

**Appendix C**

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Water Servicing



**Scenario: VMC-2011 Average Day  
Steady State Analysis  
Reservoir Report**

Label	Elevation (m)	Zone	Inflow (l/s)	Calculated Hydraulic Grade (m)
South Maple	262.10	Zone-1	191.610	262.10
Rutherford/Weston	262.90	Zone-1	531.292	262.90
South Richmond Hill Res	262.30	Zone-1	132.336	262.30
Bathurst/Hwy 7 MC	262.30	Zone-1	188.412	262.30
Weston/MajorMackenzie	262.75	Zone-1	220.039	262.75
Keele	264.70	Zone-1	719.354	264.70

**Scenario: VMC-2011 Average Day  
Steady State Analysis  
Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	263.88	109.702
PD6-436	13.746	195.10	Zone-1	Demand	Fixed	13.746	261.79	94.659
PD6-705	14.327	196.11	Zone-1	Demand	Fixed	14.327	262.63	94.429
PD6-678	1.791	197.43	Zone-1	Demand	Fixed	1.791	262.71	92.669
PD6-443	21.414	196.80	Zone-1	Demand	Fixed	21.413	261.76	92.207
PD6-VMC-4	7.640	196.90	Zone-1	Demand	Fixed	7.640	261.82	92.152
PD6-439	9.968	197.15	Zone-1	Demand	Fixed	9.968	261.80	91.774
PD6-702	8.896	198.20	Zone-1	Demand	Fixed	8.896	262.73	91.603
PD6-704	5.490	198.21	Zone-1	Demand	Fixed	5.490	262.70	91.542
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	261.78	89.968
PD6-685	0.676	199.75	Zone-1	Demand	Fixed	0.676	262.92	89.667
PD6-731	12.442	198.85	Zone-1	Demand	Fixed	12.442	261.83	89.405
PD6-703	3.564	199.94	Zone-1	Demand	Fixed	3.564	262.72	89.114
PD6-438	7.311	199.41	Zone-1	Demand	Fixed	7.311	261.81	88.569
PD6-692	21.541	200.39	Zone-1	Demand	Fixed	21.541	262.66	88.389
PD6-734	3.379	199.68	Zone-1	Demand	Fixed	3.379	261.93	88.355
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	263.12	88.174
PD6-701	11.815	200.90	Zone-1	Demand	Fixed	11.815	262.78	87.844
PD6-687	0.652	201.00	Zone-1	Demand	Fixed	0.652	262.85	87.796
PD6-700	40.273	200.90	Zone-1	Demand	Fixed	40.273	262.64	87.642
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	262.70	87.586
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	262.70	87.201
PD6-735	12.305	200.60	Zone-1	Demand	Fixed	12.305	261.95	87.088
PD6-684	3.510	201.60	Zone-1	Demand	Fixed	3.510	262.95	87.082
PD6-740	0.787	201.51	Zone-1	Demand	Fixed	0.787	262.70	86.857
PD6-744	0.524	201.52	Zone-1	Demand	Fixed	0.524	262.70	86.843
PD6-743	0.496	201.60	Zone-1	Demand	Fixed	0.496	262.70	86.729
PD6-440	9.577	200.75	Zone-1	Demand	Fixed	9.577	261.82	86.680
PD6-742	0.533	201.66	Zone-1	Demand	Fixed	0.533	262.70	86.644
PD6-741	0.328	201.74	Zone-1	Demand	Fixed	0.328	262.70	86.530
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	261.94	86.500
PD6-694	4.965	201.81	Zone-1	Demand	Fixed	4.965	262.70	86.432
PD6-VMC-2	20.545	201.20	Zone-1	Demand	Fixed	20.545	261.76	85.962
PD6-677	36.685	204.11	Zone-1	Demand	Fixed	36.685	264.53	85.764
PD6-680	22.910	204.33	Zone-1	Inflow	Fixed	-22.910	264.64	85.609
PD6-VMC-3	13.864	201.90	Zone-1	Demand	Fixed	13.864	261.82	85.060
PD6-442	21.973	202.00	Zone-1	Demand	Fixed	21.973	261.84	84.946
PD6-732	9.206	202.00	Zone-1	Demand	Fixed	9.206	261.84	84.939
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	261.94	84.209
PD6-441	29.339	202.80	Zone-1	Demand	Fixed	29.339	261.87	83.852
PD6-736	30.405	203.00	Zone-1	Demand	Fixed	30.405	262.03	83.788
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	261.98	83.722
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	261.93	83.643
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	264.65	83.246
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	261.87	83.204
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	261.80	83.161
PD6-720	1.039	204.00	Zone-1	Demand	Fixed	1.039	262.56	83.126
PD6-728	7.067	203.54	Zone-1	Demand	Fixed	7.067	261.96	82.921
PD6-689	1.473	206.10	Zone-1	Demand	Fixed	1.473	264.46	82.836
PD6-71	28.036	205.42	Zone-1	Demand	Fixed	28.036	263.73	82.770
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	261.76	82.271
PD6-VMC-1	7.153	204.00	Zone-1	Demand	Fixed	7.153	261.93	82.230
PD6-72	24.478	205.91	Zone-1	Inflow	Fixed	-24.478	263.81	82.188
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	261.95	82.179

**Scenario: VMC-2011 Average Day  
Steady State Analysis  
Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-451	30.675	203.91	Zone-1	Demand	Fixed	30.675	261.77	82.131
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	261.92	81.930
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	261.83	81.868
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	261.80	81.806
PD6-747	2.678	204.37	Zone-1	Demand	Fixed	2.678	261.83	81.566
PD6-695	88.001	205.50	Zone-1	Inflow	Fixed	-88.001	262.72	81.227
PD6-449	14.743	204.85	Zone-1	Demand	Fixed	14.743	261.84	80.893
PD6-683	0.081	206.84	Zone-1	Demand	Fixed	0.081	263.75	80.782
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	261.97	80.594
PD6-457	2.033	205.09	Zone-1	Demand	Fixed	2.033	261.80	80.502
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	261.96	80.490
PD6-749	1.900	205.34	Zone-1	Demand	Fixed	1.900	261.83	80.192
PD6-458	3.088	205.46	Zone-1	Demand	Fixed	3.088	261.79	79.952
PD6-456	2.502	205.49	Zone-1	Demand	Fixed	2.502	261.81	79.949
PD6-446	10.977	205.70	Zone-1	Demand	Fixed	10.977	261.88	79.751
PD6-754	3.770	205.80	Zone-1	Demand	Fixed	3.770	261.94	79.682
PD6-454	2.483	205.79	Zone-1	Demand	Fixed	2.483	261.78	79.476
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	263.84	79.401
PD6-671	5.798	207.07	Zone-1	Demand	Fixed	5.798	262.92	79.275
PD6-455	1.679	206.02	Zone-1	Demand	Fixed	1.679	261.80	79.175
PD6-461	3.852	206.12	Zone-1	Demand	Fixed	3.852	261.79	79.015
PD6-459	2.220	206.13	Zone-1	Demand	Fixed	2.220	261.77	78.978
PD6-452	9.156	206.27	Zone-1	Demand	Fixed	9.156	261.76	78.765
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	261.98	78.745
PD6-724	2.009	206.58	Zone-1	Demand	Fixed	2.009	261.99	78.646
PD6-460	2.618	206.42	Zone-1	Demand	Fixed	2.618	261.78	78.574
PD6-748	3.551	206.77	Zone-1	Demand	Fixed	3.551	261.89	78.248
PD6-739	13.571	206.90	Zone-1	Demand	Fixed	13.571	262.00	78.211
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	262.07	78.174
PD6-723	0.666	207.16	Zone-1	Demand	Fixed	0.666	261.99	77.828
PD6-453	3.380	207.00	Zone-1	Demand	Fixed	3.380	261.77	77.742
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	261.80	77.478
PD6-468	4.490	207.28	Zone-1	Demand	Fixed	4.490	261.83	77.432
PD6-722	0.760	207.71	Zone-1	Demand	Fixed	0.760	262.01	77.082
PD6-462	3.398	208.06	Zone-1	Demand	Fixed	3.398	261.79	76.266
PD6-753	1.116	208.21	Zone-1	Demand	Fixed	1.116	261.92	76.237
PD6-730	8.645	209.40	Zone-1	Demand	Fixed	8.645	262.63	75.554
PD6-751	6.479	209.00	Zone-1	Demand	Fixed	6.479	261.89	75.080
PD6-738	1.039	209.25	Zone-1	Demand	Fixed	1.039	262.00	74.882
PD6-473	2.642	209.20	Zone-1	Demand	Fixed	2.642	261.93	74.842
PD6-721	2.281	209.30	Zone-1	Demand	Fixed	2.281	261.94	74.726
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	261.92	74.562
PD6-756	1.240	209.46	Zone-1	Demand	Fixed	1.240	261.94	74.487
PD6-418	95.145	208.19	Zone-1	Demand	Fixed	95.145	260.54	74.311
PD6-472	1.624	209.66	Zone-1	Demand	Fixed	1.624	261.88	74.129
PD6-758	1.149	210.08	Zone-1	Demand	Fixed	1.149	261.96	73.646
PD6-469	4.595	210.09	Zone-1	Demand	Fixed	4.595	261.83	73.442
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	261.77	73.298
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	262.50	72.553
PD6-470	2.034	211.22	Zone-1	Demand	Fixed	2.034	261.87	71.897
PD6-750	4.135	211.62	Zone-1	Demand	Fixed	4.135	261.83	71.275
PD6-763	2.610	212.22	Zone-1	Demand	Fixed	2.610	262.29	71.066
PD6-474	1.767	212.05	Zone-1	Demand	Fixed	1.767	261.90	70.762
PD6-779	0.512	212.93	Zone-1	Demand	Fixed	0.512	262.76	70.727

**Scenario: VMC-2011 Average Day  
Steady State Analysis  
Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-759	4.144	212.38	Zone-1	Demand	Fixed	4.144	262.04	70.497
PD6-762	2.885	212.73	Zone-1	Demand	Fixed	2.885	262.20	70.215
PD6-769	0.916	213.39	Zone-1	Demand	Fixed	0.916	262.62	69.882
PD6-767	1.811	213.50	Zone-1	Demand	Fixed	1.811	262.62	69.726
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	261.81	69.687
PD6-780	0.637	213.94	Zone-1	Demand	Fixed	0.637	262.76	69.293
PD6-768	2.411	214.02	Zone-1	Demand	Fixed	2.411	262.61	68.966
PD6-755	1.019	213.37	Zone-1	Demand	Fixed	1.019	261.95	68.954
PD6-760	4.886	213.57	Zone-1	Demand	Fixed	4.886	262.06	68.836
PD6-471	1.794	213.41	Zone-1	Demand	Fixed	1.794	261.87	68.791
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	262.06	68.410
PD6-757	1.041	214.34	Zone-1	Demand	Fixed	1.041	261.96	67.589
PD6-466	0.607	214.31	Zone-1	Demand	Fixed	0.607	261.86	67.498
PD6-764	2.606	215.49	Zone-1	Demand	Fixed	2.606	262.26	66.391
PD6-765	4.744	215.54	Zone-1	Demand	Fixed	4.744	262.30	66.374
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	262.76	66.372
PD6-475	1.796	215.17	Zone-1	Demand	Fixed	1.796	261.87	66.294
PD6-778	0.471	216.78	Zone-1	Demand	Fixed	0.471	262.76	65.265
PD6-1094	346.167	217.10	Zone-1	Demand	Fixed	346.167	262.89	65.000
PD6-774	6.527	217.25	Zone-1	Demand	Fixed	6.527	262.76	64.596
PD6-479	5.640	217.00	Zone-1	Demand	Fixed	5.640	262.36	64.384
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	262.78	64.369
PD6-761	2.459	217.14	Zone-1	Demand	Fixed	2.459	262.19	63.952
PD6-770	1.257	217.18	Zone-1	Demand	Fixed	1.257	261.92	63.508
PD6-478	0.887	217.41	Zone-1	Demand	Fixed	0.887	261.87	63.114
PD6-840	61.693	218.78	Zone-1	Inflow	Fixed	-61.693	262.89	62.606
PD6-9	0.810	218.81	Zone-1	Demand	Fixed	0.810	262.78	62.420
PD6-476	10.675	218.20	Zone-1	Demand	Fixed	10.675	262.08	62.286
PD6-777	0.589	218.95	Zone-1	Demand	Fixed	0.589	262.76	62.185
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	262.76	61.548
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	262.19	61.340
PD6-477	9.445	219.28	Zone-1	Demand	Fixed	9.445	262.31	61.083
PD6-27	10.612	220.09	Zone-1	Demand	Fixed	10.612	262.73	60.528
PD6-480	1.203	220.00	Zone-1	Demand	Fixed	1.203	262.57	60.426
PD6-481	1.814	220.90	Zone-1	Demand	Fixed	1.814	262.68	59.301
PD6-24	9.450	221.64	Zone-1	Inflow	Fixed	-9.450	262.80	58.426
PD6-8	1.070	222.21	Zone-1	Demand	Fixed	1.070	262.80	57.610
PD6-1001	6.347	222.42	Zone-1	Demand	Fixed	6.347	262.74	57.232
PD6-325	165.281	222.88	Zone-1	Inflow	Fixed	-165.281	262.71	56.544
PD6-1000	36.044	222.98	Zone-1	Demand	Fixed	36.044	262.64	56.295
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	262.69	38.985
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	262.69	30.156
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	262.11	29.322
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	262.11	2.281
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	262.11	2.281
PD6-7000	163.000	263.65	Zone-1	Demand	Fixed	163.000	262.09	-2.217

**Scenario: VMC-2011 Average Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
596	120.30	900	Concrete	130.0	0.00	Open	-551.953	263.12	264.65	1.53	0.72	0.87
P-1	10.00	900	Concrete	130.0	0.04	Open	531.292	262.90	262.89	0.01	0.81	0.84
P-700	67.80	150	PVC	150.0	0.04	Open	12.692	262.78	262.57	0.21	3.17	0.72
P-1648	495.50	450	Concrete	120.0	0.00	Open	110.804	264.46	263.84	0.62	1.25	0.70
P-1574	853.30	750	Concrete	130.0	0.00	Open	-306.071	262.03	263.12	1.09	0.59	0.69
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	719.354	264.70	264.65	0.05	0.23	0.64
740	100.40	400	PVC	120.0	0.00	Open	-78.837	262.68	262.80	0.12	1.18	0.63
604	796.70	450	Concrete	120.0	0.00	Open	98.521	263.75	262.95	0.80	1.01	0.62
278	300.10	450	Concrete	120.0	0.00	Open	95.145	261.77	260.54	1.23	0.94	0.60
P-1024	159.50	300	PVC	120.0	0.00	Open	41.419	262.31	262.08	0.23	1.46	0.59
P-1567	348.80	300	PVC	120.0	0.00	Open	-41.348	261.93	263.88	1.96	1.45	0.58
597	225.30	450	Concrete	120.0	0.00	Open	89.368	264.65	264.46	0.19	0.84	0.56
982	848.50	900	Concrete	130.0	0.00	Open	354.610	262.69	262.11	0.59	0.32	0.56
P-1649	119.90	450	Concrete	120.0	0.00	Open	82.768	263.84	263.75	0.09	0.73	0.52
150	167.20	400	PVC	120.0	0.00	Open	-61.693	262.76	262.89	0.13	0.75	0.49
P-174	182.60	400	PVC	120.0	0.00	Open	-61.493	262.62	262.76	0.14	0.75	0.49
P-1634	724.70	150	PVC	150.0	0.04	Open	8.645	263.75	262.63	1.12	1.55	0.49
P-1573	262.50	750	Concrete	130.0	0.00	Open	-207.536	261.95	262.03	0.08	0.29	0.47
P-1585	342.60	400	PVC	120.0	0.04	Open	-56.355	262.29	262.50	0.22	0.64	0.45
258	245.40	600	Concrete	130.0	0.00	Open	124.073	261.95	261.87	0.08	0.33	0.44
655	806.70	400	PVC	120.0	0.00	Open	54.987	262.56	262.07	0.49	0.61	0.44
605	56.80	450	Concrete	120.0	0.00	Open	68.582	262.95	262.92	0.03	0.51	0.43
608	135.70	450	Concrete	120.0	0.00	Open	67.791	262.92	262.85	0.07	0.50	0.43
P-173	212.00	400	PVC	120.0	0.00	Open	-52.500	262.50	262.62	0.12	0.56	0.42
P-699	383.10	400	PVC	120.0	0.00	Open	52.276	262.57	262.36	0.21	0.55	0.42
612	314.30	450	Concrete	120.0	0.00	Open	65.348	262.85	262.70	0.15	0.47	0.41
P-1015	151.00	300	PVC	120.0	0.04	Open	28.036	263.84	263.73	0.11	0.71	0.40
618	064.00	900	Concrete	130.0	0.00	Open	-245.882	262.78	263.12	0.33	0.16	0.39
P-1657	109.60	300	PVC	120.0	0.04	Open	-24.478	263.75	263.81	0.06	0.55	0.35
598	132.50	400	PVC	120.0	0.00	Open	41.348	264.65	263.88	0.76	0.36	0.33
P-1584	253.10	400	PVC	120.0	0.04	Open	-41.002	262.20	262.29	0.09	0.35	0.33
P-698	309.20	400	PVC	120.0	0.00	Open	40.786	262.68	262.57	0.11	0.35	0.32
599	377.30	300	PVC	120.0	0.00	Open	-22.910	264.46	264.64	0.18	0.49	0.32
668	255.90	300	PVC	120.0	0.00	Open	22.672	261.96	261.83	0.12	0.48	0.32
637	417.50	400	PVC	120.0	0.00	Open	-40.273	262.64	262.78	0.14	0.34	0.32
P-1566	180.90	300	PVC	120.0	0.00	Open	-22.648	261.84	261.93	0.09	0.48	0.32
620	101.40	300	PVC	120.0	0.00	Open	21.541	262.70	262.66	0.04	0.43	0.30
657	240.10	400	PVC	120.0	0.00	Open	38.127	262.07	262.00	0.07	0.31	0.30
P-1040	228.70	400	PVC	120.0	0.00	Open	37.401	262.26	262.19	0.07	0.30	0.30
P-3	300.00	900	Concrete	130.0	0.04	Open	-188.412	262.30	262.72	0.42	0.10	0.30
154	367.70	450	Concrete	120.0	0.00	Open	47.015	261.86	261.77	0.09	0.26	0.30
607	955.80	300	PVC	120.0	0.00	Open	20.746	262.95	262.56	0.39	0.40	0.29
P-1041	449.00	400	PVC	120.0	0.00	Open	36.831	262.19	262.06	0.13	0.29	0.29
594	406.40	400	PVC	120.0	0.00	Open	-36.685	264.53	264.65	0.12	0.29	0.29
351	008.70	900	Concrete	130.0	0.00	Open	185.125	262.89	262.80	0.10	0.10	0.29
P-1018	302.90	400	PVC	120.0	0.00	Open	36.237	262.68	262.31	0.36	0.28	0.29
P-1583	541.60	400	PVC	120.0	0.04	Open	-36.228	262.04	262.20	0.15	0.28	0.29
907	425.70	400	Concrete	120.0	0.00	Open	-36.044	262.64	262.76	0.12	0.28	0.29
654	531.30	400	PVC	120.0	0.00	Open	-35.279	262.56	262.70	0.14	0.27	0.28
P-1589	277.30	400	PVC	120.0	0.04	Open	-34.571	261.96	262.03	0.07	0.26	0.28
279	162.70	400	PVC	120.0	0.00	Open	-34.471	261.83	261.87	0.04	0.26	0.27
P-1591	239.60	400	PVC	120.0	0.04	Open	-33.871	261.87	261.93	0.06	0.25	0.27
P-1575	193.10	400	PVC	120.0	0.04	Open	33.559	262.03	261.98	0.05	0.24	0.27

**Scenario: VMC-2011 Average Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
674	252.90	900	Concrete	130.0	0.00	Open	163.000	262.11	262.09	0.02	0.08	0.26
P-1582	364.70	400	PVC	120.0	0.04	Open	-32.084	261.96	262.04	0.08	0.22	0.26
P-1017	258.70	400	PVC	120.0	0.00	Open	32.009	262.36	262.30	0.06	0.22	0.25
281	157.50	400	PVC	120.0	0.00	Open	-31.983	261.92	261.96	0.04	0.22	0.25
P-1042	487.90	400	PVC	120.0	0.00	Open	31.945	262.06	261.96	0.11	0.22	0.25
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-31.630	261.82	261.93	0.10	0.22	0.25
P-1572	127.40	600	Concrete	130.0	0.00	Open	-71.158	261.94	261.95	0.01	0.12	0.25
P-1577	103.20	600	Concrete	130.0	0.00	Open	-71.158	261.93	261.94	0.01	0.12	0.25
277	285.10	400	PVC	120.0	0.00	Open	-31.457	261.77	261.83	0.06	0.22	0.25
282	244.60	400	PVC	120.0	0.00	Open	30.726	261.92	261.87	0.05	0.21	0.24
P-180	643.30	300	PVC	120.0	0.00	Open	16.926	262.08	261.90	0.18	0.28	0.24
656	214.70	300	PVC	120.0	0.00	Open	16.860	262.07	262.01	0.06	0.28	0.24
296	242.60	400	PVC	120.0	0.00	Open	29.782	261.84	261.80	0.05	0.19	0.24
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-29.713	261.93	261.98	0.05	0.20	0.24
261	304.40	600	PVC	130.0	0.00	Open	63.706	261.87	261.84	0.03	0.10	0.23
265	189.30	300	PVC	120.0	0.00	Open	-15.648	261.84	261.88	0.05	0.24	0.22
P-990	150.30	1,050	Concrete	130.0	0.00	Open	191.610	262.11	262.10	0.01	0.05	0.22
284	99.50	400	PVC	120.0	0.00	Open	27.599	261.94	261.92	0.02	0.17	0.22
P-177	295.00	150	PVC	150.0	0.04	Open	-3.855	262.50	262.61	0.10	0.35	0.22
P-1003	232.30	400	PVC	120.0	0.00	Open	-27.265	262.26	262.30	0.04	0.17	0.22
P-1586	245.10	400	PVC	120.0	0.00	Open	-27.029	261.94	261.98	0.04	0.16	0.22
658	107.80	300	PVC	120.0	0.00	Open	15.061	262.01	261.99	0.02	0.22	0.21
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-26.625	261.88	261.93	0.05	0.16	0.21
P-2	100.00	900	Concrete	130.0	0.04	Open	-132.336	262.30	262.71	0.41	0.05	0.21
P-991	253.60	300	PVC	120.0	0.00	Open	14.457	261.88	261.83	0.05	0.21	0.20
263	342.30	300	PVC	120.0	0.00	Open	14.378	261.87	261.80	0.07	0.21	0.20
643	323.20	300	PVC	120.0	0.00	Open	14.327	262.70	262.63	0.07	0.20	0.20
264	186.80	300	PVC	120.0	0.00	Open	14.012	261.84	261.80	0.04	0.20	0.20
638	427.80	450	Concrete	120.0	0.00	Open	31.382	262.78	262.73	0.05	0.12	0.20
P-178	810.60	300	PVC	120.0	0.00	Open	13.817	262.08	261.93	0.15	0.19	0.20
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	220.039	262.75	262.69	0.06	0.02	0.19
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	13.404	261.87	261.82	0.05	0.18	0.19
262	286.30	500	Concrete	120.0	0.00	Open	37.117	261.87	261.84	0.03	0.10	0.19
P-25	292.20	400	PVC	120.0	0.04	Open	-23.552	261.76	261.80	0.04	0.13	0.19
P-1587	189.70	400	PVC	120.0	0.00	Open	-23.183	261.98	262.00	0.02	0.12	0.18
283	225.00	400	PVC	120.0	0.00	Open	-23.023	261.94	261.96	0.03	0.12	0.18
289	354.90	300	PVC	120.0	0.00	Open	12.924	261.89	261.83	0.06	0.17	0.18
P-989	293.90	900	Concrete	130.0	0.00	Open	-114.668	262.78	262.80	0.01	0.04	0.18
287	386.80	300	PVC	120.0	0.00	Open	12.387	261.89	261.83	0.06	0.16	0.18
297	257.90	300	PVC	120.0	0.00	Open	11.952	261.84	261.81	0.04	0.15	0.17
300	220.50	300	PVC	120.0	0.00	Open	-11.802	261.77	261.80	0.03	0.14	0.17
298	263.70	400	PVC	120.0	0.00	Open	20.608	261.80	261.77	0.03	0.10	0.16
152	079.00	900	Concrete	130.0	0.00	Open	101.627	262.76	262.69	0.07	0.03	0.16
P-179	327.70	300	PVC	120.0	0.00	Open	11.175	261.93	261.88	0.04	0.13	0.16
P-1001	996.20	900	Concrete	130.0	0.00	Open	-100.411	262.72	262.78	0.06	0.03	0.16
290	473.50	400	PVC	120.0	0.00	Open	-19.193	261.89	261.94	0.04	0.09	0.15
143	451.50	300	PVC	120.0	0.00	Open	-10.612	262.73	262.78	0.05	0.12	0.15
P-1565	274.40	400	PVC	120.0	0.04	Open	18.552	261.78	261.76	0.02	0.08	0.15
155	512.50	300	PVC	120.0	0.00	Open	-10.335	261.86	261.92	0.06	0.11	0.15
142	269.20	900	Concrete	130.0	0.00	Open	-90.554	262.78	262.78	0.01	0.03	0.14
672	235.20	300	PVC	120.0	0.00	Open	9.761	261.84	261.82	0.02	0.10	0.14
274	248.90	300	PVC	120.0	0.00	Open	-9.753	261.79	261.81	0.02	0.10	0.14
315	189.60	300	PVC	120.0	0.00	Open	-9.753	261.81	261.83	0.02	0.10	0.14



