

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 17-T2N-R68W**

**RINN VALLEY EAST N17-20-5N**

**ORIGINAL WELLBORE**

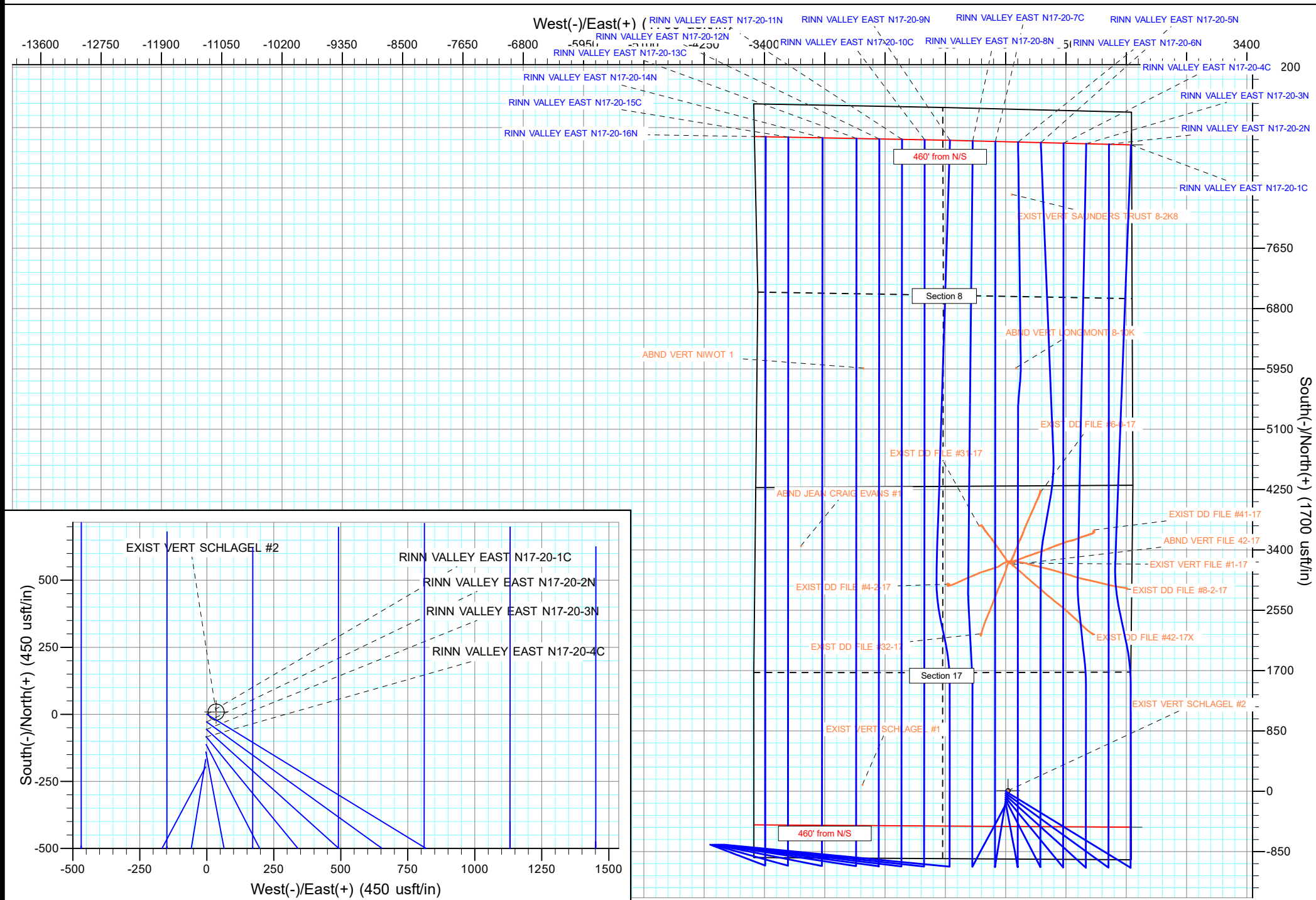
**PROPOSAL 1**

## **Anticollision Report**

**14 March, 2018**



Project: Weld County  
Site: Sec 17-T2N-R68W  
Well: RINN VALLEY EAST N17-20-1C  
ORIGINAL WELLBORE  
PROPOSAL 1



# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-5N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4945.00usft
<b>Reference Site:</b>	Sec 17-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4945.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL 1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 9,999.98 usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	2/15/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,358.43	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG MWD - Standard

<b>Summary</b>						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 17-T2N-R68W						
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	11,468.65	4,838.00	4,145.16	4,004.09	29.385	CC
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	11,500.00	4,838.00	4,145.42	4,003.90	29.292	ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	13,100.00	4,838.00	4,511.23	4,348.65	27.747	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	500.00	450.00	3,305.82	3,295.66	325.341	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	600.00	549.98	3,307.35	3,294.82	263.957	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	15,500.00	1,020.00	7,451.10	7,377.43	101.148	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	11,792.17	7,256.45	906.20	801.97	8.695	CC
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	11,804.18	7,256.37	906.31	801.77	8.670	ES
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	11,900.00	7,255.69	913.02	806.49	8.571	SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,420.54	7,388.15	835.34	747.72	9.533	CC, ES, SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	11,982.87	7,369.67	690.63	581.22	6.312	CC
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,000.00	7,369.45	690.84	581.21	6.301	ES, SF
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,128.18	7,379.87	1,308.93	1,214.54	13.866	CC, ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,299.98	7,377.62	1,320.16	1,224.33	13.776	SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,419.98	7,450.27	737.79	648.97	8.307	CC, ES, SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,419.19	7,362.03	151.61	32.83	1.276	Level 3, CC, ES, SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,059.93	7,460.30	1,212.16	1,117.20	12.765	CC, ES
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,200.00	7,455.03	1,220.21	1,123.60	12.630	SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,402.39	7,229.98	429.29	331.59	4.394	CC, ES, SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	500.00	465.00	2,023.93	2,013.44	192.837	CC
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	600.00	564.98	2,024.89	2,012.03	157.425	ES
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	8,600.00	7,245.00	2,525.16	2,346.57	14.139	SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	500.00	476.00	126.53	115.81	11.804	CC
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	600.00	575.98	127.78	114.70	9.765	ES
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	8,210.80	7,256.00	456.61	280.42	2.592	SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	608.42	608.42	99.01	94.98	24.587	CC, ES
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	17,358.43	17,811.68	1,296.81	958.54	3.834	SF
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	653.44	653.73	72.94	68.68	17.109	CC
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	700.00	700.19	73.30	68.68	15.876	ES
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	17,358.43	17,489.99	960.39	614.71	2.778	SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	701.24	701.50	47.63	43.09	10.491	CC, ES
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	17,358.43	17,430.94	640.26	294.30	1.851	SF
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	754.85	754.72	23.18	18.29	4.744	CC
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	800.00	799.98	23.32	18.10	4.472	ES
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	17,358.43	17,618.90	407.41	120.19	1.418	Level 3, SF
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	881.55	880.22	21.46	15.71	3.729	CC
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	17,358.43	17,315.40	319.91	-27.36	0.921	Level 1, ES, SF

