Appendix A

Potable Water System

Computer Model Results

Scenario: Potable Average Daily Demand (ADD)
Steady State Analysis

HYDRAULIC STATUS:

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Hydraulic status for steady-state conditions
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Balanced        Trials = 5, Accuracy = 0.000743
Flow Supplied   1,397.60 gpm
Flow Demanded   1,397.60 gpm
Flow Stored     0.00 gpm
R-1             Reservoir: Emptying
R-2             Reservoir: Emptying
R-3             Reservoir: Emptying
R-4             Reservoir: Emptying
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Scenario: Potable Average Daily Demand (ADD)
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	16	Ductile Iron	Demand	0.00	0.00	824.37	356.49	3,000.00	0.67	0.01	0.00
J-2	J-2	16	Ductile Iron	Demand	0.00	0.00	824.37	356.48	3,000.00	0.67	0.08	0.00
J-3	J-3	16	Ductile Iron	Demand	70.88	70.88	824.29	356.45	3,070.88	0.56	0.03	0.00
J-4	J-4	16	Ductile Iron	Demand	0.00	0.00	824.26	356.44	3,000.00	0.56	0.03	0.00
J-5	J-5	16	Ductile Iron	Demand	0.00	0.00	824.24	356.43	3,000.00	0.56	0.03	0.00
J-6	J-6	16	Ductile Iron	Demand	70.88	70.88	824.21	356.42	3,070.88	0.44	0.02	0.00
J-7	J-7	16	Ductile Iron	Demand	0.00	0.00	824.19	356.41	3,000.00	0.44	0.02	0.00
J-8	J-8	16	Ductile Iron	Demand	0.00	0.00	824.17	356.40	3,000.00	0.44	0.02	0.00
J-9	J-9	16	Ductile Iron	Demand	70.88	70.88	824.15	356.39	3,070.88	0.33	0.01	0.00
J-10	J-10	16	Ductile Iron	Demand	0.00	0.00	824.14	356.39	3,000.00	0.33	0.01	0.00
J-11	J-11	16	Ductile Iron	Demand	0.00	0.00	824.13	356.38	3,000.00	0.33	0.01	0.00
J-12	J-12	16	Ductile Iron	Demand	70.88	70.88	824.12	356.38	3,070.88	0.22	0.46e-2	0.00
J-13	J-13	16	Ductile Iron	Demand	0.00	0.00	824.12	356.38	3,000.00	0.22	0.48e-2	0.00
J-14	J-14	16	Ductile Iron	Demand	0.00	0.00	824.12	356.37	3,000.00	0.22	0.23e-2	0.00
J-15	J-15	16	Ductile Iron	Demand	0.00	0.00	824.11	356.37	3,000.00	0.22	0.32e-2	0.00
J-16	J-16	16	Ductile Iron	Demand	55.67	55.67	824.11	356.37	3,055.67	0.51	0.02	0.00
J-17	J-17	16	Ductile Iron	Demand	9.96	9.96	824.09	356.36	3,009.96	0.50	0.02	0.00
J-18	J-18	16	Ductile Iron	Demand	55.67	55.67	824.05	356.35	3,055.67	0.28	0.23e-2	0.00
J-19	J-19	16	Ductile Iron	Demand	55.63	55.63	824.04	356.34	3,055.63	0.19	0.45e-2	0.00
J-20	J-20	16	Ductile Iron	Demand	55.67	55.67	824.04	356.34	3,055.67	0.10	0.13e-2	0.00
J-21	J-21	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.03	0.18e-3	0.00
J-22	J-22	16	Ductile Iron	Demand	36.13	36.13	824.04	356.34	3,036.13	0.03	0.61e-4	0.00
J-23	J-23	16	Ductile Iron	Demand	35.04	35.04	824.04	356.34	3,035.04	0.08	0.79e-3	0.00
J-24	J-24	16	Ductile Iron	Demand	35.04	35.04	824.04	356.34	3,035.04	0.14	0.21e-2	0.00
J-25	J-25	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.14	0.61e-3	0.00
J-26	J-26	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.04	0.61e-4	0.00
J-27	J-27	16	Ductile Iron	Demand	31.30	31.30	824.04	356.34	3,031.30	0.09	0.67e-3	0.00
J-28	J-28	16	Ductile Iron	Demand	18.68	18.68	824.04	356.34	3,018.68	0.12	0.14e-2	0.00
J-29	J-29	16	Ductile Iron	Demand	2.20	2.20	824.04	356.34	3,002.20	0.12	0.55e-3	0.00
J-30	J-30	16	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.12	0.31e-3	0.00
J-31	J-31	16	Ductile Iron	Demand	2.15	2.15	824.05	356.35	3,002.15	0.12	0.14e-2	0.00
J-32	J-32	16	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.12	0.14e-2	0.00
J-33	J-33	16	Ductile Iron	Demand	37.00	37.00	824.05	356.35	3,037.00	0.18	0.32e-2	0.00
J-34	J-34	16	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.18	0.29e-2	0.00
J-35	J-35	16	Ductile Iron	Demand	22.61	22.61	824.06	356.35	3,022.61	0.22	0.36e-2	0.00
J-36	J-36	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.22	0.4e-2	0.00
J-37	J-37	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.22	0.13e-2	0.00
J-38	J-38	16	Ductile Iron	Demand	0.00	0.00	824.07	356.35	3,000.00	0.32	0.01	0.00
J-39	J-39	16	Ductile Iron	Demand	0.00	0.00	824.08	356.36	3,000.00	0.32	0.01	0.00
J-40	J-40	16	Ductile Iron	Demand	32.36	32.36	824.09	356.36	3,032.36	0.37	0.01	0.00
J-41	J-41	16	Ductile Iron	Demand	0.00	0.00	824.10	356.37	3,000.00	0.37	0.01	0.00
J-42	J-42	16	Ductile Iron	Demand	32.36	32.36	824.11	356.37	3,032.36	0.42	0.02	0.00
J-43	J-43	16	Ductile Iron	Demand	0.00	0.00	824.13	356.38	3,000.00	0.42	0.24e-2	0.00
J-44	J-44	10	Ductile Iron	Demand	0.00	0.00	824.13	356.38	3,000.00	1.09	0.02	0.00
J-45	J-45	16	Ductile Iron	Demand	0.00	0.00	824.33	356.47	3,000.00	0.61	0.03	0.00
J-46	J-46	16	Ductile Iron	Demand	0.00	0.00	824.37	356.48	3,000.00	0.61	0.01	0.00
J-47	J-47	16	Ductile Iron	Demand	0.00	0.00	824.38	356.49	3,000.00	0.61	0.38e-2	0.00
J-48	J-48	12	Ductile Iron	Demand	27.44	27.44	824.35	356.48	3,027.44	0.76	0.07	0.00
J-49	J-49	12	Ductile Iron	Demand	0.00	0.00	824.29	356.45	3,000.00	0.76	0.07	0.00
J-50	J-50	12	Ductile Iron	Demand	27.44	27.44	824.22	356.42	3,027.44	0.68	0.06	0.00
J-51	J-51	12	Ductile Iron	Demand	0.00	0.00	824.16	356.40	3,000.00	0.68	0.01	0.00
J-52	J-52	12	Ductile Iron	Demand	0.00	0.00	824.15	356.39	3,000.00	0.68	0.04	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	824.07	356.35	3,000.00	0.65	0.02	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	824.07	356.35	3,000.00	0.23	0.19e-2	0.00
J-54	J-54	12	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.23	0.14e-2	0.00
J-55	J-55	12	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.23	0.01	0.00
J-56	J-56	12	Ductile Iron	Demand	55.63	55.63	824.05	356.35	3,055.63	0.07	0.98e-3	0.00
J-57	J-57	12	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.07	0.79e-3	0.00
J-58	J-58	12	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.07	0.79e-3	0.00

