8.989		
3,600.00	3,587.84	3,595.47	3,584.02	11.71	11.66	108.55	-260.84	-126.40	207.77	184.50	23.27	8.927		
3,700.00	3,687.45	3,695.36	3,683.54	12.05	12.00	108.55	-269.12	-128.49	212.43	188.47	23.95	8.869		
3,800.00	3,787.06	3,795.25	3,783.07	12.39	12.34	108.55	-277.39	-130.58	217.08	192.45	24.63	8.813		
3,900.00	3,886.67	3,895.15	3,882.60	12.73	12.68	108.55	-285.67	-132.68	221.73	196.42	25.31	8.761		
4,000.00	3,986.28	3,995.04	3,982.12	13.07	13.02	108.55	-293.94	-134.77	226.39	200.40	25.99	8.711		
4,100.00	4,085.89	4,094.93	4,081.65	13.41	13.36	108.55	-302.22	-136.86	231.04	204.38	26.67	8.664		
4,200.00	4,185.51	4,194.82	4,181.17	13.75	13.70	108.55	-310.49	-138.95	235.70	208.35	27.35	8.619		
4,300.00	4,285.12	4,294.71	4,280.70	14.10	14.04	108.55	-318.77	-141.05	240.35	212.33	28.03	8.576		
4,400.00	4,384.73	4,394.60	4,380.23	14.44	14.38	108.56	-327.04	-143.14	245.01	216.31	28.70	8.536		
4,500.00	4,484.34	4,494.50	4,479.75	14.78	14.72	108.56	-335.32	-145.23	249.66	220.28	29.38	8.497		
4,600.00	4,583.95	4,594.39	4,579.28	15.12	15.06	108.56	-343.59	-147.32	254.32	224.26	30.06	8.460		
4,700.00	4,683.56	4,694.28	4,678.81	15.46	15.40	108.56	-351.87	-149.41	258.97	228.23	30.74	8.424		
4,800.00	4,783.18	4,794.17	4,778.33	15.80	15.74	108.56	-360.14	-151.51	263.63	232.21	31.42	8.390		
4,900.00	4,882.79	4,894.06	4,877.86	16.15	16.08	108.56	-368.42	-153.60	268.28	236.18	32.10	8.358		
5,000.00	4,982.40	4,993.95	4,977.38	16.48	16.42	108.56	-376.69	-155.69	272.93	240.16	32.77	8.328		
5,100.00	5,082.17	5,094.42	5,077.49	16.71	16.75	108.24	-384.90	-157.77	276.88	243.55	33.33	8.307		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	5,196.60	5,179.49	16.94	16.98	107.72	-390.69	-159.23	279.19	245.39	33.80	8.261		
5,300.00	5,282.12	5,298.93	5,281.79	17.20	17.21	-89.58	-392.95	-159.80	279.81	245.52	34.29	8.160		
5,400.00	5,382.12	5,399.26	5,382.12	17.42	17.47	-89.59	-392.99	-159.81	279.82	245.04	34.78	8.046		
5,429.87	5,411.98	5,429.12	5,411.98	17.49	17.54	-90.00	-392.99	-159.81	279.82	244.91	34.91	8.016		
5,500.00	5,481.99	5,499.13	5,481.99	17.64	17.70	-90.58	-392.99	-159.81	279.83	244.61	35.22	7.945		
5,600.00	5,579.66	5,599.69	5,582.16	17.83	17.91	-93.36	-385.81	-159.81	280.35	244.74	35.61	7.872		
5,700.00	5,671.57	5,703.14	5,681.81	17.98	18.09	-96.08	-358.73	-159.81	281.62	245.72	35.90	7.844		
5,800.00	5,754.35	5,809.52	5,776.65	18.10	18.24	-98.58	-310.94	-159.81	283.49	247.41	36.08	7.858		
5,900.00	5,824.96	5,918.78	5,861.88	18.23	18.38	-100.75	-242.89	-159.81	285.71	249.56	36.15	7.904		
6,000.00	5,880.81	6,030.67	5,932.52	18.37	18.53	-102.49	-156.39	-159.81	287.97	251.79	36.18	7.959		
6,100.00	5,919.85	6,144.74	5,983.88	18.55	18.72	-103.72	-54.80	-159.81	289.95	253.65	36.30	7.988		
6,200.00	5,940.63	6,260.31	6,012.14	18.79	18.98	-104.37	57.02	-159.81	291.38	254.74	36.64	7.953		
6,300.00	5,944.00	6,370.24	6,017.00	19.10	19.31	-104.47	166.72	-159.81	292.10	254.86	37.25	7.843		
6,400.00	5,944.00	6,470.24	6,017.00	19.49	19.71	-104.45	266.72	-159.81	292.62	254.59	38.03	7.694		
6,500.00	5,944.00	6,570.23	6,017.00	19.97	20.19	-104.42	366.72	-159.81	293.15	254.16	38.98	7.520		
6,600.00	5,944.00	6,670.23	6,017.00	20.54	20.75	-104.39	466.72	-159.81	293.67	253.58	40.09	7.325		
6,700.00	5,944.00	6,770.23	6,017.00	21.18	21.38	-104.37	566.72	-159.81	294.19	252.85	41.34	7.117		
6,800.00	5,944.00	6,870.23	6,017.00	21.88	22.09	-104.34	666.72	-159.81	294.71	251.99	42.72	6.899		
6,900.00	5,944.00	6,970.23	6,017.00	22.65	22.85	-104.32	766.72	-159.81	295.23	251.01	44.22	6.677		
7,000.00	5,944.00	7,070.23	6,017.00	23.47	23.66	-104.29	866.71	-159.81	295.75	249.93	45.82	6.455		
7,100.00	5,944.00	7,170.23	6,017.00	24.34	24.53	-104.26	966.71	-159.81	296.27	248.75	47.52	6.235		
7,200.00	5,944.00	7,270.22	6,017.00	25.26	25.44	-104.24	1,066.71	-159.81	296.80	247.49	49.31	6.019		
7,300.00	5,944.00	7,370.22	6,017.00	26.21	26.39	-104.21	1,166.71	-159.81	297.32	246.14	51.17	5.810		
7,400.00	5,944.00	7,470.22	6,017.00	27.20	27.38	-104.19	1,266.71	-159.81	297.84	244.73	53.11	5.608		
7,500.00	5,944.00	7,570.22	6,017.00	28.22	28.40	-104.16	1,366.71	-159.81	298.36	243.26	55.10	5.415		
7,600.00	5,944.00	7,670.22	6,017.00	29.27	29.44	-104.14	1,466.71	-159.81	298.88	241.73	57.15	5.229		
7,700.00	5,944.00	7,770.22	6,017.00	30.35	30.51	-104.11	1,566.70	-159.81	299.40	240.15	59.25	5.053		
7,800.00	5,944.00	7,870.22	6,017.00	31.45	31.61	-104.09	1,666.70	-159.81	299.93	238.53	61.40	4.885		
7,900.00	5,944.00	7,970.21	6,017.00	32.57	32.72	-104.06	1,766.70	-159.81	300.45	236.86	63.59	4.725		
8,000.00	5,944.00	8,070.21	6,017.00	33.70	33.86	-104.04	1,866.70	-159.81	300.97	235.16	65.81	4.573		
8,100.00	5,944.00	8,170.21	6,017.00	34.86	35.01	-104.01	1,966.70	-159.81	301.49	233.43	68.06	4.430		
8,200.00	5,944.00	8,270.21	6,017.00	36.03	36.18	-103.99	2,066.70	-159.81	302.01	231.67	70.35	4.293		
8,300.00	5,944.00	8,370.21	6,017.00	37.21	37.36	-103.96	2,166.70	-159.81	302.54	229.88	72.66	4.164		
8,400.00	5,944.00	8,470.21	6,017.00	38.40	38.55	-103.94	2,266.69	-159.80	303.06	228.06	75.00	4.041		
8,500.00	5,944.00	8,570.21	6,017.00	39.61	39.75	-103.91	2,366.69	-159.80	303.58	226.23	77.36	3.924		
8,600.00	5,944.00	8,670.20	6,017.00	40.82	40.97	-103.89	2,466.69	-159.80	304.10	224.37	79.74	3.814		
8,700.00	5,944.00	8,770.20	6,017.00	42.05	42.19	-103.87	2,566.69	-159.80	304.63	222.49	82.13	3.709		
8,800.00	5,944.00	8,870.20	6,017.00	43.28	43.42	-103.84	2,666.69	-159.80	305.15	220.60	84.55	3.609		
8,900.00	5,944.00	8,970.20	6,017.00	44.53	44.66	-103.82	2,766.69	-159.80	305.67	218.69	86.98	3.514		
9,000.00	5,944.00	9,070.20	6,017.00	45.78	45.91	-103.79	2,866.69	-159.80	306.19	216.77	89.42	3.424		
9,100.00	5,944.00	9,170.20	6,017.00	47.03	47.17	-103.77	2,966.68	-159.80	306.72	214.83	91.88	3.338		
9,200.00	5,944.00	9,270.19	6,017.00	48.29	48.43	-103.75	3,066.68	-159.80	307.24	212.89	94.35	3.256		
9,300.00	5,944.00	9,370.19	6,017.00	49.56	49.69	-103.72	3,166.68	-159.80	307.76	210.93	96.84	3.178		
9,400.00	5,944.00	9,470.19	6,017.00	50.83	50.96	-103.70	3,266.68	-159.80	308.29	208.96	99.33	3.104		
9,500.00	5,944.00	9,570.19	6,017.00	52.11	52.24	-103.67	3,366.68	-159.80	308.81	206.98	101.83	3.032		
9,600.00	5,944.00	9,670.19	6,017.00	53.39	53.52	-103.65	3,466.68	-159.80	309.33	204.99	104.35	2.964		
9,700.00	5,944.00	9,770.19	6,017.00	54.68	54.81	-103.63	3,566.68	-159.80	309.85	202.99	106.87	2.899		
9,800.00	5,944.00	9,870.19	6,017.00	55.97	56.10	-103.60	3,666.67	-159.80	310.38	200.98	109.39	2.837		
9,900.00	5,944.00	9,970.18	6,017.00	57.27	57.39	-103.58	3,766.67	-159.80	310.90	198.97	111.93	2.778		
10,000.00	5,944.00	10,070.18	6,017.00	58.56	58.69	-103.56	3,866.67	-159.80	311.42	196.95	114.47	2.720		
10,100.00	5,944.00	10,170.18	6,017.00	59.86	59.99	-103.53	3,966.67	-159.80	311.95	194.92	117.02	2.666		
10,200.00	5,944.00	10,270.18	6,017.00	61.17	61.29	-103.51	4,066.67	-159.80	312.47	192.89	119.58	2.613		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,944.00	10,370.18	6,017.00	62.47	62.60	-103.49	4,166.67	-159.80	312.99	190.85	122.14	2.563		
10,400.00	5,944.00	10,470.18	6,017.00	63.78	63.90	-103.46	4,266.67	-159.80	313.52	188.81	124.71	2.514		
10,500.00	5,944.00	10,570.18	6,017.00	65.09	65.22	-103.44	4,366.66	-159.80	314.04	186.76	127.28	2.467		
10,600.00	5,944.00	10,670.17	6,017.00	66.41	66.53	-103.42	4,466.66	-159.80	314.56	184.70	129.86	2.422		
10,700.00	5,944.00	10,770.17	6,017.00	67.72	67.84	-103.40	4,566.66	-159.80	315.09	182.65	132.44	2.379		
10,800.00	5,944.00	10,870.17	6,017.00	69.04	69.16	-103.37	4,666.66	-159.80	315.61	180.58	135.03	2.337		
10,900.00	5,944.00	10,970.17	6,017.00	70.36	70.48	-103.35	4,766.66	-159.80	316.13	178.52	137.62	2.297		
11,000.00	5,944.00	11,070.17	6,017.00	71.68	71.80	-103.33	4,866.66	-159.80	316.66	176.45	140.21	2.258		
11,100.00	5,944.00	11,170.17	6,017.00	73.01	73.13	-103.31	4,966.66	-159.80	317.18	174.37	142.81	2.221		
11,200.00	5,944.00	11,270.17	6,017.00	74.33	74.45	-103.28	5,066.65	-159.80	317.71	172.29	145.41	2.185		
11,300.00	5,944.00	11,370.16	6,017.00	75.66	75.78	-103.26	5,166.65	-159.80	318.23	170.21	148.02	2.150		
11,400.00	5,944.00	11,470.16	6,017.00	76.99	77.10	-103.24	5,266.65	-159.80	318.75	168.13	150.63	2.116		
11,500.00	5,944.00	11,570.16	6,017.00	78.32	78.43	-103.22	5,366.65	-159.80	319.28	166.04	153.24	2.084		
11,600.00	5,944.00	11,670.16	6,017.00	79.65	79.77	-103.20	5,466.65	-159.80	319.80	163.95	155.85	2.052		
11,700.00	5,944.00	11,770.16	6,017.00	80.98	81.10	-103.17	5,566.65	-159.80	320.32	161.86	158.47	2.021		
11,800.00	5,944.00	11,870.16	6,017.00	82.31	82.43	-103.15	5,666.65	-159.80	320.85	159.76	161.09	1.992		
11,900.00	5,944.00	11,970.16	6,017.00	83.65	83.76	-103.13	5,766.64	-159.80	321.37	157.66	163.71	1.963		
12,000.00	5,944.00	12,070.15	6,017.00	84.98	85.10	-103.11	5,866.64	-159.80	321.90	155.56	166.34	1.935		
