



# **Extraction Oil & Gas**

**Weld Co., Co  
Sec.36-T06N-R66W  
Hiner 36NB-23W**

**Original Hole  
Rev 1**

## **Anticollision Risk Report**

**09 June, 2014**



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Rev 1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations Interval 1.00usft	<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 25,000.00usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Risk Settings</b>	
<b>Vertical Depth for Analysis:</b>	usft (Below TVD Reference Datum)
<b>Level of Acceptable Risk (1 in):</b>	
<b>Minimum Separation:</b>	0 usft

<b>Survey Tool Program</b>	<b>Date</b>	6/9/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	11,686.39	Rev 1 (Original Hole)	Pathfinder	Pathfinder MWD	

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (usft)</b>	<b>Offset Measured Depth (usft)</b>	<b>Distance Between Centres (usft)</b>	<b>Distance Between Ellipses (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Sec.36-T06N-R66W						
Flatiron 7-36 (Offset Well) - Wellbore #1 - Wellbore #1	8,967.66	6,846.00	33.12	-9.41	0.779	Level 1 , CC, ES, SF
Hiner 36C-17W - Original Hole - Original Hole	0.00	0.00	155.97			
Hiner 36C-17W - Original Hole - Original Hole	300.00	299.37	156.75	155.76	158.284	ES
Hiner 36C-17W - Original Hole - Original Hole	11,686.39	12,026.19	2,167.20	2,096.25	30.543	SF
Hiner 36C-20W - Original Hole - Rev 0	600.00	600.00	77.98	75.94	38.253	CC, ES
Hiner 36C-20W - Original Hole - Rev 0	11,686.39	11,980.78	1,030.28	959.77	14.613	SF
Hiner 36C-22W - Original Hole - Rev 0	600.00	600.00	26.23	24.19	12.868	CC, ES
Hiner 36C-22W - Original Hole - Rev 0	11,686.39	12,048.04	439.21	375.95	6.943	SF
Hiner 36C-24W - Original Hole - Rev 1	500.00	500.00	25.87	24.18	15.313	CC, ES
Hiner 36C-24W - Original Hole - Rev 1	11,686.39	12,095.09	604.71	540.40	9.403	SF
Hiner 36NB-19W - Original Hole - Rev 0	600.00	600.00	104.22	102.18	51.123	CC, ES
Hiner 36NB-19W - Original Hole - Rev 0	11,686.39	11,684.05	1,317.02	1,245.59	18.437	SF
Hiner 36NB-21W - Original Hole - Rev 0	600.00	600.00	52.10	50.06	25.557	CC, ES
Hiner 36NB-21W - Original Hole - Rev 0	11,686.39	11,724.68	657.96	586.39	9.193	SF
Hiner 36NC-18W - Original Hole - Rev 1	600.00	600.00	130.09	128.05	63.814	CC, ES
Hiner 36NC-18W - Original Hole - Rev 1	11,686.39	11,858.69	1,656.06	1,584.63	23.185	SF

<b>Offset Design</b>													<b>Offset Site Error:</b>	0.00 usft
Sec.36-T06N-R66W - Flatiron 7-36 (Offset Well) - Wellbore #1 - Wellbore #1													<b>Offset Well Error:</b>	0.00 usft
<b>Survey Program:</b>	7285-INC_ONLY<10													
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>		<b>Distance</b>				<b>Minimum Separation</b>	<b>Separation Factor</b>	<b>Risked Separation Factor</b>	<b>Probability of Collision</b>	<b>Warning</b>		
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference (usft)</b>	<b>Offset (usft)</b>	<b>Highside Toolface (°)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>						
0.00	0.00	0.00	0.00	0.00	0.00	-132.36	1,612.31							
100.00	100.00	98.00	98.00	0.15	0.34	-132.36	1,612.30	1,611.82	0.49	3,321.362	0			
200.00	200.00	198.00	198.00	0.32	0.68	-132.36	1,612.30	1,611.30	1.01	1,603.151	0			
300.00	300.00	298.00	298.00	0.50	1.03	-132.36	1,612.30	1,610.78	1.53	1,056.567	0			
400.00	400.00	398.00	398.00	0.67	1.38	-132.36	1,612.30	1,610.26	2.05	787.928	0			
500.00	500.00	498.00	498.00	0.84	1.72	-132.36	1,612.30	1,609.74	2.57	628.203	0			

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



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## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Flatiron 7-36 (Offset Well) - Wellbore #1 - Wellbore #1		Offset Site Error: 0.00 usft	
Survey Program: 7285-INC_ONLY<10															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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
600.00	600.00	598.00	598.00	1.02	2.07	-132.36	1,612.30	1,609.22	3.09	522.321	0					
700.00	699.98	697.98	697.98	1.19	2.41	87.44	1,612.23	1,608.62	3.61	446.779	0					
800.00	799.84	797.84	797.84	1.37	2.76	87.63	1,612.00	1,607.87	4.13	390.143	0					
900.00	899.45	897.45	897.45	1.55	3.10	87.95	1,611.66	1,607.01	4.66	346.027	0					
1,000.00	998.70	996.70	996.70	1.73	3.45	88.38	1,611.27	1,606.08	5.19	310.634	0					
1,100.00	1,097.47	1,095.47	1,095.47	1.91	3.79	88.94	1,610.90	1,605.18	5.72	281.571	0					
1,200.00	1,195.62	1,193.62	1,193.62	2.10	4.13	89.61	1,610.65	1,604.39	6.26	257.258	0					
1,251.56	1,245.96	1,243.96	1,243.96	2.20	4.30	90.00	1,610.62	1,604.07	6.55	245.864	0					
1,300.00	1,293.06	1,291.06	1,291.06	2.30	4.46	90.39	1,610.66	1,603.85	6.81	236.614	0					
1,400.00	1,389.64	1,387.64	1,387.64	2.50	4.80	91.27	1,611.05	1,603.68	7.36	218.875	0					
1,439.37	1,427.41	1,425.41	1,425.41	2.59	4.93	91.64	1,611.34	1,603.76	7.58	212.597	0					
1,500.00	1,485.46	1,483.46	1,483.46	2.71	5.13	92.24	1,611.96	1,604.04	7.92	203.607	0					
1,600.00	1,581.20	1,579.20	1,579.20	2.93	5.46	93.22	1,613.40	1,604.92	8.48	190.359	0					
1,700.00	1,676.93	1,674.93	1,674.93	3.14	5.79	94.20	1,615.35	1,606.32	9.04	178.782	0					
1,800.00	1,772.67	1,770.67	1,770.67	3.36	6.12	95.18	1,617.82	1,608.22	9.60	168.597	0					
1,900.00	1,868.41	1,866.41	1,866.41	3.58	6.45	96.15	1,620.79	1,610.64	10.16	159.583	0					
2,000.00	1,964.15	1,962.15	1,962.15	3.80	6.78	97.12	1,624.28	1,613.56	10.72	151.563	0					
2,100.00	2,059.89	2,057.89	2,057.89	4.03	7.11	98.09	1,628.27	1,616.99	11.28	144.391	0					
2,200.00	2,155.63	2,153.63	2,153.63	4.25	7.45	99.05	1,632.76	1,620.92	11.84	137.949	0					
2,300.00	2,251.36	2,249.36	2,249.36	4.47	7.78	100.01	1,637.75	1,625.35	12.39	132.138	0					
2,400.00	2,347.10	2,345.10	2,345.10	4.70	8.11	100.96	1,643.23	1,630.28	12.95	126.878	0					
2,500.00	2,442.84	2,440.84	2,440.84	4.93	8.44	101.90	1,649.20	1,635.69	13.51	122.100	0					
2,600.00	2,538.58	2,536.58	2,536.58	5.15	8.77	102.84	1,655.65	1,641.59	14.06	117.745	0					
2,700.00	2,634.32	2,632.32	2,632.32	5.38	9.10	103.77	1,662.58	1,647.96	14.61	113.766	0					
2,800.00	2,730.06	2,728.06	2,728.06	5.61	9.43	104.70	1,669.98	1,654.81	15.17	110.120	0					
2,900.00	2,825.79	2,823.79	2,823.79	5.83	9.76	105.61	1,677.84	1,662.13	15.71	106.771	0					
3,000.00	2,921.53	2,919.53	2,919.53	6.06	10.09	106.52	1,686.16	1,669.90	16.26	103.688	0					
3,100.00	3,017.27	3,015.27	3,015.27	6.29	10.43	107.42	1,694.93	1,678.13	16.81	100.844	0					
3,200.00	3,113.01	3,111.01	3,111.01	6.52	10.76	108.31	1,704.15	1,686.80	17.35	98.216	0					
3,300.00	3,208.75	3,206.75	3,206.75	6.75	11.09	109.20	1,713.81	1,695.91	17.89	95.782	0					
3,400.00	3,304.49	3,302.49	3,302.49	6.98	11.42	110.07	1,723.89	1,705.46	18.43	93.524	0					
3,500.00	3,400.22	3,398.22	3,398.22	7.21	11.75	110.93	1,734.40	1,715.43	18.97	91.427	0					
3,600.00	3,495.96	3,493.96	3,493.96	7.44	12.08	111.78	1,745.32	1,725.81	19.51	89.475	0					
3,700.00	3,591.70	3,589.70	3,589.70	7.67	12.41	112.63	1,756.65	1,736.61	20.04	87.658	0					
3,800.00	3,687.44	3,685.44	3,685.44	7.90	12.74	113.46	1,768.37	1,747.80	20.57	85.962	0					
3,900.00	3,783.18	3,781.18	3,781.18	8.13	13.07	114.28	1,780.49	1,759.39	21.10	84.378	0					
4,000.00	3,878.92	3,876.92	3,876.92	8.36	13.40	115.10	1,793.00	1,771.37	21.63	82.897	0					
4,100.00	3,974.65	3,972.65	3,972.65	8.59	13.74	115.90	1,805.87	1,783.72	22.15	81.511	0					
4,200.00	4,070.39	4,068.39	4,068.39	8.82	14.07	116.69	1,819.12	1,796.44	22.68	80.212	0					
4,300.00	4,166.13	4,164.13	4,164.13	9.05	14.40	117.47	1,832.72	1,809.52	23.20	78.994	0					
4,400.00	4,261.87	4,259.87	4,259.87	9.28	14.73	118.24	1,846.68	1,822.96	23.72	77.851	0					
4,500.00	4,357.61	4,355.61	4,355.61	9.51	15.06	118.99	1,860.98	1,836.74	24.24	76.776	0					
4,600.00	4,453.35	4,451.35	4,451.35	9.74	15.39	119.74	1,875.62	1,850.86	24.76	75.766	0					
4,700.00	4,549.08	4,547.08	4,547.08	9.97	15.72	120.48	1,890.58	1,865.31	25.27	74.815	0					
4,800.00	4,644.82	4,642.82	4,642.82	10.20	16.05	121.20	1,905.86	1,880.08	25.78	73.920	0					
4,900.00	4,740.56	4,738.56	4,738.56	10.43	16.38	121.92	1,921.46	1,895.16	26.29	73.076	0					
5,000.00	4,836.30	4,834.30	4,834.30	10.66	16.71	122.62	1,937.36	1,910.56	26.80	72.280	0					
5,100.00	4,932.04	4,930.04	4,930.04	10.89	17.05	123.31	1,953.56	1,926.25	27.31	71.529	0					
5,200.00	5,027.78	5,025.78	5,025.78	11.12	17.38	123.99	1,970.05	1,942.23	27.82	70.811	0					
5,300.00	5,123.51	5,121.51	5,121.51	11.35	17.71	124.66	1,986.82	1,958.48	28.34	70.101	0					
5,400.00	5,219.25	5,217.25	5,217.25	11.59	18.04	125.32	2,003.87	1,975.01	28.86	69.428	0					
5,500.00	5,314.99	5,312.99	5,312.99	11.82	18.37	125.97	2,021.19	1,991.80	29.38	68.791	0					
5,600.00	5,410.73	5,408.73	5,408.73	12.05	18.70	126.61	2,038.77	2,008.87	29.90	68.186	0					
5,633.84	5,443.13	5,441.13	5,441.13	12.13	18.81	126.83	2,044.77	2,014.70	30.08	67.989	0					

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



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## Anticollision Risk Report

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<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Flatiron 7-36 (Offset Well) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.00 usft
Survey Program: 7285-INC_ONLY<10													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision					
5,700.00	5,506.68	5,504.68	5,504.68	12.27	19.03	127.41	2,056.14	2,025.69	30.45	67.521	0						
5,800.00	5,603.51	5,601.51	5,601.51	12.49	19.37	128.20	2,071.76	2,040.68	31.08	66.664	0						
5,900.00	5,701.15	5,699.15	5,699.15	12.69	19.70	128.87	2,085.40	2,053.68	31.73	65.728	0						
6,000.00	5,799.48	5,797.48	5,797.48	12.88	20.04	129.43	2,096.99	2,064.61	32.38	64.769	0						
6,100.00	5,898.38	5,896.38	5,896.38	13.06	20.39	129.89	2,106.44	2,073.42	33.02	63.791	0						
6,200.00	5,997.74	5,995.74	5,995.74	13.23	20.73	130.23	2,113.72	2,080.06	33.66	62.797	0						
6,300.00	6,097.43	6,095.43	6,095.43	13.40	21.07	130.47	2,118.77	2,084.48	34.29	61.789	0						
6,400.00	6,197.34	6,195.34	6,195.34	13.55	21.42	130.60	2,121.56	2,086.65	34.91	60.769	0						
6,473.21	6,270.54	6,268.54	6,268.54	13.65	21.67	-89.11	2,122.17	2,087.95	34.22	62.017	0						
6,500.00	6,297.33	6,295.33	6,295.33	13.69	21.77	-89.11	2,122.17	2,087.82	34.35	61.774	0						
6,573.21	6,370.54	6,368.54	6,368.54	13.80	22.02	-89.11	2,122.17	2,087.45	34.72	61.119	0						
6,575.00	6,372.33	6,370.33	6,370.33	13.80	22.02	0.89	2,122.17	2,086.28	35.89	59.133	0						
6,600.00	6,397.31	6,395.31	6,395.31	13.83	22.11	0.90	2,121.42	2,085.19	36.23	58.554	0						
6,625.00	6,422.23	6,420.23	6,420.23	13.86	22.20	0.90	2,119.37	2,082.88	36.49	58.087	0						
6,650.00	6,447.00	6,445.00	6,445.00	13.89	22.28	0.91	2,116.01	2,079.35	36.66	57.728	0						
6,675.00	6,471.56	6,469.56	6,469.56	13.92	22.37	0.92	2,111.36	2,074.63	36.74	57.473	0						
6,700.00	6,495.84	6,493.84	6,493.84	13.94	22.45	0.93	2,105.44	2,068.71	36.73	57.322	0						
6,725.00	6,519.78	6,517.78	6,517.78	13.96	22.53	0.95	2,098.25	2,061.61	36.64	57.274	0						
6,750.00	6,543.32	6,541.32	6,541.32	13.98	22.62	0.97	2,089.82	2,053.36	36.45	57.328	0						
6,775.00	6,566.37	6,564.37	6,564.37	14.00	22.70	1.00	2,080.17	2,043.98	36.19	57.487	0						
6,800.00	6,588.90	6,586.90	6,586.90	14.02	22.77	1.03	2,069.32	2,033.49	35.83	57.752	0						
6,825.00	6,610.82	6,608.82	6,608.82	14.03	22.85	1.07	2,057.31	2,021.92	35.39	58.127	0						
6,850.00	6,632.08	6,630.08	6,630.08	14.05	22.92	1.11	2,044.17	2,009.30	34.87	58.615	0						
6,875.00	6,652.63	6,650.63	6,650.63	14.06	22.99	1.16	2,029.94	1,995.66	34.28	59.221	0						
6,900.00	6,672.41	6,670.41	6,670.41	14.07	23.06	1.22	2,014.65	1,981.05	33.60	59.952	0						
6,925.00	6,691.35	6,689.35	6,689.35	14.08	23.13	1.28	1,998.35	1,965.49	32.86	60.814	0						
6,950.00	6,709.42	6,707.42	6,707.42	14.08	23.19	1.36	1,981.08	1,949.03	32.05	61.814	0						
6,975.00	6,726.56	6,724.56	6,724.56	14.09	23.25	1.45	1,962.88	1,931.71	31.18	62.962	0						
7,000.00	6,742.72	6,740.72	6,740.72	14.10	23.31	1.56	1,943.82	1,913.57	30.25	64.265	0						
7,025.00	6,757.87	6,755.87	6,755.87	14.11	23.36	1.69	1,923.93	1,894.66	29.27	65.734	0						
7,050.00	6,771.95	6,769.95	6,769.95	14.11	23.41	1.84	1,903.28	1,875.03	28.25	67.376	0						
7,075.00	6,784.93	6,782.93	6,782.93	14.12	23.45	2.03	1,881.92	1,854.73	27.20	69.198	0						
7,100.00	6,796.77	6,794.77	6,794.77	14.13	23.49	2.26	1,859.91	1,833.79	26.12	71.205	0						
7,125.00	6,807.45	6,805.45	6,805.45	14.14	23.53	2.56	1,837.31	1,812.28	25.03	73.393	0						
7,150.00	6,816.93	6,814.93	6,814.93	14.15	23.56	2.95	1,814.19	1,790.24	23.95	75.744	0						
7,175.00	6,825.19	6,823.19	6,823.19	14.16	23.59	3.47	1,790.60	1,767.70	22.89	78.212	0						
7,200.00	6,832.20	6,830.20	6,830.20	14.17	23.61	4.20	1,766.61	1,744.71	21.89	80.686	0						
7,225.00	6,837.94	6,835.94	6,835.94	14.18	23.63	5.32	1,742.28	1,721.27	21.02	82.896	0						
7,250.00	6,842.40	6,840.40	6,840.40	14.20	23.65	7.20	1,717.69	1,697.28	20.41	84.146	0						
7,275.00	6,845.57	6,843.57	6,843.57	14.21	23.66	10.99	1,692.90	1,672.37	20.53	82.463	0						
7,300.00	6,847.44	6,845.44	6,845.44	14.23	23.67	22.23	1,667.98	1,644.60	23.38	71.342	0						
7,323.21	6,848.00	6,846.00	6,846.00	14.25	23.67	90.00	1,644.78	1,607.91	36.87	44.607	0						
7,400.00	6,848.00	6,846.00	6,846.00	14.32	23.67	90.00	1,568.01	1,531.04	36.97	42.416	0						
7,500.00	6,848.00	6,846.00	6,846.00	14.45	23.67	90.00	1,468.03	1,430.91	37.12	39.546	0						
7,600.00	6,848.00	6,846.00	6,846.00	14.60	23.67	90.00	1,368.06	1,330.75	37.31	36.666	0						
7,700.00	6,848.00	6,846.00	6,846.00	14.79	23.67	90.00	1,268.09	1,230.56	37.53	33.785	0						
7,800.00	6,848.00	6,846.00	6,846.00	15.01	23.67	90.00	1,168.13	1,130.34	37.79	30.912	0						
7,900.00	6,848.00	6,846.00	6,846.00	15.27	23.67	90.00	1,068.17	1,030.10	38.07	28.056	0						
8,000.00	6,848.00	6,846.00	6,846.00	15.56	23.67	90.00	968.23	929.84	38.39	25.224	0						
8,100.00	6,848.00	6,846.00	6,846.00	15.88	23.67	90.00	868.29	829.57	38.72	22.422	0						
8,200.00	6,848.00	6,846.00	6,846.00	16.22	23.67	90.00	768.37	729.29	39.09	19.658	0						
8,300.00	6,848.00	6,846.00	6,846.00	16.59	23.67	90.00	668.48	629.01	39.47	16.935	0						
8,400.00	6,848.00	6,846.00	6,846.00	16.98	23.67	90.00	568.62	528.74	39.88	14.258	0						
8,500.00	6,848.00	6,846.00	6,846.00	17.39	23.67	90.00	468.83	428.52	40.31	11.631	0						