Scenario: Potable Average Daily Demand (ADD)
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-59	J-59	12	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.07	0.85e-3	0.00
J-60	J-60	12	Ductile Iron	Demand	36.13	36.13	824.05	356.35	3,036.13	0.03	0.12e-3	0.00
J-61	J-61	12	Ductile Iron	Demand	71.55	71.55	824.05	356.35	3,071.55	0.23	0.01	0.00
J-62	J-62	12	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.23	0.24e-2	0.00
J-63	J-63	12	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.19	0.42e-2	0.00
J-64	J-64	12	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.19	0.01	0.00
J-65	J-65	12	Ductile Iron	Demand	27.08	27.08	824.05	356.35	3,027.08	0.11	0.18e-2	0.00
J-66	J-66	12	Ductile Iron	Demand	11.55	11.55	824.05	356.35	3,011.55	0.08	0.13e-2	0.00
J-67	J-67	12	Ductile Iron	Demand	16.67	16.67	824.05	356.34	3,016.67	0.03	0.18e-3	0.00
J-68	J-68	12	Ductile Iron	Demand	12.51	12.51	824.04	356.34	3,012.51	0.27e-2	0.00	0.00
J-69	J-69	12	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.27e-2	0.00	0.00
J-70	J-70	12	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.27e-2	0.00	0.00
J-71	J-71	12	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.27e-2	0.00	0.00
J-72	J-72	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.12	0.18e-2	0.00
J-73	J-73	12	Ductile Iron	Demand	0.00	0.00	824.36	356.48	3,000.00	0.86	0.02	0.00
J-74	J-74	12	Ductile Iron	Demand	0.00	0.00	824.34	356.47	3,000.00	0.86	0.06	0.00
J-75	J-75	12	Ductile Iron	Demand	27.08	27.08	824.29	356.45	3,027.08	0.78	0.07	0.00
J-76	J-76	12	Ductile Iron	Demand	0.00	0.00	824.21	356.42	3,000.00	0.78	0.10	0.00
J-77	J-77	12	Ductile Iron	Demand	0.00	0.00	824.11	356.37	3,000.00	0.78	0.05	0.00
J-78	J-78	12	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.19	0.21e-2	0.00
J-78	J-78	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.20	0.19e-2	0.00
J-79	J-79	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.20	0.73e-3	0.00
J-80	J-80	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.20	0.43e-2	0.00
J-81	J-81	16	Ductile Iron	Demand	10.07	10.07	824.05	356.35	3,010.07	0.19	0.34e-2	0.00
J-82	J-82	16	Ductile Iron	Demand	0.00	0.00	824.05	356.35	3,000.00	0.19	0.35e-2	0.00
J-83	J-83	16	Ductile Iron	Demand	0.00	0.00	824.05	356.34	3,000.00	0.19	0.26e-2	0.00
J-84	J-84	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.19	0.1e-2	0.00
J-85	J-85	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.04	0.00	0.00
J-86	J-86	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.03	0.61e-4	0.00
J-86	J-86	10	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.17	0.17e-2	0.00
J-87	J-87	10	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.17	0.01	0.00
J-88	J-88	10	Ductile Iron	Demand	0.00	0.00	824.03	356.34	3,000.00	0.17	0.01	0.00
J-89	J-89	10	Ductile Iron	Demand	0.00	0.00	824.03	356.34	3,000.00	0.17	0.01	0.00
J-90	J-90	10	Ductile Iron	Demand	43.15	43.15	824.02	356.33	3,043.15	0.3e-2	0.00	0.00
J-91	J-91	10	Ductile Iron	Demand	0.00	0.00	824.02	356.33	3,000.00	0.3e-2	0.00	0.00
J-92	J-92	10	Ductile Iron	Demand	13.00	13.00	824.02	356.33	3,013.00	0.06	0.73e-3	0.00
J-93	J-93	10	Ductile Iron	Demand	0.00	0.00	824.02	356.33	3,000.00	0.06	0.67e-3	0.00
J-94	J-94	10	Ductile Iron	Demand	0.00	0.00	824.02	356.33	3,000.00	0.06	0.67e-3	0.00
J-95	J-95	10	Ductile Iron	Demand	0.00	0.00	824.02	356.33	3,000.00	0.06	0.13e-2	0.00
J-96	J-96	10	Ductile Iron	Demand	0.00	0.00	824.02	356.34	3,000.00	0.06	0.79e-3	0.00
J-97	J-97	10	Ductile Iron	Demand	39.55	39.55	824.02	356.34	3,039.55	0.22	0.01	0.00
J-98	J-98	10	Ductile Iron	Demand	0.00	0.00	824.03	356.34	3,000.00	0.22	0.01	0.00
J-99	J-99	10	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	0.22	0.2e-2	0.00
J-100	J-100	16	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.32	0.17e-2	0.00
J-100	J-100	10	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.26	0.01	0.00
J-101	J-101	10	Ductile Iron	Demand	44.44	44.44	824.06	356.35	3,044.44	0.08	0.12e-2	0.00
J-102	J-102	10	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.08	0.12e-2	0.00
J-103	J-103	10	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.08	0.15e-2	0.00
J-104	J-104	10	Ductile Iron	Demand	44.44	44.44	824.06	356.35	3,044.44	0.10	0.24e-2	0.00
J-105	J-105	10	Ductile Iron	Demand	0.00	0.00	824.06	356.35	3,000.00	0.10	0.23e-2	0.00
J-106	J-106	10	Ductile Iron	Demand	44.44	44.44	824.06	356.35	3,044.44	0.28	0.01	0.00
J-107	J-107	10	Ductile Iron	Demand	0.00	0.00	824.07	356.36	3,000.00	0.28	0.01	0.00
J-108	J-108	10	Ductile Iron	Demand	0.00	0.00	824.09	356.36	3,000.00	0.28	0.02	0.00
J-109	J-109	10	Ductile Iron	Demand	44.44	44.44	824.11	356.37	3,044.44	0.47	0.04	0.00
J-110	J-110	10	Ductile Iron	Demand	0.00	0.00	824.15	356.39	3,000.00	0.47	0.01	0.00
J-111	J-111	10	Ductile Iron	Demand	0.00	0.00	824.15	356.39	3,000.00	1.55	0.18	0.00

