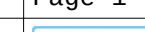


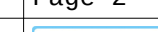
ROC Consulting		Page 1
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
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STORM SEWER DESIGN by the Modified Rational Method

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
S1.000	3.977	0.070	56.8	0.033	4.00	0.0	0.600	o	300	Pipe/Conduit	
S1.001	7.123	0.093	76.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.000	19.386	1.060	18.3	0.036	4.00	0.0	0.600	o	150	Pipe/Conduit	
S2.001	6.711	0.110	61.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S2.002	9.810	0.164	59.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.002	37.339	0.217	172.1	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	
S3.000	4.251	0.200	21.3	0.028	4.00	0.0	0.600	o	300	Pipe/Conduit	
S1.003	13.582	0.076	178.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S4.000	8.100	0.262	30.9	0.029	4.00	0.0	0.600	o	150	Pipe/Conduit	
S1.004	5.447	0.424	12.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S5.000	4.697	0.100	47.0	0.022	4.00	0.0	0.600	o	300	Pipe/Conduit	
S1.005	3.454	0.074	46.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

S1.000	64.81	4.03	28.940	0.033	0.0	0.0	0.0	2.09	147.7	5.8
S1.001	64.42	4.10	28.870	0.033	0.0	0.0	0.0	1.80	127.1	5.8
S2.000	64.20	4.14	30.260	0.036	0.0	0.0	0.0	2.37	41.8	6.3
S2.001	63.70	4.22	29.200	0.036	0.0	0.0	0.0	1.29	22.8	6.3
S2.002	63.00	4.35	29.090	0.036	0.0	0.0	0.0	1.30	23.0	6.3
S1.002	60.28	4.87	28.776	0.104	0.0	0.0	0.0	1.20	84.5	17.0
S3.000	64.87	4.02	28.600	0.028	0.0	0.0	0.0	3.43	242.1	4.9
S1.003	59.33	5.06	28.400	0.132	0.0	0.0	0.0	1.17	82.9	21.2
S4.000	64.56	4.07	28.900	0.029	0.0	0.0	0.0	1.82	32.1	5.1
S1.004	59.24	5.08	28.324	0.161	0.0	0.0	0.0	4.41	311.7	25.8
S5.000	64.79	4.03	28.000	0.022	0.0	0.0	0.0	2.30	162.6	3.9
S1.005	59.12	5.11	27.900	0.183	0.0	0.0	0.0	2.31	163.1	29.3

ROC Consulting		Page 2
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
XP Solutions	Network 2020.1.3	

STORM SEWER DESIGN by the Modified Rational Method

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
S6.000	3.353	1.554	2.2	0.029	4.00	0.0	0.600	o	150	Pipe/Conduit	
S1.006	11.788	0.308	38.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S7.000	6.372	0.240	26.6	0.016	8.00	0.0	0.600	o	150	Pipe/Conduit	
S7.001	10.869	0.230	47.3	0.006	0.00	0.0	0.600	o	150	Pipe/Conduit	
S7.002	14.212	1.530	9.3	0.014	0.00	0.0	0.600	o	150	Pipe/Conduit	
S8.000	22.253	0.223	99.8	0.028	4.00	0.0	0.600	o	150	Pipe/Conduit	
S1.007	8.061	0.066	122.1	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S9.000	14.236	0.479	29.7	0.042	4.00	0.0	0.600	o	150	Pipe/Conduit	
S10.000	8.367	0.143	58.5	0.032	4.00	0.0	0.600	o	150	Pipe/Conduit	
S9.001	22.027	0.582	37.8	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.000	13.843	0.675	20.5	0.030	4.00	0.0	0.600	o	150	Pipe/Conduit	
S12.000	14.449	0.150	96.3	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

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File 241104 SW-FW Network.MDX

