

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
PS8-RE	0.005	180	Type E	17.400	16.950	0.350	494832.355	106231.185
PS9	0.001	450	Type E	17.490	16.820	0.569	494836.948	106240.499
PS1-RE	0.008	180	Type E	17.400	17.000	0.250	494804.113	106246.659
PS2	0.000	450	Type E	17.372	16.939	0.283	494808.804	106254.471
PS6-RE	0.002	180	Type E	17.400	16.996	0.254	494813.359	106238.444
PS38-ACO	0.004	180	Type E	17.396	17.246	0.050	494820.807	106241.761
PS47-ACO	0.000	180	Type E	17.419	17.201	0.118	494816.727	106243.872
PS34	0.000	450	Type E	17.475	16.864	0.461	494818.843	106249.438
PS36-RE	0.006	180	Type E	17.400	17.035	0.265	494825.050	106234.946
PS7	0.000	450	Type E	17.376	16.946	0.330	494818.752	106238.193
PS36-ACO	0.004	180	Type E	17.418	17.268	0.050	494833.962	106241.568
PS37-ACO	0.000	180	Type E	17.407	17.230	0.077	494825.878	106245.581
PS3	0.004	450	Type E	17.445	16.581	0.714	494823.368	106247.169
PS5-DIF	0.012	300x300	Type E	17.351	16.545	0.656	494825.552	106251.549
PP2-Dummy Outfall	0.000	150	Unknown	17.200	16.504	0.546	494828.226	106257.007

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	PS8-RE	16.950	PS9	16.820	Circ	100	10.384	80	0.600	0.350	0.569
1.001	PS9	16.820	PS3	16.631	Circ	100	15.129	80	0.600	0.569	0.714
2.000	PS1-RE	17.000	PS2	16.939	Circ	150	9.113	150	0.600	0.250	0.283
2.001	PS2	16.939	PS34	16.864	Circ	150	11.230	150	0.600	0.283	0.461
3.000	PS6-RE	16.996	PS34	16.914	Circ	150	12.285	151	0.600	0.254	0.411
4.000	PS38-ACO	17.246	PS47-ACO	17.201	Circ	100	4.593	101	0.600	0.050	0.118
4.001	PS47-ACO	17.201	PS34	16.914	Circ	100	5.955	21	0.600	0.118	0.461
2.002	PS34	16.864	PS3	16.581	Circ	150	5.063	18	0.600	0.461	0.714
5.000	PS36-RE	17.035	PS7	16.946	Circ	100	7.086	80	0.600	0.265	0.330
5.001	PS7	16.946	PS3	16.631	Circ	100	10.094	32	0.600	0.330	0.714
6.000	PS36-ACO	17.268	PS37-ACO	17.230	Circ	100	9.025	237	0.600	0.050	0.077
6.001	PS37-ACO	17.230	PS3	16.631	Circ	100	2.970	5	0.600	0.077	0.714
1.002	PS3	16.581	PS5-DIF	16.545	Circ	150	4.894	136	0.600	0.714	0.656
1.003	PS5-DIF	16.545	PP2-Dummy Outfall	16.504	Circ	150	6.078	150	0.600	0.656	0.546

