


Royal HaskoningDHV		Page 1
Manchester One Portland Street Manchester M1 3LF	Haverhill Great Willsey Park Area 4 FSR simulation results	
Date 02/10/2020 File Haverhill. All Networks...	Designed by RMV Checked by AB	
Innovyze	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW 04

Pipe Sizes STANDARD Manhole Sizes STANDARD









FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	21.000	Add Flow / Climate Change (%)	0
Ratio R	0.423	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for SW 04
















« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
2.000	9.150	0.149	61.4	0.000	4.00	0.0	0.600	o	225	Pipe/Conduit	
2.001	55.464	1.188	46.7	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.002	84.363	0.860	98.1	0.401	0.00	0.0	0.600	o	450	Pipe/Conduit	
3.000	9.682	0.372	26.0	0.267	4.00	0.0	0.600	o	225	Pipe/Conduit	
2.003	10.377	0.130	79.8	0.010	0.00	0.0	0.600	o	525	Pipe/Conduit	
2.004	28.883	0.430	67.2	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
2.005	5.158	0.011	468.9	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
2.006	12.823	1.922	6.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
2.000	50.00	4.09	83.907	0.000	0.0	0.0	0.0	1.67	66.5	0.0
2.001	50.00	4.57	83.758	0.036	0.0	0.0	0.0	1.92	76.3	4.9
2.002	50.00	5.26	82.345	0.437	0.0	0.0	0.0	2.05	326.5	59.2
3.000	50.00	4.06	82.082	0.267	0.0	0.0	0.0	2.57	102.4	36.2
2.003	50.00	5.33	81.410	0.714	0.0	0.0	0.0	2.51	543.1	96.7
2.004	50.00	5.50	81.280	0.714	0.0	0.0	0.0	2.74	592.3	96.7
2.005	50.00	5.59	80.850	0.714	0.0	0.0	0.0	1.03	222.5	96.7
2.006	50.00	5.62	80.839	0.714	0.0	0.0	0.0	6.12	432.9	96.7

















Network Design Table for SW 04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
4.000	40.165	0.179	224.4	0.055	12.00	0.0	0.600	o	225	Pipe/Conduit	
4.001	38.354	0.157	244.3	0.299	0.00	0.0	0.600	o	300	Pipe/Conduit	
4.002	26.501	0.079	335.5	0.044	0.00	0.0	0.600	o	300	Pipe/Conduit	
4.003	33.109	0.465	71.2	0.020	0.00	0.0	0.600	o	300	Pipe/Conduit	
5.000	10.197	0.320	31.9	0.386	4.00	0.0	0.600	o	375	Pipe/Conduit	
5.001	47.995	0.439	109.3	0.030	0.00	0.0	0.600	o	375	Pipe/Conduit	
6.000	11.341	0.223	50.9	0.343	4.00	0.0	0.600	o	375	Pipe/Conduit	
5.002	67.760	1.621	41.8	0.088	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.000	11.963	0.321	37.3	0.397	4.00	0.0	0.600	o	375	Pipe/Conduit	
5.003	49.595	1.611	30.8	0.044	0.00	0.0	0.600	o	525	Pipe/Conduit	
8.000	7.722	0.041	188.3	0.090	4.00	0.0	0.600	o	225	Pipe/Conduit	
5.004	13.512	0.229	59.0	0.021	0.00	0.0	0.600	o	525	Pipe/Conduit	
5.005	36.167	1.028	35.2	0.040	0.00	0.0	0.600	o	525	Pipe/Conduit	
5.006	18.081	0.644	28.1	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
5.007	18.098	1.086	16.7	0.023	0.00	0.0	0.600	o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
4.000	36.50	12.77	88.700	0.055	0.0	0.0	0.0	0.87	34.5	5.4
4.001	35.48	13.41	88.446	0.354	0.0	0.0	0.0	1.00	70.8	34.0
4.002	34.71	13.93	88.289	0.398	0.0	0.0	0.0	0.85	60.3	37.4
4.003	34.28	14.22	88.210	0.418	0.0	0.0	0.0	1.87	131.9	38.8
5.000	50.00	4.05	94.800	0.386	0.0	0.0	0.0	3.22	355.6	52.3
5.001	50.00	4.51	94.480	0.416	0.0	0.0	0.0	1.73	191.3	56.3
6.000	50.00	4.07	94.264	0.343	0.0	0.0	0.0	2.55	281.2	46.4
5.002	50.00	4.87	93.966	0.847	0.0	0.0	0.0	3.15	501.3	114.7
7.000	50.00	4.07	92.741	0.397	0.0	0.0	0.0	2.98	328.7	53.8
5.003	50.00	5.08	92.270	1.288	0.0	0.0	0.0	4.05	876.2	174.4
8.000	50.00	4.14	91.000	0.090	0.0	0.0	0.0	0.95	37.7	12.2
5.004	50.00	5.15	90.659	1.399	0.0	0.0	0.0	2.92	632.1	189.4
5.005	50.00	5.31	90.430	1.439	0.0	0.0	0.0	3.79	819.5	194.9
5.006	50.00	5.38	89.327	1.439	0.0	0.0	0.0	4.61	1302.8	194.9
5.007	50.00	5.43	88.683	1.462	0.0	0.0	0.0	5.98	1692.1	198.0
















Network Design Table for SW 04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
9.000	13.499	0.080	168.7	0.084	12.00	0.0	0.600	o	225	Pipe/Conduit	
5.008	24.069	0.152	158.4	0.019	0.00	0.0	0.600	o	600	Pipe/Conduit	
4.004	17.983	0.397	45.3	0.146	0.00	0.0	0.600	o	600	Pipe/Conduit	
4.005	34.361	1.588	21.6	0.093	0.00	0.0	0.600	o	600	Pipe/Conduit	
4.006	37.924	0.062	611.7	0.215	0.00	0.0	0.600	oo	525	Double Pipe	
4.007	21.463	0.162	132.5	0.000	0.00	0.0	0.600	oo	525	Double Pipe	
4.008	30.800	0.361	85.3	0.000	0.00	0.0	0.600	oo	525	Double Pipe	
4.009	18.004	0.120	150.0	0.470	0.00	0.0	0.600	oo	600	Double Pipe	
4.010	17.012	0.200	85.1	0.000	0.00	0.0	0.600	oo	600	Double Pipe	
4.011	13.098	0.080	163.7	0.000	0.00	0.0	0.600	oo	600	Double Pipe	
4.012	6.013	0.600	10.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
4.013	28.027	1.350	20.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
10.000	10.115	0.077	131.4	0.308	4.00	0.0	0.600	o	525	Pipe/Conduit	
11.000	26.344	0.951	27.7	0.062	12.00	0.0	0.600	o	225	Pipe/Conduit	
11.001	24.400	1.726	14.1	0.022	0.00	0.0	0.600	o	225	Pipe/Conduit	
12.000	36.063	0.147	245.3	0.113	12.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
9.000	37.42	12.22	88.052	0.084	0.0	0.0	0.0	1.00	39.9	8.5
5.008	37.06	12.43	87.597	1.565	0.0	0.0	0.0	1.93	546.5	198.0
4.004	34.17	14.31	87.445	2.129	0.0	0.0	0.0	3.62	1024.9	198.0
4.005	34.01	14.41	87.048	2.222	0.0	0.0	0.0	5.25	1484.5	204.7
4.006	33.06	15.12	85.460	2.437	0.0	0.0	0.0	0.90	388.9	218.2
4.007	32.83	15.30	85.398	2.437	0.0	0.0	0.0	1.94	841.8	218.2
4.008	32.56	15.51	85.236	2.437	0.0	0.0	0.0	2.43	1050.4	218.2
4.009	32.37	15.66	84.800	2.907	0.0	0.0	0.0	1.99	1123.0	254.8
4.010	32.24	15.77	84.678	2.907	0.0	0.0	0.0	2.64	1493.8	254.8
4.011	32.10	15.89	84.480	2.907	0.0	0.0	0.0	1.90	1074.7	254.8
4.012	32.08	15.90	84.400	2.907	0.0	0.0	0.0	7.72	2183.1	254.8
4.013	31.88	16.06	83.800	2.907	0.0	0.0	0.0	2.88	114.7<	254.8
10.000	50.00	4.09	86.643	0.308	0.0	0.0	0.0	1.95	422.7	41.7
11.000	37.50	12.18	91.044	0.062	0.0	0.0	0.0	2.50	99.2	6.3
11.001	37.30	12.29	90.093	0.084	0.0	0.0	0.0	3.50	139.1	8.5
12.000	36.77	12.60	89.899	0.113	0.0	0.0	0.0	1.00	70.6	11.3