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Network 2020.1.3

Page 3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for SW Net01

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
S9.002	17.757	0.375	47.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
S13.000	13.306	0.820	16.2	0.062	4.00	0.0	0.600	o	150	Pipe/Conduit		
S9.003	4.231	0.028	151.1	0.010	0.00	0.0	0.600	o	300	Pipe/Conduit		
S9.004	12.574	0.084	150.0	0.010	0.00	0.0	0.600	o	300	Pipe/Conduit		
S14.000	16.666	0.135	123.5	0.016	4.00	0.0	0.600	o	150	Pipe/Conduit		
S14.001	16.075	0.130	123.7	0.026	0.00	0.0	0.600	o	225	Pipe/Conduit		
S14.002	5.918	0.325	18.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
S14.003	7.905	0.300	26.4	0.010	0.00	0.0	0.600	o	225	Pipe/Conduit		
S14.004	30.635	1.925	15.9	0.066	0.00	0.0	0.600	o	225	Pipe/Conduit		
S15.000	19.372	0.197	98.3	0.030	4.00	0.0	0.600	o	150	Pipe/Conduit		
S9.005	2.867	0.044	65.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
S1.008	10.695	0.053	200.0	0.032	0.00	0.0	0.600	o	300	Pipe/Conduit		
S1.009	11.909	0.060	200.0	0.033	0.00	0.0	0.600	o	300	Pipe/Conduit		
S1.010	24.729	0.112	220.8	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)
S9.002	62.42	4.46	28.400	0.156	0.0	0.0	0.0	1.91	75.8	26.4
S13.000	64.48	4.09	28.920	0.062	0.0	0.0	0.0	2.51	44.4	10.8
S9.003	62.12	4.51	27.950	0.228	0.0	0.0	0.0	1.28	90.2	38.4
S9.004	61.26	4.67	27.922	0.238	0.0	0.0	0.0	1.28	90.6	39.5
S14.000	63.23	4.31	32.790	0.016	0.0	0.0	0.0	0.90	16.0	2.7
S14.001	61.99	4.54	32.580	0.042	0.0	0.0	0.0	1.17	46.7	7.1
S14.002	61.82	4.57	32.450	0.042	0.0	0.0	0.0	3.08	122.5	7.1
S14.003	61.55	4.62	32.125	0.052	0.0	0.0	0.0	2.56	101.8	8.7
S14.004	60.75	4.77	31.825	0.118	0.0	0.0	0.0	3.30	131.1	19.4
S15.000	63.17	4.32	29.120	0.030	0.0	0.0	0.0	1.01	17.9	5.1
S9.005	64.82	4.03	27.838	0.000	24.0	0.0	0.0	1.62	64.5	24.0
S1.008	63.52	4.26	27.452	0.032	36.5	0.0	0.0	1.11	78.3	42.0
S1.009	63.95	4.18	27.399	0.000	36.5	0.0	0.0	1.11	78.3	36.5
S1.010	61.81	4.57	27.339	0.000	36.5	0.0	0.0	1.05	74.5	36.5

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ROC Consulting		Page 4
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
XP Solutions	Network 2020.1.3	

Network 2020.1.3

Area Summary for SW Net01

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.033	0.033	0.033
1.001	-	-	100	0.000	0.000	0.000
2.000	-	-	100	0.036	0.036	0.036
2.001	-	-	100	0.000	0.000	0.000
2.002	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.035	0.035	0.035
3.000	-	-	100	0.028	0.028	0.028
1.003	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.029	0.029	0.029
1.004	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.022	0.022	0.022
1.005	-	-	100	0.000	0.000	0.000
6.000	-	-	100	0.029	0.029	0.029
1.006	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.016	0.016	0.016
7.001	-	-	100	0.006	0.006	0.006
7.002	-	-	100	0.014	0.014	0.014
8.000	-	-	100	0.028	0.028	0.028
1.007	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.042	0.042	0.042
10.000	-	-	100	0.032	0.032	0.032
9.001	-	-	100	0.032	0.032	0.032
11.000	-	-	100	0.030	0.030	0.030
12.000	-	-	100	0.020	0.020	0.020
9.002	-	-	100	0.000	0.000	0.000
13.000	-	-	100	0.062	0.062	0.062
9.003	-	-	100	0.010	0.010	0.010
9.004	-	-	100	0.010	0.010	0.010
14.000	-	-	100	0.016	0.016	0.016
14.001	-	-	100	0.026	0.026	0.026
14.002	-	-	100	0.000	0.000	0.000
14.003	-	-	100	0.010	0.010	0.010
14.004	-	-	100	0.066	0.066	0.066
15.000	-	-	100	0.030	0.030	0.030
9.005	-	-	100	0.000	0.000	0.000
1.008	-	-	100	0.032	0.032	0.032
1.009	-	-	100	0.033	0.033	0.033
1.010	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.727	0.727	0.727

Free Flowing Outfall Details for SW Net01

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D, L (mm)	W (mm)
S1.010	S	31.170	27.227	0.000	0	0

ROC Consulting		Page 5
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
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Simulation Criteria for SW Net01

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	0.000
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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	2
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.357		