Outfall Details

Outfall Manhole PP2-Dummy Outfall : Free Discharge

Flow Control Details

Controls within Manhole PS5-DIF

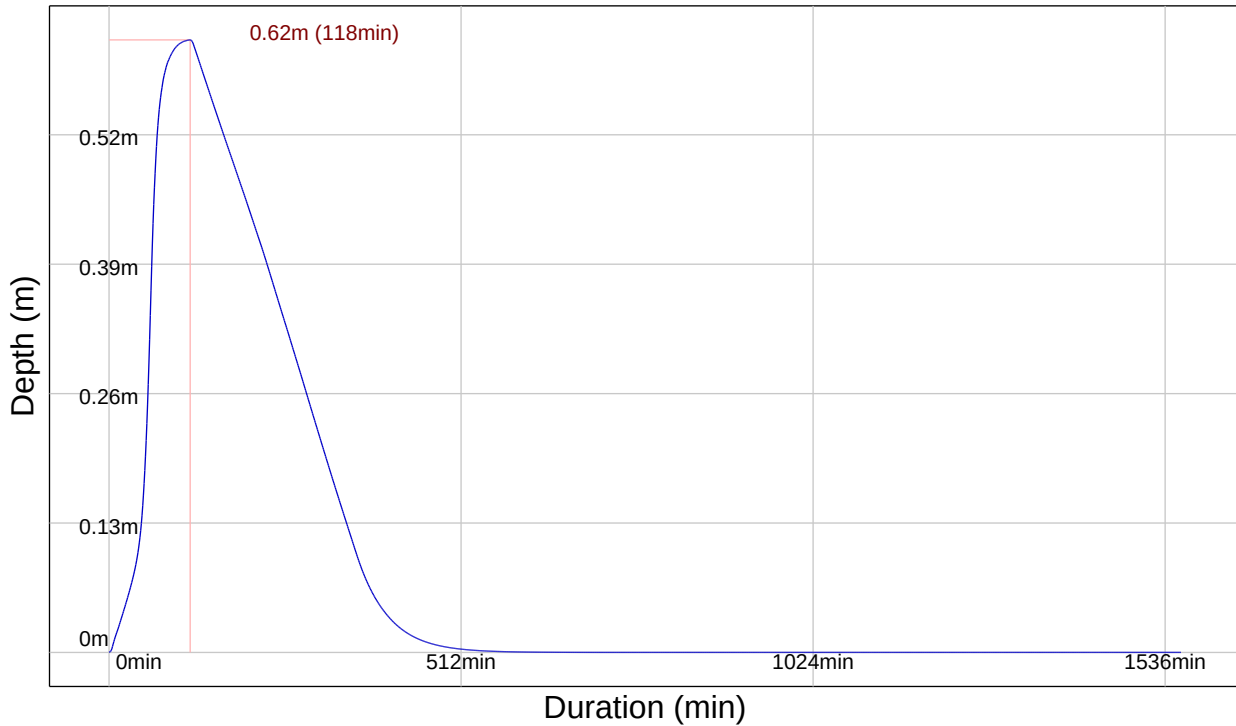
Flap Valve Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.150	0.600

Tank Structure at Manhole PS5-DIF

Tank Invert (m)	Tank Height (m)	Porosity Ratio (%)	Area (m2)	Effective Area (m2) Area x Porosity Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
16.545	0.675	30.00	120.695	36.208	24.441	0.07812000	0.07812000	2.00

Permeable Paving 2 at PS5-DIF (100Yr+45% 120Min Summer)