Network Design Table for SW 04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
12.001	19.035	0.078	244.0	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit	
12.002	20.799	0.085	244.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
12.003	91.554	0.374	244.8	0.105	0.00	0.0	0.600	o	300	Pipe/Conduit	
12.004	62.418	0.924	67.6	0.308	0.00	0.0	0.600	o	375	Pipe/Conduit	
11.002	65.171	0.932	69.9	0.069	0.00	0.0	0.600	o	375	Pipe/Conduit	
13.000	57.235	0.310	184.6	0.100	12.00	0.0	0.600	o	225	Pipe/Conduit	
11.003	41.280	0.168	245.7	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
11.004	22.676	0.400	56.7	0.074	0.00	0.0	0.600	o	525	Pipe/Conduit	
10.001	40.898	0.767	53.3	0.000	0.00	0.0	0.600	oo	375	Double Pipe	
10.002	14.503	0.240	60.4	0.000	0.00	0.0	0.600	oo	375	Double Pipe	
10.003	34.094	0.125	272.8	0.120	0.00	0.0	0.600	oo	375	Double Pipe	
10.004	5.273	0.020	263.6	0.000	0.00	0.0	0.600	oo	375	Double Pipe	
10.005	29.851	0.015	1990.1	0.000	0.00	0.0	0.600	oo	450	Double Pipe	
10.006	4.574	0.700	6.5	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
10.007	16.040	1.002	16.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
12.001	36.26	12.92	89.752	0.147	0.0	0.0	0.0	1.00	70.8	14.4
12.002	35.71	13.26	89.674	0.147	0.0	0.0	0.0	1.00	70.7	14.4
12.003	33.50	14.79	89.589	0.252	0.0	0.0	0.0	1.00	70.7	22.9
12.004	32.88	15.26	89.141	0.560	0.0	0.0	0.0	2.21	243.8	49.9
11.002	32.25	15.76	88.217	0.713	0.0	0.0	0.0	2.17	239.6	62.3
13.000	36.13	12.99	87.745	0.100	0.0	0.0	0.0	0.96	38.1	9.8
11.003	31.61	16.29	87.210	0.813	0.0	0.0	0.0	1.29	205.6	69.6
11.004	31.46	16.42	86.967	0.887	0.0	0.0	0.0	2.98	645.0	75.6
10.001	31.15	16.70	86.567	1.195	0.0	0.0	0.0	2.49	549.2	100.8
10.002	31.03	16.80	85.800	1.195	0.0	0.0	0.0	2.33	515.7	100.8
10.003	30.46	17.32	85.560	1.315	0.0	0.0	0.0	1.09	241.3	108.5
10.004	30.37	17.40	85.435	1.315	0.0	0.0	0.0	1.11	245.4	108.5
10.005	29.23	18.51	85.415	1.315	0.0	0.0	0.0	0.45	142.1	108.5
10.006	29.22	18.52	85.400	1.315	0.0	0.0	0.0	8.80	1905.2	108.5
10.007	29.14	18.60	84.700	1.315	0.0	0.0	0.0	3.29	130.7	108.5



Manhole Schedules for SW 04

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., I*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdr (mm)
S4.01	86.130	2.223	Junction		2.000	83.907	225				
S4.02	86.199	2.441	Open Manhole	1200	2.001	83.758	225	2.000	83.758	225	
S4.03	84.325	1.980	Open Manhole	1500	2.002	82.345	450	2.001	82.570	225	
S4.04	83.471	1.389	Open Manhole	1200	3.000	82.082	225				
S4.05	83.266	1.856	Open Manhole	1500	2.003	81.410	525	2.002	81.485	450	
								3.000	81.710	225	
S4.06	82.437	1.157	Junction		2.004	81.280	525	2.003	81.280	525	
S4.07	82.650	1.800	Junction		2.005	80.850	525	2.004	80.850	525	
S4.08 FC	82.650	1.811	Open Manhole	1800	2.006	80.839	300	2.005	80.839	525	
S4.01	82.300	3.383	Open Manhole	0		OUTFALL		2.006	78.917	300	
S4.09	90.122	1.422	Open Manhole	1200	4.000	88.700	225				
S4.10	90.458	2.012	Open Manhole	1200	4.001	88.446	300	4.000	88.521	225	
S4.11	90.203	1.914	Open Manhole	1200	4.002	88.289	300	4.001	88.289	300	
S4.12	89.968	1.758	Open Manhole	1200	4.003	88.210	300	4.002	88.210	300	
S4.13	97.358	2.558	Open Manhole	1500	5.000	94.800	375				
S4.15	97.422	2.942	Open Manhole	1500	5.001	94.480	375	5.000	94.480	375	
S4.16	96.785	2.521	Open Manhole	1500	6.000	94.264	375				
S4.17	97.103	3.137	Open Manhole	1500	5.002	93.966	450	5.001	94.041	375	
								6.000	94.041	375	
S4.18	95.095	2.354	Open Manhole	1500	7.000	92.741	375				
S4.19	95.257	2.987	Open Manhole	1500	5.003	92.270	525	5.002	92.345	450	
								7.000	92.420	375	
S4.20	93.029	2.029	Open Manhole	1200	8.000	91.000	225				
S4.21	93.231	2.572	Open Manhole	1500	5.004	90.659	525	5.003	90.659	525	
								8.000	90.959	225	
S4.22	92.773	2.343	Open Manhole	1500	5.005	90.430	525	5.004	90.430	525	
S4.23	91.204	1.877	Open Manhole	1500	5.006	89.327	600	5.005	89.402	525	
S4.24	90.610	1.927	Open Manhole	1500	5.007	88.683	600	5.006	88.683	600	
S4.25	89.520	1.468	Open Manhole	1200	9.000	88.052	225				
S4.26	89.859	2.262	Open Manhole	1500	5.008	87.597	600	5.007	87.597	600	
								9.000	87.972	225	
S4.27	89.180	1.735	Open Manhole	1500	4.004	87.445	600	4.003	87.745	300	
								5.008	87.445	600	
S4.28	88.564	1.516	Open Manhole	1500	4.005	87.048	600	4.004	87.048	600	
S4.29	87.356	1.896	Open Manhole	1800	4.006	85.460	525	4.005	85.460	600	
S4.30	86.700	1.302	Sealed Manhole	1800	4.007	85.398	525	4.006	85.398	525	
S4.31	86.450	1.214	Sealed Manhole	1800	4.008	85.236	525	4.007	85.236	525	
S4.32	86.620	1.820	Sealed Manhole	2100	4.009	84.800	600	4.008	84.875	525	

Manhole Schedules for SW 04

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Back
S4.33	86.200	1.522	Sealed Manhole	2100	4.010	84.678	600	4.009	84.680	600	
S4.34	86.200	1.722	Junction		4.011	84.480	600	4.010	84.478	600	
S4.35	86.200	1.800	Junction		4.012	84.400	600	4.011	84.400	600	
S4.36 FC	86.200	2.400	Open Manhole	1500	4.013	83.800	225	4.012	83.800	600	
S4.02	83.931	1.481	Open Manhole	1350		OUTFALL		4.013	82.450	225	
S4.37	87.928	1.285	Junction		10.000	86.643	525				
S4.38	92.587	1.543	Open Manhole	1200	11.000	91.044	225				
S4.39	91.592	1.499	Open Manhole	1200	11.001	90.093	225	11.000	90.093	225	
S4.40	91.343	1.444	Open Manhole	1200	12.000	89.899	300				
S4.41	92.269	2.517	Open Manhole	1200	12.001	89.752	300	12.000	89.752	300	
S4.42	92.673	2.999	Open Manhole	1200	12.002	89.674	300	12.001	89.674	300	
S4.43	92.560	2.971	Open Manhole	1200	12.003	89.589	300	12.002	89.589	300	
S4.44	91.713	2.572	Open Manhole	1500	12.004	89.141	375	12.003	89.215	300	
S4.47	90.959	2.742	Open Manhole	1500	11.002	88.217	375	11.001	88.367	225	
								12.004	88.217	375	
S4.48	89.803	2.058	Open Manhole	1200	13.000	87.745	225				
S4.49	89.777	2.567	Open Manhole	1500	11.003	87.210	450	11.002	87.285	375	
								13.000	87.435	225	
S4.50	88.186	1.219	Open Manhole	1240 x 975	11.004	86.967	525	11.003	87.042	450	
S4.51	87.771	1.205	Open Manhole	1240 x 1725	10.001	86.567	375	10.000	86.566	525	
								11.004	86.567	525	
S4.52	87.080	1.280	Open Manhole	1240 x 1500	10.002	85.800	375	10.001	85.800	375	
S4.53	86.874	1.314	Open Manhole	1240 x 1500	10.003	85.560	375	10.002	85.560	375	
S4.54	86.700	1.265	Open Manhole	1240 x 1500	10.004	85.435	375	10.003	85.435	375	
S4.56	86.700	1.285	Junction		10.005	85.415	450	10.004	85.415	375	
S4.55	86.700	1.300	Junction		10.006	85.400	525	10.005	85.400	450	
S4.57 FC	86.400	1.700	Open Manhole	1500	10.007	84.700	225	10.006	84.700	525	
S4.03	86.000	2.302	Open Manhole	2250		OUTFALL		10.007	83.698	225	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
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S4.01	568531.624	245891.923			No Entry	
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S4.02	568533.141	245900.946	568533.141	245900.946	Required	
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Manchester One Portland Street Manchester M1 3LF	Haverhill Great Willsey Park Area 4 FSR simulation results
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Manhole Schedules for SW 04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4.03	568588.101	245893.484	568588.101	245893.484	Required	
S4.04	568665.057	245859.012	568665.057	245859.012	Required	
S4.05	568668.538	245868.047	568668.538	245868.047	Required	
S4.06	568671.785	245877.903			No Entry	
S4.07	568692.468	245898.063			No Entry	
S4.08 FC	568696.336	245901.476	568696.336	245901.476	Required	
S4.01	568705.963	245909.945			No Entry	
S4.09	568328.917	245939.673	568328.917	245939.673	Required	
S4.10	568364.787	245921.601	568364.787	245921.601	Required	
S4.11	568392.877	245895.487	568392.877	245895.487	Required	
S4.12	568416.896	245884.289	568416.896	245884.289	Required	
S4.13	568242.222	245703.136	568242.222	245703.136	Required	
S4.15	568252.412	245702.747	568252.412	245702.747	Required	
S4.16	568277.930	245745.827	568277.930	245745.827	Required	
S4.17	568285.570	245737.445	568285.570	245737.445	Required	