12,100.00	5,944.00	12,170.15	6,017.00	86.32	86.44	-103.09	5,966.64	-159.80	322.42	153.46	168.96	1.908		
12,200.00	5,944.00	12,270.15	6,017.00	87.66	87.77	-103.06	6,066.64	-159.80	322.95	151.35	171.59	1.882		
12,300.00	5,944.00	12,370.15	6,017.00	88.99	89.11	-103.04	6,166.64	-159.80	323.47	149.25	174.22	1.857		
12,400.00	5,944.00	12,470.15	6,017.00	90.33	90.45	-103.02	6,266.64	-159.80	323.99	147.14	176.86	1.832		
12,500.00	5,944.00	12,570.15	6,017.00	91.67	91.79	-103.00	6,366.64	-159.79	324.52	145.03	179.49	1.808		
12,600.00	5,944.00	12,670.15	6,017.00	93.02	93.13	-102.98	6,466.63	-159.79	325.04	142.91	182.13	1.785		
12,700.00	5,944.00	12,770.14	6,017.00	94.36	94.48	-102.96	6,566.63	-159.79	325.57	140.80	184.77	1.762		
12,800.00	5,944.00	12,870.14	6,017.00	95.70	95.82	-102.94	6,666.63	-159.79	326.09	138.68	187.41	1.740		
12,900.00	5,944.00	12,970.14	6,017.00	97.04	97.16	-102.92	6,766.63	-159.79	326.62	136.56	190.06	1.719		
13,000.00	5,944.00	13,070.14	6,017.00	98.39	98.51	-102.89	6,866.63	-159.79	327.14	134.44	192.70	1.698		
13,100.00	5,944.00	13,170.14	6,017.00	99.73	99.85	-102.87	6,966.63	-159.79	327.67	132.32	195.35	1.677		
13,200.00	5,944.00	13,270.14	6,017.00	101.08	101.20	-102.85	7,066.63	-159.79	328.19	130.20	198.00	1.658		
13,300.00	5,944.00	13,370.14	6,017.00	102.42	102.54	-102.83	7,166.62	-159.79	328.72	128.07	200.64	1.638		
13,400.00	5,944.00	13,470.13	6,017.00	103.77	103.89	-102.81	7,266.62	-159.79	329.24	125.94	203.30	1.620		
13,500.00	5,944.00	13,570.13	6,017.00	105.12	105.24	-102.79	7,366.62	-159.79	329.76	123.82	205.95	1.601		
13,556.94	5,944.00	13,624.03	6,017.00	105.88	105.96	-102.78	7,420.52	-159.79	330.08	122.68	207.40	1.592 SF		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-69.77	54.65	-148.31	158.06					
100.00	100.00	100.00	100.00	0.12	0.12	-69.77	54.65	-148.31	158.06	157.81	0.25	638.106		
200.00	200.00	200.00	200.00	0.44	0.44	-69.77	54.65	-148.31	158.06	157.19	0.87	180.682		
300.00	300.00	300.00	300.00	0.75	0.75	-69.77	54.65	-148.31	158.06	156.56	1.50	105.241	CC, ES	
400.00	399.98	395.06	395.05	1.03	1.05	127.78	55.73	-149.46	160.66	158.53	2.13	75.507		
500.00	499.84	489.52	489.38	1.31	1.35	129.59	58.94	-152.88	168.56	165.76	2.80	60.138		
600.00	599.49	582.84	582.38	1.61	1.65	132.25	64.19	-158.49	181.81	178.29	3.52	51.668		
700.00	699.10	675.03	673.96	1.90	1.96	134.95	71.42	-166.19	198.89	194.67	4.22	47.091		
800.00	798.71	772.56	770.64	2.22	2.27	137.45	80.20	-175.55	218.02	213.24	4.78	45.645		
900.00	898.32	870.30	867.53	2.55	2.60	139.55	89.00	-184.93	237.49	232.15	5.34	44.460		
1,000.00	997.94	968.04	964.42	2.88	2.93	141.34	97.80	-194.32	257.22	251.31	5.92	43.479		
1,100.00	1,097.55	1,065.78	1,061.31	3.21	3.27	142.87	106.61	-203.70	277.16	270.67	6.50	42.664		
1,200.00	1,197.16	1,163.52	1,158.20	3.55	3.61	144.20	115.41	-213.08	297.27	290.18	7.09	41.940		
1,300.00	1,296.77	1,261.26	1,255.09	3.88	3.95	145.35	124.21	-222.46	317.51	309.83	7.68	41.320		
1,400.00	1,396.38	1,359.00	1,351.98	4.22	4.29	146.37	133.01	-231.85	337.86	329.57	8.28	40.782		
1,500.00	1,495.99	1,456.74	1,448.87	4.56	4.63	147.28	141.81	-241.23	358.30	349.41	8.89	40.311		
1,600.00	1,595.60	1,554.48	1,545.76	4.90	4.97	148.08	150.61	-250.61	378.82	369.32	9.50	39.896		
1,700.00	1,695.22	1,652.22	1,642.65	5.23	5.32	148.81	159.41	-259.99	399.40	389.29	10.10	39.526		
1,800.00	1,794.83	1,749.97	1,739.54	5.57	5.66	149.46	168.22	-269.37	420.04	409.32	10.72	39.197		
1,900.00	1,894.44	1,847.71	1,836.43	5.91	6.00	150.05	177.02	-278.76	440.72	429.39	11.33	38.901		
2,000.00	1,994.05	1,945.45	1,933.32	6.25	6.35	150.59	185.82	-288.14	461.45	449.50	11.94	38.634		
2,100.00	2,093.66	2,043.19	2,030.21	6.59	6.69	151.08	194.62	-297.52	482.21	469.65	12.56	38.391		
2,200.00	2,193.27	2,140.93	2,127.10	6.93	7.03	151.53	203.42	-306.90	503.00	489.82	13.18	38.171		
2,300.00	2,292.89	2,238.67	2,224.00	7.27	7.38	151.95	212.22	-316.29	523.82	510.02	13.80	37.970		
2,400.00	2,392.50	2,336.41	2,320.89	7.61	7.72	152.33	221.03	-325.67	544.66	530.25	14.41	37.785		
2,500.00	2,492.11	2,434.15	2,417.78	7.95	8.07	152.69	229.83	-335.05	565.53	550.50	15.03	37.615		
2,600.00	2,591.72	2,531.89	2,514.67	8.29	8.41	153.02	238.63	-344.43	586.42	570.76	15.66	37.458		
2,700.00	2,691.33	2,629.63	2,611.56	8.63	8.76	153.33	247.43	-353.82	607.32	591.04	16.28	37.312		
2,800.00	2,790.94	2,727.37	2,708.45	8.98	9.10	153.61	256.23	-363.20	628.24	611.34	16.90	37.177		
2,900.00	2,890.56	2,825.11	2,805.34	9.32	9.44	153.88	265.03	-372.58	649.17	631.65	17.52	37.052		
3,000.00	2,990.17	2,922.85	2,902.23	9.66	9.79	154.13	273.84	-381.96	670.11	651.97	18.14	36.934		
3,100.00	3,089.78	3,020.59	2,999.12	10.00	10.13	154.37	282.64	-391.34	691.07	672.31	18.77	36.825		
3,200.00	3,189.39	3,118.33	3,096.01	10.34	10.48	154.59	291.44	-400.73	712.04	692.65	19.39	36.722		
3,300.00	3,289.00	3,216.08	3,192.90	10.68	10.82	154.80	300.24	-410.11	733.02	713.00	20.01	36.625		
3,400.00	3,388.61	3,313.82	3,289.79	11.02	11.17	155.00	309.04	-419.49	754.00	733.37	20.64	36.535		
3,500.00	3,488.23	3,411.56	3,386.68	11.36	11.51	155.19	317.84	-428.87	775.00	753.74	21.26	36.449		
3,600.00	3,587.84	3,509.30	3,483.57	11.71	11.86	155.37	326.64	-438.26	796.00	774.11	21.89	36.368		
3,700.00	3,687.45	3,607.04	3,580.46	12.05	12.20	155.53	335.45	-447.64	817.01	794.50	22.51	36.292		
3,800.00	3,787.06	3,704.78	3,677.35	12.39	12.55	155.70	344.25	-457.02	838.02	814.89	23.14	36.220		
3,900.00	3,886.67	3,802.52	3,774.24	12.73	12.89	155.85	353.05	-466.40	859.05	835.28	23.76	36.151		
4,000.00	3,986.28	3,900.26	3,871.13	13.07	13.24	155.99	361.85	-475.78	880.07	855.68	24.39	36.086		
4,100.00	4,085.89	3,998.00	3,968.02	13.41	13.58	156.13	370.65	-485.17	901.10	876.09	25.01	36.024		
4,200.00	4,185.51	4,095.74	4,064.91	13.75	13.93	156.26	379.45	-494.55	922.14	896.50	25.64	35.965		
4,300.00	4,285.12	4,193.48	4,161.80	14.10	14.27	156.39	388.26	-503.93	943.18	916.92	26.27	35.909		
4,400.00	4,384.73	4,291.22	4,258.69	14.44	14.62	156.51	397.06	-513.31	964.23	937.34	26.89	35.855		
4,500.00	4,484.34	4,388.96	4,355.58	14.78	14.96	156.62	405.86	-522.70	985.28	957.76	27.52	35.804		
4,600.00	4,583.95	4,486.70	4,452.47	15.12	15.31	156.74	414.66	-532.08	1,006.33	978.19	28.15	35.755		
4,700.00	4,683.56	4,584.44	4,549.36	15.46	15.65	156.84	423.46	-541.46	1,027.39	998.62	28.77	35.707		
4,800.00	4,783.18	4,686.39	4,650.43	15.80	16.01	156.95	432.63	-551.23	1,048.43	1,019.01	29.42	35.637		
4,900.00	4,882.79	4,841.56	4,804.79	16.15	16.42	157.13	443.32	-562.63	1,066.47	1,036.25	30.23	35.282		
5,000.00	4,982.40	4,938.77	4,901.79	16.48	16.86	157.31	454.61	-574.03	1,084.61	1,054.39	31.04	35.027		
5,100.00	5,082.17	5,039.15	5,002.00	16.81	17.20	157.49	466.41	-586.44	1,102.85	1,072.63	31.85	34.772		
5,200.00	5,182.00	5,137.50	5,100.00	17.14	17.54	157.67	478.66	-599.89	1,121.19	1,091.05	32.66	34.517		
5,300.00	5,281.83	5,236.75	5,200.00	17.47	17.88	157.85	491.46	-614.38	1,139.62	1,109.56	33.47	34.262		
5,400.00	5,381.66	5,336.00	5,299.99	17.80	18.19	158.03	504.71	-629.91	1,158.14	1,128.16	34.28	34.007		
5,500.00	5,481.49	5,435.25	5,399.98	18.13	18.50	158.21	518.42	-646.49	1,176.75	1,146.85	35.09	33.752		
5,600.00	5,581.32	5,534.50	5,499.97	18.46	18.81	158.39	532.59	-663.12	1,195.45	1,165.63	35.90	33.497		
5,700.00	5,681.15	5,633.75	5,599.96	18.79	19.12	158.57	547.22	-680.79	1,214.24	1,184.50	36.71	33.242		
5,800.00	5,780.98	5,733.00	5,699.95	19.12	19.43	158.75	562.31	-699.50	1,233.12	1,203.46	37.52	32.987		
5,900.00	5,880.81	5,831.25	5,799.94	19.45	19.74	158.93	577.75	-719.25	1,252.09	1,222.51	38.33	32.732		
6,000.00	5,980.64	5,929.50	5,899.93	19.78	19.99	159.11	593.64	-740.04	1,271.15	1,241.74	39.14	32.477		
6,100.00	6,080.47	6,027.75	5,999.92	20.11	20.20	159.29	609.98	-761.87	1,290.30	1,261.15	39.95	32.222		
6,200.00	6,180.30	6,126.00	6,099.91	20.44	20.41	159.47	626.77	-784.74	1,309.54	1,280.74	40.76	31.967		
6,300.00	6,280.13	6,224.25	6,199.90	20.77	20.62	159.65	644.01	-808.65	1,328.87	1,300.51	41.57	31.712		
6,400.00	6,379.96	6,322.50	6,299.89	21.10	20.83	159.83	661.70	-833.60	1,348.29	1,320.46	42.38	31.457		
6,500.00	6,479.79	6,420.75	6,399.88	21.43	21.04	159.99	680.00	-859.59	1,367.80	1,340.59	43.19	31.202		
6,600.00	6,579.62	6,519.00	6,499.87	21.76	21.25	160.15	698.81	-886.62	1,387.40	1,360.90	44.00	30.947		
6,700.00	6,679.45	6,617.25	6,599.86	22.09	21.46	160.31	718.13	-914.69	1,407.09	1,381.39	44.81	30.692		
6,800.00	6,779.28	6,715.50	6,699.85	22.42	21.67	160.47	737.96	-943.80	1,426.87	1,402.06	45.62	30.437		
6,900.00	6,879.11	6,813.75	6,799.84	22.75	21.88	160.63	758.21	-973.95	1,446.74	1,422.91	46.43	30.182		
7,000.00	6,978.94	6,912.00	6,899.83	23.08	22.09	160.79	778.97	-1005.14	1,466.69	1,443.94	47.24	29.927		
7,100.00	7,078.77	7,010.25	6,999.82	23.41	22.30	160.95	799.24	-1037.37	1,486.72	1,465.15	48.05	29.672		
7,200.00	7,178.60	7,108.50	7,099.81	23.74	22.51	161.11	819.99	-1070.64	1,506.83	1,486.54	48.86	29		



