

# **EXTRACTION OIL & GAS**

**Broomfield County**

**Sec 10-T1S-R68W**

**INTERCHANGE B S22-30-14N**

**ORIGINAL WELLBORE**

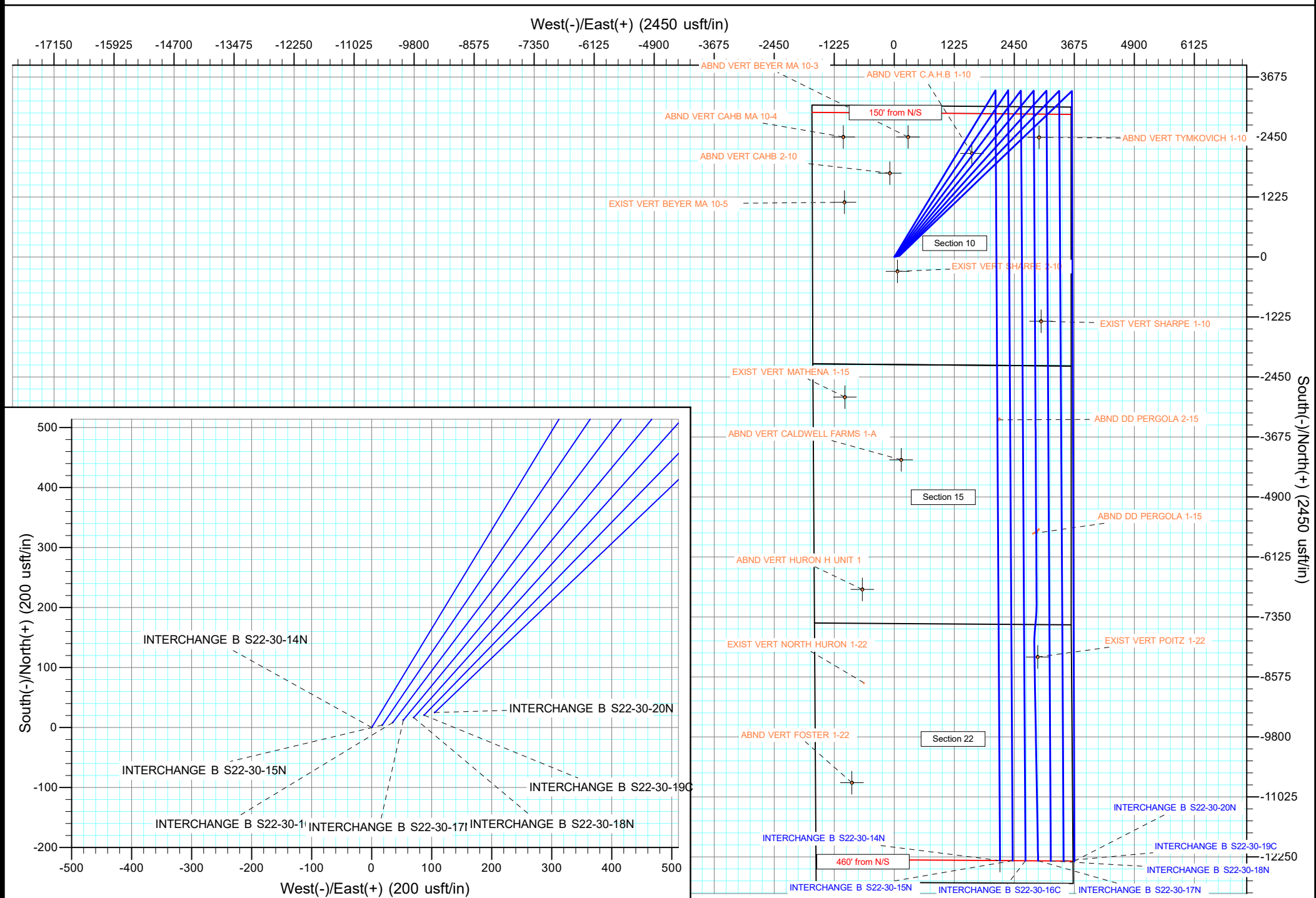
**PROPOSAL 1**

## **Anticollision Report**

**24 January, 2018**



Project: Broomfield County  
Site: Sec 10-T1S-R68W  
Well: INTERCHANGE B S22-30-14N  
ORIGINAL WELLBORE  
PROPOSAL 1



# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE B S22-30-14N
<b>Project:</b>	Broomfield County	<b>TVD Reference:</b>	KB 25' @ 5231.00usft
<b>Reference Site:</b>	Sec 10-T1S-R68W	<b>MD Reference:</b>	KB 25' @ 5231.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	INTERCHANGE B S22-30-14N	<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>	1/24/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	24,687.16	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 10-T1S-R68W						
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,055.04	4,289.45	1,030.51	901.99	8.018	CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,100.00	4,322.94	1,030.94	901.22	7.948	ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,400.00	4,546.37	1,055.90	918.96	7.710	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	5,638.93	4,685.32	257.26	113.65	1.791	CC, ES, SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,817.93	3,366.07	965.42	870.46	10.166	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,900.00	3,427.19	966.97	869.84	9.955	ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	4,300.00	3,725.11	1,017.61	910.97	9.543	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,026.67	3,541.53	2,161.17	2,060.17	21.397	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,100.00	3,603.85	2,161.73	2,058.60	20.961	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	10,000.00	7,850.99	3,112.93	2,896.53	14.385	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,659.20	5,180.00	1,322.53	1,244.55	16.960	CC, ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,800.00	5,180.00	1,331.06	1,252.23	16.886	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	2,285.40	2,221.71	1,449.48	1,394.59	26.407	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	2,400.00	2,317.97	1,450.81	1,392.98	25.087	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	11,500.00	7,855.95	3,107.24	2,894.18	14.583	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,679.14	7,785.92	903.73	678.36	4.010	CC, ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,700.00	7,785.92	903.97	678.38	4.007	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	700.00	678.00	299.17	283.66	19.288	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	800.00	777.98	300.44	282.55	16.798	ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,800.00	7,817.93	2,027.89	1,810.04	9.309	SF
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	600.00	600.00	18.10	14.25	4.698	CC
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	24,645.01	25,500.23	259.08	-242.41	0.517	Level 1, ES, SF
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	500.00	500.00	36.02	32.88	11.483	CC, ES
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	24,687.16	25,003.59	582.01	135.67	1.304	Level 3, SF
INTERCHANGE B S22-30-17N - ORIGINAL WELLBORE	400.00	400.00	54.12	51.70	22.367	CC, ES
INTERCHANGE B S22-30-17N - ORIGINAL WELLBORE	24,687.16	24,873.04	777.74	289.46	1.593	SF
INTERCHANGE B S22-30-18N - ORIGINAL WELLBORE	300.00	300.00	72.04	70.33	42.306	CC, ES
INTERCHANGE B S22-30-18N - ORIGINAL WELLBORE	24,687.16	24,937.81	1,036.64	548.34	2.123	SF
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	200.00	200.00	89.87	88.88	91.162	CC, ES
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	24,687.16	25,211.59	1,326.47	848.86	2.777	SF
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	100.00	100.00	108.06	107.79	401.910	CC, ES
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	24,687.16	25,136.26	1,519.14	1,032.13	3.119	SF

