

The Civil Engineering Practice										Page 1																																																																																																																																																																																																																
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<u>STORM SEWER DESIGN by the Modified Rational Method</u> <u>Design Criteria for NETWORK 7.SWS</u> Pipe Sizes NETWORK 9 Manhole Sizes NETWORK 9 FSR Rainfall Model - England and Wales <table><tr><td>Return Period (years)</td><td>2</td><td>PIMP (%)</td><td>100</td></tr><tr><td>M5-60 (mm)</td><td>19.600</td><td>Add Flow / Climate Change (%)</td><td>0</td></tr><tr><td>Ratio R</td><td>0.350</td><td>Minimum Backdrop Height (m)</td><td>0.500</td></tr><tr><td>Maximum Rainfall (mm/hr)</td><td>50</td><td>Maximum Backdrop Height (m)</td><td>1.000</td></tr><tr><td>Maximum Time of Concentration (mins)</td><td>30</td><td>Min Design Depth for Optimisation (m)</td><td>1.200</td></tr><tr><td>Foul Sewage (l/s/ha)</td><td>0.000</td><td>Min Vel for Auto Design only (m/s)</td><td>0.75</td></tr><tr><td>Volumetric Runoff Coeff.</td><td>0.750</td><td>Min Slope for Optimisation (1:X)</td><td>500</td></tr></table> Designed with Level Soffits												Return Period (years)	2	PIMP (%)	100	M5-60 (mm)	19.600	Add Flow / Climate Change (%)	0	Ratio R	0.350	Minimum Backdrop Height (m)	0.500	Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.000	Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200	Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.75	Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500																																																																																																																																																																																			
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<u>Network Design Table for NETWORK 7.SWS</u> <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>1.000</td><td>12.723</td><td>0.124</td><td>102.6</td><td>0.000</td><td>5.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>1.001</td><td>7.201</td><td>0.070</td><td>102.9</td><td>0.003</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>1.002</td><td>3.054</td><td>0.153</td><td>20.0</td><td>0.001</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>2.000</td><td>9.944</td><td>0.097</td><td>102.5</td><td>0.006</td><td>5.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>1.003</td><td>10.198</td><td>0.099</td><td>103.0</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>3.000</td><td>19.643</td><td>0.196</td><td>100.2</td><td>0.006</td><td>5.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>1.004</td><td>1.133</td><td>0.197</td><td>5.8</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>4.000</td><td>19.824</td><td>0.193</td><td>102.7</td><td>0.012</td><td>5.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr></table> <u>Network Results Table</u> <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>1.000</td><td>50.00</td><td>5.28</td><td>16.000</td><td>0.000</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.76</td><td>6.0</td><td>0.0</td></tr><tr><td>1.001</td><td>50.00</td><td>5.44</td><td>15.876</td><td>0.003</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.76</td><td>6.0</td><td>0.4</td></tr><tr><td>1.002</td><td>50.00</td><td>5.47</td><td>15.806</td><td>0.004</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.74</td><td>13.6</td><td>0.5</td></tr><tr><td>2.000</td><td>50.00</td><td>5.22</td><td>15.750</td><td>0.006</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.76</td><td>6.0</td><td>0.8</td></tr><tr><td>1.003</td><td>50.00</td><td>5.69</td><td>15.653</td><td>0.010</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.76</td><td>5.9</td><td>1.4</td></tr><tr><td>3.000</td><td>50.00</td><td>5.43</td><td>15.750</td><td>0.006</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.77</td><td>6.0</td><td>0.8</td></tr><tr><td>1.004</td><td>50.00</td><td>5.70</td><td>15.554</td><td>0.016</td><td>0.0</td><td>0.0</td><td>0.0</td><td>3.25</td><td>25.5</td><td>2.2</td></tr><tr><td>4.000</td><td>50.00</td><td>5.44</td><td>15.550</td><td>0.012</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.76</td><td>6.0</td><td>1.6</td></tr></table> ©1982-2017 XP Solutions												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	1.000	12.723	0.124	102.6	0.000	5.00	0.0	0.600	o	100	Pipe/Conduit		1.001	7.201	0.070	102.9	0.003	0.00	0.0	0.600	o	100	Pipe/Conduit		1.002	3.054	0.153	20.0	0.001	0.00	0.0	0.600	o	100	Pipe/Conduit		2.000	9.944	0.097	102.5	0.006	5.00	0.0	0.600	o	100	Pipe/Conduit		1.003	10.198	0.099	103.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		3.000	19.643	0.196	100.2	0.006	5.00	0.0	0.600	o	100	Pipe/Conduit		1.004	1.133	0.197	5.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		4.000	19.824	0.193	102.7	0.012	5.00	0.0	0.600	o	100	Pipe/Conduit		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)	1.000	50.00	5.28	16.000	0.000	0.0	0.0	0.0	0.76	6.0	0.0	1.001	50.00	5.44	15.876	0.003	0.0	0.0	0.0	0.76	6.0	0.4	1.002	50.00	5.47	15.806	0.004	0.0	0.0	0.0	1.74	13.6	0.5	2.000	50.00	5.22	15.750	0.006	0.0	0.0	0.0	0.76	6.0	0.8	1.003	50.00	5.69	15.653	0.010	0.0	0.0	0.0	0.76	5.9	1.4	3.000	50.00	5.43	15.750	0.006	0.0	0.0	0.0	0.77	6.0	0.8	1.004	50.00	5.70	15.554	0.016	0.0	0.0	0.0	3.25	25.5	2.2	4.000	50.00	5.44	15.550	0.012	0.0	0.0	0.0	0.76	6.0	1.6