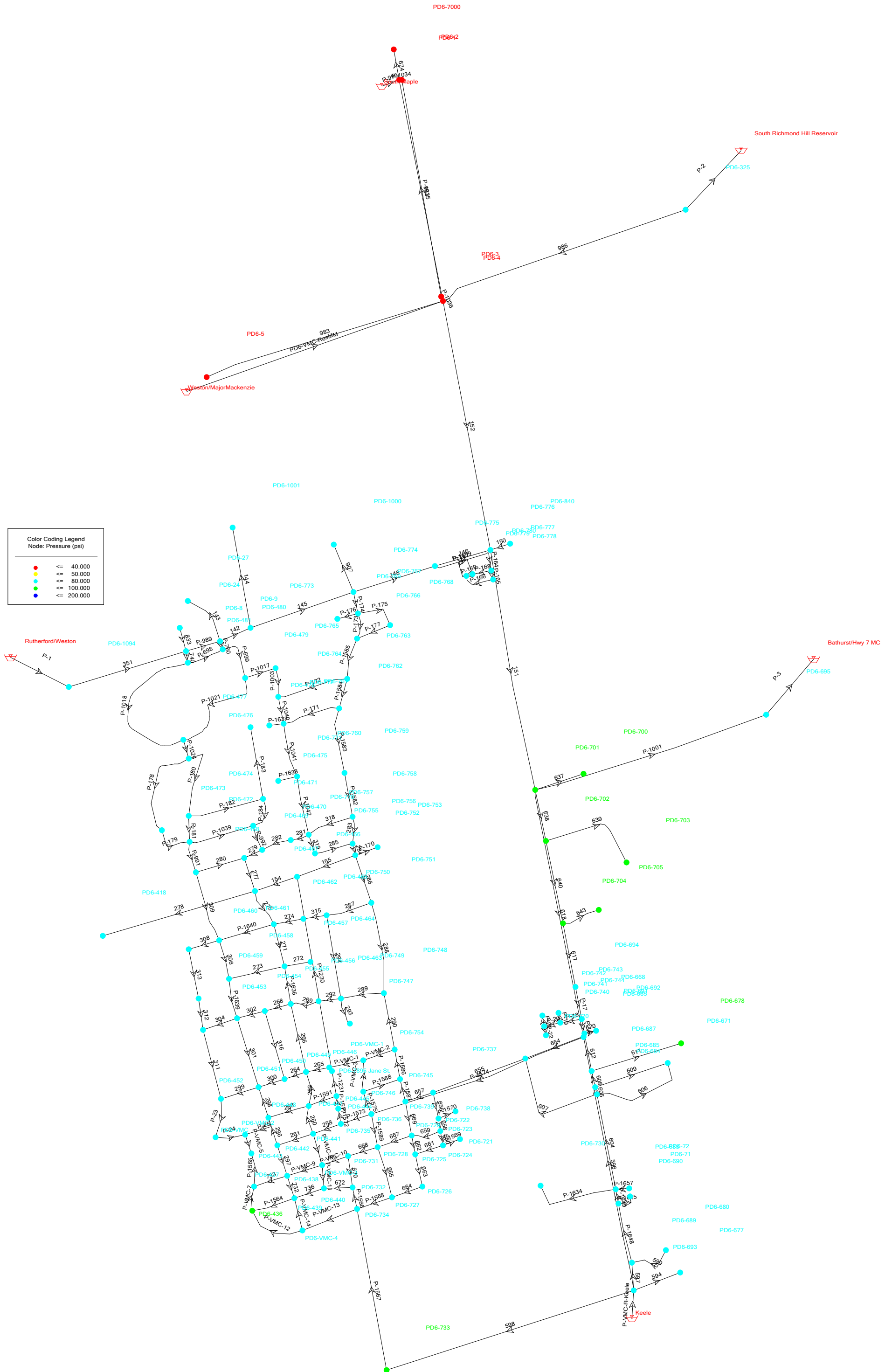
**Scenario: VMC-2011 Average Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
275	320.80	400	PVC	120.0	0.00	Open	16.673	261.79	261.77	0.02	0.07	0.13
145	898.70	900	Concrete	130.0	0.00	Open	84.207	262.78	262.76	0.02	0.02	0.13
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-16.615	261.79	261.82	0.03	0.07	0.13
P-1230	621.80	600	Concrete	130.0	0.00	Open	-37.287	261.86	261.92	0.06	0.04	0.13
P-1231	205.80	600	Concrete	130.0	0.00	Open	-37.287	261.92	261.93	0.01	0.04	0.13
P-1568	301.50	400	PVC	120.0	0.04	Open	-16.309	261.93	261.94	0.02	0.06	0.13
P-1569	148.90	150	PVC	100.0	0.04	Open	2.281	261.99	261.94	0.04	0.28	0.13
286	408.40	400	PVC	120.0	0.00	Open	16.148	261.92	261.89	0.03	0.06	0.13
733	284.70	300	PVC	120.0	0.00	Open	9.034	261.81	261.78	0.02	0.09	0.13
P-181	214.10	300	PVC	120.0	0.00	Open	8.910	261.90	261.88	0.02	0.08	0.13
659	251.40	300	PVC	120.0	0.00	Open	8.893	261.99	261.97	0.02	0.08	0.13
266	574.10	500	Concrete	120.0	0.00	Open	24.011	261.84	261.81	0.03	0.04	0.12
302	236.70	300	PVC	120.0	0.00	Open	-8.435	261.78	261.80	0.02	0.08	0.12
640	691.60	450	Concrete	120.0	0.00	Open	18.922	262.73	262.70	0.03	0.05	0.12
309	592.60	300	PVC	120.0	0.00	Open	-8.385	261.79	261.83	0.04	0.08	0.12
P-1021	873.60	400	PVC	120.0	0.00	Open	14.627	262.36	262.31	0.05	0.05	0.12
268	220.50	300	PVC	120.0	0.00	Open	7.904	261.81	261.80	0.01	0.07	0.11
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-13.912	261.82	261.83	0.01	0.05	0.11
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-7.375	261.80	261.82	0.02	0.06	0.10
P-1636	313.30	500	PVC	120.0	0.04	Open	-20.449	261.80	261.81	0.01	0.03	0.10
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-7.282	261.81	261.82	0.02	0.06	0.10
P-172	585.80	400	PVC	120.0	0.04	Open	-12.743	262.26	262.29	0.02	0.04	0.10
611	768.20	150	PVC	100.0	0.00	Open	1.791	262.85	262.71	0.14	0.18	0.10
271	351.20	400	PVC	120.0	0.00	Open	12.642	261.80	261.79	0.01	0.04	0.10
151	005.50	900	Concrete	130.0	0.00	Open	-62.001	262.76	262.78	0.03	0.01	0.10
292	186.70	300	PVC	120.0	0.00	Open	-6.844	261.83	261.83	0.01	0.05	0.10
269	232.80	300	PVC	120.0	0.00	Open	-6.844	261.81	261.83	0.01	0.05	0.10
319	159.50	300	PVC	120.0	0.00	Open	6.834	261.96	261.95	0.01	0.05	0.10
P-1564	361.00	300	PVC	120.0	0.00	Open	-6.649	261.79	261.80	0.02	0.05	0.09
736	252.00	300	PVC	120.0	0.00	Open	-6.353	261.80	261.82	0.01	0.05	0.09
144	836.00	300	PVC	120.0	0.00	Open	6.347	262.78	262.74	0.04	0.05	0.09
260	240.60	500	Concrete	120.0	0.00	Open	17.625	261.87	261.87	0.01	0.02	0.09
P-175	351.30	300	PVC	120.0	0.04	Open	-6.266	262.61	262.62	0.02	0.04	0.09
P-182	627.60	300	PVC	120.0	0.04	Open	6.249	261.90	261.87	0.03	0.04	0.09
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	6.169	261.82	261.82	0.01	0.04	0.09
308	258.70	300	PVC	120.0	0.00	Open	6.013	261.79	261.78	0.01	0.04	0.09
665	429.00	400	PVC	120.0	0.00	Open	-10.639	261.94	261.96	0.01	0.03	0.08
285	320.80	300	PVC	120.0	0.00	Open	-5.815	261.94	261.95	0.01	0.04	0.08
304	296.10	300	PVC	120.0	0.00	Open	5.810	261.78	261.77	0.01	0.04	0.08
667	293.20	300	PVC	120.0	0.00	Open	-5.808	261.96	261.97	0.01	0.04	0.08
273	464.80	300	PVC	120.0	0.00	Open	5.774	261.80	261.79	0.02	0.04	0.08
606	812.60	300	PVC	120.0	0.00	Open	5.683	262.95	262.92	0.03	0.04	0.08
663	273.70	300	PVC	120.0	0.00	Open	5.670	261.96	261.95	0.01	0.04	0.08
664	268.20	300	PVC	120.0	0.00	Open	5.670	261.95	261.94	0.01	0.04	0.08
660	120.50	300	PVC	120.0	0.00	Open	5.501	261.99	261.99	0.00	0.03	0.08
669	281.80	150	PVC	100.0	0.00	Open	-1.373	261.97	262.00	0.03	0.11	0.08
299	327.20	300	PVC	120.0	0.00	Open	5.407	261.77	261.76	0.01	0.03	0.08
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-9.518	261.78	261.79	0.00	0.02	0.08
833	196.10	400	PVC	120.0	0.00	Open	9.450	262.80	262.80	0.00	0.02	0.08
986	141.80	750	Concrete	130.0	0.00	Open	32.945	262.71	262.69	0.02	0.01	0.07
661	241.50	150	PVC	100.0	0.00	Open	1.211	261.99	261.96	0.02	0.09	0.07
662	161.60	300	PVC	120.0	0.00	Open	-4.459	261.96	261.97	0.00	0.02	0.06
318	396.50	400	PVC	120.0	0.00	Open	7.912	261.96	261.96	0.01	0.02	0.06

**Scenario: VMC-2011 Average Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1570	153.60	150	PVC	100.0	0.04	Open	1.039	262.01	262.00	0.01	0.06	0.06
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	-4.066	261.93	261.94	0.01	0.02	0.06
P-1039	545.60	300	PVC	120.0	0.00	Open	4.005	261.88	261.87	0.01	0.02	0.06
P-1588	316.50	300	PVC	120.0	0.04	Open	3.846	261.98	261.98	0.01	0.02	0.05
P-16	121.90	450	Concrete	120.0	0.00	Open	8.527	262.70	262.70	0.00	0.01	0.05
670	258.40	300	PVC	120.0	0.00	Open	-3.681	261.83	261.84	0.00	0.02	0.05
301	586.80	300	PVC	120.0	0.00	Open	-3.672	261.77	261.78	0.01	0.02	0.05
311	583.70	300	PVC	120.0	0.00	Open	-3.604	261.76	261.77	0.01	0.02	0.05
639	865.40	300	PVC	120.0	0.00	Open	3.564	262.73	262.72	0.01	0.02	0.05
P-1639	337.50	300	PVC	120.0	0.04	Open	3.530	261.79	261.78	0.01	0.02	0.05
313	407.00	300	PVC	120.0	0.00	Open	-3.394	261.77	261.78	0.01	0.01	0.05
P-992	211.80	400	PVC	120.0	0.00	Open	5.779	261.87	261.87	0.00	0.01	0.05
732	195.50	300	PVC	120.0	0.00	Open	2.889	261.81	261.80	0.00	0.01	0.04
293	225.20	300	PVC	120.0	0.00	Open	2.678	261.83	261.83	0.00	0.01	0.04
P-18	176.70	300	PVC	120.0	0.04	Open	2.668	262.70	262.70	0.00	0.01	0.04
P-168	159.40	150	PVC	150.0	0.04	Open	-0.660	262.76	262.76	0.00	0.01	0.04
P-1159	488.00	600	PVC	150.0	0.04	Open	-10.556	262.76	262.76	0.00	0.00	0.04
P-17	267.60	450	Concrete	120.0	0.00	Open	5.860	262.70	262.70	0.00	0.01	0.04
146	474.30	600	Concrete	130.0	0.00	Open	-9.301	262.76	262.76	0.00	0.00	0.03
P-1640	465.50	300	PVC	120.0	0.04	Open	-2.324	261.79	261.79	0.00	0.01	0.03
316	576.90	300	PVC	120.0	0.00	Open	-2.210	261.80	261.80	0.00	0.01	0.03
P-164	174.90	300	PVC	120.0	0.04	Open	2.210	262.76	262.76	0.00	0.01	0.03
148	701.50	900	Concrete	130.0	0.00	Open	19.857	262.76	262.76	0.00	0.00	0.03
P-184	278.60	400	PVC	120.0	0.04	Open	-3.567	261.87	261.87	0.00	0.00	0.03
P-166	264.10	150	PVC	150.0	0.04	Open	0.490	262.76	262.76	0.00	0.01	0.03
P-171	478.60	300	PVC	120.0	0.04	Open	-1.889	262.19	262.20	0.00	0.00	0.03
P-20	137.00	300	PVC	120.0	0.04	Open	1.648	262.70	262.70	0.00	0.00	0.02
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	2.862	261.76	261.76	0.00	0.00	0.02
280	416.10	300	PVC	120.0	0.00	Open	-1.581	261.83	261.83	0.00	0.00	0.02
288	750.60	400	PVC	120.0	0.00	Open	-2.718	261.89	261.89	0.00	0.00	0.02
294	696.40	300	PVC	120.0	0.00	Open	1.502	261.83	261.83	0.00	0.00	0.02
P-21	87.00	200	PVC	110.0	0.04	Open	0.533	262.70	262.70	0.00	0.00	0.02
312	261.10	300	PVC	120.0	0.00	Open	-1.174	261.77	261.77	0.00	0.00	0.02
P-170	192.30	300	PVC	120.0	0.04	Open	1.116	261.92	261.92	0.00	0.00	0.02
P-19	87.00	200	PVC	110.0	0.04	Open	0.496	262.70	262.70	0.00	0.00	0.02
P-165	74.90	300	PVC	120.0	0.04	Open	0.961	262.76	262.76	0.00	0.00	0.01
P-176	176.50	300	PVC	120.0	0.04	Open	0.916	262.62	262.62	0.00	0.00	0.01
306	327.30	300	PVC	120.0	0.00	Open	-0.844	261.79	261.79	0.00	0.00	0.01
P-22	72.80	300	PVC	120.0	0.04	Open	0.787	262.70	262.70	0.00	0.00	0.01
P-183	591.40	400	PVC	120.0	0.04	Open	0.887	261.87	261.87	0.00	0.00	0.01
609	623.30	150	PVC	100.0	0.00	Open	0.115	262.92	262.92	0.00	0.00	0.01
617	531.70	450	Concrete	120.0	0.00	Open	0.895	262.70	262.70	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.063	262.76	262.76	0.00	0.00	0.00
P-167	350.30	150	PVC	150.0	0.04	Open	0.040	262.76	262.76	0.00	0.00	0.00
P-24	246.00	300	PVC	120.0	0.39	Open	-0.146	261.76	261.76	0.00	0.00	0.00
P-23	325.20	300	PVC	120.0	0.39	Open	-0.146	261.76	261.76	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	261.80	261.80	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	262.06	262.06	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	262.19	262.19	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	262.11	262.11	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	0.000	262.11	262.11	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	262.69	262.69	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	262.69	262.11	0.00	0.00	0.00

# Scenario: VMC-2011 Max Day



Color Coding Legend	
Node: Pressure (psi)	
Red	<= 40,000
Orange	<= 50,000
Yellow	<= 80,000
Green	<= 100,000
Blue	<= 200,000

**Scenario: VMC-2011 Max Day  
Steady State Analysis  
Reservoir Report**

Label	Elevation (m)	Zone	Inflow (l/s)	Calculated Hydraulic Grade (m)
South Maple	259.70	Zone-1	-213.613	259.70
Rutherford/Weston	260.00	Zone-1	1,281.270	260.00
South Richmond Hill Res	259.00	Zone-1	189.377	259.00
Bathurst/Hwy 7 MC	256.00	Zone-1	370.570	256.00
Weston/MajorMackenzie	260.00	Zone-1	-483.856	260.00
Keele	257.00	Zone-1	-352.484	257.00

**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	255.90	98.373
PD6-705	11.351	196.11	Zone-1	Demand	Fixed	11.351	256.17	85.247
PD6-702	17.792	198.20	Zone-1	Demand	Fixed	17.792	256.82	83.211
PD6-678	1.556	197.43	Zone-1	Demand	Fixed	1.556	255.71	82.722
PD6-704	10.980	198.21	Zone-1	Demand	Fixed	10.980	256.21	82.327
PD6-436	27.492	195.10	Zone-1	Demand	Fixed	27.492	252.74	81.819
PD6-703	14.517	199.94	Zone-1	Demand	Fixed	14.517	256.64	80.485
PD6-701	23.631	200.90	Zone-1	Demand	Fixed	23.631	257.48	80.318
PD6-700	16.342	200.90	Zone-1	Demand	Fixed	16.342	257.46	80.280
PD6-685	1.351	199.75	Zone-1	Demand	Fixed	1.351	255.83	79.602
PD6-VMC-4	15.279	196.90	Zone-1	Demand	Fixed	15.279	252.83	79.390
PD6-443	42.827	196.80	Zone-1	Demand	Fixed	42.827	252.69	79.332
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	256.80	79.210
PD6-439	19.937	197.15	Zone-1	Demand	Fixed	19.937	252.79	78.981
PD6-692	10.264	200.39	Zone-1	Demand	Fixed	10.264	255.77	78.608
PD6-687	1.304	201.00	Zone-1	Demand	Fixed	1.304	255.81	77.804
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	255.78	77.757
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	255.82	77.432
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	252.73	77.125
PD6-740	1.574	201.51	Zone-1	Demand	Fixed	1.574	255.81	77.080
PD6-744	1.047	201.52	Zone-1	Demand	Fixed	1.047	255.81	77.069
PD6-684	7.021	201.60	Zone-1	Demand	Fixed	7.021	255.84	76.988
PD6-743	0.992	201.60	Zone-1	Demand	Fixed	0.992	255.81	76.954
PD6-742	1.067	201.66	Zone-1	Demand	Fixed	1.067	255.81	76.866
PD6-694	9.929	201.81	Zone-1	Demand	Fixed	9.929	255.93	76.817
PD6-741	0.655	201.74	Zone-1	Demand	Fixed	0.655	255.81	76.754
PD6-731	24.883	198.85	Zone-1	Demand	Fixed	24.883	252.92	76.747
PD6-734	6.758	199.68	Zone-1	Demand	Fixed	6.758	253.12	75.858
PD6-438	14.622	199.41	Zone-1	Demand	Fixed	14.622	252.80	75.781
PD6-735	24.611	200.60	Zone-1	Demand	Fixed	24.611	253.52	75.118
PD6-677	45.401	204.11	Zone-1	Demand	Fixed	45.401	256.81	74.810
PD6-680	17.849	204.33	Zone-1	Inflow	Fixed	-17.849	256.94	74.680
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	253.49	74.509
PD6-440	19.154	200.75	Zone-1	Demand	Fixed	19.154	252.85	73.948
PD6-695	361.387	205.50	Zone-1	Inflow	Fixed	-361.387	257.48	73.788
PD6-VMC-2	41.090	201.20	Zone-1	Demand	Fixed	41.090	252.70	73.101
PD6-720	2.077	204.00	Zone-1	Demand	Fixed	2.077	255.23	72.723
PD6-VMC-3	27.728	201.90	Zone-1	Demand	Fixed	27.728	252.89	72.385
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	256.99	72.372
PD6-732	18.412	202.00	Zone-1	Demand	Fixed	18.412	252.92	72.275
PD6-442	43.945	202.00	Zone-1	Demand	Fixed	43.945	252.87	72.202
PD6-71	27.355	205.42	Zone-1	Demand	Fixed	27.355	256.24	72.143
PD6-689	2.947	206.10	Zone-1	Demand	Fixed	2.947	256.83	72.004
PD6-736	60.811	203.00	Zone-1	Demand	Fixed	60.811	253.71	71.982
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	253.26	71.884
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	253.60	71.832
PD6-441	58.677	202.80	Zone-1	Demand	Fixed	58.677	253.29	71.673
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	253.47	71.637
PD6-72	20.237	205.91	Zone-1	Inflow	Fixed	-20.237	256.33	71.565
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	253.28	71.010
PD6-728	14.134	203.54	Zone-1	Demand	Fixed	14.134	253.36	70.722
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	252.83	70.432
PD6-VMC-1	14.306	204.00	Zone-1	Demand	Fixed	14.306	253.48	70.234
PD6-683	0.161	206.84	Zone-1	Demand	Fixed	0.161	256.28	70.184

**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	253.46	69.923
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	253.32	69.922
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	253.27	69.719
PD6-747	5.357	204.37	Zone-1	Demand	Fixed	5.357	253.31	69.475
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	252.73	69.450
PD6-451	61.350	203.91	Zone-1	Demand	Fixed	61.350	252.81	69.408
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	253.05	69.387
PD6-671	5.260	207.07	Zone-1	Demand	Fixed	5.260	255.82	69.193
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	256.35	68.768
PD6-449	29.485	204.85	Zone-1	Demand	Fixed	29.485	253.22	68.655
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	253.40	68.435
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	253.38	68.302
PD6-457	4.065	205.09	Zone-1	Demand	Fixed	4.065	253.20	68.283
PD6-749	3.800	205.34	Zone-1	Demand	Fixed	3.800	253.32	68.109
PD6-754	7.540	205.80	Zone-1	Demand	Fixed	7.540	253.54	67.762
PD6-456	5.004	205.49	Zone-1	Demand	Fixed	5.004	253.20	67.718
PD6-458	6.176	205.46	Zone-1	Demand	Fixed	6.176	253.11	67.635
PD6-446	21.955	205.70	Zone-1	Demand	Fixed	21.955	253.34	67.621
PD6-454	4.966	205.79	Zone-1	Demand	Fixed	4.966	252.99	67.002
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	253.60	66.856
PD6-455	3.358	206.02	Zone-1	Demand	Fixed	3.358	253.07	66.779
PD6-461	7.704	206.12	Zone-1	Demand	Fixed	7.704	253.15	66.762
PD6-724	4.018	206.58	Zone-1	Demand	Fixed	4.018	253.47	66.564
PD6-459	4.440	206.13	Zone-1	Demand	Fixed	4.440	252.97	66.481
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	253.82	66.460
PD6-748	7.101	206.77	Zone-1	Demand	Fixed	7.101	253.52	66.360
PD6-739	27.143	206.90	Zone-1	Demand	Fixed	27.143	253.64	66.344
PD6-460	5.237	206.42	Zone-1	Demand	Fixed	5.237	253.05	66.196
PD6-452	18.313	206.27	Zone-1	Demand	Fixed	18.313	252.76	65.997
PD6-723	1.333	207.16	Zone-1	Demand	Fixed	1.333	253.49	65.764
PD6-468	8.981	207.28	Zone-1	Demand	Fixed	8.981	253.60	65.755
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	257.51	65.459
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	253.20	65.260
PD6-453	6.760	207.00	Zone-1	Demand	Fixed	6.760	252.94	65.205
PD6-779	1.025	212.93	Zone-1	Demand	Fixed	1.025	258.84	65.166
PD6-722	1.521	207.71	Zone-1	Demand	Fixed	1.521	253.59	65.120
PD6-753	2.232	208.21	Zone-1	Demand	Fixed	2.232	253.87	64.820
PD6-462	6.797	208.06	Zone-1	Demand	Fixed	6.797	253.20	64.080
PD6-473	5.284	209.20	Zone-1	Demand	Fixed	5.284	254.28	63.984
PD6-780	1.274	213.94	Zone-1	Demand	Fixed	1.274	258.84	63.732
PD6-769	1.832	213.39	Zone-1	Demand	Fixed	1.832	258.15	63.531
PD6-767	3.622	213.50	Zone-1	Demand	Fixed	3.622	258.15	63.376
PD6-751	12.959	209.00	Zone-1	Demand	Fixed	12.959	253.59	63.289
PD6-756	2.479	209.46	Zone-1	Demand	Fixed	2.479	254.04	63.280
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	253.88	63.146
PD6-472	3.248	209.66	Zone-1	Demand	Fixed	3.248	253.97	62.896
PD6-738	2.077	209.25	Zone-1	Demand	Fixed	2.077	253.55	62.883
PD6-758	2.298	210.08	Zone-1	Demand	Fixed	2.298	254.28	62.745
PD6-763	5.220	212.22	Zone-1	Demand	Fixed	5.220	256.32	62.593
PD6-768	4.823	214.02	Zone-1	Demand	Fixed	4.823	258.07	62.533
PD6-721	4.562	209.30	Zone-1	Demand	Fixed	4.562	253.32	62.491
PD6-469	9.190	210.09	Zone-1	Demand	Fixed	9.190	253.60	61.759
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	253.21	61.153
PD6-762	5.770	212.73	Zone-1	Demand	Fixed	5.770	255.79	61.123

**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	258.86	60.838
PD6-1094	738.451	217.10	Zone-1	Demand	Fixed	738.451	259.96	60.835
PD6-730	17.289	209.40	Zone-1	Demand	Fixed	17.289	252.23	60.796
PD6-470	4.067	211.22	Zone-1	Demand	Fixed	4.067	253.85	60.512
PD6-759	8.287	212.38	Zone-1	Demand	Fixed	8.287	254.83	60.259
PD6-418	144.174	208.19	Zone-1	Demand	Fixed	144.174	250.56	60.148
PD6-778	0.942	216.78	Zone-1	Demand	Fixed	0.942	258.85	59.711
PD6-474	3.533	212.05	Zone-1	Demand	Fixed	3.533	254.09	59.678
PD6-750	8.270	211.62	Zone-1	Demand	Fixed	8.270	253.33	59.200
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	259.08	59.123
PD6-774	13.054	217.25	Zone-1	Demand	Fixed	13.054	258.87	59.075
PD6-760	9.771	213.57	Zone-1	Demand	Fixed	9.771	254.98	58.787
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	254.98	58.361
PD6-765	9.488	215.54	Zone-1	Demand	Fixed	9.488	256.47	58.098
PD6-755	2.037	213.37	Zone-1	Demand	Fixed	2.037	254.18	57.934
PD6-764	5.212	215.49	Zone-1	Demand	Fixed	5.212	256.21	57.798
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	253.27	57.564
PD6-471	3.587	213.41	Zone-1	Demand	Fixed	3.587	253.88	57.439
PD6-9	1.620	218.81	Zone-1	Demand	Fixed	1.620	259.15	57.262
PD6-840	58.965	218.78	Zone-1	Inflow	Fixed	-58.965	258.97	57.042
PD6-757	2.082	214.34	Zone-1	Demand	Fixed	2.082	254.27	56.676
PD6-777	1.179	218.95	Zone-1	Demand	Fixed	1.179	258.85	56.631
PD6-479	11.280	217.00	Zone-1	Demand	Fixed	11.280	256.83	56.537
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	258.85	55.998
PD6-466	1.214	214.31	Zone-1	Demand	Fixed	1.214	253.40	55.490
PD6-27	22.766	220.09	Zone-1	Demand	Fixed	22.766	258.93	55.137
PD6-475	3.591	215.17	Zone-1	Demand	Fixed	3.591	253.89	54.958
PD6-761	4.919	217.14	Zone-1	Demand	Fixed	4.919	255.79	54.856
PD6-480	2.405	220.00	Zone-1	Demand	Fixed	2.405	258.00	53.946
PD6-481	3.628	220.90	Zone-1	Demand	Fixed	3.628	258.60	53.519
PD6-24	28.011	221.64	Zone-1	Inflow	Fixed	-28.011	259.29	53.438
PD6-477	18.890	219.28	Zone-1	Demand	Fixed	18.890	256.61	52.985
PD6-476	21.350	218.20	Zone-1	Demand	Fixed	21.350	255.28	52.630
PD6-8	2.140	222.21	Zone-1	Demand	Fixed	2.140	259.25	52.580
PD6-325	239.683	222.88	Zone-1	Inflow	Fixed	-239.683	259.81	52.415
PD6-770	2.515	217.18	Zone-1	Demand	Fixed	2.515	254.10	52.404
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	255.79	52.244
PD6-1001	12.480	222.42	Zone-1	Demand	Fixed	12.480	258.95	51.853
PD6-478	1.773	217.41	Zone-1	Demand	Fixed	1.773	253.89	51.777
PD6-1000	79.873	222.98	Zone-1	Demand	Fixed	79.873	258.35	50.210
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	259.76	34.821
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.76	25.992
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.69	25.893
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.69	-1.148
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.69	-1.148
PD6-7000	326.000	263.65	Zone-1	Demand	Fixed	326.000	259.62	-5.717

**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1	10.00	900	Concrete	130.0	0.04	Open	281.270	260.00	259.96	0.04	4.26	2.01
P-700	67.80	150	PVC	150.0	0.04	Open	31.330	259.15	258.00	1.15	16.91	1.77
740	100.40	400	PVC	120.0	0.00	Open	-197.317	258.60	259.25	0.65	6.46	1.57
P-1024	159.50	300	PVC	120.0	0.00	Open	106.247	256.61	255.28	1.33	8.34	1.50
P-1574	853.30	750	Concrete	130.0	0.00	Open	-537.513	253.71	256.80	3.09	1.67	1.22
P-174	182.60	400	PVC	120.0	0.00	Open	-151.142	258.15	258.87	0.72	3.94	1.20
P-1585	342.60	400	PVC	120.0	0.04	Open	-140.866	256.32	257.51	1.19	3.47	1.12
P-699	383.10	400	PVC	120.0	0.00	Open	131.907	258.00	256.83	1.17	3.07	1.05
P-173	212.00	400	PVC	120.0	0.00	Open	-131.134	257.51	258.15	0.64	3.03	1.04
P-1634	724.70	150	PVC	150.0	0.04	Open	17.289	256.28	252.23	4.05	5.59	0.98
278	300.10	450	Concrete	120.0	0.00	Open	144.174	253.21	250.56	2.65	2.04	0.91
351	008.70	900	Concrete	130.0	0.00	Open	542.819	259.96	259.25	0.71	0.70	0.85
P-1584	253.10	400	PVC	120.0	0.04	Open	-106.740	255.79	256.32	0.53	2.08	0.85
151	005.50	900	Concrete	130.0	0.00	Open	535.429	258.85	257.48	1.37	0.68	0.84
P-698	309.20	400	PVC	120.0	0.00	Open	102.983	258.60	258.00	0.60	1.94	0.82
P-1040	228.70	400	PVC	120.0	0.00	Open	100.402	256.21	255.79	0.42	1.85	0.80
P-1041	449.00	400	PVC	120.0	0.00	Open	98.447	255.79	254.98	0.80	1.78	0.78
638	427.80	450	Concrete	120.0	0.00	Open	124.318	257.48	256.82	0.66	1.55	0.78
P-1583	541.60	400	PVC	120.0	0.04	Open	-98.005	254.83	255.79	0.96	1.77	0.78
P-1573	262.50	750	Concrete	130.0	0.00	Open	-343.413	253.52	253.71	0.19	0.73	0.78
655	806.70	400	PVC	120.0	0.00	Open	97.469	255.23	253.82	1.41	1.75	0.78
258	245.40	600	Concrete	130.0	0.00	Open	217.377	253.52	253.29	0.23	0.93	0.77
284	99.50	400	PVC	120.0	0.00	Open	94.451	254.04	253.88	0.16	1.65	0.75
279	162.70	400	PVC	120.0	0.00	Open	-91.128	253.60	253.85	0.25	1.55	0.73
P-1018	302.90	400	PVC	120.0	0.00	Open	90.707	258.60	256.61	2.00	1.53	0.72
P-1582	364.70	400	PVC	120.0	0.04	Open	-89.718	254.28	254.83	0.55	1.50	0.71
P-1567	348.80	300	PVC	120.0	0.00	Open	-49.970	253.12	255.90	2.78	2.06	0.71
P-1042	487.90	400	PVC	120.0	0.00	Open	88.676	254.98	254.27	0.72	1.47	0.71
261	304.40	400	PVC	120.0	0.00	Open	86.496	253.29	252.87	0.43	1.40	0.69
P-1017	258.70	400	PVC	120.0	0.00	Open	86.197	256.83	256.47	0.36	1.39	0.69
277	285.10	400	PVC	120.0	0.00	Open	-85.017	253.21	253.60	0.39	1.36	0.68
P-180	643.30	300	PVC	120.0	0.00	Open	47.014	255.28	254.09	1.18	1.84	0.67
152	079.00	900	Concrete	130.0	0.00	Open	-421.775	258.85	259.76	0.91	0.44	0.66
P-1589	277.30	400	PVC	120.0	0.04	Open	-81.315	253.36	253.71	0.35	1.25	0.65
668	255.90	300	PVC	120.0	0.00	Open	45.604	253.36	252.92	0.45	1.74	0.65
907	425.70	400	Concrete	120.0	0.00	Open	-79.873	258.35	258.87	0.52	1.21	0.64
P-1003	232.30	400	PVC	120.0	0.00	Open	-76.709	256.21	256.47	0.26	1.12	0.61
P-1648	495.50	450	Concrete	120.0	0.00	Open	96.456	256.83	256.35	0.48	0.97	0.61
281	157.50	400	PVC	120.0	0.00	Open	-75.047	254.10	254.27	0.17	1.08	0.60
283	225.00	400	PVC	120.0	0.00	Open	-75.044	254.04	254.28	0.24	1.08	0.60
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	41.528	253.29	252.89	0.40	1.49	0.59
P-989	293.90	900	Concrete	130.0	0.00	Open	-371.373	259.15	259.25	0.10	0.35	0.58
P-991	253.60	300	PVC	120.0	0.00	Open	41.217	253.97	253.60	0.37	1.44	0.58
P-3	300.00	900	Concrete	130.0	0.04	Open	-370.570	256.00	257.48	1.48	0.34	0.58
654	531.30	400	PVC	120.0	0.00	Open	-73.156	255.23	255.78	0.55	1.03	0.58
640	691.60	450	Concrete	120.0	0.00	Open	92.010	256.82	256.21	0.61	0.89	0.58
282	244.60	400	PVC	120.0	0.00	Open	72.532	254.10	253.85	0.25	1.01	0.58
618	064.00	900	Concrete	130.0	0.00	Open	361.954	257.48	256.80	0.68	0.33	0.57
263	342.30	300	PVC	120.0	0.00	Open	39.056	253.28	252.83	0.45	1.31	0.55
P-177	295.00	150	PVC	150.0	0.04	Open	-9.732	257.51	258.07	0.57	1.93	0.55
P-178	810.60	300	PVC	120.0	0.00	Open	37.884	255.28	254.28	1.00	1.23	0.54
597	225.30	450	Concrete	120.0	0.00	Open	81.554	256.99	256.83	0.16	0.71	0.51
674	252.90	900	Concrete	130.0	0.00	Open	326.000	259.69	259.62	0.07	0.27	0.51