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



**Schlumberger**  
Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Sec.36-T06N-R66W - Flatiron 7-36 (Offset Well) - Wellbore #1 - Wellbore #1													Offset Site Error:      0.00 usft	
Survey Program:      7285-INC_ONLY<10													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision		
8,600.00	6,848.00	6,846.00	6,846.00	17.82	23.67	90.00	369.15	328.39	40.76	9.058	0			
8,700.00	6,848.00	6,846.00	6,846.00	18.26	23.67	90.00	269.70	228.48	41.22	6.543	0			
8,800.00	6,848.00	6,846.00	6,846.00	18.73	23.67	90.00	170.90	129.20	41.70	4.099	0			
8,900.00	6,848.00	6,846.00	6,846.00	19.20	23.67	90.00	75.33	33.14	42.19	1.786	0			
8,967.66	6,848.00	6,846.00	6,846.00	19.54	23.67	90.00	33.12	-9.41	42.53	0.779	0		Level 1 , CC, ES, SF Level 2	
9,000.00	6,848.00	6,846.00	6,846.00	19.69	23.67	90.00	46.29	3.60	42.70	1.084	0			
9,100.00	6,848.00	6,846.00	6,846.00	20.20	23.67	90.00	136.42	93.21	43.21	3.157	0			
9,200.00	6,848.00	6,846.00	6,846.00	20.71	23.67	90.00	234.69	190.95	43.74	5.365	0			
9,300.00	6,848.00	6,846.00	6,846.00	21.24	23.67	90.00	333.99	289.70	44.28	7.542	0			
9,400.00	6,848.00	6,846.00	6,846.00	21.77	23.67	90.00	433.61	388.78	44.83	9.672	0			
9,500.00	6,848.00	6,846.00	6,846.00	22.32	23.67	90.00	533.37	487.98	45.39	11.751	0			
9,600.00	6,848.00	6,846.00	6,846.00	22.87	23.67	90.00	633.21	587.25	45.96	13.778	0			
9,700.00	6,848.00	6,846.00	6,846.00	23.43	23.67	90.00	733.09	686.56	46.53	15.755	0			
9,800.00	6,848.00	6,846.00	6,846.00	24.00	23.67	90.00	833.00	785.89	47.11	17.681	0			
9,900.00	6,848.00	6,846.00	6,846.00	24.58	23.67	90.00	932.93	885.23	47.70	19.558	0			
10,000.00	6,848.00	6,846.00	6,846.00	25.16	23.67	90.00	1,032.87	984.58	48.29	21.387	0			
10,100.00	6,848.00	6,846.00	6,846.00	25.75	23.67	90.00	1,132.82	1,083.93	48.89	23.169	0			
10,200.00	6,848.00	6,846.00	6,846.00	26.34	23.67	90.00	1,232.79	1,183.29	49.50	24.905	0			
10,300.00	6,848.00	6,846.00	6,846.00	26.94	23.67	90.00	1,332.75	1,282.64	50.11	26.597	0			
10,400.00	6,848.00	6,846.00	6,846.00	27.54	23.67	90.00	1,432.72	1,382.00	50.72	28.246	0			
10,500.00	6,848.00	6,846.00	6,846.00	28.15	23.67	90.00	1,532.70	1,481.36	51.34	29.853	0			
10,600.00	6,848.00	6,846.00	6,846.00	28.76	23.67	90.00	1,632.68	1,580.71	51.96	31.419	0			
10,700.00	6,848.00	6,846.00	6,846.00	29.38	23.67	90.00	1,732.66	1,680.07	52.59	32.946	0			
10,800.00	6,848.00	6,846.00	6,846.00	30.00	23.67	90.00	1,832.64	1,779.42	53.22	34.435	0			
10,900.00	6,848.00	6,846.00	6,846.00	30.62	23.67	90.00	1,932.62	1,878.77	53.85	35.887	0			
11,000.00	6,848.00	6,846.00	6,846.00	31.25	23.67	90.00	2,032.61	1,978.12	54.49	37.303	0			
11,100.00	6,848.00	6,846.00	6,846.00	31.88	23.67	90.00	2,132.60	2,077.47	55.13	38.685	0			
11,200.00	6,848.00	6,846.00	6,846.00	32.52	23.67	90.00	2,232.59	2,176.82	55.77	40.033	0			
11,300.00	6,848.00	6,846.00	6,846.00	33.15	23.67	90.00	2,332.58	2,276.16	56.41	41.348	0			
11,400.00	6,848.00	6,846.00	6,846.00	33.79	23.67	90.00	2,432.57	2,375.51	57.06	42.632	0			
11,500.00	6,848.00	6,846.00	6,846.00	34.43	23.67	90.00	2,532.56	2,474.85	57.71	43.885	0			
11,600.00	6,848.00	6,846.00	6,846.00	35.08	23.67	90.00	2,632.55	2,574.19	58.36	45.109	0			
11,686.39	6,848.00	6,846.00	6,846.00	35.63	23.67	90.00	2,718.93	2,660.00	58.92	46.143	0			

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36C-17W - Original Hole - Original Hole		Offset Site Error:	0.00 usft
Survey Program: 127-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
0.00	0.00	0.00	0.00	0.00	0.00	-1.83	155.97									
100.00	100.00	99.61	99.61	0.15	0.15	-1.91	156.10	155.80	0.30	522.807	0		ES			
200.00	200.00	199.52	199.52	0.32	0.32	-2.07	156.41	155.76	0.64	243.815	0					
300.00	300.00	299.37	299.37	0.50	0.49	-2.18	156.75	155.76	0.99	158.284	0					
400.00	400.00	399.00	399.00	0.67	0.67	-2.28	157.28	155.95	1.34	117.485	0					
500.00	500.00	499.51	499.50	0.84	0.84	-2.34	157.77	156.08	1.69	93.424	0					
600.00	600.00	599.58	599.58	1.02	1.02	-2.33	158.07	156.04	2.04	77.567	0					
700.00	699.98	700.13	700.12	1.19	1.19	-142.92	159.59	157.20	2.39	66.849	0					
800.00	799.84	799.48	799.47	1.37	1.37	-143.97	163.69	160.96	2.73	59.882	0					
900.00	899.45	897.18	897.14	1.55	1.54	-144.97	171.55	168.48	3.08	55.769	0					
1,000.00	998.70	997.54	997.27	1.73	1.71	-144.95	182.84	179.42	3.42	53.410	0					
1,100.00	1,097.47	1,093.29	1,092.57	1.91	1.88	-144.66	197.06	193.30	3.76	52.347	0					
1,200.00	1,195.62	1,187.64	1,185.83	2.10	2.06	-143.50	216.12	212.01	4.11	52.595	0					
1,300.00	1,293.06	1,276.61	1,273.40	2.30	2.22	-142.50	240.41	235.96	4.44	54.097	0					
1,400.00	1,389.64	1,368.64	1,363.79	2.50	2.39	-142.00	270.05	265.27	4.79	56.430	0					
1,439.37	1,427.41	1,401.75	1,396.25	2.59	2.46	-141.87	282.80	277.89	4.92	57.525	0					
1,500.00	1,485.46	1,447.64	1,440.89	2.71	2.55	-141.72	304.36	299.24	5.12	59.438	0					
1,600.00	1,581.20	1,532.49	1,522.45	2.93	2.72	-141.05	343.38	337.91	5.48	62.695	0					
1,700.00	1,676.93	1,618.77	1,605.44	3.14	2.89	-140.63	383.21	377.37	5.84	65.635	0					
1,800.00	1,772.67	1,702.71	1,685.63	3.36	3.07	-140.15	424.96	418.76	6.20	68.560	0					
1,900.00	1,868.41	1,788.53	1,767.52	3.58	3.25	-139.80	467.77	461.21	6.56	71.280	0					
2,000.00	1,964.15	1,882.31	1,856.95	3.80	3.46	-139.55	511.31	504.37	6.94	73.643	0					
2,100.00	2,059.89	1,985.54	1,955.75	4.03	3.68	-139.21	552.45	545.11	7.34	75.218	0					
2,200.00	2,155.63	2,078.59	2,045.06	4.25	3.88	-139.00	592.88	585.15	7.73	76.728	0					
2,300.00	2,251.36	2,172.86	2,135.74	4.47	4.08	-138.89	633.10	624.99	8.11	78.052	0					
2,400.00	2,347.10	2,276.28	2,235.69	4.70	4.30	-138.91	672.29	663.78	8.51	78.989	0					
2,500.00	2,442.84	2,381.74	2,338.23	4.93	4.52	-139.06	709.64	700.73	8.91	79.623	0					
2,600.00	2,538.58	2,471.98	2,426.27	5.15	4.71	-139.25	746.16	736.87	9.29	80.343	0					
2,700.00	2,634.32	2,565.99	2,517.33	5.38	4.91	-139.20	783.26	773.58	9.68	80.934	0					
2,800.00	2,730.06	2,662.62	2,610.08	5.61	5.13	-138.82	819.86	809.78	10.08	81.334	0					
2,900.00	2,825.79	2,734.27	2,678.65	5.83	5.29	-138.53	857.36	846.93	10.43	82.181	0					
3,000.00	2,921.53	2,818.07	2,758.69	6.06	5.48	-138.26	896.82	886.01	10.81	82.976	0					
3,100.00	3,017.27	2,910.62	2,847.38	6.29	5.68	-138.08	936.44	925.24	11.20	83.627	0					
3,200.00	3,113.01	2,997.70	2,931.12	6.52	5.88	-138.02	976.18	964.61	11.57	84.337	0					
3,300.00	3,208.75	3,096.29	3,026.09	6.75	6.09	-138.00	1,015.97	1,004.00	11.97	84.857	0					
3,400.00	3,304.49	3,200.42	3,126.93	6.98	6.32	-138.10	1,054.87	1,042.49	12.38	85.235	0					
3,500.00	3,400.22	3,315.12	3,238.34	7.21	6.56	-138.21	1,092.35	1,079.54	12.80	85.314	0					
3,600.00	3,495.96	3,416.45	3,336.28	7.44	6.79	-138.09	1,128.17	1,114.96	13.22	85.364	0					
3,700.00	3,591.70	3,504.16	3,420.59	7.67	6.98	-137.89	1,164.11	1,150.51	13.60	85.582	0					
3,800.00	3,687.44	3,605.06	3,518.11	7.90	7.20	-137.79	1,200.15	1,186.14	14.01	85.680	0					
3,900.00	3,783.18	3,672.03	3,583.04	8.13	7.35	-137.80	1,236.74	1,222.39	14.35	86.198	0					
4,000.00	3,878.92	3,743.41	3,651.75	8.36	7.51	-137.74	1,275.19	1,260.49	14.70	86.746	0					
4,100.00	3,974.65	3,815.36	3,720.43	8.59	7.68	-137.60	1,315.03	1,299.97	15.06	87.335	0					
4,200.00	4,070.39	3,885.15	3,786.60	8.82	7.85	-137.42	1,356.31	1,340.90	15.41	88.004	0					
4,300.00	4,166.13	3,955.52	3,852.81	9.05	8.02	-137.20	1,399.05	1,383.28	15.77	88.717	0					
4,400.00	4,261.87	4,050.09	3,941.85	9.28	8.24	-136.96	1,442.35	1,426.17	16.17	89.179	0					
4,500.00	4,357.61	4,201.54	4,086.39	9.51	8.59	-136.84	1,484.20	1,467.52	16.68	88.985	0					
4,600.00	4,453.35	4,309.51	4,190.99	9.74	8.82	-136.95	1,522.99	1,505.90	17.09	89.108	0					
4,700.00	4,549.08	4,403.47	4,282.33	9.97	9.02	-137.09	1,561.05	1,543.57	17.48	89.320	0					
4,800.00	4,644.82	4,476.06	4,352.65	10.20	9.18	-137.15	1,599.90	1,582.08	17.83	89.745	0					
4,900.00	4,740.56	4,553.89	4,427.20	10.43	9.36	-137.09	1,639.76	1,621.56	18.20	90.113	0					
5,000.00	4,836.30	4,672.66	4,540.23	10.66	9.64	-136.87	1,679.45	1,660.80	18.65	90.042	0					
5,100.00	4,932.04	4,799.00	4,661.60	10.89	9.92	-136.74	1,716.84	1,697.73	19.12	89.806	0					
5,200.00	5,027.78	4,884.00	4,743.90	11.12	10.11	-136.76	1,753.91	1,734.42	19.49	90.002	0					

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36C-17W - Original Hole - Original Hole		Offset Site Error: 0.00 usft	
Survey Program: 127-Pathfinder														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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
5,300.00	5,123.51	4,948.78	4,806.67	11.35	10.25	-136.81	1,792.08	1,772.26	19.82	90.411	0					
5,400.00	5,219.25	5,020.32	4,875.69	11.59	10.41	-136.83	1,831.36	1,811.18	20.17	90.779	0					
5,500.00	5,314.99	5,093.04	4,945.18	11.82	10.58	-136.76	1,871.62	1,851.09	20.53	91.153	0					
5,600.00	5,410.73	5,193.68	5,040.95	12.05	10.82	-136.64	1,912.53	1,891.58	20.95	91.302	0					
5,633.84	5,443.13	5,247.21	5,092.26	12.13	10.94	-136.61	1,925.99	1,904.87	21.12	91.177	0					
5,700.00	5,506.68	5,340.54	5,182.38	12.27	11.14	-136.97	1,950.71	1,929.22	21.50	90.743	0					
5,800.00	5,603.51	5,430.51	5,269.52	12.49	11.34	-137.43	1,985.56	1,963.61	21.96	90.435	0					
5,900.00	5,701.15	5,521.55	5,357.53	12.69	11.54	-137.77	2,018.54	1,996.14	22.41	90.087	0					
6,000.00	5,799.48	5,628.65	5,460.71	12.88	11.78	-137.91	2,048.54	2,025.65	22.89	89.497	0					
6,100.00	5,898.38	5,787.96	5,613.68	13.06	12.14	-137.64	2,075.06	2,051.60	23.47	88.426	0					
6,200.00	5,997.74	5,951.66	5,773.66	13.23	12.47	-137.47	2,095.17	2,071.17	24.00	87.294	0					
6,300.00	6,097.43	6,111.39	5,931.37	13.40	12.77	-137.33	2,109.73	2,085.24	24.49	86.158	0					
6,400.00	6,197.34	6,232.52	6,051.58	13.55	12.99	-137.26	2,120.80	2,095.92	24.87	85.263	0					
6,473.21	6,270.54	6,336.56	6,155.04	13.65	13.17	3.15	2,125.95	2,100.97	24.98	85.098	0					
6,500.00	6,297.33	6,409.75	6,228.04	13.69	13.28	3.26	2,127.11	2,101.97	25.14	84.598	0					
6,573.21	6,370.54	6,598.64	6,416.87	13.80	13.56	3.30	2,126.48	2,100.93	25.55	83.226	0					
6,575.00	6,372.33	6,600.07	6,418.31	13.80	13.56	93.30	2,126.44	2,100.70	25.74	82.622	0					
6,600.00	6,397.31	6,620.13	6,438.36	13.83	13.59	93.37	2,125.97	2,100.17	25.80	82.393	0					
6,625.00	6,422.23	6,640.14	6,458.36	13.86	13.62	93.45	2,125.64	2,099.77	25.86	82.183	0					
6,650.00	6,447.00	6,660.05	6,478.27	13.89	13.64	93.53	2,125.44	2,099.52	25.92	81.995	0					
6,668.93	6,465.61	6,674.00	6,492.22	13.91	13.66	93.60	2,125.39	2,099.43	25.96	81.876	0					
6,675.00	6,471.56	6,674.00	6,492.22	13.92	13.66	93.60	2,125.40	2,099.44	25.97	81.855	0					
6,700.00	6,495.84	6,695.30	6,513.51	13.94	13.69	93.71	2,125.52	2,099.51	26.01	81.708	0					
6,725.00	6,519.78	6,711.56	6,529.76	13.96	13.72	93.79	2,125.85	2,099.80	26.05	81.608	0					
6,750.00	6,543.32	6,727.60	6,545.81	13.98	13.74	93.86	2,126.37	2,100.29	26.08	81.536	0					
6,775.00	6,566.37	6,743.41	6,561.60	14.00	13.76	93.93	2,127.09	2,100.99	26.10	81.492	0					
6,800.00	6,588.90	6,760.00	6,578.19	14.02	13.79	94.00	2,128.03	2,101.91	26.12	81.472	0					
6,825.00	6,610.82	6,760.00	6,578.19	14.03	13.79	93.85	2,129.26	2,103.15	26.11	81.544	0					
6,850.00	6,632.08	6,775.91	6,594.08	14.05	13.81	93.87	2,130.71	2,104.59	26.12	81.570	0					
6,875.00	6,652.63	6,783.91	6,602.06	14.06	13.82	93.77	2,132.50	2,106.35	26.14	81.572	0					
6,900.00	6,672.41	6,802.00	6,620.09	14.07	13.85	93.79	2,134.65	2,108.47	26.18	81.548	0					
6,925.00	6,691.35	6,802.00	6,620.09	14.08	13.85	93.51	2,136.97	2,110.78	26.19	81.608	0					
6,950.00	6,709.42	6,802.00	6,620.09	14.08	13.85	93.19	2,139.66	2,113.47	26.20	81.681	0					
6,975.00	6,726.56	6,802.00	6,620.09	14.09	13.85	92.82	2,142.71	2,116.51	26.20	81.768	0					
7,000.00	6,742.72	6,802.00	6,620.09	14.10	13.85	92.41	2,146.12	2,119.90	26.21	81.867	0					
7,025.00	6,757.87	6,821.13	6,639.11	14.11	13.87	92.34	2,149.57	2,123.32	26.25	81.892	0					
7,050.00	6,771.95	7,772.92	7,098.19	14.11	14.39	92.73	2,145.30	2,116.29	29.02	73.932	0					
7,075.00	6,784.93	7,783.86	7,097.31	14.12	14.40	93.18	2,140.21	2,111.21	29.00	73.800	0					
7,100.00	6,796.77	7,814.00	7,094.96	14.13	14.44	93.35	2,135.51	2,106.42	29.09	73.399	0					
7,125.00	6,807.45	7,814.00	7,094.96	14.14	14.44	93.92	2,130.78	2,101.78	29.00	73.466	0					
7,150.00	6,816.93	7,820.55	7,094.48	14.15	14.44	94.38	2,126.41	2,097.46	28.95	73.447	0					
7,175.00	6,825.19	7,836.47	7,093.51	14.16	14.46	94.72	2,122.28	2,093.33	28.96	73.293	0					
7,200.00	6,832.20	7,856.00	7,092.67	14.17	14.49	95.03	2,118.37	2,089.39	28.98	73.093	0					
7,225.00	6,837.94	7,856.00	7,092.67	14.18	14.49	95.47	2,114.74	2,085.85	28.89	73.205	0					
7,250.00	6,842.40	7,856.00	7,092.67	14.20	14.49	95.86	2,111.52	2,082.72	28.80	73.327	0					
7,275.00	6,845.57	7,875.97	7,092.01	14.21	14.52	96.13	2,108.39	2,079.56	28.83	73.128	0					
7,300.00	6,847.44	7,883.20	7,091.77	14.23	14.53	96.43	2,105.75	2,076.96	28.79	73.138	0					
7,323.21	6,848.00	7,899.00	7,091.25	14.25	14.55	96.67	2,103.68	2,074.87	28.81	73.009	0					
7,400.00	6,848.00	7,915.40	7,090.76	14.32	14.58	96.66	2,098.02	2,069.33	28.68	73.143	0					
7,500.00	6,848.00	7,941.00	7,090.19	14.45	14.62	96.65	2,093.50	2,064.93	28.57	73.273	0					
7,596.68	6,848.00	7,984.00	7,089.46	14.60	14.70	96.63	2,092.10	2,063.50	28.60	73.147	0					
7,600.00	6,848.00	7,984.00	7,089.46	14.60	14.70	96.63	2,092.11	2,063.50	28.61	73.131	0					
7,700.00	6,848.00	8,127.29	7,088.64	14.79	15.02	96.61	2,091.62	2,062.26	29.36	71.244	0					
7,800.00	6,848.00	8,187.51	7,092.09	15.01	15.17	96.70	2,090.77	2,061.17	29.60	70.630	0					

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





# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Sec.36-T06N-R66W - Hiner 36C-17W - Original Hole - Original Hole											Offset Site Error:		0.00 usft
Survey Program:		127-Pathfinder											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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision			
7,800.14	6,848.00	8,187.61	7,092.09	15.01	15.17	96.70	2,090.77	2,061.60	29.17	71.677	0				
7,900.00	6,848.00	8,240.00	7,095.23	15.27	15.31	96.79	2,091.60	2,061.78	29.82	70.131	0				
8,000.00	6,848.00	8,323.00	7,098.61	15.56	15.56	96.88	2,094.25	2,063.94	30.31	69.095	0				
8,100.00	6,848.00	8,385.16	7,100.12	15.88	15.76	96.91	2,098.57	2,067.89	30.68	68.395	0				
8,200.00	6,848.00	8,493.00	7,103.30	16.22	16.13	96.98	2,103.35	2,071.91	31.44	66.899	0				
8,300.00	6,848.00	8,578.00	7,104.54	16.59	16.44	97.00	2,108.23	2,076.16	32.07	65.745	0				
8,400.00	6,848.00	8,663.00	7,102.12	16.98	16.77	96.92	2,113.78	2,081.05	32.73	64.581	0				
8,500.00	6,848.00	8,723.63	7,099.92	17.39	17.02	96.84	2,120.53	2,087.30	33.23	63.822	0				
8,600.00	6,848.00	8,828.18	7,099.42	17.82	17.45	96.80	2,128.69	2,094.57	34.12	62.397	0				
8,700.00	6,848.00	8,905.29	7,099.84	18.26	17.79	96.79	2,136.69	2,101.84	34.86	61.296	0				
8,800.00	6,848.00	9,164.40	7,105.11	18.73	18.96	96.90	2,141.70	2,104.55	37.14	57.659	0				
8,900.00	6,848.00	9,374.12	7,108.93	19.20	19.97	97.01	2,140.12	2,100.98	39.14	54.685	0				
9,000.00	6,848.00	9,492.17	7,110.54	19.69	20.56	97.07	2,135.79	2,095.47	40.32	52.975	0				
9,100.00	6,848.00	9,608.02	7,111.91	20.20	21.15	97.13	2,130.62	2,089.12	41.50	51.336	0				
9,200.00	6,848.00	9,714.29	7,110.33	20.71	21.71	97.11	2,124.34	2,081.72	42.62	49.838	0				
9,300.00	6,848.00	9,771.00	7,108.83	21.24	22.01	97.07	2,119.51	2,076.23	43.28	48.970	0				
9,400.00	6,848.00	9,825.09	7,107.82	21.77	22.30	97.05	2,116.79	2,072.86	43.93	48.189	0				
9,500.00	6,848.00	9,898.25	7,107.59	22.32	22.71	97.05	2,116.02	2,071.25	44.77	47.264	0				
9,556.28	6,848.00	9,941.00	7,107.00	22.63	22.94	97.03	2,115.86	2,070.78	45.08	46.938	0				
9,600.00	6,848.00	9,974.23	7,106.27	22.87	23.13	97.01	2,115.98	2,070.33	45.66	46.347	0				
9,700.00	6,848.00	10,036.15	7,104.47	23.43	23.48	96.96	2,117.70	2,071.29	46.41	45.629	0				
9,800.00	6,848.00	10,151.56	7,103.48	24.00	24.13	96.92	2,120.46	2,072.74	47.72	44.440	0				
9,900.00	6,848.00	10,312.97	7,106.11	24.58	25.06	96.99	2,120.12	2,070.62	49.50	42.833	0				
10,000.00	6,848.00	10,409.03	7,107.18	25.16	25.62	97.03	2,119.10	2,068.47	50.63	41.852	0				
10,093.48	6,848.00	10,483.83	7,106.63	25.71	26.06	97.01	2,118.57	2,067.04	51.53	41.117	0				
10,100.00	6,848.00	10,488.24	7,106.60	25.75	26.09	97.01	2,118.57	2,066.96	51.61	41.050	0				
10,200.00	6,848.00	10,557.08	7,106.49	26.34	26.50	97.01	2,119.42	2,066.94	52.49	40.381	0				
10,300.00	6,848.00	10,630.16	7,107.06	26.94	26.94	97.02	2,121.65	2,068.24	53.41	39.722	0				
10,400.00	6,848.00	10,718.55	7,108.88	27.54	27.47	97.06	2,124.86	2,070.36	54.50	38.987	0				
10,500.00	6,848.00	10,859.22	7,111.80	28.15	28.33	97.12	2,127.07	2,070.93	56.14	37.886	0				
10,600.00	6,848.00	10,942.43	7,112.80	28.76	28.84	97.15	2,128.79	2,071.59	57.20	37.218	0				
10,700.00	6,848.00	11,077.36	7,112.62	29.38	29.67	97.14	2,130.37	2,071.57	58.81	36.227	0				
10,800.00	6,848.00	11,161.55	7,112.15	30.00	30.19	97.12	2,131.12	2,071.24	59.89	35.586	0				
10,900.00	6,848.00	11,220.00	7,112.43	30.62	30.56	97.12	2,133.39	2,072.69	60.70	35.147	0				
11,000.00	6,848.00	11,271.61	7,112.45	31.25	30.88	97.12	2,137.76	2,076.32	61.44	34.793	0				
11,100.00	6,848.00	11,348.37	7,111.07	31.88	31.37	97.06	2,144.31	2,081.85	62.46	34.332	0				
11,200.00	6,848.00	11,485.42	7,110.71	32.52	32.23	97.03	2,150.06	2,085.94	64.12	33.532	0				
11,300.00	6,848.00	11,601.36	7,108.76	33.15	32.97	96.96	2,154.63	2,089.07	65.57	32.861	0				
11,400.00	6,848.00	11,719.90	7,109.41	33.79	33.73	96.96	2,158.35	2,091.31	67.04	32.193	0				
11,500.00	6,848.00	11,794.94	7,108.45	34.43	34.21	96.93	2,162.14	2,094.08	68.06	31.768	0				
11,600.00	6,848.00	11,943.72	7,106.39	35.08	35.17	96.86	2,165.16	2,095.28	69.88	30.984	0				
11,686.39	6,848.00	12,026.19	7,106.71	35.63	35.70	96.86	2,167.20	2,096.25	70.95	30.543	0	SF			





# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
0.00	0.00	0.00	0.00	0.00	0.00	-1.94	77.98				0		
100.00	100.00	100.00	100.00	0.15	0.15	-1.94	77.98	77.69	0.29	265.950	0		
200.00	200.00	200.00	200.00	0.32	0.32	-1.94	77.98	77.34	0.64	121.412	0		
300.00	300.00	300.00	300.00	0.50	0.50	-1.94	77.98	76.99	0.99	78.661	0		
400.00	400.00	400.00	400.00	0.67	0.67	-1.94	77.98	76.64	1.34	58.177	0		
500.00	500.00	500.00	500.00	0.84	0.84	-1.94	77.98	76.29	1.69	46.157	0		
600.00	600.00	600.00	600.00	1.02	1.02	-1.94	77.98	75.94	2.04	38.253	0		CC, ES
700.00	699.98	699.98	699.98	1.19	1.19	-142.96	79.37	76.98	2.39	33.249	0		
800.00	799.84	799.84	799.84	1.37	1.37	-145.07	83.60	80.87	2.73	30.577	0		
900.00	899.45	899.45	899.45	1.55	1.54	-148.14	90.89	87.81	3.08	29.515	0		
1,000.00	998.70	998.70	998.70	1.73	1.72	-151.66	101.46	98.04	3.42	29.648	0		
1,100.00	1,097.47	1,097.47	1,097.47	1.91	1.89	-155.22	115.49	111.73	3.76	30.706	0		
1,200.00	1,195.62	1,195.62	1,195.62	2.10	2.06	-158.53	133.10	129.00	4.10	32.492	0		
1,300.00	1,293.06	1,293.06	1,293.06	2.30	2.23	-161.01	153.47	149.04	4.43	34.626	0		
1,400.00	1,389.64	1,389.64	1,389.64	2.50	2.41	-162.26	175.42	170.65	4.77	36.792	0		
1,439.37	1,427.41	1,436.11	1,435.85	2.59	2.48	-162.50	184.45	179.55	4.90	37.641	0		
1,500.00	1,485.46	1,497.45	1,496.92	2.71	2.59	-162.67	198.18	193.06	5.12	38.704	0		
1,600.00	1,581.20	1,599.31	1,598.02	2.93	2.77	-162.27	219.26	213.78	5.49	39.950	0		
1,700.00	1,676.93	1,701.84	1,699.27	3.14	2.96	-161.19	238.46	232.60	5.86	40.669	0		
1,800.00	1,772.67	1,804.76	1,800.28	3.36	3.15	-159.57	255.90	249.65	6.25	40.964	0		
1,900.00	1,868.41	1,906.82	1,899.69	3.58	3.34	-157.51	271.80	265.16	6.64	40.950	0		
2,000.00	1,964.15	2,005.13	1,995.19	3.80	3.53	-155.55	287.48	280.45	7.03	40.916	0		
2,100.00	2,059.89	2,103.43	2,090.69	4.03	3.72	-153.79	303.46	296.03	7.42	40.879	0		
2,200.00	2,155.63	2,201.74	2,186.19	4.25	3.92	-152.21	319.69	311.86	7.83	40.852	0		
2,300.00	2,251.36	2,300.05	2,281.69	4.47	4.11	-150.78	336.13	327.90	8.23	40.838	0		
2,400.00	2,347.10	2,398.35	2,377.18	4.70	4.31	-149.48	352.76	344.12	8.64	40.834	0		
2,500.00	2,442.84	2,496.66	2,472.68	4.93	4.51	-148.30	369.56	360.51	9.05	40.838	0		
2,600.00	2,538.58	2,594.96	2,568.18	5.15	4.71	-147.22	386.49	377.03	9.46	40.848	0		
2,700.00	2,634.32	2,693.27	2,663.68	5.38	4.91	-146.24	403.54	393.67	9.88	40.862	0		
2,800.00	2,730.06	2,791.58	2,759.18	5.61	5.11	-145.33	420.70	410.41	10.29	40.878	0		
2,900.00	2,825.79	2,889.88	2,854.68	5.83	5.32	-144.49	437.96	427.25	10.71	40.897	0		
3,000.00	2,921.53	2,988.19	2,950.17	6.06	5.52	-143.72	455.30	444.17	11.13	40.918	0		
3,100.00	3,017.27	3,086.49	3,045.67	6.29	5.72	-143.00	472.71	461.17	11.55	40.939	0		
3,200.00	3,113.01	3,184.80	3,141.17	6.52	5.93	-142.34	490.20	478.23	11.97	40.961	0		
3,300.00	3,208.75	3,283.10	3,236.67	6.75	6.13	-141.72	507.74	495.35	12.39	40.983	0		
3,400.00	3,304.49	3,381.41	3,332.17	6.98	6.34	-141.14	525.33	512.52	12.81	41.006	0		
3,500.00	3,400.22	3,479.72	3,427.67	7.21	6.55	-140.60	542.98	529.74	13.23	41.029	0		
3,600.00	3,495.96	3,578.02	3,523.16	7.44	6.75	-140.09	560.66	547.01	13.66	41.051	0		
3,700.00	3,591.70	3,676.33	3,618.66	7.67	6.96	-139.62	578.39	564.31	14.08	41.073	0		
3,800.00	3,687.44	3,774.63	3,714.16	7.90	7.17	-139.17	596.16	581.65	14.51	41.095	0		
3,900.00	3,783.18	3,872.94	3,809.66	8.13	7.37	-138.75	613.95	599.02	14.93	41.117	0		
4,000.00	3,878.92	3,971.24	3,905.16	8.36	7.58	-138.35	631.78	616.42	15.36	41.138	0		
4,100.00	3,974.65	4,069.55	4,000.66	8.59	7.79	-137.98	649.64	633.85	15.78	41.158	0		
4,200.00	4,070.39	4,167.86	4,096.15	8.82	8.00	-137.62	667.52	651.31	16.21	41.179	0		
4,300.00	4,166.13	4,266.16	4,191.65	9.05	8.20	-137.28	685.42	668.79	16.64	41.198	0		
4,400.00	4,261.87	4,364.47	4,287.15	9.28	8.41	-136.96	703.35	686.29	17.06	41.218	0		
4,500.00	4,357.61	4,462.77	4,382.65	9.51	8.62	-136.66	721.30	703.81	17.49	41.236	0		
4,600.00	4,453.35	4,561.08	4,478.15	9.74	8.83	-136.37	739.26	721.34	17.92	41.255	0		
4,700.00	4,549.08	4,659.38	4,573.65	9.97	9.04	-136.09	757.25	738.90	18.35	41.273	0		
4,800.00	4,644.82	4,757.69	4,669.15	10.20	9.25	-135.83	775.25	756.47	18.78	41.290	0		
4,900.00	4,740.56	4,856.00	4,764.64	10.43	9.46	-135.58	793.26	774.06	19.20	41.307	0		
5,000.00	4,836.30	4,954.30	4,860.14	10.66	9.67	-135.34	811.29	791.66	19.63	41.324	0		
5,100.00	4,932.04	5,052.61	4,955.64	10.89	9.88	-135.11	829.33	809.27	20.06	41.340	0		
5,200.00	5,027.78	5,150.91	5,051.14	11.12	10.09	-134.89	847.39	826.90	20.49	41.355	0		

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16")
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16")
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
5,300.00	5,123.51	5,249.22	5,146.64	11.35	10.29	-134.68	865.45	844.53	20.92	41.371	0		
5,400.00	5,219.25	5,347.52	5,242.14	11.59	10.50	-134.48	883.53	862.18	21.35	41.386	0		
5,500.00	5,314.99	5,445.83	5,337.63	11.82	10.71	-134.28	901.62	879.84	21.78	41.400	0		
5,600.00	5,410.73	5,544.14	5,433.13	12.05	10.92	-134.10	919.71	897.51	22.21	41.414	0		
5,633.84	5,443.13	5,577.40	5,465.45	12.13	11.00	-134.03	925.84	903.49	22.35	41.419	0		
5,700.00	5,506.68	5,642.52	5,528.70	12.27	11.13	-134.05	937.30	914.64	22.66	41.360	0		
5,800.00	5,603.51	5,741.16	5,624.53	12.49	11.34	-133.92	952.65	929.53	23.12	41.201	0		
5,900.00	5,701.15	5,839.97	5,720.52	12.69	11.56	-133.62	965.65	942.08	23.57	40.963	0		
6,000.00	5,799.48	5,936.45	5,814.59	12.88	11.75	-133.26	976.48	952.48	24.00	40.694	0		
6,100.00	5,898.38	6,033.37	5,909.76	13.06	11.94	-132.93	985.24	960.85	24.39	40.396	0		
6,200.00	5,997.74	6,130.75	6,005.95	13.23	12.13	-132.61	991.93	967.17	24.76	40.066	0		
6,300.00	6,097.43	6,228.53	6,102.99	13.40	12.30	-132.32	996.51	971.41	25.10	39.702	0		
6,400.00	6,197.34	6,326.62	6,200.70	13.55	12.47	-132.04	998.95	973.53	25.42	39.303	0		
6,473.21	6,270.54	6,398.59	6,272.55	13.65	12.59	8.42	999.38	975.41	23.97	41.691	0		
6,500.00	6,297.33	6,424.96	6,298.89	13.69	12.63	8.49	999.33	975.28	24.06	41.543	0		
6,573.21	6,370.54	6,497.09	6,371.01	13.80	12.75	8.58	999.26	974.97	24.29	41.139	0		
6,574.64	6,371.96	6,498.50	6,372.41	13.80	12.75	98.58	999.26	973.31	25.95	38.504	0		
6,575.00	6,372.33	6,498.86	6,372.77	13.80	12.75	98.59	999.26	973.31	25.95	38.502	0		
6,600.00	6,397.31	6,523.49	6,397.40	13.83	12.79	98.62	999.37	973.33	26.04	38.384	0		
6,625.00	6,422.23	6,548.32	6,422.23	13.86	12.82	98.70	999.68	973.56	26.11	38.280	0		
6,650.00	6,447.00	6,573.09	6,447.00	13.89	12.86	98.83	1,000.19	974.00	26.19	38.193	0		
6,675.00	6,471.56	6,597.65	6,471.56	13.92	12.90	99.00	1,000.92	974.67	26.26	38.122	0		
6,700.00	6,495.84	6,621.93	6,495.84	13.94	12.94	99.21	1,001.89	975.57	26.32	38.070	0		
6,725.00	6,519.78	6,652.00	6,525.90	13.96	12.98	99.54	1,003.06	976.68	26.38	38.024	0		
6,750.00	6,543.32	6,685.21	6,559.05	13.98	13.03	99.92	1,004.28	977.85	26.43	37.992	0		
6,775.00	6,566.37	6,718.94	6,592.55	14.00	13.07	100.30	1,005.55	979.08	26.48	37.976	0		
6,800.00	6,588.90	6,753.20	6,626.33	14.02	13.11	100.68	1,006.87	980.36	26.51	37.977	0		
6,825.00	6,610.82	6,788.02	6,660.30	14.03	13.14	101.05	1,008.22	981.68	26.54	37.993	0		
6,850.00	6,632.08	6,823.43	6,694.35	14.05	13.17	101.43	1,009.60	983.05	26.55	38.023	0		
6,875.00	6,652.63	6,859.43	6,728.37	14.06	13.20	101.81	1,011.01	984.45	26.56	38.066	0		
6,900.00	6,672.41	6,896.06	6,762.25	14.07	13.22	102.18	1,012.43	985.87	26.56	38.120	0		
6,925.00	6,691.35	6,933.33	6,795.83	14.08	13.24	102.54	1,013.87	987.32	26.55	38.180	0		
6,950.00	6,709.42	6,971.25	6,828.98	14.08	13.26	102.90	1,015.31	988.76	26.55	38.246	0		
6,975.00	6,726.56	7,009.84	6,861.52	14.09	13.27	103.26	1,016.74	990.20	26.54	38.316	0		
7,000.00	6,742.72	7,049.11	6,893.29	14.10	13.28	103.60	1,018.16	991.63	26.53	38.384	0		
7,025.00	6,757.87	7,089.06	6,924.08	14.11	13.29	103.94	1,019.54	993.03	26.52	38.445	0		
7,050.00	6,771.95	7,129.70	6,953.70	14.11	13.30	104.26	1,020.90	994.38	26.52	38.498	0		
7,075.00	6,784.93	7,171.01	6,981.93	14.12	13.31	104.57	1,022.20	995.67	26.52	38.538	0		
7,100.00	6,796.77	7,212.98	7,008.55	14.13	13.32	104.86	1,023.44	996.90	26.54	38.562	0		
7,125.00	6,807.45	7,255.59	7,033.33	14.14	13.33	105.14	1,024.62	998.05	26.57	38.565	0		
7,150.00	6,816.93	7,298.82	7,056.05	14.15	13.34	105.40	1,025.71	999.10	26.61	38.544	0		
7,175.00	6,825.19	7,342.63	7,076.47	14.16	13.35	105.63	1,026.71	1,000.03	26.67	38.493	0		
7,200.00	6,832.20	7,386.98	7,094.37	14.17	13.37	105.84	1,027.60	1,000.85	26.75	38.412	0		
7,225.00	6,837.94	7,431.80	7,109.56	14.18	13.39	106.02	1,028.39	1,001.54	26.85	38.300	0		
7,250.00	6,842.40	7,477.05	7,121.84	14.20	13.42	106.17	1,029.05	1,002.08	26.97	38.156	0		
7,275.00	6,845.57	7,522.65	7,131.06	14.21	13.45	106.30	1,029.59	1,002.48	27.11	37.980	0		
7,300.00	6,847.44	7,568.54	7,137.09	14.23	13.50	106.39	1,029.99	1,002.72	27.27	37.774	0		
7,323.21	6,848.00	7,611.32	7,139.74	14.25	13.54	106.45	1,030.24	1,002.81	27.43	37.558	0		
7,400.00	6,848.00	7,696.43	7,140.00	14.32	13.64	106.46	1,030.28	1,002.58	27.70	37.195	0		
7,500.00	6,848.00	7,796.43	7,140.00	14.45	13.80	106.46	1,030.28	1,002.23	28.05	36.731	0		
7,600.00	6,848.00	7,896.43	7,140.00	14.60	14.00	106.46	1,030.28	1,001.82	28.46	36.200	0		
7,700.00	6,848.00	7,996.43	7,140.00	14.79	14.24	106.46	1,030.28	1,001.34	28.93	35.609	0		
7,800.00	6,848.00	8,096.43	7,140.00	15.01	14.51	106.46	1,030.28	1,000.81	29.46	34.970	0		
7,900.00	6,848.00	8,196.43	7,140.00	15.27	14.80	106.46	1,030.28	1,000.23	30.04	34.292	0		

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



**Schlumberger**  
Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision		
8,000.00	6,848.00	8,296.43	7,140.00	15.56	15.12	106.46	1,030.28	999.60	30.68	33.583	0			
8,100.00	6,848.00	8,396.43	7,140.00	15.88	15.47	106.46	1,030.28	998.92	31.36	32.854	0			
8,200.00	6,848.00	8,496.43	7,140.00	16.22	15.84	106.46	1,030.28	998.19	32.09	32.111	0			
8,300.00	6,848.00	8,596.43	7,140.00	16.59	16.23	106.46	1,030.28	997.42	32.85	31.361	0			
8,400.00	6,848.00	8,696.43	7,140.00	16.98	16.64	106.46	1,030.28	996.62	33.66	30.610	0			
8,500.00	6,848.00	8,796.43	7,140.00	17.39	17.07	106.46	1,030.28	995.78	34.50	29.863	0			
8,600.00	6,848.00	8,896.43	7,140.00	17.82	17.51	106.46	1,030.28	994.90	35.37	29.125	0			
8,700.00	6,848.00	8,996.43	7,140.00	18.26	17.98	106.46	1,030.28	994.00	36.28	28.398	0			
8,800.00	6,848.00	9,096.43	7,140.00	18.73	18.46	106.46	1,030.28	993.06	37.21	27.685	0			
8,900.00	6,848.00	9,196.43	7,140.00	19.20	18.95	106.46	1,030.28	992.10	38.17	26.989	0			
9,000.00	6,848.00	9,296.43	7,140.00	19.69	19.46	106.46	1,030.28	991.12	39.16	26.310	0			
9,100.00	6,848.00	9,396.43	7,140.00	20.20	19.97	106.46	1,030.28	990.11	40.17	25.651	0			
9,200.00	6,848.00	9,496.43	7,140.00	20.71	20.50	106.46	1,030.28	989.08	41.19	25.011	0			
9,300.00	6,848.00	9,596.43	7,140.00	21.24	21.04	106.46	1,030.28	988.04	42.24	24.391	0			
9,400.00	6,848.00	9,696.43	7,140.00	21.77	21.59	106.46	1,030.28	986.97	43.31	23.791	0			
9,500.00	6,848.00	9,796.43	7,140.00	22.32	22.15	106.46	1,030.28	985.89	44.39	23.211	0			
9,600.00	6,848.00	9,896.43	7,140.00	22.87	22.71	106.46	1,030.28	984.79	45.48	22.652	0			
9,700.00	6,848.00	9,996.43	7,140.00	23.43	23.28	106.46	1,030.28	983.68	46.59	22.112	0			
9,800.00	6,848.00	10,096.43	7,140.00	24.00	23.86	106.46	1,030.28	982.56	47.72	21.591	0			
9,900.00	6,848.00	10,196.43	7,140.00	24.58	24.45	106.46	1,030.28	981.42	48.86	21.088	0			
10,000.00	6,848.00	10,296.43	7,140.00	25.16	25.04	106.46	1,030.28	980.27	50.00	20.604	0			
10,100.00	6,848.00	10,396.43	7,140.00	25.75	25.64	106.46	1,030.28	979.11	51.16	20.138	0			
10,200.00	6,848.00	10,496.43	7,140.00	26.34	26.24	106.46	1,030.28	977.95	52.33	19.688	0			
10,300.00	6,848.00	10,596.43	7,140.00	26.94	26.85	106.46	1,030.28	976.77	53.51	19.255	0			
10,400.00	6,848.00	10,696.43	7,140.00	27.54	27.47	106.46	1,030.28	975.58	54.69	18.837	0			
10,500.00	6,848.00	10,796.43	7,140.00	28.15	28.08	106.46	1,030.28	974.39	55.89	18.435	0			
10,600.00	6,848.00	10,896.43	7,140.00	28.76	28.70	106.46	1,030.28	973.19	57.09	18.046	0			
10,700.00	6,848.00	10,996.43	7,140.00	29.38	29.33	106.46	1,030.28	971.98	58.30	17.672	0			
10,800.00	6,848.00	11,096.43	7,140.00	30.00	29.96	106.46	1,030.28	970.76	59.51	17.311	0			
10,900.00	6,848.00	11,196.43	7,140.00	30.62	30.59	106.46	1,030.28	969.54	60.74	16.963	0			
11,000.00	6,848.00	11,296.43	7,140.00	31.25	31.22	106.46	1,030.28	968.31	61.96	16.627	0			
11,100.00	6,848.00	11,396.43	7,140.00	31.88	31.86	106.46	1,030.28	967.08	63.20	16.302	0			
11,200.00	6,848.00	11,496.43	7,140.00	32.52	32.50	106.46	1,030.28	965.84	64.44	15.989	0			
11,300.00	6,848.00	11,596.43	7,140.00	33.15	33.14	106.46	1,030.28	964.60	65.68	15.686	0			
11,400.00	6,848.00	11,696.43	7,140.00	33.79	33.79	106.46	1,030.28	963.35	66.93	15.394	0			
11,500.00	6,848.00	11,796.43	7,140.00	34.43	34.43	106.46	1,030.28	962.09	68.18	15.111	0			
11,600.00	6,848.00	11,896.43	7,140.00	35.08	35.08	106.46	1,030.28	960.84	69.44	14.837	0			
11,662.08	6,848.00	11,958.54	7,140.00	35.48	35.49	106.46	1,030.27	960.16	70.12	14.693	0			
11,686.39	6,848.00	11,980.78	7,140.00	35.63	35.63	106.46	1,030.28	959.77	70.51	14.613	0		SF	