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																																																																																																																																																																																																															
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The Civil Engineering Practice											Page 2		
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<u>Network Design Table for NETWORK 7.SWS</u>													
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	
1.005	2.675	0.178	15.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit			
5.000	4.044	0.039	103.7	0.002	5.00	0.0	0.600	o	100	Pipe/Conduit			
5.001	9.985	0.181	55.2	0.002	0.00	0.0	0.600	o	100	Pipe/Conduit			
6.000	8.188	0.080	102.4	0.003	5.00	0.0	0.600	o	100	Pipe/Conduit			
6.001	2.404	0.023	104.5	0.003	0.00	0.0	0.600	o	100	Pipe/Conduit			
6.002	12.080	0.117	103.3	0.003	0.00	0.0	0.600	o	100	Pipe/Conduit			
5.002	8.379	0.184	45.5	0.001	0.00	0.0	0.600	o	100	Pipe/Conduit			
7.000	21.033	0.204	103.1	0.010	5.00	0.0	0.600	o	100	Pipe/Conduit			
5.003	9.954	0.097	102.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit			
8.000	16.410	0.159	103.2	0.010	5.00	0.0	0.600	o	100	Pipe/Conduit			
8.001	5.371	0.142	37.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit			
5.004	2.046	0.020	102.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit			
1.006	1.824	0.010	182.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit			
<u>Network Results Table</u>													
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)			
1.005	50.00	5.72	15.357	0.028	0.0	0.0	0.0	2.00	15.7	3.8			
5.000	50.00	5.09	15.700	0.002	0.0	0.0	0.0	0.75	5.9	0.3			
5.001	50.00	5.25	15.661	0.004	0.0	0.0	0.0	1.04	8.2	0.5			
6.000	50.00	5.18	15.700	0.003	0.0	0.0	0.0	0.76	6.0	0.4			
6.001	50.00	5.23	15.620	0.006	0.0	0.0	0.0	0.75	5.9	0.8			
6.002	50.00	5.50	15.597	0.009	0.0	0.0	0.0	0.76	5.9	1.2			
5.002	50.00	5.62	15.480	0.014	0.0	0.0	0.0	1.15	9.0	1.9			
7.000	50.00	5.46	15.500	0.010	0.0	0.0	0.0	0.76	5.9	1.4			
5.003	50.00	5.84	15.296	0.024	0.0	0.0	0.0	0.76	6.0	3.2			
8.000	50.00	5.36	15.500	0.010	0.0	0.0	0.0	0.76	5.9	1.4			
8.001	50.00	5.43	15.341	0.010	0.0	0.0	0.0	1.26	9.9	1.4			
5.004	50.00	5.88	15.199	0.034	0.0	0.0	0.0	0.76	6.0	4.6			
1.006	50.00	5.93	15.129	0.062	0.0	0.0	0.0	0.74	13.1	8.4			
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The Civil Engineering Practice								Page 3																																																																																																																																																																																																																																																													
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<u>PIPELINE SCHEDULES for NETWORK 7.SWS</u> <u>Upstream Manhole</u> <table><tr><th>PN</th><th>Hyd Sect</th><th>Diam (mm)</th><th>MH Name</th><th>C.Level (m)</th><th>I.Level (m)</th><th>D.Depth (m)</th><th>MH Connection</th><th>MH DIAM., L*W (mm)</th></tr><tr><td>1.000</td><td>o</td><td>100</td><td>1</td><td>16.600</td><td>16.000</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.001</td><td>o</td><td>100</td><td>2</td><td>16.600</td><td>15.876</td><td>0.624</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.002</td><td>o</td><td>100</td><td>3</td><td>16.450</td><td>15.806</td><td>0.544</td><td>Open Manhole</td><td>1200</td></tr><tr><td>2.000</td><td>o</td><td>100</td><td>8</td><td>16.350</td><td>15.750</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.003</td><td>o</td><td>100</td><td>4</td><td>16.450</td><td>15.653</td><td>0.697</td><td>Open Manhole</td><td>1200</td></tr><tr><td>3.000</td><td>o</td><td>100</td><td>9</td><td>16.350</td><td>15.750</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.004</td><td>o</td><td>100</td><td>5</td><td>16.225</td><td>15.554</td><td>0.571</td><td>Open Manhole</td><td>1200</td></tr><tr><td>4.000</td><td>o</td><td>100</td><td>10</td><td>16.150</td><td>15.550</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.005</td><td>o</td><td>100</td><td>6</td><td>16.225</td><td>15.357</td><td>0.768</td><td>Open Manhole</td><td>1200</td></tr><tr><td>5.000</td><td>o</td><td>100</td><td>11</td><td>16.300</td><td>15.700</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>5.001</td><td>o</td><td>100</td><td>12</td><td>16.300</td><td>15.661</td><td>0.539</td><td>Open