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ROC Consulting		Page 6
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
XP Solutions Network 2020.1.3		

Network 2020.1.3

Online Controls for SW Net01

Hydro-Brake® Optimum Manhole: S1.12, DS/PN: S1.007, Volume (m³): 10.6

Unit Reference	MD-SHE-0146-1250-2000-1250
Design Head (m)	2.000
Design Flow (l/s)	12.5
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	146
Invert Level (m)	27.518
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	12.5
Flush-Flo™	0.582	12.5
Kick-Flo®	1.207	9.9
Mean Flow over Head Range	-	10.9

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	5.3	1.200	10.0	3.000	15.1	7.000	22.7
0.200	10.4	1.400	10.6	3.500	16.3	7.500	23.5
0.300	11.6	1.600	11.2	4.000	17.4	8.000	24.2
0.400	12.2	1.800	11.9	4.500	18.4	8.500	24.9
0.500	12.4	2.000	12.5	5.000	19.3	9.000	25.6
0.600	12.5	2.200	13.1	5.500	20.2	9.500	26.3
0.800	12.2	2.400	13.6	6.000	21.1		
1.000	11.6	2.600	14.2	6.500	21.9		

Hydro-Brake® Optimum Manhole: S1.25, DS/PN: S9.005, Volume (m³): 10.7

Unit Reference	MD-SHE-0208-2400-1500-2400
Design Head (m)	1.500
Design Flow (l/s)	24.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	208
Invert Level (m)	27.838
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1800

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Date 08/11/2024 11:56
File 241104 SW-FW Network.MDX

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Network 2020.1.3

Page 7



Hydro-Brake® Optimum Manhole: S1.25, DS/PN: S9.005, Volume (m³): 10.7

Control Points

Head (m)

Flow (l/s)

Design Point (Calculated)

1.500

24.0

Flush-Flo™

0.457

24.0

Kick-Flo®

1.000

19.8

Mean Flow over Head Range

-

20.7

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)

0.100

7.1

0.200

20.0

0.300

23.3

0.400

23.9

0.500

24.0

0.600

23.7

0.800

22.7

1.000

19.9

Depth (m)

Flow (l/s)

1.200

21.6

1.400

23.2

1.600

24.7

1.800

26.2

2.000

27.5

2.200

28.8

2.400

30.0

2.600

31.2

Depth (m)

Flow (l/s)

3.000

33.4

3.500

36.0

4.000

38.4

4.500

40.6

5.000

42.8

5.500

44.8

6.000

46.7

6.500

48.6

Depth (m)

Flow (l/s)

7.000

50.3

7.500

52.0

8.000

53.7

8.500

55.3

9.000

56.9

9.500

58.4

Non Return Valve Manhole: S1.27, DS/PN: S1.009, Volume (m³): 4.3

Hydro-Brake® Optimum Manhole: S1.28, DS/PN: S1.010, Volume (m³): 6.7

Unit Reference

MD-SHE-0244-3650-2000-3650

Design Head (m)

2.000

Design Flow (l/s)

36.5

Flush-Flo™

Calculated

Objective

Minimise upstream storage

Application

Surface

Sump Available

Yes

Diameter (mm)

244

Invert Level (m)

27.339

Minimum Outlet Pipe Diameter (mm)

300

Suggested Manhole Diameter (mm)

2100

Control Points

Head (m)

Flow (l/s)

Design Point (Calculated)

2.000

36.4

Flush-Flo™

0.588

36.4

Kick-Flo®

1.285

29.5

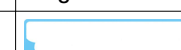
Mean Flow over Head Range

-

31.5

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

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ROC Consulting		Page 9
Commercial Wharf 6 Commercial Street Manchester M15 4PZ		
Date 08/11/2024 11:56 File 241104 SW-FW Network.MDX	Designed by andyj Checked by	
XP Solutions	Network 2020.1.3	

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Storage Structures for SW Net01

Cellular Storage Manhole: ST1, DS/PN: S5.000

Invert Level (m) 28.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	74.5	67.0	1.601	0.0	127.1
1.600	74.5	127.1			

Cellular Storage Manhole: S1.19, DS/PN: S9.003

Invert Level (m) 28.400 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	92.0	75.0	1.201	0.0	127.5
1.200	92.0	127.5			

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Date 08/11/2024 11:56
File 241104 SW-FW Network.MDX