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,398.19	5,737.00	16.94	19.22	107.16	-399.17	-562.78	879.77	852.46	27.30	32.221		
5,300.00	5,282.12	6,398.47	5,737.00	17.20	19.22	-90.37	-399.45	-562.78	820.44	790.96	29.49	27.825		
5,400.00	5,382.12	6,398.47	5,737.00	17.42	19.22	-90.37	-399.45	-562.78	769.51	737.86	31.66	24.309		
5,500.00	5,481.99	6,395.12	5,737.00	17.64	19.20	-93.10	-396.10	-562.80	728.90	695.23	33.67	21.649		
5,600.00	5,579.66	6,374.36	5,737.00	17.83	19.10	-94.61	-375.34	-562.94	700.97	665.77	35.20	19.916		
5,700.00	5,671.57	6,335.35	5,737.00	17.98	18.92	-93.21	-336.34	-563.19	686.67	650.63	36.04	19.054		
5,770.46	5,731.03	6,297.66	5,737.00	18.07	18.76	-90.85	-298.65	-563.44	684.02	647.81	36.21	18.890 SF		
5,800.00	5,754.35	6,279.53	5,737.00	18.10	18.69	-89.60	-280.52	-563.56	684.43	648.23	36.21	18.903		
5,900.00	5,824.96	6,208.95	5,737.00	18.23	18.46	-84.77	-209.93	-564.02	690.68	654.77	35.90	19.237		
6,000.00	5,880.81	6,126.19	5,737.00	18.37	18.26	-79.88	-127.17	-564.56	700.95	665.52	35.43	19.786		
6,100.00	5,919.85	6,050.00	5,736.56	18.55	18.17	-76.29	-51.00	-565.05	711.33	676.28	35.05	20.297		
6,200.00	5,940.63	5,975.59	5,728.22	18.79	18.12	-73.35	22.88	-565.54	721.41	686.58	34.82	20.716		
6,300.00	5,944.00	5,908.95	5,711.89	19.10	18.09	-71.37	87.44	-565.96	731.34	696.55	34.79	21.023		
6,400.00	5,944.00	5,850.00	5,690.68	19.49	18.08	-69.82	142.41	-566.31	745.36	710.50	34.85	21.387		
6,500.00	5,944.00	5,800.00	5,667.92	19.97	18.07	-68.19	186.90	-566.60	765.26	730.28	34.99	21.873		
6,600.00	5,944.00	5,750.00	5,641.00	20.54	18.06	-66.30	229.01	-566.88	791.53	756.41	35.11	22.541		
6,700.00	5,944.00	5,700.00	5,610.17	21.18	18.04	-64.20	268.35	-567.14	824.48	789.26	35.22	23.412		
6,800.00	5,944.00	5,650.00	5,575.71	21.88	18.01	-61.95	304.55	-567.37	864.39	829.12	35.28	24.503		
6,900.00	5,944.00	5,626.69	5,558.49	22.65	17.99	-60.85	320.26	-567.47	910.60	874.98	35.62	25.563		
7,000.00	5,944.00	5,600.00	5,537.94	23.47	17.98	-59.58	337.28	-567.59	962.99	927.10	35.89	26.831		
7,100.00	5,944.00	5,572.45	5,515.83	24.34	17.95	-58.24	353.73	-567.69	1,020.85	984.74	36.11	28.271		
7,200.00	5,944.00	5,550.00	5,497.20	25.26	17.94	-57.15	366.25	-567.77	1,083.60	1,047.26	36.35	29.813		
7,300.00	5,944.00	5,530.56	5,480.65	26.21	17.92	-56.19	376.43	-567.84	1,150.65	1,114.08	36.57	31.461		
7,400.00	5,944.00	5,500.00	5,453.88	27.20	17.89	-54.70	391.17	-567.94	1,221.65	1,184.99	36.66	33.326		
7,500.00	5,944.00	5,500.00	5,453.88	28.22	17.89	-54.70	391.17	-567.94	1,295.48	1,258.49	37.00	35.018		
7,600.00	5,944.00	5,500.00	5,453.88	29.27	17.89	-54.70	391.17	-567.94	1,372.64	1,335.36	37.28	36.823		
7,700.00	5,944.00	5,471.28	5,427.98	30.35	17.85	-53.30	403.58	-568.02	1,451.60	1,414.30	37.30	38.912		
7,800.00	5,944.00	5,450.00	5,408.37	31.45	17.83	-52.28	411.84	-568.07	1,533.11	1,495.74	37.38	41.019		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-59.23	52.61	-88.37	102.85					
100.00	100.00	100.00	100.00	0.12	0.12	-59.23	52.61	-88.37	102.85	102.60	0.25	415.209		
200.00	200.00	200.00	200.00	0.44	0.44	-59.23	52.61	-88.37	102.85	101.97	0.87	117.568		
300.00	300.00	300.00	300.00	0.75	0.75	-59.23	52.61	-88.37	102.85	101.35	1.50	68.479	CC, ES	
400.00	399.98	397.13	397.12	1.03	1.06	138.80	54.15	-88.97	105.50	103.37	2.13	49.593		
500.00	499.84	493.59	493.44	1.31	1.37	141.87	58.71	-90.74	113.68	110.87	2.80	40.593		
600.00	599.49	589.64	589.16	1.61	1.69	146.05	66.16	-93.63	127.50	124.01	3.49	36.565		
700.00	699.10	688.01	687.10	1.90	1.99	149.83	74.67	-96.94	143.19	139.13	4.06	35.278		
800.00	798.71	786.37	785.04	2.22	2.30	152.85	83.19	-100.25	159.36	154.72	4.64	34.334		
900.00	898.32	884.74	882.98	2.55	2.62	155.32	91.70	-103.55	175.89	170.67	5.23	33.636		
1,000.00	997.94	983.11	980.92	2.88	2.93	157.36	100.21	-106.86	192.69	186.87	5.82	33.086		
1,100.00	1,097.55	1,081.47	1,078.86	3.21	3.25	159.07	108.72	-110.16	209.69	203.26	6.42	32.655		
1,200.00	1,197.16	1,179.84	1,176.81	3.55	3.58	160.53	117.23	-113.47	226.84	219.81	7.02	32.295		
1,300.00	1,296.77	1,278.21	1,274.75	3.88	3.90	161.78	125.75	-116.77	244.11	236.48	7.63	31.999		
1,400.00	1,396.38	1,376.57	1,372.69	4.22	4.22	162.86	134.26	-120.08	261.48	253.24	8.24	31.749		
1,500.00	1,495.99	1,474.94	1,470.63	4.56	4.54	163.81	142.77	-123.38	278.93	270.09	8.85	31.535		
1,600.00	1,595.60	1,573.30	1,568.57	4.90	4.86	164.65	151.28	-126.69	296.45	286.99	9.46	31.351		
1,700.00	1,695.22	1,671.67	1,666.51	5.23	5.19	165.40	159.79	-129.99	314.02	303.95	10.07	31.191		
1,800.00	1,794.83	1,770.04	1,764.46	5.57	5.51	166.06	168.31	-133.30	331.64	320.96	10.68	31.049		
1,900.00	1,894.44	1,868.40	1,862.40	5.91	5.83	166.66	176.82	-136.60	349.30	338.00	11.30	30.924		
2,000.00	1,994.05	1,966.77	1,960.34	6.25	6.16	167.20	185.33	-139.91	366.99	355.08	11.91	30.813		
2,100.00	2,093.66	2,065.14	2,058.28	6.59	6.48	167.70	193.84	-143.22	384.70	372.18	12.53	30.712		
2,200.00	2,193.27	2,163.50	2,156.22	6.93	6.80	168.14	202.35	-146.52	402.45	389.31	13.14	30.622		
2,300.00	2,292.89	2,261.87	2,254.16	7.27	7.13	168.55	210.87	-149.83	420.22	406.46	13.76	30.540		
2,400.00	2,392.50	2,360.24	2,352.11	7.61	7.45	168.93	219.38	-153.13	438.00	423.62	14.38	30.466		
2,500.00	2,492.11	2,458.60	2,450.05	7.95	7.78	169.28	227.89	-156.44	455.80	440.81	14.99	30.398		
2,600.00	2,591.72	2,556.97	2,547.99	8.29	8.10	169.60	236.40	-159.74	473.62	458.01	15.61	30.335		
2,700.00	2,691.33	2,655.34	2,646.93	8.63	8.42	169.90	244.91	-163.05	491.45	475.22	16.23	30.277		
2,800.00	2,790.94	2,753.70	2,743.87	8.98	8.75	170.18	253.43	-166.35	509.29	492.44	16.85	30.224		
2,900.00	2,890.56	2,852.07	2,841.82	9.32	9.07	170.43	261.94	-169.66	527.15	509.68	17.47	30.175		
3,000.00	2,990.17	2,950.43	2,939.76	9.66	9.39	170.68	270.45	-172.96	545.01	526.92	18.09	30.129		
3,100.00	3,089.78	3,048.80	3,037.70	10.00	9.72	170.90	278.96	-176.27	562.88	544.17	18.71	30.086		
3,200.00	3,189.39	3,147.17	3,135.64	10.34	10.04	171.11	287.47	-179.57	580.76	561.43	19.33	30.046		
3,300.00	3,289.00	3,245.53	3,233.58	10.68	10.37	171.31	295.99	-182.88	598.65	578.70	19.95	30.009		
3,400.00	3,388.61	3,343.90	3,331.52	11.02	10.69	171.50	304.50	-186.19	616.54	595.97	20.57	29.974		
3,500.00	3,488.23	3,442.27	3,429.47	11.36	11.01	171.68	313.01	-189.49	634.44	613.25	21.19	29.941		
3,600.00	3,587.84	3,540.63	3,527.41	11.71	11.34	171.85	321.52	-192.80	652.35	630.54	21.81	29.910		
3,700.00	3,687.45	3,639.00	3,625.35	12.05	11.66	172.01	330.03	-196.10	670.26	647.83	22.43	29.881		
3,800.00	3,787.06	3,737.37	3,723.29	12.39	11.99	172.16	338.55	-199.41	688.18	665.12	23.05	29.853		
3,900.00	3,886.67	3,835.73	3,821.23	12.73	12.31	172.30	347.06	-202.71	706.10	682.42	23.67	29.827		
4,000.00	3,986.28	3,934.10	3,919.17	13.07	12.63	172.44	355.57	-206.02	724.02	699.72	24.29	29.802		
4,100.00	4,085.89	4,032.47	4,017.12	13.41	12.96	172.56	364.08	-209.32	741.95	717.03	24.92	29.779		
4,200.00	4,185.51	4,130.83	4,115.06	13.75	13.28	172.69	372.59	-212.63	759.88	734.34	25.54	29.756		
4,300.00	4,285.12	4,229.20	4,213.00	14.10	13.61	172.81	381.11	-215.93	777.81	751.65	26.16	29.735		
4,400.00	4,384.73	4,327.56	4,310.94	14.44	13.93	172.92	389.62	-219.24	795.75	768.97	26.78	29.715		
4,500.00	4,484.34	4,425.93	4,408.88	14.78	14.25	173.03	398.13	-222.54	813.69	786.29	27.40	29.695		
4,600.00	4,583.95	4,524.30	4,506.82	15.12	14.58	173.13	406.64	-225.85	831.63	803.61	28.02	29.677		
4,700.00	4,683.56	4,622.66	4,604.77	15.46	14.90	173.23	415.15	-229.16	849.58	820.93	28.64	29.659		
4,800.00	4,783.18	4,721.03	4,702.71	15.80	15.23	173.32	423.67	-232.46	867.52	838.26	29.27	29.642		
4,900.00	4,882.79	4,819.40	4,800.65	16.15	15.55	173.41	432.18	-235.77	885.47	855.59	29.89	29.626		
5,000.00	4,982.40	4,947.56	4,928.38	16.48	15.92	173.52	441.82	-239.51	903.33	871.72	30.61	29.474		
5,100.00	5,082.17	6,457.22	5,821.00	16.71	18.90	111.96	-393.93	-236.07	819.72	802.96	16.76	48.899		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,460.26	5,821.00	16.94	18.91	107.93	-396.97	-236.05	731.36	712.81	18.55	39.419		
5,300.00	5,282.12	6,460.54	5,821.00	17.20	18.91	-90.36	-397.25	-236.05	645.89	625.12	20.77	31.103		
5,400.00	5,382.12	6,460.54	5,821.00	17.42	18.91	-90.36	-397.25	-236.05	565.15	541.65	23.50	24.049		
5,500.00	5,481.99	6,457.19	5,821.00	17.64	18.90	-96.81	-393.90	-236.07	491.66	464.84	26.82	18.332		
5,600.00	5,579.66	6,436.43	5,821.00	17.83	18.79	-102.12	-373.14	-236.20	430.38	399.94	30.44	14.140		
5,700.00	5,671.57	6,397.42	5,821.00	17.98	18.59	-101.87	-334.13	-236.45	386.82	353.14	33.68	11.484		
5,800.00	5,754.35	6,341.60	5,821.00	18.10	18.36	-97.27	-278.31	-236.80	363.61	327.88	35.73	10.176		
5,886.42	5,816.18	6,281.38	5,821.00	18.21	18.12	-91.02	-218.09	-237.18	358.18	321.96	36.23	9.887 SF		
5,900.00	5,824.96	6,271.01	5,821.00	18.23	18.08	-89.94	-207.73	-237.24	358.29	322.08	36.22	9.893		
6,000.00	5,880.81	6,188.25	5,821.00	18.37	17.82	-81.99	-124.97	-237.77	364.18	328.53	35.66	10.213		
6,100.00	5,919.85	6,100.00	5,819.64	18.55	17.65	-75.50	-36.75	-238.32	374.01	339.15	34.86	10.728		