Controls within Manhole PP2-Dummy Outfall

Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.001	0.600

Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_494812_106233_v5_1_0.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (1, +0%), (30, +40%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Item Volume Continuity Errors
1Yr 15Min Winter	15.628	0.00	7.98	PS5-DIF 0.09m3, PP2-Dummy Outfall 0.07m3
1Yr 15Min Summer	15.628	0.00	8.01	PS5-DIF 0.10m3, PP2-Dummy Outfall 0.07m3
1Yr 30Min Winter	10.316	0.00	7.37	PS5-DIF 0.13m3, PP2-Dummy Outfall 0.08m3
1Yr 30Min Summer	10.316	0.00	7.13	PS5-DIF 0.12m3, PP2-Dummy Outfall 0.08m3
1Yr 60Min Winter	6.595	0.00	6.36	PS5-DIF 0.14m3, PP2-Dummy Outfall 0.08m3
1Yr 60Min Summer	6.595	0.00	6.36	PS5-DIF 0.15m3, PP2-Dummy Outfall 0.08m3
1Yr 120Min Summer	5.323	0.00	5.38	PS5-DIF 0.21m3, PP2-Dummy Outfall 0.10m3
1Yr 120Min Winter	5.323	0.00	5.10	PS5-DIF 0.20m3, PP2-Dummy Outfall 0.09m3
1Yr 180Min Winter	4.511	0.00	4.13	
1Yr 180Min Summer	4.511	0.00	4.60	
1Yr 240Min Winter	3.753	0.00	3.40	
1Yr 240Min Summer	3.753	0.00	3.93	
1Yr 360Min Winter	2.919	0.00	2.40	
1Yr 360Min Summer	2.919	0.00	3.08	
1Yr 480Min Summer	2.427	0.00	2.48	
1Yr 480Min Winter	2.427	0.00	1.71	
1Yr 600Min Winter	2.074	0.00	1.29	
1Yr 600Min Summer	2.074	0.00	2.06	
1Yr 720Min Summer	1.811	0.00	1.72	
1Yr 720Min Winter	1.811	0.00	0.98	
1Yr 960Min Summer	1.465	0.00	1.02	
1Yr 960Min Winter	1.465	0.00	0.73	
1Yr 1440Min Winter	1.102	0.00	0.46	
1Yr 1440Min Summer	1.102	0.00	0.67	
30Yr+40% 15Min Winter	115.253	0.00	7.21	PS5-DIF 0.62m3, PP2-Dummy Outfall 0.59m3
30Yr+40% 15Min Summer	115.253	0.00	7.20	PS5-DIF 0.80m3, PP2-Dummy Outfall 0.23m3
30Yr+40% 30Min Summer	76.731	0.00	6.82	PP2-Dummy Outfall 0.96m3, PS5-DIF 0.70m3
30Yr+40% 30Min Winter	76.731	0.00	7.28	PS5-DIF 0.93m3, PP2-Dummy Outfall 0.65m3
30Yr+40% 60Min Summer	48.847	0.00	6.84	PS5-DIF 1.34m3, PP2-Dummy Outfall 0.41m3
30Yr+40% 60Min Winter	48.847	0.00	7.46	PS5-DIF 1.47m3, PP2-Dummy Outfall 0.35m3
30Yr+40% 120Min Summer	29.859	0.00	6.80	PS5-DIF 1.57m3, PP2-Dummy Outfall 0.38m3
30Yr+40% 120Min Winter	29.859	0.00	8.24	PS5-DIF 1.92m3, PP2-Dummy Outfall 0.88m3
30Yr+40% 180Min Winter	22.126	0.00	9.37	PS5-DIF 2.55m3, PP2-Dummy Outfall 0.32m3
30Yr+40% 180Min Summer	22.126	0.00	7.01	PS5-DIF 2.24m3, PP2-Dummy Outfall 0.36m3
30Yr+40% 240Min Summer	17.757	0.00	7.71	PS5-DIF 2.35m3, PP2-Dummy Outfall 0.56m3
30Yr+40% 240Min Winter	17.757	0.00	7.98	PS5-DIF 2.62m3, PP2-Dummy Outfall 0.31m3
30Yr+40% 360Min Summer	12.891	0.00	6.60	PS5-DIF 2.42m3, PP2-Dummy Outfall 0.34m3
30Yr+40% 360Min Winter	12.891	0.00	5.43	PS5-DIF 1.98m3, PP2-Dummy Outfall 0.29m3
30Yr+40% 480Min Summer	10.228	0.00	4.85	
30Yr+40% 480Min Winter	10.228	0.00	4.21	
30Yr+40% 600Min Summer	8.522	0.00	4.04	
30Yr+40% 600Min Winter	8.522	0.00	3.72	
30Yr+40% 720Min Summer	7.326	0.00	3.77	
30Yr+40% 720Min Winter	7.326	0.00	4.58	
30Yr+40% 960Min Summer	5.766	0.00	3.03	
30Yr+40% 960Min Winter	5.766	0.00	1.45	
30Yr+40% 1440Min Summer	4.126	0.00	1.19	
30Yr+40% 1440Min Winter	4.126	0.00	0.46	
100Yr+45% 15Min Summer	149.272	0.00	5.97	PP2-Dummy Outfall 0.96m3, PS5-DIF 0.57m3
100Yr+45% 15Min Winter	149.272	0.00	5.98	PS5-DIF 0.78m3, PP2-Dummy Outfall 0.27m3
100Yr+45% 30Min Summer	100.198	0.00	5.99	PS5-DIF 0.99m3, PP2-Dummy Outfall 0.80m3
100Yr+45% 30Min Winter	100.198	0.00	6.19	PS5-DIF 0.98m3, PP2-Dummy Outfall 0.90m3
100Yr+45% 60Min Summer	64.450	0.00	6.00	PS5-DIF 1.41m3, PP2-Dummy Outfall 0.64m3
100Yr+45% 60Min Winter	64.450	0.00	6.45	PS5-DIF 1.64m3, PP2-Dummy Outfall 0.74m3