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Network 2020.1.3

Page 10



2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW Net01

Simulation Criteria

Areal Reduction Factor 1.000

Additional Flow - % of Total Flow 0.000

Hot Start (mins) 0

MADD Factor * 10m³/ha Storage 0.000

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 2

Number of Online Controls 4

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Ratio R 0.357

Region England and Wales Cv (Summer) 0.750

M5-60 (mm) 18.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status OFF

DVD Status OFF

Inertia Status OFF

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880

Return Period(s) (years) 2, 30, 100

Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1.0	15 Summer	2	+0%					28.998
S1.001	S1.0A	15 Summer	2	+0%					28.923
S2.000	S1.1	15 Winter	2	+0%					30.299
S2.001	S1.2	15 Winter	2	+0%	100/15 Summer				29.257
S2.002	S1.2A	15 Summer	2	+0%					29.145
S1.002	S1.3	15 Winter	2	+0%	100/60 Winter				28.868
S3.000	S1.4A	15 Winter	2	+0%	100/30 Winter				28.639
S1.003	S1.4	15 Winter	2	+0%	100/15 Summer				28.513
S4.000	S1.5	15 Winter	2	+0%	100/60 Winter				28.942
S1.004	S1.6	15 Winter	2	+0%	100/15 Summer				28.403
S5.000	ST1	30 Winter	2	+0%	30/15 Summer				28.130
S1.005	S1.7	15 Winter	2	+0%	2/15 Summer				28.310
S6.000	S1.8	15 Winter	2	+0%					29.554
S1.006	SJ1	15 Summer	2	+0%					28.126
S7.000	SRG1	15 Winter	2	+0%					31.025
S7.001	S1.9	15 Winter	2	+0%					30.794
S7.002	S1.10	15 Winter	2	+0%					30.559
S8.000	S1.11	15 Winter	2	+0%					29.154

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Page 12



2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW Net01

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.007	S1.12	15 Summer	2	+0%	2/15 Summer				28.315
S9.000	S1.13	15 Winter	2	+0%	100/15 Summer				29.585
S10.000	S1.29	15 Winter	2	+0%	100/15 Summer				29.252
S9.001	S1.14	15 Winter	2	+0%	100/15 Summer				29.052
S11.000	S1.15	15 Winter	2	+0%	100/15 Summer				29.187
S12.000	S1.16	15 Winter	2	+0%					29.695
S9.002	S1.17	15 Winter	2	+0%	30/15 Summer				28.495
S13.000	S1.18	15 Winter	2	+0%	100/15 Summer				28.971
S9.003	S1.19	15 Winter	2	+0%	2/15 Summer				28.474
S9.004	S1.20	15 Winter	2	+0%	2/15 Summer				28.482
S14.000	S1.21A	15 Winter	2	+0%					32.833
S14.001	S1.21B	15 Winter	2	+0%					32.637
S14.002	S1.21	15 Winter	2	+0%					32.491
S14.003	S1.22	15 Winter	2	+0%					32.172
S14.004	S1.23	15 Winter	2	+0%					31.879
S15.000	S1.24	15 Winter	2	+0%	100/60 Winter				29.176
S9.005	S1.25	15 Winter	2	+0%	2/15 Summer				28.485
S1.008	S1.26	30 Winter	2	+0%	2/15 Summer				28.076
S1.009	S1.27	30 Winter	2	+0%	2/15 Summer				28.053
S1.010	S1.28	30 Winter	2	+0%	2/15 Summer				28.025

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.007	S1.12	0.497	0.000	0.19			12.4	SURCHARGED	
S9.000	S1.13	-0.101	0.000	0.23			7.0	OK	
S10.000	S1.29	-0.098	0.000	0.26			5.3	OK	
S9.001	S1.14	-0.155	0.000	0.21			16.6	OK	
S11.000	S1.15	-0.113	0.000	0.14			5.0	OK	
S12.000	S1.16	-0.105	0.000	0.20			3.3	OK	
S9.002	S1.17	-0.130	0.000	0.37			24.9	OK	
S13.000	S1.18	-0.099	0.000	0.25			10.3	OK	
S9.003	S1.19	0.224	0.000	0.41		7	23.3	SURCHARGED	
S9.004	S1.20	0.260	0.000	0.31			22.3	SURCHARGED	
S14.000	S1.21A	-0.107	0.000	0.18			2.7	OK	
S14.001	S1.21B	-0.168	0.000	0.15			6.1	OK	
S14.002	S1.21	-0.184	0.000	0.08			6.1	OK	
S14.003	S1.22	-0.178	0.000	0.10			7.4	OK	
S14.004	S1.23	-0.171	0.000	0.13			16.0	OK	
S15.000	S1.24	-0.094	0.000	0.30			5.0	OK	
S9.005	S1.25	0.421	0.000	0.80			23.9	SURCHARGED	
S1.008	S1.26	0.324	0.000	0.60			37.1	SURCHARGED	
S1.009	S1.27	0.354	0.000	0.64			39.3	SURCHARGED	
S1.010	S1.28	0.386	0.000	0.55			36.4	SURCHARGED	