6,200.00	5,940.63	6,026.38	5,809.16	18.79	17.61	-70.64	36.06	-238.78	385.68	351.51	34.17	11.288		
6,300.00	5,944.00	5,950.00	5,787.57	19.10	17.59	-66.63	109.25	-239.24	398.76	365.13	33.64	11.856		
6,400.00	5,944.00	5,885.33	5,761.08	19.49	17.56	-63.23	168.20	-239.62	418.41	385.24	33.16	12.616		
6,500.00	5,944.00	5,826.04	5,730.55	19.97	17.52	-59.56	218.99	-239.94	447.11	414.44	32.68	13.684		
6,600.00	5,944.00	5,774.69	5,699.59	20.54	17.49	-56.10	259.93	-240.19	485.39	453.06	32.33	15.013		
6,700.00	5,944.00	5,730.58	5,669.90	21.18	17.46	-53.03	292.52	-240.40	532.88	500.70	32.19	16.555		
6,800.00	5,944.00	5,700.00	5,647.73	21.88	17.43	-50.88	313.59	-240.53	588.74	556.33	32.41	18.167		
6,900.00	5,944.00	5,650.00	5,608.96	22.65	17.39	-47.43	345.12	-240.73	651.67	619.51	32.16	20.261		
7,000.00	5,944.00	5,632.54	5,594.72	23.47	17.38	-46.25	355.24	-240.80	720.22	687.57	32.65	22.058		
7,100.00	5,944.00	5,600.00	5,567.34	24.34	17.35	-44.10	372.80	-240.91	793.86	761.09	32.77	24.223		
7,200.00	5,944.00	5,600.00	5,567.34	25.26	17.35	-44.10	372.80	-240.91	871.43	838.02	33.41	26.080		
7,300.00	5,944.00	5,569.06	5,540.32	26.21	17.32	-42.14	387.88	-241.00	951.84	918.36	33.48	28.432		
7,400.00	5,944.00	5,550.00	5,523.26	27.20	17.30	-40.97	396.36	-241.05	1,035.10	1,001.42	33.69	30.726		
7,500.00	5,944.00	5,550.00	5,523.26	28.22	17.30	-40.97	396.36	-241.05	1,120.67	1,086.59	34.09	32.879		
7,600.00	5,944.00	5,525.79	5,501.15	29.27	17.27	-39.53	406.22	-241.12	1,207.68	1,173.52	34.16	35.354		
7,700.00	5,944.00	5,500.00	5,477.12	30.35	17.24	-38.06	415.58	-241.18	1,296.63	1,262.42	34.21	37.902		
7,800.00	5,944.00	5,500.00	5,477.12	31.45	17.24	-38.06	415.58	-241.18	1,386.32	1,351.83	34.48	40.203		
7,900.00	5,944.00	5,500.00	5,477.12	32.57	17.24	-38.06	415.58	-241.18	1,477.33	1,442.61	34.71	42.557		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-28.86	51.60	-28.43	58.92					
100.00	100.00	100.00	100.00	0.12	0.12	-28.86	51.60	-28.43	58.92	58.67	0.25	237.845		
200.00	200.00	200.00	200.00	0.44	0.44	-28.86	51.60	-28.43	58.92	58.04	0.87	67.347		
300.00	300.00	300.00	300.00	0.75	0.75	-28.86	51.60	-28.43	58.92	57.41	1.50	39.227		
400.00	399.98	398.41	398.39	1.03	1.06	169.43	53.24	-28.02	61.90	59.77	2.13	29.052		
500.00	499.84	496.16	496.01	1.31	1.38	172.87	58.11	-26.80	71.01	68.20	2.81	25.275		
600.00	599.49	593.50	593.01	1.61	1.70	176.92	65.99	-24.82	86.02	82.53	3.49	24.667		
700.00	699.10	692.02	691.12	1.90	2.00	-179.98	74.66	-22.64	102.44	98.38	4.06	25.245		
800.00	798.71	790.53	789.22	2.22	2.31	-177.73	83.34	-20.46	119.07	114.43	4.64	25.668		
900.00	898.32	889.05	887.33	2.55	2.62	-176.04	92.01	-18.28	135.83	130.61	5.23	25.984		
1,000.00	997.94	987.56	985.44	2.88	2.93	-174.71	100.69	-16.10	152.69	146.87	5.82	26.220		
1,100.00	1,097.55	1,086.08	1,083.55	3.21	3.25	-173.66	109.37	-13.92	169.61	163.18	6.42	26.404		
1,200.00	1,197.16	1,184.59	1,181.66	3.55	3.57	-172.79	118.04	-11.74	186.57	179.55	7.03	26.546		
1,300.00	1,296.77	1,283.11	1,279.76	3.88	3.89	-172.07	126.72	-9.56	203.57	195.94	7.64	26.660		
1,400.00	1,396.38	1,381.62	1,377.87	4.22	4.21	-171.46	135.39	-7.38	220.60	212.35	8.25	26.752		
1,500.00	1,495.99	1,480.14	1,475.98	4.56	4.53	-170.93	144.07	-5.20	237.65	228.79	8.86	26.827		
1,600.00	1,595.60	1,578.65	1,574.09	4.90	4.86	-170.48	152.75	-3.02	254.71	245.24	9.47	26.890		
1,700.00	1,695.22	1,677.17	1,672.19	5.23	5.18	-170.08	161.42	-0.84	271.79	261.70	10.09	26.943		
1,800.00	1,794.83	1,775.68	1,770.30	5.57	5.50	-169.73	170.10	1.34	288.88	278.17	10.70	26.988		
1,900.00	1,894.44	1,874.20	1,868.41	5.91	5.82	-169.42	178.77	3.52	305.97	294.65	11.32	27.027		
2,000.00	1,994.05	1,972.71	1,966.52	6.25	6.14	-169.15	187.45	5.70	323.08	311.14	11.94	27.060		
2,100.00	2,093.66	2,071.23	2,064.62	6.59	6.46	-168.90	196.13	7.88	340.19	327.63	12.56	27.089		
2,200.00	2,193.27	2,169.74	2,162.73	6.93	6.78	-168.67	204.80	10.06	357.31	344.13	13.18	27.115		
2,300.00	2,292.89	2,268.25	2,260.84	7.27	7.11	-168.47	213.48	12.24	374.43	360.63	13.80	27.137		
2,400.00	2,392.50	2,366.77	2,358.95	7.61	7.43	-168.28	222.15	14.42	391.56	377.14	14.42	27.157		
2,500.00	2,492.11	2,465.28	2,457.06	7.95	7.75	-168.11	230.83	16.60	408.69	393.65	15.04	27.175		
2,600.00	2,591.72	2,563.80	2,555.16	8.29	8.07	-167.95	239.51	18.78	425.82	410.16	15.66	27.191		
2,700.00	2,691.33	2,662.31	2,653.27	8.63	8.39	-167.80	248.18	20.96	442.96	426.68	16.28	27.206		
2,800.00	2,790.94	2,760.83	2,751.38	8.98	8.72	-167.67	256.86	23.14	460.10	443.19	16.90	27.219		
2,900.00	2,890.56	2,859.34	2,849.49	9.32	9.04	-167.54	265.53	25.32	477.24	459.71	17.53	27.231		
3,000.00	2,990.17	2,957.86	2,947.59	9.66	9.36	-167.43	274.21	27.50	494.38	476.24	18.15	27.242		
3,100.00	3,089.78	3,056.37	3,045.70	10.00	9.68	-167.32	282.89	29.68	511.53	492.76	18.77	27.252		
3,200.00	3,189.39	3,154.89	3,143.81	10.34	10.00	-167.22	291.56	31.86	528.68	509.28	19.39	27.261		
3,300.00	3,289.00	3,253.40	3,241.92	10.68	10.33	-167.12	300.24	34.04	545.82	525.81	20.02	27.269		
3,400.00	3,388.61	3,351.92	3,340.03	11.02	10.65	-167.03	308.91	36.22	562.97	542.34	20.64	27.277		
3,500.00	3,488.23	3,450.43	3,438.13	11.36	10.97	-166.95	317.59	38.40	580.13	558.86	21.26	27.284		
3,600.00	3,587.84	3,548.95	3,536.24	11.71	11.29	-166.87	326.27	40.58	597.28	575.39	21.89	27.291		
3,700.00	3,687.45	3,647.46	3,634.35	12.05	11.61	-166.80	334.94	42.76	614.43	591.92	22.51	27.297		
3,800.00	3,787.06	3,745.98	3,732.46	12.39	11.94	-166.72	343.62	44.94	631.59	608.45	23.13	27.302		
3,900.00	3,886.67	3,844.49	3,830.56	12.73	12.26	-166.66	352.29	47.12	648.74	624.98	23.76	27.308		
4,000.00	3,986.28	3,943.01	3,928.67	13.07	12.58	-166.59	360.97	49.30	665.90	641.52	24.38	27.313		
4,100.00	4,085.89	4,041.52	4,026.78	13.41	12.90	-166.53	369.65	51.48	683.05	658.05	25.00	27.317		
4,200.00	4,185.51	4,140.03	4,124.89	13.75	13.23	-166.48	378.32	53.66	700.21	674.58	25.63	27.322		
4,300.00	4,285.12	4,238.55	4,223.00	14.10	13.55	-166.42	387.00	55.84	717.37	691.12	26.25	27.326		
4,400.00	4,384.73	4,337.06	4,321.10	14.44	13.87	-166.37	395.67	58.02	734.53	707.65	26.88	27.330		
4,500.00	4,484.34	4,435.58	4,419.21	14.78	14.19	-166.32	404.35	60.20	751.69	724.19	27.50	27.333		
4,600.00	4,583.95	4,534.09	4,517.32	15.12	14.51	-166.27	413.03	62.38	768.85	740.72	28.13	27.337		
4,700.00	4,683.56	4,632.61	4,615.43	15.46	14.84	-166.23	421.70	64.56	786.01	757.26	28.75	27.340		
4,800.00	4,783.18	4,731.12	4,713.53	15.80	15.16	-166.18	430.38	66.74	803.17	773.80	29.37	27.343		
4,900.00	4,882.79	4,850.70	4,832.71	16.15	15.51	-166.15	439.91	69.14	819.61	789.54	30.07	27.258		
5,000.00	4,982.40	4,949.76	4,931.00	16.48	15.84	-166.12	449.44	71.52	836.05	805.22	30.77	27.261		
5,100.00	5,082.17	5,049.15	5,030.00	16.77	16.17	-166.09	459.07	73.90	852.49	820.80	31.47	27.264		
5,200.00	5,181.94	5,148.55	5,129.00	17.06	16.47	-166.06	468.70	76.28	868.93	836.28	32.17	27.267		
5,300.00	5,281.71	5,247.95	5,228.00	17.35	16.77	-166.03	478.33	78.66	885.37	851.76	32.87	27.270		
5,400.00	5,381.48	5,347.45	5,327.00	17.64	17.08	-166.00	487.96	81.04	901.81	867.24	33.57	27.273		
5,500.00	5,481.25	5,446.85	5,426.00	17.93	17.39	-165.97	497.59	83.42	918.25	882.72	34.27	27.276		
5,600.00	5,581.02	5,546.25	5,525.00	18.22	17.70	-165.94	507.22	85.80	934.69	898.20	34.97	27.279		
5,700.00	5,680.79	5,645.75	5,624.00	18.51	18.01	-165.91	516.85	88.18	951.13	913.68	35.67	27.282		
5,800.00	5,780.56	5,745.15	5,723.00	18.80	18.32	-165.88	526.48	90.56	967.57	929.16	36.37	27.285		
5,900.00	5,880.33	5,844.55	5,822.00	19.09	18.63	-165.85	536.11	92.94	984.01	944.64	37.07	27.288		
6,000.00	5,980.10	5,943.85	5,921.00	19.38	18.94	-165.82	545.74	95.32	1,000.45	960.12	37.77	27.291		
6,100.00	6,079.87	6,043.25	6,020.00	19.67	19.25	-165.79	555.37	97.70	1,016.89	975.60	38.47	27.294		
6,200.00	6,179.64	6,142.55	6,119.00	19.96	19.56	-165.76	565.00	100.08	1,033.33	991.08	39.17	27.297		
6,300.00	6,279.41	6,241.85	6,218.00	20.25	19.87	-165.73	574.63	102.46	1,049.77	1,006.56	39.87	27.300		
6,400.00	6,379.18	6,341.15	6,317.00	20.54	20.18	-165.70	584.26	104.84	1,066.21	1,022.04	40.57	27.303		
6,500.00	6,478.95	6,439.85	6,416.00	20.83	20.49	-165.67	593.89	107.22	1,082.65	1,037.52	41.27	27.306		
6,600.00	6,578.72	6,539.25	6,515.00	21.12	20.80	-165.64	603.52	109.60	1,099.09	1,053.00	41.97	27.309		
6,700.00	6,678.49	6,638.55	6,614.00	21.41	21.11	-165.61	613.15	111.98	1,115.53	1,068.48	42.67	27.312		
6,800.00	6,778.26	6,737.95	6,713.00	21.70	21.42	-165.58	622.78	114.36	1,131.97	1,083.96	43.37	27.315		
6,900.00	6,878.03	6,837.45	6,812.00	21.99	21.73	-165.55	632.41	116.74	1,148.41	1,099.44	44.07	27.318		
7,000.00	6,977.80	6,936.85	6,911.00	22.28	22.04	-165.52	642.04	119.12	1,164.85	1,114.92	44.77	27.321		
7,100.00	7,077.57	7,036.25	7,011.00	22.57	22.35	-165.49	651.67	121.50	1,181.29	1,130.40	45.47	27.324		
7,200.00	7,177.34	7,135.45	7,110.00	22.86	22.66	-165.46	661.30	123.88	1,197.73	1,145.88	46.17	27.327		
7,300.00	7,277.11	7,234.95	7,210.00	23.15	22.97	-165.43	6							