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
0.00	0.00	0.00	0.00	0.00	0.00	-1.72	26.23				0		
100.00	100.00	100.00	100.00	0.15	0.15	-1.72	26.23	25.94	0.29	89.461	0		
200.00	200.00	200.00	200.00	0.32	0.32	-1.72	26.23	25.59	0.64	40.841	0		
300.00	300.00	300.00	300.00	0.50	0.50	-1.72	26.23	25.24	0.99	26.460	0		
400.00	400.00	400.00	400.00	0.67	0.67	-1.72	26.23	24.89	1.34	19.570	0		
500.00	500.00	500.00	500.00	0.84	0.84	-1.72	26.23	24.54	1.69	15.526	0		
600.00	600.00	600.00	600.00	1.02	1.02	-1.72	26.23	24.19	2.04	12.868	0		CC, ES
700.00	699.98	699.98	699.98	1.19	1.19	-144.20	27.63	25.24	2.39	11.574	0		
800.00	799.84	799.84	799.84	1.37	1.37	-149.64	32.02	29.29	2.73	11.712	0		
900.00	899.45	899.45	899.45	1.55	1.54	-155.93	39.79	36.71	3.08	12.926	0		
1,000.00	998.70	998.70	998.70	1.73	1.72	-161.43	51.16	47.75	3.42	14.965	0		
1,100.00	1,097.47	1,099.47	1,099.45	1.91	1.89	-165.03	64.69	60.93	3.76	17.207	0		
1,200.00	1,195.62	1,200.72	1,200.55	2.10	2.07	-166.80	78.63	74.53	4.10	19.175	0		
1,300.00	1,293.06	1,302.44	1,301.87	2.30	2.25	-167.53	92.82	88.38	4.44	20.901	0		
1,400.00	1,389.64	1,404.61	1,403.27	2.50	2.43	-167.62	107.22	102.44	4.78	22.418	0		
1,439.37	1,427.41	1,444.96	1,443.18	2.59	2.50	-167.53	112.94	108.02	4.92	22.966	0		
1,500.00	1,485.46	1,507.33	1,504.68	2.71	2.62	-167.26	121.18	116.04	5.14	23.565	0		
1,600.00	1,581.20	1,610.81	1,606.19	2.93	2.81	-166.32	132.21	126.69	5.52	23.957	0		
1,700.00	1,676.93	1,714.83	1,707.43	3.14	3.01	-164.80	140.07	134.17	5.90	23.735	0		
1,800.00	1,772.67	1,819.12	1,808.01	3.36	3.22	-162.72	144.87	138.58	6.29	23.020	0		
1,900.00	1,868.41	1,919.33	1,904.05	3.58	3.43	-160.40	148.02	141.34	6.69	22.138	0		
2,000.00	1,964.15	2,019.11	1,999.68	3.80	3.63	-158.20	151.39	144.31	7.09	21.363	0		
2,100.00	2,059.89	2,118.88	2,095.31	4.03	3.84	-156.09	154.98	147.48	7.49	20.684	0		
2,200.00	2,155.63	2,218.66	2,190.94	4.25	4.06	-154.08	158.76	150.86	7.90	20.086	0		
2,300.00	2,251.36	2,318.43	2,286.57	4.47	4.27	-152.16	162.73	154.41	8.32	19.558	0		
2,400.00	2,347.10	2,418.21	2,382.20	4.70	4.49	-150.34	166.87	158.13	8.74	19.090	0		
2,500.00	2,442.84	2,517.99	2,477.83	4.93	4.70	-148.61	171.18	162.01	9.17	18.672	0		
2,600.00	2,538.58	2,617.76	2,573.45	5.15	4.92	-146.96	175.63	166.03	9.60	18.299	0		
2,700.00	2,634.32	2,717.54	2,669.08	5.38	5.14	-145.40	180.22	170.19	10.03	17.965	0		
2,800.00	2,730.06	2,817.32	2,764.71	5.61	5.36	-143.92	184.94	174.47	10.47	17.665	0		
2,900.00	2,825.79	2,917.09	2,860.34	5.83	5.58	-142.51	189.78	178.87	10.91	17.394	0		
3,000.00	2,921.53	3,016.87	2,955.97	6.06	5.81	-141.17	194.72	183.37	11.35	17.150	0		
3,100.00	3,017.27	3,116.65	3,051.60	6.29	6.03	-139.89	199.77	187.97	11.80	16.928	0		
3,200.00	3,113.01	3,216.42	3,147.23	6.52	6.25	-138.68	204.91	192.66	12.25	16.727	0		
3,300.00	3,208.75	3,316.20	3,242.86	6.75	6.48	-137.53	210.14	197.44	12.70	16.545	0		
3,400.00	3,304.49	3,415.98	3,338.49	6.98	6.70	-136.44	215.44	202.29	13.15	16.378	0		
3,500.00	3,400.22	3,515.75	3,434.11	7.21	6.93	-135.40	220.83	207.22	13.61	16.226	0		
3,600.00	3,495.96	3,615.53	3,529.74	7.44	7.15	-134.41	226.28	212.21	14.07	16.087	0		
3,700.00	3,591.70	3,715.31	3,625.37	7.67	7.38	-133.46	231.79	217.27	14.52	15.960	0		
3,800.00	3,687.44	3,815.08	3,721.00	7.90	7.60	-132.56	237.37	222.39	14.98	15.843	0		
3,900.00	3,783.18	3,914.86	3,816.63	8.13	7.83	-131.70	243.00	227.56	15.44	15.736	0		
4,000.00	3,878.92	4,014.63	3,912.26	8.36	8.06	-130.88	248.69	232.78	15.90	15.637	0		
4,100.00	3,974.65	4,114.41	4,007.89	8.59	8.28	-130.10	254.42	238.05	16.37	15.546	0		
4,200.00	4,070.39	4,214.19	4,103.52	8.82	8.51	-129.35	260.20	243.37	16.83	15.461	0		
4,300.00	4,166.13	4,313.96	4,199.15	9.05	8.74	-128.64	266.02	248.72	17.29	15.384	0		
4,400.00	4,261.87	4,413.74	4,294.77	9.28	8.97	-127.95	271.88	254.12	17.76	15.311	0		
4,500.00	4,357.61	4,513.52	4,390.40	9.51	9.19	-127.29	277.77	259.55	18.22	15.245	0		
4,600.00	4,453.35	4,613.29	4,486.03	9.74	9.42	-126.67	283.70	265.02	18.69	15.182	0		
4,700.00	4,549.08	4,713.07	4,581.66	9.97	9.65	-126.06	289.67	270.52	19.15	15.125	0		
4,800.00	4,644.82	4,812.85	4,677.29	10.20	9.88	-125.48	295.66	276.05	19.62	15.071	0		
4,900.00	4,740.56	4,912.62	4,772.92	10.43	10.10	-124.93	301.69	281.60	20.08	15.021	0		
5,000.00	4,836.30	5,012.40	4,868.55	10.66	10.33	-124.39	307.74	287.19	20.55	14.975	0		
5,100.00	4,932.04	5,112.18	4,964.18	10.89	10.56	-123.88	313.82	292.80	21.02	14.931	0		
5,200.00	5,027.78	5,211.95	5,059.81	11.12	10.79	-123.39	319.92	298.43	21.48	14.890	0		

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
5,300.00	5,123.51	5,311.73	5,155.43	11.35	11.02	-122.91	326.04	304.09	21.95	14.852	0		
5,400.00	5,219.25	5,411.51	5,251.06	11.59	11.25	-122.46	332.18	309.77	22.42	14.817	0		
5,500.00	5,314.99	5,511.28	5,346.69	11.82	11.48	-122.01	338.35	315.46	22.89	14.783	0		
5,600.00	5,410.73	5,611.06	5,442.32	12.05	11.70	-121.59	344.54	321.18	23.36	14.752	0		
5,633.84	5,443.13	5,644.82	5,474.68	12.13	11.78	-121.45	346.63	323.12	23.51	14.742	0		
5,700.00	5,506.68	5,710.84	5,537.95	12.27	11.93	-121.14	350.34	326.51	23.83	14.700	0		
5,800.00	5,603.51	5,808.77	5,631.93	12.49	12.16	-120.34	354.64	330.33	24.31	14.588	0		
5,900.00	5,701.15	5,905.07	5,725.10	12.69	12.36	-119.53	358.15	333.39	24.76	14.467	0		
6,000.00	5,799.48	6,000.00	5,817.69	12.88	12.56	-118.76	360.97	335.80	25.18	14.338	0		
6,100.00	5,898.38	6,098.20	5,914.15	13.06	12.75	-117.99	363.09	337.51	25.58	14.196	0		
6,200.00	5,997.74	6,195.01	6,009.81	13.23	12.93	-117.26	364.50	338.55	25.95	14.047	0		
6,300.00	6,097.43	6,291.99	6,106.08	13.40	13.10	-116.55	365.20	338.90	26.30	13.886	0		
6,400.00	6,197.34	6,389.13	6,202.85	13.55	13.26	-115.85	365.17	338.54	26.63	13.714	0		
6,473.21	6,270.54	6,460.34	6,273.94	13.65	13.37	24.92	364.68	340.95	23.73	15.367	0		
6,500.00	6,297.33	6,486.42	6,300.00	13.69	13.41	25.08	364.46	340.65	23.81	15.305	0		
6,573.21	6,370.54	6,557.77	6,371.33	13.80	13.52	25.34	364.12	340.07	24.04	15.145	0		
6,575.00	6,372.33	6,559.52	6,373.07	13.80	13.52	115.34	364.11	336.94	27.17	13.401	0		
6,575.46	6,372.79	6,559.97	6,373.53	13.80	13.52	115.34	364.11	336.94	27.17	13.400	0		
6,600.00	6,397.31	6,583.88	6,397.44	13.83	13.56	115.44	364.40	337.14	27.26	13.368	0		
6,625.00	6,422.23	6,608.67	6,422.23	13.86	13.59	115.63	365.29	337.96	27.34	13.363	0		
6,650.00	6,447.00	6,633.44	6,447.00	13.89	13.63	115.94	366.76	339.36	27.40	13.386	0		
6,675.00	6,471.56	6,658.00	6,471.56	13.92	13.66	116.36	368.84	341.40	27.45	13.439	0		
6,700.00	6,495.84	6,682.29	6,495.84	13.94	13.70	116.87	371.56	344.08	27.47	13.524	0		
6,725.00	6,519.78	6,713.07	6,526.62	13.96	13.74	117.68	374.80	347.30	27.49	13.633	0		
6,750.00	6,543.32	6,746.80	6,560.27	13.98	13.79	118.58	378.15	350.66	27.49	13.757	0		
6,775.00	6,566.37	6,781.05	6,594.29	14.00	13.82	119.47	381.59	354.13	27.45	13.900	0		
6,800.00	6,588.90	6,815.86	6,628.57	14.02	13.86	120.35	385.09	357.70	27.39	14.061	0		
6,825.00	6,610.82	6,851.24	6,663.04	14.03	13.89	121.21	388.65	361.35	27.30	14.238	0		
6,850.00	6,632.08	6,887.22	6,697.58	14.05	13.92	122.05	392.24	365.06	27.18	14.432	0		
6,875.00	6,652.63	6,923.81	6,732.06	14.06	13.95	122.87	395.85	368.82	27.04	14.640	0		
6,900.00	6,672.41	6,961.03	6,766.37	14.07	13.97	123.67	399.46	372.59	26.88	14.863	0		
6,925.00	6,691.35	6,998.90	6,800.34	14.08	13.99	124.44	403.05	376.36	26.70	15.098	0		
6,950.00	6,709.42	7,037.42	6,833.82	14.08	14.01	125.19	406.60	380.09	26.50	15.341	0		
6,975.00	6,726.56	7,076.61	6,866.63	14.09	14.02	125.91	410.07	383.77	26.30	15.591	0		
7,000.00	6,742.72	7,116.48	6,898.59	14.10	14.03	126.60	413.46	387.37	26.10	15.844	0		
7,025.00	6,757.87	7,157.02	6,929.49	14.11	14.04	127.25	416.74	390.85	25.89	16.097	0		
7,050.00	6,771.95	7,198.22	6,959.13	14.11	14.05	127.86	419.88	394.18	25.69	16.343	0		
7,075.00	6,784.93	7,240.07	6,987.28	14.12	14.06	128.44	422.85	397.35	25.51	16.578	0		
7,100.00	6,796.77	7,282.55	7,013.70	14.13	14.06	128.97	425.65	400.31	25.34	16.797	0		
7,125.00	6,807.45	7,325.64	7,038.18	14.14	14.07	129.46	428.23	403.03	25.20	16.994	0		
7,150.00	6,816.93	7,369.30	7,060.48	14.15	14.08	129.91	430.59	405.50	25.09	17.163	0		
7,175.00	6,825.19	7,413.48	7,080.38	14.16	14.09	130.30	432.70	407.69	25.01	17.299	0		
7,200.00	6,832.20	7,458.14	7,097.66	14.17	14.11	130.64	434.54	409.56	24.98	17.397	0		
7,225.00	6,837.94	7,503.21	7,112.13	14.18	14.13	130.92	436.10	411.11	24.99	17.453	0		
7,250.00	6,842.40	7,548.64	7,123.63	14.20	14.15	131.15	437.35	412.31	25.04	17.464	0		
7,275.00	6,845.57	7,594.34	7,132.00	14.21	14.18	131.33	438.30	413.15	25.15	17.429	0		
7,300.00	6,847.44	7,640.24	7,137.15	14.23	14.22	131.44	438.92	413.62	25.30	17.349	0		
7,323.21	6,848.00	7,682.96	7,138.97	14.25	14.26	131.49	439.20	413.72	25.48	17.237	0		
7,400.00	6,848.00	7,762.43	7,139.00	14.32	14.34	131.49	439.21	413.40	25.81	17.015	0		
7,500.00	6,848.00	7,862.43	7,139.00	14.45	14.49	131.49	439.21	412.95	26.26	16.723	0		
7,600.00	6,848.00	7,962.43	7,139.00	14.60	14.66	131.49	439.21	412.45	26.76	16.415	0		
7,700.00	6,848.00	8,062.43	7,139.00	14.79	14.88	131.49	439.21	411.92	27.29	16.095	0		
7,800.00	6,848.00	8,162.43	7,139.00	15.01	15.14	131.49	439.21	411.35	27.86	15.767	0		
7,900.00	6,848.00	8,262.43	7,139.00	15.27	15.42	131.49	439.21	410.75	28.46	15.433	0		

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
8,000.00	6,848.00	8,362.43	7,139.00	15.56	15.74	131.49	439.21	410.11	29.10	15.096	0		
8,100.00	6,848.00	8,462.43	7,139.00	15.88	16.07	131.49	439.21	409.45	29.76	14.758	0		
8,200.00	6,848.00	8,562.43	7,139.00	16.22	16.44	131.49	439.21	408.75	30.46	14.421	0		
8,300.00	6,848.00	8,662.43	7,139.00	16.59	16.82	131.49	439.21	408.03	31.18	14.088	0		
8,400.00	6,848.00	8,762.43	7,139.00	16.98	17.22	131.49	439.21	407.29	31.92	13.759	0		
8,500.00	6,848.00	8,862.43	7,139.00	17.39	17.65	131.49	439.21	406.52	32.69	13.436	0		
8,600.00	6,848.00	8,962.43	7,139.00	17.82	18.08	131.49	439.21	405.73	33.48	13.119	0		
8,700.00	6,848.00	9,062.43	7,139.00	18.26	18.54	131.49	439.21	404.92	34.29	12.810	0		
8,800.00	6,848.00	9,162.43	7,139.00	18.73	19.01	131.49	439.21	404.10	35.11	12.508	0		
8,900.00	6,848.00	9,262.43	7,139.00	19.20	19.49	131.49	439.21	403.25	35.96	12.215	0		
9,000.00	6,848.00	9,362.43	7,139.00	19.69	19.99	131.49	439.21	402.39	36.82	11.929	0		
9,100.00	6,848.00	9,462.43	7,139.00	20.20	20.50	131.49	439.21	401.52	37.69	11.652	0		
9,200.00	6,848.00	9,562.43	7,139.00	20.71	21.02	131.49	439.21	400.63	38.58	11.384	0		
9,300.00	6,848.00	9,662.43	7,139.00	21.24	21.54	131.49	439.21	399.73	39.48	11.124	0		
9,400.00	6,848.00	9,762.43	7,139.00	21.77	22.08	131.49	439.21	398.82	40.40	10.873	0		
9,500.00	6,848.00	9,862.43	7,139.00	22.32	22.63	131.49	439.21	397.89	41.32	10.630	0		
9,600.00	6,848.00	9,962.43	7,139.00	22.87	23.19	131.49	439.21	396.96	42.25	10.395	0		
9,700.00	6,848.00	10,062.43	7,139.00	23.43	23.75	131.49	439.21	396.01	43.20	10.167	0		
9,800.00	6,848.00	10,162.43	7,139.00	24.00	24.32	131.49	439.21	395.06	44.15	9.948	0		
9,900.00	6,848.00	10,262.43	7,139.00	24.58	24.90	131.49	439.21	394.10	45.11	9.736	0		
10,000.00	6,848.00	10,362.43	7,139.00	25.16	25.49	131.49	439.21	393.13	46.08	9.531	0		
10,100.00	6,848.00	10,462.43	7,139.00	25.75	26.08	131.49	439.21	392.15	47.06	9.333	0		
10,200.00	6,848.00	10,562.43	7,139.00	26.34	26.67	131.49	439.21	391.17	48.04	9.142	0		
10,300.00	6,848.00	10,662.43	7,139.00	26.94	27.27	131.49	439.21	390.18	49.03	8.957	0		
10,400.00	6,848.00	10,762.43	7,139.00	27.54	27.88	131.49	439.21	389.18	50.03	8.779	0		
10,500.00	6,848.00	10,862.43	7,139.00	28.15	28.49	131.49	439.21	388.18	51.03	8.606	0		
10,600.00	6,848.00	10,962.43	7,139.00	28.76	29.10	131.49	439.21	387.17	52.04	8.440	0		
10,700.00	6,848.00	11,062.43	7,139.00	29.38	29.72	131.49	439.21	386.16	53.05	8.278	0		
10,800.00	6,848.00	11,162.43	7,139.00	30.00	30.34	131.49	439.21	385.14	54.07	8.123	0		
10,900.00	6,848.00	11,262.43	7,139.00	30.62	30.97	131.49	439.21	384.12	55.09	7.972	0		
11,000.00	6,848.00	11,362.43	7,139.00	31.25	31.60	131.49	439.21	383.09	56.12	7.826	0		
11,100.00	6,848.00	11,462.43	7,139.00	31.88	32.23	131.49	439.21	382.06	57.15	7.685	0		
11,200.00	6,848.00	11,562.43	7,139.00	32.52	32.86	131.49	439.21	381.02	58.19	7.548	0		
11,300.00	6,848.00	11,662.43	7,139.00	33.15	33.50	131.49	439.21	379.98	59.23	7.416	0		
11,400.00	6,848.00	11,762.43	7,139.00	33.79	34.14	131.49	439.21	378.94	60.27	7.288	0		
11,500.00	6,848.00	11,862.43	7,139.00	34.43	34.78	131.49	439.21	377.90	61.31	7.163	0		
11,600.00	6,848.00	11,962.43	7,139.00	35.08	35.43	131.49	439.21	376.85	62.36	7.043	0		
11,661.40	6,848.00	12,023.83	7,139.00	35.47	35.83	131.49	439.21	376.29	62.92	6.980	0		
11,686.39	6,848.00	12,048.04	7,139.00	35.63	35.98	131.49	439.21	375.95	63.26	6.943	0		SF

