

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 17-T2N-R68W**

**RINN VALLEY EAST N17-20-6N**

**ORIGINAL WELLBORE**

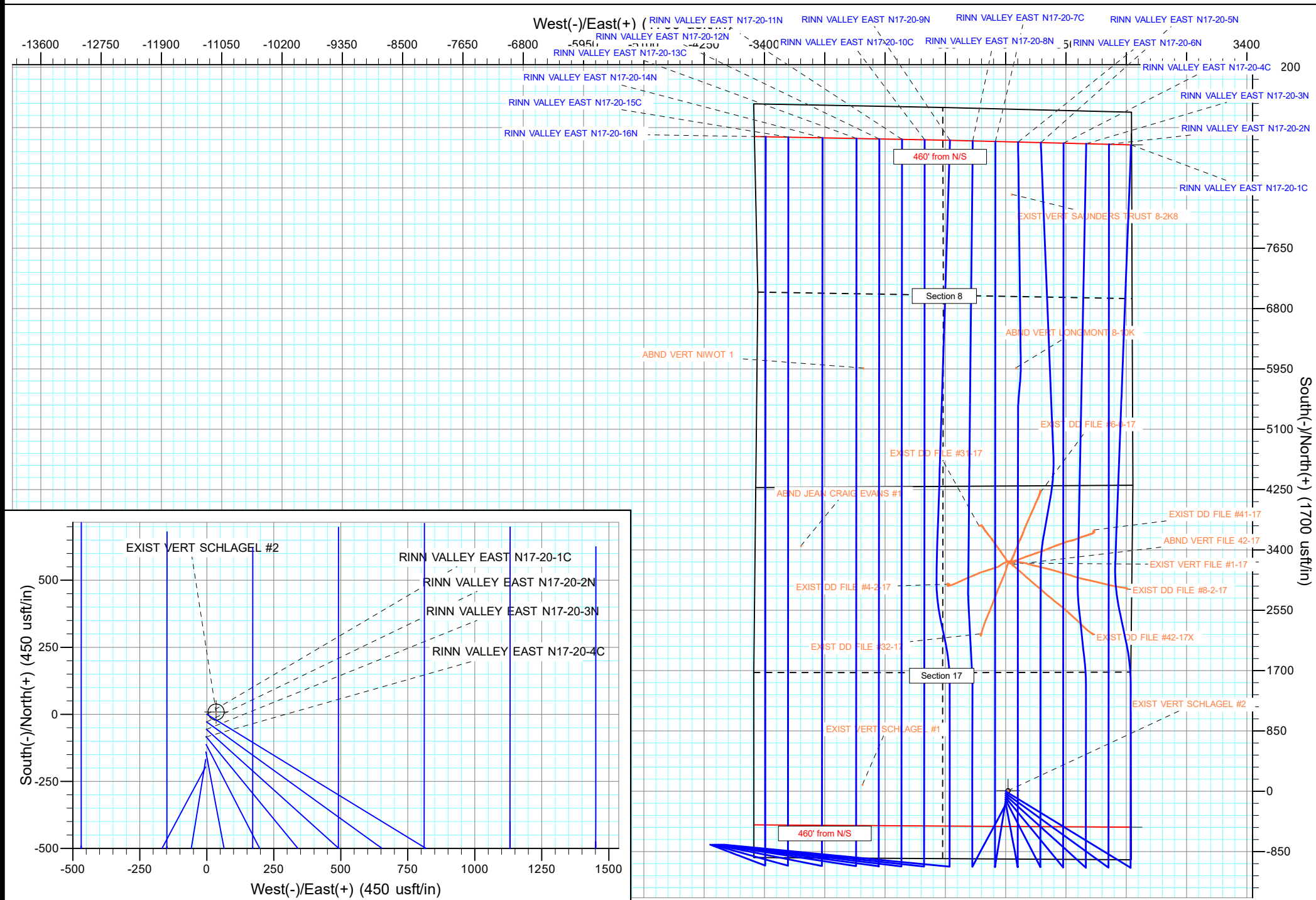
**PROPOSAL 1**

## **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 N17-20-6N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4946.00usft
<b>Reference Site:</b>	Sec 17-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4946.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-6N	<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	17,327.22	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 #	11,637.28	4,838.00	3,879.69	3,739.24	27.623	CC
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	11,700.00	4,838.00	3,880.20	3,738.86	27.453	ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	12,900.00	4,838.00	4,080.01	3,922.81	25.956	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	600.00	549.00	3,333.88	3,321.36	266.172	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	700.00	648.98	3,335.59	3,320.70	224.046	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	15,500.00	1,020.00	7,456.54	7,383.25	101.741	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	11,919.24	7,266.01	532.22	424.22	4.928	CC, ES, SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,396.80	7,382.12	515.51	427.63	5.866	CC
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,400.00	7,382.18	515.52	427.62	5.865	ES, SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	11,834.79	7,357.48	1,074.05	966.71	10.006	CC, ES
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,000.00	7,354.02	1,086.67	976.42	9.856	SF
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,104.72	7,363.04	989.33	894.68	10.452	CC, ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,200.00	7,362.11	993.91	898.40	10.406	SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,396.42	7,443.23	1,057.61	968.54	11.875	CC
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,400.00	7,443.19	1,057.61	968.53	11.872	ES
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,500.00	7,442.02	1,062.67	973.13	11.868	SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,406.20	7,373.66	318.81	199.05	2.662	CC, ES, SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,036.73	7,448.34	1,531.84	1,436.61	16.086	CC, ES
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,300.00	7,437.98	1,554.27	1,456.23	15.854	SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,393.21	7,228.94	107.53	9.29	1.095	Level 2, CC, ES, SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	600.00	564.00	2,026.19	2,013.33	157.572	CC
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	800.00	763.84	2,028.28	2,010.71	115.457	ES
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	8,500.00	7,243.99	2,198.76	2,020.90	12.362	SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	8,187.17	7,254.99	136.74	-39.22	0.777	Level 1, CC, ES, SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	676.65	677.19	122.89	118.30	26.754	CC
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	700.00	700.23	123.03	118.25	25.733	ES
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	17,327.22	17,807.65	1,612.05	1,270.87	4.725	SF
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	720.66	721.79	96.10	91.30	20.019	CC, ES