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,372.19	5,737.00	16.94	18.68	116.02	-395.06	77.13	556.53	548.00	8.52	65.284		
5,300.00	5,282.12	6,372.47	5,737.00	17.20	18.68	-90.45	-395.33	77.14	456.90	448.07	8.82	51.780		
5,400.00	5,382.12	6,372.47	5,737.00	17.42	18.68	-90.45	-395.33	77.14	357.46	348.13	9.33	38.315		
5,500.00	5,481.99	6,369.12	5,737.00	17.64	18.67	-124.45	-391.98	77.11	258.59	248.27	10.33	25.038		
5,600.00	5,579.66	6,348.36	5,737.00	17.83	18.56	-137.94	-371.23	76.95	163.16	150.37	12.79	12.758		
5,700.00	5,671.57	6,309.36	5,737.00	17.98	18.37	-125.98	-332.22	76.64	78.68	56.99	21.69	3.627		
5,777.35	5,736.56	6,267.55	5,737.00	18.07	18.18	-90.95	-290.42	76.32	44.25	8.09	36.17	1.224	Level 2, CC, ES, SF	
5,800.00	5,754.35	6,253.54	5,737.00	18.10	18.12	-76.61	-276.41	76.21	47.70	14.23	33.47	1.425	Level 3	
5,900.00	5,824.96	6,182.95	5,737.00	18.23	17.85	-33.91	-205.82	75.66	98.97	82.14	16.83	5.880		
6,000.00	5,880.81	6,100.19	5,737.00	18.37	17.59	-20.23	-123.07	75.01	151.13	139.34	11.79	12.820		
6,100.00	5,919.85	6,019.83	5,735.98	18.55	17.42	-15.47	-42.73	74.38	190.30	180.10	10.20	18.664		
6,200.00	5,940.63	5,950.00	5,726.95	18.79	17.31	-13.13	26.46	73.84	222.84	211.90	10.94	20.360		
6,300.00	5,944.00	5,885.48	5,710.46	19.10	17.24	-11.91	88.79	73.35	251.17	237.58	13.59	18.488		
6,400.00	5,944.00	5,823.86	5,687.63	19.49	17.19	-11.04	145.99	72.91	287.87	271.41	16.46	17.487		
6,500.00	5,944.00	5,768.38	5,661.42	19.97	17.14	-10.16	194.86	72.53	334.73	315.54	19.19	17.443		
6,600.00	5,944.00	5,719.22	5,633.98	20.54	17.10	-9.38	235.62	72.21	390.21	368.62	21.60	18.069		
6,700.00	5,944.00	5,676.10	5,606.84	21.18	17.06	-8.71	269.11	71.95	452.86	429.22	23.64	19.157		
6,800.00	5,944.00	5,650.00	5,589.10	21.88	17.04	-8.32	288.25	71.80	521.63	495.78	25.85	20.180		
6,900.00	5,944.00	5,600.00	5,552.54	22.65	17.01	-7.61	322.33	71.53	594.74	568.21	26.53	22.415		
7,000.00	5,944.00	5,577.01	5,534.66	23.47	16.99	-7.31	336.79	71.42	671.90	644.00	27.90	24.083		
7,100.00	5,944.00	5,550.00	5,512.88	24.34	16.98	-6.97	352.74	71.29	752.31	723.50	28.81	26.117		
7,200.00	5,944.00	5,529.88	5,496.12	25.26	16.96	-6.73	363.89	71.21	835.32	805.67	29.65	28.173		
7,300.00	5,944.00	5,500.00	5,470.49	26.21	16.94	-6.40	379.22	71.09	920.67	890.56	30.12	30.569		
7,400.00	5,944.00	5,500.00	5,470.49	27.20	16.94	-6.40	379.22	71.09	1,007.57	976.58	30.99	32.515		
7,500.00	5,944.00	5,477.76	5,450.85	28.22	16.92	-6.16	389.67	71.00	1,096.00	1,064.65	31.35	34.955		
7,600.00	5,944.00	5,450.00	5,425.75	29.27	16.89	-5.88	401.51	70.91	1,186.05	1,154.46	31.59	37.546		
7,700.00	5,944.00	5,450.00	5,425.75	30.35	16.89	-5.88	401.51	70.91	1,276.64	1,244.53	32.11	39.764		
7,800.00	5,944.00	5,450.00	5,425.75	31.45	16.89	-5.88	401.51	70.91	1,368.54	1,336.01	32.53	42.068		
7,900.00	5,944.00	5,430.26	5,407.53	32.57	16.87	-5.69	409.12	70.85	1,461.00	1,428.29	32.71	44.661		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	32.45	49.59	31.54	58.77					
100.00	100.00	100.00	100.00	0.12	0.12	32.45	49.59	31.54	58.77	58.52	0.25	237.256		
200.00	200.00	200.00	200.00	0.44	0.44	32.45	49.59	31.54	58.77	57.89	0.87	67.180		
300.00	300.00	300.00	300.00	0.75	0.75	32.45	49.59	31.54	58.77	57.27	1.50	39.130	CC, ES	
400.00	399.98	397.91	397.90	1.03	1.06	-131.62	50.88	32.60	61.61	59.46	2.15	28.647		
500.00	499.84	495.29	495.14	1.31	1.37	-134.05	54.72	35.77	70.22	67.36	2.85	24.599		
600.00	599.49	591.65	591.15	1.61	1.68	-136.88	61.03	40.97	84.44	80.86	3.59	23.547		
700.00	699.10	689.10	687.99	1.90	2.00	-138.78	69.41	47.88	101.71	97.53	4.18	24.306		
800.00	798.71	787.51	785.77	2.22	2.31	-140.11	78.02	54.98	119.26	114.51	4.74	25.143		
900.00	898.32	885.93	883.55	2.55	2.63	-141.10	86.63	62.09	136.85	131.53	5.32	25.721		
1,000.00	997.94	984.35	981.33	2.88	2.95	-141.87	95.24	69.19	154.47	148.56	5.91	26.138		
1,100.00	1,097.55	1,082.76	1,079.11	3.21	3.28	-142.48	103.85	76.29	172.12	165.61	6.51	26.455		
1,200.00	1,197.16	1,181.18	1,176.89	3.55	3.61	-142.97	112.46	83.39	189.78	182.66	7.11	26.682		
1,300.00	1,296.77	1,279.60	1,274.68	3.88	3.94	-143.38	121.07	90.50	207.45	199.72	7.72	26.861		
1,400.00	1,396.38	1,378.01	1,372.46	4.22	4.27	-143.73	129.68	97.60	225.13	216.79	8.34	27.003		
1,500.00	1,495.99	1,476.43	1,470.24	4.56	4.60	-144.03	138.29	104.70	242.81	233.86	8.95	27.116		
1,600.00	1,595.60	1,574.85	1,568.02	4.90	4.93	-144.28	146.90	111.81	260.50	250.93	9.57	27.208		
1,700.00	1,695.22	1,673.26	1,665.80	5.23	5.27	-144.51	155.52	118.91	278.20	268.00	10.20	27.284		
1,800.00	1,794.83	1,771.68	1,763.58	5.57	5.60	-144.70	164.13	126.01	295.90	285.08	10.82	27.347		
1,900.00	1,894.44	1,870.09	1,861.36	5.91	5.93	-144.88	172.74	133.12	313.60	302.16	11.45	27.400		
2,000.00	1,994.05	1,968.51	1,959.14	6.25	6.26	-145.03	181.35	140.22	331.31	319.24	12.07	27.445		
2,100.00	2,093.66	2,066.93	2,056.93	6.59	6.60	-145.17	189.96	147.32	349.01	336.32	12.70	27.484		
2,200.00	2,193.27	2,165.34	2,154.71	6.93	6.93	-145.30	198.57	154.42	366.72	353.40	13.33	27.517		
2,300.00	2,292.89	2,263.76	2,252.49	7.27	7.26	-145.41	207.18	161.53	384.43	370.48	13.96	27.546		
2,400.00	2,392.50	2,362.18	2,350.27	7.61	7.60	-145.52	215.79	168.63	402.15	387.56	14.59	27.572		
2,500.00	2,492.11	2,460.59	2,448.05	7.95	7.93	-145.61	224.40	175.73	419.86	404.64	15.22	27.594		
2,600.00	2,591.72	2,559.01	2,545.83	8.29	8.26	-145.70	233.01	182.84	437.57	421.73	15.85	27.614		
2,700.00	2,691.33	2,657.43	2,643.61	8.63	8.60	-145.78	241.63	189.94	455.29	438.81	16.48	27.632		
2,800.00	2,790.94	2,755.84	2,741.39	8.98	8.93	-145.86	250.24	197.04	473.00	455.90	17.11	27.647		
2,900.00	2,890.56	2,854.26	2,839.18	9.32	9.26	-145.93	258.85	204.15	490.72	472.98	17.74	27.662		
3,000.00	2,990.17	2,952.67	2,936.96	9.66	9.60	-145.99	267.46	211.25	508.44	490.07	18.37	27.674		
3,100.00	3,089.78	3,051.09	3,034.74	10.00	9.93	-146.05	276.07	218.35	526.16	507.15	19.00	27.686		
3,200.00	3,189.39	3,149.51	3,132.52	10.34	10.26	-146.11	284.68	225.45	543.88	524.24	19.64	27.696		
3,300.00	3,289.00	3,247.92	3,230.30	10.68	10.60	-146.16	293.29	232.56	561.59	541.32	20.27	27.706		
3,400.00	3,388.61	3,346.34	3,328.08	11.02	10.93	-146.21	301.90	239.66	579.31	558.41	20.90	27.714		
3,500.00	3,488.23	3,444.76	3,425.86	11.36	11.26	-146.26	310.51	246.76	597.03	575.50	21.54	27.722		
3,600.00	3,587.84	3,543.17	3,523.65	11.71	11.60	-146.30	319.13	253.87	614.75	592.58	22.17	27.730		
3,700.00	3,687.45	3,641.59	3,621.43	12.05	11.93	-146.34	327.74	260.97	632.47	609.67	22.80	27.736		
3,800.00	3,787.06	3,740.01	3,719.21	12.39	12.27	-146.38	336.35	268.07	650.20	626.76	23.44	27.743		
3,900.00	3,886.67	3,838.42	3,816.99	12.73	12.60	-146.42	344.96	275.18	667.92	643.85	24.07	27.748		
4,000.00	3,986.28	3,936.84	3,914.77	13.07	12.93	-146.46	353.57	282.28	685.64	660.93	24.70	27.753		
4,100.00	4,085.89	4,035.25	4,012.55	13.41	13.27	-146.49	362.18	289.38	703.36	678.02	25.34	27.758		
4,200.00	4,185.51	4,133.67	4,110.33	13.75	13.60	-146.52	370.79	296.48	721.08	695.11	25.97	27.763		
4,300.00	4,285.12	4,232.09	4,208.11	14.10	13.93	-146.55	379.40	303.59	738.80	712.20	26.61	27.767		
4,400.00	4,384.73	4,330.50	4,305.90	14.44	14.27	-146.58	388.01	310.69	756.53	729.28	27.24	27.771		
4,500.00	4,484.34	4,428.92	4,403.68	14.78	14.60	-146.61	396.62	317.79	774.25	746.37	27.88	27.775		
4,600.00	4,583.95	4,527.34	4,501.46	15.12	14.94	-146.64	405.24	324.90	791.97	763.46	28.51	27.778		
4,700.00	4,683.56	4,625.75	4,599.24	15.46	15.27	-146.66	413.85	332.00	809.69	780.55	29.15	27.781		
4,800.00	4,783.18	4,724.17	4,697.02	15.80	15.60	-146.68	422.46	339.10	827.42	797.64	29.78	27.784		
4,900.00	4,882.79	4,823.96	4,800.14	16.15	15.95	-146.71	431.61	346.66	845.05	814.60	30.45	27.787		
5,000.00	4,982.40	4,923.74	4,897.74	16.48	16.33	-146.74	440.04	353.61	859.75	828.56	31.19	27.790		
5,100.00	5,082.17	5,023.97	5,000.00	16.81	16.63	-146.77	448.04	360.61	874.25	843.06	31.92	27.793		
5,200.00	5,182.00	5,124.57	5,100.00	17.14	16.94	-146.80	456.04	367.61	888.75	857.56	32.65	27.796		
5,300.00	5,281.83	5,224.17	5,200.00	17.47	17.25	-146.83	464.04	374.61	903.25	872.06	33.38	27.799		
5,400.00	5,381.66	5,323.67	5,300.00	17.80	17.57	-146.86	472.04	381.61	917.75	886.56	34.11	27.802		
5,500.00	5,481.49	5,422.07	5,400.00	18.13	17.89	-146.89	480.04	388.61	932.25	901.06	34.84	27.805		
5,600.00	5,581.32	5,519.47	5,500.00	18.46	18.21	-146.92	488.04	395.61	946.75	915.56	35.57	27.808		
5,700.00	5,681.15	5,619.17	5,600.00	18.79	18.53	-146.95	496.04	402.61	961.25	930.06	36.30	27.811		
5,800.00	5,780.98	5,718.47	5,700.00	19.12	18.85	-146.98	504.04	409.61	975.75	944.56	37.03	27.814		
5,900.00	5,880.81	5,818.07	5,800.00	19.45	19.17	-147.01	512.04	416.61	990.25	959.06	37.76	27.817		
6,000.00	5,980.64	5,919.47	5,900.00	19.78	19.49	-147.04	520.04	423.61	1,004.75	973.56	38.49	27.820		
6,100.00	6,080.47	6,020.07	6,000.00	20.11	19.81	-147.07	528.04	430.61	1,019.25	988.06	39.22	27.823		
6,200.00	6,180.30	6,120.87	6,100.00	20.44	20.13	-147.10	536.04	437.61	1,033.75	1,002.56	39.95	27.826		
6,300.00	6,280.13	6,220.87	6,200.00	20.77	20.45	-147.13	544.04	444.61	1,048.25	1,017.06	40.68	27.829		
6,400.00	6,379.96	6,319.47	6,300.00	21.10	20.77	-147.16	552.04	451.61	1,062.75	1,031.56	41.41	27.832		
6,500.00	6,479.79	6,418.47	6,400.00	21.43	21.09	-147.19	560.04	458.61	1,077.25	1,046.06	42.14	27.835		
6,600.00	6,579.62	6,517.87	6,500.00	21.76	21.41	-147.22	568.04	465.61	1,091.75	1,060.56	42.87	27.838		
6,700.00	6,679.45	6,617.87	6,600.00	22.09	21.73	-147.25	576.04	472.61	1,106.25	1,075.06	43.60	27.841		
6,800.00	6,779.28	6,718.87	6,700.00	22.42	22.05	-147.28	584.04	479.61	1,120.75	1,089.56	44.33	27.844		
6,900.00	6,879.11	6,818.47	6,800.00	22.75	22.37	-147.31	592.04	486.61	1,135.25	1,104.06	45.06	27.847		
7,000.00	6,978.94	6,918.47	6,900.00	23.08	22.69	-147.34	600.04	493.61	1,149.75	1,118.56	45.79	27.850		
7,100.00	7,078.77	7,018.47	7,000.00	23.41	23.01	-147.37	608.04	500.61	1,164.25	1,133.06	46.52	27.853		
7,200.00	7,178.60	7,118.47	7,100.00	23.74	23.33	-147.40	616.04	507.61	1,178.75	1,147.56	47.25	27.856		
7,300.00	7,278.43	7,218.47	7,200.00	24.07										