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Manhole Schedules for SW 04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4.18	568326.882	245790.662	568326.882	245790.662	Required	
S4.19	568335.906	245782.808	568335.906	245782.808	Required	
S4.20	568367.916	245821.195	568367.916	245821.195	Required	
S4.21	568373.169	245815.536	568373.169	245815.536	Required	
S4.22	568383.734	245823.959	568383.734	245823.959	Required	
S4.23	568418.275	245834.683	568418.275	245834.683	Required	
S4.24	568433.193	245844.900	568433.193	245844.900	Required	
S4.25	568456.505	245854.045	568456.505	245854.045	Required	
S4.26	568444.092	245859.348	568444.092	245859.348	Required	
S4.27	568449.966	245882.689	568449.966	245882.689	Required	
S4.28	568467.719	245885.562	568467.719	245885.562	Required	
S4.29	568500.150	245896.916	568500.150	245896.916	Required	
S4.30	568488.449	245932.990			No Entry	
S4.31	568489.195	245954.440			No Entry	
S4.32	568461.130	245967.128			No Entry	

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Manhole Schedules for SW 04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4.33	568467.603	245983.928			No Entry	
S4.34	568478.451	245997.032			No Entry	
S4.35	568486.106	246007.661			No Entry	
S4.36 FC	568490.758	246011.471	568490.758	246011.471	Required	
S4.02	568511.687	246030.112			No Entry	
S4.37	568287.209	246055.465			No Entry	
S4.38	568181.841	245990.501	568181.841	245990.501	Required	
S4.39	568191.405	246015.048	568191.405	246015.048	Required	
S4.40	568076.798	246188.664	568076.798	246188.664	Required	
S4.41	568064.888	246154.624	568064.888	246154.624	Required	
S4.42	568066.980	246135.704	568066.980	246135.704	Required	
S4.43	568078.102	246118.129	568078.102	246118.129	Required	
S4.44	568153.034	246065.523	568153.034	246065.523	Required	
S4.47	568206.863	246033.926	568206.863	246033.926	Required	
S4.48	568302.816	245958.402	568302.816	245958.402	Required	

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Manhole Schedules for SW 04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4.49	568260.590	245997.038	568260.590	245997.038	Required	
S4.50	568283.290	246031.517	568283.290	246031.517	Required	
S4.51	568295.931	246050.343	568295.931	246050.343	Required	
S4.52	568330.679	246028.775	568330.679	246028.775	Required	
S4.53	568345.131	246027.551	568345.131	246027.551	Required	
S4.54	568367.704	246053.102	568367.704	246053.102	Required	
S4.56	568371.194	246057.053			No Entry	
S4.55	568396.833	246041.764			No Entry	
S4.57 FC	568400.838	246043.974	568400.838	246043.974	Required	
S4.03	568414.759	246051.941			No Entry	


PIPELINE SCHEDULES for SW 04

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
2.000	o	225	S4.01	86.130	83.907	1.998	Junction	
2.001	o	225	S4.02	86.199	83.758	2.216	Open Manhole	1200
2.002	o	450	S4.03	84.325	82.345	1.530	Open Manhole	1500
3.000	o	225	S4.04	83.471	82.082	1.164	Open Manhole	1200
2.003	o	525	S4.05	83.266	81.410	1.331	Open Manhole	1500
2.004	o	525	S4.06	82.437	81.280	0.632	Junction	
2.005	o	525	S4.07	82.650	80.850	1.275	Junction	
2.006	o	300	S4.08 FC	82.650	80.839	1.511	Open Manhole	1800
4.000	o	225	S4.09	90.122	88.700	1.197	Open Manhole	1200
4.001	o	300	S4.10	90.458	88.446	1.712	Open Manhole	1200
4.002	o	300	S4.11	90.203	88.289	1.614	Open Manhole	1200
4.003	o	300	S4.12	89.968	88.210	1.458	Open Manhole	1200
5.000	o	375	S4.13	97.358	94.800	2.183	Open Manhole	1500
5.001	o	375	S4.15	97.422	94.480	2.567	Open Manhole	1500
6.000	o	375	S4.16	96.785	94.264	2.146	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
2.000	9.150	61.4	S4.02	86.199	83.758	2.216	Open Manhole	1200
2.001	55.464	46.7	S4.03	84.325	82.570	1.530	Open Manhole	1500
2.002	84.363	98.1	S4.05	83.266	81.485	1.331	Open Manhole	1500
3.000	9.682	26.0	S4.05	83.266	81.710	1.331	Open Manhole	1500
2.003	10.377	79.8	S4.06	82.437	81.280	0.632	Junction	
2.004	28.883	67.2	S4.07	82.650	80.850	1.275	Junction	
2.005	5.158	468.9	S4.08 FC	82.650	80.839	1.286	Open Manhole	1800
2.006	12.823	6.7	S4.01	82.300	78.917	3.083	Open Manhole	0
4.000	40.165	224.4	S4.10	90.458	88.521	1.712	Open Manhole	1200
4.001	38.354	244.3	S4.11	90.203	88.289	1.614	Open Manhole	1200
4.002	26.501	335.5	S4.12	89.968	88.210	1.458	Open Manhole	1200
4.003	33.109	71.2	S4.27	89.180	87.745	1.135	Open Manhole	1500
5.000	10.197	31.9	S4.15	97.422	94.480	2.567	Open Manhole	1500
5.001	47.995	109.3	S4.17	97.103	94.041	2.687	Open Manhole	1500
6.000	11.341	50.9	S4.17	97.103	94.041	2.687	Open Manhole	1500

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PIPELINE SCHEDULES for SW 04

