

Global Variables			
Region	FSR - England & Wales	Manhole Headloss Coefficient	0.500
Return Period (yrs)	10	MADD Factor * 10m³/ha Storage	2.000
M5-60 (mm)	18.700	Foul Sewage/Hectare (l/s)	0.00
Ratio R	0.400	Additional Flow - % of Total Flow	0
Volumetric Runoff Coef	0.750	Inlet Coefficient	0.800
Profile Type	Summer	Number of Input Hydrographs	0
PIMP (%)	100	Number of Time/Area Diagrams	1
Areal Reduction Factor	1.000	Number of Bifurcations	0
Storm Duration (mins)	15	Number of Overflows	0
Hot Start (mins)	0	Number of Off-Line Controls	1
Hot Start Level (mm)	0	Number of On-Line Controls	0
Starting Storm file name			
J:\11321\2002\Windes\West side\Cellular D.sws			

Green Roof at Pipe Number 1.000

Area (m²)768Evaporation (mm/day)3

Depression Storage (mm)5Decay Coefficient0.050

Time/Area Diagram for Green Roof

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.013956	32	36	0.002818	64	68	0.000569	96	100	0.000115
4	8	0.011426	36	40	0.002307	68	72	0.000466	100	104	0.000094
8	12	0.009355	40	44	0.001889	72	76	0.000381	104	108	0.000077
12	16	0.007659	44	48	0.001546	76	80	0.000312	108	112	0.000063
16	20	0.006271	48	52	0.001266	80	84	0.000256	112	116	0.000052
20	24	0.005134	52	56	0.001037	84	88	0.000209	116	120	0.000042
24	28	0.004203	56	60	0.000849	88	92	0.000171			
28	32	0.003442	60	64	0.000695	92	96	0.000140			

Freely Discharging Outfalls						
Outfall Pipe Number	Outfall MH/No	C.Level (m)	I.Level (m)	D,L (mm)	B (mm)	
1.006		39.625	39.100	1200	0	

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Infiltration Systems

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier.

DS/PN	MH Loss	Height above DS PN (m)	Filename	Type	Include Volume
1.006	0.500	-0.400	Cellular Infiltration D.SRC	Cellular Storage	Yes (capped) (lvl 39.300m)

Network Details

* - Indicates pipe has been modified outside of WinDes's Storm/Foul & Schedules

PN	Length (m)	Fall (m)	Slope (1:x)	Area (ha)	T.E. (mins)	Rain Pro	k (mm)	Hyd Sect	Dia (mm)
1.000	1.00	0.006	166.7	0.077	4.00	1	0.600	o	225
1.001	27.26	0.163	167.2	0.019	0.00	1	0.600	o	225
1.002	19.24	0.115	167.3	0.035	0.00	1	0.600	o	225
1.003	8.24	0.049	168.1	0.019	0.00	1	0.600	o	225
2.000	7.40	0.044	168.1	0.019	4.00	1	0.600	o	225
2.001	5.28	0.032	165.0	0.004	0.00	1	0.600	o	225
2.002	20.58	0.123	167.3	0.008	0.00	1	0.600	o	225
1.004	9.51	0.057	166.9	0.004	0.00	1	0.600	o	225
1.005	11.71	0.070	167.3	0.026	0.00	1	0.600	o	225
1.006	1.00	0.100	10.0	0.000	0.00	1	0.600	o	225

PN	USMH No.	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl No.	US/MH (mm)
1.000	1	40.585	39.460	0.900	40.579	39.454	0.900		1050
1.001	1	40.579	39.454	0.900	40.416	39.291	0.900		1200
1.002	2	40.416	39.291	0.900	40.301	39.176	0.900		1050
1.003	3	40.301	39.176	0.900	40.250	39.127	0.898		1050
2.000	4	40.451	39.326	0.900	40.407	39.282	0.900		1050
2.001	5	40.407	39.282	0.900	40.375	39.250	0.900		1050
2.002	6	40.375	39.250	0.900	40.250	39.127	0.898		1050
1.004	7	40.250	39.127	0.898	40.200	39.070	0.905		1200
1.005	8	40.200	39.070	0.905	40.325	39.000	1.100		1200
1.006		40.325	39.200	0.900	39.625	39.100	0.300		1200