**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1566	180.90	300	PVC	120.0	0.00	Open	-36.048	252.92	253.12	0.20	1.13	0.51
P-1591	239.60	400	PVC	120.0	0.04	Open	-63.775	253.28	253.47	0.19	0.80	0.51
300	220.50	300	PVC	120.0	0.00	Open	-35.822	252.81	253.05	0.25	1.11	0.51
656	214.70	300	PVC	120.0	0.00	Open	35.443	253.82	253.59	0.23	1.09	0.50
142	269.20	900	Concrete	130.0	0.00	Open	-315.657	259.08	259.15	0.07	0.26	0.50
657	240.10	400	PVC	120.0	0.00	Open	62.026	253.82	253.64	0.18	0.76	0.49
145	898.70	900	Concrete	130.0	0.00	Open	303.177	259.08	258.87	0.21	0.24	0.48
286	408.40	400	PVC	120.0	0.00	Open	59.805	253.88	253.59	0.29	0.71	0.48
150	167.20	400	PVC	120.0	0.00	Open	-58.965	258.85	258.97	0.12	0.69	0.47
P-179	327.70	300	PVC	120.0	0.00	Open	32.599	254.28	253.97	0.31	0.94	0.46
155	512.50	300	PVC	120.0	0.00	Open	-32.415	253.40	253.88	0.47	0.93	0.46
604	796.70	450	Concrete	120.0	0.00	Open	71.888	256.28	255.84	0.45	0.56	0.45
658	107.80	300	PVC	120.0	0.00	Open	31.845	253.59	253.49	0.10	0.90	0.45
264	186.80	300	PVC	120.0	0.00	Open	31.512	253.22	253.05	0.16	0.88	0.45
617	531.70	450	Concrete	120.0	0.00	Open	-69.679	255.93	256.21	0.28	0.53	0.44
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-54.879	252.83	253.12	0.29	0.61	0.44
P-1649	119.90	450	Concrete	120.0	0.00	Open	69.101	256.35	256.28	0.06	0.52	0.43
154	367.70	450	Concrete	120.0	0.00	Open	68.852	253.40	253.21	0.19	0.52	0.43
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	483.856	260.00	259.76	0.24	0.11	0.43
P-1575	193.10	400	PVC	120.0	0.04	Open	51.974	253.71	253.60	0.11	0.55	0.41
309	592.60	300	PVC	120.0	0.00	Open	-29.157	253.15	253.60	0.45	0.76	0.41
598	132.50	400	PVC	120.0	0.00	Open	49.970	256.99	255.90	1.08	0.51	0.40
P-1015	151.00	300	PVC	120.0	0.04	Open	27.355	256.35	256.24	0.10	0.68	0.39
287	386.80	300	PVC	120.0	0.00	Open	27.324	253.59	253.33	0.26	0.67	0.39
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-48.563	253.34	253.48	0.14	0.49	0.39
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-48.329	253.48	253.60	0.13	0.49	0.38
P-1568	301.50	400	PVC	120.0	0.04	Open	-47.715	253.12	253.26	0.14	0.47	0.38
265	189.30	300	PVC	120.0	0.00	Open	-26.608	253.22	253.34	0.12	0.64	0.38
P-17	267.60	450	Concrete	120.0	0.00	Open	-59.749	255.82	255.93	0.11	0.40	0.38
607	955.80	300	PVC	120.0	0.00	Open	26.390	255.84	255.23	0.60	0.63	0.37
P-25	292.20	400	PVC	120.0	0.04	Open	-46.436	252.70	252.83	0.13	0.44	0.37
268	220.50	300	PVC	120.0	0.00	Open	25.577	253.20	253.07	0.13	0.60	0.36
594	406.40	400	PVC	120.0	0.00	Open	-45.401	256.81	256.99	0.17	0.43	0.36
P-1572	127.40	600	Concrete	130.0	0.00	Open	-101.426	253.49	253.52	0.03	0.23	0.36
P-1577	103.20	600	Concrete	130.0	0.00	Open	-101.426	253.47	253.49	0.02	0.23	0.36
P-181	214.10	300	PVC	120.0	0.00	Open	24.999	254.09	253.97	0.12	0.57	0.35
289	354.90	300	PVC	120.0	0.00	Open	24.663	253.52	253.32	0.20	0.56	0.35
P-16	121.90	450	Concrete	120.0	0.00	Open	-54.414	255.78	255.82	0.04	0.34	0.34
319	159.50	300	PVC	120.0	0.00	Open	23.924	254.27	254.18	0.08	0.53	0.34
143	451.50	300	PVC	120.0	0.00	Open	-22.766	258.93	259.15	0.22	0.48	0.32
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	352.484	257.00	256.99	0.01	0.06	0.31
285	320.80	300	PVC	120.0	0.00	Open	-21.886	254.04	254.18	0.14	0.45	0.31
P-2	100.00	900	Concrete	130.0	0.04	Open	-189.377	259.00	259.81	0.81	0.10	0.30
P-1657	109.60	300	PVC	120.0	0.04	Open	-20.237	256.28	256.33	0.04	0.39	0.29
308	258.70	300	PVC	120.0	0.00	Open	20.099	253.15	253.05	0.10	0.38	0.28
262	286.30	500	Concrete	120.0	0.00	Open	55.393	253.28	253.22	0.06	0.21	0.28
596	120.30	900	Concrete	130.0	0.00	Open	-175.558	256.80	256.99	0.18	0.09	0.28
P-1021	873.60	400	PVC	120.0	0.00	Open	34.431	256.83	256.61	0.22	0.25	0.27
P-1586	245.10	400	PVC	120.0	0.00	Open	-34.322	253.54	253.60	0.06	0.25	0.27
659	251.40	300	PVC	120.0	0.00	Open	19.173	253.49	253.40	0.09	0.35	0.27
P-1639	337.50	300	PVC	120.0	0.04	Open	18.993	253.11	252.99	0.12	0.34	0.27
665	429.00	400	PVC	120.0	0.00	Open	-32.980	253.26	253.36	0.10	0.24	0.26
P-182	627.60	300	PVC	120.0	0.04	Open	18.481	254.09	253.89	0.21	0.33	0.26

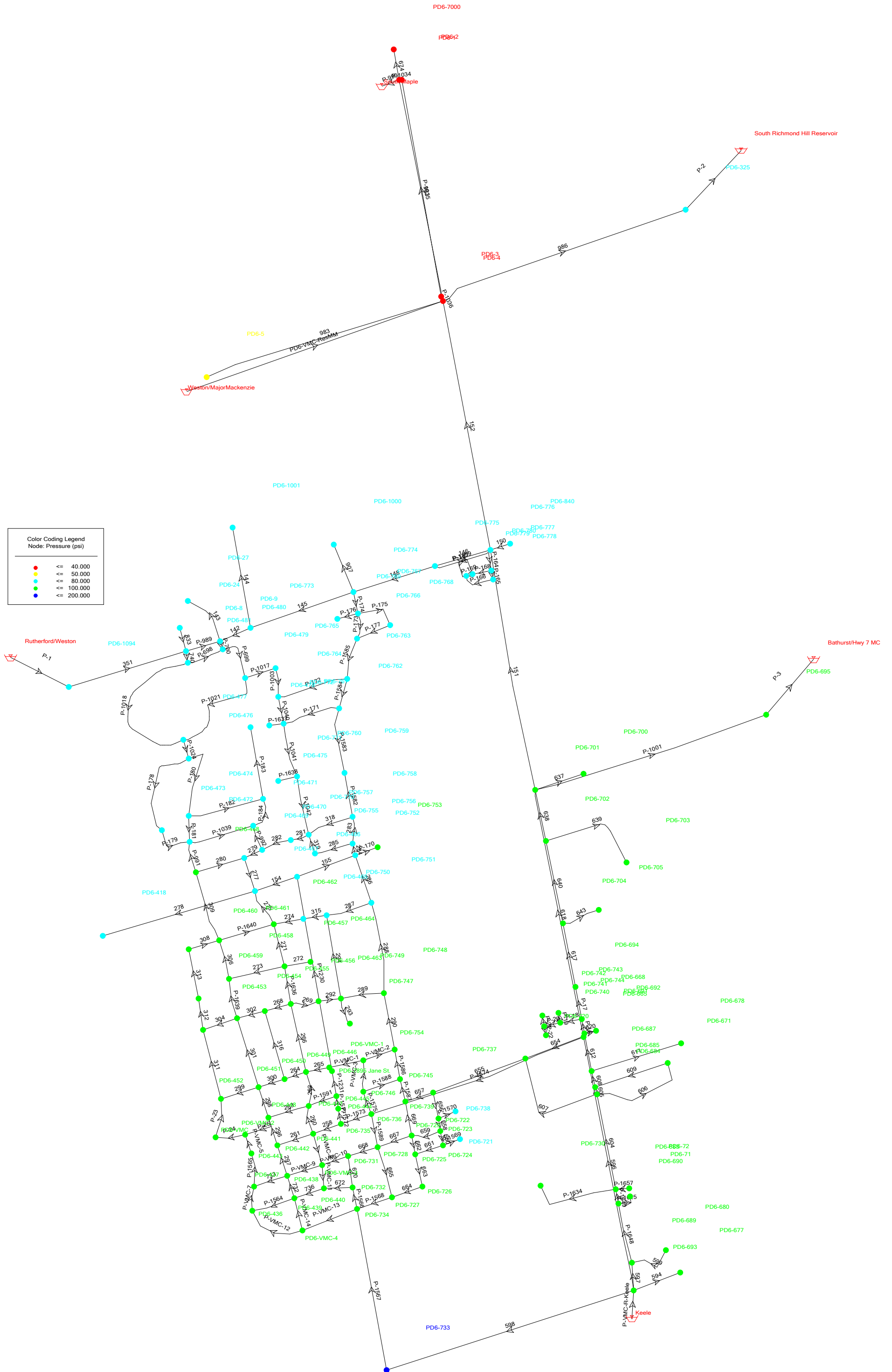
**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-18.274	252.80	252.89	0.10	0.32	0.26
P-1569	148.90	150	PVC	100.0	0.04	Open	4.562	253.47	253.32	0.15	1.01	0.26
301	586.80	300	PVC	120.0	0.00	Open	-18.138	252.81	252.99	0.19	0.32	0.26
302	236.70	300	PVC	120.0	0.00	Open	-17.908	252.99	253.07	0.07	0.31	0.25
599	377.30	300	PVC	120.0	0.00	Open	-17.849	256.83	256.94	0.12	0.31	0.25
672	235.20	300	PVC	120.0	0.00	Open	17.828	252.92	252.85	0.07	0.31	0.25
269	232.80	300	PVC	120.0	0.00	Open	-17.590	253.20	253.27	0.07	0.30	0.25
292	186.70	300	PVC	120.0	0.00	Open	-17.590	253.27	253.32	0.06	0.30	0.25
311	583.70	300	PVC	120.0	0.00	Open	-17.460	252.76	252.94	0.17	0.29	0.25
P-990	150.30	1,050	Concrete	130.0	0.00	Open	-213.613	259.69	259.70	0.01	0.06	0.25
P-1587	189.70	400	PVC	120.0	0.00	Open	-30.678	253.60	253.64	0.04	0.21	0.24
274	248.90	300	PVC	120.0	0.00	Open	-16.970	253.20	253.27	0.07	0.28	0.24
315	189.60	300	PVC	120.0	0.00	Open	-16.970	253.27	253.33	0.05	0.28	0.24
669	281.80	150	PVC	100.0	0.00	Open	-4.205	253.40	253.64	0.24	0.84	0.24
297	257.90	300	PVC	120.0	0.00	Open	16.511	252.87	252.80	0.07	0.27	0.23
P-172	585.80	400	PVC	120.0	0.04	Open	-28.905	256.21	256.32	0.11	0.18	0.23
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	16.055	252.89	252.85	0.05	0.26	0.23
833	196.10	400	PVC	120.0	0.00	Open	28.011	259.29	259.25	0.03	0.17	0.22
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-27.857	252.74	252.83	0.09	0.17	0.22
P-1565	274.40	400	PVC	120.0	0.04	Open	27.063	252.73	252.69	0.04	0.16	0.22
733	284.70	300	PVC	120.0	0.00	Open	15.051	252.80	252.73	0.06	0.22	0.21
605	56.80	450	Concrete	120.0	0.00	Open	33.783	255.84	255.83	0.01	0.14	0.21
313	407.00	300	PVC	120.0	0.00	Open	-14.862	252.97	253.05	0.09	0.22	0.21
664	268.20	300	PVC	120.0	0.00	Open	14.735	253.32	253.26	0.06	0.21	0.21
663	273.70	300	PVC	120.0	0.00	Open	14.735	253.38	253.32	0.06	0.21	0.21
736	252.00	300	PVC	120.0	0.00	Open	-14.728	252.79	252.85	0.05	0.21	0.21
296	242.60	400	PVC	120.0	0.00	Open	26.040	252.87	252.83	0.04	0.15	0.21
P-175	351.30	300	PVC	120.0	0.04	Open	-14.555	258.07	258.15	0.07	0.21	0.21
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	-14.540	253.48	253.54	0.06	0.21	0.21
639	865.40	300	PVC	120.0	0.00	Open	14.517	256.82	256.64	0.18	0.21	0.21
608	135.70	450	Concrete	120.0	0.00	Open	31.866	255.83	255.81	0.02	0.12	0.20
304	296.10	300	PVC	120.0	0.00	Open	13.798	252.99	252.94	0.06	0.19	0.20
273	464.80	300	PVC	120.0	0.00	Open	13.639	253.20	253.11	0.09	0.19	0.19
P-1039	545.60	300	PVC	120.0	0.00	Open	13.134	253.97	253.88	0.09	0.17	0.19
612	314.30	450	Concrete	120.0	0.00	Open	29.006	255.81	255.78	0.03	0.10	0.18
P-992	211.80	400	PVC	120.0	0.00	Open	22.663	253.88	253.85	0.02	0.12	0.18
982	848.50	900	Concrete	130.0	0.00	Open	112.387	259.76	259.69	0.07	0.04	0.18
144	836.00	300	PVC	120.0	0.00	Open	12.480	259.08	258.95	0.13	0.16	0.18
662	161.60	300	PVC	120.0	0.00	Open	-11.975	253.38	253.40	0.02	0.15	0.17
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-11.743	252.79	252.83	0.04	0.14	0.17
P-1564	361.00	300	PVC	120.0	0.00	Open	-11.646	252.74	252.79	0.05	0.14	0.16
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-20.528	252.89	252.92	0.02	0.10	0.16
306	327.30	300	PVC	120.0	0.00	Open	-11.531	253.11	253.15	0.04	0.14	0.16
667	293.20	300	PVC	120.0	0.00	Open	-11.403	253.36	253.40	0.04	0.13	0.16
643	323.20	300	PVC	120.0	0.00	Open	11.351	256.21	256.17	0.04	0.13	0.16
660	120.50	300	PVC	120.0	0.00	Open	11.339	253.49	253.47	0.02	0.13	0.16
299	327.20	300	PVC	120.0	0.00	Open	11.271	252.81	252.76	0.04	0.13	0.16
260	240.60	500	Concrete	120.0	0.00	Open	30.674	253.29	253.28	0.02	0.07	0.16
661	241.50	150	PVC	100.0	0.00	Open	2.760	253.47	253.38	0.10	0.40	0.16
288	750.60	400	PVC	120.0	0.00	Open	19.522	253.59	253.52	0.07	0.09	0.16
298	263.70	400	PVC	120.0	0.00	Open	18.660	252.83	252.81	0.02	0.08	0.15
312	261.10	300	PVC	120.0	0.00	Open	-10.422	252.94	252.97	0.03	0.11	0.15
P-23	325.20	300	PVC	120.0	0.39	Open	10.418	252.76	252.73	0.04	0.11	0.15

**Scenario: VMC-2011 Max Day**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-24	246.00	300	PVC	120.0	0.39	Open	10.418	252.73	252.70	0.03	0.11	0.15
620	101.40	300	PVC	120.0	0.00	Open	10.264	255.78	255.77	0.01	0.11	0.15
P-1640	465.50	300	PVC	120.0	0.04	Open	-10.177	253.15	253.20	0.05	0.11	0.14
P-1231	205.80	600	Concrete	130.0	0.00	Open	-37.651	253.46	253.47	0.01	0.04	0.13
P-1230	621.80	600	Concrete	130.0	0.00	Open	-37.651	253.40	253.46	0.06	0.04	0.13
637	417.50	400	PVC	120.0	0.00	Open	-16.342	257.46	257.48	0.03	0.06	0.13
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	15.764	252.70	252.69	0.01	0.06	0.13
P-1570	153.60	150	PVC	100.0	0.04	Open	2.077	253.59	253.55	0.04	0.23	0.12
986	141.80	750	Concrete	130.0	0.00	Open	50.306	259.81	259.76	0.04	0.02	0.11
P-1159	488.00	600	PVC	150.0	0.04	Open	31.418	258.86	258.85	0.01	0.02	0.11
266	574.10	500	Concrete	120.0	0.00	Open	21.004	253.22	253.20	0.02	0.03	0.11
P-184	278.60	400	PVC	120.0	0.04	Open	-13.116	253.88	253.89	0.01	0.04	0.10
318	396.50	400	PVC	120.0	0.00	Open	12.377	254.28	254.27	0.02	0.04	0.10
146	474.30	600	Concrete	130.0	0.00	Open	27.690	258.86	258.85	0.01	0.02	0.10
290	473.50	400	PVC	120.0	0.00	Open	-12.243	253.52	253.54	0.02	0.04	0.10
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-12.012	252.73	252.74	0.01	0.04	0.10
148	701.50	900	Concrete	130.0	0.00	Open	-59.108	258.86	258.87	0.01	0.01	0.09
611	768.20	150	PVC	100.0	0.00	Open	1.556	255.81	255.71	0.11	0.14	0.09
275	320.80	400	PVC	120.0	0.00	Open	-9.695	253.20	253.21	0.01	0.02	0.08
271	351.20	400	PVC	120.0	0.00	Open	-9.691	253.20	253.20	0.01	0.02	0.08
293	225.20	300	PVC	120.0	0.00	Open	5.357	253.32	253.31	0.01	0.03	0.08
P-18	176.70	300	PVC	120.0	0.04	Open	5.335	255.82	255.81	0.01	0.03	0.08
P-168	159.40	150	PVC	150.0	0.04	Open	-1.319	258.84	258.85	0.01	0.05	0.07
732	195.50	300	PVC	120.0	0.00	Open	5.112	252.80	252.79	0.01	0.03	0.07
606	812.60	300	PVC	120.0	0.00	Open	4.694	255.84	255.82	0.02	0.03	0.07
P-164	174.90	300	PVC	120.0	0.04	Open	4.420	258.85	258.85	0.00	0.02	0.06
316	576.90	300	PVC	120.0	0.00	Open	4.310	253.07	253.05	0.01	0.02	0.06
P-166	264.10	150	PVC	150.0	0.04	Open	0.980	258.85	258.84	0.01	0.03	0.06
P-1588	316.50	300	PVC	120.0	0.04	Open	3.645	253.60	253.60	0.01	0.02	0.05
P-20	137.00	300	PVC	120.0	0.04	Open	3.296	255.81	255.81	0.00	0.01	0.05
280	416.10	300	PVC	120.0	0.00	Open	-3.079	253.60	253.60	0.00	0.01	0.04
P-171	478.60	300	PVC	120.0	0.04	Open	-2.964	255.79	255.79	0.01	0.01	0.04
P-1636	313.30	500	PVC	120.0	0.04	Open	-8.012	253.20	253.20	0.00	0.01	0.04
P-21	87.00	200	PVC	110.0	0.04	Open	1.067	255.81	255.81	0.00	0.01	0.03
609	623.30	150	PVC	100.0	0.00	Open	0.566	255.83	255.82	0.01	0.02	0.03
P-170	192.30	300	PVC	120.0	0.04	Open	2.232	253.88	253.87	0.00	0.01	0.03
P-19	87.00	200	PVC	110.0	0.04	Open	0.992	255.81	255.81	0.00	0.01	0.03
294	696.40	300	PVC	120.0	0.00	Open	-2.084	253.32	253.33	0.00	0.01	0.03
P-165	74.90	300	PVC	120.0	0.04	Open	1.921	258.85	258.85	0.00	0.00	0.03
P-176	176.50	300	PVC	120.0	0.04	Open	1.832	258.15	258.15	0.00	0.00	0.03
P-22	72.80	300	PVC	120.0	0.04	Open	1.574	255.81	255.81	0.00	0.00	0.02
P-1001	996.20	900	Concrete	130.0	0.00	Open	-9.184	257.48	257.48	0.00	0.00	0.01
P-183	591.40	400	PVC	120.0	0.04	Open	1.773	253.89	253.89	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.134	258.84	258.84	0.00	0.00	0.01
P-167	350.30	150	PVC	150.0	0.04	Open	0.089	258.84	258.84	0.00	0.00	0.01
670	258.40	300	PVC	120.0	0.00	Open	0.193	252.92	252.92	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	254.98	254.98	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	259.69	259.69	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	-0.000	259.69	259.69	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	253.20	253.20	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	255.79	255.79	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	259.76	259.69	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	259.76	259.76	0.00	0.00	0.00

# Scenario: VMC-2011 Min Hour



**Scenario: VMC-2011 Min Hour  
Steady State Analysis  
Reservoir Report**

Label	Elevation (m)	Zone	Inflow (l/s)	Calculated Hydraulic Grade (m)
South Maple	263.00	Zone-1	481.642	263.00
Rutherford/Weston	265.00	Zone-1	375.401	265.00
South Richmond Hill Res	263.70	Zone-1	195.834	263.70
Bathurst/Hwy 7 MC	265.00	Zone-1	183.686	265.00
Weston/MajorMackenzie	264.70	Zone-1	341.369	264.70
Keele	269.00	Zone-1	929.597	269.00

**Scenario: VMC-2011 Min Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	267.87	115.365
PD6-436	10.997	195.10	Zone-1	Demand	Fixed	10.997	265.04	99.278
PD6-705	14.327	196.11	Zone-1	Demand	Fixed	14.327	265.46	98.436
PD6-678	1.791	197.43	Zone-1	Demand	Fixed	1.791	265.88	97.163
PD6-443	17.131	196.80	Zone-1	Demand	Fixed	17.131	265.00	96.809
PD6-VMC-4	6.112	196.90	Zone-1	Demand	Fixed	6.112	265.08	96.782
PD6-439	7.975	197.15	Zone-1	Demand	Fixed	7.975	265.06	96.391
PD6-704	3.843	198.21	Zone-1	Demand	Fixed	3.843	265.52	95.549
PD6-702	6.227	198.20	Zone-1	Demand	Fixed	6.227	265.47	95.491
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	265.03	94.580
PD6-685	0.473	199.75	Zone-1	Demand	Fixed	0.473	266.15	94.246
PD6-731	9.953	198.85	Zone-1	Demand	Fixed	9.953	265.11	94.049
PD6-438	5.849	199.41	Zone-1	Demand	Fixed	5.849	265.05	93.175
PD6-734	2.703	199.68	Zone-1	Demand	Fixed	2.703	265.20	93.006
PD6-703	3.564	199.94	Zone-1	Demand	Fixed	3.564	265.46	93.002
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	266.37	92.784
PD6-692	21.541	200.39	Zone-1	Demand	Fixed	21.541	265.69	92.688
PD6-687	0.456	201.00	Zone-1	Demand	Fixed	0.456	266.02	92.289
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	265.73	91.885
PD6-677	36.685	204.11	Zone-1	Demand	Fixed	36.685	268.80	91.821
PD6-735	9.844	200.60	Zone-1	Demand	Fixed	9.844	265.20	91.703
PD6-684	2.457	201.60	Zone-1	Demand	Fixed	2.457	266.20	91.696
PD6-701	8.271	200.90	Zone-1	Demand	Fixed	8.271	265.46	91.641
PD6-680	22.910	204.33	Zone-1	Inflow	Fixed	-22.910	268.79	91.495
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	265.70	91.456
PD6-700	40.273	200.90	Zone-1	Demand	Fixed	40.273	265.32	91.439
PD6-440	7.662	200.75	Zone-1	Demand	Fixed	7.662	265.08	91.318
PD6-740	0.551	201.51	Zone-1	Demand	Fixed	0.551	265.70	91.114
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	265.18	91.102
PD6-744	0.366	201.52	Zone-1	Demand	Fixed	0.366	265.70	91.100
PD6-743	0.347	201.60	Zone-1	Demand	Fixed	0.347	265.70	90.986
PD6-742	0.373	201.66	Zone-1	Demand	Fixed	0.373	265.70	90.901
PD6-741	0.229	201.74	Zone-1	Demand	Fixed	0.229	265.70	90.787
PD6-694	3.475	201.81	Zone-1	Demand	Fixed	3.475	265.64	90.597
PD6-VMC-2	16.436	201.20	Zone-1	Demand	Fixed	16.436	265.00	90.562
PD6-VMC-3	11.091	201.90	Zone-1	Demand	Fixed	11.091	265.09	89.699
PD6-732	7.365	202.00	Zone-1	Demand	Fixed	7.365	265.11	89.587
PD6-442	17.578	202.00	Zone-1	Demand	Fixed	17.578	265.05	89.495
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	268.91	89.304
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	265.21	88.845
PD6-689	1.031	206.10	Zone-1	Demand	Fixed	1.031	268.60	88.722
PD6-441	23.471	202.80	Zone-1	Demand	Fixed	23.471	265.14	88.487
PD6-736	24.324	203.00	Zone-1	Demand	Fixed	24.324	265.28	88.406
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	265.22	88.325
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	265.16	88.236
PD6-71	28.036	205.42	Zone-1	Demand	Fixed	28.036	267.56	88.205
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	265.12	87.815
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	265.02	87.738
PD6-728	5.654	203.54	Zone-1	Demand	Fixed	5.654	265.22	87.549
PD6-72	24.478	205.91	Zone-1	Inflow	Fixed	-24.478	267.58	87.535
PD6-720	0.727	204.00	Zone-1	Demand	Fixed	0.727	265.66	87.528
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	264.99	86.859
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	265.21	86.806
PD6-VMC-1	5.723	204.00	Zone-1	Demand	Fixed	5.723	265.15	86.803

**Scenario: VMC-2011 Min Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-451	24.540	203.91	Zone-1	Demand	Fixed	24.540	264.99	86.702
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	265.14	86.507
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	265.01	86.387
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	265.02	86.373
PD6-683	0.056	206.84	Zone-1	Demand	Fixed	0.056	267.52	86.129
PD6-747	1.875	204.37	Zone-1	Demand	Fixed	1.875	265.01	86.073
PD6-449	11.794	204.85	Zone-1	Demand	Fixed	11.794	265.07	85.475
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	265.22	85.209
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	265.22	85.108
PD6-695	88.001	205.50	Zone-1	Inflow	Fixed	-88.001	265.40	85.032
PD6-457	1.423	205.09	Zone-1	Demand	Fixed	1.423	264.99	85.023
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	267.67	84.836
PD6-749	1.330	205.34	Zone-1	Demand	Fixed	1.330	265.01	84.697
PD6-456	1.751	205.49	Zone-1	Demand	Fixed	1.751	265.01	84.485
PD6-458	2.162	205.46	Zone-1	Demand	Fixed	2.162	264.97	84.475
PD6-446	8.782	205.70	Zone-1	Demand	Fixed	8.782	265.11	84.334
PD6-754	3.016	205.80	Zone-1	Demand	Fixed	3.016	265.14	84.234
PD6-454	1.738	205.79	Zone-1	Demand	Fixed	1.738	264.98	84.022
PD6-671	5.798	207.07	Zone-1	Demand	Fixed	5.798	266.16	83.878
PD6-455	1.175	206.02	Zone-1	Demand	Fixed	1.175	265.00	83.723
PD6-459	1.554	206.13	Zone-1	Demand	Fixed	1.554	264.96	83.508
PD6-461	2.697	206.12	Zone-1	Demand	Fixed	2.697	264.95	83.502
PD6-452	7.325	206.27	Zone-1	Demand	Fixed	7.325	264.98	83.338
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	265.19	83.303
PD6-724	1.406	206.58	Zone-1	Demand	Fixed	1.406	265.23	83.252
PD6-460	1.833	206.42	Zone-1	Demand	Fixed	1.833	264.95	83.081
PD6-739	10.857	206.90	Zone-1	Demand	Fixed	10.857	265.22	82.779
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	265.28	82.728
PD6-748	2.485	206.77	Zone-1	Demand	Fixed	2.485	265.04	82.715
PD6-723	0.466	207.16	Zone-1	Demand	Fixed	0.466	265.23	82.432
PD6-453	2.366	207.00	Zone-1	Demand	Fixed	2.366	264.97	82.290
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	264.99	82.000
PD6-468	3.143	207.28	Zone-1	Demand	Fixed	3.143	264.91	81.800
PD6-730	6.051	209.40	Zone-1	Demand	Fixed	6.051	266.94	81.672
PD6-722	0.532	207.71	Zone-1	Demand	Fixed	0.532	265.25	81.671
PD6-462	2.379	208.06	Zone-1	Demand	Fixed	2.379	264.95	80.747
PD6-753	0.781	208.21	Zone-1	Demand	Fixed	0.781	264.96	80.559
PD6-738	0.727	209.25	Zone-1	Demand	Fixed	0.727	265.24	79.478
PD6-751	4.536	209.00	Zone-1	Demand	Fixed	4.536	264.98	79.457
PD6-721	1.597	209.30	Zone-1	Demand	Fixed	1.597	265.21	79.361
PD6-473	1.850	209.20	Zone-1	Demand	Fixed	1.850	264.91	79.075
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	264.96	78.884
PD6-756	0.868	209.46	Zone-1	Demand	Fixed	0.868	264.95	78.773
PD6-418	95.145	208.19	Zone-1	Demand	Fixed	95.145	263.66	78.738
PD6-472	1.137	209.66	Zone-1	Demand	Fixed	1.137	264.91	78.422
PD6-758	0.804	210.08	Zone-1	Demand	Fixed	0.804	264.95	77.881
PD6-469	3.216	210.09	Zone-1	Demand	Fixed	3.216	264.90	77.801
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	264.89	77.725
PD6-470	1.423	211.22	Zone-1	Demand	Fixed	1.423	264.91	76.207
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	264.97	76.053
PD6-750	2.895	211.62	Zone-1	Demand	Fixed	2.895	264.97	75.731
PD6-474	1.237	212.05	Zone-1	Demand	Fixed	1.237	264.91	75.029
PD6-763	1.827	212.22	Zone-1	Demand	Fixed	1.827	264.95	74.849
PD6-759	2.901	212.38	Zone-1	Demand	Fixed	2.901	264.95	74.616