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36C-24W - Original Hole - Rev 1		Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
0.00	0.00	0.00	0.00	0.00	0.00	178.26	25.87									
100.00	100.00	100.00	100.00	0.15	0.15	178.26	25.87	25.58	0.29	88.233	0					
200.00	200.00	200.00	200.00	0.32	0.32	178.26	25.87	25.23	0.64	40.280	0					
300.00	300.00	300.00	300.00	0.50	0.50	178.26	25.87	24.88	0.99	26.097	0					
400.00	400.00	400.00	400.00	0.67	0.67	178.26	25.87	24.53	1.34	19.301	0					
500.00	500.00	500.00	500.00	0.84	0.84	178.26	25.87	24.18	1.69	15.313	0		CC, ES			
600.00	600.00	599.17	599.15	1.02	1.02	176.57	27.41	25.37	2.04	13.453	0					
700.00	699.98	698.20	698.04	1.19	1.19	33.89	30.67	28.29	2.38	12.864	0					
800.00	799.84	797.11	796.58	1.37	1.37	32.85	34.23	31.49	2.73	12.530	0					
900.00	899.45	895.89	894.63	1.55	1.55	32.80	38.02	34.94	3.08	12.348	0					
1,000.00	998.70	994.54	992.09	1.73	1.73	33.48	42.06	38.63	3.43	12.266	0					
1,100.00	1,097.47	1,093.06	1,088.84	1.91	1.92	34.69	46.35	42.57	3.78	12.253	0					
1,200.00	1,195.62	1,191.45	1,184.75	2.10	2.11	36.26	50.91	46.77	4.14	12.289	0					
1,300.00	1,293.06	1,289.69	1,279.73	2.30	2.31	38.09	55.77	51.26	4.51	12.362	0					
1,400.00	1,389.64	1,387.80	1,373.66	2.50	2.52	40.07	60.97	56.07	4.89	12.461	0					
1,439.37	1,427.41	1,426.39	1,410.33	2.59	2.61	40.88	63.11	58.06	5.05	12.507	0					
1,500.00	1,485.46	1,485.74	1,466.40	2.71	2.74	41.82	66.99	61.70	5.29	12.664	0					
1,600.00	1,581.20	1,584.69	1,559.20	2.93	2.97	42.31	75.14	69.44	5.69	13.196	0					
1,700.00	1,676.93	1,684.34	1,652.59	3.14	3.21	42.62	83.48	77.38	6.10	13.680	0					
1,800.00	1,772.67	1,783.99	1,745.97	3.36	3.44	42.88	91.82	85.31	6.51	14.097	0					
1,900.00	1,868.41	1,883.64	1,839.35	3.58	3.68	43.09	100.17	93.24	6.93	14.460	0					
2,000.00	1,964.15	1,983.29	1,932.73	3.80	3.92	43.27	108.52	101.18	7.34	14.779	0					
2,100.00	2,059.89	2,082.94	2,026.12	4.03	4.16	43.42	116.87	109.11	7.76	15.061	0					
2,200.00	2,155.63	2,182.59	2,119.50	4.25	4.40	43.55	125.22	117.04	8.18	15.311	0					
2,300.00	2,251.36	2,282.24	2,212.88	4.47	4.65	43.67	133.57	124.97	8.60	15.535	0					
2,400.00	2,347.10	2,381.89	2,306.26	4.70	4.89	43.77	141.92	132.90	9.02	15.736	0					
2,500.00	2,442.84	2,481.54	2,399.64	4.93	5.14	43.86	150.27	140.83	9.44	15.918	0					
2,600.00	2,538.58	2,581.19	2,493.03	5.15	5.39	43.95	158.62	148.76	9.86	16.083	0					
2,700.00	2,634.32	2,680.84	2,586.41	5.38	5.63	44.02	166.97	156.69	10.29	16.234	0					
2,800.00	2,730.06	2,780.49	2,679.79	5.61	5.88	44.09	175.32	164.61	10.71	16.371	0					
2,900.00	2,825.79	2,880.14	2,773.17	5.83	6.13	44.15	183.68	172.54	11.13	16.498	0					
3,000.00	2,921.53	2,979.79	2,866.56	6.06	6.38	44.20	192.03	180.47	11.56	16.614	0					
3,100.00	3,017.27	3,079.44	2,959.94	6.29	6.63	44.25	200.38	188.40	11.98	16.722	0					
3,200.00	3,113.01	3,179.09	3,053.32	6.52	6.88	44.30	208.73	196.32	12.41	16.822	0					
3,300.00	3,208.75	3,278.74	3,146.70	6.75	7.13	44.34	217.09	204.25	12.83	16.914	0					
3,400.00	3,304.49	3,378.39	3,240.08	6.98	7.38	44.38	225.44	212.18	13.26	17.001	0					
3,500.00	3,400.22	3,478.05	3,333.47	7.21	7.63	44.42	233.79	220.10	13.69	17.081	0					
3,600.00	3,495.96	3,577.70	3,426.85	7.44	7.88	44.45	242.14	228.03	14.11	17.157	0					
3,700.00	3,591.70	3,677.35	3,520.23	7.67	8.13	44.48	250.50	235.96	14.54	17.228	0					
3,800.00	3,687.44	3,777.00	3,613.61	7.90	8.38	44.51	258.85	243.88	14.97	17.294	0					
3,900.00	3,783.18	3,876.65	3,707.00	8.13	8.63	44.54	267.20	251.81	15.39	17.357	0					
4,000.00	3,878.92	3,976.30	3,800.38	8.36	8.88	44.57	275.56	259.73	15.82	17.416	0					
4,100.00	3,974.65	4,075.95	3,893.76	8.59	9.13	44.59	283.91	267.66	16.25	17.471	0					
4,200.00	4,070.39	4,175.60	3,987.14	8.82	9.38	44.62	292.26	275.59	16.68	17.524	0					
4,300.00	4,166.13	4,275.25	4,080.52	9.05	9.63	44.64	300.62	283.51	17.11	17.574	0					
4,400.00	4,261.87	4,374.90	4,173.91	9.28	9.88	44.66	308.97	291.44	17.53	17.621	0					
4,500.00	4,357.61	4,474.55	4,267.29	9.51	10.13	44.68	317.32	299.36	17.96	17.666	0					
4,600.00	4,453.35	4,574.20	4,360.67	9.74	10.39	44.70	325.68	307.29	18.39	17.709	0					
4,700.00	4,549.08	4,673.85	4,454.05	9.97	10.64	44.72	334.03	315.21	18.82	17.750	0					
4,800.00	4,644.82	4,773.50	4,547.44	10.20	10.89	44.73	342.39	323.14	19.25	17.789	0					
4,900.00	4,740.56	4,873.15	4,640.82	10.43	11.14	44.75	350.74	331.06	19.68	17.826	0					
5,000.00	4,836.30	4,972.80	4,734.20	10.66	11.39	44.77	359.09	338.99	20.10	17.861	0					
5,100.00	4,932.04	5,072.45	4,827.58	10.89	11.64	44.78	367.45	346.91	20.53	17.895	0					
5,200.00	5,027.78	5,172.10	4,920.97	11.12	11.90	44.79	375.80	354.84	20.96	17.927	0					

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





# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
5,300.00	5,123.51	5,271.75	5,014.35	11.35	12.15	44.81	384.15	362.76	21.39	17.958	0		
5,400.00	5,219.25	5,371.40	5,107.73	11.59	12.40	44.82	392.51	370.69	21.82	17.988	0		
5,500.00	5,314.99	5,471.05	5,201.11	11.82	12.65	44.83	400.86	378.61	22.25	18.016	0		
5,600.00	5,410.73	5,570.70	5,294.49	12.05	12.90	44.85	409.22	386.54	22.68	18.044	0		
5,633.84	5,443.13	5,604.43	5,326.10	12.13	12.99	44.85	412.04	389.22	22.82	18.053	0		
5,700.00	5,506.68	5,670.30	5,387.83	12.27	13.16	44.87	418.11	395.01	23.10	18.100	0		
5,800.00	5,603.51	5,769.63	5,480.91	12.49	13.41	44.66	429.33	405.85	23.48	18.284	0		
5,900.00	5,701.15	5,870.43	5,575.38	12.69	13.66	44.17	443.03	419.20	23.83	18.594	0		
6,000.00	5,799.48	5,984.02	5,682.78	12.88	13.93	43.50	457.27	433.11	24.16	18.927	0		
6,100.00	5,898.38	6,098.41	5,792.32	13.06	14.19	42.84	470.81	446.35	24.47	19.242	0		
6,200.00	5,997.74	6,213.57	5,903.84	13.23	14.43	42.18	483.65	458.90	24.75	19.539	0		
6,300.00	6,097.43	6,329.47	6,017.16	13.40	14.66	41.52	495.75	470.73	25.01	19.819	0		
6,400.00	6,197.34	6,446.11	6,132.09	13.55	14.88	40.86	507.08	481.83	25.25	20.082	0		
6,473.21	6,270.54	6,531.94	6,217.14	13.65	15.03	-179.37	514.89	487.73	27.16	18.961	0		
6,500.00	6,297.33	6,563.46	6,248.44	13.69	15.08	-179.57	517.54	490.28	27.26	18.982	0		
6,573.21	6,370.54	6,649.96	6,334.55	13.80	15.22	179.98	523.52	495.97	27.55	19.003	0		
6,575.00	6,372.33	6,652.08	6,336.66	13.80	15.22	-90.02	523.64	497.93	25.72	20.360	0		
6,600.00	6,397.31	6,681.67	6,366.18	13.83	15.26	-90.04	525.24	499.43	25.80	20.356	0		
6,625.00	6,422.23	6,711.19	6,395.64	13.86	15.31	-90.24	526.62	500.75	25.87	20.357	0		
6,650.00	6,447.00	6,740.56	6,424.97	13.89	15.35	-90.61	527.81	501.89	25.92	20.364	0		
6,675.00	6,471.56	6,769.72	6,454.10	13.92	15.39	-91.14	528.83	502.88	25.95	20.378	0		
6,700.00	6,495.84	6,798.61	6,482.97	13.94	15.43	-91.82	529.72	503.76	25.97	20.399	0		
6,725.00	6,519.78	6,827.16	6,511.52	13.96	15.47	-92.64	530.54	504.57	25.97	20.428	0		
6,750.00	6,543.32	6,855.31	6,539.67	13.98	15.51	-93.58	531.32	505.36	25.96	20.468	0		
6,775.00	6,566.37	6,882.02	6,566.37	14.00	15.54	-94.59	532.14	506.21	25.94	20.517	0		
6,800.00	6,588.90	6,904.54	6,588.90	14.02	15.57	-95.51	533.20	507.29	25.92	20.574	0		
6,825.00	6,610.82	6,926.46	6,610.82	14.03	15.60	-96.47	534.63	508.74	25.89	20.650	0		
6,850.00	6,632.08	6,947.73	6,632.08	14.05	15.63	-97.44	536.50	510.64	25.86	20.746	0		
6,875.00	6,652.63	6,968.28	6,652.63	14.06	15.66	-98.39	538.88	513.05	25.83	20.862	0		
6,900.00	6,672.41	6,991.38	6,675.74	14.07	15.69	-99.52	541.81	516.02	25.78	21.014	0		
6,925.00	6,691.35	7,017.88	6,702.19	14.08	15.72	-100.81	545.15	519.44	25.72	21.199	0		
6,950.00	6,709.42	7,045.64	6,729.76	14.08	15.75	-102.11	548.87	523.23	25.64	21.406	0		
6,975.00	6,726.56	7,074.84	6,758.51	14.09	15.79	-103.42	552.94	527.39	25.56	21.635	0		
7,000.00	6,742.72	7,105.66	6,788.47	14.10	15.81	-104.75	557.32	531.86	25.46	21.889	0		
7,025.00	6,757.87	7,138.32	6,819.63	14.11	15.84	-106.10	561.96	536.61	25.35	22.167	0		
7,050.00	6,771.95	7,173.06	6,851.97	14.11	15.87	-107.48	566.79	541.57	25.23	22.469	0		
7,075.00	6,784.93	7,210.15	6,885.37	14.12	15.89	-108.87	571.75	546.68	25.08	22.798	0		
7,100.00	6,796.77	7,249.86	6,919.63	14.13	15.91	-110.28	576.76	551.85	24.91	23.149	0		
7,125.00	6,807.45	7,292.47	6,954.41	14.14	15.93	-111.69	581.72	556.99	24.73	23.524	0		
7,150.00	6,816.93	7,338.24	6,989.15	14.15	15.95	-113.07	586.51	561.99	24.52	23.915	0		
7,175.00	6,825.19	7,387.36	7,023.09	14.16	15.97	-114.41	591.02	566.71	24.31	24.314	0		
7,200.00	6,832.20	7,439.94	7,055.17	14.17	15.98	-115.66	595.10	571.02	24.09	24.707	0		
7,225.00	6,837.94	7,495.90	7,084.07	14.18	16.00	-116.77	598.63	574.75	23.87	25.074	0		
7,250.00	6,842.40	7,554.94	7,108.27	14.20	16.03	-117.68	601.45	577.76	23.69	25.390	0		
7,275.00	6,845.57	7,616.52	7,126.24	14.21	16.05	-118.34	603.45	579.90	23.55	25.626	0		
7,300.00	6,847.44	7,679.80	7,136.66	14.23	16.09	-118.70	604.54	581.07	23.47	25.756	0		
7,323.21	6,848.00	7,731.88	7,139.00	14.25	16.13	-118.77	604.71	581.22	23.49	25.746	0		
7,400.00	6,848.00	7,808.67	7,139.00	14.32	16.20	-118.77	604.71	581.01	23.70	25.516	0		
7,500.00	6,848.00	7,908.67	7,139.00	14.45	16.32	-118.77	604.71	580.68	24.03	25.164	0		
7,600.00	6,848.00	8,008.67	7,139.00	14.60	16.46	-118.77	604.71	580.29	24.42	24.759	0		
7,700.00	6,848.00	8,108.67	7,139.00	14.79	16.63	-118.77	604.71	579.84	24.88	24.309	0		
7,800.00	6,848.00	8,208.67	7,139.00	15.01	16.83	-118.77	604.71	579.33	25.38	23.823	0		
7,832.51	6,848.00	8,241.18	7,139.00	15.09	16.90	-118.77	604.71	578.89	25.82	23.417	0		
7,900.00	6,848.00	8,308.67	7,139.00	15.27	17.06	-118.77	604.71	578.77	25.94	23.308	0		

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36C-24W - Original Hole - Rev 1		Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
8,000.00	6,848.00	8,408.67	7,139.00	15.56	17.32	-118.77	604.71	578.16	26.55	22.774	0					
8,100.00	6,848.00	8,508.67	7,139.00	15.88	17.60	-118.77	604.71	577.50	27.21	22.226	0					
8,200.00	6,848.00	8,608.67	7,139.00	16.22	17.91	-118.77	604.71	576.81	27.91	21.670	0					
8,300.00	6,848.00	8,708.67	7,139.00	16.59	18.24	-118.77	604.71	576.07	28.64	21.113	0					
8,400.00	6,848.00	8,808.67	7,139.00	16.98	18.59	-118.77	604.71	575.30	29.41	20.558	0					
8,500.00	6,848.00	8,908.67	7,139.00	17.39	18.97	-118.77	604.71	574.49	30.22	20.009	0					
8,600.00	6,848.00	9,008.67	7,139.00	17.82	19.37	-118.77	604.71	573.65	31.06	19.469	0					
8,700.00	6,848.00	9,108.67	7,139.00	18.26	19.78	-118.77	604.71	572.79	31.93	18.941	0					
8,800.00	6,848.00	9,208.67	7,139.00	18.73	20.21	-118.77	604.71	571.89	32.82	18.426	0					
8,900.00	6,848.00	9,308.67	7,139.00	19.20	20.66	-118.77	604.71	570.98	33.74	17.925	0					
8,921.70	6,848.00	9,330.37	7,139.00	19.31	20.76	-118.77	604.71	570.47	34.24	17.662	0					
9,000.00	6,848.00	9,408.67	7,139.00	19.69	21.12	-118.77	604.71	570.04	34.67	17.440	0					
9,100.00	6,848.00	9,508.67	7,139.00	20.20	21.60	-118.77	604.71	569.08	35.63	16.970	0					
9,200.00	6,848.00	9,608.67	7,139.00	20.71	22.09	-118.77	604.71	568.10	36.61	16.516	0					
9,300.00	6,848.00	9,708.67	7,139.00	21.24	22.58	-118.77	604.71	567.10	37.61	16.079	0					
9,400.00	6,848.00	9,808.67	7,139.00	21.77	23.09	-118.77	604.71	566.09	38.62	15.657	0					
9,500.00	6,848.00	9,908.67	7,139.00	22.32	23.61	-118.77	604.71	565.06	39.65	15.252	0					
9,600.00	6,848.00	10,008.67	7,139.00	22.87	24.14	-118.77	604.71	564.02	40.69	14.862	0					
9,700.00	6,848.00	10,108.67	7,139.00	23.43	24.68	-118.77	604.71	562.97	41.74	14.487	0					
9,800.00	6,848.00	10,208.67	7,139.00	24.00	25.23	-118.77	604.71	561.90	42.81	14.126	0					
9,900.00	6,848.00	10,308.67	7,139.00	24.58	25.78	-118.77	604.71	560.83	43.88	13.780	0					
10,000.00	6,848.00	10,408.67	7,139.00	25.16	26.34	-118.77	604.71	559.74	44.97	13.447	0					
10,100.00	6,848.00	10,508.67	7,139.00	25.75	26.91	-118.77	604.71	558.65	46.07	13.127	0					
10,200.00	6,848.00	10,608.67	7,139.00	26.34	27.49	-118.77	604.71	557.54	47.17	12.820	0					
10,300.00	6,848.00	10,708.67	7,139.00	26.94	28.07	-118.77	604.71	556.43	48.28	12.524	0					
10,400.00	6,848.00	10,808.67	7,139.00	27.54	28.65	-118.77	604.71	555.31	49.40	12.240	0					
10,500.00	6,848.00	10,908.67	7,139.00	28.15	29.24	-118.77	604.71	554.18	50.53	11.967	0					
10,600.00	6,848.00	11,008.67	7,139.00	28.76	29.84	-118.77	604.71	553.05	51.66	11.705	0					
10,700.00	6,848.00	11,108.67	7,139.00	29.38	30.44	-118.77	604.71	551.91	52.80	11.452	0					
10,800.00	6,848.00	11,208.67	7,139.00	30.00	31.04	-118.77	604.71	550.76	53.95	11.209	0					
10,900.00	6,848.00	11,308.67	7,139.00	30.62	31.65	-118.77	604.71	549.61	55.10	10.975	0					
11,000.00	6,848.00	11,408.67	7,139.00	31.25	32.26	-118.77	604.71	548.45	56.26	10.749	0					
11,100.00	6,848.00	11,508.67	7,139.00	31.88	32.88	-118.77	604.71	547.29	57.42	10.532	0					
11,177.65	6,848.00	11,586.31	7,139.00	32.37	33.36	-118.77	604.71	546.30	58.41	10.353	0					
11,200.00	6,848.00	11,608.67	7,139.00	32.52	33.50	-118.77	604.71	546.13	58.59	10.322	0					
11,300.00	6,848.00	11,708.67	7,139.00	33.15	34.12	-118.77	604.71	544.96	59.76	10.120	0					
11,400.00	6,848.00	11,808.67	7,139.00	33.79	34.75	-118.77	604.71	543.78	60.93	9.925	0					
11,500.00	6,848.00	11,908.67	7,139.00	34.43	35.38	-118.77	604.71	542.60	62.11	9.737	0					
11,600.00	6,848.00	12,008.70	7,139.00	35.08	36.01	-118.77	604.71	541.42	63.29	9.555	0					
11,686.39	6,848.00	12,095.09	7,139.00	35.63	36.56	-118.77	604.71	540.40	64.31	9.403	0	SF				

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
0.00	0.00	0.00	0.00	0.00	0.00	-1.88	104.22				0		
100.00	100.00	100.00	100.00	0.15	0.15	-1.88	104.22	103.92	0.29	355.425	0		
200.00	200.00	200.00	200.00	0.32	0.32	-1.88	104.22	103.57	0.64	162.259	0		
300.00	300.00	300.00	300.00	0.50	0.50	-1.88	104.22	103.22	0.99	105.126	0		
400.00	400.00	400.00	400.00	0.67	0.67	-1.88	104.22	102.88	1.34	77.749	0		
500.00	500.00	500.00	500.00	0.84	0.84	-1.88	104.22	102.53	1.69	61.685	0		
600.00	600.00	600.00	600.00	1.02	1.02	-1.88	104.22	102.18	2.04	51.123	0		CC, ES
700.00	699.98	699.98	699.98	1.19	1.19	-142.71	105.60	103.21	2.39	44.238	0		
800.00	799.84	799.84	799.84	1.37	1.37	-144.32	109.81	107.08	2.73	40.161	0		
900.00	899.45	899.45	899.45	1.55	1.54	-146.72	117.00	113.92	3.08	37.991	0		
1,000.00	998.70	998.70	998.70	1.73	1.72	-149.62	127.38	123.96	3.42	37.215	0		
1,100.00	1,097.47	1,098.09	1,098.07	1.91	1.89	-152.04	140.91	137.15	3.76	37.432	0		
1,200.00	1,195.62	1,197.39	1,197.23	2.10	2.06	-153.30	157.23	153.13	4.11	38.300	0		
1,300.00	1,293.06	1,296.46	1,295.93	2.30	2.24	-153.67	176.16	171.72	4.45	39.619	0		
1,400.00	1,389.64	1,395.13	1,393.88	2.50	2.41	-153.36	197.63	192.84	4.79	41.263	0		
1,439.37	1,427.41	1,433.85	1,432.19	2.59	2.48	-153.10	206.77	201.85	4.93	41.980	0		
1,500.00	1,485.46	1,493.41	1,490.97	2.71	2.59	-152.64	221.07	215.92	5.15	42.933	0		
1,600.00	1,581.20	1,591.61	1,587.42	2.93	2.78	-151.36	244.32	238.80	5.53	44.220	0		
1,700.00	1,676.93	1,689.57	1,682.93	3.14	2.96	-149.57	267.34	261.43	5.91	45.237	0		
1,800.00	1,772.67	1,786.48	1,777.05	3.36	3.15	-147.75	290.46	284.15	6.30	46.080	0		
1,900.00	1,868.41	1,883.39	1,871.17	3.58	3.34	-146.20	313.81	307.10	6.70	46.820	0		
2,000.00	1,964.15	1,980.29	1,965.29	3.80	3.54	-144.86	337.35	330.24	7.10	47.485	0		
2,100.00	2,059.89	2,077.20	2,059.40	4.03	3.73	-143.70	361.04	353.53	7.51	48.084	0		
2,200.00	2,155.63	2,174.11	2,153.52	4.25	3.93	-142.68	384.85	376.94	7.91	48.626	0		
2,300.00	2,251.36	2,271.02	2,247.64	4.47	4.13	-141.78	408.77	400.45	8.32	49.116	0		
2,400.00	2,347.10	2,367.92	2,341.76	4.70	4.32	-140.98	432.77	424.04	8.73	49.562	0		
2,500.00	2,442.84	2,464.83	2,435.88	4.93	4.52	-140.26	456.85	447.71	9.14	49.969	0		
2,600.00	2,538.58	2,561.74	2,529.99	5.15	4.72	-139.62	480.98	471.43	9.55	50.341	0		
2,700.00	2,634.32	2,658.65	2,624.11	5.38	4.93	-139.03	505.17	495.20	9.97	50.683	0		
2,800.00	2,730.06	2,755.56	2,718.23	5.61	5.13	-138.50	529.40	519.02	10.38	50.997	0		
2,900.00	2,825.79	2,852.46	2,812.35	5.83	5.33	-138.02	553.68	542.88	10.80	51.288	0		
3,000.00	2,921.53	2,949.37	2,906.47	6.06	5.53	-137.57	577.98	566.77	11.21	51.557	0		
3,100.00	3,017.27	3,046.28	3,000.59	6.29	5.74	-137.16	602.32	590.69	11.63	51.806	0		
3,200.00	3,113.01	3,143.19	3,094.70	6.52	5.94	-136.79	626.68	614.64	12.04	52.038	0		
3,300.00	3,208.75	3,240.09	3,188.82	6.75	6.15	-136.44	651.07	638.61	12.46	52.255	0		
3,400.00	3,304.49	3,337.00	3,282.94	6.98	6.35	-136.12	675.47	662.60	12.88	52.457	0		
3,500.00	3,400.22	3,433.91	3,377.06	7.21	6.55	-135.82	699.90	686.60	13.29	52.646	0		
3,600.00	3,495.96	3,530.82	3,471.18	7.44	6.76	-135.54	724.34	710.63	13.71	52.824	0		
3,700.00	3,591.70	3,627.73	3,565.30	7.67	6.97	-135.27	748.80	734.67	14.13	52.991	0		
3,800.00	3,687.44	3,724.63	3,659.41	7.90	7.17	-135.03	773.27	758.72	14.55	53.148	0		
3,900.00	3,783.18	3,821.54	3,753.53	8.13	7.38	-134.80	797.76	782.79	14.97	53.297	0		
4,000.00	3,878.92	3,918.45	3,847.65	8.36	7.58	-134.58	822.25	806.86	15.39	53.437	0		
4,100.00	3,974.65	4,015.36	3,941.77	8.59	7.79	-134.38	846.76	830.95	15.81	53.569	0		
4,200.00	4,070.39	4,112.26	4,035.89	8.82	7.99	-134.18	871.27	855.05	16.23	53.695	0		
4,300.00	4,166.13	4,209.17	4,130.01	9.05	8.20	-134.00	895.80	879.15	16.65	53.814	0		
4,400.00	4,261.87	4,306.08	4,224.12	9.28	8.41	-133.83	920.33	903.27	17.07	53.927	0		
4,500.00	4,357.61	4,402.99	4,318.24	9.51	8.61	-133.67	944.87	927.39	17.49	54.035	0		
4,600.00	4,453.35	4,499.90	4,412.36	9.74	8.82	-133.51	969.42	951.51	17.91	54.137	0		
4,700.00	4,549.08	4,596.80	4,506.48	9.97	9.03	-133.36	993.97	975.64	18.33	54.235	0		
4,800.00	4,644.82	4,693.71	4,600.60	10.20	9.24	-133.22	1,018.53	999.78	18.75	54.328	0		
4,900.00	4,740.56	4,790.62	4,694.72	10.43	9.44	-133.09	1,043.10	1,023.93	19.17	54.417	0		
5,000.00	4,836.30	4,887.53	4,788.83	10.66	9.65	-132.96	1,067.67	1,048.08	19.59	54.502	0		
5,100.00	4,932.04	4,984.43	4,882.95	10.89	9.86	-132.84	1,092.24	1,072.23	20.01	54.584	0		
5,200.00	5,027.78	5,081.34	4,977.07	11.12	10.06	-132.72	1,116.82	1,096.39	20.43	54.662	0		