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.002	o	450	S4.17	97.103	93.966	2.687	Open Manhole	1500
7.000	o	375	S4.18	95.095	92.741	1.979	Open Manhole	1500
5.003	o	525	S4.19	95.257	92.270	2.462	Open Manhole	1500
8.000	o	225	S4.20	93.029	91.000	1.804	Open Manhole	1200
5.004	o	525	S4.21	93.231	90.659	2.047	Open Manhole	1500
5.005	o	525	S4.22	92.773	90.430	1.818	Open Manhole	1500
5.006	o	600	S4.23	91.204	89.327	1.277	Open Manhole	1500
5.007	o	600	S4.24	90.610	88.683	1.327	Open Manhole	1500
9.000	o	225	S4.25	89.520	88.052	1.243	Open Manhole	1200
5.008	o	600	S4.26	89.859	87.597	1.662	Open Manhole	1500
4.004	o	600	S4.27	89.180	87.445	1.135	Open Manhole	1500
4.005	o	600	S4.28	88.564	87.048	0.916	Open Manhole	1500
4.006	oo	525	S4.29	87.356	85.460	1.371	Open Manhole	1800
4.007	oo	525	S4.30	86.700	85.398	0.777	Sealed Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.002	67.760	41.8	S4.19	95.257	92.345	2.462	Open Manhole	1500
7.000	11.963	37.3	S4.19	95.257	92.420	2.462	Open Manhole	1500
5.003	49.595	30.8	S4.21	93.231	90.659	2.047	Open Manhole	1500
8.000	7.722	188.3	S4.21	93.231	90.959	2.047	Open Manhole	1500
5.004	13.512	59.0	S4.22	92.773	90.430	1.818	Open Manhole	1500
5.005	36.167	35.2	S4.23	91.204	89.402	1.277	Open Manhole	1500
5.006	18.081	28.1	S4.24	90.610	88.683	1.327	Open Manhole	1500
5.007	18.098	16.7	S4.26	89.859	87.597	1.662	Open Manhole	1500
9.000	13.499	168.7	S4.26	89.859	87.972	1.662	Open Manhole	1500
5.008	24.069	158.4	S4.27	89.180	87.445	1.135	Open Manhole	1500
4.004	17.983	45.3	S4.28	88.564	87.048	0.916	Open Manhole	1500
4.005	34.361	21.6	S4.29	87.356	85.460	1.296	Open Manhole	1800
4.006	37.924	611.7	S4.30	86.700	85.398	0.777	Sealed Manhole	1800
4.007	21.463	132.5	S4.31	86.450	85.236	0.689	Sealed Manhole	1800

PIPELINE SCHEDULES for SW 04

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
4.008	oo	525	S4.31	86.450	85.236	0.689	Sealed Manhole	1800
4.009	oo	600	S4.32	86.620	84.800	1.220	Sealed Manhole	2100
4.010	oo	600	S4.33	86.200	84.678	0.922	Sealed Manhole	2100
4.011	oo	600	S4.34	86.200	84.480	1.120	Junction	
4.012	o	600	S4.35	86.200	84.400	1.200	Junction	
4.013	o	225	S4.36 FC	86.200	83.800	2.175	Open Manhole	1500
10.000	o	525	S4.37	87.928	86.643	0.760	Junction	
11.000	o	225	S4.38	92.587	91.044	1.318	Open Manhole	1200
11.001	o	225	S4.39	91.592	90.093	1.274	Open Manhole	1200
12.000	o	300	S4.40	91.343	89.899	1.144	Open Manhole	1200
12.001	o	300	S4.41	92.269	89.752	2.217	Open Manhole	1200
12.002	o	300	S4.42	92.673	89.674	2.699	Open Manhole	1200
12.003	o	300	S4.43	92.560	89.589	2.671	Open Manhole	1200
12.004	o	375	S4.44	91.713	89.141	2.197	Open Manhole	1500
11.002	o	375	S4.47	90.959	88.217	2.367	Open Manhole	1500
13.000	o	225	S4.48	89.803	87.745	1.833	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
4.008	30.800	85.3	S4.32	86.620	84.875	1.220	Sealed Manhole	2100
4.009	18.004	150.0	S4.33	86.200	84.680	0.920	Sealed Manhole	2100
4.010	17.012	85.1	S4.34	86.200	84.478	1.122	Junction	
4.011	13.098	163.7	S4.35	86.200	84.400	1.200	Junction	
4.012	6.013	10.0	S4.36 FC	86.200	83.800	1.800	Open Manhole	1500
4.013	28.027	20.8	S4.02	83.931	82.450	1.256	Open Manhole	1350
10.000	10.115	131.4	S4.51	87.771	86.566	0.680	Open Manhole	1240 x 1725
11.000	26.344	27.7	S4.39	91.592	90.093	1.274	Open Manhole	1200
11.001	24.400	14.1	S4.47	90.959	88.367	2.367	Open Manhole	1500
12.000	36.063	245.3	S4.41	92.269	89.752	2.217	Open Manhole	1200
12.001	19.035	244.0	S4.42	92.673	89.674	2.699	Open Manhole	1200
12.002	20.799	244.7	S4.43	92.560	89.589	2.671	Open Manhole	1200
12.003	91.554	244.8	S4.44	91.713	89.215	2.198	Open Manhole	1500
12.004	62.418	67.6	S4.47	90.959	88.217	2.367	Open Manhole	1500
11.002	65.171	69.9	S4.49	89.777	87.285	2.117	Open Manhole	1500
13.000	57.235	184.6	S4.49	89.777	87.435	2.117	Open Manhole	1500


PIPELINE SCHEDULES for SW 04

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.003	o	450	S4.49	89.777	87.210	2.117	Open Manhole	1500
11.004	o	525	S4.50	88.186	86.967	0.694	Open Manhole	1240 x 975
10.001	oo	375	S4.51	87.771	86.567	0.829	Open Manhole	1240 x 1725
10.002	oo	375	S4.52	87.080	85.800	0.905	Open Manhole	1240 x 1500
10.003	oo	375	S4.53	86.874	85.560	0.939	Open Manhole	1240 x 1500
10.004	oo	375	S4.54	86.700	85.435	0.890	Open Manhole	1240 x 1500
10.005	oo	450	S4.56	86.700	85.415	0.835	Junction	
10.006	o	525	S4.55	86.700	85.400	0.775	Junction	
10.007	o	225	S4.57 FC	86.400	84.700	1.475	Open Manhole	1500


Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.003	41.280	245.7	S4.50	88.186	87.042	0.694	Open Manhole	1240 x 975
11.004	22.676	56.7	S4.51	87.771	86.567	0.679	Open Manhole	1240 x 1725
10.001	40.898	53.3	S4.52	87.080	85.800	0.905	Open Manhole	1240 x 1500
10.002	14.503	60.4	S4.53	86.874	85.560	0.939	Open Manhole	1240 x 1500
10.003	34.094	272.8	S4.54	86.700	85.435	0.890	Open Manhole	1240 x 1500
10.004	5.273	263.6	S4.56	86.700	85.415	0.910	Junction	
10.005	29.851	1990.1	S4.55	86.700	85.400	0.850	Junction	
10.006	4.574	6.5	S4.57 FC	86.400	84.700	1.175	Open Manhole	1500
10.007	16.040	16.0	S4.03	86.000	83.698	2.077	Open Manhole	2250

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Area Summary for SW 04

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
2.000	-	-	100	0.000	0.000	0.000
2.001	-	-	100	0.036	0.036	0.036
2.002	-	-	100	0.401	0.401	0.401
3.000	-	-	100	0.267	0.267	0.267
2.003	-	-	100	0.010	0.010	0.010
2.004	-	-	100	0.000	0.000	0.000
2.005	-	-	100	0.000	0.000	0.000
2.006	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.055	0.055	0.055
4.001	-	-	100	0.299	0.299	0.299
4.002	-	-	100	0.044	0.044	0.044
4.003	-	-	100	0.020	0.020	0.020
5.000	-	-	100	0.386	0.386	0.386
5.001	-	-	100	0.030	0.030	0.030
6.000	-	-	100	0.343	0.343	0.343
5.002	-	-	100	0.088	0.088	0.088
7.000	-	-	100	0.397	0.397	0.397
5.003	-	-	100	0.044	0.044	0.044
8.000	-	-	100	0.090	0.090	0.090
5.004	-	-	100	0.021	0.021	0.021
5.005	-	-	100	0.040	0.040	0.040
5.006	-	-	100	0.000	0.000	0.000
5.007	-	-	100	0.023	0.023	0.023
9.000	-	-	100	0.084	0.084	0.084
5.008	-	-	100	0.019	0.019	0.019
4.004	-	-	100	0.146	0.146	0.146
4.005	-	-	100	0.093	0.093	0.093
4.006	-	-	100	0.215	0.215	0.215
4.007	-	-	100	0.000	0.000	0.000
4.008	-	-	100	0.000	0.000	0.000
4.009	-	-	100	0.470	0.470	0.470
4.010	-	-	100	0.000	0.000	0.000
4.011	-	-	100	0.000	0.000	0.000
4.012	-	-	100	0.000	0.000	0.000
4.013	-	-	100	0.000	0.000	0.000
10.000	-	-	100	0.308	0.308	0.308
11.000	-	-	100	0.062	0.062	0.062
11.001	-	-	100	0.022	0.022	0.022
12.000	-	-	100	0.113	0.113	0.113
12.001	-	-	100	0.034	0.034	0.034
12.002	-	-	100	0.000	0.000	0.000
12.003	-	-	100	0.105	0.105	0.105
12.004	-	-	100	0.308	0.308	0.308
11.002	-	-	100	0.069	0.069	0.069
13.000	-	-	100	0.100	0.100	0.100
11.003	-	-	100	0.000	0.000	0.000
11.004	-	-	100	0.074	0.074	0.074
10.001	-	-	100	0.000	0.000	0.000
10.002	-	-	100	0.000	0.000	0.000
10.003	-	-	100	0.120	0.120	0.120
10.004	-	-	100	0.000	0.000	0.000