**Scenario: VMC-2011 Min Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	264.96	74.153
PD6-762	2.020	212.73	Zone-1	Demand	Fixed	2.020	264.95	74.121
PD6-779	0.359	212.93	Zone-1	Demand	Fixed	0.359	265.01	73.931
PD6-769	0.641	213.39	Zone-1	Demand	Fixed	0.641	264.98	73.228
PD6-755	0.713	213.37	Zone-1	Demand	Fixed	0.713	264.94	73.204
PD6-471	1.255	213.41	Zone-1	Demand	Fixed	1.255	264.91	73.098
PD6-767	1.268	213.50	Zone-1	Demand	Fixed	1.268	264.98	73.072
PD6-760	3.420	213.57	Zone-1	Demand	Fixed	3.420	264.94	72.914
PD6-780	0.446	213.94	Zone-1	Demand	Fixed	0.446	265.01	72.497
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	264.94	72.488
PD6-768	1.688	214.02	Zone-1	Demand	Fixed	1.688	264.98	72.329
PD6-466	0.425	214.31	Zone-1	Demand	Fixed	0.425	265.00	71.954
PD6-757	0.729	214.34	Zone-1	Demand	Fixed	0.729	264.94	71.819
PD6-475	1.257	215.17	Zone-1	Demand	Fixed	1.257	264.91	70.600
PD6-764	1.824	215.49	Zone-1	Demand	Fixed	1.824	264.94	70.199
PD6-765	3.321	215.54	Zone-1	Demand	Fixed	3.321	264.94	70.128
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	265.00	69.558
PD6-778	0.330	216.78	Zone-1	Demand	Fixed	0.330	265.01	68.467
PD6-479	3.948	217.00	Zone-1	Demand	Fixed	3.948	264.95	68.057
PD6-1094	346.167	217.10	Zone-1	Demand	Fixed	346.167	265.00	67.986
PD6-761	1.722	217.14	Zone-1	Demand	Fixed	1.722	264.94	67.854
PD6-770	0.880	217.18	Zone-1	Demand	Fixed	0.880	264.92	67.771
PD6-774	4.569	217.25	Zone-1	Demand	Fixed	4.569	264.99	67.769
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	264.99	67.513
PD6-478	0.621	217.41	Zone-1	Demand	Fixed	0.621	264.91	67.420
PD6-476	7.472	218.20	Zone-1	Demand	Fixed	7.472	264.91	66.306
PD6-840	61.693	218.78	Zone-1	Inflow	Fixed	-61.693	265.14	65.807
PD6-9	0.567	218.81	Zone-1	Demand	Fixed	0.567	264.99	65.554
PD6-777	0.413	218.95	Zone-1	Demand	Fixed	0.413	265.01	65.387
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	264.94	65.242
PD6-477	6.612	219.28	Zone-1	Demand	Fixed	6.612	264.93	64.805
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	265.02	64.749
PD6-480	0.842	220.00	Zone-1	Demand	Fixed	0.842	264.97	63.829
PD6-27	10.612	220.09	Zone-1	Demand	Fixed	10.612	264.94	63.662
PD6-481	1.270	220.90	Zone-1	Demand	Fixed	1.270	264.98	62.568
PD6-24	9.450	221.64	Zone-1	Inflow	Fixed	-9.450	265.00	61.544
PD6-8	0.749	222.21	Zone-1	Demand	Fixed	0.749	264.99	60.728
PD6-1001	6.347	222.42	Zone-1	Demand	Fixed	6.347	264.95	60.376
PD6-1000	36.044	222.98	Zone-1	Demand	Fixed	36.044	264.87	59.468
PD6-325	165.281	222.88	Zone-1	Inflow	Fixed	-165.281	264.56	59.159
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	264.57	41.654
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	264.57	32.825
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	263.04	30.646
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	263.04	3.605
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	263.04	3.605
PD6-7000	114.100	263.65	Zone-1	Demand	Fixed	114.100	263.03	-0.880



**Scenario: VMC-2011 Min Hour  
Steady State Analysis  
Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
596	120.30	900	Concrete	130.0	0.00	Open	-727.347	266.37	268.91	2.55	1.20	1.14
982	848.50	900	Concrete	130.0	0.00	Open	595.742	264.57	263.04	1.54	0.83	0.94
P-1648	495.50	450	Concrete	120.0	0.00	Open	138.549	268.60	267.67	0.94	1.89	0.87
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	929.597	269.00	268.91	0.09	0.36	0.82
604	796.70	450	Concrete	120.0	0.00	Open	128.883	267.52	266.20	1.32	1.65	0.81
597	225.30	450	Concrete	120.0	0.00	Open	116.670	268.91	268.60	0.31	1.38	0.73
P-1649	119.90	450	Concrete	120.0	0.00	Open	110.513	267.67	267.52	0.15	1.24	0.69
P-1567	348.80	300	PVC	120.0	0.00	Open	-48.895	265.20	267.87	2.67	1.98	0.69
P-1574	853.30	750	Concrete	130.0	0.00	Open	-305.278	265.28	266.37	1.08	0.59	0.69
618	064.00	900	Concrete	130.0	0.00	Open	-422.069	265.46	266.37	0.91	0.44	0.66
608	135.70	450	Concrete	120.0	0.00	Open	95.399	266.15	266.02	0.13	0.95	0.60
605	56.80	450	Concrete	120.0	0.00	Open	95.233	266.20	266.15	0.05	0.94	0.60
278	300.10	450	Concrete	120.0	0.00	Open	95.145	264.89	263.66	1.23	0.94	0.60
P-1	10.00	900	Concrete	130.0	0.04	Open	375.401	265.00	265.00	0.00	0.42	0.59
612	314.30	450	Concrete	120.0	0.00	Open	93.152	266.02	265.73	0.29	0.91	0.59
P-990	150.30	1,050	Concrete	130.0	0.00	Open	481.642	263.04	263.00	0.04	0.26	0.56
150	167.20	400	PVC	120.0	0.00	Open	-61.693	265.02	265.14	0.13	0.75	0.49
P-1573	262.50	750	Concrete	130.0	0.00	Open	-211.127	265.20	265.28	0.08	0.30	0.48
151	005.50	900	Concrete	130.0	0.00	Open	-292.130	265.02	265.46	0.44	0.22	0.46
152	079.00	900	Concrete	130.0	0.00	Open	284.926	265.02	264.57	0.44	0.21	0.45
P-1015	151.00	300	PVC	120.0	0.04	Open	28.036	267.67	267.56	0.11	0.71	0.40
258	245.40	600	Concrete	130.0	0.00	Open	110.687	265.20	265.14	0.07	0.27	0.39
598	132.50	400	PVC	120.0	0.00	Open	48.895	268.91	267.87	1.04	0.49	0.39
655	806.70	400	PVC	120.0	0.00	Open	48.047	265.66	265.28	0.38	0.47	0.38
607	955.80	300	PVC	120.0	0.00	Open	24.756	266.20	265.66	0.54	0.56	0.35
P-1657	109.60	300	PVC	120.0	0.04	Open	-24.478	267.52	267.58	0.06	0.55	0.35
P-1634	724.70	150	PVC	150.0	0.04	Open	6.051	267.52	266.94	0.58	0.80	0.34
154	367.70	450	Concrete	120.0	0.00	Open	52.260	265.00	264.89	0.11	0.31	0.33
P-1566	180.90	300	PVC	120.0	0.00	Open	-23.025	265.11	265.20	0.09	0.49	0.33
599	377.30	300	PVC	120.0	0.00	Open	-22.910	268.60	268.79	0.18	0.49	0.32
637	417.50	400	PVC	120.0	0.00	Open	-40.273	265.32	265.46	0.14	0.34	0.32
P-1572	127.40	600	Concrete	130.0	0.00	Open	-90.596	265.18	265.20	0.02	0.18	0.32
P-1577	103.20	600	Concrete	130.0	0.00	Open	-90.596	265.16	265.18	0.02	0.18	0.32
P-2	100.00	900	Concrete	130.0	0.04	Open	-195.834	263.70	264.56	0.86	0.11	0.31
620	101.40	300	PVC	120.0	0.00	Open	21.541	265.73	265.69	0.04	0.43	0.30
668	255.90	300	PVC	120.0	0.00	Open	21.499	265.22	265.11	0.11	0.43	0.30
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	341.369	264.70	264.57	0.13	0.06	0.30
P-16	121.90	450	Concrete	120.0	0.00	Open	47.593	265.73	265.70	0.03	0.26	0.30
261	304.40	400	PVC	120.0	0.00	Open	37.310	265.14	265.05	0.09	0.30	0.30
P-1575	193.10	400	PVC	120.0	0.04	Open	37.264	265.28	265.22	0.06	0.30	0.30
594	406.40	400	PVC	120.0	0.00	Open	-36.685	268.80	268.91	0.12	0.29	0.29
P-3	300.00	900	Concrete	130.0	0.04	Open	-183.686	265.00	265.40	0.40	0.09	0.29
P-17	267.60	450	Concrete	120.0	0.00	Open	45.725	265.70	265.64	0.06	0.24	0.29
907	425.70	400	Concrete	120.0	0.00	Open	-36.044	264.87	264.99	0.12	0.28	0.29
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-35.811	265.15	265.22	0.07	0.28	0.28
657	240.10	400	PVC	120.0	0.00	Open	35.441	265.28	265.22	0.06	0.27	0.28
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-33.961	265.08	265.20	0.12	0.25	0.27
617	531.70	450	Concrete	120.0	0.00	Open	42.250	265.64	265.52	0.11	0.21	0.27
P-1589	277.30	400	PVC	120.0	0.04	Open	-32.563	265.22	265.28	0.06	0.23	0.26
262	286.30	500	Concrete	120.0	0.00	Open	49.667	265.12	265.07	0.05	0.17	0.25
290	473.50	400	PVC	120.0	0.00	Open	-31.119	265.04	265.14	0.10	0.21	0.25
263	342.30	300	PVC	120.0	0.00	Open	16.868	265.12	265.02	0.09	0.28	0.24
P-1591	239.60	400	PVC	120.0	0.04	Open	-29.638	265.12	265.16	0.05	0.19	0.24

**Scenario: VMC-2011 Min Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
275	320.80	400	PVC	120.0	0.00	Open	28.934	264.95	264.89	0.06	0.18	0.23
264	186.80	300	PVC	120.0	0.00	Open	16.124	265.07	265.02	0.05	0.25	0.23
P-1586	245.10	400	PVC	120.0	0.00	Open	-28.528	265.14	265.19	0.04	0.18	0.23
P-700	67.80	150	PVC	150.0	0.04	Open	3.980	264.99	264.97	0.03	0.37	0.23
265	189.30	300	PVC	120.0	0.00	Open	-15.700	265.07	265.11	0.05	0.24	0.22
P-1231	205.80	600	Concrete	130.0	0.00	Open	-60.958	265.14	265.16	0.02	0.09	0.22
P-1230	621.80	600	Concrete	130.0	0.00	Open	-60.958	265.00	265.14	0.14	0.09	0.22
P-1587	189.70	400	PVC	120.0	0.00	Open	-27.076	265.19	265.22	0.03	0.16	0.22
643	323.20	300	PVC	120.0	0.00	Open	14.327	265.52	265.46	0.07	0.20	0.20
740	100.40	400	PVC	120.0	0.00	Open	-24.878	264.98	264.99	0.01	0.14	0.20
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-24.482	265.11	265.15	0.04	0.14	0.19
654	531.30	400	PVC	120.0	0.00	Open	-24.018	265.66	265.73	0.07	0.13	0.19
266	574.10	500	Concrete	120.0	0.00	Open	37.449	265.07	265.01	0.06	0.10	0.19
260	240.60	500	Concrete	120.0	0.00	Open	36.897	265.14	265.12	0.02	0.10	0.19
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	13.009	265.14	265.09	0.05	0.17	0.18
271	351.20	400	PVC	120.0	0.00	Open	22.975	264.99	264.95	0.04	0.12	0.18
674	252.90	900	Concrete	130.0	0.00	Open	114.100	263.04	263.03	0.01	0.04	0.18
296	242.60	400	PVC	120.0	0.00	Open	22.435	265.05	265.02	0.03	0.12	0.18
656	214.70	300	PVC	120.0	0.00	Open	12.606	265.28	265.25	0.03	0.16	0.18
298	263.70	400	PVC	120.0	0.00	Open	22.115	265.02	264.99	0.03	0.11	0.18
P-1565	274.40	400	PVC	120.0	0.04	Open	21.789	265.03	265.00	0.03	0.11	0.17
P-1024	159.50	300	PVC	120.0	0.00	Open	11.828	264.93	264.91	0.02	0.14	0.17
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-11.499	265.05	265.09	0.04	0.14	0.16
658	107.80	300	PVC	120.0	0.00	Open	11.346	265.25	265.23	0.01	0.13	0.16
300	220.50	300	PVC	120.0	0.00	Open	-11.124	264.99	265.02	0.03	0.13	0.16
672	235.20	300	PVC	120.0	0.00	Open	11.105	265.11	265.08	0.03	0.13	0.16
288	750.60	400	PVC	120.0	0.00	Open	-19.236	264.98	265.04	0.07	0.09	0.15
P-1636	313.30	500	PVC	120.0	0.04	Open	-29.900	264.99	265.01	0.02	0.07	0.15
640	691.60	450	Concrete	120.0	0.00	Open	-24.080	265.47	265.52	0.05	0.07	0.15
284	99.50	400	PVC	120.0	0.00	Open	-18.924	264.95	264.96	0.01	0.08	0.15
P-1001	996.20	900	Concrete	130.0	0.00	Open	-95.685	265.40	265.46	0.06	0.03	0.15
143	451.50	300	PVC	120.0	0.00	Open	-10.612	264.94	264.99	0.05	0.12	0.15
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-18.467	265.04	265.08	0.04	0.08	0.15
P-174	182.60	400	PVC	120.0	0.00	Open	-18.288	264.98	264.99	0.01	0.08	0.15
281	157.50	400	PVC	120.0	0.00	Open	-17.827	264.92	264.94	0.01	0.08	0.14
736	252.00	300	PVC	120.0	0.00	Open	-9.963	265.06	265.08	0.03	0.10	0.14
P-25	292.20	400	PVC	120.0	0.04	Open	-17.188	265.00	265.02	0.02	0.07	0.14
282	244.60	400	PVC	120.0	0.00	Open	16.947	264.92	264.91	0.02	0.07	0.13
289	354.90	300	PVC	120.0	0.00	Open	9.397	265.04	265.01	0.03	0.09	0.13
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-9.383	265.06	265.08	0.03	0.09	0.13
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-16.101	265.09	265.11	0.01	0.06	0.13
P-1159	488.00	600	PVC	150.0	0.04	Open	-35.799	265.00	265.02	0.01	0.03	0.13
302	236.70	300	PVC	120.0	0.00	Open	-8.882	264.98	265.00	0.02	0.08	0.13
P-699	383.10	400	PVC	120.0	0.00	Open	15.187	264.97	264.95	0.02	0.06	0.12
306	327.30	300	PVC	120.0	0.00	Open	8.514	264.97	264.95	0.03	0.08	0.12
155	512.50	300	PVC	120.0	0.00	Open	8.273	265.00	264.96	0.04	0.07	0.12
P-1585	342.60	400	PVC	120.0	0.04	Open	-14.691	264.95	264.97	0.02	0.05	0.12
733	284.70	300	PVC	120.0	0.00	Open	8.031	265.05	265.03	0.02	0.07	0.11
146	474.30	600	Concrete	130.0	0.00	Open	-31.551	265.00	265.02	0.01	0.03	0.11
277	285.10	400	PVC	120.0	0.00	Open	-13.951	264.89	264.90	0.01	0.05	0.11
309	592.60	300	PVC	120.0	0.00	Open	7.787	264.95	264.91	0.04	0.07	0.11
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-13.759	265.03	265.04	0.01	0.05	0.11
P-173	212.00	400	PVC	120.0	0.00	Open	-13.698	264.97	264.98	0.01	0.05	0.11

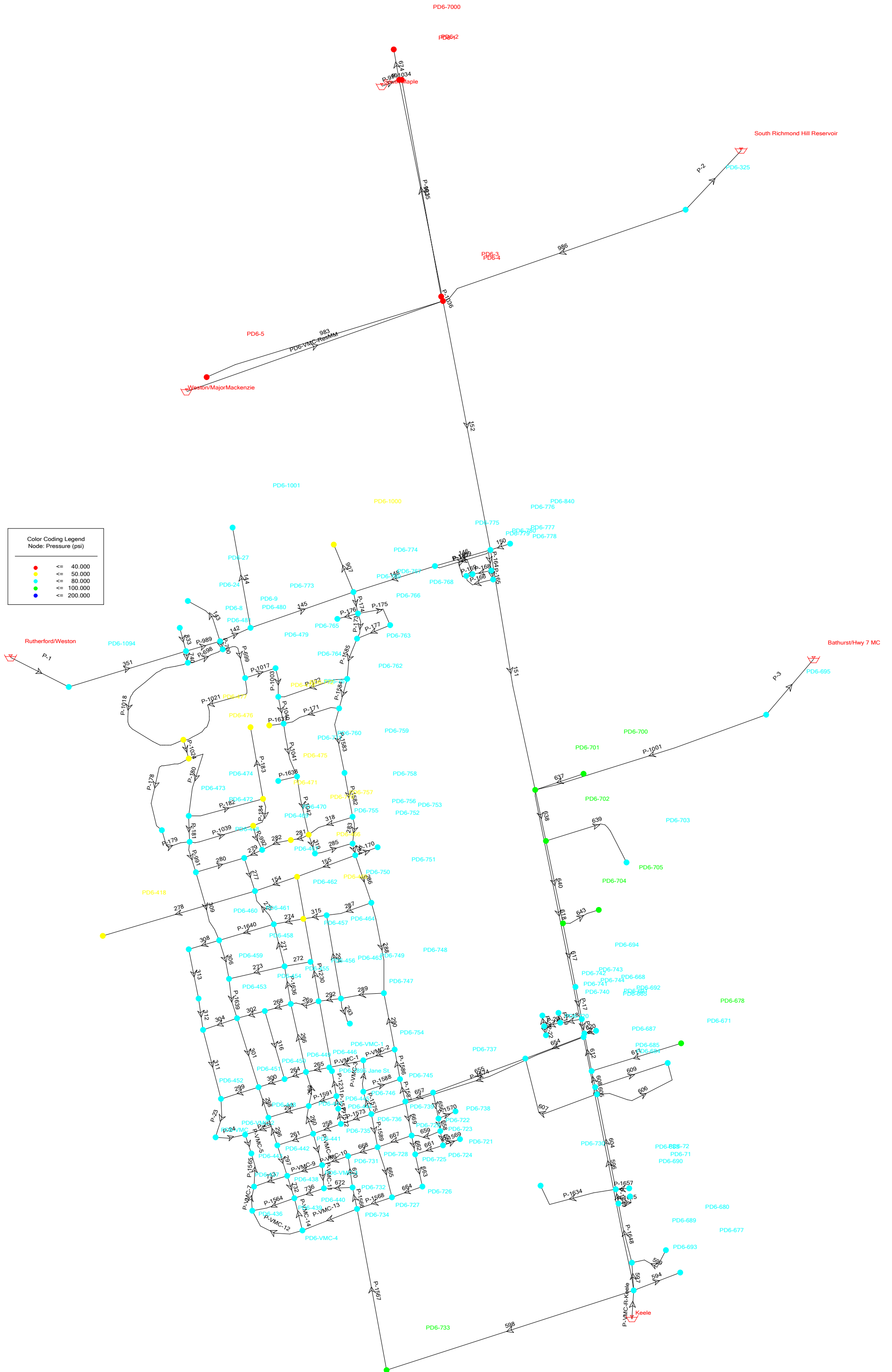
**Scenario: VMC-2011 Min Hour  
Steady State Analysis  
Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
279	162.70	400	PVC	120.0	0.00	Open	-13.372	264.90	264.91	0.01	0.04	0.11
148	701.50	900	Concrete	130.0	0.00	Open	67.350	265.00	264.99	0.01	0.01	0.11
274	248.90	300	PVC	120.0	0.00	Open	-7.306	264.95	264.96	0.01	0.06	0.10
315	189.60	300	PVC	120.0	0.00	Open	-7.306	264.96	264.97	0.01	0.06	0.10
611	768.20	150	PVC	100.0	0.00	Open	1.791	266.02	265.88	0.14	0.18	0.10
659	251.40	300	PVC	120.0	0.00	Open	6.961	265.23	265.22	0.01	0.05	0.10
294	696.40	300	PVC	120.0	0.00	Open	6.933	265.01	264.97	0.04	0.05	0.10
P-698	309.20	400	PVC	120.0	0.00	Open	12.048	264.98	264.97	0.01	0.04	0.10
283	225.00	400	PVC	120.0	0.00	Open	11.968	264.95	264.95	0.01	0.04	0.10
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	6.519	265.09	265.08	0.01	0.05	0.09
P-1018	302.90	400	PVC	120.0	0.00	Open	11.560	264.98	264.93	0.04	0.03	0.09
606	812.60	300	PVC	120.0	0.00	Open	6.437	266.20	266.16	0.04	0.05	0.09
286	408.40	400	PVC	120.0	0.00	Open	-11.433	264.96	264.98	0.01	0.03	0.09
312	261.10	300	PVC	120.0	0.00	Open	6.389	264.97	264.96	0.01	0.05	0.09
P-1569	148.90	150	PVC	100.0	0.04	Open	1.597	265.23	265.21	0.02	0.14	0.09
638	427.80	450	Concrete	120.0	0.00	Open	-14.289	265.46	265.47	0.01	0.03	0.09
144	836.00	300	PVC	120.0	0.00	Open	6.347	264.99	264.95	0.04	0.05	0.09
P-1564	361.00	300	PVC	120.0	0.00	Open	-6.289	265.04	265.06	0.02	0.04	0.09
285	320.80	300	PVC	120.0	0.00	Open	6.088	264.95	264.94	0.01	0.04	0.09
P-1568	301.50	400	PVC	120.0	0.04	Open	-10.795	265.20	265.21	0.01	0.03	0.09
P-1588	316.50	150	PVC	100.0	0.04	Open	1.452	265.22	265.19	0.04	0.12	0.08
318	396.50	400	PVC	120.0	0.00	Open	10.195	264.95	264.94	0.01	0.03	0.08
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	5.607	265.15	265.14	0.01	0.04	0.08
273	464.80	300	PVC	120.0	0.00	Open	5.503	264.99	264.97	0.02	0.03	0.08
304	296.10	300	PVC	120.0	0.00	Open	5.411	264.98	264.97	0.01	0.03	0.08
P-23	325.20	300	PVC	120.0	0.39	Open	-5.411	264.98	264.99	0.01	0.03	0.08
P-24	246.00	300	PVC	120.0	0.39	Open	-5.411	264.99	265.00	0.01	0.03	0.08
319	159.50	300	PVC	120.0	0.00	Open	-5.375	264.94	264.94	0.01	0.03	0.08
833	196.10	400	PVC	120.0	0.00	Open	9.450	265.00	264.99	0.00	0.02	0.08
299	327.20	300	PVC	120.0	0.00	Open	5.259	264.99	264.98	0.01	0.03	0.07
P-1639	337.50	300	PVC	120.0	0.04	Open	-5.172	264.97	264.98	0.01	0.03	0.07
732	195.50	300	PVC	120.0	0.00	Open	-5.083	265.05	265.06	0.01	0.03	0.07
268	220.50	300	PVC	120.0	0.00	Open	5.056	265.01	265.00	0.01	0.03	0.07
316	576.90	300	PVC	120.0	0.00	Open	-5.001	265.00	265.02	0.02	0.03	0.07
986	141.80	750	Concrete	130.0	0.00	Open	-30.553	264.56	264.57	0.02	0.01	0.07
313	407.00	300	PVC	120.0	0.00	Open	4.835	264.96	264.95	0.01	0.03	0.07
670	258.40	300	PVC	120.0	0.00	Open	-4.555	265.11	265.11	0.01	0.02	0.06
665	429.00	400	PVC	120.0	0.00	Open	-7.532	265.21	265.22	0.01	0.02	0.06
P-177	295.00	150	PVC	150.0	0.04	Open	-0.993	264.97	264.98	0.01	0.02	0.06
660	120.50	300	PVC	120.0	0.00	Open	3.919	265.23	265.23	0.00	0.02	0.06
P-1021	873.60	400	PVC	120.0	0.00	Open	6.880	264.95	264.93	0.01	0.01	0.05
P-1584	253.10	400	PVC	120.0	0.04	Open	-6.760	264.95	264.95	0.00	0.01	0.05
280	416.10	300	PVC	120.0	0.00	Open	-3.795	264.90	264.91	0.01	0.02	0.05
661	241.50	150	PVC	100.0	0.00	Open	0.916	265.23	265.22	0.01	0.05	0.05
P-1041	449.00	400	PVC	120.0	0.00	Open	6.406	264.94	264.94	0.01	0.01	0.05
639	865.40	300	PVC	120.0	0.00	Open	3.564	265.47	265.46	0.01	0.02	0.05
301	586.80	300	PVC	120.0	0.00	Open	3.440	264.99	264.98	0.01	0.01	0.05
P-172	585.80	400	PVC	120.0	0.04	Open	-6.104	264.94	264.95	0.01	0.01	0.05
311	583.70	300	PVC	120.0	0.00	Open	3.344	264.98	264.97	0.01	0.01	0.05
287	386.80	300	PVC	120.0	0.00	Open	3.268	264.98	264.97	0.01	0.01	0.05
664	268.20	300	PVC	120.0	0.00	Open	3.263	265.21	265.21	0.00	0.01	0.05
663	273.70	300	PVC	120.0	0.00	Open	3.263	265.22	265.21	0.00	0.01	0.05
351	008.70	900	Concrete	130.0	0.00	Open	29.234	265.00	264.99	0.00	0.00	0.05

**Scenario: VMC-2011 Min Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
308	258.70	300	PVC	120.0	0.00	Open	-3.002	264.95	264.95	0.00	0.01	0.04
P-1040	228.70	400	PVC	120.0	0.00	Open	5.318	264.94	264.94	0.00	0.01	0.04
P-1570	153.60	150	PVC	100.0	0.04	Open	0.727	265.25	265.24	0.01	0.03	0.04
P-171	478.60	300	PVC	120.0	0.04	Open	-2.809	264.94	264.95	0.00	0.01	0.04
297	257.90	300	PVC	120.0	0.00	Open	-2.703	265.05	265.05	0.00	0.01	0.04
P-175	351.30	300	PVC	120.0	0.04	Open	-2.681	264.98	264.98	0.00	0.01	0.04
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	-4.658	265.00	265.00	0.00	0.01	0.04
609	623.30	150	PVC	100.0	0.00	Open	-0.639	266.15	266.16	0.02	0.03	0.04
669	281.80	300	PVC	120.0	0.00	Open	2.492	265.22	265.22	0.00	0.01	0.04
P-1017	258.70	400	PVC	120.0	0.00	Open	4.359	264.95	264.94	0.00	0.01	0.03
662	161.60	300	PVC	120.0	0.00	Open	-2.347	265.22	265.22	0.00	0.01	0.03
P-180	643.30	300	PVC	120.0	0.00	Open	2.308	264.91	264.91	0.00	0.01	0.03
667	293.20	300	PVC	120.0	0.00	Open	-2.123	265.22	265.22	0.00	0.01	0.03
P-178	810.60	300	PVC	120.0	0.00	Open	2.048	264.91	264.91	0.00	0.01	0.03
293	225.20	300	PVC	120.0	0.00	Open	1.875	265.01	265.01	0.00	0.00	0.03
P-18	176.70	300	PVC	120.0	0.04	Open	1.867	265.70	265.70	0.00	0.00	0.03
P-168	159.40	150	PVC	150.0	0.04	Open	-0.459	265.01	265.01	0.00	0.01	0.03
P-1042	487.90	400	PVC	120.0	0.00	Open	2.986	264.94	264.94	0.00	0.00	0.02
P-164	174.90	300	PVC	120.0	0.04	Open	1.547	265.02	265.01	0.00	0.00	0.02
P-989	293.90	900	Concrete	130.0	0.00	Open	-13.057	264.99	264.99	0.00	0.00	0.02
P-166	264.10	150	PVC	150.0	0.04	Open	0.346	265.01	265.01	0.00	0.00	0.02
P-992	211.80	400	PVC	120.0	0.00	Open	-2.152	264.91	264.91	0.00	0.00	0.02
P-20	137.00	300	PVC	120.0	0.04	Open	1.154	265.70	265.70	0.00	0.00	0.02
P-1583	541.60	400	PVC	120.0	0.04	Open	-1.931	264.95	264.95	0.00	0.00	0.02
P-1640	465.50	300	PVC	120.0	0.04	Open	1.032	264.95	264.95	0.00	0.00	0.01
145	898.70	900	Concrete	130.0	0.00	Open	-8.449	264.99	264.99	0.00	0.00	0.01
P-991	253.60	300	PVC	120.0	0.00	Open	-0.848	264.91	264.91	0.00	0.00	0.01
P-21	87.00	200	PVC	110.0	0.04	Open	0.373	265.70	265.70	0.00	0.00	0.01
P-170	192.30	300	PVC	120.0	0.04	Open	0.781	264.96	264.96	0.00	0.00	0.01
P-19	87.00	200	PVC	110.0	0.04	Open	0.347	265.70	265.70	0.00	0.00	0.01
292	186.70	300	PVC	120.0	0.00	Open	0.741	265.01	265.01	0.00	0.00	0.01
269	232.80	300	PVC	120.0	0.00	Open	0.741	265.01	265.01	0.00	0.00	0.01
P-184	278.60	400	PVC	120.0	0.04	Open	1.281	264.91	264.91	0.00	0.00	0.01
P-165	74.90	300	PVC	120.0	0.04	Open	0.675	265.01	265.01	0.00	0.00	0.01
P-176	176.50	300	PVC	120.0	0.04	Open	0.641	264.98	264.98	0.00	0.00	0.01
P-182	627.60	300	PVC	120.0	0.04	Open	0.597	264.91	264.91	0.00	0.00	0.01
P-1003	232.30	400	PVC	120.0	0.00	Open	-1.038	264.94	264.94	0.00	0.00	0.01
P-22	72.80	300	PVC	120.0	0.04	Open	0.551	265.70	265.70	0.00	0.00	0.01
P-1582	364.70	400	PVC	120.0	0.04	Open	0.969	264.95	264.95	0.00	0.00	0.01
P-181	214.10	300	PVC	120.0	0.00	Open	0.474	264.91	264.91	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.105	265.01	265.01	0.00	0.00	0.01
P-1039	545.60	300	PVC	120.0	0.00	Open	0.384	264.91	264.91	0.00	0.00	0.01
P-167	350.30	150	PVC	150.0	0.04	Open	0.092	265.01	265.01	0.00	0.00	0.01
P-183	591.40	400	PVC	120.0	0.04	Open	0.621	264.91	264.91	0.00	0.00	0.00
142	269.20	900	Concrete	130.0	0.00	Open	2.102	264.99	264.99	0.00	0.00	0.00
P-179	327.70	300	PVC	120.0	0.00	Open	0.199	264.91	264.91	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	263.04	263.04	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	264.94	264.94	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	264.99	264.99	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	264.94	264.94	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	0.000	263.04	263.04	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	264.57	263.04	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	264.57	264.57	0.00	0.00	0.00