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	17,327.22	17,489.99	1,280.52	934.18	3.697	SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	767.94	769.27	70.11	65.05	13.864	CC
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	800.00	801.29	70.31	65.02	13.275	ES
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	17,327.22	17,430.94	960.39	613.77	2.771	SF
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	820.96	822.06	45.06	39.69	8.385	CC, ES
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	17,327.22	17,618.90	688.43	361.56	2.106	SF
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	880.22	881.55	21.46	15.71	3.729	CC
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	17,327.22	17,358.43	320.13	-27.48	0.921	Level 1, ES, SF
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	1,044.35	1,044.49	17.68	10.80	2.569	CC

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 N17-20-6N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4946.00usft
<b>Reference Site:</b>	Sec 17-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4946.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-6N	<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
<b>Offset Well - Wellbore - Design</b>						
Sec 17-T2N-R68W						
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	1,078.46	1,078.37	17.84	10.71	2.502	ES
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	17,327.22	17,565.18	404.23	110.74	1.377	Level 3, SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	1,129.82	1,125.12	30.98	23.48	4.135	CC, ES
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	17,327.22	17,340.41	640.19	291.84	1.838	SF
Sec 18-T2N-R68W						
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	6,967.36	7,578.88	1,319.59	1,258.97	21.768	CC
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	17,327.22	18,161.07	1,337.12	984.92	3.796	ES, SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	17,327.22	17,808.16	1,636.54	1,282.90	4.628	CC, ES, SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	17,327.22	17,695.42	1,956.64	1,602.98	5.532	CC, ES, SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	6,971.23	7,251.82	2,279.31	2,221.58	39.483	CC
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	17,327.22	17,822.43	2,288.79	1,935.66	6.481	ES, SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	17,327.22	17,447.39	2,757.13	2,403.87	7.805	CC, ES, SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	6,975.55	7,024.40	3,239.38	3,184.03	58.523	CC
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	17,327.22	17,586.17	3,245.83	2,892.90	9.197	ES, SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	17,327.22	17,291.65	3,557.97	3,204.89	10.077	CC, ES, SF
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	6,736.02	7,538.30	960.18	900.16	15.997	CC
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	17,327.22	18,144.53	960.51	605.26	2.704	ES, SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,146.74	7,209.90	65.00	-198.39	0.247	Level 1, CC, ES, SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,014.60	7,219.90	2,217.37	1,956.10	8.487	CC
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,200.00	7,219.90	2,219.12	1,954.71	8.393	ES
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,400.00	7,219.90	2,230.78	1,963.84	8.357	SF
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	16,590.98	7,305.90	95.15	-212.63	0.309	Level 1, CC, ES, SF

