

WML Consulting

No8 Oak Green

Earl Road

Cheadle Hulme SK8 6QL

Date 22/03/2016 16:54

File 6499G_Dinting Rd, Prel...

XP Solutions

Source Control 2014.1.1

Page 1



Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 311 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	8.483	0.483	0.0	4.9	4.9	69.4	O K
30 min Summer	8.652	0.652	0.0	4.9	4.9	93.6	O K
60 min Summer	8.829	0.829	0.0	4.9	4.9	119.1	O K
120 min Summer	8.980	0.980	0.0	4.9	4.9	140.7	O K
180 min Summer	9.034	1.034	0.0	4.9	4.9	148.5	O K
240 min Summer	9.046	1.046	0.0	4.9	4.9	150.2	O K
360 min Summer	9.041	1.041	0.0	4.9	4.9	149.6	O K
480 min Summer	9.026	1.026	0.0	4.9	4.9	147.4	O K
600 min Summer	9.006	1.006	0.0	4.9	4.9	144.5	O K
720 min Summer	8.982	0.982	0.0	4.9	4.9	141.1	O K
960 min Summer	8.931	0.931	0.0	4.9	4.9	133.7	O K
1440 min Summer	8.821	0.821	0.0	4.9	4.9	117.9	O K
2160 min Summer	8.621	0.621	0.0	4.9	4.9	89.2	O K
2880 min Summer	8.462	0.462	0.0	4.9	4.9	66.4	O K
4320 min Summer	8.264	0.264	0.0	4.9	4.9	38.0	O K
5760 min Summer	8.170	0.170	0.0	4.5	4.5	24.5	O K
7200 min Summer	8.126	0.126	0.0	4.2	4.2	18.1	O K
8640 min Summer	8.109	0.109	0.0	3.7	3.7	15.7	O K
10080 min Summer	8.098	0.098	0.0	3.3	3.3	14.0	O K
15 min Winter	8.544	0.544	0.0	4.9	4.9	78.1	O K
30 min Winter	8.736	0.736	0.0	4.9	4.9	105.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	107.592	0.0	72.6	18
30 min Summer	73.904	0.0	99.8	33
60 min Summer	48.563	0.0	131.6	62
120 min Summer	30.806	0.0	167.0	122
180 min Summer	23.221	0.0	188.9	180
240 min Summer	18.840	0.0	204.3	238
360 min Summer	14.014	0.0	228.0	296
480 min Summer	11.347	0.0	246.2	360
600 min Summer	9.623	0.0	261.0	428
720 min Summer	8.406	0.0	273.5	498
960 min Summer	6.783	0.0	294.3	636
1440 min Summer	5.001	0.0	325.5	912
2160 min Summer	3.678	0.0	359.3	1296
2880 min Summer	2.952	0.0	384.6	1644
4320 min Summer	2.161	0.0	422.1	2332
5760 min Summer	1.732	0.0	451.4	3000
7200 min Summer	1.460	0.0	475.6	3672
8640 min Summer	1.270	0.0	496.4	4408
10080 min Summer	1.129	0.0	514.6	5136
15 min Winter	107.592	0.0	81.3	18
30 min Winter	73.904	0.0	111.8	33

©1982-2014 XP Solutions

WML Consulting		Page 3
No8 Oak Green Earl Road Cheadle Hulme SK8 6QL		
Date 22/03/2016 16:54	Designed by smostyn	
File 6499G_Dinting Rd, Prel...	Checked by	
XP Solutions		Source Control 2014.1.1

Model Details

Storage is Online Cover Level (m) 10.000

Cellular Storage Structure

Invert Level (m) 8.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
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	151.2	151.2	1.300	0.0	231.4
1.200	151.2	231.4			

Hydro-Brake Optimum® Outflow Control

Unit Reference MD-SHE-0102-5000-1200-5000
Design Head (m) 1.200
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 102
Invert Level (m) 8.000
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	5.0	Kick-Flo®	0.740	4.0
Flush-Flo™	0.353	4.9	Mean Flow over Head Range	-	4.3

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	3.4	1.200	5.0	3.000	7.6	7.000	11.4
0.200	4.7	1.400	5.3	3.500	8.2	7.500	11.8
0.300	4.9	1.600	5.7	4.000	8.7	8.000	12.1
0.400	4.9	1.800	6.0	4.500	9.2	8.500	12.5
0.500	4.8	2.000	6.3	5.000	9.7	9.000	12.8
0.600	4.6	2.200	6.6	5.500	10.2	9.500	13.2
0.800	4.1	2.400	6.9	6.000	10.6		
1.000	4.6	2.600	7.1	6.500	11.0		

©1982-2014 XP Solutions