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,461.02	5,821.00	16.94	19.28	-75.87	-391.62	367.01	685.01	671.42	13.59	50.405		
5,300.00	5,282.12	6,461.30	5,821.00	17.20	19.29	89.28	-391.90	367.02	592.81	577.45	15.36	38.586		
5,400.00	5,382.12	6,461.30	5,821.00	17.42	19.29	89.28	-391.90	367.02	503.63	485.82	17.81	28.280		
5,500.00	5,481.99	6,457.95	5,821.00	17.64	19.27	97.84	-388.55	366.97	419.43	398.24	21.20	19.786		
5,600.00	5,579.66	6,437.19	5,821.00	17.83	19.16	105.49	-367.80	366.71	345.05	319.44	25.61	13.472		
5,700.00	5,671.57	6,398.19	5,821.00	17.98	18.97	105.33	-328.80	366.22	287.75	257.11	30.64	9.392		
5,800.00	5,754.35	6,342.38	5,821.00	18.10	18.74	99.05	-272.99	365.52	253.81	219.03	34.78	7.297		
5,900.00	5,824.96	6,271.79	5,821.00	18.23	18.48	88.63	-202.41	364.64	243.67	207.34	36.33	6.708		
5,902.18	5,826.34	6,270.11	5,821.00	18.23	18.48	88.38	-200.73	364.62	243.67	207.34	36.33	6.707 SF		
6,000.00	5,880.81	6,189.04	5,821.00	18.37	18.25	77.29	-119.66	363.60	249.43	213.86	35.57	7.013		
6,100.00	5,919.85	6,105.15	5,819.34	18.55	18.09	68.51	-35.83	362.55	260.79	226.68	34.10	7.647		
6,200.00	5,940.63	6,029.05	5,807.76	18.79	18.00	61.66	39.32	361.61	274.94	242.28	32.66	8.418		
6,300.00	5,944.00	5,950.00	5,784.29	19.10	17.95	56.13	114.72	360.66	291.00	259.50	31.50	9.238		
6,400.00	5,944.00	5,889.21	5,758.64	19.49	17.92	51.96	169.78	359.97	315.67	284.89	30.78	10.257		
6,500.00	5,944.00	5,830.59	5,727.99	19.97	17.89	47.54	219.71	359.34	351.59	321.38	30.20	11.641		
6,600.00	5,944.00	5,779.87	5,697.08	20.54	17.86	43.62	259.90	358.84	398.24	368.17	30.07	13.246		
6,700.00	5,944.00	5,736.33	5,667.54	21.18	17.83	40.33	291.87	358.44	454.30	424.00	30.30	14.995		
6,800.00	5,944.00	5,700.00	5,640.92	21.88	17.81	37.71	316.58	358.13	518.14	487.37	30.77	16.837		
6,900.00	5,944.00	5,667.05	5,615.34	22.65	17.78	35.44	337.33	357.87	588.25	556.97	31.27	18.811		
7,000.00	5,944.00	5,650.00	5,601.60	23.47	17.77	34.32	347.43	357.74	663.50	631.44	32.06	20.693		
7,100.00	5,944.00	5,615.67	5,572.97	24.34	17.74	32.17	366.36	357.50	742.33	710.03	32.30	22.980		
7,200.00	5,944.00	5,600.00	5,559.50	25.26	17.72	31.24	374.37	357.40	824.54	791.69	32.84	25.104		
7,300.00	5,944.00	5,576.74	5,539.08	26.21	17.70	29.92	385.50	357.26	909.19	876.04	33.14	27.431		
7,400.00	5,944.00	5,550.00	5,515.02	27.20	17.67	28.49	397.16	357.12	996.10	962.76	33.34	29.880		
7,500.00	5,944.00	5,550.00	5,515.02	28.22	17.67	28.49	397.16	357.12	1,084.38	1,050.54	33.84	32.048		
7,600.00	5,944.00	5,550.00	5,515.02	29.27	17.67	28.49	397.16	357.12	1,174.53	1,140.30	34.23	34.310		
7,700.00	5,944.00	5,522.57	5,489.74	30.35	17.63	27.12	407.81	356.98	1,265.16	1,230.87	34.29	36.893		
7,800.00	5,944.00	5,500.00	5,468.56	31.45	17.60	26.06	415.57	356.89	1,357.33	1,322.94	34.39	39.468		
7,900.00	5,944.00	5,500.00	5,468.56	32.57	17.60	26.06	415.57	356.89	1,449.94	1,415.28	34.66	41.829		
8,000.00	5,944.00	5,500.00	5,468.56	33.70	17.60	26.06	415.57	356.89	1,543.47	1,508.57	34.90	44.230		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-65.62	53.64	-118.37	129.96					
100.00	100.00	100.00	100.00	0.12	0.12	-65.62	53.64	-118.37	129.96	129.71	0.25	524.653		
200.00	200.00	200.00	200.00	0.44	0.44	-65.62	53.64	-118.37	129.96	129.08	0.87	148.558		
300.00	300.00	300.00	300.00	0.75	0.75	-65.62	53.64	-118.37	129.96	128.46	1.50	86.529 CC, ES		
400.00	399.98	396.09	396.08	1.03	1.05	132.12	54.94	-119.32	132.59	130.46	2.13	62.282		
500.00	499.84	491.54	491.40	1.31	1.36	134.46	58.81	-122.14	140.64	137.83	2.80	50.141		
600.00	599.49	585.78	585.30	1.61	1.67	137.78	65.15	-126.76	154.22	150.69	3.52	43.759		
700.00	699.10	683.21	682.20	1.90	1.98	141.08	73.38	-132.75	170.64	166.54	4.11	41.556		
800.00	798.71	781.40	779.85	2.22	2.29	143.83	81.70	-138.82	187.58	182.90	4.68	40.085		
900.00	898.32	879.59	877.50	2.55	2.61	146.12	90.02	-144.88	204.86	199.60	5.26	38.948		
1,000.00	997.94	977.78	975.14	2.88	2.93	148.05	98.35	-150.94	222.42	216.57	5.85	38.023		
1,100.00	1,097.55	1,075.97	1,072.79	3.21	3.26	149.70	106.67	-157.01	240.19	233.74	6.44	37.285		
1,200.00	1,197.16	1,174.16	1,170.44	3.55	3.59	151.13	115.00	-163.07	258.12	251.08	7.04	36.650		
1,300.00	1,296.77	1,272.35	1,268.09	3.88	3.91	152.36	123.32	-169.13	276.19	268.54	7.65	36.121		
1,400.00	1,396.38	1,370.54	1,365.74	4.22	4.24	153.45	131.65	-175.20	294.37	286.11	8.25	35.671		
1,500.00	1,495.99	1,468.73	1,463.39	4.56	4.57	154.41	139.97	-181.26	312.63	303.77	8.86	35.283		
1,600.00	1,595.60	1,566.92	1,561.03	4.90	4.90	155.26	148.30	-187.33	330.98	321.51	9.47	34.946		
1,700.00	1,695.22	1,665.10	1,658.68	5.23	5.23	156.03	156.62	-193.39	349.39	339.30	10.08	34.650		
1,800.00	1,794.83	1,763.29	1,756.33	5.57	5.56	156.72	164.95	-199.45	367.85	357.15	10.70	34.388		
1,900.00	1,894.44	1,861.48	1,853.98	5.91	5.89	157.34	173.27	-205.52	386.36	375.04	11.31	34.156		
2,000.00	1,994.05	1,959.67	1,951.63	6.25	6.22	157.90	181.59	-211.58	404.90	392.98	11.93	33.947		
2,100.00	2,093.66	2,057.86	2,049.27	6.59	6.55	158.42	189.92	-217.65	423.49	410.94	12.54	33.760		
2,200.00	2,193.27	2,156.05	2,146.92	6.93	6.88	158.89	198.24	-223.71	442.10	428.94	13.16	33.590		
2,300.00	2,292.89	2,254.24	2,244.57	7.27	7.21	159.33	206.57	-229.77	460.74	446.96	13.78	33.436		
2,400.00	2,392.50	2,352.43	2,342.22	7.61	7.54	159.73	214.89	-235.84	479.40	465.01	14.40	33.296		
2,500.00	2,492.11	2,450.62	2,439.87	7.95	7.87	160.10	223.22	-241.90	498.09	483.07	15.02	33.167		
2,600.00	2,591.72	2,548.81	2,537.52	8.29	8.20	160.44	231.54	-247.96	516.79	501.15	15.64	33.049		
2,700.00	2,691.33	2,647.00	2,635.16	8.63	8.53	160.76	239.87	-254.03	535.51	519.25	16.26	32.940		
2,800.00	2,790.94	2,745.19	2,732.81	8.98	8.86	161.06	248.19	-260.09	554.25	537.37	16.88	32.839		
2,900.00	2,890.56	2,843.38	2,830.46	9.32	9.19	161.34	256.52	-266.16	573.00	555.50	17.50	32.745		
3,000.00	2,990.17	2,941.57	2,928.11	9.66	9.52	161.60	264.84	-272.22	591.76	573.64	18.12	32.658		
3,100.00	3,089.78	3,039.76	3,025.76	10.00	9.85	161.84	273.16	-278.28	610.53	591.79	18.74	32.577		
3,200.00	3,189.39	3,137.95	3,123.40	10.34	10.18	162.07	281.49	-284.35	629.31	609.95	19.36	32.501		
3,300.00	3,289.00	3,236.14	3,221.05	10.68	10.51	162.29	289.81	-290.41	648.10	628.12	19.98	32.429		
3,400.00	3,388.61	3,334.33	3,318.70	11.02	10.84	162.50	298.14	-296.47	666.90	646.29	20.61	32.363		
3,500.00	3,488.23	3,432.52	3,416.35	11.36	11.17	162.69	306.46	-302.54	685.71	664.48	21.23	32.300		
3,600.00	3,587.84	3,530.71	3,514.00	11.71	11.50	162.87	314.79	-308.60	704.52	682.67	21.85	32.241		
3,700.00	3,687.45	3,628.90	3,611.65	12.05	11.83	163.05	323.11	-314.67	723.34	700.87	22.47	32.185		
3,800.00	3,787.06	3,727.09	3,709.29	12.39	12.16	163.21	331.44	-320.73	742.17	719.07	23.10	32.132		
3,900.00	3,886.67	3,825.28	3,806.94	12.73	12.49	163.37	339.76	-326.79	761.00	737.28	23.72	32.082		
4,000.00	3,986.28	3,923.47	3,904.59	13.07	12.82	163.52	348.09	-332.86	779.84	755.50	24.34	32.035		
4,100.00	4,085.89	4,021.66	4,002.24	13.41	13.15	163.66	356.41	-338.92	798.69	773.72	24.97	31.990		
4,200.00	4,185.51	4,119.85	4,099.89	13.75	13.48	163.79	364.73	-344.98	817.53	791.94	25.59	31.947		
4,300.00	4,285.12	4,218.04	4,197.54	14.10	13.81	163.92	373.06	-351.05	836.39	810.17	26.21	31.906		
4,400.00	4,384.73	4,316.23	4,295.18	14.44	14.14	164.05	381.38	-357.11	855.24	828.40	26.84	31.868		
4,500.00	4,484.34	4,414.42	4,392.83	14.78	14.48	164.17	389.71	-363.18	874.10	846.64	27.46	31.831		
4,600.00	4,583.95	4,512.61	4,490.48	15.12	14.81	164.28	398.03	-369.24	892.96	864.88	28.08	31.795		
4,700.00	4,683.56	4,610.80	4,588.13	15.46	15.14	164.39	406.36	-375.30	911.83	883.12	28.71	31.761		
4,800.00	4,783.18	4,708.99	4,685.78	15.80	15.47	164.49	414.68	-381.37	930.70	901.37	29.33	31.729		
4,900.00	4,882.79	4,807.18	4,783.42	16.15	15.80	164.59	423.01	-387.43	949.57	919.61	29.96	31.698		
5,000.00	4,982.40	4,905.37	4,881.08	16.48	16.13	164.70	431.33	-393.49	968.42	937.85	30.58	31.672		
5,100.00	5,082.17	5,033.62	5,008.74	16.71	16.51	164.86	441.15	-400.65	984.40	953.16	31.24	31.509		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,591.18	5,944.00	16.94	19.45	107.67	-398.06	-399.93	922.34	901.49	20.86	44.224		
5,300.00	5,282.12	6,591.46	5,944.00	17.20	19.46	-90.37	-398.34	-399.93	841.68	818.87	22.82	36.891		
5,400.00	5,382.12	6,591.46	5,944.00	17.42	19.46	-90.37	-398.34	-399.93	765.54	740.49	25.05	30.556		
5,500.00	5,481.99	6,588.11	5,944.00	17.64	19.44	-96.41	-394.99	-399.95	695.58	668.01	27.57	25.228		
5,600.00	5,579.66	6,567.36	5,944.00	17.83	19.34	-102.51	-374.24	-400.09	635.13	604.97	30.16	21.061		
5,700.00	5,671.57	6,528.35	5,944.00	17.98	19.16	-104.58	-335.23	-400.34	587.65	555.13	32.52	18.070		
5,800.00	5,754.35	6,472.53	5,944.00	18.10	18.92	-103.52	-279.41	-400.70	554.77	520.39	34.38	16.136		
5,900.00	5,824.96	6,401.94	5,944.00	18.23	18.67	-100.39	-208.82	-401.15	535.58	500.01	35.57	15.059		
6,000.00	5,880.81	6,319.18	5,944.00	18.37	18.45	-96.38	-126.07	-401.68	526.96	490.78	36.18	14.566		
6,100.00	5,919.85	6,225.47	5,942.39	18.55	18.32	-92.49	-32.40	-402.29	524.73	488.29	36.45	14.398		
6,117.75	5,924.90	6,208.38	5,940.77	18.60	18.31	-91.80	-15.39	-402.39	524.69	488.21	36.48	14.382		
6,200.00	5,940.63	6,131.82	5,926.70	18.79	18.27	-88.61	59.79	-402.88	525.60	488.98	36.61	14.355 SF		
6,300.00	5,944.00	6,044.29	5,897.34	19.10	18.25	-84.93	142.14	-403.41	529.07	492.33	36.74	14.400		
6,400.00	5,944.00	5,967.55	5,860.58	19.49	18.21	-81.01	209.42	-403.84	537.03	500.20	36.83	14.583		
6,500.00	5,944.00	5,900.00	5,820.34	19.97	18.18	-76.81	263.63	-404.19	552.28	515.48	36.80	15.007		
6,600.00	5,944.00	5,850.00	5,786.22	20.54	18.15	-73.37	300.15	-404.42	576.67	539.89	36.78	15.680		
6,700.00	5,944.00	5,800.00	5,748.76	21.18	18.11	-69.73	333.23	-404.64	611.01	574.38	36.63	16.682		
6,800.00	5,944.00	5,768.79	5,723.84	21.88	18.08	-67.39	352.01	-404.76	654.92	618.26	36.65	17.869		
6,900.00	5,944.00	5,750.00	5,708.30	22.65	18.07	-65.98	362.58	-404.83	707.76	670.96	36.80	19.232		
7,000.00	5,944.00	5,700.00	5,665.22	23.47	18.02	-62.22	387.91	-404.99	767.96	731.48	36.48	21.053		
7,100.00	5,944.00	5,700.00	5,665.22	24.34	18.02	-62.22	387.91	-404.99	834.32	797.51	36.81	22.666		
7,200.00	5,944.00	5,672.00	5,640.09	25.26	17.98	-60.14	400.25	-405.07	905.84	869.10	36.74	24.654		
7,300.00	5,944.00	5,650.00	5,619.90	26.21	17.96	-58.53	409.00	-405.12	981.75	945.01	36.74	26.724		
7,400.00	5,944.00	5,650.00	5,619.90	27.20	17.96	-58.53	409.00	-405.12	1,061.10	1,024.16	36.94	28.725		
7,500.00	5,944.00	5,629.34	5,600.63	28.22	17.93	-57.04	416.42	-405.17	1,143.15	1,106.24	36.92	30.966		
7,600.00	5,944.00	5,618.39	5,590.30	29.27	17.91	-56.26	420.05	-405.19	1,227.62	1,190.65	36.97	33.203		
7,700.00	5,944.00	5,600.00	5,572.78	30.35	17.88	-54.97	425.64	-405.23	1,314.11	1,277.15	36.96	35.552		
7,800.00	5,944.00	5,600.00	5,572.78	31.45	17.88	-54.97	425.64	-405.23	1,402.03	1,364.95	37.08	37.809		
7,900.00	5,944.00	5,600.00	5,572.78	32.57	17.88	-54.97	425.64	-405.23	1,491.46	1,454.28	37.18	40.112		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	-47.99	52.61	-58.40	78.61					
100.00	100.00	100.00	100.00	0.12	0.12	-47.99	52.61	-58.40	78.61	78.36	0.25	317.340		
200.00	200.00	200.00	200.00	0.44	0.44	-47.99	52.61	-58.40	78.61	77.73	0.87	89.856		
300.00	300.00	300.00	300.00	0.75	0.75	-47.99	52.61	-58.40	78.61	77.10	1.50	52.338	CC, ES	
400.00	399.98	397.92	397.90	1.03	1.06	150.31	54.28	-58.54	81.37	79.25	2.13	38.256		
500.00	499.84	495.16	495.01	1.31	1.38	153.97	59.23	-58.96	89.93	87.13	2.80	32.110		
600.00	599.49	592.75	592.29	1.61	1.69	158.57	66.98	-59.61	104.00	100.55	3.45	30.143		
700.00	699.10	691.30	690.50	1.90	2.00	162.29	75.11	-60.29	119.34	115.31	4.03	29.624		
800.00	798.71	789.86	788.72	2.22	2.31	165.17	83.24	-60.97	135.05	130.44	4.61	29.269		
900.00	898.32	888.42	886.94	2.55	2.62	167.44	91.37	-61.65	151.03	145.82	5.21	29.007		
1,000.00	997.94	986.97	985.16	2.88	2.93	169.27	99.51	-62.33	167.19	161.39	5.80	28.807		
1,100.00	1,097.55	1,085.53	1,083.38	3.21	3.25	170.78	107.64	-63.01	183.50	177.09	6.41	28.649		
1,200.00	1,197.16	1,184.09	1,181.60	3.55	3.56	172.04	115.77	-63.69	199.90	192.89	7.01	28.517		
1,300.00	1,296.77	1,282.64	1,279.81	3.88	3.88	173.12	123.90	-64.37	216.39	208.77	7.62	28.409		
1,400.00	1,396.38	1,381.20	1,378.03	4.22	4.20	174.04	132.04	-65.06	232.94	224.72	8.23	28.316		
1,500.00	1,495.99	1,479.76	1,476.25	4.56	4.52	174.83	140.17	-65.74	249.54	240.71	8.84	28.237		
1,600.00	1,595.60	1,578.31	1,574.47	4.90	4.84	175.53	148.30	-66.42	266.19	256.74	9.45	28.168		
1,700.00	1,695.22	1,676.87	1,672.69	5.23	5.16	176.15	156.43	-67.10	282.86	272.80	10.06	28.108		
1,800.00	1,794.83	1,775.43	1,770.90	5.57	5.48	176.70	164.57	-67.78	299.57	288.89	10.68	28.054		
1,900.00	1,894.44	1,873.98	1,869.12	5.91	5.79	177.19	172.70	-68.46	316.30	305.00	11.29	28.006		
2,000.00	1,994.05	1,972.54	1,967.34	6.25	6.11	177.63	180.83	-69.14	333.05	321.14	11.91	27.964		
2,100.00	2,093.66	2,071.10	2,065.56	6.59	6.43	178.03	188.96	-69.82	349.81	337.29	12.53	27.925		
2,200.00	2,193.27	2,169.65	2,163.78	6.93	6.75	178.39	197.10	-70.50	366.60	353.45	13.14	27.890		
2,300.00	2,292.89	2,268.21	2,261.99	7.27	7.07	178.72	205.23	-71.19	383.39	369.63	13.76	27.858		
2,400.00	2,392.50	2,366.77	2,360.21	7.61	7.39	179.02	213.36	-71.87	400.20	385.82	14.38	27.829		
2,500.00	2,492.11	2,465.32	2,458.43	7.95	7.71	179.30	221.50	-72.55	417.01	402.01	15.00	27.802		
2,600.00	2,591.72	2,563.88	2,556.65	8.29	8.03	179.56	229.63	-73.23	433.84	418.22	15.62	27.777		