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Area Summary for SW 04

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
10.005	-	-	100	0.000	0.000	0.000
10.006	-	-	100	0.000	0.000	0.000
10.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				4.936	4.936	4.936


Simulation Criteria for SW 04

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	1.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	10080
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	2

Number of Input Hydrographs	0	Number of Storage Structures	3
Number of Online Controls	3	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	21.000	Storm Duration (mins)	15
Ratio R	0.430		

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Online Controls for SW 04

Complex Manhole: S4.08 FC, DS/PN: 2.006, Volume (m³): 5.5

Hydro-Brake® Optimum

Unit Reference	MD-SHE-0066-2000-1100-2000
Design Head (m)	1.100
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	66
Invert Level (m)	80.839
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	2.0
Flush-Flo™	0.289	1.8
Kick-Flo®	0.584	1.5
Mean Flow over Head Range	-	1.7


The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.6	1.200	2.1	3.000	3.2	7.000	4.7
0.200	1.8	1.400	2.2	3.500	3.4	7.500	4.9
0.300	1.8	1.600	2.4	4.000	3.6	8.000	5.0
0.400	1.8	1.800	2.5	4.500	3.8	8.500	5.1
0.500	1.7	2.000	2.6	5.000	4.0	9.000	5.3
0.600	1.5	2.200	2.7	5.500	4.2	9.500	5.4
0.800	1.7	2.400	2.9	6.000	4.4		
1.000	1.9	2.600	3.0	6.500	4.5		

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 81.739

Complex Manhole: S4.36 FC, DS/PN: 4.013, Volume (m³): 5.7

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Hydro-Brake® Optimum

Unit Reference MD-SHE-0097-5000-1600-5000
Design Head (m) 1.600
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 97
Invert Level (m) 83.800
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.600	5.0
Flush-Flo™	0.425	4.7
Kick-Flo®	0.865	3.8
Mean Flow over Head Range	-	4.2

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.1	1.200	4.4	3.000	6.7	7.000	10.0
0.200	4.3	1.400	4.7	3.500	7.2	7.500	10.3
0.300	4.6	1.600	5.0	4.000	7.7	8.000	10.7
0.400	4.7	1.800	5.3	4.500	8.1	8.500	11.0
0.500	4.7	2.000	5.5	5.000	8.5	9.000	11.3
0.600	4.6	2.200	5.8	5.500	8.9	9.500	11.6
0.800	4.1	2.400	6.0	6.000	9.3		
1.000	4.0	2.600	6.3	6.500	9.7		


Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 85.400

Complex Manhole: S4.57 FC, DS/PN: 10.007, Volume (m³): 3.8

Hydro-Brake® Optimum

Unit Reference MD-SHE-0077-3000-1350-3000
Design Head (m) 1.350
Design Flow (l/s) 3.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 77

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Hydro-Brake® Optimum

Invert Level (m) 84.700
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200


Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.350	3.0
Flush-Flo™	0.338	2.7
Kick-Flo®	0.689	2.2
Mean Flow over Head Range	-	2.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.2	1.200	2.8	3.000	4.3	7.000	6.5
0.200	2.6	1.400	3.0	3.500	4.7	7.500	6.7
0.300	2.7	1.600	3.2	4.000	5.0	8.000	6.9
0.400	2.7	1.800	3.4	4.500	5.2	8.500	7.1
0.500	2.7	2.000	3.6	5.000	5.5	9.000	7.3
0.600	2.5	2.200	3.8	5.500	5.8	9.500	7.5
0.800	2.4	2.400	3.9	6.000	6.0		
1.000	2.6	2.600	4.1	6.500	6.2		

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 86.000

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Storage Structures for SW 04

Tank or Pond Manhole: S4.08 FC, DS/PN: 2.006

Invert Level (m) 80.850

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	0.0	0.500	396.0	1.000	824.0	1.500	1394.0
0.250	219.0	0.750	600.0	1.250	1094.0		

Tank or Pond Manhole: S4.36 FC, DS/PN: 4.013


Invert Level (m) 84.400

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	0.0	0.500	1020.0	1.000	2333.0	1.500	3143.0
0.250	581.0	0.750	1721.0	1.250	2790.0		

Tank or Pond Manhole: S4.57 FC, DS/PN: 10.007

Invert Level (m) 85.390

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	0.0	0.500	525.0	1.050	1229.0
0.250	226.0	0.750	840.0		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 1.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 3
Number of Online Controls 3 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.430
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 21.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status OFF


Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.000	S4.01	60 Winter	1	+0%				
2.001	S4.02	15 Winter	1	+0%				
2.002	S4.03	15 Winter	1	+0%	100/15 Summer			
3.000	S4.04	15 Winter	1	+0%	30/15 Summer	100/15 Summer		
2.003	S4.05	15 Winter	1	+0%	100/15 Summer			
2.004	S4.06	15 Winter	1	+0%				
2.005	S4.07	360 Winter	1	+0%				
2.006	S4.08 FC	360 Winter	1	+0%	1/15 Summer			
4.000	S4.09	15 Winter	1	+0%	30/15 Summer	100/15 Summer		
4.001	S4.10	15 Winter	1	+0%	30/15 Summer	100/15 Summer		
4.002	S4.11	15 Winter	1	+0%	30/15 Summer			
4.003	S4.12	15 Winter	1	+0%	30/15 Summer			
5.000	S4.13	15 Winter	1	+0%	100/15 Summer			
5.001	S4.15	15 Winter	1	+0%	100/15 Summer			
6.000	S4.16	15 Winter	1	+0%	100/15 Summer			
5.002	S4.17	15 Winter	1	+0%	100/15 Summer			
7.000	S4.18	15 Winter	1	+0%	100/15 Summer			
5.003	S4.19	15 Winter	1	+0%	100/15 Summer			
8.000	S4.20	15 Summer	1	+0%	30/15 Summer			

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.000	S4.01	83.907	-0.225	0.000	0.00		0.0	OK*	
2.001	S4.02	83.795	-0.188	0.000	0.06		4.6	OK	
2.002	S4.03	82.474	-0.321	0.000	0.18		54.8	OK	
3.000	S4.04	82.195	-0.112	0.000	0.51		42.9	OK	2
2.003	S4.05	81.626	-0.309	0.000	0.35		96.1	OK	
2.004	S4.06	81.436	-0.369	0.000	0.19		97.1	OK*	
2.005	S4.07	81.344	-0.031	0.000	0.06		15.1	OK*	
2.006	S4.08 FC	81.344	0.205	0.000	0.01		1.8	SURCHARGED	
4.000	S4.09	88.758	-0.167	0.000	0.15		5.0	OK	4
4.001	S4.10	88.622	-0.124	0.000	0.63		41.3	OK	3
4.002	S4.11	88.503	-0.086	0.000	0.84		45.6	OK	
4.003	S4.12	88.341	-0.169	0.000	0.40		47.8	OK	
5.000	S4.13	94.935	-0.240	0.000	0.28		62.0	OK	
5.001	S4.15	94.638	-0.217	0.000	0.37		64.9	OK	
6.000	S4.16	94.403	-0.236	0.000	0.30		55.1	OK	
5.002	S4.17	94.129	-0.287	0.000	0.28		128.7	OK	
7.000	S4.18	92.878	-0.238	0.000	0.29		63.8	OK	
5.003	S4.19	92.450	-0.345	0.000	0.25		196.6	OK	
8.000	S4.20	91.110	-0.115	0.000	0.48		14.5	OK	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
5.004	S4.21	15 Winter	1	+0%	30/15 Summer		
5.005	S4.22	15 Winter	1	+0%	100/15 Summer		
5.006	S4.23	15 Winter	1	+0%	100/15 Summer		
5.007	S4.24	15 Winter	1	+0%	100/15 Summer		
9.000	S4.25	15 Winter	1	+0%	30/15 Summer	100/15 Summer	
5.008	S4.26	15 Winter	1	+0%	30/15 Summer		
4.004	S4.27	15 Winter	1	+0%	30/15 Summer		
4.005	S4.28	15 Winter	1	+0%	100/15 Summer		
4.006	S4.29	15 Winter	1	+0%	30/15 Summer	100/15 Summer	
4.007	S4.30	15 Winter	1	+0%	30/15 Summer		
4.008	S4.31	120 Winter	1	+0%	30/15 Summer		
4.009	S4.32	120 Winter	1	+0%	1/120 Winter		
4.010	S4.33	120 Winter	1	+0%	1/120 Winter		
4.011	S4.34	120 Winter	1	+0%			
4.012	S4.35	360 Winter	1	+0%			
4.013	S4.36 FC	360 Winter	1	+0%	1/15 Summer		
10.000	S4.37	15 Winter	1	+0%			
11.000	S4.38	15 Winter	1	+0%			
11.001	S4.39	15 Winter	1	+0%			
12.000	S4.40	15 Winter	1	+0%	100/15 Summer		
12.001	S4.41	15 Winter	1	+0%	100/15 Summer		
12.002	S4.42	15 Winter	1	+0%	100/15 Summer		
12.003	S4.43	15 Winter	1	+0%	100/15 Summer		
12.004	S4.44	15 Winter	1	+0%	100/15 Summer		
11.002	S4.47	15 Winter	1	+0%	100/15 Summer		
13.000	S4.48	15 Winter	1	+0%	100/15 Summer		
11.003	S4.49	15 Winter	1	+0%	30/15 Summer		
11.004	S4.50	15 Winter	1	+0%	100/15 Summer		
10.001	S4.51	15 Winter	1	+0%	100/15 Summer		
10.002	S4.52	60 Winter	1	+0%	1/30 Winter	100/15 Summer	
10.003	S4.53	60 Winter	1	+0%	1/15 Winter	100/15 Summer	
10.004	S4.54	60 Winter	1	+0%	1/15 Winter		
10.005	S4.56	60 Winter	1	+0%			
10.006	S4.55	240 Winter	1	+0%			
10.007	S4.57 FC	240 Winter	1	+0%	1/15 Summer		1/240 Winter