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	OFF
DTS Status	ON	Analysis Time Step	Fine
DVD Status	OFF		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	10
Climate Change (%)	0

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	30 Winter	10	0%	1				
1.001	60 Winter	10	0%	1				
1.002	15 Summer	10	0%	1				
1.003	15 Winter	10	0%	1				
2.000	15 Summer	10	0%	1				
2.001	15 Summer	10	0%	1				
2.002	15 Winter	10	0%	1				
1.004	15 Winter	10	0%	1				
1.005	15 Summer	10	0%	1				
1.006	240 Winter	10	0%	1			10/15 Summer	18

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	39.526	-0.159	0.000	0.19	0.0	5.5	0 K
	1.001	39.521	-0.158	0.000	0.19	0.0	7.2	0 K
	1.002	39.389	-0.127	0.000	0.39	0.0	13.9	0 K
	1.003	39.309	-0.092	0.000	0.59	0.0	18.3	0 K
	2.000	39.388	-0.163	0.000	0.17	0.0	5.1	0 K
	2.001	39.352	-0.155	0.000	0.21	0.0	6.2	0 K
	2.002	39.326	-0.149	0.000	0.22	0.0	8.2	0 K
	1.004	39.286	-0.066	0.000	0.83	0.0	27.4	0 K
	1.005	39.248	-0.047	0.000	0.97	0.0	33.1	0 K
	1.006	38.957	-0.468	0.000	0.00	1.4	0.0	0 K

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	OFF
DTS Status	ON	Analysis Time Step	Fine
DVD Status	OFF		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	0

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	30 Winter	30	0%	1				
1.001	30 Winter	30	0%	1				
1.002	15 Winter	30	0%	1				
1.003	15 Winter	30	0%	1				
2.000	15 Summer	30	0%	1				
2.001	15 Winter	30	0%	1				
2.002	15 Winter	30	0%	1				
1.004	15 Winter	30	0%	1	30/15 Winter			
1.005	15 Winter	30	0%	1	30/15 Summer			
1.006	360 Winter	30	0%	1			30/15 Summer	18

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	39.537	-0.148	0.000	0.25	0.0	7.4	0 K
	1.001	39.533	-0.146	0.000	0.25	0.0	9.3	0 K
	1.002	39.409	-0.107	0.000	0.48	0.0	17.5	0 K
	1.003	39.377	-0.024	0.000	0.68	0.0	21.3	0 K
	2.000	39.397	-0.154	0.000	0.22	0.0	6.5	0 K
	2.001	39.378	-0.129	0.000	0.25	0.0	7.6	0 K
	2.002	39.372	-0.103	0.000	0.27	0.0	9.8	0 K
	1.004	39.353	0.001	0.000	0.94	0.0	31.2	SURCH'ED
	1.005	39.303	0.008	0.000	1.10	0.0	37.7	SURCH'ED
	1.006	39.016	-0.409	0.000	0.00	1.4	0.0	0 K

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
 Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	OFF
DTS Status	ON	Analysis Time Step	Fine
DVD Status	OFF		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	Storm	Return Period	Climate Change	Rank	First X Surcharge	First Y Flood	First Z Overflow	O/F Act
1.000	30 Winter	100	0%	1				
1.001	30 Winter	100	0%	1				
1.002	15 Winter	100	0%	1				
1.003	15 Winter	100	0%	1	100/15 Summer			
2.000	15 Winter	100	0%	1				
2.001	15 Winter	100	0%	1				
2.002	15 Winter	100	0%	1				
1.004	15 Winter	100	0%	1	100/15 Summer			
1.005	15 Winter	100	0%	1	100/15 Summer			
1.006	360 Winter	100	0%	1			100/15 Summer	18