Scenario: Potable Average Daily Demand (ADD)
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	47.00	16	Ductile Iron	0.00	130.0	419.16	824.37	356.49	0.01	0.13	0.67
J-2	P-3	607.00	16	Ductile Iron	0.00	130.0	419.16	824.37	356.48	0.08	0.13	0.67
J-3	P-4	300.00	16	Ductile Iron	0.00	130.0	348.28	824.29	356.45	0.03	0.09	0.56
J-4	P-5	299.00	16	Ductile Iron	0.00	130.0	348.28	824.26	356.44	0.03	0.09	0.56
J-5	P-6	295.00	16	Ductile Iron	0.00	130.0	348.28	824.24	356.43	0.03	0.09	0.56
J-6	P-7	299.00	16	Ductile Iron	0.00	130.0	277.40	824.21	356.42	0.02	0.06	0.44
J-7	P-8	408.00	16	Ductile Iron	0.00	130.0	277.40	824.19	356.41	0.02	0.06	0.44
J-8	P-9	269.00	16	Ductile Iron	0.00	130.0	277.40	824.17	356.40	0.02	0.06	0.44
J-9	P-10	301.00	16	Ductile Iron	0.00	130.0	206.52	824.15	356.39	0.01	0.03	0.33
J-10	P-11	252.00	16	Ductile Iron	0.00	130.0	206.52	824.14	356.39	0.01	0.03	0.33
J-11	P-12	301.00	16	Ductile Iron	0.00	130.0	206.52	824.13	356.38	0.01	0.03	0.33
J-12	P-13	297.00	16	Ductile Iron	0.00	130.0	135.64	824.12	356.38	0.46e-2	0.02	0.22
J-13	P-14	305.00	16	Ductile Iron	0.00	130.0	135.64	824.12	356.38	0.48e-2	0.02	0.22
J-14	P-15	145.00	16	Ductile Iron	0.00	130.0	135.64	824.12	356.37	0.23e-2	0.02	0.22
J-15	P-16	202.00	16	Ductile Iron	0.00	130.0	135.64	824.11	356.37	0.32e-2	0.02	0.22
J-16	P-17	296.00	16	Ductile Iron	0.00	130.0	320.58	824.11	356.37	0.02	0.08	0.51
J-17	P-55	306.00	16	Ductile Iron	0.00	130.0	310.62	824.09	356.36	0.02	0.07	0.50
J-18	P-19	91.00	16	Ductile Iron	0.00	130.0	173.31	824.05	356.35	0.23e-2	0.02	0.28
J-19	P-20	373.00	16	Ductile Iron	0.00	130.0	117.68	824.04	356.34	0.45e-2	0.01	0.19
J-20	P-95	368.00	16	Ductile Iron	0.00	130.0	62.01	824.04	356.34	0.13e-2	0.36e-2	0.10
J-21	P-22	447.00	16	Ductile Iron	0.00	130.0	19.59	824.04	356.34	0.18e-3	0.41e-3	0.03
J-22	P-23	305.00	16	Ductile Iron	0.00	130.0	-16.54	824.04	356.34	0.61e-4	0.2e-3	0.03
J-23	P-24	293.00	16	Ductile Iron	0.00	130.0	-51.58	824.04	356.34	0.79e-3	0.27e-2	0.08
J-24	P-25	310.00	16	Ductile Iron	0.00	130.0	-86.62	824.04	356.34	0.21e-2	0.01	0.14
J-25	P-92	88.00	16	Ductile Iron	0.00	130.0	-86.62	824.04	356.34	0.61e-3	0.01	0.14
J-26	P-27	43.00	16	Ductile Iron	0.00	130.0	-22.81	824.04	356.34	0.61e-4	0.14e-2	0.04
J-27	P-28	242.00	16	Ductile Iron	0.00	130.0	-54.11	824.04	356.34	0.67e-3	0.28e-2	0.09
J-28	P-29	279.00	16	Ductile Iron	0.00	130.0	-72.79	824.04	356.34	0.14e-2	0.01	0.12
J-29	P-75	111.00	16	Ductile Iron	0.00	130.0	-74.99	824.04	356.34	0.55e-3	0.49e-2	0.12
J-30	P-31	58.00	16	Ductile Iron	0.00	130.0	-75.93	824.05	356.35	0.31e-3	0.01	0.12
J-31	P-32	248.00	16	Ductile Iron	0.00	130.0	-78.08	824.05	356.35	0.14e-2	0.01	0.12
J-32	P-33	254.00	16	Ductile Iron	0.00	130.0	-78.08	824.05	356.35	0.14e-2	0.01	0.12
J-33	P-34	274.00	16	Ductile Iron	0.00	130.0	-115.08	824.05	356.35	0.32e-2	0.01	0.18
J-34	P-35	250.00	16	Ductile Iron	0.00	130.0	-115.08	824.05	356.35	0.29e-2	0.01	0.18
J-35	P-36	223.00	16	Ductile Iron	0.00	130.0	-137.69	824.06	356.35	0.36e-2	0.02	0.22
J-36	P-37	250.00	16	Ductile Iron	0.00	130.0	-137.69	824.06	356.35	0.4e-2	0.02	0.22
J-37	P-111	80.00	16	Ductile Iron	0.00	130.0	-137.69	824.06	356.35	0.13e-2	0.02	0.22
J-38	P-39	262.00	16	Ductile Iron	0.00	130.0	-201.52	824.07	356.35	0.01	0.03	0.32
J-39	P-40	442.00	16	Ductile Iron	0.00	130.0	-201.52	824.08	356.36	0.01	0.03	0.32
J-40	P-41	259.00	16	Ductile Iron	0.00	130.0	-233.88	824.09	356.36	0.01	0.04	0.37
J-41	P-42	309.00	16	Ductile Iron	0.00	130.0	-233.88	824.10	356.37	0.01	0.04	0.37
J-42	P-43	305.00	16	Ductile Iron	0.00	130.0	-266.24	824.11	356.37	0.02	0.05	0.42
J-43	P-44	43.00	16	Ductile Iron	0.00	130.0	-266.24	824.13	356.38	0.24e-2	0.06	0.42
J-44	P-123	37.00	10	Ductile Iron	0.00	130.0	-266.24	824.13	356.38	0.02	0.54	1.09
J-45	P-46	329.00	16	Ductile Iron	0.00	130.0	-380.17	824.33	356.47	0.03	0.11	0.61
J-46	P-47	86.00	16	Ductile Iron	0.00	130.0	-380.17	824.37	356.48	0.01	0.11	0.61
J-47	P-48	36.00	16	Ductile Iron	0.00	130.0	-380.17	824.38	356.49	0.38e-2	0.11	0.61
J-48	P-50	298.00	12	Ductile Iron	0.00	130.0	268.05	824.35	356.48	0.07	0.22	0.76
J-49	P-51	299.00	12	Ductile Iron	0.00	130.0	268.05	824.29	356.45	0.07	0.22	0.76
J-50	P-52	311.00	12	Ductile Iron	0.00	130.0	240.61	824.22	356.42	0.06	0.18	0.68
J-51	P-53	80.00	12	Ductile Iron	0.00	130.0	240.61	824.16	356.40	0.01	0.18	0.68
J-52	P-54	211.00	12	Ductile Iron	0.00	130.0	240.61	824.15	356.39	0.04	0.18	0.68
J-53	P-56	108.00	12	Ductile Iron	0.00	130.0	228.98	824.07	356.35	0.02	0.17	0.65
J-53	P-57	77.00	12	Ductile Iron	0.00	130.0	81.64	824.07	356.35	0.19e-2	0.02	0.23
J-54	P-58	55.00	12	Ductile Iron	0.00	130.0	81.64	824.06	356.35	0.14e-2	0.03	0.23
J-55	P-59	296.00	12	Ductile Iron	0.00	130.0	81.64	824.06	356.35	0.01	0.02	0.23
J-56	P-60	334.00	12	Ductile Iron	0.00	130.0	26.01	824.05	356.35	0.98e-3	0.29e-2	0.07
J-57	P-61	263.00	12	Ductile Iron	0.00	130.0	26.01	824.05	356.35	0.79e-3	0.3e-2	0.07
J-58	P-62	265.00	12	Ductile Iron	0.00	130.0	26.01	824.05	356.35	0.79e-3	0.3e-2	0.07