# Scenario: VMC-2011 3.0 Peak Hour



**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	254.36	96.178
PD6-705	5.513	196.11	Zone-1	Demand	Fixed	5.513	256.01	85.030
PD6-702	26.688	198.20	Zone-1	Demand	Fixed	26.688	257.12	83.636
PD6-700	72.139	200.90	Zone-1	Inflow	Fixed	-72.139	259.02	82.501
PD6-704	16.470	198.21	Zone-1	Demand	Fixed	16.470	256.02	82.065
PD6-678	0.234	197.43	Zone-1	Inflow	Fixed	-0.234	255.15	81.925
PD6-701	35.446	200.90	Zone-1	Demand	Fixed	35.446	258.60	81.907
PD6-703	39.438	199.94	Zone-1	Demand	Fixed	39.438	255.97	79.532
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	256.64	78.986
PD6-685	2.027	199.75	Zone-1	Demand	Fixed	2.027	255.15	78.639
PD6-692	29.418	200.39	Zone-1	Inflow	Fixed	-29.418	255.20	77.805
PD6-695	1,112.370	205.50	Zone-1	Inflow	Fixed	-1,112.370	259.79	77.062
PD6-687	1.956	201.00	Zone-1	Demand	Fixed	1.956	255.14	76.853
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	255.12	76.828
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	255.21	76.566
PD6-740	2.362	201.51	Zone-1	Demand	Fixed	2.362	255.19	76.201
PD6-744	1.571	201.52	Zone-1	Demand	Fixed	1.571	255.20	76.194
PD6-694	14.894	201.81	Zone-1	Demand	Fixed	14.894	255.43	76.116
PD6-743	1.487	201.60	Zone-1	Demand	Fixed	1.487	255.20	76.077
PD6-684	10.531	201.60	Zone-1	Demand	Fixed	10.531	255.16	76.020
PD6-742	1.600	201.66	Zone-1	Demand	Fixed	1.600	255.19	75.986
PD6-741	0.983	201.74	Zone-1	Demand	Fixed	0.983	255.19	75.876
PD6-680	14.494	204.33	Zone-1	Inflow	Fixed	-14.494	256.74	74.393
PD6-677	76.485	204.11	Zone-1	Demand	Fixed	76.485	256.52	74.390
PD6-436	41.237	195.10	Zone-1	Demand	Fixed	41.237	246.73	73.284
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	256.97	72.352
PD6-689	4.420	206.10	Zone-1	Demand	Fixed	4.420	256.66	71.769
PD6-71	36.878	205.42	Zone-1	Demand	Fixed	36.878	255.69	71.350
PD6-VMC-4	22.919	196.90	Zone-1	Demand	Fixed	22.919	246.95	71.038
PD6-72	20.864	205.91	Zone-1	Inflow	Fixed	-20.864	255.81	70.826
PD6-443	64.241	196.80	Zone-1	Demand	Fixed	64.241	246.58	70.662
PD6-439	29.905	197.15	Zone-1	Demand	Fixed	29.905	246.85	70.544
PD6-720	3.116	204.00	Zone-1	Demand	Fixed	3.116	253.51	70.281
PD6-683	0.242	206.84	Zone-1	Demand	Fixed	0.242	255.76	69.442
PD6-731	37.325	198.85	Zone-1	Demand	Fixed	37.325	247.16	68.572
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	246.70	68.565
PD6-671	4.466	207.07	Zone-1	Demand	Fixed	4.466	255.14	68.234
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	255.86	68.083
PD6-734	10.137	199.68	Zone-1	Demand	Fixed	10.137	247.64	68.080
PD6-735	36.916	200.60	Zone-1	Demand	Fixed	36.916	248.44	67.901
PD6-438	21.933	199.41	Zone-1	Demand	Fixed	21.933	246.85	67.343
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	248.34	67.197
PD6-440	28.731	200.75	Zone-1	Demand	Fixed	28.731	246.99	65.631
PD6-779	1.537	212.93	Zone-1	Demand	Fixed	1.537	259.04	65.452
PD6-736	91.216	203.00	Zone-1	Demand	Fixed	91.216	248.94	65.211
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	248.68	64.837
PD6-VMC-2	61.635	201.20	Zone-1	Demand	Fixed	61.635	246.59	64.434
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	247.97	64.368
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	248.26	64.248
PD6-VMC-3	41.593	201.90	Zone-1	Demand	Fixed	41.593	247.10	64.153
PD6-732	27.619	202.00	Zone-1	Demand	Fixed	27.619	247.16	64.101
PD6-780	1.911	213.94	Zone-1	Demand	Fixed	1.911	259.04	64.018
PD6-441	88.016	202.80	Zone-1	Demand	Fixed	88.016	247.89	64.002
PD6-442	65.918	202.00	Zone-1	Demand	Fixed	65.918	246.96	63.813

**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-728	21.201	203.54	Zone-1	Demand	Fixed	21.201	248.19	63.382
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	256.03	63.371
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	247.81	63.257
PD6-VMC-1	21.460	204.00	Zone-1	Demand	Fixed	21.460	248.34	62.933
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	248.11	62.526
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	248.22	62.487
PD6-769	2.748	213.39	Zone-1	Demand	Fixed	2.748	257.37	62.432
PD6-767	5.433	213.50	Zone-1	Demand	Fixed	5.433	257.37	62.278
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	246.85	61.948
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	247.60	61.677
PD6-747	8.035	204.37	Zone-1	Demand	Fixed	8.035	247.72	61.529
PD6-768	7.234	214.02	Zone-1	Demand	Fixed	7.234	257.22	61.320
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	248.31	61.210
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	247.22	61.112
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	248.25	61.030
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	258.96	60.984
PD6-451	92.024	203.91	Zone-1	Demand	Fixed	92.024	246.77	60.844
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	246.63	60.795
PD6-1094	1,680.230	217.10	Zone-1	Demand	Fixed	1,680.230	259.88	60.722
PD6-449	44.228	204.85	Zone-1	Demand	Fixed	44.228	247.60	60.682
PD6-754	11.310	205.80	Zone-1	Demand	Fixed	11.310	248.44	60.531
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	249.41	60.200
PD6-749	5.700	205.34	Zone-1	Demand	Fixed	5.700	247.73	60.174
PD6-457	6.098	205.09	Zone-1	Demand	Fixed	6.098	247.38	60.026
PD6-778	1.413	216.78	Zone-1	Demand	Fixed	1.413	259.06	60.009
PD6-446	32.932	205.70	Zone-1	Demand	Fixed	32.932	247.97	59.999
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	248.67	59.866
PD6-456	7.506	205.49	Zone-1	Demand	Fixed	7.506	247.44	59.543
PD6-724	6.026	206.58	Zone-1	Demand	Fixed	6.026	248.52	59.539
PD6-739	40.714	206.90	Zone-1	Demand	Fixed	40.714	248.84	59.537
PD6-458	9.264	205.46	Zone-1	Demand	Fixed	9.264	247.21	59.268
PD6-774	19.580	217.25	Zone-1	Demand	Fixed	19.580	258.88	59.088
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	258.99	58.996
PD6-748	10.652	206.77	Zone-1	Demand	Fixed	10.652	248.30	58.945
PD6-723	1.999	207.16	Zone-1	Demand	Fixed	1.999	248.56	58.768
PD6-763	7.830	212.22	Zone-1	Demand	Fixed	7.830	253.56	58.676
PD6-454	7.449	205.79	Zone-1	Demand	Fixed	7.449	247.06	58.574
PD6-455	5.037	206.02	Zone-1	Demand	Fixed	5.037	247.22	58.486
PD6-461	11.557	206.12	Zone-1	Demand	Fixed	11.557	247.27	58.405
PD6-722	2.281	207.71	Zone-1	Demand	Fixed	2.281	248.81	58.343
PD6-459	6.661	206.13	Zone-1	Demand	Fixed	6.661	246.97	57.978
PD6-468	13.471	207.28	Zone-1	Demand	Fixed	13.471	248.06	57.892
PD6-840	121.222	218.78	Zone-1	Inflow	Fixed	-121.222	259.50	57.805
PD6-460	7.855	206.42	Zone-1	Demand	Fixed	7.855	247.11	57.751
PD6-753	3.348	208.21	Zone-1	Demand	Fixed	3.348	248.82	57.639
PD6-452	27.469	206.27	Zone-1	Demand	Fixed	27.469	246.68	57.357
PD6-9	2.430	218.81	Zone-1	Demand	Fixed	2.430	259.04	57.099
PD6-473	7.926	209.20	Zone-1	Demand	Fixed	7.926	249.38	57.029
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	247.38	57.003
PD6-777	1.768	218.95	Zone-1	Demand	Fixed	1.768	259.06	56.930
PD6-453	10.140	207.00	Zone-1	Demand	Fixed	10.140	246.94	56.692
PD6-762	8.656	212.73	Zone-1	Demand	Fixed	8.656	252.50	56.451
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	259.07	56.303
PD6-756	3.719	209.46	Zone-1	Demand	Fixed	3.719	249.11	56.278

**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-738	3.116	209.25	Zone-1	Demand	Fixed	3.116	248.74	56.049
PD6-758	3.447	210.08	Zone-1	Demand	Fixed	3.447	249.54	56.013
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	248.82	55.968
PD6-751	19.438	209.00	Zone-1	Demand	Fixed	19.438	248.34	55.843
PD6-462	10.195	208.06	Zone-1	Demand	Fixed	10.195	247.32	55.727
PD6-472	4.872	209.66	Zone-1	Demand	Fixed	4.872	248.79	55.538
PD6-721	6.843	209.30	Zone-1	Demand	Fixed	6.843	248.21	55.228
PD6-765	14.232	215.54	Zone-1	Demand	Fixed	14.232	253.77	54.273
PD6-759	12.431	212.38	Zone-1	Demand	Fixed	12.431	250.61	54.270
PD6-469	13.785	210.09	Zone-1	Demand	Fixed	13.785	248.05	53.877
PD6-27	52.349	220.09	Zone-1	Demand	Fixed	52.349	258.02	53.842
PD6-764	7.818	215.49	Zone-1	Demand	Fixed	7.818	253.30	53.674
PD6-325	524.170	222.88	Zone-1	Inflow	Fixed	-524.170	260.69	53.665
PD6-730	25.934	209.40	Zone-1	Demand	Fixed	25.934	247.17	53.614
PD6-24	69.121	221.64	Zone-1	Inflow	Fixed	-69.121	259.31	53.467
PD6-479	16.920	217.00	Zone-1	Demand	Fixed	16.920	254.44	53.144
PD6-470	6.101	211.22	Zone-1	Demand	Fixed	6.101	248.57	53.020
PD6-760	14.657	213.57	Zone-1	Demand	Fixed	14.657	250.90	52.987
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	247.22	52.641
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	250.90	52.561
PD6-474	5.300	212.05	Zone-1	Demand	Fixed	5.300	249.03	52.486
PD6-481	5.442	220.90	Zone-1	Demand	Fixed	5.442	257.87	52.474
PD6-8	3.209	222.21	Zone-1	Demand	Fixed	3.209	259.13	52.400
PD6-480	3.608	220.00	Zone-1	Demand	Fixed	3.608	256.72	52.119
PD6-750	12.406	211.62	Zone-1	Demand	Fixed	12.406	247.73	51.256
PD6-1001	27.941	222.42	Zone-1	Demand	Fixed	27.941	258.41	51.079
PD6-755	3.056	213.37	Zone-1	Demand	Fixed	3.056	249.35	51.071
PD6-761	7.378	217.14	Zone-1	Demand	Fixed	7.378	252.48	50.165
PD6-471	5.381	213.41	Zone-1	Demand	Fixed	5.381	248.62	49.974
PD6-757	3.123	214.34	Zone-1	Demand	Fixed	3.123	249.49	49.900
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	247.55	49.443
PD6-477	28.335	219.28	Zone-1	Demand	Fixed	28.335	253.97	49.235
PD6-466	1.821	214.31	Zone-1	Demand	Fixed	1.821	247.91	47.688
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	252.48	47.553
PD6-475	5.387	215.17	Zone-1	Demand	Fixed	5.387	248.64	47.506
PD6-1000	184.822	222.98	Zone-1	Demand	Fixed	184.822	256.44	47.495
PD6-476	32.025	218.20	Zone-1	Demand	Fixed	32.025	251.33	47.027
PD6-770	3.772	217.18	Zone-1	Demand	Fixed	3.772	249.12	45.337
PD6-478	2.660	217.41	Zone-1	Demand	Fixed	2.660	248.64	44.325
PD6-418	305.677	208.19	Zone-1	Demand	Fixed	305.677	236.57	40.280
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	259.87	34.979
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.87	26.150
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.68	25.882
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.68	-1.159
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.68	-1.159
PD6-7000	489.000	263.65	Zone-1	Demand	Fixed	489.000	259.54	-5.837



**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1	10.00	900	Concrete	130.0	0.04	Open	242.605	260.00	259.88	0.12	12.20	3.53
P-700	67.80	150	PVC	150.0	0.04	Open	45.818	259.04	256.72	2.32	34.20	2.59
740	100.40	400	PVC	120.0	0.00	Open	-282.108	257.87	259.13	1.26	12.53	2.24
P-1024	159.50	300	PVC	120.0	0.00	Open	153.707	253.97	251.33	2.64	16.52	2.17
P-1574	853.30	750	Concrete	130.0	0.00	Open	-879.996	248.94	256.64	7.70	4.16	1.99
278	300.10	450	Concrete	120.0	0.00	Open	305.677	247.22	236.57	10.65	8.19	1.92
P-174	182.60	400	PVC	120.0	0.00	Open	-224.823	257.37	258.88	1.50	8.23	1.79
P-1585	342.60	400	PVC	120.0	0.04	Open	-209.407	253.56	256.03	2.48	7.23	1.67
P-173	212.00	400	PVC	120.0	0.00	Open	-194.953	256.03	257.37	1.34	6.32	1.55
P-699	383.10	400	PVC	120.0	0.00	Open	188.625	256.72	254.44	2.28	5.95	1.50
907	425.70	400	Concrete	120.0	0.00	Open	-184.822	256.44	258.88	2.44	5.73	1.47
P-1634	724.70	150	PVC	150.0	0.04	Open	25.934	255.76	247.17	8.59	11.85	1.47
655	806.70	400	PVC	120.0	0.00	Open	173.360	253.51	249.41	4.10	5.09	1.38
P-1573	262.50	750	Concrete	130.0	0.00	Open	-580.695	248.44	248.94	0.51	1.92	1.31
P-1584	253.10	400	PVC	120.0	0.04	Open	-155.697	252.50	253.56	1.06	4.18	1.24
258	245.40	600	Concrete	130.0	0.00	Open	349.273	248.44	247.89	0.55	2.23	1.24
638	427.80	450	Concrete	120.0	0.00	Open	192.080	258.60	257.12	1.48	3.46	1.21
P-698	309.20	400	PVC	120.0	0.00	Open	146.415	257.87	256.72	1.15	3.72	1.17
P-1040	228.70	400	PVC	120.0	0.00	Open	143.744	253.30	252.48	0.82	3.59	1.14
P-1567	348.80	300	PVC	120.0	0.00	Open	-80.423	247.64	254.36	6.71	4.98	1.14
P-1041	449.00	400	PVC	120.0	0.00	Open	142.184	252.48	250.90	1.58	3.52	1.13
P-1583	541.60	400	PVC	120.0	0.04	Open	-141.223	250.61	252.50	1.89	3.48	1.12
279	162.70	400	PVC	120.0	0.00	Open	-135.834	248.05	248.57	0.53	3.24	1.08
261	304.40	400	PVC	120.0	0.00	Open	131.959	247.89	246.96	0.93	3.07	1.05
654	531.30	400	PVC	120.0	0.00	Open	-131.184	253.51	255.12	1.61	3.03	1.04
P-1018	302.90	400	PVC	120.0	0.00	Open	130.251	257.87	253.97	3.90	2.99	1.04
P-1582	364.70	400	PVC	120.0	0.04	Open	-128.792	249.54	250.61	1.07	2.94	1.02
277	285.10	400	PVC	120.0	0.00	Open	-128.344	247.22	248.05	0.83	2.91	1.02
284	99.50	400	PVC	120.0	0.00	Open	127.952	249.11	248.82	0.29	2.90	1.02
668	255.90	300	PVC	120.0	0.00	Open	71.835	248.19	247.16	1.03	4.04	1.02
P-1042	487.90	400	PVC	120.0	0.00	Open	127.527	250.90	249.49	1.40	2.88	1.01
618	064.00	900	Concrete	130.0	0.00	Open	640.142	258.60	256.64	1.96	0.95	1.01
P-1589	277.30	400	PVC	120.0	0.04	Open	-123.028	248.19	248.94	0.75	2.70	0.98
P-3	300.00	900	Concrete	130.0	0.04	Open	-615.006	256.00	259.79	3.79	0.88	0.97
150	167.20	400	PVC	120.0	0.00	Open	-121.222	259.07	259.50	0.44	2.62	0.96
P-1017	258.70	400	PVC	120.0	0.00	Open	119.915	254.44	253.77	0.66	2.57	0.95
P-180	643.30	300	PVC	120.0	0.00	Open	67.321	251.33	249.03	2.30	3.58	0.95
281	157.50	400	PVC	120.0	0.00	Open	-115.023	249.12	249.49	0.37	2.38	0.92
657	240.10	400	PVC	120.0	0.00	Open	114.596	249.41	248.84	0.57	2.36	0.91
282	244.60	400	PVC	120.0	0.00	Open	111.251	249.12	248.57	0.55	2.24	0.89
351	008.70	900	Concrete	130.0	0.00	Open	562.375	259.88	259.13	0.75	0.75	0.88
154	367.70	450	Concrete	120.0	0.00	Open	138.053	247.91	247.22	0.69	1.88	0.87
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	60.274	247.89	247.10	0.79	2.97	0.85
P-991	253.60	300	PVC	120.0	0.00	Open	59.473	248.79	248.06	0.72	2.85	0.84
P-1003	232.30	400	PVC	120.0	0.00	Open	-105.682	253.30	253.77	0.47	2.03	0.84
263	342.30	300	PVC	120.0	0.00	Open	59.073	247.81	246.85	0.96	2.81	0.84
656	214.70	300	PVC	120.0	0.00	Open	58.764	249.41	248.81	0.60	2.78	0.83
P-177	295.00	150	PVC	150.0	0.04	Open	-14.454	256.03	257.22	1.19	4.02	0.82
283	225.00	400	PVC	120.0	0.00	Open	-102.643	249.11	249.54	0.43	1.93	0.82
P-1566	180.90	300	PVC	120.0	0.00	Open	-57.450	247.16	247.64	0.48	2.67	0.81
P-1591	239.60	400	PVC	120.0	0.04	Open	-100.804	247.81	248.26	0.45	1.87	0.80
P-1648	495.50	450	Concrete	120.0	0.00	Open	126.920	256.66	255.86	0.80	1.61	0.80
640	691.60	450	Concrete	120.0	0.00	Open	125.954	257.12	256.02	1.10	1.59	0.79

**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1001	996.20	900	Concrete	130.0	0.00	Open	497.364	259.79	258.60	1.19	0.59	0.78
P-178	810.60	300	PVC	120.0	0.00	Open	54.361	251.33	249.38	1.95	2.41	0.77
674	252.90	900	Concrete	130.0	0.00	Open	489.000	259.68	259.54	0.15	0.58	0.77
658	107.80	300	PVC	120.0	0.00	Open	53.367	248.81	248.56	0.25	2.33	0.75
143	451.50	300	PVC	120.0	0.00	Open	-52.349	258.02	259.04	1.01	2.25	0.74
597	225.30	450	Concrete	120.0	0.00	Open	116.846	256.97	256.66	0.31	1.38	0.73
300	220.50	300	PVC	120.0	0.00	Open	-49.605	246.77	247.22	0.45	2.03	0.70
264	186.80	300	PVC	120.0	0.00	Open	49.409	247.60	247.22	0.38	2.02	0.70
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-87.744	246.95	247.64	0.70	1.46	0.70
P-1577	103.20	600	Concrete	130.0	0.00	Open	-194.506	248.26	248.34	0.08	0.75	0.69
P-1572	127.40	600	Concrete	130.0	0.00	Open	-194.506	248.34	248.44	0.10	0.75	0.69
265	189.30	300	PVC	120.0	0.00	Open	-48.466	247.60	247.97	0.37	1.95	0.69
P-1575	193.10	400	PVC	120.0	0.04	Open	85.056	248.94	248.68	0.26	1.36	0.68
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-82.701	248.34	248.68	0.34	1.32	0.66
P-179	327.70	300	PVC	120.0	0.00	Open	46.435	249.38	248.79	0.59	1.80	0.66
617	531.70	450	Concrete	120.0	0.00	Open	-103.971	255.43	256.02	0.59	1.11	0.65
155	512.50	300	PVC	120.0	0.00	Open	-46.172	247.91	248.82	0.91	1.78	0.65
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-81.398	247.97	248.34	0.37	1.28	0.65
607	955.80	300	PVC	120.0	0.00	Open	45.292	255.16	253.51	1.64	1.72	0.64
598	132.50	400	PVC	120.0	0.00	Open	80.423	256.97	254.36	2.61	1.23	0.64
286	408.40	400	PVC	120.0	0.00	Open	78.433	248.82	248.34	0.48	1.17	0.62
152	079.00	900	Concrete	130.0	0.00	Open	-395.156	259.07	259.87	0.81	0.39	0.62
289	354.90	300	PVC	120.0	0.00	Open	43.410	248.30	247.73	0.56	1.59	0.61
287	386.80	300	PVC	120.0	0.00	Open	43.288	248.34	247.73	0.61	1.58	0.61
594	406.40	400	PVC	120.0	0.00	Open	-76.485	256.52	256.97	0.45	1.12	0.61
P-1568	301.50	400	PVC	120.0	0.04	Open	-74.908	247.64	247.97	0.32	1.08	0.60
637	417.50	400	PVC	120.0	0.00	Open	72.139	259.02	258.60	0.42	1.00	0.57
P-1649	119.90	450	Concrete	120.0	0.00	Open	90.042	255.86	255.76	0.10	0.85	0.57
262	286.30	500	Concrete	120.0	0.00	Open	110.754	247.81	247.60	0.21	0.75	0.56
309	592.60	300	PVC	120.0	0.00	Open	-39.707	247.27	248.06	0.80	1.35	0.56
P-17	267.60	450	Concrete	120.0	0.00	Open	-89.077	255.21	255.43	0.22	0.83	0.56
639	865.40	300	PVC	120.0	0.00	Open	39.438	257.12	255.97	1.15	1.33	0.56
P-1586	245.10	400	PVC	120.0	0.00	Open	-69.821	248.44	248.67	0.23	0.94	0.56
833	196.10	400	PVC	120.0	0.00	Open	69.121	259.31	259.13	0.18	0.93	0.55
986	141.80	750	Concrete	130.0	0.00	Open	241.921	260.69	259.87	0.81	0.38	0.55
P-989	293.90	900	Concrete	130.0	0.00	Open	-346.179	259.04	259.13	0.09	0.30	0.54
P-1587	189.70	400	PVC	120.0	0.00	Open	-67.466	248.67	248.84	0.17	0.89	0.54
P-25	292.20	400	PVC	120.0	0.04	Open	-67.350	246.59	246.85	0.26	0.88	0.54
604	796.70	450	Concrete	120.0	0.00	Open	84.730	255.76	255.16	0.61	0.76	0.53
P-1015	151.00	300	PVC	120.0	0.04	Open	36.878	255.86	255.69	0.18	1.18	0.52
P-16	121.90	450	Concrete	120.0	0.00	Open	-81.074	255.12	255.21	0.09	0.70	0.51
P-181	214.10	300	PVC	120.0	0.00	Open	35.936	249.03	248.79	0.24	1.12	0.51
659	251.40	300	PVC	120.0	0.00	Open	33.667	248.56	248.31	0.25	0.99	0.48
268	220.50	300	PVC	120.0	0.00	Open	33.306	247.44	247.22	0.21	0.97	0.47
151	005.50	900	Concrete	130.0	0.00	Open	298.164	259.07	258.60	0.46	0.23	0.47
315	189.60	300	PVC	120.0	0.00	Open	-32.605	247.55	247.73	0.18	0.94	0.46
274	248.90	300	PVC	120.0	0.00	Open	-32.605	247.32	247.55	0.23	0.94	0.46
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	513.608	257.00	256.97	0.03	0.12	0.45
319	159.50	300	PVC	120.0	0.00	Open	32.084	249.49	249.35	0.14	0.91	0.45
P-2	100.00	900	Concrete	130.0	0.04	Open	-282.249	259.00	260.69	1.69	0.21	0.44
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-29.845	246.85	247.10	0.24	0.81	0.42
620	101.40	300	PVC	120.0	0.00	Open	-29.418	255.12	255.20	0.08	0.77	0.42
P-1021	873.60	400	PVC	120.0	0.00	Open	51.791	254.44	253.97	0.47	0.54	0.41