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Page 13



30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW Net01

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
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 2
Number of Online Controls 4 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.357
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 18.000 Cv (Winter) 0.840

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

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1.0	15 Winter	30	+0%					29.019
S1.001	S1.0A	15 Summer	30	+0%					28.944
S2.000	S1.1	15 Winter	30	+0%					30.315
S2.001	S1.2	15 Winter	30	+0%	100/15 Summer				29.283
S2.002	S1.2A	15 Summer	30	+0%					29.170
S1.002	S1.3	15 Winter	30	+0%	100/60 Winter				28.911
S3.000	S1.4A	15 Winter	30	+0%	100/30 Winter				28.656
S1.003	S1.4	15 Summer	30	+0%	100/15 Summer				28.569
S4.000	S1.5	15 Winter	30	+0%	100/60 Winter				28.959
S1.004	S1.6	60 Winter	30	+0%	100/15 Summer				28.451
S5.000	ST1	60 Winter	30	+0%	30/15 Summer				28.443
S1.005	S1.7	60 Winter	30	+0%	2/15 Summer				28.457
S6.000	S1.8	15 Winter	30	+0%					29.564
S1.006	SJ1	15 Summer	30	+0%					28.126
S7.000	SRG1	15 Winter	30	+0%					31.035
S7.001	S1.9	15 Winter	30	+0%					30.809
S7.002	S1.10	15 Winter	30	+0%					30.573
S8.000	S1.11	15 Winter	30	+0%					29.177

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Page 15



30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for SW Net01

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.007	S1.12	60 Winter	30	+0%	2/15 Summer				28.497
S9.000	S1.13	15 Winter	30	+0%	100/15 Summer				29.605
S10.000	S1.29	15 Winter	30	+0%	100/15 Summer				29.275
S9.001	S1.14	15 Winter	30	+0%	100/15 Summer				29.085
S11.000	S1.15	15 Winter	30	+0%	100/15 Summer				29.202
S12.000	S1.16	15 Winter	30	+0%					29.714
S9.002	S1.17	15 Winter	30	+0%	30/15 Summer				28.752
S13.000	S1.18	15 Winter	30	+0%	100/15 Summer				28.993
S9.003	S1.19	30 Winter	30	+0%	2/15 Summer				28.723
S9.004	S1.20	30 Winter	30	+0%	2/15 Summer				28.726
S14.000	S1.21A	15 Winter	30	+0%					32.850
S14.001	S1.21B	15 Winter	30	+0%					32.667
S14.002	S1.21	15 Summer	30	+0%					32.511
S14.003	S1.22	15 Summer	30	+0%					32.195
S14.004	S1.23	15 Winter	30	+0%					31.909
S15.000	S1.24	15 Winter	30	+0%	100/60 Winter				29.200
S9.005	S1.25	30 Winter	30	+0%	2/15 Summer				28.730
S1.008	S1.26	15 Winter	30	+0%	2/15 Summer				28.418
S1.009	S1.27	15 Winter	30	+0%	2/15 Summer				28.400
S1.010	S1.28	15 Winter	30	+0%	2/15 Summer				28.374

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.007	S1.12	0.679	0.000	0.19			12.5	SURCHARGED	
S9.000	S1.13	-0.081	0.000	0.44			13.2	OK	
S10.000	S1.29	-0.075	0.000	0.50			10.1	OK	
S9.001	S1.14	-0.122	0.000	0.43			33.4	OK	
S11.000	S1.15	-0.098	0.000	0.26			9.4	OK	
S12.000	S1.16	-0.086	0.000	0.38			6.3	OK	
S9.002	S1.17	0.127	0.000	0.68			46.1	SURCHARGED*	
S13.000	S1.18	-0.077	0.000	0.48			19.5	OK	
S9.003	S1.19	0.473	0.000	0.45		18	25.9	SURCHARGED	
S9.004	S1.20	0.504	0.000	0.35			25.3	SURCHARGED	
S14.000	S1.21A	-0.090	0.000	0.34			5.0	OK	
S14.001	S1.21B	-0.138	0.000	0.32			13.2	OK	
S14.002	S1.21	-0.164	0.000	0.16			13.2	OK	
S14.003	S1.22	-0.155	0.000	0.21			16.4	OK	
S14.004	S1.23	-0.141	0.000	0.30			37.1	OK	
S15.000	S1.24	-0.070	0.000	0.56			9.4	OK	
S9.005	S1.25	0.667	0.000	0.80			23.9	SURCHARGED	
S1.008	S1.26	0.666	0.000	0.64			39.1	SURCHARGED	
S1.009	S1.27	0.701	0.000	0.74			45.1	SURCHARGED	
S1.010	S1.28	0.735	0.000	0.55			36.4	SURCHARGED	