Manhole</td><td>1200</td></tr><tr><td>6.000</td><td>o</td><td>100</td><td>16</td><td>16.300</td><td>15.700</td><td>0.500</td><td>Open Manhole</td><td>1200</td></tr><tr><td>6.001</td><td>o</td><td>100</td><td>17</td><td>16.300</td><td>15.620</td><td>0.580</td><td>Open Manhole</td><td>1200</td></tr></table> <u>Downstream Manhole</u> <table><tr><th>PN</th><th>Length (m)</th><th>Slope (1:X)</th><th>MH Name</th><th>C.Level (m)</th><th>I.Level (m)</th><th>D.Depth (m)</th><th>MH Connection</th><th>MH DIAM., L*W (mm)</th></tr><tr><td>1.000</td><td>12.723</td><td>102.6</td><td>2</td><td>16.600</td><td>15.876</td><td>0.624</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.001</td><td>7.201</td><td>102.9</td><td>3</td><td>16.450</td><td>15.806</td><td>0.544</td><td>Open Manhole</td><td>1200</td></tr><tr><td>1.002</td><td>3.054</td><td>20.0</td><td>4</td><td>16.450</td><td>15.653</td><td>0.697</td><td>Open Manhole</td><td>1200</td></tr><tr><td>2.000</td><td>9.944</td><td>102.5</td><td>4</td><td>16.450</td><td>15.653</td><td>0.697</td><td>Open 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<u>Synthetic Rainfall Details</u>																																																																																																																																																																																																																																																								
Rainfall Model			FSR			Ratio R 0.350																																																																																																																																																																																																																																																		
Region England and Wales			Cv (Summer)			0.750																																																																																																																																																																																																																																																		
M5-60 (mm)			19.500 Cv (Winter)			0.840																																																																																																																																																																																																																																																		
Margin for Flood Risk Warning (mm) 300.0			DVD Status OFF																																																																																																																																																																																																																																																					
Analysis Timestep			Fine Inertia Status OFF																																																																																																																																																																																																																																																					
DTS Status			ON																																																																																																																																																																																																																																																					
Profile(s)			Summer and Winter																																																																																																																																																																																																																																																					
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440																																																																																																																																																																																																																																																								
Return Period(s) (years)			100																																																																																																																																																																																																																																																					
Climate Change (%)			40																																																																																																																																																																																																																																																					