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Item Volume Continuity Errors
100Yr+45% 120Min Summer	38.652	0.00	6.11	PS5-DIF 1.93m3, PP2-Dummy Outfall 0.49m3
100Yr+45% 120Min Winter	38.652	0.00	7.50	PS5-DIF 2.59m3, PP2-Dummy Outfall 0.82m3
100Yr+45% 180Min Summer	28.339	0.00	6.62	PS5-DIF 2.24m3, PP2-Dummy Outfall 1.07m3
100Yr+45% 180Min Winter	28.339	0.00	9.51	PS5-DIF 3.21m3, PP2-Dummy Outfall 0.74m3
100Yr+45% 240Min Summer	22.782	0.00	6.91	PS5-DIF 2.93m3, PP2-Dummy Outfall 0.45m3
100Yr+45% 240Min Winter	22.782	0.00	9.52	PS5-DIF 3.59m3, PP2-Dummy Outfall 0.62m3
100Yr+45% 360Min Summer	16.530	0.00	7.49	PS5-DIF 3.18m3, PP2-Dummy Outfall 0.60m3
100Yr+45% 360Min Winter	16.530	0.00	7.07	PS5-DIF 3.08m3, PP2-Dummy Outfall 0.77m3
100Yr+45% 480Min Summer	13.117	0.00	6.77	PS5-DIF 3.08m3, PP2-Dummy Outfall 0.42m3
100Yr+45% 480Min Winter	13.117	0.00	5.76	PS5-DIF 2.24m3, PP2-Dummy Outfall 0.36m3
100Yr+45% 600Min Summer	10.952	0.00	5.05	PS5-DIF 2.42m3, PP2-Dummy Outfall 0.65m3
100Yr+45% 600Min Winter	10.952	0.00	4.63	
100Yr+45% 720Min Summer	9.434	0.00	4.21	
100Yr+45% 720Min Winter	9.434	0.00	4.92	
100Yr+45% 960Min Summer	7.431	0.00	3.92	
100Yr+45% 960Min Winter	7.431	0.00	4.21	
100Yr+45% 1440Min Winter	5.311	0.00	0.73	
100Yr+45% 1440Min Summer	5.311	0.00	2.80	

