Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 665 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	-1.415	0.385	0.0	3.5	3.5	93.4	O K
30 min Summer	-1.268	0.532	0.0	3.5	3.5	128.8	O K
60 min Summer	-1.103	0.697	0.0	3.5	3.5	169.0	O K
120 min Summer	-0.927	0.873	0.0	3.5	3.5	211.5	O K
180 min Summer	-0.834	0.966	0.0	3.5	3.5	233.9	O K
240 min Summer	-0.781	1.019	0.0	3.5	3.5	246.8	O K
360 min Summer	-0.720	1.080	0.0	3.5	3.5	261.6	O K
480 min Summer	-0.692	1.108	0.0	3.5	3.5	268.4	O K
600 min Summer	-0.684	1.116	0.0	3.5	3.5	270.4	O K
720 min Summer	-0.684	1.116	0.0	3.5	3.5	270.4	O K
960 min Summer	-0.691	1.109	0.0	3.5	3.5	268.8	O K
1440 min Summer	-0.722	1.078	0.0	3.5	3.5	261.2	O K
2160 min Summer	-0.783	1.017	0.0	3.5	3.5	246.4	O K
2880 min Summer	-0.850	0.950	0.0	3.5	3.5	230.2	O K
4320 min Summer	-0.990	0.810	0.0	3.5	3.5	196.2	O K
5760 min Summer	-1.156	0.644	0.0	3.5	3.5	155.9	O K
7200 min Summer	-1.289	0.511	0.0	3.5	3.5	123.8	O K
8640 min Summer	-1.391	0.409	0.0	3.5	3.5	99.0	O K
10080 min Summer	-1.470	0.330	0.0	3.5	3.5	79.9	O K
15 min Winter	-1.415	0.385	0.0	3.5	3.5	93.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	109.295	0.0	94.2	19
30 min Summer	76.125	0.0	131.5	33
60 min Summer	50.812	0.0	177.5	64
120 min Summer	32.748	0.0	228.9	122
180 min Summer	24.897	0.0	261.0	182
240 min Summer	20.306	0.0	283.9	242
360 min Summer	15.215	0.0	319.0	362
480 min Summer	12.380	0.0	346.0	480
600 min Summer	10.539	0.0	368.1	594
720 min Summer	9.234	0.0	386.9	642
960 min Summer	7.485	0.0	417.7	762
1440 min Summer	5.553	0.0	462.5	1026
2160 min Summer	4.108	0.0	518.4	1448
2880 min Summer	3.310	0.0	556.9	1872
4320 min Summer	2.438	0.0	614.8	2720
5760 min Summer	1.965	0.0	661.8	3456
7200 min Summer	1.663	0.0	700.0	4112
8640 min Summer	1.451	0.0	732.9	4840
10080 min Summer	1.294	0.0	761.8	5456
15 min Winter	109.295	0.0	94.2	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	-1.268	0.532	0.0	3.5	3.5	128.8	O K
60 min Winter	-1.102	0.698	0.0	3.5	3.5	169.0	O K
120 min Winter	-0.926	0.874	0.0	3.5	3.5	211.6	O K
180 min Winter	-0.833	0.967	0.0	3.5	3.5	234.2	O K
240 min Winter	-0.779	1.021	0.0	3.5	3.5	247.3	O K
360 min Winter	-0.716	1.084	0.0	3.5	3.5	262.7	O K
480 min Winter	-0.685	1.115	0.0	3.5	3.5	270.1	O K
600 min Winter	-0.673	1.127	0.0	3.5	3.5	272.9	O K
720 min Winter	-0.674	1.126	0.0	3.5	3.5	272.8	O K
960 min Winter	-0.691	1.109	0.0	3.5	3.5	268.6	O K
1440 min Winter	-0.737	1.063	0.0	3.5	3.5	257.5	O K
2160 min Winter	-0.834	0.966	0.0	3.5	3.5	233.9	O K
2880 min Winter	-0.944	0.856	0.0	3.5	3.5	207.4	O K
4320 min Winter	-1.213	0.587	0.0	3.5	3.5	142.2	O K
5760 min Winter	-1.407	0.393	0.0	3.5	3.5	95.1	O K
7200 min Winter	-1.535	0.265	0.0	3.4	3.4	64.3	O K
8640 min Winter	-1.612	0.188	0.0	3.2	3.2	45.6	O K
10080 min Winter	-1.659	0.141	0.0	3.0	3.0	34.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	76.125	0.0	131.5	33
60 min Winter	50.812	0.0	177.5	62
120 min Winter	32.748	0.0	228.9	120
180 min Winter	24.897	0.0	261.0	180
240 min Winter	20.306	0.0	283.9	238
360 min Winter	15.215	0.0	319.0	352
480 min Winter	12.380	0.0	346.0	464
600 min Winter	10.539	0.0	368.1	574
720 min Winter	9.234	0.0	386.9	678
960 min Winter	7.485	0.0	417.7	780
1440 min Winter	5.553	0.0	462.7	1084
2160 min Winter	4.108	0.0	518.4	1556
2880 min Winter	3.310	0.0	556.9	2016
4320 min Winter	2.438	0.0	614.9	2768
5760 min Winter	1.965	0.0	661.9	3464
7200 min Winter	1.663	0.0	700.0	4104
8640 min Winter	1.451	0.0	732.9	4752
10080 min Winter	1.294	0.0	761.9	5352

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Model Details

Storage is Online Cover Level (m) 0.000

Cellular Storage Structure

Invert Level (m) -1.800 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	255.0	0.0	1.201	0.0	0.0
1.200	255.0	0.0			

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0086-3500-1200-3500
Design Head (m)	1.200
Design Flow (l/s)	3.5
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	86
Invert Level (m)	-1.800
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	3.5
Flush-Flo™	0.367	3.5
Kick-Flo®	0.746	2.8
Mean Flow over Head Range	-	3.1

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	2.6	1.200	3.5	3.000	5.4	7.000	8.0
0.200	3.3	1.400	3.8	3.500	5.8	7.500	8.3
0.300	3.5	1.600	4.0	4.000	6.1	8.000	8.5
0.400	3.5	1.800	4.2	4.500	6.5	8.500	8.8
0.500	3.4	2.000	4.4	5.000	6.8	9.000	9.0
0.600	3.3	2.200	4.6	5.500	7.1	9.500	9.2
0.800	2.9	2.400	4.8	6.000	7.4		
1.000	3.2	2.600	5.0	6.500	7.7		

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