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36NB-19W - Original Hole - Rev 0		Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder															Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning			
5,300.00	5,123.51	5,178.25	5,071.19	11.35	10.27	-132.61	1,141.40	1,120.55	20.85	54.737	0					
5,400.00	5,219.25	5,275.16	5,165.31	11.59	10.48	-132.50	1,165.99	1,144.72	21.27	54.809	0					
5,500.00	5,314.99	5,372.07	5,259.43	11.82	10.69	-132.40	1,190.58	1,168.89	21.70	54.878	0					
5,600.00	5,410.73	5,468.97	5,353.54	12.05	10.90	-132.30	1,215.17	1,193.06	22.12	54.944	0					
5,633.84	5,443.13	5,501.77	5,385.39	12.13	10.97	-132.27	1,223.50	1,201.24	22.26	54.966	0					
5,700.00	5,506.68	5,567.72	5,449.47	12.27	11.11	-132.42	1,239.26	1,216.69	22.57	54.901	0					
5,800.00	5,603.51	5,674.73	5,554.00	12.49	11.32	-132.62	1,260.70	1,237.67	23.04	54.724	0					
5,900.00	5,701.15	5,782.68	5,660.26	12.69	11.53	-132.82	1,279.09	1,255.62	23.48	54.483	0					
6,000.00	5,799.48	5,891.40	5,767.91	12.88	11.73	-133.03	1,294.39	1,270.50	23.89	54.182	0					
6,100.00	5,898.38	6,000.70	5,876.65	13.06	11.92	-133.25	1,306.56	1,282.29	24.28	53.822	0					
6,200.00	5,997.74	6,110.38	5,986.10	13.23	12.10	-133.48	1,315.59	1,290.96	24.63	53.404	0					
6,300.00	6,097.43	6,220.25	6,095.93	13.40	12.27	-133.72	1,321.47	1,296.50	24.97	52.924	0					
6,400.00	6,197.34	6,321.66	6,197.34	13.55	12.43	-133.90	1,324.45	1,299.18	25.27	52.408	0					
6,473.21	6,270.54	6,411.84	6,287.34	13.65	12.55	6.14	1,324.73	1,300.62	24.10	54.960	0					
6,500.00	6,297.33	6,445.87	6,321.02	13.69	12.59	5.93	1,324.32	1,300.11	24.21	54.711	0					
6,573.21	6,370.54	6,535.28	6,407.76	13.80	12.67	5.01	1,322.59	1,298.11	24.48	54.016	0					
6,575.00	6,372.33	6,537.38	6,409.76	13.80	12.67	94.99	1,322.54	1,296.74	25.80	51.264	0					
6,600.00	6,397.31	6,566.56	6,437.28	13.83	12.69	94.68	1,321.87	1,296.00	25.87	51.090	0					
6,625.00	6,422.23	6,595.39	6,464.01	13.86	12.71	94.39	1,321.26	1,295.31	25.94	50.927	0					
6,650.00	6,447.00	6,623.89	6,489.92	13.89	12.73	94.10	1,320.70	1,294.68	26.01	50.771	0					
6,675.00	6,471.56	6,652.07	6,515.01	13.92	12.74	93.81	1,320.19	1,294.11	26.08	50.628	0					
6,700.00	6,495.84	6,679.97	6,539.25	13.94	12.75	93.54	1,319.73	1,293.59	26.14	50.490	0					
6,725.00	6,519.78	6,707.59	6,562.64	13.96	12.76	93.27	1,319.32	1,293.13	26.20	50.364	0					
6,750.00	6,543.32	6,734.96	6,585.17	13.98	12.77	93.01	1,318.96	1,292.71	26.25	50.244	0					
6,775.00	6,566.37	6,762.09	6,606.81	14.00	12.77	92.75	1,318.64	1,292.33	26.30	50.133	0					
6,800.00	6,588.90	6,789.00	6,627.58	14.02	12.78	92.51	1,318.35	1,292.00	26.35	50.031	0					
6,825.00	6,610.82	6,815.71	6,647.46	14.03	12.78	92.27	1,318.11	1,291.71	26.40	49.935	0					
6,850.00	6,632.08	6,842.23	6,666.43	14.05	12.78	92.05	1,317.90	1,291.46	26.44	49.848	0					
6,875.00	6,652.63	6,868.57	6,684.50	14.06	12.79	91.83	1,317.72	1,291.24	26.48	49.765	0					
6,900.00	6,672.41	6,894.75	6,701.66	14.07	12.79	91.62	1,317.57	1,291.06	26.51	49.693	0					
6,925.00	6,691.35	6,920.77	6,717.90	14.08	12.79	91.43	1,317.44	1,290.89	26.55	49.621	0					
6,950.00	6,709.42	6,946.66	6,733.21	14.08	12.80	91.25	1,317.34	1,290.76	26.58	49.559	0					
6,975.00	6,726.56	6,972.42	6,747.59	14.09	12.80	91.07	1,317.26	1,290.64	26.61	49.496	0					
7,000.00	6,742.72	6,998.07	6,761.04	14.10	12.81	90.91	1,317.19	1,290.55	26.64	49.443	0					
7,025.00	6,757.87	7,023.61	6,773.55	14.11	12.81	90.77	1,317.14	1,290.47	26.67	49.385	0					
7,050.00	6,771.95	7,049.06	6,785.12	14.11	12.82	90.63	1,317.10	1,290.40	26.70	49.336	0					
7,075.00	6,784.93	7,074.42	6,795.73	14.12	12.83	90.51	1,317.07	1,290.35	26.73	49.280	0					
7,100.00	6,796.77	7,099.71	6,805.40	14.13	12.84	90.40	1,317.05	1,290.30	26.75	49.231	0					
7,125.00	6,807.45	7,124.93	6,814.10	14.14	12.85	90.31	1,317.04	1,290.26	26.78	49.174	0					
7,150.00	6,816.93	7,150.10	6,821.85	14.15	12.86	90.22	1,317.03	1,290.22	26.81	49.121	0					
7,175.00	6,825.19	7,175.22	6,828.63	14.16	12.88	90.15	1,317.02	1,290.18	26.85	49.057	0					
7,200.00	6,832.20	7,200.30	6,834.44	14.17	12.90	90.10	1,317.02	1,290.14	26.88	48.996	0					
7,225.00	6,837.94	7,225.36	6,839.29	14.18	12.92	90.06	1,317.02	1,290.10	26.92	48.922	0					
7,250.00	6,842.40	7,250.39	6,843.16	14.20	12.94	90.03	1,317.02	1,290.06	26.96	48.848	0					
7,275.00	6,845.57	7,275.41	6,846.05	14.21	12.96	90.02	1,317.02	1,290.01	27.01	48.762	0					
7,284.00	6,846.40	7,284.42	6,846.85	14.22	12.97	90.02	1,317.02	1,290.06	26.96	48.856	0					
7,300.00	6,847.44	7,300.43	6,847.97	14.23	12.99	90.02	1,317.02	1,289.96	27.06	48.673	0					
7,323.21	6,848.00	7,323.66	6,848.87	14.25	13.01	90.04	1,317.02	1,289.91	27.11	48.579	0					
7,400.00	6,848.00	7,400.47	6,849.00	14.32	13.11	90.04	1,317.02	1,289.71	27.31	48.229	0					
7,500.00	6,848.00	7,500.47	6,849.00	14.45	13.28	90.04	1,317.02	1,289.39	27.63	47.670	0					
7,600.00	6,848.00	7,600.47	6,849.00	14.60	13.48	90.04	1,317.02	1,289.00	28.02	47.008	0					
7,700.00	6,848.00	7,700.47	6,849.00	14.79	13.71	90.04	1,317.02	1,288.55	28.47	46.255	0					
7,800.00	6,848.00	7,800.47	6,849.00	15.01	13.98	90.04	1,317.02	1,288.03	28.99	45.427	0					
7,900.00	6,848.00	7,900.47	6,849.00	15.27	14.27	90.04	1,317.02	1,287.45	29.57	44.538	0					

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36NB-19W - Original Hole - Rev 0		Offset Site Error:		0.00 usft
Survey Program: 0-Pathfinder													Offset Well Error:		0.00 usft		
Reference		Offset		Semi Major Axis		Distance							Warning				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Risked Separation Factor	Probability of Collision					
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)								
8,000.00	6,848.00	8,000.47	6,849.00	15.56	14.60	90.04	1,317.02	1,286.81	30.21	43.602	0						
8,100.00	6,848.00	8,100.47	6,849.00	15.88	14.94	90.04	1,317.02	1,286.13	30.89	42.632	0						
8,200.00	6,848.00	8,200.47	6,849.00	16.22	15.32	90.04	1,317.02	1,285.39	31.63	41.639	0						
8,300.00	6,848.00	8,300.47	6,849.00	16.59	15.71	90.04	1,317.02	1,284.61	32.41	40.634	0						
8,400.00	6,848.00	8,400.47	6,849.00	16.98	16.13	90.04	1,317.02	1,283.78	33.24	39.626	0						
8,500.00	6,848.00	8,500.47	6,849.00	17.39	16.57	90.04	1,317.02	1,282.92	34.10	38.622	0						
8,600.00	6,848.00	8,600.47	6,849.00	17.82	17.02	90.04	1,317.02	1,282.02	35.00	37.629	0						
8,700.00	6,848.00	8,700.47	6,849.00	18.26	17.49	90.04	1,317.02	1,281.09	35.93	36.652	0						
8,800.00	6,848.00	8,800.47	6,849.00	18.73	17.98	90.04	1,317.02	1,280.12	36.90	35.694	0						
8,900.00	6,848.00	8,900.47	6,849.00	19.20	18.48	90.04	1,317.02	1,279.13	37.89	34.759	0						
9,000.00	6,848.00	9,000.47	6,849.00	19.69	18.99	90.04	1,317.02	1,278.11	38.91	33.849	0						
9,100.00	6,848.00	9,100.47	6,849.00	20.20	19.51	90.04	1,317.02	1,277.07	39.95	32.965	0						
9,200.00	6,848.00	9,200.47	6,849.00	20.71	20.05	90.04	1,317.02	1,276.00	41.02	32.109	0						
9,300.00	6,848.00	9,300.47	6,849.00	21.24	20.59	90.04	1,317.02	1,274.92	42.10	31.281	0						
9,400.00	6,848.00	9,400.47	6,849.00	21.77	21.15	90.04	1,317.02	1,273.81	43.21	30.482	0						
9,500.00	6,848.00	9,500.47	6,849.00	22.32	21.71	90.04	1,317.02	1,272.69	44.33	29.710	0						
9,600.00	6,848.00	9,600.47	6,849.00	22.87	22.28	90.04	1,317.02	1,271.55	45.47	28.966	0						
9,700.00	6,848.00	9,700.47	6,849.00	23.43	22.86	90.04	1,317.02	1,270.40	46.62	28.250	0						
9,800.00	6,848.00	9,800.47	6,849.00	24.00	23.45	90.04	1,317.02	1,269.23	47.79	27.560	0						
9,900.00	6,848.00	9,900.47	6,849.00	24.58	24.04	90.04	1,317.02	1,268.05	48.97	26.896	0						
10,000.00	6,848.00	10,000.47	6,849.00	25.16	24.64	90.04	1,317.02	1,266.86	50.16	26.257	0						
10,100.00	6,848.00	10,100.47	6,849.00	25.75	25.24	90.04	1,317.02	1,265.66	51.36	25.642	0						
10,200.00	6,848.00	10,200.47	6,849.00	26.34	25.85	90.04	1,317.02	1,264.44	52.58	25.050	0						
10,300.00	6,848.00	10,300.47	6,849.00	26.94	26.46	90.04	1,317.02	1,263.22	53.80	24.481	0						
10,400.00	6,848.00	10,400.47	6,849.00	27.54	27.08	90.04	1,317.02	1,261.99	55.03	23.933	0						
10,500.00	6,848.00	10,500.47	6,849.00	28.15	27.70	90.04	1,317.02	1,260.75	56.27	23.405	0						
10,600.00	6,848.00	10,600.47	6,849.00	28.76	28.33	90.04	1,317.02	1,259.50	57.52	22.897	0						
10,700.00	6,848.00	10,700.47	6,849.00	29.38	28.96	90.04	1,317.02	1,258.25	58.77	22.408	0						
10,800.00	6,848.00	10,800.47	6,849.00	30.00	29.59	90.04	1,317.02	1,256.98	60.04	21.937	0						
10,900.00	6,848.00	10,900.47	6,849.00	30.62	30.23	90.04	1,317.02	1,255.72	61.30	21.483	0						
11,000.00	6,848.00	11,000.47	6,849.00	31.25	30.86	90.04	1,317.02	1,254.44	62.58	21.046	0						
11,100.00	6,848.00	11,100.47	6,849.00	31.88	31.51	90.04	1,317.02	1,253.16	63.86	20.624	0						
11,200.00	6,848.00	11,200.47	6,849.00	32.52	32.15	90.04	1,317.02	1,251.88	65.14	20.217	0						
11,300.00	6,848.00	11,300.47	6,849.00	33.15	32.80	90.04	1,317.02	1,250.58	66.44	19.824	0						
11,400.00	6,848.00	11,400.47	6,849.00	33.79	33.44	90.04	1,317.02	1,249.29	67.73	19.445	0						
11,500.00	6,848.00	11,500.47	6,849.00	34.43	34.09	90.04	1,317.02	1,247.99	69.03	19.079	0						
11,600.00	6,848.00	11,600.52	6,849.00	35.08	34.75	90.04	1,317.02	1,246.69	70.33	18.725	0						
11,662.33	6,848.00	11,662.85	6,849.00	35.48	35.16	90.04	1,317.02	1,245.97	71.04	18.538	0						
11,686.39	6,848.00	11,684.05	6,849.00	35.63	35.30	90.04	1,317.02	1,245.59	71.43	18.437	0	SF					

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-1.73	52.10				0	CC, ES	
100.00	100.00	100.00	100.00	0.15	0.15	-1.73	52.10	51.81	0.29	177.681	0		
200.00	200.00	200.00	200.00	0.32	0.32	-1.73	52.10	51.46	0.64	81.115	0		
300.00	300.00	300.00	300.00	0.50	0.50	-1.73	52.10	51.11	0.99	52.554	0		
400.00	400.00	400.00	400.00	0.67	0.67	-1.73	52.10	50.76	1.34	38.868	0		
500.00	500.00	500.00	500.00	0.84	0.84	-1.73	52.10	50.41	1.69	30.837	0		
600.00	600.00	600.00	600.00	1.02	1.02	-1.73	52.10	50.06	2.04	25.557	0		
700.00	699.98	699.98	699.98	1.19	1.19	-143.13	53.48	51.10	2.39	22.406	0		
800.00	799.84	799.84	799.84	1.37	1.37	-146.20	57.76	55.02	2.73	21.125	0		
900.00	899.45	899.45	899.45	1.55	1.54	-150.38	65.18	62.11	3.08	21.170	0		
1,000.00	998.70	998.70	998.70	1.73	1.72	-154.83	76.03	72.61	3.42	22.225	0		
1,100.00	1,097.47	1,097.47	1,097.47	1.91	1.89	-158.94	90.45	86.69	3.76	24.062	0		
1,200.00	1,195.62	1,198.35	1,198.33	2.10	2.06	-161.92	107.29	103.19	4.10	26.179	0		
1,300.00	1,293.06	1,299.78	1,299.61	2.30	2.24	-163.45	125.02	120.58	4.44	28.173	0		
1,400.00	1,389.64	1,401.66	1,401.11	2.50	2.42	-164.03	143.45	138.68	4.78	30.028	0		
1,439.37	1,427.41	1,441.90	1,441.09	2.59	2.49	-164.07	150.89	145.98	4.91	30.721	0		
1,500.00	1,485.46	1,504.10	1,502.76	2.71	2.60	-163.96	161.93	156.79	5.13	31.535	0		
1,600.00	1,581.20	1,607.41	1,604.77	2.93	2.79	-163.17	177.98	172.47	5.51	32.307	0		
1,700.00	1,676.93	1,711.40	1,706.77	3.14	2.99	-161.76	191.41	185.52	5.89	32.492	0		
1,800.00	1,772.67	1,815.80	1,808.38	3.36	3.19	-159.79	202.35	196.06	6.28	32.209	0		
1,900.00	1,868.41	1,919.06	1,907.97	3.58	3.39	-157.34	211.05	204.37	6.68	31.576	0		
2,000.00	1,964.15	2,018.31	2,003.43	3.80	3.59	-154.96	219.41	212.32	7.09	30.945	0		
2,100.00	2,059.89	2,117.56	2,098.88	4.03	3.80	-152.77	228.11	220.61	7.50	30.405	0		
2,200.00	2,155.63	2,216.81	2,194.33	4.25	4.00	-150.73	237.12	229.20	7.92	29.942	0		
2,300.00	2,251.36	2,316.06	2,289.78	4.47	4.21	-148.85	246.41	238.07	8.34	29.541	0		
2,400.00	2,347.10	2,415.31	2,385.24	4.70	4.42	-147.10	255.95	247.18	8.77	29.193	0		
2,500.00	2,442.84	2,514.56	2,480.69	4.93	4.63	-145.48	265.70	256.51	9.20	28.889	0		
2,600.00	2,538.58	2,613.81	2,576.14	5.15	4.84	-143.98	275.66	266.03	9.63	28.623	0		
2,700.00	2,634.32	2,713.07	2,671.60	5.38	5.06	-142.58	285.78	275.72	10.07	28.389	0		
2,800.00	2,730.06	2,812.32	2,767.05	5.61	5.27	-141.28	296.07	285.56	10.51	28.183	0		
2,900.00	2,825.79	2,911.57	2,862.50	5.83	5.49	-140.06	306.50	295.55	10.95	28.000	0		
3,000.00	2,921.53	3,010.82	2,957.95	6.06	5.70	-138.93	317.05	305.66	11.39	27.838	0		
3,100.00	3,017.27	3,110.07	3,053.41	6.29	5.92	-137.86	327.72	315.89	11.83	27.693	0		
3,200.00	3,113.01	3,209.32	3,148.86	6.52	6.14	-136.87	338.50	326.22	12.28	27.564	0		
3,300.00	3,208.75	3,308.57	3,244.31	6.75	6.36	-135.94	349.37	336.64	12.73	27.448	0		
3,400.00	3,304.49	3,407.82	3,339.76	6.98	6.58	-135.06	360.33	347.15	13.18	27.345	0		
3,500.00	3,400.22	3,507.07	3,435.22	7.21	6.80	-134.23	371.36	357.73	13.63	27.251	0		
3,600.00	3,495.96	3,606.32	3,530.67	7.44	7.02	-133.46	382.47	368.39	14.08	27.167	0		
3,700.00	3,591.70	3,705.57	3,626.12	7.67	7.24	-132.72	393.64	379.11	14.53	27.092	0		
3,800.00	3,687.44	3,804.82	3,721.58	7.90	7.46	-132.03	404.88	389.89	14.98	27.023	0		
3,900.00	3,783.18	3,904.07	3,817.03	8.13	7.68	-131.37	416.16	400.73	15.44	26.961	0		
4,000.00	3,878.92	4,003.33	3,912.48	8.36	7.90	-130.75	427.50	411.61	15.89	26.904	0		
4,100.00	3,974.65	4,102.58	4,007.93	8.59	8.12	-130.16	438.89	422.55	16.34	26.853	0		
4,200.00	4,070.39	4,201.83	4,103.39	8.82	8.34	-129.60	450.32	433.52	16.80	26.807	0		
4,300.00	4,166.13	4,301.08	4,198.84	9.05	8.57	-129.07	461.79	444.54	17.25	26.764	0		
4,400.00	4,261.87	4,400.33	4,294.29	9.28	8.79	-128.57	473.30	455.59	17.71	26.725	0		
4,500.00	4,357.61	4,499.58	4,389.75	9.51	9.01	-128.08	484.85	466.68	18.17	26.690	0		
4,600.00	4,453.35	4,598.83	4,485.20	9.74	9.23	-127.63	496.42	477.80	18.62	26.657	0		
4,700.00	4,549.08	4,698.08	4,580.65	9.97	9.46	-127.19	508.03	488.95	19.08	26.628	0		
4,800.00	4,644.82	4,797.33	4,676.10	10.20	9.68	-126.77	519.66	500.13	19.54	26.601	0		
4,900.00	4,740.56	4,896.58	4,771.56	10.43	9.90	-126.37	531.32	511.33	19.99	26.576	0		
5,000.00	4,836.30	4,995.83	4,867.01	10.66	10.12	-125.98	543.01	522.56	20.45	26.553	0		
5,100.00	4,932.04	5,095.08	4,962.46	10.89	10.35	-125.62	554.71	533.81	20.91	26.532	0		
5,200.00	5,027.78	5,194.33	5,057.91	11.12	10.57	-125.26	566.44	545.08	21.37	26.512	0		