Scenario: Potable Average Daily Demand (ADD)
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-59	P-63	298.00	12	Ductile Iron	0.00	130.0	26.01	824.05	356.35	0.85e-3	0.29e-2	0.07
J-60	P-64	329.00	12	Ductile Iron	0.00	130.0	-10.12	824.05	356.35	0.12e-3	0.37e-3	0.03
J-61	P-65	248.00	12	Ductile Iron	0.00	130.0	-81.67	824.05	356.35	0.01	0.02	0.23
J-62	P-83	97.00	12	Ductile Iron	0.00	130.0	-81.67	824.06	356.35	0.24e-2	0.03	0.23
J-63	P-67	245.00	12	Ductile Iron	0.00	130.0	66.87	824.06	356.35	0.42e-2	0.02	0.19
J-64	P-68	302.00	12	Ductile Iron	0.00	130.0	66.87	824.05	356.35	0.01	0.02	0.19
J-65	P-69	268.00	12	Ductile Iron	0.00	130.0	39.79	824.05	356.35	0.18e-2	0.01	0.11
J-66	P-70	387.00	12	Ductile Iron	0.00	130.0	28.24	824.05	356.35	0.13e-2	0.35e-2	0.08
J-67	P-71	247.00	12	Ductile Iron	0.00	130.0	11.57	824.05	356.34	0.18e-3	0.74e-3	0.03
J-68	P-72	318.00	12	Ductile Iron	0.00	130.0	-0.94	824.04	356.34	0.00	0.00	0.27e-2
J-69	P-73	292.00	12	Ductile Iron	0.00	130.0	-0.94	824.04	356.34	0.00	0.00	0.27e-2
J-70	P-74	330.00	12	Ductile Iron	0.00	130.0	-0.94	824.04	356.34	0.00	0.00	0.27e-2
J-71	P-77	96.00	12	Ductile Iron	0.00	130.0	-0.94	824.04	356.34	0.00	0.00	0.27e-2
J-72	P-76	339.00	16	Ductile Iron	0.00	130.0	-75.93	824.04	356.34	0.18e-2	0.01	0.12
J-73	P-79	64.00	12	Ductile Iron	0.00	130.0	302.78	824.36	356.48	0.02	0.28	0.86
J-74	P-80	200.00	12	Ductile Iron	0.00	130.0	302.78	824.34	356.47	0.06	0.28	0.86
J-75	P-81	310.00	12	Ductile Iron	0.00	130.0	275.70	824.29	356.45	0.07	0.24	0.78
J-76	P-82	441.00	12	Ductile Iron	0.00	130.0	275.70	824.21	356.42	0.10	0.24	0.78
J-77	P-85	218.00	12	Ductile Iron	0.00	130.0	275.70	824.11	356.37	0.05	0.24	0.78
J-78	P-84	123.00	12	Ductile Iron	0.00	130.0	66.87	824.06	356.35	0.21e-2	0.02	0.19
J-78	P-86	133.00	16	Ductile Iron	0.00	130.0	127.17	824.06	356.35	0.19e-2	0.01	0.20
J-79	P-87	55.00	16	Ductile Iron	0.00	130.0	127.17	824.06	356.35	0.73e-3	0.01	0.20
J-80	P-88	313.00	16	Ductile Iron	0.00	130.0	127.17	824.06	356.35	0.43e-2	0.01	0.20
J-81	P-89	282.00	16	Ductile Iron	0.00	130.0	117.10	824.05	356.35	0.34e-2	0.01	0.19
J-82	P-90	295.00	16	Ductile Iron	0.00	130.0	117.10	824.05	356.35	0.35e-2	0.01	0.19
J-83	P-91	219.00	16	Ductile Iron	0.00	130.0	117.10	824.05	356.34	0.26e-2	0.01	0.19
J-84	P-94	86.00	16	Ductile Iron	0.00	130.0	117.10	824.04	356.34	0.1e-2	0.01	0.19
J-85	P-93	45.00	16	Ductile Iron	0.00	130.0	-22.81	824.04	356.34	0.00	0.00	0.04
J-86	P-96	140.00	16	Ductile Iron	0.00	130.0	19.59	824.04	356.34	0.61e-4	0.44e-3	0.03
J-86	P-97	96.00	10	Ductile Iron	0.00	130.0	42.41	824.04	356.34	0.17e-2	0.02	0.17
J-87	P-98	293.00	10	Ductile Iron	0.00	130.0	42.41	824.04	356.34	0.01	0.02	0.17
J-88	P-99	356.00	10	Ductile Iron	0.00	130.0	42.41	824.03	356.34	0.01	0.02	0.17
J-89	P-100	326.00	10	Ductile Iron	0.00	130.0	42.41	824.03	356.34	0.01	0.02	0.17
J-90	P-101	287.00	10	Ductile Iron	0.00	130.0	-0.74	824.02	356.33	0.00	0.00	0.3e-2
J-91	P-102	851.00	10	Ductile Iron	0.00	130.0	-0.74	824.02	356.33	0.00	0.00	0.3e-2
J-92	P-103	306.00	10	Ductile Iron	0.00	130.0	-13.74	824.02	356.33	0.73e-3	0.24e-2	0.06
J-93	P-104	302.00	10	Ductile Iron	0.00	130.0	-13.74	824.02	356.33	0.67e-3	0.22e-2	0.06
J-94	P-105	318.00	10	Ductile Iron	0.00	130.0	-13.74	824.02	356.33	0.67e-3	0.21e-2	0.06
J-95	P-106	561.00	10	Ductile Iron	0.00	130.0	-13.74	824.02	356.33	0.13e-2	0.23e-2	0.06
J-96	P-107	369.00	10	Ductile Iron	0.00	130.0	-13.74	824.02	356.34	0.79e-3	0.22e-2	0.06
J-97	P-108	301.00	10	Ductile Iron	0.00	130.0	-53.29	824.02	356.34	0.01	0.03	0.22
J-98	P-109	298.00	10	Ductile Iron	0.00	130.0	-53.29	824.03	356.34	0.01	0.03	0.22
J-99	P-110	73.00	10	Ductile Iron	0.00	130.0	-53.29	824.04	356.34	0.2e-2	0.03	0.22
J-100	P-112	53.00	16	Ductile Iron	0.00	130.0	-201.52	824.06	356.35	0.17e-2	0.03	0.32
J-100	P-113	152.00	10	Ductile Iron	0.00	130.0	63.84	824.06	356.35	0.01	0.04	0.26
J-101	P-114	276.00	10	Ductile Iron	0.00	130.0	19.40	824.06	356.35	0.12e-2	0.42e-2	0.08
J-102	P-115	273.00	10	Ductile Iron	0.00	130.0	19.40	824.06	356.35	0.12e-2	0.42e-2	0.08
J-103	P-116	356.00	10	Ductile Iron	0.00	130.0	19.40	824.06	356.35	0.15e-2	0.41e-2	0.08
J-104	P-117	355.00	10	Ductile Iron	0.00	130.0	-25.04	824.06	356.35	0.24e-2	0.01	0.10
J-105	P-118	337.00	10	Ductile Iron	0.00	130.0	-25.04	824.06	356.35	0.23e-2	0.01	0.10
J-106	P-119	320.00	10	Ductile Iron	0.00	130.0	-69.48	824.06	356.35	0.01	0.04	0.28
J-107	P-120	320.00	10	Ductile Iron	0.00	130.0	-69.48	824.07	356.36	0.01	0.04	0.28
J-108	P-121	384.00	10	Ductile Iron	0.00	130.0	-69.48	824.09	356.36	0.02	0.04	0.28
J-109	P-122	354.00	10	Ductile Iron	0.00	130.0	-113.92	824.11	356.37	0.04	0.11	0.47
J-110	P-125	66.00	10	Ductile Iron	0.00	130.0	-113.92	824.15	356.39	0.01	0.11	0.47
J-111	P-124	174.00	10	Ductile Iron	0.00	130.0	-380.17	824.15	356.39	0.18	1.04	1.55