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	15 min Summer	8	16.967	0.017	0.464		OK
PS9	15 min Summer	9	16.840	0.019	0.557		OK
PS1-RE	15 min Summer	8	17.023	0.023	0.769		OK
PS2	15 min Summer	9	16.963	0.024	0.771		OK
PS6-RE	15 min Summer	9	17.008	0.012	0.204		OK
PS38-ACO	15 min Summer	8	17.265	0.018	0.414		OK
PS47-ACO	15 min Summer	9	17.213	0.012	0.403		OK
PS34	15 min Summer	9	16.883	0.018	1.393		OK
PS36-RE	15 min Summer	8	17.054	0.019	0.538		OK
PS7	15 min Summer	9	16.961	0.015	0.524		OK
PS36-ACO	15 min Summer	9	17.291	0.023	0.396		OK
PS37-ACO	15 min Summer	9	17.238	0.008	0.403		OK
PS3	15 min Summer	8	16.632	0.051	3.169		OK
PS5-DIF	180 min Summer	110	16.615	0.070	0.937		OK
PP2-Dummy Outfall	180 min Summer	112	16.615	0.110	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	9	PS8-RE	PS9	0.018	0.465	0.455	0.067	OK
1.001	15 min Summer	9	PS9	PS3	0.019	0.527	0.561	0.083	OK
2.000	15 min Summer	8	PS1-RE	PS2	0.024	0.425	0.760	0.053	OK
2.001	15 min Summer	9	PS2	PS34	0.021	0.513	0.780	0.054	OK
3.000	15 min Summer	9	PS6-RE	PS34	0.012	0.297	0.207	0.014	OK
4.000	15 min Summer	9	PS38-ACO	PS47-ACO	0.015	0.547	0.404	0.068	OK
4.001	15 min Summer	9	PS47-ACO	PS34	0.012	0.774	0.406	0.030	OK
2.002	15 min Summer	9	PS34	PS3	0.034	0.463	1.397	0.033	OK
5.000	15 min Summer	8	PS36-RE	PS7	0.017	0.588	0.530	0.079	OK
5.001	15 min Summer	9	PS7	PS3	0.015	0.719	0.529	0.049	OK
6.000	15 min Summer	9	PS36-ACO	PS37-ACO	0.016	0.515	0.403	0.104	OK
6.001	15 min Summer	9	PS37-ACO	PS3	0.008	1.291	0.405	0.015	OK
1.002	180 min Summer	110	PS3	PS5-DIF	0.052	0.486	1.712	0.113	OK
1.003	180 min Summer	110	PS5-DIF	PP2-Dummy Outfall	0.090	0.148	0.069	0.005	OK

Return Period (yrs) + Climate Change (%):

30yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	120 min Summer	102	17.008	0.058	0.170		OK
PS9	120 min Summer	102	17.008	0.188	0.203		Surcharged
PS1-RE	15 min Summer	8	17.067	0.067	5.674		OK
PS2	120 min Summer	104	17.008	0.069	0.284		OK
PS6-RE	15 min Summer	8	17.029	0.033	1.573		OK
PS38-ACO	15 min Summer	8	17.297	0.051	3.051		OK
PS47-ACO	15 min Summer	8	17.234	0.033	3.027		OK
PS34	120 min Summer	104	17.008	0.144	0.528		OK
PS36-RE	15 min Summer	8	17.091	0.056	3.974		OK
PS7	120 min Summer	104	17.008	0.062	0.192		OK
PS36-ACO	15 min Summer	8	17.330	0.062	3.051		OK
PS37-ACO	15 min Summer	8	17.252	0.022	3.022		OK
PS3	120 min Summer	104	17.008	0.427	1.198		Surcharged
PS5-DIF	120 min Summer	104	17.008	0.463	1.595		Surcharged
PP2-Dummy Outfall	120 min Summer	100	17.013	0.508	0.001		Flood Risk