2,700.00	2,691.33	2,662.44	2,654.87	8.63	8.35	179.79	237.76	-73.91	450.67	434.43	16.24	27.754		
2,800.00	2,790.94	2,760.99	2,753.09	8.98	8.67	-179.99	245.89	-74.59	467.51	450.65	16.86	27.733		
2,900.00	2,890.56	2,859.55	2,851.30	9.32	8.99	-179.78	254.03	-75.27	484.35	466.88	17.48	27.713		
3,000.00	2,990.17	2,958.11	2,949.52	9.66	9.31	-179.59	262.16	-75.95	501.21	483.11	18.10	27.695		
3,100.00	3,089.78	3,056.66	3,047.74	10.00	9.63	-179.41	270.29	-76.63	518.06	499.34	18.72	27.678		
3,200.00	3,189.39	3,155.22	3,145.96	10.34	9.95	-179.24	278.42	-77.32	534.92	515.58	19.34	27.662		
3,300.00	3,289.00	3,253.78	3,244.18	10.68	10.27	-179.09	286.56	-78.00	551.79	531.83	19.96	27.647		
3,400.00	3,388.61	3,352.33	3,342.39	11.02	10.59	-178.94	294.69	-78.68	568.66	548.08	20.58	27.632		
3,500.00	3,488.23	3,450.89	3,440.61	11.36	10.91	-178.80	302.82	-79.36	585.53	564.33	21.20	27.619		
3,600.00	3,587.84	3,549.45	3,538.83	11.71	11.23	-178.67	310.95	-80.04	602.40	580.58	21.82	27.606		
3,700.00	3,687.45	3,648.00	3,637.05	12.05	11.55	-178.54	319.09	-80.72	619.28	596.84	22.44	27.594		
3,800.00	3,787.06	3,746.56	3,735.27	12.39	11.87	-178.43	327.22	-81.40	636.16	613.10	23.06	27.583		
3,900.00	3,886.67	3,845.12	3,833.48	12.73	12.18	-178.31	335.35	-82.08	653.05	629.36	23.69	27.572		
4,000.00	3,986.28	3,943.67	3,931.70	13.07	12.50	-178.21	343.48	-82.76	669.93	645.63	24.31	27.562		
4,100.00	4,085.89	4,042.23	4,029.92	13.41	12.82	-178.11	351.62	-83.45	686.82	661.89	24.93	27.552		
4,200.00	4,185.51	4,140.79	4,128.14	13.75	13.14	-178.01	359.75	-84.13	703.71	678.16	25.55	27.543		
4,300.00	4,285.12	4,239.34	4,226.36	14.10	13.46	-177.92	367.88	-84.81	720.60	694.43	26.17	27.534		
4,400.00	4,384.73	4,337.90	4,324.58	14.44	13.78	-177.83	376.01	-85.49	737.50	710.70	26.79	27.525		
4,500.00	4,484.34	4,436.46	4,422.79	14.78	14.10	-177.75	384.15	-86.17	754.39	726.98	27.42	27.517		
4,600.00	4,583.95	4,535.01	4,521.01	15.12	14.42	-177.67	392.28	-86.85	771.29	743.25	28.04	27.509		
4,700.00	4,683.56	4,633.57	4,619.23	15.46	14.74	-177.59	400.41	-87.53	788.19	759.53	28.66	27.502		
4,800.00	4,783.18	4,732.13	4,717.45	15.80	15.06	-177.52	408.55	-88.21	805.09	775.81	29.28	27.495		
4,900.00	4,882.79	4,830.68	4,815.67	16.15	15.38	-177.45	416.68	-88.90	821.99	792.08	29.90	27.488		
5,000.00	4,982.40	4,929.24	4,913.89	16.48	15.70	-177.38	424.81	-89.58	838.87	808.34	30.52	27.484		
5,100.00	5,082.17	5,028.13	5,012.44	16.71	16.02	-177.33	432.97	-90.26	853.64	822.57	31.07	27.473		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,652.44	6,017.00	16.94	19.39	109.60	-396.30	-84.92	859.64	847.79	11.86	72.496		
5,300.00	5,282.12	6,652.72	6,017.00	17.20	19.39	-90.44	-396.58	-84.92	762.92	750.18	12.74	59.871		
5,400.00	5,382.12	6,652.72	6,017.00	17.42	19.39	-90.44	-396.58	-84.92	667.14	653.23	13.91	47.970		
5,500.00	5,481.99	6,649.37	6,017.00	17.64	19.37	-107.15	-393.23	-84.94	572.93	557.44	15.48	37.001		
5,600.00	5,579.66	6,628.62	6,017.00	17.83	19.27	-123.15	-372.47	-85.10	483.11	465.54	17.56	27.506		
5,700.00	5,671.57	6,589.61	6,017.00	17.98	19.08	-129.10	-333.46	-85.40	402.07	381.76	20.30	19.804		
5,800.00	5,754.35	6,533.79	6,017.00	18.10	18.85	-129.32	-277.65	-85.83	334.10	310.34	23.75	14.067		
5,900.00	5,824.96	6,463.20	6,017.00	18.23	18.60	-125.86	-207.06	-86.38	282.66	255.06	27.59	10.243		
6,000.00	5,880.81	6,380.45	6,017.00	18.37	18.35	-120.13	-124.31	-87.01	249.02	217.93	31.09	8.010		
6,100.00	5,919.85	6,279.10	6,014.47	18.55	18.16	-112.81	-23.05	-87.79	230.24	196.58	33.66	6.841		
6,200.00	5,940.63	6,172.00	5,993.07	18.79	18.09	-103.46	81.70	-88.60	218.01	182.22	35.78	6.092		
6,300.00	5,944.00	6,074.76	5,955.48	19.10	18.03	-93.09	171.23	-89.28	212.67	175.71	36.95	5.755		
6,315.31	5,944.00	6,061.11	5,948.88	19.16	18.02	-91.32	183.18	-89.38	212.54	175.50	37.04	5.738 SF		
6,400.00	5,944.00	5,992.68	5,911.25	19.49	17.95	-81.27	240.27	-89.82	217.49	180.63	36.86	5.900		
6,500.00	5,944.00	5,926.34	5,867.93	19.97	17.88	-70.42	290.45	-90.20	239.85	204.29	35.56	6.744		
6,600.00	5,944.00	5,873.21	5,828.86	20.54	17.83	-61.76	326.42	-90.48	281.45	247.28	34.17	8.236		
6,700.00	5,944.00	5,830.53	5,794.95	21.18	17.80	-55.23	352.31	-90.68	338.79	305.39	33.40	10.143		
6,800.00	5,944.00	5,800.00	5,769.45	21.88	17.78	-50.92	369.09	-90.81	407.35	374.03	33.32	12.225		
6,900.00	5,944.00	5,767.54	5,741.31	22.65	17.75	-46.70	385.25	-90.93	483.50	450.24	33.25	14.540		
7,000.00	5,944.00	5,750.00	5,725.70	23.47	17.73	-44.59	393.25	-90.99	565.03	531.44	33.59	16.821		
7,100.00	5,944.00	5,724.15	5,702.22	24.34	17.71	-41.69	404.06	-91.08	650.18	616.51	33.67	19.310		
7,200.00	5,944.00	5,700.00	5,679.83	25.26	17.68	-39.21	413.10	-91.14	738.21	704.44	33.77	21.861		
7,300.00	5,944.00	5,700.00	5,679.83	26.21	17.68	-39.21	413.10	-91.14	828.20	794.00	34.20	24.216		
7,400.00	5,944.00	5,680.30	5,661.27	27.20	17.65	-37.32	419.71	-91.20	919.68	885.40	34.28	26.826		
7,500.00	5,944.00	5,669.33	5,650.83	28.22	17.64	-36.33	423.07	-91.22	1,012.47	978.03	34.45	29.392		
7,600.00	5,944.00	5,650.00	5,632.27	29.27	17.61	-34.68	428.48	-91.26	1,106.37	1,071.87	34.50	32.067		
7,700.00	5,944.00	5,650.00	5,632.27	30.35	17.61	-34.68	428.48	-91.26	1,200.81	1,166.09	34.72	34.586		
7,800.00	5,944.00	5,650.00	5,632.27	31.45	17.61	-34.68	428.48	-91.26	1,296.08	1,261.18	34.90	37.137		
7,900.00	5,944.00	5,650.00	5,632.27	32.57	17.61	-34.68	428.48	-91.26	1,392.02	1,356.96	35.05	39.711		
8,000.00	5,944.00	5,630.41	5,613.27	33.70	17.58	-33.12	433.24	-91.30	1,487.99	1,452.93	35.07	42.433		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	1.74	50.60	1.54	50.63					
100.00	100.00	100.00	100.00	0.12	0.12	1.74	50.60	1.54	50.63	50.38	0.25	204.384		
200.00	200.00	200.00	200.00	0.44	0.44	1.74	50.60	1.54	50.63	49.75	0.87	57.872		
300.00	300.00	300.00	300.00	0.75	0.75	1.74	50.60	1.54	50.63	49.12	1.50	33.709 CC, ES		
400.00	399.98	398.33	398.31	1.03	1.06	-161.15	52.10	2.31	53.83	51.68	2.15	25.077		
500.00	499.84	496.06	495.90	1.31	1.38	-160.64	56.56	4.61	63.42	60.57	2.85	22.286		
600.00	599.49	593.17	592.67	1.61	1.70	-160.02	63.86	8.37	78.89	75.36	3.54	22.293		
700.00	699.10	691.73	690.79	1.90	2.00	-159.48	72.17	12.65	95.77	91.67	4.09	23.399		
800.00	798.71	790.30	788.90	2.22	2.31	-159.11	80.48	16.93	112.65	107.98	4.67	24.145		
900.00	898.32	888.86	887.02	2.55	2.62	-158.83	88.80	21.22	129.53	124.28	5.25	24.668		
1,000.00	997.94	987.42	985.14	2.88	2.94	-158.61	97.11	25.50	146.41	140.57	5.85	25.047		
1,100.00	1,097.55	1,085.99	1,083.26	3.21	3.26	-158.44	105.42	29.78	163.30	156.85	6.45	25.333		
1,200.00	1,197.16	1,184.55	1,181.38	3.55	3.58	-158.30	113.73	34.06	180.19	173.13	7.05	25.550		
1,300.00	1,296.77	1,283.11	1,279.50	3.88	3.91	-158.19	122.05	38.35	197.07	189.41	7.66	25.720		
1,400.00	1,396.38	1,381.67	1,377.61	4.22	4.23	-158.09	130.36	42.63	213.96	205.69	8.28	25.856		
1,500.00	1,495.99	1,480.24	1,475.73	4.56	4.55	-158.01	138.67	46.91	230.85	221.96	8.89	25.966		
1,600.00	1,595.60	1,578.80	1,573.85	4.90	4.87	-157.94	146.99	51.20	247.74	238.23	9.51	26.057		
1,700.00	1,695.22	1,677.36	1,671.97	5.23	5.20	-157.88	155.30	55.48	264.63	254.51	10.13	26.133		
1,800.00	1,794.83	1,775.93	1,770.09	5.57	5.52	-157.82	163.61	59.76	281.52	270.78	10.75	26.198		
1,900.00	1,894.44	1,874.49	1,868.21	5.91	5.85	-157.77	171.92	64.04	298.41	287.05	11.37	26.252		
2,000.00	1,994.05	1,973.05	1,966.32	6.25	6.17	-157.73	180.24	68.33	315.30	303.31	11.99	26.299		
2,100.00	2,093.66	2,071.62	2,064.44	6.59	6.49	-157.69	188.55	72.61	332.19	319.58	12.61	26.340		
2,200.00	2,193.27	2,170.18	2,162.56	6.93	6.82	-157.66	196.86	76.89	349.08	335.85	13.23	26.376		
2,300.00	2,292.89	2,268.74	2,260.68	7.27	7.14	-157.63	205.17	81.18	365.98	352.12	13.86	26.408		
2,400.00	2,392.50	2,367.30	2,358.80	7.61	7.47	-157.60	213.49	85.46	382.87	368.38	14.48	26.436		
2,500.00	2,492.11	2,465.87	2,456.92	7.95	7.79	-157.57	221.80	89.74	399.76	384.65	15.11	26.465		
2,600.00	2,591.72	2,564.43	2,555.03	8.29	8.11	-157.55	230.11	94.02	416.65	400.92	15.73	26.482		
2,700.00	2,691.33	2,662.99	2,653.15	8.63	8.44	-157.52	238.42	98.31	433.54	417.18	16.36	26.502		
2,800.00	2,790.94	2,761.56	2,751.27	8.98	8.76	-157.50	246.74	102.59	450.43	433.45	16.98	26.520		
2,900.00	2,890.56	2,860.12	2,849.39	9.32	9.09	-157.48	255.05	106.87	467.32	449.71	17.61	26.537		
3,000.00	2,990.17	2,958.68	2,947.51	9.66	9.41	-157.46	263.36	111.16	484.22	465.98	18.24	26.552		
3,100.00	3,089.78	3,057.24	3,045.63	10.00	9.74	-157.45	271.67	115.44	501.11	482.24	18.86	26.565		
3,200.00	3,189.39	3,155.81	3,143.74	10.34	10.06	-157.43	279.99	119.72	518.00	498.51	19.49	26.578		
3,300.00	3,289.00	3,254.37	3,241.86	10.68	10.39	-157.42	288.30	124.00	534.89	514.77	20.12	26.589		
3,400.00	3,388.61	3,352.93	3,339.98	11.02	10.71	-157.40	296.61	128.29	551.78	531.04	20.74	26.600		
3,500.00	3,488.23	3,451.50	3,438.10	11.36	11.03	-157.39	304.93	132.57	568.67	547.30	21.37	26.609		
3,600.00	3,587.84	3,550.06	3,536.22	11.71	11.36	-157.38	313.24	136.85	585.57	563.57	22.00	26.618		
3,700.00	3,687.45	3,648.62	3,634.34	12.05	11.68	-157.37	321.55	141.14	602.46	579.83	22.63	26.627		
3,800.00	3,787.06	3,747.19	3,732.45	12.39	12.01	-157.36	329.86	145.42	619.35	596.10	23.25	26.635		
3,900.00	3,886.67	3,845.75	3,830.57	12.73	12.33	-157.35	338.18	149.70	636.24	612.36	23.88	26.642		
4,000.00	3,986.28	3,944.31	3,928.69	13.07	12.66	-157.34	346.49	153.99	653.13	628.62	24.51	26.649		
4,100.00	4,085.89	4,042.87	4,026.81	13.41	12.98	-157.33	354.80	158.27	670.02	644.89	25.14	26.655		
4,200.00	4,185.51	4,141.44	4,124.93	13.75	13.31	-157.32	363.11	162.55	686.92	661.15	25.76	26.661		
4,300.00	4,285.12	4,240.00	4,223.05	14.10	13.63	-157.31	371.43	166.83	703.81	677.41	26.39	26.666		
4,400.00	4,384.73	4,338.56	4,321.16	14.44	13.96	-157.30	379.74	171.12	720.70	693.68	27.02	26.672		
4,500.00	4,484.34	4,437.13	4,419.28	14.78	14.28	-157.29	388.05	175.40	737.59	709.94	27.65	26.676		
4,600.00	4,583.95	4,535.69	4,517.40	15.12	14.61	-157.29	396.36	179.68	754.48	726.21	28.28	26.681		
4,700.00	4,683.56	4,634.25	4,615.52	15.46	14.93	-157.28	404.68	183.97	771.38	742.47	28.91	26.685		
4,800.00	4,783.18	4,732.81	4,713.64	15.80	15.25	-157.27	412.99	188.25	788.27	758.73	29.53	26.689		
4,900.00	4,882.79	4,831.38	4,811.76	16.15	15.58	-157.27	421.30	192.53	805.16	775.00	30.16	26.693		
5,000.00	4,982.40	4,929.94	4,909.88	16.48	15.90	-157.27	429.61	196.81	822.03	791.24	30.79	26.700		
5,100.00	5,082.17	5,050.20	5,029.69	16.71	16.25	-157.33	438.80	201.55	836.23	804.81	31.41	26.620		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	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	5,182.12	6,579.37	5,944.00	16.94	19.38	-80.29	-393.67	213.94	767.66	759.09	8.57	89.525		
5,300.00	5,282.12	6,579.65	5,944.00	17.20	19.38	89.36	-393.95	213.95	668.52	659.64	8.88	75.316		
5,400.00	5,382.12	6,579.65	5,944.00	17.42	19.38	89.36	-393.95	213.95	569.68	560.34	9.34	60.991		
5,500.00	5,481.99	6,576.30	5,944.00	17.64	19.37	118.40	-390.60	213.91	471.45	461.39	10.07	46.835		
5,600.00	5,579.66	6,555.54	5,944.00	17.83	19.27	139.12	-369.84	213.67	376.16	365.01	11.16	33.714		
5,700.00	5,671.57	6,516.54	5,944.00	17.98	19.08	144.16	-330.84	213.24	287.84	274.82	13.02	22.115		
5,800.00	5,754.35	6,460.72	5,944.00	18.10	18.85	142.40	-275.03	212.61	210.78	194.43	16.35	12.893		
5,900.00	5,824.96	6,390.14	5,944.00	18.23	18.58	135.03	-204.45	211.82	149.72	127.78	21.94	6.825		
6,000.00	5,880.81	6,307.39	5,944.00	18.37	18.34	121.51	-121.70	210.89	109.50	80.14	29.36	3.729		
6,100.00	5,919.85	6,213.38	5,941.73	18.55	18.16	102.71	-27.77	209.84	90.61	55.43	35.18	2.575		
6,166.68	5,935.79	6,150.76	5,932.16	18.71	18.08	87.56	34.08	209.14	86.91	50.32	36.59	2.375 SF		
6,200.00	5,940.63	6,120.50	5,924.89	18.79	18.04	79.95	63.44	208.81	87.82	51.58	36.24	2.423		
6,300.00	5,944.00	6,033.81	5,894.80	19.10	17.98	59.94	144.63	207.90	100.56	67.87	32.70	3.076		
6,400.00	5,944.00	5,957.99	5,857.76	19.49	17.93	44.21	210.71	207.16	132.52	103.80	28.73	4.613		
6,500.00	5,944.00	5,900.00	5,823.19	19.97	17.89	34.53	257.22	206.64	182.75	154.74	28.01	6.524		
6,600.00	5,944.00	5,841.60	5,783.36	20.54	17.85	27.16	299.89	206.16	245.53	217.60	27.92	8.793		
6,700.00	5,944.00	5,800.00	5,752.20	21.18	17.81	23.14	327.43	205.85	317.10	288.04	29.07	10.909		
6,800.00	5,944.00	5,761.95	5,721.86	21.88	17.78	20.17	350.37	205.59	394.72	364.75	29.96	13.173		
6,900.00	5,944.00	5,731.81	5,696.68	22.65	17.75	18.20	366.94	205.41	476.71	445.87	30.84	15.457		
7,000.00	5,944.00	5,700.00	5,669.12	23.47	17.72	16.43	382.81	205.23	562.03	530.65	31.37	17.914		
7,100.00	5,944.00	5,684.84	5,655.65	24.34	17.71	15.68	389.78	205.15	649.66	617.51	32.15	20.206		
7,200.00	5,944.00	5,666.33	5,638.95	25.26	17.69	14.83	397.75	205.06	739.28	706.64	32.63	22.653		
7,300.00	5,944.00	5,650.00	5,623.99	26.21	17.67	14.15	404.28	204.99	830.41	797.38	33.03	25.142		
7,400.00	5,944.00	5,650.00	5,623.99	27.20	17.67	14.15	404.28	204.99	923.03	889.47	33.56	27.507		
7,500.00	5,944.00	5,624.08	5,599.83	28.22	17.63	13.17	413.68	204.88	1,016.07	982.42	33.65	30.196		
7,600.00	5,944.00	5,600.00	5,577.00	29.27	17.60	12.36	421.32	204.80	1,110.45	1,076.70	33.75	32.903		
7,700.00	5,944.00	5,600.00	5,577.00	30.35	17.60	12.36	421.32	204.80	1,205.03	1,170.96	34.07	35.370		
7,800.00	5,944.00	5,600.00	5,577.00	31.45	17.60	12.36	421.32	204.80	1,300.42	1,266.09	34.33	37.879		
7,900.00	5,944.00	5,600.00	5,577.00	32.57	17.60	12.36	421.32	204.80	1,396.45	1,361.90	34.55	40.417		
8,000.00	5,944.00	5,580.10	5,557.88	33.70	17.57	11.75	426.84	204.74	1,492.50	1,457.89	34.60	43.130		