Scenario: Potable MDD Fire Flow in L-MDR @ J-106
Fire Flow Analysis

HYDRAULIC STATUS:

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Hydraulic status for steady-state conditions
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Balanced        Trials = 5, Accuracy = 0.000007
Flow Supplied   2,375.92 gpm
Flow Demanded   2,375.92 gpm
Flow Stored     0.00 gpm
R-1             Reservoir: Emptying
R-2             Reservoir: Emptying
R-3             Reservoir: Emptying
R-4             Reservoir: Emptying
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Scenario: Potable MDD Fire Flow in L-MDR @ J-106
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	16	Ductile Iron	Demand	0.00	0.00	824.36	356.48	0.00	1.14	0.02	0.00
J-2	J-2	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.14	0.20	0.00
J-3	J-3	16	Ductile Iron	Demand	120.50	120.50	824.14	356.39	120.50	0.94	0.07	0.00
J-4	J-4	16	Ductile Iron	Demand	0.00	0.00	824.07	356.36	0.00	0.94	0.07	0.00
J-5	J-5	16	Ductile Iron	Demand	0.00	0.00	824.00	356.32	0.00	0.94	0.07	0.00
J-6	J-6	16	Ductile Iron	Demand	120.50	120.50	823.93	356.29	120.50	0.75	0.05	0.00
J-7	J-7	16	Ductile Iron	Demand	0.00	0.00	823.88	356.27	0.00	0.75	0.06	0.00
J-8	J-8	16	Ductile Iron	Demand	0.00	0.00	823.82	356.25	0.00	0.75	0.04	0.00
J-9	J-9	16	Ductile Iron	Demand	120.50	120.50	823.78	356.23	120.50	0.56	0.03	0.00
J-10	J-10	16	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.56	0.02	0.00
J-11	J-11	16	Ductile Iron	Demand	0.00	0.00	823.73	356.21	0.00	0.56	0.03	0.00
J-12	J-12	16	Ductile Iron	Demand	120.50	120.50	823.70	356.19	120.50	0.37	0.01	0.00
J-13	J-13	16	Ductile Iron	Demand	0.00	0.00	823.69	356.19	0.00	0.37	0.01	0.00
J-14	J-14	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-15	J-15	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-16	J-16	16	Ductile Iron	Demand	94.64	94.64	823.66	356.18	94.64	0.87	0.06	0.00
J-17	J-17	16	Ductile Iron	Demand	16.93	16.93	823.60	356.15	16.93	0.84	0.06	0.00
J-18	J-18	16	Ductile Iron	Demand	94.64	94.64	823.49	356.11	94.64	0.47	0.01	0.00
J-19	J-19	16	Ductile Iron	Demand	94.57	94.57	823.49	356.10	94.57	0.32	0.01	0.00
J-20	J-20	16	Ductile Iron	Demand	94.64	94.64	823.47	356.10	94.64	0.17	0.36e-2	0.00
J-21	J-21	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.55e-3	0.00
J-22	J-22	16	Ductile Iron	Demand	61.42	61.42	823.47	356.10	61.42	0.04	0.31e-3	0.00
J-23	J-23	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.14	0.2e-2	0.00
J-24	J-24	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.23	0.01	0.00
J-25	J-25	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.23	0.16e-2	0.00
J-26	J-26	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.61e-4	0.00
J-27	J-27	16	Ductile Iron	Demand	53.21	53.21	823.48	356.10	53.21	0.15	0.18e-2	0.00
J-28	J-28	16	Ductile Iron	Demand	31.76	31.76	823.48	356.10	31.76	0.20	0.37e-2	0.00
J-29	J-29	16	Ductile Iron	Demand	3.74	3.74	823.48	356.10	3.74	0.20	0.15e-2	0.00
J-30	J-30	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.85e-3	0.00
J-31	J-31	16	Ductile Iron	Demand	3.65	3.65	823.49	356.11	3.65	0.21	0.37e-2	0.00
J-32	J-32	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.21	0.38e-2	0.00
J-33	J-33	16	Ductile Iron	Demand	62.90	62.90	823.50	356.11	62.90	0.31	0.01	0.00
J-34	J-34	16	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.31	0.01	0.00
J-35	J-35	16	Ductile Iron	Demand	38.44	38.44	823.52	356.12	38.44	0.37	0.01	0.00
J-36	J-36	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.37	0.01	0.00
J-37	J-37	16	Ductile Iron	Demand	0.00	0.00	823.54	356.12	0.00	0.37	0.34e-2	0.00
J-38	J-38	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.02	0.00
J-39	J-39	16	Ductile Iron	Demand	0.00	0.00	823.57	356.14	0.00	0.55	0.04	0.00
J-40	J-40	16	Ductile Iron	Demand	55.01	55.01	823.60	356.15	55.01	0.63	0.03	0.00
J-41	J-41	16	Ductile Iron	Demand	0.00	0.00	823.63	356.17	0.00	0.63	0.04	0.00
J-42	J-42	16	Ductile Iron	Demand	55.01	55.01	823.67	356.18	55.01	0.72	0.04	0.00
J-43	J-43	16	Ductile Iron	Demand	0.00	0.00	823.71	356.20	0.00	0.72	0.01	0.00
J-44	J-44	10	Ductile Iron	Demand	0.00	0.00	823.72	356.20	0.00	1.85	0.05	0.00
J-45	J-45	16	Ductile Iron	Demand	0.00	0.00	824.25	356.43	0.00	1.03	0.09	0.00
J-46	J-46	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.03	0.02	0.00
J-47	J-47	16	Ductile Iron	Demand	0.00	0.00	824.37	356.49	0.00	1.03	0.01	0.00
J-48	J-48	12	Ductile Iron	Demand	46.65	46.65	824.31	356.46	46.65	1.29	0.18	0.00
J-49	J-49	12	Ductile Iron	Demand	0.00	0.00	824.13	356.38	0.00	1.29	0.18	0.00
J-50	J-50	12	Ductile Iron	Demand	46.65	46.65	823.95	356.30	46.65	1.16	0.15	0.00
J-51	J-51	12	Ductile Iron	Demand	0.00	0.00	823.80	356.24	0.00	1.16	0.04	0.00
J-52	J-52	12	Ductile Iron	Demand	0.00	0.00	823.76	356.22	0.00	1.16	0.10	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	1.10	0.05	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.39	0.01	0.00
J-54	J-54	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.37e-2	0.00
J-55	J-55	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.02	0.00
J-56	J-56	12	Ductile Iron	Demand	94.57	94.57	823.51	356.11	94.57	0.13	0.27e-2	0.00
J-57	J-57	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00
J-58	J-58	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00