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/ Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	39.554	-0.131	0.000	0.33	0.0	9.9	0 K
	1.001	39.551	-0.128	0.000	0.37	0.0	13.7	0 K
	1.002	39.492	-0.024	0.000	0.54	0.0	19.4	0 K
	1.003	39.453	0.052	0.000	0.83	0.0	25.8	SURCH'ED
	2.000	39.457	-0.094	0.000	0.27	0.0	8.0	0 K
	2.001	39.450	-0.057	0.000	0.29	0.0	8.7	0 K
	2.002	39.444	-0.031	0.000	0.29	0.0	10.7	0 K
	1.004	39.421	0.069	0.000	1.15	0.0	38.1	SURCH'ED
	1.005	39.348	0.053	0.000	1.35	0.0	46.2	SURCH'ED
	1.006	39.101	-0.324	0.000	0.00	1.5	0.0	0 K

Summary Wizard of "CRITICAL BY RETURN PERIOD"(Rank 1 by Max Level)
Results for Design Storms

Margin for Flood Risk warning (mm)	300	Inertia Status	OFF
DTS Status	ON	Analysis Time Step	Fine
DVD Status	OFF		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	30

PN	Storm	Return Period	Climate Change	Rank	First X Surge	First Y Flood	First Z Overflow	O/F Act
1.000	15 Winter	100	30%	1				
1.001	15 Winter	100	30%	1				
1.002	15 Winter	100	30%	1	100/15 Summer			
1.003	15 Winter	100	30%	1	100/15 Summer			
2.000	15 Winter	100	30%	1	100/15 Summer			
2.001	15 Winter	100	30%	1	100/15 Summer			
2.002	15 Winter	100	30%	1	100/15 Summer			
1.004	15 Winter	100	30%	1	100/15 Summer			
1.005	15 Winter	100	30%	1	100/15 Summer			
1.006	480 Winter	100	30%	1			100/15 Summer	18

Lvl Ex.	PN	Water Lvl. (m)	Surcharged Depth (m)	Flooded Vol (m³)	Flow/Capacity	Overflow (l/s)	Pipe Flow (l/s)	Status
	1.000	39.648	-0.037	0.000	0.44	0.0	13.0	0 K
	1.001	39.649	-0.030	0.000	0.46	0.0	17.1	0 K
	1.002	39.631	0.115	0.000	0.73	0.0	26.5	SURCH'ED
	1.003	39.585	0.184	0.000	0.99	0.0	30.7	SURCH'ED
	2.000	39.585	0.034	0.000	0.31	0.0	9.3	SURCH'ED
	2.001	39.575	0.068	0.000	0.35	0.0	10.5	SURCH'ED
	2.002	39.567	0.092	0.000	0.39	0.0	14.2	SURCH'ED
	1.004	39.537	0.185	0.000	1.41	0.0	46.7	SURCH'ED
	1.005	39.424	0.129	0.000	1.69	0.0	57.8	SURCH'ED
	1.006	39.210	-0.215	0.000	0.01	1.5	0.4	0 K

Cellular Storage Details

Infil Coef - Base (m/hr) 0.036000 Safety Factor 2.0 Invert Level (m) 0.000
Infil Coef - Sides (m/hr) 0.036000 Porosity 0.95 Ground Level (m) 0.500

Depth (m)	Area (m ²)	Infil. Area (m ²)	Depth (m)	Area (m ²)	Infil. Area (m ²)	Depth (m)	Area (m ²)	Infil. Area (m ²)	Depth (m)	Area (m ²)	Infil. Area (m ²)	Depth (m)	Area (m ²)	Infil. Area (m ²)
0.00	272.0	272.0	0.60	0.0	305.0	1.20	0.0	305.0	1.80	0.0	305.0	2.40	0.0	305.0
0.10	272.0	278.6	0.70	0.0	305.0	1.30	0.0	305.0	1.90	0.0	305.0	2.50	0.0	305.0
0.20	272.0	285.2	0.80	0.0	305.0	1.40	0.0	305.0	2.00	0.0	305.0			
0.30	272.0	291.8	0.90	0.0	305.0	1.50	0.0	305.0	2.10	0.0	305.0			
0.40	272.0	298.4	1.00	0.0	305.0	1.60	0.0	305.0	2.20	0.0	305.0			
0.50	272.0	305.0	1.10	0.0	305.0	1.70	0.0	305.0	2.30	0.0	305.0			

Note:
Infiltration Rate = 1 x 10 ⁻⁵m/s