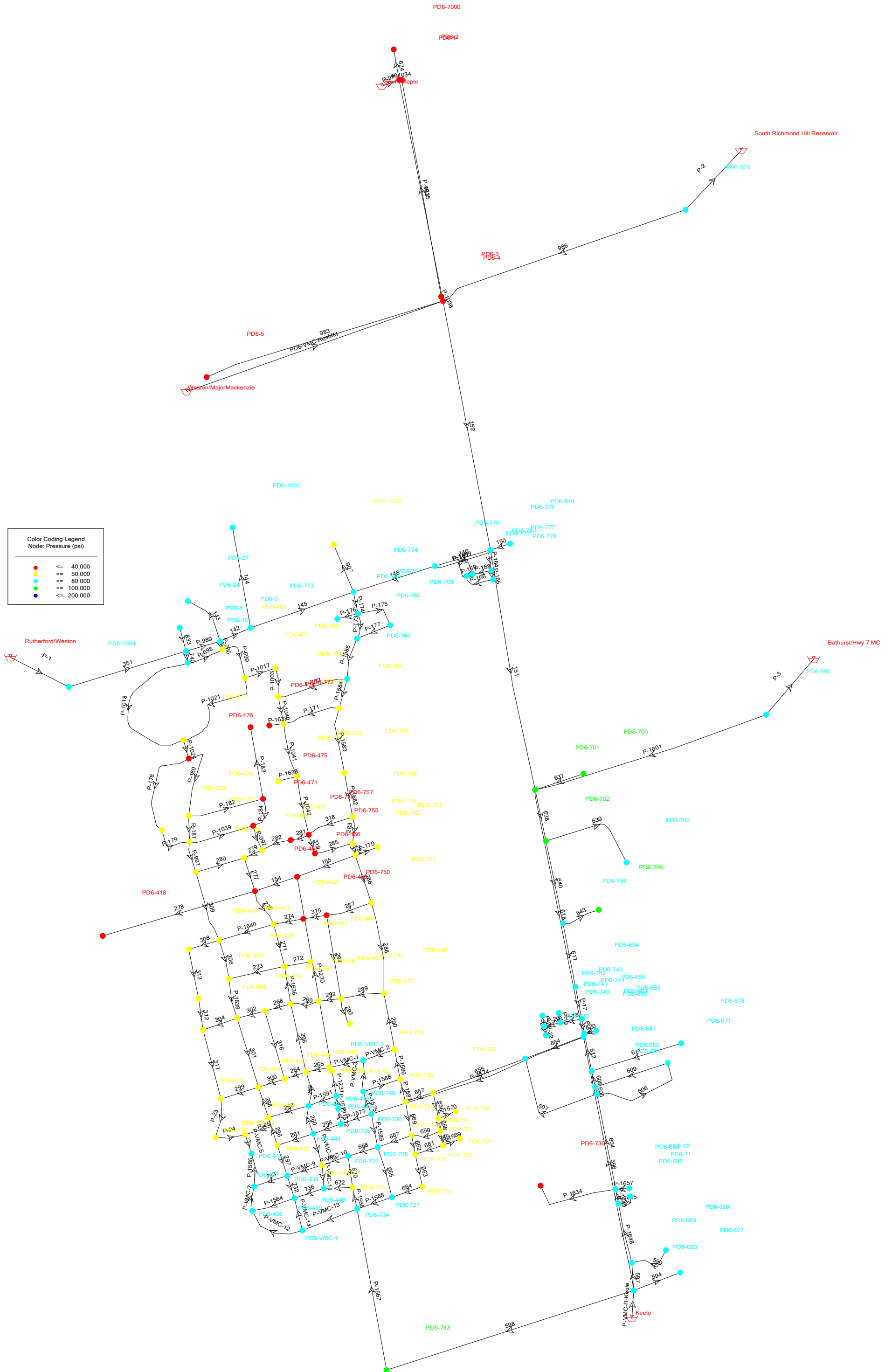
**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
285	320.80	300	PVC	120.0	0.00	Open	-29.028	249.11	249.35	0.24	0.75	0.41
665	429.00	400	PVC	120.0	0.00	Open	-50.862	247.97	248.19	0.23	0.52	0.40
672	235.20	300	PVC	120.0	0.00	Open	28.594	247.16	246.99	0.17	0.73	0.40
P-1159	488.00	600	PVC	150.0	0.04	Open	-112.449	258.96	259.07	0.10	0.21	0.40
302	236.70	300	PVC	120.0	0.00	Open	-28.072	247.06	247.22	0.17	0.71	0.40
269	232.80	300	PVC	120.0	0.00	Open	-27.952	247.44	247.60	0.16	0.70	0.40
292	186.70	300	PVC	120.0	0.00	Open	-27.952	247.60	247.73	0.13	0.70	0.40
144	836.00	300	PVC	120.0	0.00	Open	27.941	258.99	258.41	0.59	0.70	0.40
P-1569	148.90	150	PVC	100.0	0.04	Open	6.843	248.52	248.21	0.32	2.13	0.39
142	269.20	900	Concrete	130.0	0.00	Open	-245.582	258.99	259.04	0.04	0.16	0.39
596	120.30	900	Concrete	130.0	0.00	Open	-239.854	256.64	256.97	0.33	0.15	0.38
P-1565	274.40	400	PVC	120.0	0.04	Open	46.589	246.70	246.58	0.12	0.45	0.37
308	258.70	300	PVC	120.0	0.00	Open	26.141	247.27	247.11	0.16	0.62	0.37
P-182	627.60	300	PVC	120.0	0.04	Open	26.085	249.03	248.64	0.39	0.62	0.37
P-172	585.80	400	PVC	120.0	0.04	Open	-45.880	253.30	253.56	0.25	0.43	0.37
669	281.80	150	PVC	100.0	0.00	Open	-6.416	248.31	248.84	0.53	1.89	0.36
296	242.60	400	PVC	120.0	0.00	Open	45.493	246.96	246.85	0.10	0.43	0.36
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-45.316	246.73	246.95	0.22	0.43	0.36
260	240.60	500	Concrete	120.0	0.00	Open	69.024	247.89	247.81	0.07	0.31	0.35
146	474.30	600	Concrete	130.0	0.00	Open	-99.135	258.96	259.07	0.10	0.22	0.35
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	24.584	247.10	246.99	0.11	0.57	0.35
736	252.00	300	PVC	120.0	0.00	Open	-24.447	246.85	246.99	0.14	0.55	0.35
P-990	150.30	1,050	Concrete	130.0	0.00	Open	-297.054	259.68	259.70	0.02	0.11	0.34
145	898.70	900	Concrete	130.0	0.00	Open	217.641	258.99	258.88	0.12	0.13	0.34
663	273.70	300	PVC	120.0	0.00	Open	24.047	248.25	248.11	0.15	0.53	0.34
664	268.20	300	PVC	120.0	0.00	Open	24.047	248.11	247.97	0.14	0.53	0.34
733	284.70	300	PVC	120.0	0.00	Open	23.865	246.85	246.70	0.15	0.52	0.34
266	574.10	500	Concrete	120.0	0.00	Open	65.584	247.60	247.44	0.16	0.28	0.33
148	701.50	900	Concrete	130.0	0.00	Open	211.584	258.96	258.88	0.09	0.12	0.33
P-1230	621.80	600	Concrete	130.0	0.00	Open	-93.702	247.91	248.22	0.32	0.19	0.33
P-1231	205.80	600	Concrete	130.0	0.00	Open	-93.702	248.22	248.26	0.04	0.19	0.33
301	586.80	300	PVC	120.0	0.00	Open	-22.709	246.77	247.06	0.28	0.48	0.32
P-1639	337.50	300	PVC	120.0	0.04	Open	22.500	247.21	247.06	0.16	0.47	0.32
275	320.80	400	PVC	120.0	0.00	Open	39.280	247.32	247.22	0.10	0.33	0.31
311	583.70	300	PVC	120.0	0.00	Open	-21.900	246.68	246.94	0.26	0.45	0.31
P-175	351.30	300	PVC	120.0	0.04	Open	-21.688	257.22	257.37	0.15	0.44	0.31
290	473.50	400	PVC	120.0	0.00	Open	-38.355	248.30	248.44	0.15	0.31	0.31
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	345.180	260.00	259.87	0.13	0.06	0.31
982	848.50	900	Concrete	130.0	0.00	Open	191.946	259.87	259.68	0.19	0.10	0.30
298	263.70	400	PVC	120.0	0.00	Open	37.216	246.85	246.77	0.08	0.29	0.30
667	293.20	300	PVC	120.0	0.00	Open	-20.869	248.19	248.31	0.12	0.41	0.30
P-1657	109.60	300	PVC	120.0	0.04	Open	-20.864	255.76	255.81	0.05	0.41	0.30
297	257.90	300	PVC	120.0	0.00	Open	20.548	246.96	246.85	0.10	0.40	0.29
304	296.10	300	PVC	120.0	0.00	Open	20.415	247.06	246.94	0.12	0.39	0.29
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	-20.157	248.34	248.44	0.11	0.39	0.29
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-35.747	247.10	247.16	0.06	0.28	0.28
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-19.509	246.85	246.95	0.10	0.36	0.28
661	241.50	150	PVC	100.0	0.00	Open	4.832	248.52	248.25	0.27	1.12	0.27
273	464.80	300	PVC	120.0	0.00	Open	19.254	247.38	247.21	0.16	0.35	0.27
662	161.60	300	PVC	120.0	0.00	Open	-19.215	248.25	248.31	0.06	0.35	0.27
P-1636	313.30	500	PVC	120.0	0.04	Open	-52.723	247.38	247.44	0.06	0.19	0.27
P-1564	361.00	300	PVC	120.0	0.00	Open	-18.645	246.73	246.85	0.12	0.33	0.26
313	407.00	300	PVC	120.0	0.00	Open	-18.286	246.97	247.11	0.13	0.32	0.26

**Scenario: VMC-2011 3.0 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1039	545.60	300	PVC	120.0	0.00	Open	18.027	248.79	248.62	0.17	0.31	0.26
660	120.50	300	PVC	120.0	0.00	Open	17.701	248.56	248.52	0.04	0.30	0.25
299	327.20	300	PVC	120.0	0.00	Open	17.506	246.77	246.68	0.10	0.30	0.25
P-992	211.80	400	PVC	120.0	0.00	Open	30.684	248.62	248.57	0.04	0.21	0.24
271	351.20	400	PVC	120.0	0.00	Open	27.372	247.38	247.32	0.06	0.17	0.22
599	377.30	300	PVC	120.0	0.00	Open	-14.494	256.66	256.74	0.08	0.21	0.21
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-22.724	246.70	246.73	0.02	0.12	0.18
318	396.50	400	PVC	120.0	0.00	Open	22.702	249.54	249.49	0.05	0.12	0.18
306	327.30	300	PVC	120.0	0.00	Open	-12.510	247.21	247.27	0.05	0.16	0.18
P-1570	153.60	150	PVC	100.0	0.04	Open	3.116	248.81	248.74	0.08	0.50	0.18
P-23	325.20	300	PVC	120.0	0.39	Open	11.936	246.68	246.63	0.05	0.15	0.17
P-24	246.00	300	PVC	120.0	0.39	Open	11.936	246.63	246.59	0.04	0.15	0.17
312	261.10	300	PVC	120.0	0.00	Open	-11.625	246.94	246.97	0.04	0.14	0.16
605	56.80	450	Concrete	120.0	0.00	Open	24.951	255.16	255.15	0.00	0.08	0.16
P-1640	465.50	300	PVC	120.0	0.04	Open	-10.501	247.27	247.32	0.05	0.11	0.15
P-184	278.60	400	PVC	120.0	0.04	Open	-18.038	248.62	248.64	0.02	0.08	0.14
608	135.70	450	Concrete	120.0	0.00	Open	22.414	255.15	255.14	0.01	0.06	0.14
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	17.651	246.59	246.58	0.01	0.08	0.14
612	314.30	450	Concrete	120.0	0.00	Open	20.692	255.14	255.12	0.02	0.06	0.13
288	750.60	400	PVC	120.0	0.00	Open	15.706	248.34	248.30	0.04	0.06	0.12
293	225.20	300	PVC	120.0	0.00	Open	8.035	247.73	247.72	0.02	0.07	0.11
P-18	176.70	300	PVC	120.0	0.04	Open	8.003	255.21	255.20	0.01	0.07	0.11
P-168	159.40	150	PVC	150.0	0.04	Open	-1.980	259.04	259.06	0.02	0.10	0.11
P-164	174.90	300	PVC	120.0	0.04	Open	6.629	259.07	259.06	0.01	0.05	0.09
280	416.10	300	PVC	120.0	0.00	Open	-6.294	248.05	248.06	0.02	0.04	0.09
P-166	264.10	150	PVC	150.0	0.04	Open	1.469	259.06	259.04	0.02	0.06	0.08
P-171	478.60	300	PVC	120.0	0.04	Open	-5.818	252.48	252.50	0.02	0.04	0.08
643	323.20	300	PVC	120.0	0.00	Open	5.513	256.02	256.01	0.01	0.03	0.08
P-20	137.00	300	PVC	120.0	0.04	Open	4.945	255.20	255.19	0.00	0.03	0.07
732	195.50	300	PVC	120.0	0.00	Open	4.594	246.85	246.85	0.00	0.02	0.06
606	812.60	300	PVC	120.0	0.00	Open	3.957	255.16	255.14	0.02	0.02	0.06
P-21	87.00	200	PVC	110.0	0.04	Open	1.600	255.19	255.19	0.00	0.03	0.05
P-170	192.30	300	PVC	120.0	0.04	Open	3.348	248.82	248.82	0.00	0.01	0.05
P-19	87.00	200	PVC	110.0	0.04	Open	1.487	255.20	255.20	0.00	0.03	0.05
P-165	74.90	300	PVC	120.0	0.04	Open	2.882	259.06	259.06	0.00	0.01	0.04
P-176	176.50	300	PVC	120.0	0.04	Open	2.748	257.37	257.37	0.00	0.01	0.04
P-22	72.80	300	PVC	120.0	0.04	Open	2.362	255.19	255.19	0.00	0.01	0.03
P-1588	316.50	300	PVC	120.0	0.04	Open	2.356	248.68	248.67	0.00	0.01	0.03
609	623.30	150	PVC	100.0	0.00	Open	0.509	255.15	255.14	0.01	0.02	0.03
294	696.40	300	PVC	120.0	0.00	Open	1.722	247.73	247.73	0.00	0.00	0.02
P-183	591.40	400	PVC	120.0	0.04	Open	2.660	248.64	248.64	0.00	0.00	0.02
670	258.40	300	PVC	120.0	0.00	Open	-1.237	247.16	247.16	0.00	0.00	0.02
611	768.20	150	PVC	100.0	0.00	Open	-0.234	255.14	255.15	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.149	259.04	259.04	0.00	0.00	0.01
P-167	350.30	150	PVC	150.0	0.04	Open	0.081	259.04	259.04	0.00	0.00	0.00
316	576.90	300	PVC	120.0	0.00	Open	0.196	247.22	247.22	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	252.48	252.48	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	-0.000	259.68	259.68	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	259.68	259.68	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	247.38	247.38	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	250.90	250.90	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	259.87	259.68	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	259.87	259.87	0.00	0.00	0.00

# Scenario: VMC-2011 4.5 Peak Hour



**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	251.61	92.283
PD6-705	5.513	196.11	Zone-1	Demand	Fixed	5.513	253.60	81.606
PD6-700	72.139	200.90	Zone-1	Inflow	Fixed	-72.139	258.17	81.291
PD6-702	40.032	198.20	Zone-1	Demand	Fixed	40.032	255.43	81.232
PD6-701	53.169	200.90	Zone-1	Demand	Fixed	53.169	257.75	80.697
PD6-704	24.705	198.21	Zone-1	Demand	Fixed	24.705	253.61	78.641
PD6-678	0.234	197.43	Zone-1	Inflow	Fixed	-0.234	252.28	77.863
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	255.41	77.237
PD6-703	39.438	199.94	Zone-1	Demand	Fixed	39.438	254.28	77.128
PD6-695	1,112.374	205.50	Zone-1	Inflow	Fixed	-1,112.374	259.19	76.211
PD6-685	3.041	199.75	Zone-1	Demand	Fixed	3.041	252.33	74.634
PD6-677	76.485	204.11	Zone-1	Demand	Fixed	76.485	256.46	74.308
PD6-680	14.494	204.33	Zone-1	Inflow	Fixed	-14.494	256.21	73.645
PD6-692	29.418	200.39	Zone-1	Inflow	Fixed	-29.418	252.26	73.622
PD6-687	2.934	201.00	Zone-1	Demand	Fixed	2.934	252.28	72.791
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	252.18	72.645
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	252.31	72.443
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	256.91	72.270
PD6-694	22.341	201.81	Zone-1	Demand	Fixed	22.341	252.65	72.168
PD6-740	3.542	201.51	Zone-1	Demand	Fixed	3.542	252.27	72.052
PD6-744	2.356	201.52	Zone-1	Demand	Fixed	2.356	252.28	72.051
PD6-684	15.796	201.60	Zone-1	Demand	Fixed	15.796	252.35	72.040
PD6-743	2.231	201.60	Zone-1	Demand	Fixed	2.231	252.27	71.931
PD6-742	2.400	201.66	Zone-1	Demand	Fixed	2.400	252.27	71.833
PD6-741	1.475	201.74	Zone-1	Demand	Fixed	1.475	252.27	71.727
PD6-689	6.630	206.10	Zone-1	Demand	Fixed	6.630	256.13	71.021
PD6-71	36.878	205.42	Zone-1	Demand	Fixed	36.878	254.11	69.113
PD6-72	20.864	205.91	Zone-1	Inflow	Fixed	-20.864	254.03	68.299
PD6-683	0.362	206.84	Zone-1	Demand	Fixed	0.362	253.98	66.915
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	254.29	65.845
PD6-779	2.306	212.93	Zone-1	Demand	Fixed	2.306	258.42	64.566
PD6-671	4.466	207.07	Zone-1	Demand	Fixed	4.466	252.33	64.245
PD6-720	4.674	204.00	Zone-1	Demand	Fixed	4.674	249.16	64.106
PD6-780	2.867	213.94	Zone-1	Demand	Fixed	2.867	258.42	63.132
PD6-1094	1,680.228	217.10	Zone-1	Demand	Fixed	1,680.228	259.86	60.694
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	258.33	60.084
PD6-769	4.122	213.39	Zone-1	Demand	Fixed	4.122	255.46	59.724
PD6-767	8.150	213.50	Zone-1	Demand	Fixed	8.150	255.47	59.573
PD6-778	2.119	216.78	Zone-1	Demand	Fixed	2.119	258.45	59.147
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	253.05	59.134
PD6-768	10.851	214.02	Zone-1	Demand	Fixed	10.851	255.17	58.418
PD6-436	61.856	195.10	Zone-1	Demand	Fixed	61.856	236.19	58.322
PD6-774	29.370	217.25	Zone-1	Demand	Fixed	29.370	258.21	58.143
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	258.39	58.141
PD6-840	121.222	218.78	Zone-1	Inflow	Fixed	-121.222	258.91	56.959
PD6-VMC-4	34.378	196.90	Zone-1	Demand	Fixed	34.378	236.61	56.371
PD6-9	3.645	218.81	Zone-1	Demand	Fixed	3.645	258.45	56.273
PD6-777	2.652	218.95	Zone-1	Demand	Fixed	2.652	258.45	56.069
PD6-439	44.858	197.15	Zone-1	Demand	Fixed	44.858	236.42	55.748
PD6-443	96.361	196.80	Zone-1	Demand	Fixed	96.361	235.92	55.530
PD6-735	55.375	200.60	Zone-1	Demand	Fixed	55.375	239.70	55.505
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	258.47	55.456
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	239.55	54.715
PD6-734	15.205	199.68	Zone-1	Demand	Fixed	15.205	238.00	54.393

**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-731	55.987	198.85	Zone-1	Demand	Fixed	55.987	237.03	54.190
PD6-325	524.170	222.88	Zone-1	Inflow	Fixed	-524.170	260.64	53.599
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	236.15	53.579
PD6-736	136.824	203.00	Zone-1	Demand	Fixed	136.824	240.64	53.425
PD6-27	52.349	220.09	Zone-1	Demand	Fixed	52.349	257.44	53.015
PD6-24	69.121	221.64	Zone-1	Inflow	Fixed	-69.121	258.76	52.696
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	240.12	52.685
PD6-438	32.899	199.41	Zone-1	Demand	Fixed	32.899	236.44	52.566
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	239.42	51.697
PD6-8	4.814	222.21	Zone-1	Demand	Fixed	4.814	258.58	51.630
PD6-763	11.745	212.22	Zone-1	Demand	Fixed	11.745	248.58	51.608
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	238.64	51.136
PD6-440	43.097	200.75	Zone-1	Demand	Fixed	43.097	236.69	51.010
PD6-441	132.024	202.80	Zone-1	Demand	Fixed	132.024	238.64	50.869
PD6-728	31.802	203.54	Zone-1	Demand	Fixed	31.802	239.10	50.471
PD6-VMC-1	32.189	204.00	Zone-1	Demand	Fixed	32.189	239.48	50.356
PD6-481	8.162	220.90	Zone-1	Demand	Fixed	8.162	256.29	50.242
PD6-1001	27.941	222.42	Zone-1	Demand	Fixed	27.941	257.80	50.224
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	238.53	50.083
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	239.37	49.920
PD6-732	41.428	202.00	Zone-1	Demand	Fixed	41.428	237.03	49.719
PD6-VMC-3	62.389	201.90	Zone-1	Demand	Fixed	62.389	236.91	49.696
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	238.92	49.485
PD6-VMC-2	92.453	201.20	Zone-1	Demand	Fixed	92.453	235.96	49.338
PD6-442	98.877	202.00	Zone-1	Demand	Fixed	98.877	236.71	49.266
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	241.43	48.876
PD6-480	5.412	220.00	Zone-1	Demand	Fixed	5.412	254.21	48.561
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	238.31	48.488
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	239.32	48.440
PD6-747	12.053	204.37	Zone-1	Demand	Fixed	12.053	238.49	48.435
PD6-762	12.983	212.73	Zone-1	Demand	Fixed	12.983	246.70	48.226
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	239.20	48.182
PD6-754	16.964	205.80	Zone-1	Demand	Fixed	16.964	239.68	48.094
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	240.10	47.694
PD6-739	61.071	206.90	Zone-1	Demand	Fixed	61.071	240.38	47.528
PD6-765	21.349	215.54	Zone-1	Demand	Fixed	21.349	248.91	47.372
PD6-449	66.342	204.85	Zone-1	Demand	Fixed	66.342	238.20	47.342
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	236.52	47.288
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	237.45	47.244
PD6-749	8.551	205.34	Zone-1	Demand	Fixed	8.551	238.53	47.105
PD6-724	9.039	206.58	Zone-1	Demand	Fixed	9.039	239.71	47.022
PD6-446	49.398	205.70	Zone-1	Demand	Fixed	49.398	238.81	46.992
PD6-479	25.379	217.00	Zone-1	Demand	Fixed	25.379	250.09	46.964
PD6-457	9.146	205.09	Zone-1	Demand	Fixed	9.146	238.01	46.732
PD6-1000	184.822	222.98	Zone-1	Demand	Fixed	184.822	255.77	46.550
PD6-748	15.978	206.77	Zone-1	Demand	Fixed	15.978	239.44	46.369
PD6-723	2.998	207.16	Zone-1	Demand	Fixed	2.998	239.78	46.304
PD6-764	11.728	215.49	Zone-1	Demand	Fixed	11.728	248.10	46.291
PD6-722	3.422	207.71	Zone-1	Demand	Fixed	3.422	240.27	46.213
PD6-456	11.259	205.49	Zone-1	Demand	Fixed	11.259	238.04	46.203
PD6-451	138.037	203.91	Zone-1	Demand	Fixed	138.037	236.40	46.124
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	236.06	45.799
PD6-753	5.022	208.21	Zone-1	Demand	Fixed	5.022	240.36	45.642
PD6-458	13.896	205.46	Zone-1	Demand	Fixed	13.896	237.59	45.607

**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-473	11.890	209.20	Zone-1	Demand	Fixed	11.890	241.29	45.552
PD6-468	20.207	207.28	Zone-1	Demand	Fixed	20.207	239.19	45.291
PD6-461	17.335	206.12	Zone-1	Demand	Fixed	17.335	237.73	44.866
PD6-758	5.170	210.08	Zone-1	Demand	Fixed	5.170	241.60	44.744
PD6-455	7.556	206.02	Zone-1	Demand	Fixed	7.556	237.48	44.661
PD6-756	5.578	209.46	Zone-1	Demand	Fixed	5.578	240.86	44.571
PD6-454	11.173	205.79	Zone-1	Demand	Fixed	11.173	237.14	44.502
PD6-759	18.646	212.38	Zone-1	Demand	Fixed	18.646	243.43	44.070
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	240.37	43.975
PD6-460	11.783	206.42	Zone-1	Demand	Fixed	11.783	237.33	43.879
PD6-459	9.991	206.13	Zone-1	Demand	Fixed	9.991	236.99	43.807
PD6-738	4.674	209.25	Zone-1	Demand	Fixed	4.674	240.10	43.797
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	238.01	43.708
PD6-472	7.307	209.66	Zone-1	Demand	Fixed	7.307	240.34	43.549
PD6-751	29.157	209.00	Zone-1	Demand	Fixed	29.157	239.52	43.320
PD6-760	21.985	213.57	Zone-1	Demand	Fixed	21.985	243.91	43.073
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	243.91	42.647
PD6-462	15.293	208.06	Zone-1	Demand	Fixed	15.293	238.02	42.521
PD6-477	42.503	219.28	Zone-1	Demand	Fixed	42.503	249.22	42.500
PD6-452	41.204	206.27	Zone-1	Demand	Fixed	41.204	236.21	42.492
PD6-453	15.210	207.00	Zone-1	Demand	Fixed	15.210	236.89	42.422
PD6-721	10.264	209.30	Zone-1	Demand	Fixed	10.264	239.03	42.206
PD6-761	11.068	217.14	Zone-1	Demand	Fixed	11.068	246.67	41.912
PD6-469	20.677	210.09	Zone-1	Demand	Fixed	20.677	239.19	41.300
PD6-470	9.151	211.22	Zone-1	Demand	Fixed	9.151	240.01	40.866
PD6-474	7.950	212.05	Zone-1	Demand	Fixed	7.950	240.73	40.714
PD6-755	4.584	213.37	Zone-1	Demand	Fixed	4.584	241.27	39.609
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	238.03	39.596
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	246.67	39.300
PD6-757	4.684	214.34	Zone-1	Demand	Fixed	4.684	241.53	38.591
PD6-750	18.608	211.62	Zone-1	Demand	Fixed	18.608	238.53	38.192
PD6-471	8.071	213.41	Zone-1	Demand	Fixed	8.071	240.07	37.845
PD6-730	38.901	209.40	Zone-1	Demand	Fixed	38.901	235.78	37.441
PD6-476	48.037	218.20	Zone-1	Demand	Fixed	48.037	244.58	37.439
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	238.31	36.318
PD6-475	8.080	215.17	Zone-1	Demand	Fixed	8.080	240.10	35.390
PD6-466	2.731	214.31	Zone-1	Demand	Fixed	2.731	238.96	34.994
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	259.80	34.874
PD6-770	5.658	217.18	Zone-1	Demand	Fixed	5.658	240.91	33.680
PD6-478	3.990	217.41	Zone-1	Demand	Fixed	3.990	240.10	32.206
PD6-418	305.677	208.19	Zone-1	Demand	Fixed	305.677	227.38	27.235
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.80	26.045
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.65	25.830
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.65	-1.211
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.65	-1.211
PD6-7000	733.500	263.65	Zone-1	Demand	Fixed	733.500	259.34	-6.120



**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1	10.00	900	Concrete	130.0	0.04	Open	427.890	260.00	259.86	0.14	14.17	3.82
P-700	67.80	150	PVC	150.0	0.04	Open	63.486	258.45	254.21	4.24	62.58	3.59
740	100.40	400	PVC	120.0	0.00	Open	-389.630	256.29	258.58	2.29	22.78	3.10
P-1024	159.50	300	PVC	120.0	0.00	Open	208.743	249.22	244.58	4.65	29.12	2.95
P-1574	853.30	750	Concrete	130.0	0.00	Open	250.822	240.64	255.41	14.78	7.97	2.83
P-174	182.60	400	PVC	120.0	0.00	Open	-311.154	255.47	258.21	2.74	15.02	2.48
P-1585	342.60	400	PVC	120.0	0.04	Open	-288.031	248.58	253.05	4.47	13.05	2.29
P-1634	724.70	150	PVC	150.0	0.04	Open	38.901	253.98	235.78	18.20	25.12	2.20
P-173	212.00	400	PVC	120.0	0.00	Open	-268.218	253.05	255.47	2.42	11.41	2.13
P-699	383.10	400	PVC	120.0	0.00	Open	259.938	254.21	250.09	4.12	10.77	2.07
655	806.70	400	PVC	120.0	0.00	Open	244.074	249.16	241.43	7.73	9.58	1.94
278	300.10	450	Concrete	120.0	0.00	Open	305.677	238.03	227.38	10.65	8.19	1.92
P-1573	262.50	750	Concrete	130.0	0.00	Open	-809.508	239.70	240.64	0.93	3.56	1.83
258	245.40	600	Concrete	130.0	0.00	Open	501.089	239.70	238.64	1.07	4.34	1.77
P-1584	253.10	400	PVC	120.0	0.04	Open	-211.924	246.70	248.58	1.87	7.40	1.69
P-1567	348.80	300	PVC	120.0	0.00	Open	-117.788	238.00	251.61	13.61	10.09	1.67
P-698	309.20	400	PVC	120.0	0.00	Open	201.864	256.29	254.21	2.08	6.74	1.61
261	304.40	400	PVC	120.0	0.00	Open	195.233	238.64	236.71	1.93	6.34	1.55
P-1040	228.70	400	PVC	120.0	0.00	Open	194.201	248.10	246.67	1.44	6.27	1.55
638	427.80	450	Concrete	120.0	0.00	Open	244.836	257.75	255.43	2.32	5.43	1.54
P-1041	449.00	400	PVC	120.0	0.00	Open	191.767	246.67	243.91	2.75	6.13	1.53
P-1583	541.60	400	PVC	120.0	0.04	Open	-190.307	243.43	246.70	3.28	6.05	1.51
668	255.90	300	PVC	120.0	0.00	Open	104.530	239.10	237.03	2.07	8.09	1.48
907	425.70	400	Concrete	120.0	0.00	Open	-184.822	255.77	258.21	2.44	5.73	1.47
654	531.30	400	PVC	120.0	0.00	Open	-183.953	249.16	252.18	3.02	5.68	1.46
P-1589	277.30	400	PVC	120.0	0.04	Open	-181.590	239.10	240.64	1.54	5.56	1.45
P-1018	302.90	400	PVC	120.0	0.00	Open	179.603	256.29	249.22	7.07	5.43	1.43
279	162.70	400	PVC	120.0	0.00	Open	-173.007	239.19	240.01	0.82	5.07	1.38
P-1582	364.70	400	PVC	120.0	0.04	Open	-171.661	241.60	243.43	1.82	5.00	1.37
284	99.50	400	PVC	120.0	0.00	Open	170.440	240.86	240.37	0.49	4.93	1.36
P-1042	487.90	400	PVC	120.0	0.00	Open	169.782	243.91	241.53	2.39	4.89	1.35
P-1017	258.70	400	PVC	120.0	0.00	Open	162.915	250.09	248.91	1.17	4.53	1.30
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	91.615	238.64	236.91	1.73	6.46	1.30
657	240.10	400	PVC	120.0	0.00	Open	159.777	241.43	240.38	1.05	4.37	1.27
P-1648	495.50	450	Concrete	120.0	0.00	Open	199.807	256.13	254.29	1.85	3.73	1.26
P-180	643.30	300	PVC	120.0	0.00	Open	88.740	244.58	240.73	3.84	5.97	1.26
263	342.30	300	PVC	120.0	0.00	Open	87.900	238.53	236.52	2.01	5.87	1.24
277	285.10	400	PVC	120.0	0.00	Open	-153.726	238.03	239.19	1.16	4.07	1.22
597	225.30	450	Concrete	120.0	0.00	Open	191.943	256.91	256.13	0.78	3.46	1.21
281	157.50	400	PVC	120.0	0.00	Open	-150.986	240.91	241.53	0.62	3.94	1.20
656	214.70	300	PVC	120.0	0.00	Open	84.297	241.43	240.27	1.17	5.43	1.19
P-1566	180.90	300	PVC	120.0	0.00	Open	-83.833	237.03	238.00	0.97	5.38	1.19
351	008.70	900	Concrete	130.0	0.00	Open	747.662	259.86	258.58	1.28	1.26	1.18
P-1591	239.60	400	PVC	120.0	0.04	Open	-145.810	238.53	239.42	0.89	3.70	1.16
282	244.60	400	PVC	120.0	0.00	Open	145.329	240.91	240.01	0.90	3.67	1.16
674	252.90	900	Concrete	130.0	0.00	Open	733.500	259.65	259.34	0.31	1.22	1.15
P-1003	232.30	400	PVC	120.0	0.00	Open	-141.567	248.10	248.91	0.81	3.49	1.13
P-177	295.00	150	PVC	150.0	0.04	Open	-19.813	253.05	255.17	2.13	7.20	1.12
300	220.50	300	PVC	120.0	0.00	Open	-78.480	236.40	237.45	1.05	4.76	1.11
618	064.00	900	Concrete	130.0	0.00	Open	704.388	257.75	255.41	2.34	1.13	1.11
283	225.00	400	PVC	120.0	0.00	Open	-137.219	240.86	241.60	0.74	3.30	1.09
P-991	253.60	300	PVC	120.0	0.00	Open	76.587	240.34	239.19	1.15	4.55	1.08
658	107.80	300	PVC	120.0	0.00	Open	76.202	240.27	239.78	0.49	4.51	1.08