PN	US/MH Name	Overflow Act.	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	
5.004	S4.21		90.950	-0.234	0.000	0.58	212.3	OK
5.005	S4.22		90.632	-0.323	0.000	0.31	219.7	OK
5.006	S4.23		89.540	-0.387	0.000	0.27	220.6	OK
5.007	S4.24		88.870	-0.413	0.000	0.21	223.3	OK
9.000	S4.25		88.123	-0.154	0.000	0.22	7.7	OK
5.008	S4.26		87.931	-0.266	0.000	0.59	231.4	OK
4.004	S4.27		87.735	-0.310	0.000	0.46	293.0	OK

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04


PN	US/MH Name	Overflow Act.	Water Surcharged Flooded			Pipe		Status	
			Level (m)	Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)		Flow (l/s)
4.005	S4.28		87.250	-0.398	0.000	0.25	305.0	OK	
4.006	S4.29		85.899	-0.086	0.000	0.95	319.8	OK	
4.007	S4.30		85.653	-0.270	0.000	0.52	319.7	OK	
4.008	S4.31		85.456	-0.305	0.000	0.13	116.7	OK	
4.009	S4.32		85.402	0.002	0.000	0.19	130.5	SURCHARGED*	
4.010	S4.33		85.332	0.054	0.000	0.14	125.3	SURCHARGED*	
4.011	S4.34		85.080	0.000	0.000	0.18	125.2	SURCHARGED*	
4.012	S4.35		85.000	0.000	0.000	0.08	58.7	SURCHARGED*	
4.013	S4.36 FC		85.057	1.032	0.000	0.04	4.7	SURCHARGED	
10.000	S4.37		86.801	-0.367	0.000	0.20	49.5	OK*	
11.000	S4.38		91.080	-0.189	0.000	0.06	5.7	OK	
11.001	S4.39		90.130	-0.188	0.000	0.06	8.0	OK	
12.000	S4.40		89.978	-0.221	0.000	0.16	10.3	OK	
12.001	S4.41		89.848	-0.204	0.000	0.22	13.6	OK	
12.002	S4.42		89.771	-0.203	0.000	0.22	13.6	OK	
12.003	S4.43		89.715	-0.174	0.000	0.35	23.7	OK	
12.004	S4.44		89.271	-0.245	0.000	0.25	58.2	OK	
11.002	S4.47		88.366	-0.226	0.000	0.33	74.2	OK	
13.000	S4.48		87.821	-0.149	0.000	0.25	9.2	OK	
11.003	S4.49		87.421	-0.239	0.000	0.45	82.1	OK	
11.004	S4.50		87.119	-0.373	0.000	0.18	89.6	OK	
10.001	S4.51		86.693	-0.249	0.000	0.25	123.6	OK	
10.002	S4.52		86.261	0.086	0.000	0.22	84.3	SURCHARGED	
10.003	S4.53		86.102	0.167	0.000	0.41	88.6	SURCHARGED	
10.004	S4.54		86.010	0.200	0.000	0.57	86.5	SURCHARGED	
10.005	S4.56		85.865	0.000	0.000	0.50	78.2	SURCHARGED*	
10.006	S4.55		85.925	0.000	0.000	0.06	36.7	SURCHARGED*	
10.007	S4.57 FC	35	85.964	1.039	0.000	0.03	2.9	2.9	SURCHARGED

PN	US/MH Name	Level Exceeded
5.004	S4.21	
5.005	S4.22	
5.006	S4.23	
5.007	S4.24	
9.000	S4.25	4
5.008	S4.26	
4.004	S4.27	
4.005	S4.28	
4.006	S4.29	5
4.007	S4.30	
4.008	S4.31	10
4.009	S4.32	
4.010	S4.33	
4.011	S4.34	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Level Exceeded
4.012	S4.35	
4.013	S4.36 FC	
10.000	S4.37	
11.000	S4.38	
11.001	S4.39	
12.000	S4.40	
12.001	S4.41	
12.002	S4.42	
12.003	S4.43	
12.004	S4.44	
11.002	S4.47	
13.000	S4.48	
11.003	S4.49	
11.004	S4.50	
10.001	S4.51	
10.002	S4.52	4
10.003	S4.53	6
10.004	S4.54	
10.005	S4.56	
10.006	S4.55	
10.007	S4.57 FC	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 1.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 3
Number of Online Controls 3 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.430
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 21.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status OFF


Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.000	S4.01	60 Winter	30	+0%				
2.001	S4.02	15 Winter	30	+0%				
2.002	S4.03	15 Winter	30	+0%	100/15 Summer			
3.000	S4.04	15 Winter	30	+0%	30/15 Summer	100/15 Summer		
2.003	S4.05	15 Winter	30	+0%	100/15 Summer			
2.004	S4.06	240 Winter	30	+0%				
2.005	S4.07	60 Winter	30	+0%				
2.006	S4.08 FC	960 Winter	30	+0%	1/15 Summer			
4.000	S4.09	15 Winter	30	+0%	30/15 Summer	100/15 Summer		
4.001	S4.10	15 Winter	30	+0%	30/15 Summer	100/15 Summer		
4.002	S4.11	15 Winter	30	+0%	30/15 Summer			
4.003	S4.12	15 Winter	30	+0%	30/15 Summer			
5.000	S4.13	15 Winter	30	+0%	100/15 Summer			
5.001	S4.15	15 Summer	30	+0%	100/15 Summer			
6.000	S4.16	15 Winter	30	+0%	100/15 Summer			
5.002	S4.17	15 Winter	30	+0%	100/15 Summer			
7.000	S4.18	15 Winter	30	+0%	100/15 Summer			
5.003	S4.19	15 Winter	30	+0%	100/15 Summer			
8.000	S4.20	15 Winter	30	+0%	30/15 Summer			

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04

PN	US/MH Name	Water		Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)				
2.000	S4.01	83.907	-0.225	0.000	0.00		0.0	OK*		
2.001	S4.02	83.825	-0.158	0.000	0.19		14.2	OK		
2.002	S4.03	82.586	-0.209	0.000	0.54		167.4	OK		
3.000	S4.04	82.494	0.187	0.000	1.22		103.2	SURCHARGED	2	
2.003	S4.05	81.832	-0.103	0.000	0.99		273.5	OK		
2.004	S4.06	81.667	-0.138	0.000	0.09		46.3	OK*		
2.005	S4.07	81.375	0.000	0.000	0.51		126.0	SURCHARGED*		
2.006	S4.08 FC	81.653	0.514	0.000	0.01		1.8	SURCHARGED		
4.000	S4.09	89.440	0.515	0.000	0.57		18.6	SURCHARGED	4	
4.001	S4.10	89.419	0.673	0.000	1.69		111.0	SURCHARGED	3	
4.002	S4.11	89.033	0.444	0.000	2.24		121.5	SURCHARGED		
4.003	S4.12	88.654	0.144	0.000	1.02		123.1	SURCHARGED		
5.000	S4.13	95.029	-0.146	0.000	0.69		152.4	OK		
5.001	S4.15	94.765	-0.090	0.000	0.91		161.3	OK		
6.000	S4.16	94.503	-0.136	0.000	0.73		135.4	OK		
5.002	S4.17	94.248	-0.168	0.000	0.70		325.4	OK		
7.000	S4.18	92.974	-0.142	0.000	0.71		156.7	OK		
5.003	S4.19	92.578	-0.217	0.000	0.63		495.3	OK		
8.000	S4.20	91.506	0.281	0.000	1.10		33.0	SURCHARGED		