<table><tr><th></th><th>US/MH</th><th></th><th>Return</th><th>Climate</th><th>First (X)</th><th>First (Y)</th><th>First (Z)</th><th>Overflow</th><th>Water</th></tr><tr><th>PN</th><th>Name</th><th>Storm</th><th>Period</th><th>Change</th><th>Surcharge</th><th>Flood</th><th>Overflow</th><th>Act.</th><th>Level</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>(m)</th></tr><tr><td>1.000</td><td>1 60 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>16.000</td></tr><tr><td>1.001</td><td>2 15 Summer</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.916</td></tr><tr><td>1.002</td><td>3 15 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.838</td></tr><tr><td>2.000</td><td>8 15 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.808</td></tr><tr><td>1.003</td><td>4 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Winter</td><td></td><td></td><td></td><td>15.761</td></tr><tr><td>3.000</td><td>9 15 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.806</td></tr><tr><td>1.004</td><td>5 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.688</td></tr><tr><td>4.000</td><td>10 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.782</td></tr><tr><td>1.005</td><td>6 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.615</td></tr><tr><td>5.000</td><td>11 15 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.770</td></tr><tr><td>5.001</td><td>12 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Winter</td><td></td><td></td><td></td><td>15.768</td></tr><tr><td>6.000</td><td>16 15 Winter</td><td></td><td>100</td><td>+40%</td><td></td><td></td><td></td><td></td><td>15.793</td></tr><tr><td>6.001</td><td>17 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.786</td></tr><tr><td>6.002</td><td>18 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.781</td></tr><tr><td>5.002</td><td>13 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.760</td></tr><tr><td>7.000</td><td>19 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.820</td></tr><tr><td>5.003</td><td>14 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.727</td></tr><tr><td>8.000</td><td>20 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.671</td></tr><tr><td>8.001</td><td>21 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.591</td></tr><tr><td>5.004</td><td>15 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.564</td></tr><tr><td>1.006</td><td>7 15 Winter</td><td></td><td>100</td><td>+40%</td><td>100/15 Summer</td><td></td><td></td><td></td><td>15.406</td></tr></table>										US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Water	PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	Level										(m)	1.000	1 60 Winter		100	+40%					16.000	1.001	2 15 Summer		100	+40%					15.916	1.002	3 15 Winter		100	+40%					15.838	2.000	8 15 Winter		100	+40%					15.808	1.003	4 15 Winter		100	+40%	100/15 Winter				15.761	3.000	9 15 Winter		100	+40%					15.806	1.004	5 15 Winter		100	+40%	100/15 Summer				15.688	4.000	10 15 Winter		100	+40%	100/15 Summer				15.782	1.005	6 15 Winter		100	+40%	100/15 Summer				15.615	5.000	11 15 Winter		100	+40%					15.770	5.001	12 15 Winter		100	+40%	100/15 Winter				15.768	6.000	16 15 Winter		100	+40%					15.793	6.001	17 15 Winter		100	+40%	100/15 Summer				15.786	6.002	18 15 Winter		100	+40%	100/15 Summer				15.781	5.002	13 15 Winter		100	+40%	100/15 Summer				15.760	7.000	19 15 Winter		100	+40%	100/15 Summer				15.820	5.003	14 15 Winter		100	+40%	100/15 Summer				15.727	8.000	20 15 Winter		100	+40%	100/15 Summer				15.671	8.001	21 15 Winter		100	+40%	100/15 Summer				15.591	5.004	15 15 Winter		100	+40%	100/15 Summer				15.564	1.006	7 15 Winter		100	+40%	100/15 Summer				15.406
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Water																																																																																																																																																																																																																																															
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The Civil Engineering Practice							Page 6	
11 Tungsten Building George Street Fishersgate BN41 1RA				Manor Nursery Angmering West Sussex				
Date 28/06/2019 File Planning Network File.MDX				Designed by S Burgess Checked by SRD				
Innovyze				Network 2017.1.2				
<u>Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 7.SWS</u>								
PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)			Flow (l/s)		
1.000	1	-0.100	0.000	0.00		0.0	OK	
1.001	2	-0.060	0.000	0.34		1.9	OK	
1.002	3	-0.068	0.000	0.23		2.5	OK	
2.000	8	-0.042	0.000	0.62		3.4	OK	
1.003	4	0.008	0.000	0.99		5.5	SURCHARGED	
3.000	9	-0.044	0.000	0.59		3.4	OK	
1.004	5	0.034	0.000	0.65		8.0	SURCHARGED	
4.000	10	0.132	0.000	0.95		5.5	SURCHARGED	
1.005	6	0.158	0.000	1.09		12.8	SURCHARGED	
5.000	11	-0.030	0.000	0.23		1.1	OK	
5.001	12	0.007	0.000	0.30		2.3	SURCHARGED	
6.000	16	-0.007	0.000	0.30		1.6	OK	
6.001	17	0.066	0.000	0.71		3.0	SURCHARGED	
6.002	18	0.084	0.000	0.77		4.3	SURCHARGED	
5.002	13	0.180	0.000	0.58		4.8	SURCHARGED	
7.000	19	0.220	0.000	0.70		4.0	FLOOD RISK	
5.003	14	0.331	0.000	1.31		7.2	SURCHARGED	
8.000	20	0.071	0.000	0.84		4.8	SURCHARGED	
8.001	21	0.150	0.000	0.45		3.9	FLOOD RISK	
5.004	15	0.265	0.000	2.81		11.1	SURCHARGED	
1.006	7	0.127	0.000	2.18		23.7	SURCHARGED	
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