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36NB-21W - Original Hole - Rev 0		Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
5,300.00	5,123.51	5,293.59	5,153.37	11.35	10.80	-124.93	578.19	556.37	21.82	26.494	0					
5,400.00	5,219.25	5,392.84	5,248.82	11.59	11.02	-124.60	589.96	567.68	22.28	26.478	0					
5,500.00	5,314.99	5,491.46	5,343.68	11.82	11.24	-124.30	601.76	579.02	22.74	26.466	0					
5,600.00	5,410.73	5,587.12	5,436.25	12.05	11.45	-124.21	613.95	590.79	23.16	26.507	0					
5,633.84	5,443.13	5,619.46	5,467.72	12.13	11.51	-124.25	618.21	594.91	23.30	26.532	0					
5,700.00	5,506.68	5,682.67	5,529.46	12.27	11.64	-124.49	626.30	602.73	23.58	26.563	0					
5,800.00	5,603.51	5,778.23	5,623.32	12.49	11.83	-124.86	637.40	613.43	23.98	26.584	0					
5,900.00	5,701.15	5,873.78	5,717.72	12.69	12.01	-125.24	647.13	622.78	24.35	26.573	0					
6,000.00	5,799.48	5,969.30	5,812.54	12.88	12.17	-125.63	655.48	630.78	24.71	26.532	0					
6,100.00	5,898.38	6,064.77	5,907.63	13.06	12.34	-126.01	662.45	637.42	25.03	26.462	0					
6,200.00	5,997.74	6,160.15	6,002.87	13.23	12.49	-126.41	668.04	642.70	25.34	26.363	0					
6,300.00	6,097.43	6,255.44	6,098.13	13.40	12.63	-126.81	672.26	646.63	25.62	26.235	0					
6,400.00	6,197.34	6,354.65	6,197.34	13.55	12.78	-127.14	674.84	648.93	25.90	26.054	0					
6,473.21	6,270.54	6,445.81	6,288.32	13.65	12.90	12.67	674.62	650.61	24.01	28.099	0					
6,500.00	6,297.33	6,480.28	6,322.41	13.69	12.94	12.26	673.77	649.64	24.13	27.927	0					
6,573.21	6,370.54	6,570.72	6,410.09	13.80	13.02	10.42	670.16	645.69	24.47	27.385	0					
6,575.00	6,372.33	6,572.85	6,412.10	13.80	13.02	100.38	670.06	643.73	26.33	25.452	0					
6,600.00	6,397.31	6,602.33	6,439.87	13.83	13.04	99.78	668.65	642.26	26.39	25.340	0					
6,625.00	6,422.23	6,631.44	6,466.82	13.86	13.06	99.19	667.35	640.90	26.44	25.238	0					
6,650.00	6,447.00	6,660.21	6,492.91	13.89	13.07	98.61	666.15	639.66	26.49	25.145	0					
6,675.00	6,471.56	6,688.64	6,518.15	13.92	13.08	98.05	665.07	638.53	26.54	25.061	0					
6,700.00	6,495.84	6,716.77	6,542.52	13.94	13.10	97.49	664.08	637.50	26.58	24.984	0					
6,725.00	6,519.78	6,744.62	6,566.01	13.96	13.10	96.95	663.20	636.58	26.62	24.916	0					
6,750.00	6,543.32	6,772.20	6,588.60	13.98	13.11	96.42	662.40	635.75	26.65	24.853	0					
6,775.00	6,566.37	6,799.53	6,610.29	14.00	13.12	95.90	661.70	635.01	26.68	24.798	0					
6,800.00	6,588.90	6,826.62	6,631.08	14.02	13.12	95.41	661.07	634.36	26.71	24.746	0					
6,825.00	6,610.82	6,853.50	6,650.95	14.03	13.12	94.92	660.53	633.79	26.74	24.702	0					
6,850.00	6,632.08	6,880.18	6,669.89	14.05	13.13	94.46	660.06	633.29	26.77	24.661	0					
6,875.00	6,652.63	6,906.67	6,687.91	14.06	13.13	94.02	659.65	632.86	26.79	24.625	0					
6,900.00	6,672.41	6,932.99	6,705.00	14.07	13.13	93.59	659.30	632.49	26.81	24.592	0					
6,925.00	6,691.35	6,959.15	6,721.15	14.08	13.14	93.19	659.01	632.18	26.83	24.564	0					
6,950.00	6,709.42	6,985.16	6,736.35	14.08	13.14	92.80	658.77	631.92	26.85	24.538	0					
6,975.00	6,726.56	7,011.03	6,750.61	14.09	13.14	92.44	658.57	631.70	26.86	24.514	0					
7,000.00	6,742.72	7,036.78	6,763.92	14.10	13.15	92.10	658.41	631.53	26.88	24.492	0					
7,025.00	6,757.87	7,062.42	6,776.27	14.11	13.15	91.79	658.28	631.38	26.90	24.471	0					
7,050.00	6,771.95	7,087.95	6,787.67	14.11	13.16	91.50	658.19	631.27	26.92	24.451	0					
7,075.00	6,784.93	7,113.40	6,798.10	14.12	13.16	91.24	658.11	631.17	26.94	24.431	0					
7,100.00	6,796.77	7,138.76	6,807.57	14.13	13.17	91.00	658.06	631.10	26.96	24.411	0					
7,125.00	6,807.45	7,164.04	6,816.07	14.14	13.18	90.79	658.02	631.04	26.98	24.389	0					
7,150.00	6,816.93	7,189.27	6,823.60	14.15	13.19	90.60	657.99	630.99	27.01	24.365	0					
7,175.00	6,825.19	7,214.44	6,830.16	14.16	13.21	90.45	657.98	630.94	27.03	24.339	0					
7,200.00	6,832.20	7,239.57	6,835.75	14.17	13.22	90.32	657.97	630.90	27.07	24.311	0					
7,225.00	6,837.94	7,264.66	6,840.35	14.18	13.24	90.21	657.96	630.86	27.10	24.278	0					
7,250.00	6,842.40	7,289.72	6,843.98	14.20	13.25	90.14	657.96	630.82	27.14	24.243	0					
7,275.00	6,845.57	7,314.77	6,846.63	14.21	13.27	90.09	657.96	630.77	27.19	24.202	0					
7,300.00	6,847.44	7,339.80	6,848.30	14.23	13.30	90.07	657.96	630.72	27.24	24.158	0					
7,303.19	6,847.59	7,343.00	6,848.44	14.23	13.30	90.07	657.96	630.80	27.15	24.230	0					
7,323.21	6,848.00	7,363.05	6,848.97	14.25	13.32	90.08	657.96	630.67	27.29	24.113	0					
7,400.00	6,848.00	7,439.84	6,849.00	14.32	13.40	90.09	657.96	630.47	27.49	23.936	0					
7,500.00	6,848.00	7,539.84	6,849.00	14.45	13.54	90.09	657.96	630.15	27.81	23.661	0					
7,600.00	6,848.00	7,639.84	6,849.00	14.60	13.73	90.09	657.96	629.76	28.20	23.335	0					
7,700.00	6,848.00	7,739.84	6,849.00	14.79	13.97	90.09	657.96	629.30	28.65	22.965	0					
7,800.00	6,848.00	7,839.84	6,849.00	15.01	14.24	90.09	657.96	628.79	29.17	22.557	0					
7,900.00	6,848.00	7,939.84	6,849.00	15.27	14.54	90.09	657.96	628.21	29.75	22.119	0					

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





**Schlumberger**  
Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36NB-21W - Original Hole - Rev 0		Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
8,000.00	6,848.00	8,039.84	6,849.00	15.56	14.86	90.09	657.96	627.58	30.38	21.658	0					
8,100.00	6,848.00	8,139.84	6,849.00	15.88	15.21	90.09	657.96	626.89	31.06	21.180	0					
8,200.00	6,848.00	8,239.84	6,849.00	16.22	15.58	90.09	657.96	626.16	31.80	20.691	0					
8,300.00	6,848.00	8,339.84	6,849.00	16.59	15.98	90.09	657.96	625.38	32.58	20.195	0					
8,400.00	6,848.00	8,439.84	6,849.00	16.98	16.39	90.09	657.96	624.55	33.40	19.698	0					
8,500.00	6,848.00	8,539.84	6,849.00	17.39	16.82	90.09	657.96	623.69	34.26	19.202	0					
8,600.00	6,848.00	8,639.84	6,849.00	17.82	17.27	90.09	657.96	622.79	35.16	18.712	0					
8,700.00	6,848.00	8,739.84	6,849.00	18.26	17.74	90.09	657.96	621.86	36.09	18.229	0					
8,800.00	6,848.00	8,839.84	6,849.00	18.73	18.22	90.09	657.96	620.90	37.06	17.756	0					
8,900.00	6,848.00	8,939.84	6,849.00	19.20	18.71	90.09	657.96	619.91	38.05	17.293	0					
9,000.00	6,848.00	9,039.84	6,849.00	19.69	19.22	90.09	657.96	618.89	39.06	16.843	0					
9,100.00	6,848.00	9,139.84	6,849.00	20.20	19.74	90.09	657.96	617.85	40.10	16.406	0					
9,200.00	6,848.00	9,239.84	6,849.00	20.71	20.27	90.09	657.96	616.79	41.17	15.982	0					
9,300.00	6,848.00	9,339.84	6,849.00	21.24	20.81	90.09	657.96	615.70	42.25	15.572	0					
9,400.00	6,848.00	9,439.84	6,849.00	21.77	21.36	90.09	657.96	614.60	43.36	15.176	0					
9,500.00	6,848.00	9,539.84	6,849.00	22.32	21.92	90.09	657.96	613.48	44.48	14.794	0					
9,600.00	6,848.00	9,639.84	6,849.00	22.87	22.49	90.09	657.96	612.34	45.61	14.425	0					
9,700.00	6,848.00	9,739.84	6,849.00	23.43	23.06	90.09	657.96	611.19	46.76	14.070	0					
9,800.00	6,848.00	9,839.84	6,849.00	24.00	23.65	90.09	657.96	610.03	47.93	13.727	0					
9,900.00	6,848.00	9,939.84	6,849.00	24.58	24.23	90.09	657.96	608.85	49.11	13.398	0					
10,000.00	6,848.00	10,039.84	6,849.00	25.16	24.83	90.09	657.96	607.66	50.30	13.081	0					
10,100.00	6,848.00	10,139.84	6,849.00	25.75	25.43	90.09	657.96	606.45	51.50	12.776	0					
10,200.00	6,848.00	10,239.84	6,849.00	26.34	26.03	90.09	657.96	605.24	52.71	12.482	0					
10,300.00	6,848.00	10,339.84	6,849.00	26.94	26.64	90.09	657.96	604.02	53.93	12.199	0					
10,400.00	6,848.00	10,439.84	6,849.00	27.54	27.25	90.09	657.96	602.79	55.17	11.927	0					
10,500.00	6,848.00	10,539.84	6,849.00	28.15	27.87	90.09	657.96	601.55	56.40	11.665	0					
10,600.00	6,848.00	10,639.84	6,849.00	28.76	28.50	90.09	657.96	600.30	57.65	11.413	0					
10,700.00	6,848.00	10,739.84	6,849.00	29.38	29.12	90.09	657.96	599.05	58.91	11.170	0					
10,800.00	6,848.00	10,839.84	6,849.00	30.00	29.75	90.09	657.96	597.79	60.17	10.935	0					
10,900.00	6,848.00	10,939.84	6,849.00	30.62	30.38	90.09	657.96	596.52	61.43	10.710	0					
11,000.00	6,848.00	11,039.84	6,849.00	31.25	31.02	90.09	657.96	595.25	62.71	10.492	0					
11,100.00	6,848.00	11,139.84	6,849.00	31.88	31.66	90.09	657.96	593.97	63.99	10.283	0					
11,200.00	6,848.00	11,239.84	6,849.00	32.52	32.30	90.09	657.96	592.68	65.27	10.080	0					
11,300.00	6,848.00	11,339.84	6,849.00	33.15	32.94	90.09	657.96	591.39	66.56	9.885	0					
11,400.00	6,848.00	11,439.84	6,849.00	33.79	33.59	90.09	657.96	590.10	67.86	9.696	0					
11,500.00	6,848.00	11,539.84	6,849.00	34.43	34.24	90.09	657.96	588.80	69.16	9.514	0					
11,600.00	6,848.00	11,639.84	6,849.00	35.08	34.89	90.09	657.96	587.50	70.46	9.338	0					
11,659.78	6,848.00	11,699.62	6,849.00	35.46	35.28	90.09	657.96	586.83	71.12	9.251	0					
11,686.39	6,848.00	11,724.68	6,849.00	35.63	35.44	90.09	657.96	586.39	71.57	9.193	0	SF				



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
0.00	0.00	0.00	0.00	0.00	0.00	-1.85	130.09				0		
100.00	100.00	100.00	100.00	0.15	0.15	-1.85	130.09	129.79	0.29	443.658	0		
200.00	200.00	200.00	200.00	0.32	0.32	-1.85	130.09	129.45	0.64	202.540	0		
300.00	300.00	300.00	300.00	0.50	0.50	-1.85	130.09	129.10	0.99	131.223	0		
400.00	400.00	400.00	400.00	0.67	0.67	-1.85	130.09	128.75	1.34	97.050	0		
500.00	500.00	500.00	500.00	0.84	0.84	-1.85	130.09	128.40	1.69	76.999	0		
600.00	600.00	600.00	600.00	1.02	1.02	-1.85	130.09	128.05	2.04	63.814	0		CC, ES
700.00	699.98	699.98	699.98	1.19	1.19	-142.57	131.47	129.08	2.39	55.076	0		
800.00	799.84	799.84	799.84	1.37	1.37	-143.86	135.66	132.93	2.73	49.615	0		
900.00	899.45	899.45	899.45	1.55	1.54	-145.84	142.80	139.72	3.08	46.364	0		
1,000.00	998.70	997.58	997.56	1.73	1.71	-147.65	153.41	149.99	3.42	44.833	0		
1,100.00	1,097.47	1,095.35	1,095.20	1.91	1.88	-148.65	167.80	164.04	3.76	44.598	0		
1,200.00	1,195.62	1,192.53	1,192.03	2.10	2.06	-148.95	185.84	181.73	4.10	45.294	0		
1,300.00	1,293.06	1,288.91	1,287.72	2.30	2.23	-148.72	207.44	203.00	4.44	46.678	0		
1,400.00	1,389.64	1,384.28	1,381.98	2.50	2.40	-148.10	232.56	227.78	4.79	48.580	0		
1,439.37	1,427.41	1,421.51	1,418.63	2.59	2.47	-147.78	243.42	238.49	4.92	49.445	0		
1,500.00	1,485.46	1,478.58	1,474.66	2.71	2.58	-147.34	260.67	255.52	5.15	50.662	0		
1,600.00	1,581.20	1,572.20	1,566.04	2.93	2.76	-146.23	289.70	284.18	5.52	52.511	0		
1,700.00	1,676.93	1,667.12	1,658.26	3.14	2.94	-144.95	319.31	313.41	5.90	54.150	0		
1,800.00	1,772.67	1,762.41	1,750.81	3.36	3.13	-143.86	349.06	342.78	6.28	55.554	0		
1,900.00	1,868.41	1,857.69	1,843.36	3.58	3.32	-142.95	378.90	372.23	6.67	56.778	0		
2,000.00	1,964.15	1,952.97	1,935.91	3.80	3.51	-142.17	408.82	401.76	7.07	57.861	0		
2,100.00	2,059.89	2,048.25	2,028.46	4.03	3.71	-141.50	438.80	431.34	7.46	58.824	0		
2,200.00	2,155.63	2,143.54	2,121.01	4.25	3.90	-140.91	468.82	460.97	7.85	59.686	0		
2,300.00	2,251.36	2,238.82	2,213.56	4.47	4.10	-140.40	498.89	490.64	8.25	60.461	0		
2,400.00	2,347.10	2,334.10	2,306.11	4.70	4.29	-139.94	528.99	520.34	8.65	61.161	0		
2,500.00	2,442.84	2,429.38	2,398.66	4.93	4.49	-139.53	559.11	550.07	9.05	61.796	0		
2,600.00	2,538.58	2,524.67	2,491.21	5.15	4.69	-139.17	589.26	579.82	9.45	62.375	0		
2,700.00	2,634.32	2,619.95	2,583.76	5.38	4.89	-138.83	619.43	609.58	9.85	62.903	0		
2,800.00	2,730.06	2,715.23	2,676.31	5.61	5.09	-138.53	649.62	639.37	10.25	63.388	0		
2,900.00	2,825.79	2,810.51	2,768.86	5.83	5.29	-138.26	679.82	669.17	10.65	63.835	0		
3,000.00	2,921.53	2,905.80	2,861.41	6.06	5.49	-138.01	710.03	698.98	11.05	64.247	0		
3,100.00	3,017.27	3,001.08	2,953.96	6.29	5.69	-137.78	740.26	728.80	11.45	64.629	0		
3,200.00	3,113.01	3,096.36	3,046.51	6.52	5.89	-137.57	770.49	758.63	11.86	64.983	0		
3,300.00	3,208.75	3,191.65	3,139.06	6.75	6.09	-137.37	800.73	788.47	12.26	65.312	0		
3,400.00	3,304.49	3,286.93	3,231.61	6.98	6.29	-137.19	830.99	818.32	12.66	65.620	0		
3,500.00	3,400.22	3,382.21	3,324.16	7.21	6.49	-137.02	861.24	848.18	13.07	65.907	0		
3,600.00	3,495.96	3,477.49	3,416.71	7.44	6.70	-136.86	891.51	878.04	13.47	66.176	0		
3,700.00	3,591.70	3,572.78	3,509.26	7.67	6.90	-136.72	921.78	907.90	13.88	66.429	0		
3,800.00	3,687.44	3,668.06	3,601.81	7.90	7.10	-136.58	952.06	937.77	14.28	66.667	0		
3,900.00	3,783.18	3,763.34	3,694.36	8.13	7.30	-136.45	982.34	967.65	14.69	66.891	0		
4,000.00	3,878.92	3,858.62	3,786.91	8.36	7.51	-136.33	1,012.62	997.53	15.09	67.102	0		
4,100.00	3,974.65	3,953.91	3,879.46	8.59	7.71	-136.21	1,042.91	1,027.41	15.50	67.302	0		
4,200.00	4,070.39	4,049.19	3,972.00	8.82	7.91	-136.11	1,073.20	1,057.30	15.90	67.491	0		
4,300.00	4,166.13	4,144.47	4,064.55	9.05	8.12	-136.00	1,103.50	1,087.19	16.31	67.670	0		
4,400.00	4,261.87	4,239.75	4,157.10	9.28	8.32	-135.91	1,133.80	1,117.08	16.71	67.840	0		
4,500.00	4,357.61	4,335.04	4,249.65	9.51	8.52	-135.82	1,164.10	1,146.98	17.12	68.002	0		
4,600.00	4,453.35	4,430.32	4,342.20	9.74	8.73	-135.73	1,194.40	1,176.88	17.52	68.155	0		
4,700.00	4,549.08	4,525.60	4,434.75	9.97	8.93	-135.65	1,224.71	1,206.78	17.93	68.302	0		
4,800.00	4,644.82	4,620.88	4,527.30	10.20	9.13	-135.57	1,255.02	1,236.68	18.34	68.442	0		
4,900.00	4,740.56	4,716.17	4,619.85	10.43	9.34	-135.49	1,285.33	1,266.58	18.74	68.575	0		
5,000.00	4,836.30	4,811.45	4,712.40	10.66	9.54	-135.42	1,315.64	1,296.49	19.15	68.703	0		
5,100.00	4,932.04	4,906.73	4,804.95	10.89	9.74	-135.35	1,345.95	1,326.40	19.56	68.824	0		
5,200.00	5,027.78	5,002.01	4,897.50	11.12	9.95	-135.29	1,376.27	1,356.31	19.96	68.941	0		