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
5.004	S4.21	15 Winter	30	+0%	30/15 Summer		
5.005	S4.22	15 Winter	30	+0%	100/15 Summer		
5.006	S4.23	15 Winter	30	+0%	100/15 Summer		
5.007	S4.24	15 Winter	30	+0%	100/15 Summer		
9.000	S4.25	15 Winter	30	+0%	30/15 Summer	100/15 Summer	
5.008	S4.26	15 Winter	30	+0%	30/15 Summer		
4.004	S4.27	15 Winter	30	+0%	30/15 Summer		
4.005	S4.28	15 Winter	30	+0%	100/15 Summer		
4.006	S4.29	15 Winter	30	+0%	30/15 Summer	100/15 Summer	
4.007	S4.30	60 Summer	30	+0%	30/15 Summer		
4.008	S4.31	60 Summer	30	+0%	30/15 Summer		
4.009	S4.32	60 Summer	30	+0%	1/120 Winter		
4.010	S4.33	30 Winter	30	+0%	1/120 Winter		
4.011	S4.34	60 Winter	30	+0%			
4.012	S4.35	60 Winter	30	+0%			
4.013	S4.36 FC	960 Winter	30	+0%	1/15 Summer		
10.000	S4.37	15 Winter	30	+0%			
11.000	S4.38	15 Winter	30	+0%			
11.001	S4.39	15 Winter	30	+0%			
12.000	S4.40	15 Winter	30	+0%	100/15 Summer		
12.001	S4.41	15 Winter	30	+0%	100/15 Summer		
12.002	S4.42	15 Winter	30	+0%	100/15 Summer		
12.003	S4.43	15 Winter	30	+0%	100/15 Summer		
12.004	S4.44	15 Winter	30	+0%	100/15 Summer		
11.002	S4.47	15 Winter	30	+0%	100/15 Summer		
13.000	S4.48	15 Winter	30	+0%	100/15 Summer		
11.003	S4.49	15 Winter	30	+0%	30/15 Summer		
11.004	S4.50	15 Winter	30	+0%	100/15 Summer		
10.001	S4.51	15 Winter	30	+0%	100/15 Summer		
10.002	S4.52	30 Winter	30	+0%	1/30 Winter	100/15 Summer	
10.003	S4.53	30 Winter	30	+0%	1/15 Winter	100/15 Summer	
10.004	S4.54	30 Winter	30	+0%	1/15 Winter		
10.005	S4.56	60 Winter	30	+0%			
10.006	S4.55	60 Winter	30	+0%			
10.007	S4.57 FC	60 Winter	30	+0%	1/15 Summer		1/240 Winter

PN	US/MH Name	Water Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Pipe Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.004	S4.21		91.435	0.251	0.000	1.46		537.5	SURCHARGED
5.005	S4.22		90.784	-0.171	0.000	0.79		554.3	OK
5.006	S4.23		89.694	-0.233	0.000	0.69		554.1	OK
5.007	S4.24		88.996	-0.287	0.000	0.54		559.3	OK
9.000	S4.25		88.521	0.244	0.000	0.72		24.9	SURCHARGED
5.008	S4.26		88.494	0.297	0.000	1.46		572.0	SURCHARGED
4.004	S4.27		88.159	0.114	0.000	1.16		734.4	SURCHARGED

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04


PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
4.005	S4.28		87.388	-0.260	0.000	0.61	755.8		OK
4.006	S4.29		86.612	0.627	0.000	2.26	760.2		SURCHARGED
4.007	S4.30		86.370	0.447	0.000	0.84	520.3		SURCHARGED*
4.008	S4.31		86.229	0.468	0.000	0.59	521.7		FLOOD RISK*
4.009	S4.32		86.026	0.626	0.000	0.86	595.2		SURCHARGED*
4.010	S4.33		86.007	0.729	0.000	0.76	684.5		FLOOD RISK*
4.011	S4.34		85.080	0.000	0.000	0.76	525.2		SURCHARGED*
4.012	S4.35		85.000	0.000	0.000	0.67	523.8		SURCHARGED*
4.013	S4.36 FC		85.525	1.500	0.000	0.10	10.5		SURCHARGED
10.000	S4.37		86.940	-0.228	0.000	0.49	121.6		OK*
11.000	S4.38		91.102	-0.167	0.000	0.15	13.9		OK
11.001	S4.39		90.154	-0.164	0.000	0.16	20.4		OK
12.000	S4.40		90.029	-0.170	0.000	0.39	25.3		OK
12.001	S4.41		89.918	-0.134	0.000	0.55	33.7		OK
12.002	S4.42		89.863	-0.111	0.000	0.55	34.3		OK
12.003	S4.43		89.829	-0.060	0.000	0.90	61.5		OK
12.004	S4.44		89.387	-0.129	0.000	0.73	167.4		OK
11.002	S4.47		88.519	-0.073	0.000	0.93	209.5		OK
13.000	S4.48		87.872	-0.098	0.000	0.61	22.3		OK
11.003	S4.49		87.723	0.063	0.000	1.20	220.5		SURCHARGED
11.004	S4.50		87.229	-0.263	0.000	0.49	236.7		OK
10.001	S4.51		86.925	-0.017	0.000	0.64	319.4		OK
10.002	S4.52		86.712	0.537	0.000	0.67	255.8		SURCHARGED
10.003	S4.53		86.548	0.613	0.000	1.29	278.8		SURCHARGED
10.004	S4.54		86.381	0.571	0.000	1.83	278.4		SURCHARGED
10.005	S4.56		85.865	0.000	0.000	1.37	214.0		SURCHARGED*
10.006	S4.55		85.925	0.000	0.000	0.33	213.6		SURCHARGED*
10.007	S4.57 FC	35	86.020	1.095	0.000	0.03	160.9	3.1	SURCHARGED

PN	US/MH Name	Level Exceeded
5.004	S4.21	
5.005	S4.22	
5.006	S4.23	
5.007	S4.24	
9.000	S4.25	4
5.008	S4.26	
4.004	S4.27	
4.005	S4.28	
4.006	S4.29	5
4.007	S4.30	
4.008	S4.31	10
4.009	S4.32	
4.010	S4.33	
4.011	S4.34	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW 04

PN	US/MH Name	Level Exceeded
4.012	S4.35	
4.013	S4.36 FC	
10.000	S4.37	
11.000	S4.38	
11.001	S4.39	
12.000	S4.40	
12.001	S4.41	
12.002	S4.42	
12.003	S4.43	
12.004	S4.44	
11.002	S4.47	
13.000	S4.48	
11.003	S4.49	
11.004	S4.50	
10.001	S4.51	
10.002	S4.52	4
10.003	S4.53	6
10.004	S4.54	
10.005	S4.56	
10.006	S4.55	
10.007	S4.57 FC	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW 04

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 1.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 3
Number of Online Controls 3 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.430
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 21.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
2.000	S4.01	60 Winter	100	+30%				
2.001	S4.02	15 Winter	100	+30%				
2.002	S4.03	15 Winter	100	+30%	100/15 Summer			
3.000	S4.04	15 Winter	100	+30%	30/15 Summer	100/15 Summer		
2.003	S4.05	15 Winter	100	+30%	100/15 Summer			
2.004	S4.06	60 Winter	100	+30%				
2.005	S4.07	60 Winter	100	+30%				
2.006	S4.08 FC	360 Winter	100	+30%	1/15 Summer			
4.000	S4.09	15 Winter	100	+30%	30/15 Summer	100/15 Summer		
4.001	S4.10	15 Winter	100	+30%	30/15 Summer	100/15 Summer		
4.002	S4.11	15 Winter	100	+30%	30/15 Summer			
4.003	S4.12	15 Winter	100	+30%	30/15 Summer			
5.000	S4.13	15 Winter	100	+30%	100/15 Summer			
5.001	S4.15	15 Winter	100	+30%	100/15 Summer			
6.000	S4.16	15 Winter	100	+30%	100/15 Summer			
5.002	S4.17	15 Winter	100	+30%	100/15 Summer			
7.000	S4.18	15 Winter	100	+30%	100/15 Summer			
5.003	S4.19	15 Winter	100	+30%	100/15 Summer			
8.000	S4.20	15 Winter	100	+30%	30/15 Summer			