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Page 16



100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW Net01

Simulation Criteria

Areal Reduction Factor 1.000Additional Flow - % of Total Flow 0.000

Hot Start (mins) 0MADD Factor * 10m³/ha Storage 0.000

Hot Start Level (mm) 0Inlet Coeffiecient 0.800

Manhole Headloss Coeff (Global) 0.500Flow per Person per Day (l/per/day) 0.000

Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0Number of Storage Structures 2

Number of Online Controls 4Number of Time/Area Diagrams 0

Number of Offline Controls 0Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall ModelFSRRatio R 0.357

Region England and Wales Cv (Summer) 0.750

M5-60 (mm)18.000Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS StatusOFF

DVD StatusOFF

Inertia StatusOFF

Profile(s)Summer and Winter

Duration(s) (mins)15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880

Return Period(s) (years)2, 30, 100

Climate Change (%)0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1.0	60 Winter	100	+40%					29.127
S1.001	S1.0A	60 Winter	100	+40%					29.126
S2.000	S1.1	15 Winter	100	+40%					30.337
S2.001	S1.2	15 Summer	100	+40%	100/15	Summer			29.358
S2.002	S1.2A	15 Summer	100	+40%					29.222
S1.002	S1.3	60 Winter	100	+40%	100/60	Winter			29.126
S3.000	S1.4A	60 Winter	100	+40%	100/30	Winter			29.121
S1.003	S1.4	60 Winter	100	+40%	100/15	Summer			29.120
S4.000	S1.5	60 Winter	100	+40%	100/60	Winter			29.119
S1.004	S1.6	60 Winter	100	+40%	100/15	Summer			29.116
S5.000	ST1	60 Winter	100	+40%	30/15	Summer			29.112
S1.005	S1.7	60 Winter	100	+40%	2/15	Summer			29.113
S6.000	S1.8	15 Winter	100	+40%					29.577
S1.006	SJ1	15 Summer	100	+40%					28.126
S7.000	SRG1	15 Winter	100	+40%					31.049
S7.001	S1.9	15 Winter	100	+40%					30.828
S7.002	S1.10	15 Winter	100	+40%					30.589
S8.000	S1.11	15 Winter	100	+40%					29.215

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SW Net01

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1.0	-0.113	0.000	0.15			9.7	OK	
S1.001	S1.0A	-0.044	0.000	0.13			9.7	OK	
S2.000	S1.1	-0.073	0.000	0.52			20.5	OK	
S2.001	S1.2	0.008	0.000	1.06			20.5	SURCHARGED	
S2.002	S1.2A	-0.018	0.000	1.00			20.4	OK	
S1.002	S1.3	0.050	0.000	0.39			30.5	SURCHARGED	
S3.000	S1.4A	0.221	0.000	0.07			8.2	SURCHARGED*	
S1.003	S1.4	0.420	0.000	0.53			36.6	SURCHARGED*	
S4.000	S1.5	0.069	0.000	0.31			8.5	SURCHARGED*	
S1.004	S1.6	0.492	0.000	0.25			40.3	SURCHARGED*	
S5.000	ST1	0.812	0.000	0.22			17.4	SURCHARGED*	
S1.005	S1.7	0.913	0.000	0.30			20.3	SURCHARGED*	
S6.000	S1.8	-0.103	0.000	0.21			16.5	OK	
S1.006	SJ1	0.000	0.000	0.12			17.0	SURCHARGED*	
S7.000	SRG1	-0.101	0.000	0.23			6.7	OK	
S7.001	S1.9	-0.082	0.000	0.42			9.7	OK	
S7.002	S1.10	-0.091	0.000	0.33			17.6	OK	
S8.000	S1.11	-0.035	0.000	0.95			15.9	OK	