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

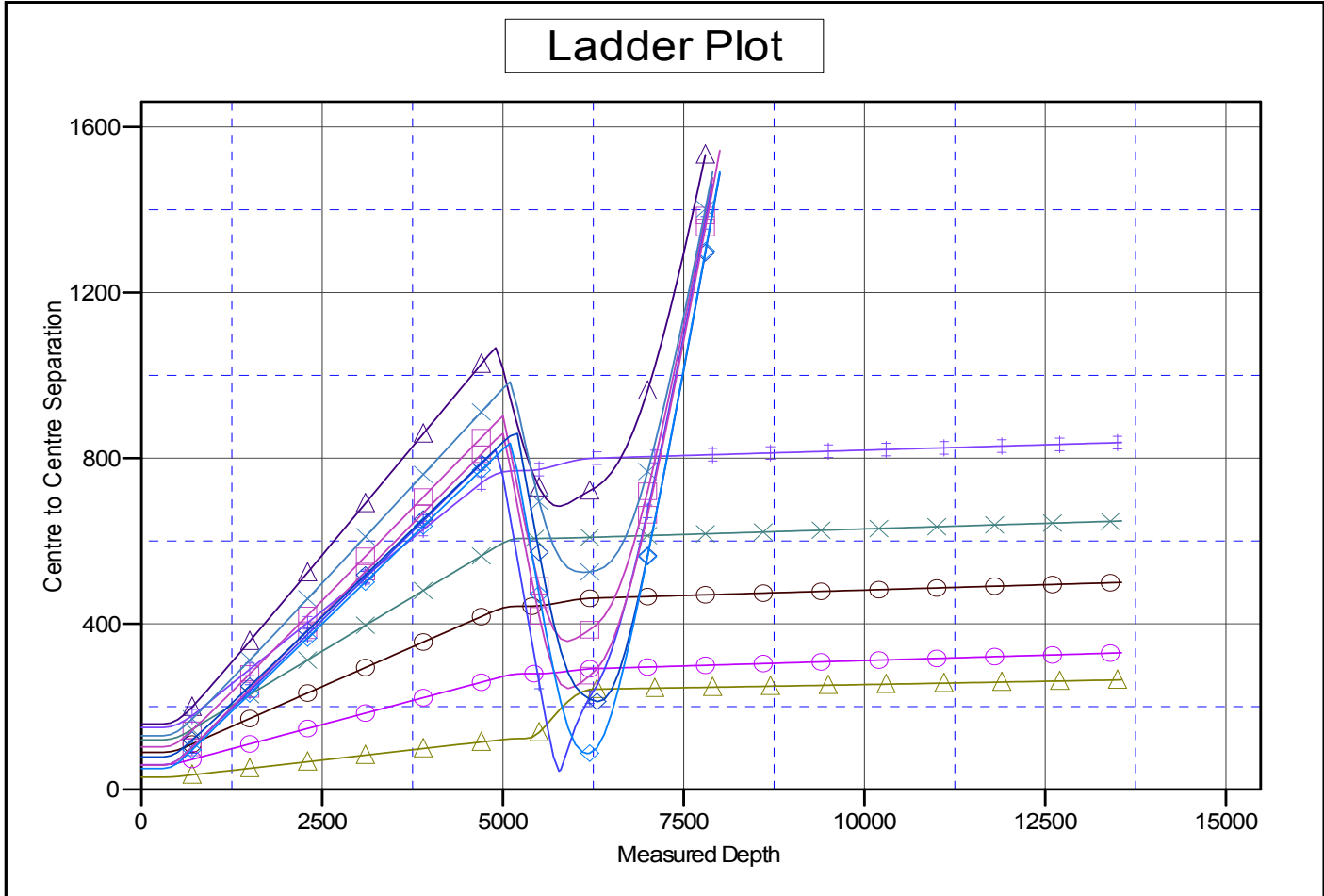


# WOG Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07H-0648
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4933.00usft
<b>Reference Site:</b>	Sec 7-T10N-R57W	<b>MD Reference:</b>	KBE @ 4933.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #07H-0648	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 4933.00usft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Horsetail #07H-0648  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 1.11°



### LEGEND

- + Horsetail #07H-0613, Hz, Design #1 V0
- o Horsetail #07H-0647, Hz, Design #1 V0
- Horsetail #07H-1816, Hz, Design #1 V0
- o Horsetail #07H-0614, Hz, Design #1 V0
- ▲ Horsetail #07H-1813, Hz, Design #1 V0
- x Horsetail #07H-1846, Hz, Design #1 V0
- ▲ Horsetail #07H-0615, Hz, APD V0
- Horsetail #07H-1814, Hz, Design #1 V0
- ◆ Horsetail #07H-1847, Hz, Design #1 V0
- x Horsetail #07H-0646, Hz, Design #1 V0
- + Horsetail #07H-1815, Hz, Design #1 V0
- ◆ Horsetail #07H-1848, Hz, Design #1 V0

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



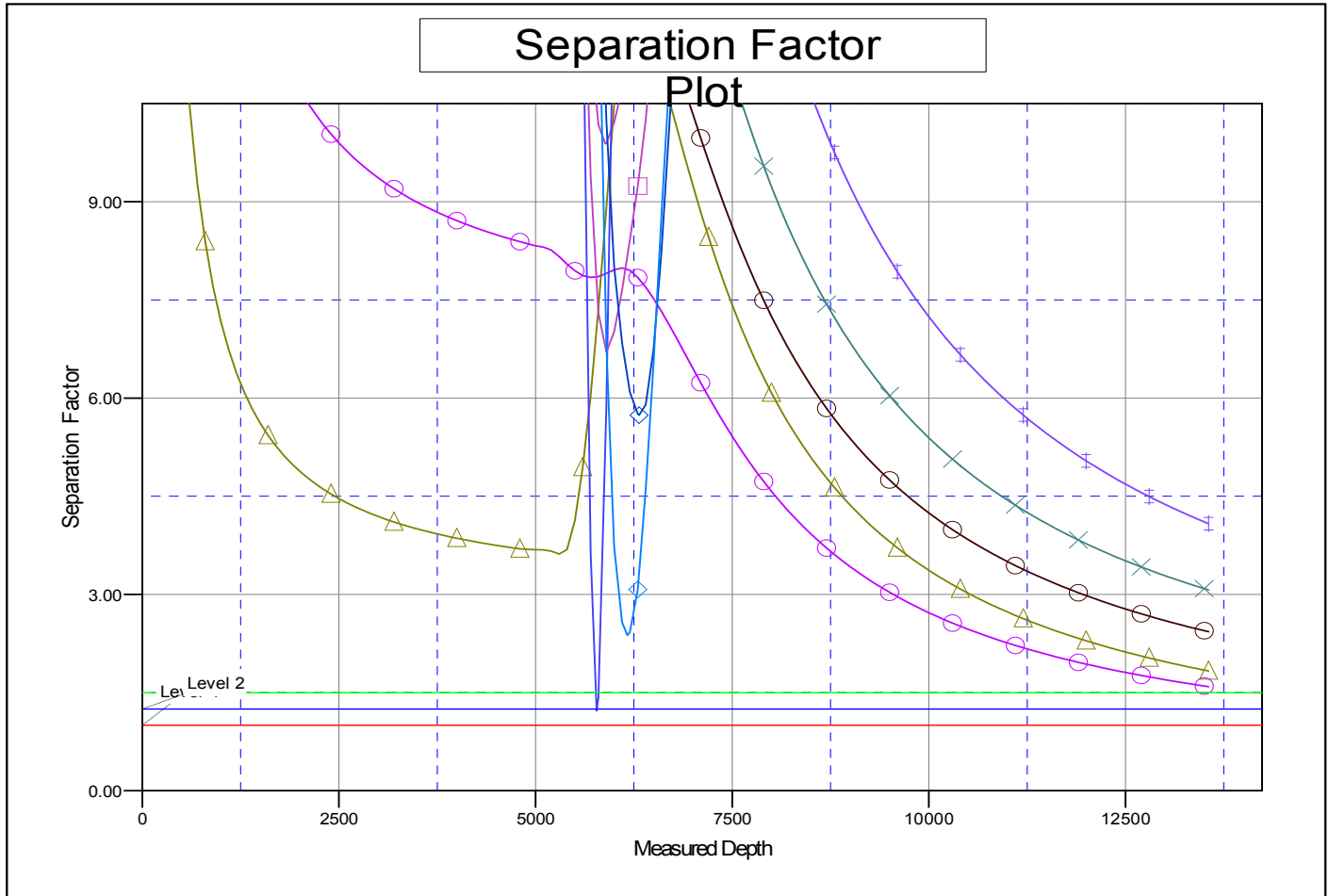
# WOG

## Anticollision Report

<b>Company:</b> Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b> Well Horsetail #07H-0648
<b>Project:</b> Weld County, CO	<b>TVD Reference:</b> KBE @ 4933.00usft
<b>Reference Site:</b> Sec 7-T10N-R57W	<b>MD Reference:</b> KBE @ 4933.00usft
<b>Site Error:</b> 0.00 usft	<b>North Reference:</b> True
<b>Reference Well:</b> Horsetail #07H-0648	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Well Error:</b> 0.00 usft	<b>Output errors are at:</b> 2.79 sigma
<b>Reference Wellbore:</b> Hz	<b>Database:</b> LandmarkEDM
<b>Reference Design:</b> APD	<b>Offset TVD Reference:</b> Offset Datum

Reference Depths are relative to KBE @ 4933.00usft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Horsetail #07H-0648  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 1.11°



### LEGEND

- |   |   |   |
|---|---|---|
| ✚ Horsetail #07H-0613, Hz, Design #1 V0 | ○ Horsetail #07H-0647, Hz, Design #1 V0 | ⊞ Horsetail #07H-1816, Hz, Design #1 V0 |
| ● Horsetail #07H-0614, Hz, Design #1 V0 | ▲ Horsetail #07H-1813, Hz, Design #1 V0 | ✚ Horsetail #07H-1846, Hz, Design #1 V0 |
| ▲ Horsetail #07H-0615, Hz, APD V0       | ⊞ Horsetail #07H-1814, Hz, Design #1 V0 | ◆ Horsetail #07H-1847, Hz, Design #1 V0 |
| ✚ Horsetail #07H-0646, Hz, Design #1 V0 | ✚ Horsetail #07H-1815, Hz, Design #1 V0 | ◆ Horsetail #07H-1848, Hz, Design #1 V0 |

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