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



# Schlumberger

## Anticollision Risk Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-Pathfinder												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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision	
5,300.00	5,123.51	5,097.30	4,990.05	11.35	10.15	-135.22	1,406.59	1,386.22	20.37	69.053	0		
5,400.00	5,219.25	5,192.58	5,082.60	11.59	10.36	-135.17	1,436.90	1,416.13	20.78	69.160	0		
5,500.00	5,314.99	5,287.86	5,175.15	11.82	10.56	-135.11	1,467.22	1,446.04	21.18	69.264	0		
5,600.00	5,410.73	5,383.14	5,267.70	12.05	10.76	-135.05	1,497.55	1,475.96	21.59	69.363	0		
5,633.84	5,443.13	5,415.39	5,299.02	12.13	10.83	-135.03	1,507.81	1,486.08	21.73	69.395	0		
5,700.00	5,506.68	5,478.58	5,360.40	12.27	10.97	-135.27	1,527.35	1,505.31	22.04	69.301	0		
5,800.00	5,603.51	5,574.61	5,453.67	12.49	11.17	-135.51	1,554.93	1,532.42	22.50	69.103	0		
5,900.00	5,701.15	5,671.15	5,547.45	12.69	11.38	-135.63	1,580.12	1,557.16	22.95	68.843	0		
6,000.00	5,799.48	5,780.35	5,653.62	12.88	11.61	-135.60	1,602.77	1,579.35	23.41	68.456	0		
6,100.00	5,898.38	5,908.22	5,778.95	13.06	11.87	-135.50	1,621.53	1,597.65	23.88	67.904	0		
6,200.00	5,997.74	6,037.96	5,907.15	13.23	12.11	-135.43	1,636.02	1,611.71	24.31	67.285	0		
6,300.00	6,097.43	6,169.13	6,037.52	13.40	12.34	-135.37	1,646.16	1,621.44	24.72	66.593	0		
6,400.00	6,197.34	6,301.24	6,169.36	13.55	12.56	-135.33	1,651.89	1,626.80	25.09	65.827	0		
6,473.21	6,270.54	6,398.26	6,266.35	13.65	12.70	4.96	1,653.27	1,628.91	24.36	67.881	0		
6,500.00	6,297.33	6,429.23	6,297.33	13.69	12.75	4.96	1,653.29	1,628.84	24.45	67.623	0		
6,573.21	6,370.54	6,502.45	6,370.54	13.80	12.86	4.96	1,653.29	1,628.60	24.68	66.977	0		
6,575.00	6,372.33	6,504.23	6,372.33	13.80	12.87	94.96	1,653.29	1,627.61	25.67	64.396	0		
6,600.00	6,397.31	6,533.28	6,401.37	13.83	12.91	94.98	1,653.33	1,627.58	25.76	64.193	0		
6,625.00	6,422.23	6,565.56	6,433.60	13.86	12.95	95.00	1,653.40	1,627.56	25.84	63.998	0		
6,650.00	6,447.00	6,597.90	6,465.76	13.89	12.99	95.03	1,653.46	1,627.55	25.91	63.819	0		
6,675.00	6,471.56	6,630.28	6,497.75	13.92	13.03	95.06	1,653.53	1,627.56	25.97	63.659	0		
6,700.00	6,495.84	6,662.71	6,529.49	13.94	13.06	95.08	1,653.61	1,627.57	26.04	63.513	0		
6,725.00	6,519.78	6,695.20	6,560.91	13.96	13.09	95.11	1,653.68	1,627.59	26.09	63.382	0		
6,750.00	6,543.32	6,727.75	6,591.92	13.98	13.11	95.14	1,653.76	1,627.62	26.14	63.263	0		
6,775.00	6,566.37	6,760.35	6,622.44	14.00	13.14	95.18	1,653.85	1,627.66	26.19	63.157	0		
6,800.00	6,588.90	6,793.02	6,652.39	14.02	13.16	95.21	1,653.93	1,627.71	26.23	63.062	0		
6,825.00	6,610.82	6,825.75	6,681.68	14.03	13.17	95.24	1,654.02	1,627.76	26.27	62.974	0		
6,850.00	6,632.08	6,858.55	6,710.25	14.05	13.19	95.28	1,654.11	1,627.82	26.30	62.897	0		
6,875.00	6,652.63	6,891.41	6,738.00	14.06	13.20	95.31	1,654.21	1,627.88	26.33	62.824	0		
6,900.00	6,672.41	6,924.35	6,764.87	14.07	13.21	95.35	1,654.30	1,627.94	26.36	62.754	0		
6,925.00	6,691.35	6,957.35	6,790.76	14.08	13.22	95.38	1,654.40	1,628.01	26.39	62.690	0		
6,950.00	6,709.42	6,990.43	6,815.62	14.08	13.22	95.42	1,654.50	1,628.08	26.42	62.625	0		
6,975.00	6,726.56	7,023.58	6,839.36	14.09	13.23	95.46	1,654.61	1,628.16	26.45	62.566	0		
7,000.00	6,742.72	7,056.80	6,861.91	14.10	13.23	95.49	1,654.71	1,628.23	26.48	62.488	0		
7,025.00	6,757.87	7,090.10	6,883.21	14.11	13.24	95.53	1,654.81	1,628.30	26.51	62.412	0		
7,050.00	6,771.95	7,123.47	6,903.19	14.11	13.25	95.57	1,654.92	1,628.37	26.55	62.327	0		
7,075.00	6,784.93	7,156.92	6,921.77	14.12	13.25	95.61	1,655.02	1,628.43	26.59	62.238	0		
7,100.00	6,796.77	7,190.45	6,938.91	14.13	13.26	95.64	1,655.13	1,628.49	26.64	62.135	0		
7,125.00	6,807.45	7,224.05	6,954.54	14.14	13.27	95.68	1,655.23	1,628.54	26.69	62.018	0		
7,150.00	6,816.93	7,257.73	6,968.61	14.15	13.28	95.72	1,655.34	1,628.59	26.75	61.891	0		
7,175.00	6,825.19	7,291.49	6,981.07	14.16	13.30	95.75	1,655.44	1,628.63	26.81	61.747	0		
7,200.00	6,832.20	7,325.32	6,991.87	14.17	13.31	95.79	1,655.54	1,628.66	26.88	61.585	0		
7,225.00	6,837.94	7,359.22	7,000.97	14.18	13.33	95.82	1,655.64	1,628.68	26.96	61.410	0		
7,250.00	6,842.40	7,393.20	7,008.33	14.20	13.36	95.85	1,655.74	1,628.70	27.05	61.217	0		
7,275.00	6,845.57	7,427.24	7,013.92	14.21	13.38	95.89	1,655.84	1,628.70	27.14	61.004	0		
7,300.00	6,847.44	7,461.36	7,017.72	14.23	13.41	95.92	1,655.93	1,628.69	27.25	60.778	0		
7,323.21	6,848.00	7,493.10	7,019.61	14.25	13.44	95.95	1,656.02	1,628.67	27.35	60.554	0		
7,400.00	6,848.00	7,575.87	7,020.00	14.32	13.53	95.96	1,656.05	1,628.46	27.59	60.032	0		
7,500.00	6,848.00	7,675.87	7,020.00	14.45	13.66	95.96	1,656.05	1,628.14	27.91	59.330	0		
7,600.00	6,848.00	7,775.87	7,020.00	14.60	13.85	95.96	1,656.05	1,627.74	28.31	58.505	0		
7,700.00	6,848.00	7,875.87	7,020.00	14.79	14.11	95.96	1,656.05	1,627.28	28.76	57.573	0		
7,800.00	6,848.00	7,975.87	7,020.00	15.01	14.39	95.96	1,656.05	1,626.77	29.28	56.551	0		
7,900.00	6,848.00	8,075.87	7,020.00	15.27	14.69	95.96	1,656.05	1,626.19	29.86	55.456	0		
8,000.00	6,848.00	8,175.87	7,020.00	15.56	15.01	95.96	1,656.05	1,625.55	30.50	54.305	0		

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



# Schlumberger

## Anticollision Risk Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec.36-T06N-R66W - Hiner 36NC-18W - Original Hole - Rev 1		Offset Site Error: 0.00 usft	
Survey Program: 0-Pathfinder													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 (°)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Risked Separation Factor	Probability of Collision				
8,100.00	6,848.00	8,275.87	7,020.00	15.88	15.36	95.96	1,656.05	1,624.87	31.18	53.112	0					
8,200.00	6,848.00	8,375.87	7,020.00	16.22	15.73	95.96	1,656.05	1,624.14	31.91	51.893	0					
8,300.00	6,848.00	8,475.87	7,020.00	16.59	16.12	95.96	1,656.05	1,623.36	32.69	50.658	0					
8,400.00	6,848.00	8,575.87	7,020.00	16.98	16.54	95.96	1,656.05	1,622.54	33.51	49.420	0					
8,500.00	6,848.00	8,675.87	7,020.00	17.39	16.97	95.96	1,656.05	1,621.68	34.37	48.187	0					
8,600.00	6,848.00	8,775.87	7,020.00	17.82	17.42	95.96	1,656.05	1,620.79	35.26	46.966	0					
8,700.00	6,848.00	8,875.87	7,020.00	18.26	17.88	95.96	1,656.05	1,619.86	36.19	45.764	0					
8,800.00	6,848.00	8,975.87	7,020.00	18.73	18.36	95.96	1,656.05	1,618.91	37.14	44.585	0					
8,900.00	6,848.00	9,075.87	7,020.00	19.20	18.86	95.96	1,656.05	1,617.92	38.13	43.434	0					
9,000.00	6,848.00	9,175.87	7,020.00	19.69	19.36	95.96	1,656.05	1,616.91	39.14	42.312	0					
9,100.00	6,848.00	9,275.87	7,020.00	20.20	19.88	95.96	1,656.05	1,615.88	40.17	41.223	0					
9,200.00	6,848.00	9,375.87	7,020.00	20.71	20.41	95.96	1,656.05	1,614.82	41.23	40.166	0					
9,300.00	6,848.00	9,475.87	7,020.00	21.24	20.95	95.96	1,656.05	1,613.74	42.31	39.143	0					
9,400.00	6,848.00	9,575.87	7,020.00	21.77	21.50	95.96	1,656.05	1,612.65	43.40	38.155	0					
9,500.00	6,848.00	9,675.87	7,020.00	22.32	22.06	95.96	1,656.05	1,611.53	44.52	37.201	0					
9,600.00	6,848.00	9,775.87	7,020.00	22.87	22.63	95.96	1,656.05	1,610.40	45.65	36.280	0					
9,700.00	6,848.00	9,875.87	7,020.00	23.43	23.20	95.96	1,656.05	1,609.26	46.79	35.393	0					
9,800.00	6,848.00	9,975.87	7,020.00	24.00	23.78	95.96	1,656.05	1,608.10	47.95	34.538	0					
9,900.00	6,848.00	10,075.87	7,020.00	24.58	24.37	95.96	1,656.05	1,606.93	49.12	33.714	0					
10,000.00	6,848.00	10,175.87	7,020.00	25.16	24.96	95.96	1,656.05	1,605.75	50.30	32.921	0					
10,100.00	6,848.00	10,275.87	7,020.00	25.75	25.56	95.96	1,656.05	1,604.55	51.50	32.158	0					
10,200.00	6,848.00	10,375.87	7,020.00	26.34	26.16	95.96	1,656.05	1,603.35	52.70	31.423	0					
10,300.00	6,848.00	10,475.87	7,020.00	26.94	26.77	95.96	1,656.05	1,602.13	53.92	30.715	0					
10,400.00	6,848.00	10,575.87	7,020.00	27.54	27.39	95.96	1,656.05	1,600.91	55.14	30.034	0					
10,500.00	6,848.00	10,675.87	7,020.00	28.15	28.00	95.96	1,656.05	1,599.68	56.37	29.377	0					
10,600.00	6,848.00	10,775.87	7,020.00	28.76	28.62	95.96	1,656.05	1,598.44	57.61	28.745	0					
10,700.00	6,848.00	10,875.87	7,020.00	29.38	29.25	95.96	1,656.05	1,597.19	58.86	28.136	0					
10,800.00	6,848.00	10,975.87	7,020.00	30.00	29.88	95.96	1,656.05	1,595.94	60.11	27.550	0					
10,900.00	6,848.00	11,075.87	7,020.00	30.62	30.51	95.96	1,656.05	1,594.68	61.37	26.984	0					
11,000.00	6,848.00	11,175.87	7,020.00	31.25	31.15	95.96	1,656.05	1,593.41	62.64	26.438	0					
11,100.00	6,848.00	11,275.87	7,020.00	31.88	31.78	95.96	1,656.05	1,592.14	63.91	25.912	0					
11,200.00	6,848.00	11,375.87	7,020.00	32.52	32.42	95.96	1,656.05	1,590.86	65.19	25.404	0					
11,300.00	6,848.00	11,475.87	7,020.00	33.15	33.07	95.96	1,656.05	1,589.58	66.47	24.914	0					
11,400.00	6,848.00	11,575.87	7,020.00	33.79	33.71	95.96	1,656.05	1,588.29	67.76	24.441	0					
11,500.00	6,848.00	11,675.87	7,020.00	34.43	34.36	95.96	1,656.05	1,587.00	69.05	23.984	0					
11,600.00	6,848.00	11,775.87	7,020.00	35.08	35.01	95.96	1,656.05	1,585.70	70.34	23.542	0					
11,649.46	6,848.00	11,825.25	7,020.00	35.40	35.33	95.96	1,656.05	1,585.22	70.83	23.382	0					
11,686.39	6,848.00	11,858.69	7,020.00	35.63	35.55	95.96	1,656.06	1,584.63	71.43	23.185	0	SF				

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

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 4677.00usft (Xtreme 7 - 16')

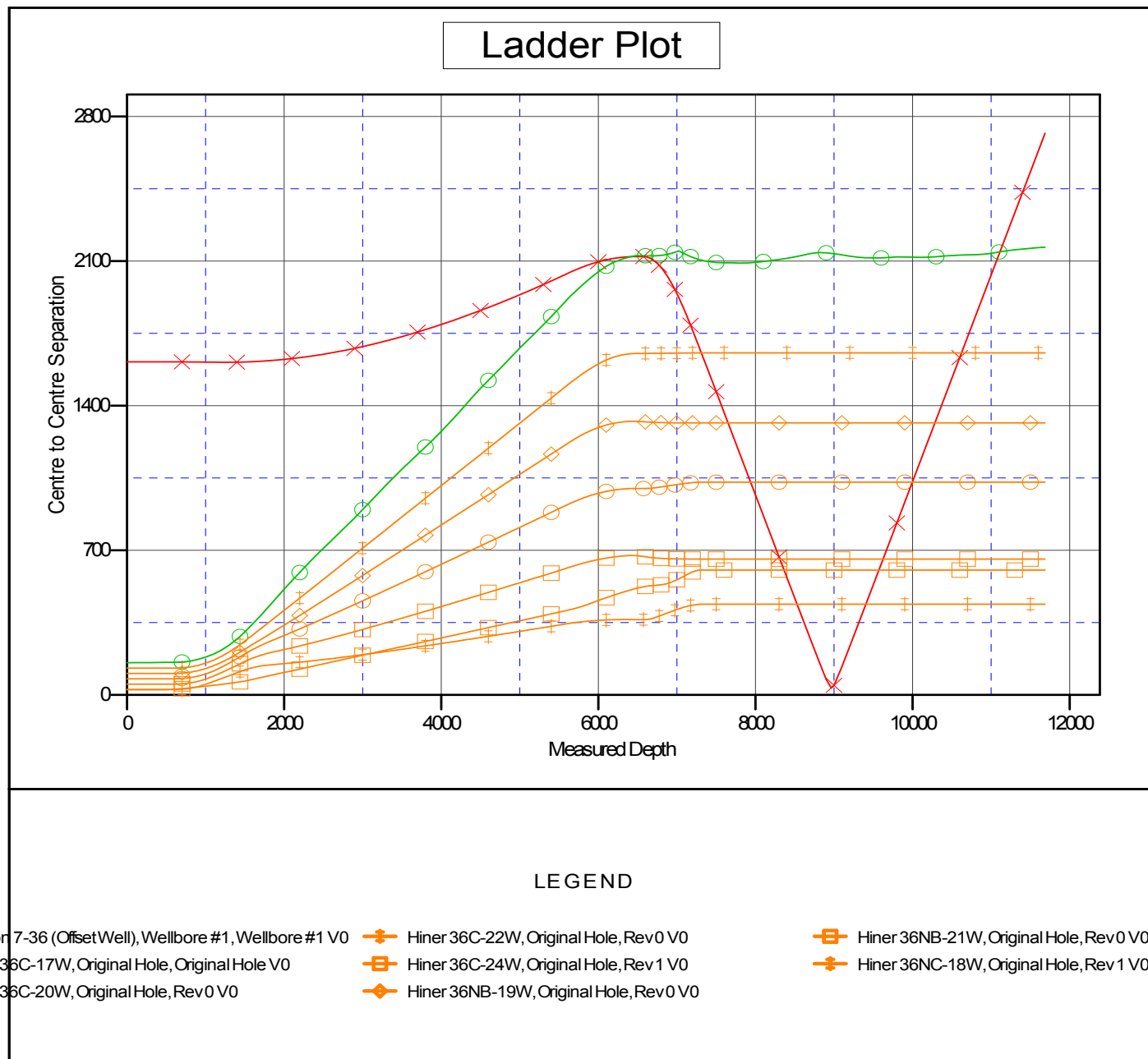
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: Hiner 36NB-23W

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.50°



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Hiner 36NB-23W
<b>Project:</b>	Weld Co., Co	<b>TVD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Reference Site:</b>	Sec.36-T06N-R66W	<b>MD Reference:</b>	KB @ 4677.00usft (Xtreme 7 - 16')
<b>Site Error:</b>	0.00	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Hiner 36NB-23W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Hole	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Rev 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 4677.00usft (Xtreme 7 - 16')

Offset Depths are relative to Offset Datum

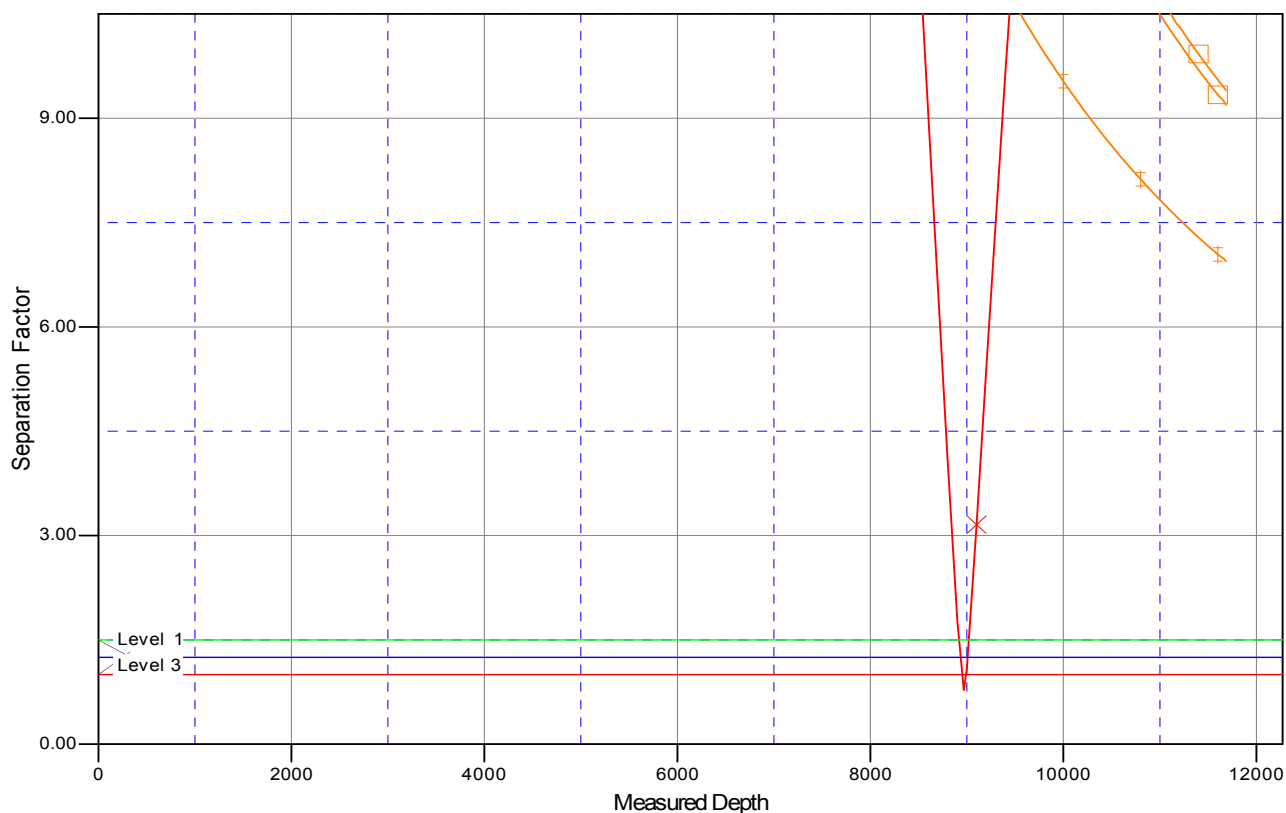
Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: Hiner 36NB-23W

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.50°

## Separation Factor Plot



### LEGEND

on 7-36 (Offset Well), Wellbore #1, Wellbore #1 V0	✦ Hiner 36C-22W, Original Hole, Rev0 V0	✦ Hiner 36NB-21W, Original Hole, Rev0 V0
r36C-17W, Original Hole, Original Hole V0	✦ Hiner 36C-24W, Original Hole, Rev 1 V0	✦ Hiner 36NC-18W, Original Hole, Rev 1 V0
r36C-20W, Original Hole, Rev0 V0	✦ Hiner 36NB-19W, Original Hole, Rev0 V0	