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	120 min Summer	102	PS8-RE	PS9	0.079	0.653	1.544	0.229	OK
1.001	30 min Winter	27	PS9	PS3	0.100	0.670	3.024	0.448	Surcharged
2.000	15 min Summer	8	PS1-RE	PS2	0.067	0.745	5.642	0.391	OK
2.001	120 min Summer	104	PS2	PS34	0.106	0.737	2.647	0.183	OK
3.000	120 min Summer	103	PS6-RE	PS34	0.053	0.429	0.711	0.049	OK
4.000	15 min Summer	8	PS38-ACO	PS47-ACO	0.042	0.976	3.027	0.505	OK
4.001	120 min Summer	99	PS47-ACO	PS34	0.051	1.104	1.379	0.103	OK
2.002	120 min Summer	104	PS34	PS3	0.147	0.436	4.737	0.112	OK
5.000	15 min Summer	8	PS36-RE	PS7	0.049	1.036	3.945	0.584	OK
5.001	120 min Summer	104	PS7	PS3	0.081	0.763	1.796	0.167	OK
6.000	15 min Summer	8	PS36-ACO	PS37-ACO	0.042	0.971	3.022	0.779	OK
6.001	15 min Summer	8	PS37-ACO	PS3	0.061	1.202	3.013	0.110	OK
1.002	15 min Summer	9	PS3	PS5-DIF	0.150	1.351	23.133	1.525	Surcharged
1.003	15 min Summer	9	PS5-DIF	PP2-Dummy Outfall	0.150	0.410	1.920	0.133	Surcharged

Return Period (yrs) + Climate Change (%):

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
PS8-RE	120 min Summer	117	17.161	0.211	0.180		Flood Risk
PS9	120 min Summer	117	17.161	0.341	0.223		Surcharged
PS1-RE	120 min Summer	118	17.161	0.161	0.287		Flood Risk
PS2	120 min Summer	118	17.161	0.221	0.295		Flood Risk
PS6-RE	120 min Summer	118	17.161	0.165	0.079		Flood Risk
PS38-ACO	15 min Summer	8	17.305	0.059	3.951		OK
PS47-ACO	15 min Summer	8	17.239	0.038	3.922		OK
PS34	120 min Summer	118	17.161	0.296	0.536		Surcharged
PS36-RE	120 min Summer	117	17.161	0.126	0.209		Flood Risk
PS7	120 min Summer	117	17.161	0.214	0.205		Flood Risk
PS36-ACO	15 min Summer	8	17.340	0.072	3.952		OK
PS37-ACO	15 min Summer	8	17.255	0.025	3.915		OK
PS3	120 min Summer	118	17.161	0.580	1.252		Flood Risk
PS5-DIF	120 min Summer	118	17.160	0.615	1.666		Surcharged
PP2-Dummy Outfall	120 min Summer	110	17.163	0.659	0.001		Flood Risk

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	30 min Summer	17	PS8-RE	PS9	0.100	0.778	3.904	0.578	Surcharged
1.001	15 min Winter	8	PS9	PS3	0.100	0.635	4.122	0.611	Surcharged
2.000	120 min Winter	98	PS1-RE	PS2	0.150	0.588	2.215	0.153	Surcharged
2.001	60 min Winter	42	PS2	PS34	0.150	0.812	3.724	0.258	Surcharged
3.000	120 min Winter	94	PS6-RE	PS34	0.150	0.411	0.614	0.043	Surcharged
4.000	15 min Summer	8	PS38-ACO	PS47-ACO	0.048	1.058	3.922	0.655	OK
4.001	30 min Summer	18	PS47-ACO	PS34	0.065	1.419	3.568	0.267	OK
2.002	30 min Winter	22	PS34	PS3	0.150	0.756	9.428	0.223	Surcharged
5.000	180 min Summer	125	PS36-RE	PS7	0.100	0.832	1.750	0.259	Surcharged
5.001	60 min Winter	38	PS7	PS3	0.100	0.834	2.524	0.235	Surcharged
6.000	15 min Summer	8	PS36-ACO	PS37-ACO	0.048	1.041	3.915	1.009	OK
6.001	15 min Summer	8	PS37-ACO	PS3	0.062	0.950	3.904	0.142	OK
1.002	15 min Winter	8	PS3	PS5-DIF	0.150	1.465	25.897	1.707	Surcharged
1.003	15 min Winter	8	PS5-DIF	PP2-Dummy Outfall	0.150	0.446	2.821	0.195	Surcharged