Scenario: Potable MDD Fire Flow in L-MDR @ J-106
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-59	J-59	12	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.13	0.24e-2	0.00
J-60	J-60	12	Ductile Iron	Demand	61.42	61.42	823.50	356.11	61.42	0.05	0.49e-3	0.00
J-61	J-61	12	Ductile Iron	Demand	121.63	121.64	823.50	356.11	121.63	0.39	0.02	0.00
J-62	J-62	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.39	0.01	0.00
J-63	J-63	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.32	0.01	0.00
J-64	J-64	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.32	0.01	0.00
J-65	J-65	12	Ductile Iron	Demand	46.04	46.04	823.49	356.11	46.04	0.19	0.47e-2	0.00
J-66	J-66	12	Ductile Iron	Demand	19.64	19.64	823.49	356.10	19.64	0.14	0.36e-2	0.00
J-67	J-67	12	Ductile Iron	Demand	28.34	28.34	823.49	356.10	28.34	0.06	0.43e-3	0.00
J-68	J-68	12	Ductile Iron	Demand	21.27	21.27	823.49	356.10	21.27	0.45e-2	0.00	0.00
J-69	J-69	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-70	J-70	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-71	J-71	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-72	J-72	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.48e-2	0.00
J-73	J-73	12	Ductile Iron	Demand	0.00	0.00	824.33	356.47	0.00	1.46	0.05	0.00
J-74	J-74	12	Ductile Iron	Demand	0.00	0.00	824.28	356.45	0.00	1.46	0.15	0.00
J-75	J-75	12	Ductile Iron	Demand	46.04	46.04	824.13	356.38	46.04	1.33	0.19	0.00
J-76	J-76	12	Ductile Iron	Demand	0.00	0.00	823.94	356.30	0.00	1.33	0.28	0.00
J-77	J-77	12	Ductile Iron	Demand	0.00	0.00	823.66	356.18	0.00	1.33	0.14	0.00
J-78	J-78	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.32	0.01	0.00
J-78	J-78	16	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.34	0.49e-2	0.00
J-79	J-79	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.2e-2	0.00
J-80	J-80	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.01	0.00
J-81	J-81	16	Ductile Iron	Demand	17.12	17.12	823.51	356.11	17.12	0.32	0.01	0.00
J-82	J-82	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.32	0.01	0.00
J-83	J-83	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.32	0.01	0.00
J-84	J-84	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.32	0.27e-2	0.00
J-85	J-85	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.12e-3	0.00
J-86	J-86	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.18e-3	0.00
J-86	J-86	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.29	0.46e-2	0.00
J-87	J-87	10	Ductile Iron	Demand	0.00	0.00	823.47	356.09	0.00	0.29	0.01	0.00
J-88	J-88	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.29	0.02	0.00
J-89	J-89	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.29	0.02	0.00
J-90	J-90	10	Ductile Iron	Demand	73.35	73.36	823.42	356.07	73.35	0.01	0.00	0.00
J-91	J-91	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.01	0.61e-4	0.00
J-92	J-92	10	Ductile Iron	Demand	22.10	22.10	823.42	356.07	22.10	0.10	0.18e-2	0.00
J-93	J-93	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.10	0.18e-2	0.00
J-94	J-94	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.19e-2	0.00
J-95	J-95	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.33e-2	0.00
J-96	J-96	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.10	0.22e-2	0.00
J-97	J-97	10	Ductile Iron	Demand	67.23	67.24	823.43	356.08	67.23	0.37	0.02	0.00
J-98	J-98	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.37	0.02	0.00
J-99	J-99	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.37	0.01	0.00
J-100	J-100	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.46e-2	0.00
J-100	J-100	10	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.44	0.02	0.00
J-101	J-101	10	Ductile Iron	Demand	75.55	75.55	823.52	356.12	75.55	0.13	0.31e-2	0.00
J-102	J-102	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.31e-2	0.00
J-103	J-103	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.4e-2	0.00
J-104	J-104	10	Ductile Iron	Demand	75.55	75.55	823.51	356.11	75.55	0.17	0.01	0.00
J-105	J-105	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.17	0.01	0.00
J-106	J-106	10	Ductile Iron	Demand	75.55	75.55	823.53	356.12	3,075.55	0.48	0.04	0.00
J-107	J-107	10	Ductile Iron	Demand	0.00	0.00	823.56	356.14	0.00	0.48	0.04	0.00
J-108	J-108	10	Ductile Iron	Demand	0.00	0.00	823.60	356.15	0.00	0.48	0.05	0.00
J-109	J-109	10	Ductile Iron	Demand	75.55	75.55	823.65	356.17	75.55	0.79	0.11	0.00
J-110	J-110	10	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.79	0.02	0.00
J-111	J-111	10	Ductile Iron	Demand	0.00	0.00	823.77	356.23	0.00	2.64	0.48	0.00