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW 04

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.000	S4.01	83.907	-0.225	0.000	0.00	0.0	OK*	
2.001	S4.02	83.846	-0.137	0.000	0.32	23.8	OK	
2.002	S4.03	82.904	0.109	0.000	0.88	272.3	SURCHARGED	
3.000	S4.04	83.472	1.165	0.812	1.88	159.1	FLOOD	2
2.003	S4.05	82.250	0.315	0.000	1.51	416.6	SURCHARGED	
2.004	S4.06	81.805	0.000	0.000	0.44	223.0	SURCHARGED*	
2.005	S4.07	81.375	0.000	0.000	0.89	220.4	SURCHARGED*	
2.006	S4.08 FC	81.865	0.726	0.000	0.02	7.3	SURCHARGED	
4.000	S4.09	90.141	1.216	19.180	2.53	83.0	FLOOD	4
4.001	S4.10	90.463	1.717	5.585	2.12	138.9	FLOOD	3
4.002	S4.11	90.167	1.578	0.000	2.84	153.7	FLOOD RISK	
4.003	S4.12	89.747	1.237	0.000	1.27	152.9	FLOOD RISK	
5.000	S4.13	96.128	0.953	0.000	1.07	236.5	SURCHARGED	
5.001	S4.15	95.831	0.976	0.000	1.37	242.6	SURCHARGED	
6.000	S4.16	95.326	0.687	0.000	1.18	217.4	SURCHARGED	
5.002	S4.17	95.096	0.680	0.000	1.00	466.3	SURCHARGED	
7.000	S4.18	93.779	0.663	0.000	1.11	245.1	SURCHARGED	
5.003	S4.19	93.486	0.691	0.000	0.88	688.8	SURCHARGED	
8.000	S4.20	92.474	1.249	0.000	1.83	54.7	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW 04

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
5.004	S4.21	15 Winter	100	+30%	30/15 Summer		
5.005	S4.22	15 Winter	100	+30%	100/15 Summer		
5.006	S4.23	15 Winter	100	+30%	100/15 Summer		
5.007	S4.24	15 Winter	100	+30%	100/15 Summer		
9.000	S4.25	15 Winter	100	+30%	30/15 Summer	100/15 Summer	
5.008	S4.26	15 Winter	100	+30%	30/15 Summer		
4.004	S4.27	15 Winter	100	+30%	30/15 Summer		
4.005	S4.28	15 Winter	100	+30%	100/15 Summer		
4.006	S4.29	30 Winter	100	+30%	30/15 Summer	100/15 Summer	
4.007	S4.30	60 Winter	100	+30%	30/15 Summer		
4.008	S4.31	240 Winter	100	+30%	30/15 Summer		
4.009	S4.32	15 Winter	100	+30%	1/120 Winter		
4.010	S4.33	30 Winter	100	+30%	1/120 Winter		
4.011	S4.34	60 Winter	100	+30%			
4.012	S4.35	60 Winter	100	+30%			
4.013	S4.36	FC 960 Winter	100	+30%	1/15 Summer		
10.000	S4.37	60 Winter	100	+30%			
11.000	S4.38	15 Winter	100	+30%			
11.001	S4.39	15 Winter	100	+30%			
12.000	S4.40	15 Winter	100	+30%	100/15 Summer		
12.001	S4.41	15 Winter	100	+30%	100/15 Summer		
12.002	S4.42	15 Winter	100	+30%	100/15 Summer		
12.003	S4.43	15 Winter	100	+30%	100/15 Summer		
12.004	S4.44	15 Winter	100	+30%	100/15 Summer		
11.002	S4.47	15 Winter	100	+30%	100/15 Summer		
13.000	S4.48	15 Winter	100	+30%	100/15 Summer		
11.003	S4.49	15 Winter	100	+30%	30/15 Summer		
11.004	S4.50	15 Winter	100	+30%	100/15 Summer		
10.001	S4.51	15 Winter	100	+30%	100/15 Summer		
10.002	S4.52	15 Winter	100	+30%	1/30 Winter	100/15 Summer	
10.003	S4.53	30 Winter	100	+30%	1/15 Winter	100/15 Summer	
10.004	S4.54	30 Winter	100	+30%	1/15 Winter		
10.005	S4.56	60 Winter	100	+30%			
10.006	S4.55	60 Winter	100	+30%			
10.007	S4.57	FC 60 Winter	100	+30%	1/15 Summer		1/240 Winter

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Pipe Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
5.004	S4.21		92.396	1.212	0.000	1.96		717.9	SURCHARGED
5.005	S4.22		91.596	0.641	0.000	1.03		725.8	SURCHARGED
5.006	S4.23		90.563	0.636	0.000	0.88		705.3	SURCHARGED
5.007	S4.24		90.072	0.789	0.000	0.68		712.3	SURCHARGED
9.000	S4.25		89.526	1.249	6.212	2.74		94.9	FLOOD
5.008	S4.26		89.572	1.375	0.000	1.84		719.1	FLOOD RISK
4.004	S4.27		89.084	1.039	0.000	1.41		889.5	FLOOD RISK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW 04

PN	US/MH Name	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Pipe Flow (l/s)	Overflow (l/s)	Status
4.005	S4.28		88.289	0.641	0.000	0.75	927.8		FLOOD RISK
4.006	S4.29		87.415	1.430	59.374	2.38	801.9		FLOOD
4.007	S4.30		86.700	0.777	0.000	1.14	703.7		FLOOD RISK*
4.008	S4.31		86.450	0.689	0.000	0.30	269.0		FLOOD
4.009	S4.32		86.620	1.220	0.000	1.45	1010.0		FLOOD RISK*
4.010	S4.33		86.200	0.922	0.000	1.08	965.7		FLOOD RISK*
4.011	S4.34		85.080	0.000	0.000	1.18	820.7		SURCHARGED*
4.012	S4.35		85.000	0.000	0.000	1.19	927.4		SURCHARGED*
4.013	S4.36 FC		85.901	1.876	0.000	0.18	19.7		FLOOD RISK
10.000	S4.37		87.168	0.000	0.000	0.38	94.1		SURCHARGED*
11.000	S4.38		91.121	-0.148	0.000	0.26	23.6		OK
11.001	S4.39		90.173	-0.145	0.000	0.27	34.6		OK
12.000	S4.40		91.087	0.888	0.000	0.79	51.2		FLOOD RISK
12.001	S4.41		91.016	0.964	0.000	1.01	61.7		SURCHARGED
12.002	S4.42		90.939	0.965	0.000	1.07	66.0		SURCHARGED
12.003	S4.43		90.860	0.971	0.000	1.26	86.5		SURCHARGED
12.004	S4.44		90.335	0.819	0.000	1.00	228.0		SURCHARGED
11.002	S4.47		89.594	1.002	0.000	1.17	264.6		SURCHARGED
13.000	S4.48		88.583	0.613	0.000	1.07	39.3		SURCHARGED
11.003	S4.49		88.270	0.610	0.000	1.63	298.0		SURCHARGED
11.004	S4.50		87.856	0.364	0.000	0.65	315.1		SURCHARGED
10.001	S4.51		87.638	0.696	0.000	0.83	416.0		FLOOD RISK
10.002	S4.52		87.090	0.915	10.072	0.94	359.4		FLOOD
10.003	S4.53		86.896	0.961	22.070	1.72	370.9		FLOOD
10.004	S4.54		86.644	0.834	0.000	2.43	369.9		FLOOD RISK
10.005	S4.56		85.865	0.000	0.000	2.12	330.7		SURCHARGED*
10.006	S4.55		85.925	0.000	0.000	0.52	330.6		SURCHARGED*
10.007	S4.57 FC	35	86.141	1.216	0.000	0.08	424.2	9.3	FLOOD RISK

PN	US/MH Name	Level Exceeded
5.004	S4.21	
5.005	S4.22	
5.006	S4.23	
5.007	S4.24	
9.000	S4.25	4
5.008	S4.26	
4.004	S4.27	
4.005	S4.28	
4.006	S4.29	5
4.007	S4.30	
4.008	S4.31	10
4.009	S4.32	
4.010	S4.33	
4.011	S4.34	

Manchester One Portland Street Manchester M1 3LF Date 02/10/2020 File Haverhill. All Networks...	Haverhill Great Willsey Park Area 4 FSR simulation results Designed by RMV Checked by AB Network 2019.1
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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW 04

PN	US/MH Name	Level Exceeded
4.012	S4.35	
4.013	S4.36 FC	
10.000	S4.37	
11.000	S4.38	
11.001	S4.39	
12.000	S4.40	
12.001	S4.41	
12.002	S4.42	
12.003	S4.43	
12.004	S4.44	
11.002	S4.47	
13.000	S4.48	
11.003	S4.49	
11.004	S4.50	
10.001	S4.51	
10.002	S4.52	4
10.003	S4.53	6
10.004	S4.54	
10.005	S4.56	
10.006	S4.55	
10.007	S4.57 FC	