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

# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-5N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4945.00usft
<b>Reference Site:</b>	Sec 17-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4945.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-5N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 17-T2N-R68W						
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	965.90	964.79	40.11	33.74	6.294	CC
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	1,000.00	998.27	40.35	33.73	6.097	ES
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	17,300.00	19,354.51	687.68	328.36	1.914	SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	1,059.35	1,053.25	55.77	48.70	7.894	CC, ES
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	17,358.43	17,335.64	960.28	612.71	2.763	SF
Sec 18-T2N-R68W						
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	7,003.58	7,595.02	1,639.43	1,578.15	26.755	CC
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	17,358.43	18,153.55	1,653.03	1,300.40	4.688	ES, SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	17,358.43	17,805.70	1,956.53	1,603.55	5.543	CC, ES, SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	17,358.43	17,687.68	2,276.67	1,923.86	6.453	CC, ES, SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	7,004.44	7,262.38	2,599.16	2,540.80	44.535	CC
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	17,358.43	17,814.66	2,607.28	2,254.65	7.394	ES, SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	17,358.43	17,439.62	3,077.17	2,724.76	8.732	CC, ES, SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	7,005.16	7,030.99	3,559.24	3,503.27	63.595	CC
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	17,358.43	17,578.40	3,565.05	3,212.80	10.121	ES, SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	6,154.85	6,474.30	3,874.65	3,823.65	75.976	CC
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	17,358.43	17,283.86	3,878.00	3,525.79	11.010	ES, SF
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	6,727.18	7,512.94	1,280.00	1,219.43	21.131	CC
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	17,358.43	18,144.53	1,280.62	925.98	3.611	ES, SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,200.00	7,210.98	475.51	212.98	1.811	ES, SF
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,203.58	7,210.98	475.50	212.98	1.811	CC
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,287.18	7,220.98	2,627.14	2,362.96	9.945	CC
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,300.00	7,220.98	2,627.17	2,362.83	9.938	ES
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,500.00	7,220.98	2,635.75	2,369.13	9.886	SF
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	16,646.09	7,306.98	435.45	128.31	1.418	Level 3, CC, ES, SF

Offset Design													Offset Site Error:		0.00 usft
Survey Program: 0-INC													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	-38.87	3,572.66	-2,879.51	4,588.90						
100.00	100.00	50.00	50.00	0.13	0.60	-38.87	3,572.66	-2,879.51	4,588.63	4,587.89	0.73	6,255.470			
200.00	200.00	150.00	150.00	0.49	2.34	-38.87	3,572.66	-2,879.51	4,588.63	4,585.79	2.84	1,618.023			
300.00	300.00	250.00	250.00	0.85	4.53	-38.87	3,572.66	-2,879.51	4,588.63	4,583.25	5.38	853.157			
400.00	400.00	350.00	350.00	1.21	6.59	-38.87	3,572.66	-2,879.51	4,588.63	4,580.83	7.80	588.502			
500.00	500.00	450.00	450.00	1.57	8.62	-38.87	3,572.66	-2,879.51	4,588.63	4,578.43	10.19	450.253			
600.00	599.98	549.98	549.98	1.91	10.65	168.39	3,572.66	-2,879.51	4,590.33	4,577.77	12.56	365.479			
700.00	699.84	649.84	649.84	2.25	12.67	168.38	3,572.66	-2,879.51	4,595.46	4,580.55	14.92	308.104			
800.00	799.45	749.45	749.45	2.60	14.68	168.37	3,572.66	-2,879.51	4,604.00	4,586.73	17.27	266.568			
900.00	898.70	848.70	848.70	2.97	16.68	168.35	3,572.66	-2,879.51	4,615.94	4,596.31	19.62	235.213			
1,000.00	997.47	947.47	947.47	3.36	18.67	168.32	3,572.66	-2,879.51	4,631.27	4,609.29	21.97	210.779			
1,041.01	1,037.80	987.80	987.80	3.53	19.48	168.31	3,572.66	-2,879.51	4,638.53	4,615.59	22.94	202.243			
1,100.00	1,095.74	1,045.74	1,045.74	3.78	20.65	168.34	3,572.66	-2,879.51	4,649.38	4,625.07	24.31	191.229			
1,200.00	1,193.96	1,143.96	1,143.96	4.21	22.63	168.39	3,572.66	-2,879.51	4,667.78	4,641.13	26.65	175.157			
1,300.00	1,292.19	1,242.19	1,242.19	4.65	24.60	168.43	3,572.66	-2,879.51	4,686.18	4,657.19	28.99	161.656			
1,400.00	1,390.41	1,340.41	1,340.41	5.10	26.58	168.48	3,572.66	-2,879.51	4,704.59	4,673.26	31.33	150.159			

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