**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
640	691.60	450	Concrete	120.0	0.00	Open	165.366	255.43	253.61	1.82	2.63	1.04
P-1649	119.90	450	Concrete	120.0	0.00	Open	162.929	254.29	253.98	0.31	2.55	1.02
154	367.70	450	Concrete	120.0	0.00	Open	162.810	238.96	238.03	0.94	2.55	1.02
P-178	810.60	300	PVC	120.0	0.00	Open	71.966	244.58	241.29	3.29	4.05	1.02
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-127.250	236.61	238.00	1.39	2.91	1.01
264	186.80	300	PVC	120.0	0.00	Open	71.555	238.20	237.45	0.75	4.01	1.01
P-1575	193.10	400	PVC	120.0	0.04	Open	122.899	240.64	240.12	0.52	2.70	0.98
150	167.20	400	PVC	120.0	0.00	Open	-121.222	258.47	258.91	0.44	2.62	0.96
598	132.50	400	PVC	120.0	0.00	Open	117.788	256.91	251.61	5.30	2.49	0.94
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-116.143	239.48	240.12	0.64	2.49	0.92
607	955.80	300	PVC	120.0	0.00	Open	64.794	252.35	249.16	3.19	3.34	0.92
604	796.70	450	Concrete	120.0	0.00	Open	144.529	253.98	252.35	1.63	2.05	0.91
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-112.606	238.81	239.48	0.67	2.34	0.90
P-1577	103.20	600	Concrete	130.0	0.00	Open	-253.044	239.42	239.55	0.13	1.23	0.89
P-1572	127.40	600	Concrete	130.0	0.00	Open	-253.044	239.55	239.70	0.16	1.23	0.89
265	189.30	300	PVC	120.0	0.00	Open	-63.208	238.20	238.81	0.60	3.19	0.89
P-3	300.00	900	Concrete	130.0	0.04	Open	-560.374	256.00	259.19	3.19	0.74	0.88
P-1001	996.20	900	Concrete	130.0	0.00	Open	552.000	259.19	257.75	1.44	0.72	0.87
P-1568	301.50	400	PVC	120.0	0.04	Open	-108.500	238.00	238.64	0.65	2.14	0.86
596	120.30	900	Concrete	130.0	0.00	Open	-546.434	255.41	256.91	1.50	0.71	0.86
286	408.40	400	PVC	120.0	0.00	Open	107.111	240.37	239.52	0.85	2.08	0.85
P-179	327.70	300	PVC	120.0	0.00	Open	60.076	241.29	240.34	0.95	2.90	0.85
617	531.70	450	Concrete	120.0	0.00	Open	-135.148	252.65	253.61	0.96	1.81	0.85
155	512.50	300	PVC	120.0	0.00	Open	-58.307	238.96	240.37	1.41	2.74	0.82
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	932.650	257.00	256.91	0.09	0.37	0.82
P-25	292.20	400	PVC	120.0	0.04	Open	-102.809	235.96	236.52	0.57	1.94	0.82
152	079.00	900	Concrete	130.0	0.00	Open	-517.404	258.47	259.80	1.33	0.64	0.81
289	354.90	300	PVC	120.0	0.00	Open	56.259	239.44	238.53	0.91	2.57	0.80
287	386.80	300	PVC	120.0	0.00	Open	56.221	239.52	238.53	0.99	2.57	0.80
268	220.50	300	PVC	120.0	0.00	Open	55.722	238.04	237.48	0.56	2.52	0.79
309	592.60	300	PVC	120.0	0.00	Open	-54.985	237.73	239.19	1.46	2.46	0.78
P-1586	245.10	400	PVC	120.0	0.00	Open	-96.120	239.68	240.10	0.42	1.71	0.76
143	451.50	300	PVC	120.0	0.00	Open	-52.349	257.44	258.45	1.01	2.25	0.74
262	286.30	500	Concrete	120.0	0.00	Open	140.128	238.53	238.20	0.33	1.16	0.71
P-1587	189.70	400	PVC	120.0	0.00	Open	-89.364	240.10	240.38	0.28	1.49	0.71
P-17	267.60	450	Concrete	120.0	0.00	Open	-112.807	252.31	252.65	0.35	1.29	0.71
659	251.40	300	PVC	120.0	0.00	Open	47.143	239.78	239.32	0.47	1.85	0.67
P-989	293.90	900	Concrete	130.0	0.00	Open	-422.339	258.45	258.58	0.13	0.44	0.66
P-181	214.10	300	PVC	120.0	0.00	Open	46.898	240.73	240.34	0.39	1.83	0.66
P-990	150.30	1,050	Concrete	130.0	0.00	Open	-563.014	259.65	259.70	0.05	0.35	0.65
P-16	121.90	450	Concrete	120.0	0.00	Open	-100.803	252.18	252.31	0.13	1.05	0.63
319	159.50	300	PVC	120.0	0.00	Open	43.384	241.53	241.27	0.25	1.59	0.61
594	406.40	400	PVC	120.0	0.00	Open	-76.485	256.46	256.91	0.45	1.12	0.61
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-42.562	236.44	236.91	0.47	1.56	0.60
308	258.70	300	PVC	120.0	0.00	Open	42.507	237.73	237.33	0.40	1.53	0.60
151	005.50	900	Concrete	130.0	0.00	Open	378.254	258.47	257.75	0.72	0.36	0.59
665	429.00	400	PVC	120.0	0.00	Open	-74.109	238.64	239.10	0.45	1.05	0.59
672	235.20	300	PVC	120.0	0.00	Open	41.306	237.03	236.69	0.34	1.45	0.58
302	236.70	300	PVC	120.0	0.00	Open	-41.242	237.14	237.48	0.34	1.45	0.58
P-1569	148.90	150	PVC	100.0	0.04	Open	10.264	239.71	239.03	0.67	4.52	0.58
637	417.50	400	PVC	120.0	0.00	Open	72.139	258.17	257.75	0.42	1.00	0.57
P-1021	873.60	400	PVC	120.0	0.00	Open	71.643	250.09	249.22	0.86	0.99	0.57
639	865.40	300	PVC	120.0	0.00	Open	39.438	255.43	254.28	1.15	1.33	0.56

**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
986	141.80	750	Concrete	130.0	0.00	Open	246.202	260.64	259.80	0.84	0.39	0.56
P-1639	337.50	300	PVC	120.0	0.04	Open	39.392	237.59	237.14	0.45	1.33	0.56
833	196.10	400	PVC	120.0	0.00	Open	69.121	258.76	258.58	0.18	0.93	0.55
285	320.80	300	PVC	120.0	0.00	Open	-38.799	240.86	241.27	0.41	1.29	0.55
301	586.80	300	PVC	120.0	0.00	Open	-38.250	236.40	237.14	0.74	1.26	0.54
669	281.80	150	PVC	100.0	0.00	Open	-9.342	239.32	240.38	1.07	3.79	0.53
P-1015	151.00	300	PVC	120.0	0.04	Open	36.878	254.29	254.11	0.18	1.18	0.52
311	583.70	300	PVC	120.0	0.00	Open	-36.733	236.21	236.89	0.68	1.17	0.52
315	189.60	300	PVC	120.0	0.00	Open	-36.692	238.31	238.53	0.22	1.16	0.52
274	248.90	300	PVC	120.0	0.00	Open	-36.692	238.02	238.31	0.29	1.16	0.52
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-65.045	236.19	236.61	0.43	0.84	0.52
269	232.80	300	PVC	120.0	0.00	Open	-36.575	238.04	238.31	0.27	1.16	0.52
292	186.70	300	PVC	120.0	0.00	Open	-36.575	238.31	238.53	0.22	1.16	0.52
P-1565	274.40	400	PVC	120.0	0.04	Open	64.664	236.15	235.92	0.23	0.82	0.51
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	36.305	236.91	236.69	0.22	1.17	0.51
P-172	585.80	400	PVC	120.0	0.04	Open	-64.362	248.10	248.58	0.48	0.81	0.51
296	242.60	400	PVC	120.0	0.00	Open	62.028	236.71	236.52	0.18	0.76	0.49
733	284.70	300	PVC	120.0	0.00	Open	34.559	236.44	236.15	0.30	1.04	0.49
736	252.00	300	PVC	120.0	0.00	Open	-34.514	236.42	236.69	0.26	1.04	0.49
663	273.70	300	PVC	120.0	0.00	Open	34.391	239.20	238.92	0.28	1.03	0.49
664	268.20	300	PVC	120.0	0.00	Open	34.391	238.92	238.64	0.28	1.03	0.49
297	257.90	300	PVC	120.0	0.00	Open	34.328	236.71	236.44	0.27	1.03	0.49
P-182	627.60	300	PVC	120.0	0.04	Open	33.892	240.73	240.10	0.63	1.01	0.48
142	269.20	900	Concrete	130.0	0.00	Open	-302.859	258.39	258.45	0.06	0.24	0.48
P-1159	488.00	600	PVC	150.0	0.04	Open	-133.091	258.33	258.47	0.14	0.29	0.47
273	464.80	300	PVC	120.0	0.00	Open	32.085	238.01	237.59	0.42	0.91	0.45
304	296.10	300	PVC	120.0	0.00	Open	31.210	237.14	236.89	0.26	0.86	0.44
P-2	100.00	900	Concrete	130.0	0.04	Open	-277.968	259.00	260.64	1.64	0.20	0.44
313	407.00	300	PVC	120.0	0.00	Open	-30.725	236.99	237.33	0.34	0.84	0.43
P-175	351.30	300	PVC	120.0	0.04	Open	-30.664	255.17	255.47	0.29	0.84	0.43
145	898.70	900	Concrete	130.0	0.00	Open	274.918	258.39	258.21	0.18	0.20	0.43
260	240.60	500	Concrete	120.0	0.00	Open	82.218	238.64	238.53	0.10	0.43	0.42
620	101.40	300	PVC	120.0	0.00	Open	-29.418	252.18	252.26	0.08	0.77	0.42
146	474.30	600	Concrete	130.0	0.00	Open	-117.337	258.33	258.47	0.14	0.30	0.41
667	293.20	300	PVC	120.0	0.00	Open	-28.850	239.10	239.32	0.22	0.75	0.41
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	-28.652	239.48	239.68	0.21	0.75	0.41
290	473.50	400	PVC	120.0	0.00	Open	-50.503	239.44	239.68	0.25	0.52	0.40
144	836.00	300	PVC	120.0	0.00	Open	27.941	258.39	257.80	0.59	0.70	0.40
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-49.642	236.91	237.03	0.12	0.52	0.40
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-27.827	236.42	236.61	0.19	0.70	0.39
148	701.50	900	Concrete	130.0	0.00	Open	250.428	258.33	258.21	0.12	0.17	0.39
662	161.60	300	PVC	120.0	0.00	Open	-27.634	239.20	239.32	0.11	0.69	0.39
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	441.689	260.00	259.80	0.20	0.09	0.39
661	241.50	150	PVC	100.0	0.00	Open	6.757	239.71	239.20	0.50	2.08	0.38
P-1564	361.00	300	PVC	120.0	0.00	Open	-26.915	236.19	236.42	0.24	0.66	0.38
P-1230	621.80	600	Concrete	130.0	0.00	Open	-107.234	238.96	239.37	0.41	0.25	0.38
P-1231	205.80	600	Concrete	130.0	0.00	Open	-107.234	239.37	239.42	0.05	0.25	0.38
298	263.70	400	PVC	120.0	0.00	Open	47.118	236.52	236.40	0.12	0.46	0.37
605	56.80	450	Concrete	120.0	0.00	Open	59.236	252.35	252.33	0.02	0.39	0.37
660	120.50	300	PVC	120.0	0.00	Open	26.061	239.78	239.71	0.07	0.62	0.37
P-1640	465.50	300	PVC	120.0	0.04	Open	-26.060	237.73	238.02	0.29	0.62	0.37
299	327.20	300	PVC	120.0	0.00	Open	25.811	236.40	236.21	0.20	0.61	0.37
608	135.70	450	Concrete	120.0	0.00	Open	56.432	252.33	252.28	0.05	0.36	0.35

**Scenario: VMC-2011 4.5 Peak Hour**  
**Steady State Analysis**  
**Pipe Report**

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
612	314.30	450	Concrete	120.0	0.00	Open	53.732	252.28	252.18	0.10	0.33	0.34
266	574.10	500	Concrete	120.0	0.00	Open	65.440	238.20	238.04	0.16	0.28	0.33
P-1039	545.60	300	PVC	120.0	0.00	Open	23.079	240.34	240.07	0.27	0.49	0.33
P-23	325.20	300	PVC	120.0	0.39	Open	21.341	236.21	236.06	0.14	0.43	0.30
P-24	246.00	300	PVC	120.0	0.39	Open	21.341	236.06	235.96	0.11	0.43	0.30
306	327.30	300	PVC	120.0	0.00	Open	-21.203	237.59	237.73	0.14	0.42	0.30
P-1657	109.60	300	PVC	120.0	0.04	Open	-20.864	253.98	254.03	0.05	0.41	0.30
312	261.10	300	PVC	120.0	0.00	Open	-20.734	236.89	236.99	0.11	0.40	0.29
P-992	211.80	400	PVC	120.0	0.00	Open	36.830	240.07	240.01	0.06	0.29	0.29
982	848.50	900	Concrete	130.0	0.00	Open	170.487	259.80	259.65	0.15	0.08	0.27
P-1570	153.60	150	PVC	100.0	0.04	Open	4.674	240.27	240.10	0.16	1.05	0.26
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	31.697	235.96	235.92	0.04	0.23	0.25
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-30.105	236.15	236.19	0.04	0.20	0.24
318	396.50	400	PVC	120.0	0.00	Open	29.272	241.60	241.53	0.07	0.19	0.23
599	377.30	300	PVC	120.0	0.00	Open	-14.494	256.13	256.21	0.08	0.21	0.21
P-1636	313.30	500	PVC	120.0	0.04	Open	-35.033	238.01	238.04	0.03	0.09	0.18
P-184	278.60	400	PVC	120.0	0.04	Open	-21.822	240.07	240.10	0.03	0.11	0.17
288	750.60	400	PVC	120.0	0.00	Open	21.733	239.52	239.44	0.08	0.11	0.17
293	225.20	300	PVC	120.0	0.00	Open	12.053	238.53	238.49	0.03	0.15	0.17
P-18	176.70	300	PVC	120.0	0.04	Open	12.004	252.31	252.28	0.03	0.15	0.17
P-168	159.40	150	PVC	150.0	0.04	Open	-2.970	258.42	258.45	0.03	0.21	0.17
P-164	174.90	300	PVC	120.0	0.04	Open	9.944	258.47	258.45	0.02	0.10	0.14
732	195.50	300	PVC	120.0	0.00	Open	9.432	236.44	236.42	0.02	0.09	0.13
P-166	264.10	150	PVC	150.0	0.04	Open	2.203	258.45	258.42	0.03	0.12	0.12
P-171	478.60	300	PVC	120.0	0.04	Open	-8.634	246.67	246.70	0.04	0.08	0.12
P-20	137.00	300	PVC	120.0	0.04	Open	7.417	252.28	252.27	0.01	0.06	0.10
316	576.90	300	PVC	120.0	0.00	Open	6.924	237.48	237.45	0.03	0.05	0.10
P-1588	316.50	300	PVC	120.0	0.04	Open	6.756	240.12	240.10	0.02	0.05	0.10
275	320.80	400	PVC	120.0	0.00	Open	-10.859	238.02	238.03	0.01	0.03	0.09
643	323.20	300	PVC	120.0	0.00	Open	5.513	253.61	253.60	0.01	0.03	0.08
P-21	87.00	200	PVC	110.0	0.04	Open	2.400	252.27	252.27	0.01	0.06	0.08
P-170	192.30	300	PVC	120.0	0.04	Open	5.022	240.37	240.36	0.01	0.03	0.07
P-19	87.00	200	PVC	110.0	0.04	Open	2.231	252.28	252.27	0.00	0.06	0.07
606	812.60	300	PVC	120.0	0.00	Open	4.703	252.35	252.33	0.02	0.03	0.07
P-165	74.90	300	PVC	120.0	0.04	Open	4.322	258.45	258.45	0.00	0.02	0.06
P-176	176.50	300	PVC	120.0	0.04	Open	4.122	255.47	255.46	0.00	0.02	0.06
P-22	72.80	300	PVC	120.0	0.04	Open	3.542	252.27	252.27	0.00	0.02	0.05
271	351.20	400	PVC	120.0	0.00	Open	-6.198	238.01	238.02	0.00	0.01	0.05
P-183	591.40	400	PVC	120.0	0.04	Open	3.990	240.10	240.10	0.00	0.00	0.03
280	416.10	300	PVC	120.0	0.00	Open	-1.395	239.19	239.19	0.00	0.00	0.02
670	258.40	300	PVC	120.0	0.00	Open	-1.099	237.03	237.03	0.00	0.00	0.02
609	623.30	150	PVC	100.0	0.00	Open	-0.237	252.33	252.33	0.00	0.00	0.01
611	768.20	150	PVC	100.0	0.00	Open	-0.234	252.28	252.28	0.00	0.00	0.01
294	696.40	300	PVC	120.0	0.00	Open	-0.920	238.53	238.53	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.178	258.42	258.42	0.00	0.00	0.01
P-167	350.30	150	PVC	150.0	0.04	Open	0.075	258.42	258.42	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	243.91	243.91	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	238.01	238.01	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	259.65	259.65	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	0.000	259.65	259.65	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	246.67	246.67	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	259.80	259.80	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	259.80	259.65	0.00	0.00	0.00

# Scenario: VMC-2011 Max Day +FF



**Scenario: VMC-2011 Max Day +FF**  
**Fire Flow Analysis**  
**Junction Report**

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-733	0.000	186.60	Zone-1	Demand	Fixed	0.000	255.90	98.373
PD6-705	11.351	196.11	Zone-1	Demand	Fixed	11.351	256.17	85.247
PD6-702	17.792	198.20	Zone-1	Demand	Fixed	17.792	256.82	83.211
PD6-678	1.556	197.43	Zone-1	Demand	Fixed	1.556	255.71	82.722
PD6-704	10.980	198.21	Zone-1	Demand	Fixed	10.980	256.21	82.327
PD6-436	27.492	195.10	Zone-1	Demand	Fixed	27.492	252.74	81.819
PD6-703	14.517	199.94	Zone-1	Demand	Fixed	14.517	256.64	80.485
PD6-701	23.631	200.90	Zone-1	Demand	Fixed	23.631	257.48	80.318
PD6-700	16.342	200.90	Zone-1	Demand	Fixed	16.342	257.46	80.280
PD6-685	1.351	199.75	Zone-1	Demand	Fixed	1.351	255.83	79.602
PD6-VMC-4	15.279	196.90	Zone-1	Demand	Fixed	15.279	252.83	79.390
PD6-443	42.827	196.80	Zone-1	Demand	Fixed	42.827	252.69	79.332
PD6-665	0.000	201.00	Zone-1	Demand	Fixed	0.000	256.80	79.210
PD6-439	19.937	197.15	Zone-1	Demand	Fixed	19.937	252.79	78.981
PD6-692	10.264	200.39	Zone-1	Demand	Fixed	10.264	255.77	78.608
PD6-687	1.304	201.00	Zone-1	Demand	Fixed	1.304	255.81	77.804
PD6-691	0.000	201.00	Zone-1	Demand	Fixed	0.000	255.78	77.757
PD6-668	0.000	201.27	Zone-1	Demand	Fixed	0.000	255.82	77.432
PD6-437	0.000	198.40	Zone-1	Demand	Fixed	0.000	252.73	77.125
PD6-740	1.574	201.51	Zone-1	Demand	Fixed	1.574	255.81	77.080
PD6-744	1.047	201.52	Zone-1	Demand	Fixed	1.047	255.81	77.069
PD6-684	7.021	201.60	Zone-1	Demand	Fixed	7.021	255.84	76.988
PD6-743	0.992	201.60	Zone-1	Demand	Fixed	0.992	255.81	76.954
PD6-742	1.067	201.66	Zone-1	Demand	Fixed	1.067	255.81	76.866
PD6-694	9.929	201.81	Zone-1	Demand	Fixed	9.929	255.93	76.817
PD6-741	0.655	201.74	Zone-1	Demand	Fixed	0.655	255.81	76.754
PD6-731	24.883	198.85	Zone-1	Demand	Fixed	24.883	252.92	76.747
PD6-734	6.758	199.68	Zone-1	Demand	Fixed	6.758	253.12	75.858
PD6-438	14.622	199.41	Zone-1	Demand	Fixed	14.622	252.80	75.781
PD6-735	24.611	200.60	Zone-1	Demand	Fixed	24.611	253.52	75.118
PD6-677	45.401	204.11	Zone-1	Demand	Fixed	45.401	256.81	74.810
PD6-680	17.849	204.33	Zone-1	Inflow	Fixed	-17.849	256.94	74.680
PD6-444	0.000	201.00	Zone-1	Demand	Fixed	0.000	253.49	74.509
PD6-440	19.154	200.75	Zone-1	Demand	Fixed	19.154	252.85	73.948
PD6-695	361.387	205.50	Zone-1	Inflow	Fixed	-361.387	257.48	73.788
PD6-VMC-2	41.090	201.20	Zone-1	Demand	Fixed	41.090	252.70	73.101
PD6-720	2.077	204.00	Zone-1	Demand	Fixed	2.077	255.23	72.723
PD6-VMC-3	27.728	201.90	Zone-1	Demand	Fixed	27.728	252.89	72.385
PD6-693	0.000	206.00	Zone-1	Demand	Fixed	0.000	256.99	72.372
PD6-732	18.412	202.00	Zone-1	Demand	Fixed	18.412	252.92	72.275
PD6-442	43.945	202.00	Zone-1	Demand	Fixed	43.945	252.87	72.202
PD6-71	27.355	205.42	Zone-1	Demand	Fixed	27.355	256.24	72.143
PD6-689	2.947	206.10	Zone-1	Demand	Fixed	2.947	256.83	72.004
PD6-736	60.811	203.00	Zone-1	Demand	Fixed	60.811	253.71	71.982
PD6-727	0.000	202.62	Zone-1	Demand	Fixed	0.000	253.26	71.884
PD6-746	0.000	203.00	Zone-1	Demand	Fixed	0.000	253.60	71.832
PD6-441	58.677	202.80	Zone-1	Demand	Fixed	58.677	253.29	71.673
PD6-445	0.000	203.00	Zone-1	Demand	Fixed	0.000	253.47	71.637
PD6-72	20.237	205.91	Zone-1	Inflow	Fixed	-20.237	256.33	71.565
PD6-447	0.000	203.25	Zone-1	Demand	Fixed	0.000	253.28	71.010
PD6-728	14.134	203.54	Zone-1	Demand	Fixed	14.134	253.36	70.722
PD6-448	0.000	203.21	Zone-1	Demand	Fixed	0.000	252.83	70.432
PD6-VMC-1	14.306	204.00	Zone-1	Demand	Fixed	14.306	253.48	70.234
PD6-683	0.161	206.84	Zone-1	Demand	Fixed	0.161	256.28	70.184

# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Junction Report

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-7895 Jane	0.000	204.20	Zone-1	Demand	Fixed	0.000	253.46	69.923
PD6-726	0.000	204.06	Zone-1	Demand	Fixed	0.000	253.32	69.922
PD6-463	0.000	204.15	Zone-1	Demand	Fixed	0.000	253.27	69.719
PD6-747	5.357	204.37	Zone-1	Demand	Fixed	5.357	253.31	69.475
PD6-VMC	0.000	203.80	Zone-1	Demand	Fixed	0.000	252.73	69.450
PD6-451	61.350	203.91	Zone-1	Demand	Fixed	61.350	252.81	69.408
PD6-450	0.000	204.17	Zone-1	Demand	Fixed	0.000	253.05	69.387
PD6-671	5.260	207.07	Zone-1	Demand	Fixed	5.260	255.82	69.193
PD6-690	0.000	207.90	Zone-1	Demand	Fixed	0.000	256.35	68.768
PD6-449	29.485	204.85	Zone-1	Demand	Fixed	29.485	253.22	68.655
PD6-729	0.000	205.19	Zone-1	Demand	Fixed	0.000	253.40	68.435
PD6-725	0.000	205.26	Zone-1	Demand	Fixed	0.000	253.38	68.302
PD6-457	4.065	205.09	Zone-1	Demand	Fixed	4.065	253.20	68.283
PD6-749	3.800	205.34	Zone-1	Demand	Fixed	3.800	253.32	68.109
PD6-754	7.540	205.80	Zone-1	Demand	Fixed	7.540	253.54	67.762
PD6-456	5.004	205.49	Zone-1	Demand	Fixed	5.004	253.20	67.718
PD6-458	6.176	205.46	Zone-1	Demand	Fixed	6.176	253.11	67.635
PD6-446	21.955	205.70	Zone-1	Demand	Fixed	21.955	253.34	67.621
PD6-454	4.966	205.79	Zone-1	Demand	Fixed	4.966	252.99	67.002
PD6-745	0.000	206.50	Zone-1	Demand	Fixed	0.000	253.60	66.856
PD6-455	3.358	206.02	Zone-1	Demand	Fixed	3.358	253.07	66.779
PD6-461	7.704	206.12	Zone-1	Demand	Fixed	7.704	253.15	66.762
PD6-724	4.018	206.58	Zone-1	Demand	Fixed	4.018	253.47	66.564
PD6-459	4.440	206.13	Zone-1	Demand	Fixed	4.440	252.97	66.481
PD6-737	0.000	207.00	Zone-1	Demand	Fixed	0.000	253.82	66.460
PD6-748	7.101	206.77	Zone-1	Demand	Fixed	7.101	253.52	66.360
PD6-739	27.143	206.90	Zone-1	Demand	Fixed	27.143	253.64	66.344
PD6-460	5.237	206.42	Zone-1	Demand	Fixed	5.237	253.05	66.196
PD6-452	18.313	206.27	Zone-1	Demand	Fixed	18.313	252.76	65.997
PD6-723	1.333	207.16	Zone-1	Demand	Fixed	1.333	253.49	65.764
PD6-468	8.981	207.28	Zone-1	Demand	Fixed	8.981	253.60	65.755
PD6-766	0.000	211.39	Zone-1	Demand	Fixed	0.000	257.51	65.459
PD6-464	0.000	207.22	Zone-1	Demand	Fixed	0.000	253.20	65.260
PD6-453	6.760	207.00	Zone-1	Demand	Fixed	6.760	252.94	65.205
PD6-779	1.025	212.93	Zone-1	Demand	Fixed	1.025	258.84	65.166
PD6-722	1.521	207.71	Zone-1	Demand	Fixed	1.521	253.59	65.120
PD6-753	2.232	208.21	Zone-1	Demand	Fixed	2.232	253.87	64.820
PD6-462	6.797	208.06	Zone-1	Demand	Fixed	6.797	253.20	64.080
PD6-473	5.284	209.20	Zone-1	Demand	Fixed	5.284	254.28	63.984
PD6-780	1.274	213.94	Zone-1	Demand	Fixed	1.274	258.84	63.732
PD6-769	1.832	213.39	Zone-1	Demand	Fixed	1.832	258.15	63.531
PD6-767	3.622	213.50	Zone-1	Demand	Fixed	3.622	258.15	63.376
PD6-751	12.959	209.00	Zone-1	Demand	Fixed	12.959	253.59	63.289
PD6-756	2.479	209.46	Zone-1	Demand	Fixed	2.479	254.04	63.280
PD6-752	0.000	209.39	Zone-1	Demand	Fixed	0.000	253.88	63.146
PD6-472	3.248	209.66	Zone-1	Demand	Fixed	3.248	253.97	62.896
PD6-738	2.077	209.25	Zone-1	Demand	Fixed	2.077	253.55	62.883
PD6-758	2.298	210.08	Zone-1	Demand	Fixed	2.298	254.28	62.745
PD6-763	5.220	212.22	Zone-1	Demand	Fixed	5.220	256.32	62.593
PD6-768	4.823	214.02	Zone-1	Demand	Fixed	4.823	258.07	62.533
PD6-721	4.562	209.30	Zone-1	Demand	Fixed	4.562	253.32	62.491
PD6-469	9.190	210.09	Zone-1	Demand	Fixed	9.190	253.60	61.759
PD6-467	0.000	210.13	Zone-1	Demand	Fixed	0.000	253.21	61.153
PD6-762	5.770	212.73	Zone-1	Demand	Fixed	5.770	255.79	61.123

# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Junction Report

Label	Base Flow (l/s)	Elevation (m)	Zone	Type	Pattern	Demand (Calculated) (l/s)	Calculated Hydraulic Grade (m)	Pressure (psi)
PD6-775	0.000	216.00	Zone-1	Demand	Fixed	0.000	258.86	60.838
PD6-1094	738.451	217.10	Zone-1	Demand	Fixed	738.451	259.96	60.835
PD6-730	17.289	209.40	Zone-1	Demand	Fixed	17.289	252.23	60.796
PD6-470	4.067	211.22	Zone-1	Demand	Fixed	4.067	253.85	60.512
PD6-759	8.287	212.38	Zone-1	Demand	Fixed	8.287	254.83	60.259
PD6-418	144.174	208.19	Zone-1	Demand	Fixed	144.174	250.56	60.148
PD6-778	0.942	216.78	Zone-1	Demand	Fixed	0.942	258.85	59.711
PD6-474	3.533	212.05	Zone-1	Demand	Fixed	3.533	254.09	59.678
PD6-750	8.270	211.62	Zone-1	Demand	Fixed	8.270	253.33	59.200
PD6-773	0.000	217.43	Zone-1	Demand	Fixed	0.000	259.08	59.123
PD6-774	13.054	217.25	Zone-1	Demand	Fixed	13.054	258.87	59.075
PD6-760	9.771	213.57	Zone-1	Demand	Fixed	9.771	254.98	58.787
PD6-771	0.000	213.87	Zone-1	Demand	Fixed	0.000	254.98	58.361
PD6-765	9.488	215.54	Zone-1	Demand	Fixed	9.488	256.47	58.098
PD6-755	2.037	213.37	Zone-1	Demand	Fixed	2.037	254.18	57.934
PD6-764	5.212	215.49	Zone-1	Demand	Fixed	5.212	256.21	57.798
PD6-465	0.000	212.72	Zone-1	Demand	Fixed	0.000	253.27	57.564
PD6-471	3.587	213.41	Zone-1	Demand	Fixed	3.587	253.88	57.439
PD6-9	1.620	218.81	Zone-1	Demand	Fixed	1.620	259.15	57.262
PD6-840	58.965	218.78	Zone-1	Inflow	Fixed	-58.965	258.97	57.042
PD6-757	2.082	214.34	Zone-1	Demand	Fixed	2.082	254.27	56.676
PD6-777	1.179	218.95	Zone-1	Demand	Fixed	1.179	258.85	56.631
PD6-479	11.280	217.00	Zone-1	Demand	Fixed	11.280	256.83	56.537
PD6-776	0.000	219.40	Zone-1	Demand	Fixed	0.000	258.85	55.998
PD6-466	1.214	214.31	Zone-1	Demand	Fixed	1.214	253.40	55.490
PD6-27	22.766	220.09	Zone-1	Demand	Fixed	22.766	258.93	55.137
PD6-475	3.591	215.17	Zone-1	Demand	Fixed	3.591	253.89	54.958
PD6-761	4.919	217.14	Zone-1	Demand	Fixed	4.919	255.79	54.856
PD6-480	2.405	220.00	Zone-1	Demand	Fixed	2.405	258.00	53.946
PD6-481	3.628	220.90	Zone-1	Demand	Fixed	3.628	258.60	53.519
PD6-24	28.011	221.64	Zone-1	Inflow	Fixed	-28.011	259.29	53.438
PD6-477	18.890	219.28	Zone-1	Demand	Fixed	18.890	256.61	52.985
PD6-476	21.350	218.20	Zone-1	Demand	Fixed	21.350	255.28	52.630
PD6-8	2.140	222.21	Zone-1	Demand	Fixed	2.140	259.25	52.580
PD6-325	239.683	222.88	Zone-1	Inflow	Fixed	-239.683	259.81	52.415
PD6-770	2.515	217.18	Zone-1	Demand	Fixed	2.515	254.10	52.404
PD6-772	0.000	218.98	Zone-1	Demand	Fixed	0.000	255.79	52.244
PD6-1001	12.480	222.42	Zone-1	Demand	Fixed	12.480	258.95	51.853
PD6-478	1.773	217.41	Zone-1	Demand	Fixed	1.773	253.89	51.777
PD6-1000	79.873	222.98	Zone-1	Demand	Fixed	79.873	258.35	50.210
PD6-5	0.000	235.23	Zone-1	Demand	Fixed	0.000	259.76	34.821
PD6-4	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.76	25.992
PD6-3	0.000	241.45	Zone-1	Demand	Fixed	0.000	259.69	25.893
PD6-2	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.69	-1.148
PD6-1	0.000	260.50	Zone-1	Demand	Fixed	0.000	259.69	-1.148
PD6-7000	326.000	263.65	Zone-1	Demand	Fixed	326.000	259.62	-5.717



# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Pipe Report

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1	10.00	900	Concrete	130.0	0.04	Open	281.270	260.00	259.96	0.04	4.26	2.01
P-700	67.80	150	PVC	150.0	0.04	Open	31.330	259.15	258.00	1.15	16.91	1.77
740	100.40	400	PVC	120.0	0.00	Open	-197.317	258.60	259.25	0.65	6.46	1.57
P-1024	159.50	300	PVC	120.0	0.00	Open	106.247	256.61	255.28	1.33	8.34	1.50
P-1574	853.30	750	Concrete	130.0	0.00	Open	-537.513	253.71	256.80	3.09	1.67	1.22
P-174	182.60	400	PVC	120.0	0.00	Open	-151.142	258.15	258.87	0.72	3.94	1.20
P-1585	342.60	400	PVC	120.0	0.04	Open	-140.866	256.32	257.51	1.19	3.47	1.12
P-699	383.10	400	PVC	120.0	0.00	Open	131.907	258.00	256.83	1.17	3.07	1.05
P-173	212.00	400	PVC	120.0	0.00	Open	-131.134	257.51	258.15	0.64	3.03	1.04
P-1634	724.70	150	PVC	150.0	0.04	Open	17.289	256.28	252.23	4.05	5.59	0.98
278	300.10	450	Concrete	120.0	0.00	Open	144.174	253.21	250.56	2.65	2.04	0.91
351	008.70	900	Concrete	130.0	0.00	Open	542.819	259.96	259.25	0.71	0.70	0.85
P-1584	253.10	400	PVC	120.0	0.04	Open	-106.740	255.79	256.32	0.53	2.08	0.85
151	005.50	900	Concrete	130.0	0.00	Open	535.429	258.85	257.48	1.37	0.68	0.84
P-698	309.20	400	PVC	120.0	0.00	Open	102.983	258.60	258.00	0.60	1.94	0.82
P-1040	228.70	400	PVC	120.0	0.00	Open	100.402	256.21	255.79	0.42	1.85	0.80
P-1041	449.00	400	PVC	120.0	0.00	Open	98.447	255.79	254.98	0.80	1.78	0.78
638	427.80	450	Concrete	120.0	0.00	Open	124.318	257.48	256.82	0.66	1.55	0.78
P-1583	541.60	400	PVC	120.0	0.04	Open	-98.005	254.83	255.79	0.96	1.77	0.78
P-1573	262.50	750	Concrete	130.0	0.00	Open	-343.413	253.52	253.71	0.19	0.73	0.78
655	806.70	400	PVC	120.0	0.00	Open	97.469	255.23	253.82	1.41	1.75	0.78
258	245.40	600	Concrete	130.0	0.00	Open	217.377	253.52	253.29	0.23	0.93	0.77
284	99.50	400	PVC	120.0	0.00	Open	94.451	254.04	253.88	0.16	1.65	0.75
279	162.70	400	PVC	120.0	0.00	Open	-91.128	253.60	253.85	0.25	1.55	0.73
P-1018	302.90	400	PVC	120.0	0.00	Open	90.707	258.60	256.61	2.00	1.53	0.72
P-1582	364.70	400	PVC	120.0	0.04	Open	-89.718	254.28	254.83	0.55	1.50	0.71
P-1567	348.80	300	PVC	120.0	0.00	Open	-49.970	253.12	255.90	2.78	2.06	0.71
P-1042	487.90	400	PVC	120.0	0.00	Open	88.676	254.98	254.27	0.72	1.47	0.71
261	304.40	400	PVC	120.0	0.00	Open	86.496	253.29	252.87	0.43	1.40	0.69
P-1017	258.70	400	PVC	120.0	0.00	Open	86.197	256.83	256.47	0.36	1.39	0.69
277	285.10	400	PVC	120.0	0.00	Open	-85.017	253.21	253.60	0.39	1.36	0.68
P-180	643.30	300	PVC	120.0	0.00	Open	47.014	255.28	254.09	1.18	1.84	0.67
152	079.00	900	Concrete	130.0	0.00	Open	-421.775	258.85	259.76	0.91	0.44	0.66
P-1589	277.30	400	PVC	120.0	0.04	Open	-81.315	253.36	253.71	0.35	1.25	0.65
668	255.90	300	PVC	120.0	0.00	Open	45.604	253.36	252.92	0.45	1.74	0.65
907	425.70	400	Concrete	120.0	0.00	Open	-79.873	258.35	258.87	0.52	1.21	0.64
P-1003	232.30	400	PVC	120.0	0.00	Open	-76.709	256.21	256.47	0.26	1.12	0.61
P-1648	495.50	450	Concrete	120.0	0.00	Open	96.456	256.83	256.35	0.48	0.97	0.61
281	157.50	400	PVC	120.0	0.00	Open	-75.047	254.10	254.27	0.17	1.08	0.60
283	225.00	400	PVC	120.0	0.00	Open	-75.044	254.04	254.28	0.24	1.08	0.60
P-VMC-8	267.10	300	PVC	120.0	0.39	Open	41.528	253.29	252.89	0.40	1.49	0.59
P-989	293.90	900	Concrete	130.0	0.00	Open	-371.373	259.15	259.25	0.10	0.35	0.58
P-991	253.60	300	PVC	120.0	0.00	Open	41.217	253.97	253.60	0.37	1.44	0.58
P-3	300.00	900	Concrete	130.0	0.04	Open	-370.570	256.00	257.48	1.48	0.34	0.58
654	531.30	400	PVC	120.0	0.00	Open	-73.156	255.23	255.78	0.55	1.03	0.58
640	691.60	450	Concrete	120.0	0.00	Open	92.010	256.82	256.21	0.61	0.89	0.58
282	244.60	400	PVC	120.0	0.00	Open	72.532	254.10	253.85	0.25	1.01	0.58
618	064.00	900	Concrete	130.0	0.00	Open	361.954	257.48	256.80	0.68	0.33	0.57
263	342.30	300	PVC	120.0	0.00	Open	39.056	253.28	252.83	0.45	1.31	0.55
P-177	295.00	150	PVC	150.0	0.04	Open	-9.732	257.51	258.07	0.57	1.93	0.55
P-178	810.60	300	PVC	120.0	0.00	Open	37.884	255.28	254.28	1.00	1.23	0.54
597	225.30	450	Concrete	120.0	0.00	Open	81.554	256.99	256.83	0.16	0.71	0.51
674	252.90	900	Concrete	130.0	0.00	Open	326.000	259.69	259.62	0.07	0.27	0.51

# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Pipe Report

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-1566	180.90	300	PVC	120.0	0.00	Open	-36.048	252.92	253.12	0.20	1.13	0.51
P-1591	239.60	400	PVC	120.0	0.04	Open	-63.775	253.28	253.47	0.19	0.80	0.51
300	220.50	300	PVC	120.0	0.00	Open	-35.822	252.81	253.05	0.25	1.11	0.51
656	214.70	300	PVC	120.0	0.00	Open	35.443	253.82	253.59	0.23	1.09	0.50
142	269.20	900	Concrete	130.0	0.00	Open	-315.657	259.08	259.15	0.07	0.26	0.50
657	240.10	400	PVC	120.0	0.00	Open	62.026	253.82	253.64	0.18	0.76	0.49
145	898.70	900	Concrete	130.0	0.00	Open	303.177	259.08	258.87	0.21	0.24	0.48
286	408.40	400	PVC	120.0	0.00	Open	59.805	253.88	253.59	0.29	0.71	0.48
150	167.20	400	PVC	120.0	0.00	Open	-58.965	258.85	258.97	0.12	0.69	0.47
P-179	327.70	300	PVC	120.0	0.00	Open	32.599	254.28	253.97	0.31	0.94	0.46
155	512.50	300	PVC	120.0	0.00	Open	-32.415	253.40	253.88	0.47	0.93	0.46
604	796.70	450	Concrete	120.0	0.00	Open	71.888	256.28	255.84	0.45	0.56	0.45
658	107.80	300	PVC	120.0	0.00	Open	31.845	253.59	253.49	0.10	0.90	0.45
264	186.80	300	PVC	120.0	0.00	Open	31.512	253.22	253.05	0.16	0.88	0.45
617	531.70	450	Concrete	120.0	0.00	Open	-69.679	255.93	256.21	0.28	0.53	0.44
P-VMC-13	476.30	400	PVC	120.0	0.39	Open	-54.879	252.83	253.12	0.29	0.61	0.44
P-1649	119.90	450	Concrete	120.0	0.00	Open	69.101	256.35	256.28	0.06	0.52	0.43
154	367.70	450	Concrete	120.0	0.00	Open	68.852	253.40	253.21	0.19	0.52	0.43
PD6-VMC-ResM	234.60	1,200	PVC	150.0	0.04	Open	483.856	260.00	259.76	0.24	0.11	0.43
P-1575	193.10	400	PVC	120.0	0.04	Open	51.974	253.71	253.60	0.11	0.55	0.41
309	592.60	300	PVC	120.0	0.00	Open	-29.157	253.15	253.60	0.45	0.76	0.41
598	132.50	400	PVC	120.0	0.00	Open	49.970	256.99	255.90	1.08	0.51	0.40
P-1015	151.00	300	PVC	120.0	0.04	Open	27.355	256.35	256.24	0.10	0.68	0.39
287	386.80	300	PVC	120.0	0.00	Open	27.324	253.59	253.33	0.26	0.67	0.39
P-VMC-1	286.00	400	PVC	120.0	0.39	Open	-48.563	253.34	253.48	0.14	0.49	0.39
P-VMC-3	257.70	400	PVC	120.0	0.39	Open	-48.329	253.48	253.60	0.13	0.49	0.38
P-1568	301.50	400	PVC	120.0	0.04	Open	-47.715	253.12	253.26	0.14	0.47	0.38
265	189.30	300	PVC	120.0	0.00	Open	-26.608	253.22	253.34	0.12	0.64	0.38
P-17	267.60	450	Concrete	120.0	0.00	Open	-59.749	255.82	255.93	0.11	0.40	0.38
607	955.80	300	PVC	120.0	0.00	Open	26.390	255.84	255.23	0.60	0.63	0.37
P-25	292.20	400	PVC	120.0	0.04	Open	-46.436	252.70	252.83	0.13	0.44	0.37
268	220.50	300	PVC	120.0	0.00	Open	25.577	253.20	253.07	0.13	0.60	0.36
594	406.40	400	PVC	120.0	0.00	Open	-45.401	256.81	256.99	0.17	0.43	0.36
P-1572	127.40	600	Concrete	130.0	0.00	Open	-101.426	253.49	253.52	0.03	0.23	0.36
P-1577	103.20	600	Concrete	130.0	0.00	Open	-101.426	253.47	253.49	0.02	0.23	0.36
P-181	214.10	300	PVC	120.0	0.00	Open	24.999	254.09	253.97	0.12	0.57	0.35
289	354.90	300	PVC	120.0	0.00	Open	24.663	253.52	253.32	0.20	0.56	0.35
P-16	121.90	450	Concrete	120.0	0.00	Open	-54.414	255.78	255.82	0.04	0.34	0.34
319	159.50	300	PVC	120.0	0.00	Open	23.924	254.27	254.18	0.08	0.53	0.34
143	451.50	300	PVC	120.0	0.00	Open	-22.766	258.93	259.15	0.22	0.48	0.32
P-VMC-R-Keele	237.00	1,200	PVC	150.0	0.04	Open	352.484	257.00	256.99	0.01	0.06	0.31
285	320.80	300	PVC	120.0	0.00	Open	-21.886	254.04	254.18	0.14	0.45	0.31
P-2	100.00	900	Concrete	130.0	0.04	Open	-189.377	259.00	259.81	0.81	0.10	0.30
P-1657	109.60	300	PVC	120.0	0.04	Open	-20.237	256.28	256.33	0.04	0.39	0.29
308	258.70	300	PVC	120.0	0.00	Open	20.099	253.15	253.05	0.10	0.38	0.28
262	286.30	500	Concrete	120.0	0.00	Open	55.393	253.28	253.22	0.06	0.21	0.28
596	120.30	900	Concrete	130.0	0.00	Open	-175.558	256.80	256.99	0.18	0.09	0.28
P-1021	873.60	400	PVC	120.0	0.00	Open	34.431	256.83	256.61	0.22	0.25	0.27
P-1586	245.10	400	PVC	120.0	0.00	Open	-34.322	253.54	253.60	0.06	0.25	0.27
659	251.40	300	PVC	120.0	0.00	Open	19.173	253.49	253.40	0.09	0.35	0.27
P-1639	337.50	300	PVC	120.0	0.04	Open	18.993	253.11	252.99	0.12	0.34	0.27
665	429.00	400	PVC	120.0	0.00	Open	-32.980	253.26	253.36	0.10	0.24	0.26
P-182	627.60	300	PVC	120.0	0.04	Open	18.481	254.09	253.89	0.21	0.33	0.26

# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Pipe Report

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-VMC-9	300.90	300	PVC	120.0	0.39	Open	-18.274	252.80	252.89	0.10	0.32	0.26
P-1569	148.90	150	PVC	100.0	0.04	Open	4.562	253.47	253.32	0.15	1.01	0.26
301	586.80	300	PVC	120.0	0.00	Open	-18.138	252.81	252.99	0.19	0.32	0.26
302	236.70	300	PVC	120.0	0.00	Open	-17.908	252.99	253.07	0.07	0.31	0.25
599	377.30	300	PVC	120.0	0.00	Open	-17.849	256.83	256.94	0.12	0.31	0.25
672	235.20	300	PVC	120.0	0.00	Open	17.828	252.92	252.85	0.07	0.31	0.25
269	232.80	300	PVC	120.0	0.00	Open	-17.590	253.20	253.27	0.07	0.30	0.25
292	186.70	300	PVC	120.0	0.00	Open	-17.590	253.27	253.32	0.06	0.30	0.25
311	583.70	300	PVC	120.0	0.00	Open	-17.460	252.76	252.94	0.17	0.29	0.25
P-990	150.30	1,050	Concrete	130.0	0.00	Open	-213.613	259.69	259.70	0.01	0.06	0.25
P-1587	189.70	400	PVC	120.0	0.00	Open	-30.678	253.60	253.64	0.04	0.21	0.24
274	248.90	300	PVC	120.0	0.00	Open	-16.970	253.20	253.27	0.07	0.28	0.24
315	189.60	300	PVC	120.0	0.00	Open	-16.970	253.27	253.33	0.05	0.28	0.24
669	281.80	150	PVC	100.0	0.00	Open	-4.205	253.40	253.64	0.24	0.84	0.24
297	257.90	300	PVC	120.0	0.00	Open	16.511	252.87	252.80	0.07	0.27	0.23
P-172	585.80	400	PVC	120.0	0.04	Open	-28.905	256.21	256.32	0.11	0.18	0.23
P-VMC-11	192.30	300	PVC	120.0	0.39	Open	16.055	252.89	252.85	0.05	0.26	0.23
833	196.10	400	PVC	120.0	0.00	Open	28.011	259.29	259.25	0.03	0.17	0.22
P-VMC-12	507.90	400	PVC	120.0	0.39	Open	-27.857	252.74	252.83	0.09	0.17	0.22
P-1565	274.40	400	PVC	120.0	0.04	Open	27.063	252.73	252.69	0.04	0.16	0.22
733	284.70	300	PVC	120.0	0.00	Open	15.051	252.80	252.73	0.06	0.22	0.21
605	56.80	450	Concrete	120.0	0.00	Open	33.783	255.84	255.83	0.01	0.14	0.21
313	407.00	300	PVC	120.0	0.00	Open	-14.862	252.97	253.05	0.09	0.22	0.21
664	268.20	300	PVC	120.0	0.00	Open	14.735	253.32	253.26	0.06	0.21	0.21
663	273.70	300	PVC	120.0	0.00	Open	14.735	253.38	253.32	0.06	0.21	0.21
736	252.00	300	PVC	120.0	0.00	Open	-14.728	252.79	252.85	0.05	0.21	0.21
296	242.60	400	PVC	120.0	0.00	Open	26.040	252.87	252.83	0.04	0.15	0.21
P-175	351.30	300	PVC	120.0	0.04	Open	-14.555	258.07	258.15	0.07	0.21	0.21
P-VMC-2	276.60	300	PVC	120.0	0.39	Open	-14.540	253.48	253.54	0.06	0.21	0.21
639	865.40	300	PVC	120.0	0.00	Open	14.517	256.82	256.64	0.18	0.21	0.21
608	135.70	450	Concrete	120.0	0.00	Open	31.866	255.83	255.81	0.02	0.12	0.20
304	296.10	300	PVC	120.0	0.00	Open	13.798	252.99	252.94	0.06	0.19	0.20
273	464.80	300	PVC	120.0	0.00	Open	13.639	253.20	253.11	0.09	0.19	0.19
P-1039	545.60	300	PVC	120.0	0.00	Open	13.134	253.97	253.88	0.09	0.17	0.19
612	314.30	450	Concrete	120.0	0.00	Open	29.006	255.81	255.78	0.03	0.10	0.18
P-992	211.80	400	PVC	120.0	0.00	Open	22.663	253.88	253.85	0.02	0.12	0.18
982	848.50	900	Concrete	130.0	0.00	Open	112.387	259.76	259.69	0.07	0.04	0.18
144	836.00	300	PVC	120.0	0.00	Open	12.480	259.08	258.95	0.13	0.16	0.18
662	161.60	300	PVC	120.0	0.00	Open	-11.975	253.38	253.40	0.02	0.15	0.17
P-VMC-14	270.40	300	PVC	120.0	0.05	Open	-11.743	252.79	252.83	0.04	0.14	0.17
P-1564	361.00	300	PVC	120.0	0.00	Open	-11.646	252.74	252.79	0.05	0.14	0.16
P-VMC-10	224.50	400	PVC	120.0	0.39	Open	-20.528	252.89	252.92	0.02	0.10	0.16
306	327.30	300	PVC	120.0	0.00	Open	-11.531	253.11	253.15	0.04	0.14	0.16
667	293.20	300	PVC	120.0	0.00	Open	-11.403	253.36	253.40	0.04	0.13	0.16
643	323.20	300	PVC	120.0	0.00	Open	11.351	256.21	256.17	0.04	0.13	0.16
660	120.50	300	PVC	120.0	0.00	Open	11.339	253.49	253.47	0.02	0.13	0.16
299	327.20	300	PVC	120.0	0.00	Open	11.271	252.81	252.76	0.04	0.13	0.16
260	240.60	500	Concrete	120.0	0.00	Open	30.674	253.29	253.28	0.02	0.07	0.16
661	241.50	150	PVC	100.0	0.00	Open	2.760	253.47	253.38	0.10	0.40	0.16
288	750.60	400	PVC	120.0	0.00	Open	19.522	253.59	253.52	0.07	0.09	0.16
298	263.70	400	PVC	120.0	0.00	Open	18.660	252.83	252.81	0.02	0.08	0.15
312	261.10	300	PVC	120.0	0.00	Open	-10.422	252.94	252.97	0.03	0.11	0.15
P-23	325.20	300	PVC	120.0	0.39	Open	10.418	252.76	252.73	0.04	0.11	0.15

# Scenario: VMC-2011 Max Day +FF

## Fire Flow Analysis

### Pipe Report

Label	Length (m)	Diameter (mm)	Material	Hazen-Williams C	Minor Loss Coefficient	Control Status	Discharge (l/s)	Upstream Structure Hydraulic Grade (m)	Downstream Structure Hydraulic Grade (m)	Pressure Pipe Headloss (m)	Headloss Gradient (m/km)	Velocity (m/s)
P-24	246.00	300	PVC	120.0	0.39	Open	10.418	252.73	252.70	0.03	0.11	0.15
620	101.40	300	PVC	120.0	0.00	Open	10.264	255.78	255.77	0.01	0.11	0.15
P-1640	465.50	300	PVC	120.0	0.04	Open	-10.177	253.15	253.20	0.05	0.11	0.14
P-1231	205.80	600	Concrete	130.0	0.00	Open	-37.651	253.46	253.47	0.01	0.04	0.13
P-1230	621.80	600	Concrete	130.0	0.00	Open	-37.651	253.40	253.46	0.06	0.04	0.13
637	417.50	400	PVC	120.0	0.00	Open	-16.342	257.46	257.48	0.03	0.06	0.13
P-VMC-5	164.80	400	PVC	120.0	0.39	Open	15.764	252.70	252.69	0.01	0.06	0.13
P-1570	153.60	150	PVC	100.0	0.04	Open	2.077	253.59	253.55	0.04	0.23	0.12
986	141.80	750	Concrete	130.0	0.00	Open	50.306	259.81	259.76	0.04	0.02	0.11
P-1159	488.00	600	PVC	150.0	0.04	Open	31.418	258.86	258.85	0.01	0.02	0.11
266	574.10	500	Concrete	120.0	0.00	Open	21.004	253.22	253.20	0.02	0.03	0.11
P-184	278.60	400	PVC	120.0	0.04	Open	-13.116	253.88	253.89	0.01	0.04	0.10
318	396.50	400	PVC	120.0	0.00	Open	12.377	254.28	254.27	0.02	0.04	0.10
146	474.30	600	Concrete	130.0	0.00	Open	27.690	258.86	258.85	0.01	0.02	0.10
290	473.50	400	PVC	120.0	0.00	Open	-12.243	253.52	253.54	0.02	0.04	0.10
P-VMC-7	203.10	400	PVC	120.0	0.39	Open	-12.012	252.73	252.74	0.01	0.04	0.10
148	701.50	900	Concrete	130.0	0.00	Open	-59.108	258.86	258.87	0.01	0.01	0.09
611	768.20	150	PVC	100.0	0.00	Open	1.556	255.81	255.71	0.11	0.14	0.09
275	320.80	400	PVC	120.0	0.00	Open	-9.695	253.20	253.21	0.01	0.02	0.08
271	351.20	400	PVC	120.0	0.00	Open	-9.691	253.20	253.20	0.01	0.02	0.08
293	225.20	300	PVC	120.0	0.00	Open	5.357	253.32	253.31	0.01	0.03	0.08
P-18	176.70	300	PVC	120.0	0.04	Open	5.335	255.82	255.81	0.01	0.03	0.08
P-168	159.40	150	PVC	150.0	0.04	Open	-1.319	258.84	258.85	0.01	0.05	0.07
732	195.50	300	PVC	120.0	0.00	Open	5.112	252.80	252.79	0.01	0.03	0.07
606	812.60	300	PVC	120.0	0.00	Open	4.694	255.84	255.82	0.02	0.03	0.07
P-164	174.90	300	PVC	120.0	0.04	Open	4.420	258.85	258.85	0.00	0.02	0.06
316	576.90	300	PVC	120.0	0.00	Open	4.310	253.07	253.05	0.01	0.02	0.06
P-166	264.10	150	PVC	150.0	0.04	Open	0.980	258.85	258.84	0.01	0.03	0.06
P-1588	316.50	300	PVC	120.0	0.04	Open	3.645	253.60	253.60	0.01	0.02	0.05
P-20	137.00	300	PVC	120.0	0.04	Open	3.296	255.81	255.81	0.00	0.01	0.05
280	416.10	300	PVC	120.0	0.00	Open	-3.079	253.60	253.60	0.00	0.01	0.04
P-171	478.60	300	PVC	120.0	0.04	Open	-2.964	255.79	255.79	0.01	0.01	0.04
P-1636	313.30	500	PVC	120.0	0.04	Open	-8.012	253.20	253.20	0.00	0.01	0.04
P-21	87.00	200	PVC	110.0	0.04	Open	1.067	255.81	255.81	0.00	0.01	0.03
609	623.30	150	PVC	100.0	0.00	Open	0.566	255.83	255.82	0.01	0.02	0.03
P-170	192.30	300	PVC	120.0	0.04	Open	2.232	253.88	253.87	0.00	0.01	0.03
P-19	87.00	200	PVC	110.0	0.04	Open	0.992	255.81	255.81	0.00	0.01	0.03
294	696.40	300	PVC	120.0	0.00	Open	-2.084	253.32	253.33	0.00	0.01	0.03
P-165	74.90	300	PVC	120.0	0.04	Open	1.921	258.85	258.85	0.00	0.00	0.03
P-176	176.50	300	PVC	120.0	0.04	Open	1.832	258.15	258.15	0.00	0.00	0.03
P-22	72.80	300	PVC	120.0	0.04	Open	1.574	255.81	255.81	0.00	0.00	0.02
P-1001	996.20	900	Concrete	130.0	0.00	Open	-9.184	257.48	257.48	0.00	0.00	0.01
P-183	591.40	400	PVC	120.0	0.04	Open	1.773	253.89	253.89	0.00	0.00	0.01
P-169	54.00	150	PVC	150.0	0.04	Open	-0.134	258.84	258.84	0.00	0.00	0.01
P-167	350.30	150	PVC	150.0	0.04	Open	0.089	258.84	258.84	0.00	0.00	0.01
670	258.40	300	PVC	120.0	0.00	Open	0.193	252.92	252.92	0.00	0.00	0.00
P-1638	160.80	300	PVC	120.0	0.04	Open	0.000	254.98	254.98	0.00	0.00	0.00
P-1034	22.60	750	Concrete	130.0	0.00	Open	-0.000	259.69	259.69	0.00	0.00	0.00
P-1035	810.50	750	Concrete	130.0	0.00	Open	-0.000	259.69	259.69	0.00	0.00	0.00
272	219.60	300	PVC	120.0	0.00	Open	0.000	253.20	253.20	0.00	0.00	0.00
P-1637	117.70	300	PVC	120.0	0.04	Open	0.000	255.79	255.79	0.00	0.00	0.00
P-1036	37.40	750	Concrete	130.0	0.00	Closed	0.000	259.76	259.69	0.00	0.00	0.00
983	039.10	750	Concrete	130.0	0.00	Closed	0.000	259.76	259.76	0.00	0.00	0.00