Scenario: Potable MDD Fire Flow in L-MDR @ J-106
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	47.00	16	Ductile Iron	0.00	130.0	712.57	824.36	356.48	0.02	0.34	1.14
J-2	P-3	607.00	16	Ductile Iron	0.00	130.0	712.57	824.35	356.47	0.20	0.34	1.14
J-3	P-4	300.00	16	Ductile Iron	0.00	130.0	592.07	824.14	356.39	0.07	0.24	0.94
J-4	P-5	299.00	16	Ductile Iron	0.00	130.0	592.07	824.07	356.36	0.07	0.24	0.94
J-5	P-6	295.00	16	Ductile Iron	0.00	130.0	592.07	824.00	356.32	0.07	0.24	0.94
J-6	P-7	299.00	16	Ductile Iron	0.00	130.0	471.58	823.93	356.29	0.05	0.16	0.75
J-7	P-8	408.00	16	Ductile Iron	0.00	130.0	471.58	823.88	356.27	0.06	0.16	0.75
J-8	P-9	269.00	16	Ductile Iron	0.00	130.0	471.58	823.82	356.25	0.04	0.16	0.75
J-9	P-10	301.00	16	Ductile Iron	0.00	130.0	351.08	823.78	356.23	0.03	0.09	0.56
J-10	P-11	252.00	16	Ductile Iron	0.00	130.0	351.08	823.75	356.22	0.02	0.09	0.56
J-11	P-12	301.00	16	Ductile Iron	0.00	130.0	351.08	823.73	356.21	0.03	0.09	0.56
J-12	P-13	297.00	16	Ductile Iron	0.00	130.0	230.58	823.70	356.19	0.01	0.04	0.37
J-13	P-14	305.00	16	Ductile Iron	0.00	130.0	230.58	823.69	356.19	0.01	0.04	0.37
J-14	P-15	145.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-15	P-16	202.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-16	P-17	296.00	16	Ductile Iron	0.00	130.0	544.99	823.66	356.18	0.06	0.20	0.87
J-17	P-55	306.00	16	Ductile Iron	0.00	130.0	528.06	823.60	356.15	0.06	0.19	0.84
J-18	P-19	91.00	16	Ductile Iron	0.00	130.0	294.62	823.49	356.11	0.01	0.07	0.47
J-19	P-20	373.00	16	Ductile Iron	0.00	130.0	200.05	823.49	356.10	0.01	0.03	0.32
J-20	P-95	368.00	16	Ductile Iron	0.00	130.0	105.41	823.47	356.10	0.36e-2	0.01	0.17
J-21	P-22	447.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.55e-3	0.12e-2	0.05
J-22	P-23	305.00	16	Ductile Iron	0.00	130.0	-28.12	823.47	356.10	0.31e-3	0.1e-2	0.04
J-23	P-24	293.00	16	Ductile Iron	0.00	130.0	-87.68	823.47	356.10	0.2e-2	0.01	0.14
J-24	P-25	310.00	16	Ductile Iron	0.00	130.0	-147.25	823.47	356.10	0.01	0.02	0.23
J-25	P-92	88.00	16	Ductile Iron	0.00	130.0	-147.25	823.48	356.10	0.16e-2	0.02	0.23
J-26	P-27	43.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.61e-4	0.14e-2	0.06
J-27	P-28	242.00	16	Ductile Iron	0.00	130.0	-91.98	823.48	356.10	0.18e-2	0.01	0.15
J-28	P-29	279.00	16	Ductile Iron	0.00	130.0	-123.74	823.48	356.10	0.37e-2	0.01	0.20
J-29	P-75	111.00	16	Ductile Iron	0.00	130.0	-127.48	823.48	356.10	0.15e-2	0.01	0.20
J-30	P-31	58.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.85e-3	0.01	0.21
J-31	P-32	248.00	16	Ductile Iron	0.00	130.0	-132.73	823.49	356.11	0.37e-2	0.02	0.21
J-32	P-33	254.00	16	Ductile Iron	0.00	130.0	-132.73	823.50	356.11	0.38e-2	0.01	0.21
J-33	P-34	274.00	16	Ductile Iron	0.00	130.0	-195.63	823.50	356.11	0.01	0.03	0.31
J-34	P-35	250.00	16	Ductile Iron	0.00	130.0	-195.63	823.51	356.11	0.01	0.03	0.31
J-35	P-36	223.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-36	P-37	250.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-37	P-111	80.00	16	Ductile Iron	0.00	130.0	-234.07	823.54	356.12	0.34e-2	0.04	0.37
J-38	P-39	262.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.02	0.09	0.55
J-39	P-40	442.00	16	Ductile Iron	0.00	130.0	-342.59	823.57	356.14	0.04	0.09	0.55
J-40	P-41	259.00	16	Ductile Iron	0.00	130.0	-397.60	823.60	356.15	0.03	0.11	0.63
J-41	P-42	309.00	16	Ductile Iron	0.00	130.0	-397.60	823.63	356.17	0.04	0.11	0.63
J-42	P-43	305.00	16	Ductile Iron	0.00	130.0	-452.62	823.67	356.18	0.04	0.15	0.72
J-43	P-44	43.00	16	Ductile Iron	0.00	130.0	-452.62	823.71	356.20	0.01	0.14	0.72
J-44	P-123	37.00	10	Ductile Iron	0.00	130.0	-452.62	823.72	356.20	0.05	1.43	1.85
J-45	P-46	329.00	16	Ductile Iron	0.00	130.0	-646.28	824.25	356.43	0.09	0.28	1.03
J-46	P-47	86.00	16	Ductile Iron	0.00	130.0	-646.28	824.35	356.47	0.02	0.28	1.03
J-47	P-48	36.00	16	Ductile Iron	0.00	130.0	-646.28	824.37	356.49	0.01	0.28	1.03
J-48	P-50	298.00	12	Ductile Iron	0.00	130.0	455.69	824.31	356.46	0.18	0.60	1.29
J-49	P-51	299.00	12	Ductile Iron	0.00	130.0	455.69	824.13	356.38	0.18	0.60	1.29
J-50	P-52	311.00	12	Ductile Iron	0.00	130.0	409.04	823.95	356.30	0.15	0.49	1.16
J-51	P-53	80.00	12	Ductile Iron	0.00	130.0	409.04	823.80	356.24	0.04	0.49	1.16
J-52	P-54	211.00	12	Ductile Iron	0.00	130.0	409.04	823.76	356.22	0.10	0.49	1.16
J-53	P-56	108.00	12	Ductile Iron	0.00	130.0	389.26	823.54	356.13	0.05	0.45	1.10
J-53	P-57	77.00	12	Ductile Iron	0.00	130.0	138.80	823.54	356.13	0.01	0.07	0.39
J-54	P-58	55.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.37e-2	0.07	0.39
J-55	P-59	296.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.02	0.07	0.39
J-56	P-60	334.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.27e-2	0.01	0.13
J-57	P-61	263.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13
J-58	P-62	265.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13