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<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE B S22-30-14N
<b>Project:</b>	Broomfield County	<b>TVD Reference:</b>	KB 25' @ 5231.00usft
<b>Reference Site:</b>	Sec 10-T1S-R68W	<b>MD Reference:</b>	KB 25' @ 5231.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	INTERCHANGE B S22-30-14N	<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 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,012.41	7,500.00	760.84	605.65	4.903	CC, ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,100.00	7,500.00	765.86	607.92	4.849	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,688.34	7,500.00	306.34	220.59	3.573	CC
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,700.00	7,500.00	306.57	219.85	3.535	ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,800.00	7,500.00	326.06	232.31	3.478	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,492.87	7,814.90	1,968.68	1,704.15	7.442	CC
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,500.00	7,814.90	1,968.70	1,704.09	7.440	ES
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,600.00	7,814.90	1,971.60	1,706.17	7.428	SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,133.09	7,842.91	2,776.16	2,468.67	9.029	CC, ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,300.00	7,842.91	2,781.17	2,472.12	8.999	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	700.00	702.00	3,034.19	3,018.19	189.695	CC
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,205.35	7,837.91	3,109.70	2,863.75	12.644	ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,600.00	7,837.91	3,134.65	2,884.69	12.541	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,078.94	7,801.04	3,012.98	2,639.57	8.069	CC
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,100.00	7,801.04	3,013.05	2,639.42	8.064	ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,200.00	7,801.03	3,015.41	2,640.85	8.051	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,039.45	7,815.93	2,756.92	2,418.04	8.135	CC, ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,200.00	7,815.93	2,761.59	2,421.31	8.115	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,534.27	7,780.92	794.07	464.42	2.409	CC, ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,600.00	7,780.92	796.78	465.17	2.403	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						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	7.00	-7.00	0.00	0.08	6.56	2,450.10	281.62	2,466.23				
100.00	100.00	107.00	93.00	0.13	1.35	6.56	2,450.10	281.62	2,466.23	2,464.76	1.48	1,666.580	
200.00	200.00	207.00	193.00	0.49	3.62	6.56	2,450.10	281.62	2,466.23	2,462.12	4.12	599.196	
300.00	300.00	307.00	293.00	0.85	5.70	6.56	2,450.10	281.62	2,466.23	2,459.68	6.55	376.502	
400.00	400.00	407.00	393.00	1.21	7.74	6.56	2,450.10	281.62	2,466.23	2,457.28	8.95	275.551	
500.00	500.00	507.00	493.00	1.57	9.77	6.56	2,450.10	281.62	2,466.23	2,454.90	11.34	217.533	
600.00	600.00	607.00	593.00	1.93	11.79	6.56	2,450.10	281.62	2,466.23	2,452.52	13.72	179.777	
700.00	700.00	707.00	693.00	2.29	13.81	6.56	2,450.10	281.62	2,466.23	2,450.14	16.10	153.221	
800.00	799.98	807.02	792.98	2.64	15.83	-24.73	2,450.10	281.62	2,464.65	2,446.18	18.47	133.433	
900.00	899.84	907.16	892.84	3.00	17.85	-24.82	2,450.10	281.62	2,459.90	2,439.05	20.85	117.987	
1,000.00	999.45	1,007.55	992.45	3.36	19.87	-24.97	2,450.10	281.62	2,451.99	2,428.75	23.23	105.540	
1,100.00	1,098.70	1,108.30	1,091.70	3.73	21.90	-25.19	2,450.10	281.62	2,440.93	2,415.31	25.63	95.252	
1,200.00	1,197.47	1,209.53	1,190.47	4.12	23.94	-25.47	2,450.10	281.62	2,426.76	2,398.73	28.03	86.569	
1,300.00	1,295.62	1,288.62	1,288.62	4.53	25.53	-25.81	2,450.10	281.62	2,409.50	2,379.50	30.00	80.320	
1,400.00	1,393.06	1,386.06	1,386.06	4.96	27.49	-26.23	2,450.10	281.62	2,389.19	2,356.85	32.34	73.876	
1,500.00	1,489.64	1,482.64	1,482.64	5.42	29.43	-26.72	2,450.10	281.62	2,365.86	2,331.19	34.67	68.232	
1,600.00	1,585.27	1,578.27	1,578.27	5.92	31.36	-27.29	2,450.10	281.62	2,339.58	2,302.58	37.00	63.235	
1,700.00	1,679.82	1,672.82	1,672.82	6.46	33.26	-27.94	2,450.10	281.62	2,310.40	2,271.09	39.31	58.769	
1,800.00	1,773.17	1,766.17	1,766.17	7.05	35.14	-28.68	2,450.10	281.62	2,278.38	2,236.76	41.62	54.744	
1,900.00	1,865.21	1,858.21	1,858.21	7.68	36.99	-29.51	2,450.10	281.62	2,243.61	2,199.69	43.91	51.090	
2,000.00	1,955.84	1,948.84	1,948.84	8.36	38.81	-30.45	2,450.10	281.62	2,206.15	2,159.95	46.20	47.750	
2,100.00	2,044.94	2,037.94	2,037.94	9.09	40.61	-31.49	2,450.10	281.62	2,166.12	2,117.64	48.48	44.679	

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