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 0-INC												<b>Offset Well Error:</b>	0.00 usft
Sec 17-T2N-R68W - ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #1													
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	-38.64	3,600.71	-2,878.67	4,610.26				
100.00	100.00	49.00	49.00	0.13	0.59	-38.64	3,600.71	-2,878.67	4,609.97	4,609.25	0.72	6,388.936	
200.00	200.00	149.00	149.00	0.49	2.32	-38.64	3,600.71	-2,878.67	4,609.97	4,607.16	2.81	1,638.782	
300.00	300.00	249.00	249.00	0.85	4.51	-38.64	3,600.71	-2,878.67	4,609.97	4,604.62	5.36	860.452	
400.00	400.00	349.00	349.00	1.21	6.57	-38.64	3,600.71	-2,878.67	4,609.97	4,602.20	7.78	592.792	
500.00	500.00	449.00	449.00	1.57	8.60	-38.64	3,600.71	-2,878.67	4,609.97	4,599.80	10.17	453.250	
600.00	600.00	549.00	549.00	1.93	10.63	-38.64	3,600.71	-2,878.67	4,609.97	4,597.42	12.56	367.171	
700.00	699.98	648.98	648.98	2.27	12.65	151.99	3,600.71	-2,878.67	4,611.51	4,596.60	14.92	309.131	
800.00	799.84	748.84	748.84	2.60	14.66	151.98	3,600.71	-2,878.67	4,616.14	4,598.87	17.27	267.344	
900.00	899.45	848.45	848.45	2.95	16.67	151.95	3,600.71	-2,878.67	4,623.84	4,604.22	19.62	235.697	
1,000.00	998.70	947.70	947.70	3.31	18.67	151.92	3,600.71	-2,878.67	4,634.61	4,612.64	21.97	210.967	
1,078.46	1,076.24	1,025.24	1,025.24	3.61	20.24	151.89	3,600.71	-2,878.67	4,645.21	4,621.39	23.81	195.078	
1,100.00	1,097.48	1,046.48	1,046.48	3.69	20.66	151.91	3,600.71	-2,878.67	4,648.37	4,624.06	24.32	191.143	
1,200.00	1,196.09	1,145.09	1,145.09	4.09	22.65	152.01	3,600.71	-2,878.67	4,663.09	4,636.43	26.66	174.881	
1,300.00	1,294.70	1,243.70	1,243.70	4.51	24.63	152.10	3,600.71	-2,878.67	4,677.82	4,648.81	29.02	161.220	
1,400.00	1,393.30	1,342.30	1,342.30	4.93	26.62	152.20	3,600.71	-2,878.67	4,692.57	4,661.20	31.37	149.588	
1,500.00	1,491.91	1,440.91	1,440.91	5.36	28.60	152.29	3,600.71	-2,878.67	4,707.32	4,673.59	33.73	139.568	
1,600.00	1,590.52	1,539.52	1,539.52	5.79	30.59	152.39	3,600.71	-2,878.67	4,722.09	4,686.00	36.09	130.849	
1,700.00	1,689.13	1,638.13	1,638.13	6.22	32.57	152.48	3,600.71	-2,878.67	4,736.87	4,698.42	38.45	123.194	
1,800.00	1,787.74	1,736.74	1,736.74	6.66	34.56	152.57	3,600.71	-2,878.67	4,751.66	4,710.85	40.81	116.422	

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