Scenario: Potable MDD Fire Flow in L-MDR @ J-106
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-59	P-63	298.00	12	Ductile Iron	0.00	130.0	44.22	823.50	356.11	0.24e-2	0.01	0.13
J-60	P-64	329.00	12	Ductile Iron	0.00	130.0	-17.20	823.50	356.11	0.49e-3	0.15e-2	0.05
J-61	P-65	248.00	12	Ductile Iron	0.00	130.0	-138.83	823.50	356.11	0.02	0.07	0.39
J-62	P-83	97.00	12	Ductile Iron	0.00	130.0	-138.83	823.52	356.12	0.01	0.07	0.39
J-63	P-67	245.00	12	Ductile Iron	0.00	130.0	113.68	823.52	356.12	0.01	0.05	0.32
J-64	P-68	302.00	12	Ductile Iron	0.00	130.0	113.68	823.51	356.11	0.01	0.05	0.32
J-65	P-69	268.00	12	Ductile Iron	0.00	130.0	67.65	823.49	356.11	0.47e-2	0.02	0.19
J-66	P-70	387.00	12	Ductile Iron	0.00	130.0	48.01	823.49	356.10	0.36e-2	0.01	0.14
J-67	P-71	247.00	12	Ductile Iron	0.00	130.0	19.67	823.49	356.10	0.43e-3	0.17e-2	0.06
J-68	P-72	318.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-69	P-73	292.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-70	P-74	330.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-71	P-77	96.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-72	P-76	339.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.48e-2	0.01	0.21
J-73	P-79	64.00	12	Ductile Iron	0.00	130.0	514.73	824.33	356.47	0.05	0.75	1.46
J-74	P-80	200.00	12	Ductile Iron	0.00	130.0	514.73	824.28	356.45	0.15	0.75	1.46
J-75	P-81	310.00	12	Ductile Iron	0.00	130.0	468.70	824.13	356.38	0.19	0.63	1.33
J-76	P-82	441.00	12	Ductile Iron	0.00	130.0	468.70	823.94	356.30	0.28	0.63	1.33
J-77	P-85	218.00	12	Ductile Iron	0.00	130.0	468.70	823.66	356.18	0.14	0.63	1.33
J-78	P-84	123.00	12	Ductile Iron	0.00	130.0	113.68	823.53	356.12	0.01	0.05	0.32
J-78	P-86	133.00	16	Ductile Iron	0.00	130.0	216.18	823.53	356.12	0.49e-2	0.04	0.34
J-79	P-87	55.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.2e-2	0.04	0.34
J-80	P-88	313.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.01	0.04	0.34
J-81	P-89	282.00	16	Ductile Iron	0.00	130.0	199.06	823.51	356.11	0.01	0.03	0.32
J-82	P-90	295.00	16	Ductile Iron	0.00	130.0	199.06	823.50	356.11	0.01	0.03	0.32
J-83	P-91	219.00	16	Ductile Iron	0.00	130.0	199.06	823.49	356.10	0.01	0.03	0.32
J-84	P-94	86.00	16	Ductile Iron	0.00	130.0	199.06	823.48	356.10	0.27e-2	0.03	0.32
J-85	P-93	45.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.12e-3	0.27e-2	0.06
J-86	P-96	140.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.18e-3	0.13e-2	0.05
J-86	P-97	96.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.10	0.46e-2	0.05	0.29
J-87	P-98	293.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.09	0.01	0.05	0.29
J-88	P-99	356.00	10	Ductile Iron	0.00	130.0	72.11	823.45	356.09	0.02	0.05	0.29
J-89	P-100	326.00	10	Ductile Iron	0.00	130.0	72.11	823.43	356.08	0.02	0.05	0.29
J-90	P-101	287.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.00	0.00	0.01
J-91	P-102	851.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.61e-4	0.72e-4	0.01
J-92	P-103	306.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-93	P-104	302.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-94	P-105	318.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.19e-2	0.01	0.10
J-95	P-106	561.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.33e-2	0.01	0.10
J-96	P-107	369.00	10	Ductile Iron	0.00	130.0	-23.35	823.43	356.08	0.22e-2	0.01	0.10
J-97	P-108	301.00	10	Ductile Iron	0.00	130.0	-90.58	823.43	356.08	0.02	0.07	0.37
J-98	P-109	298.00	10	Ductile Iron	0.00	130.0	-90.58	823.45	356.09	0.02	0.07	0.37
J-99	P-110	73.00	10	Ductile Iron	0.00	130.0	-90.58	823.47	356.10	0.01	0.07	0.37
J-100	P-112	53.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.46e-2	0.09	0.55
J-100	P-113	152.00	10	Ductile Iron	0.00	130.0	108.53	823.54	356.13	0.02	0.10	0.44
J-101	P-114	276.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-102	P-115	273.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-103	P-116	356.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.4e-2	0.01	0.13
J-104	P-117	355.00	10	Ductile Iron	0.00	130.0	-42.57	823.51	356.11	0.01	0.02	0.17
J-105	P-118	337.00	10	Ductile Iron	0.00	130.0	-42.57	823.52	356.12	0.01	0.02	0.17
J-106	P-119	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.53	356.12	0.04	0.12	0.48
J-107	P-120	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.56	356.14	0.04	0.12	0.48
J-108	P-121	384.00	10	Ductile Iron	0.00	130.0	-118.12	823.60	356.15	0.05	0.12	0.48
J-109	P-122	354.00	10	Ductile Iron	0.00	130.0	-193.67	823.65	356.17	0.11	0.30	0.79
J-110	P-125	66.00	10	Ductile Iron	0.00	130.0	-193.67	823.75	356.22	0.02	0.30	0.79
J-111	P-124	174.00	10	Ductile Iron	0.00	130.0	-646.28	823.77	356.23	0.48	2.77	2.64

Scenario: Potable MDD Fire Flow in HDR @ J-19
Fire Flow Analysis

HYDRAULIC STATUS:

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Hydraulic status for steady-state conditions
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Balanced        Trials = 5, Accuracy = 0.000007
Flow Supplied   2,375.92 gpm
Flow Demanded   2,375.92 gpm
Flow Stored     0.00 gpm
R-1             Reservoir: Emptying
R-2             Reservoir: Emptying
R-3             Reservoir: Emptying
R-4             Reservoir: Emptying
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Scenario: Potable MDD Fire Flow in HDR @ J-19
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	16	Ductile Iron	Demand	0.00	0.00	824.36	356.48	0.00	1.14	0.02	0.00
J-2	J-2	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.14	0.20	0.00
J-3	J-3	16	Ductile Iron	Demand	120.50	120.50	824.14	356.39	120.50	0.94	0.07	0.00
J-4	J-4	16	Ductile Iron	Demand	0.00	0.00	824.07	356.36	0.00	0.94	0.07	0.00
J-5	J-5	16	Ductile Iron	Demand	0.00	0.00	824.00	356.32	0.00	0.94	0.07	0.00
J-6	J-6	16	Ductile Iron	Demand	120.50	120.50	823.93	356.29	120.50	0.75	0.05	0.00
J-7	J-7	16	Ductile Iron	Demand	0.00	0.00	823.88	356.27	0.00	0.75	0.06	0.00
J-8	J-8	16	Ductile Iron	Demand	0.00	0.00	823.82	356.25	0.00	0.75	0.04	0.00
J-9	J-9	16	Ductile Iron	Demand	120.50	120.50	823.78	356.23	120.50	0.56	0.03	0.00
J-10	J-10	16	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.56	0.02	0.00
J-11	J-11	16	Ductile Iron	Demand	0.00	0.00	823.73	356.21	0.00	0.56	0.03	0.00
J-12	J-12	16	Ductile Iron	Demand	120.50	120.50	823.70	356.19	120.50	0.37	0.01	0.00
J-13	J-13	16	Ductile Iron	Demand	0.00	0.00	823.69	356.19	0.00	0.37	0.01	0.00
J-14	J-14	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-15	J-15	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-16	J-16	16	Ductile Iron	Demand	94.64	94.64	823.66	356.18	94.64	0.87	0.06	0.00
J-17	J-17	16	Ductile Iron	Demand	16.93	16.93	823.60	356.15	16.93	0.84	0.06	0.00
J-18	J-18	16	Ductile Iron	Demand	94.64	94.64	823.49	356.11	94.64	0.47	0.01	0.00
J-19	J-19	16	Ductile Iron	Demand	94.57	94.57	823.49	356.10	3,094.57	0.32	0.01	0.00
J-20	J-20	16	Ductile Iron	Demand	94.64	94.64	823.47	356.10	94.64	0.17	0.36e-2	0.00
J-21	J-21	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.55e-3	0.00
J-22	J-22	16	Ductile Iron	Demand	61.42	61.42	823.47	356.10	61.42	0.04	0.31e-3	0.00
J-23	J-23	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.14	0.2e-2	0.00
J-24	J-24	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.23	0.01	0.00
J-25	J-25	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.23	0.16e-2	0.00
J-26	J-26	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.61e-4	0.00
J-27	J-27	16	Ductile Iron	Demand	53.21	53.21	823.48	356.10	53.21	0.15	0.18e-2	0.00
J-28	J-28	16	Ductile Iron	Demand	31.76	31.76	823.48	356.10	31.76	0.20	0.37e-2	0.00
J-29	J-29	16	Ductile Iron	Demand	3.74	3.74	823.48	356.10	3.74	0.20	0.15e-2	0.00
J-30	J-30	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.85e-3	0.00
J-31	J-31	16	Ductile Iron	Demand	3.65	3.65	823.49	356.11	3.65	0.21	0.37e-2	0.00
J-32	J-32	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.21	0.38e-2	0.00
J-33	J-33	16	Ductile Iron	Demand	62.90	62.90	823.50	356.11	62.90	0.31	0.01	0.00
J-34	J-34	16	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.31	0.01	0.00
J-35	J-35	16	Ductile Iron	Demand	38.44	38.44	823.52	356.12	38.44	0.37	0.01	0.00
J-36	J-36	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.37	0.01	0.00
J-37	J-37	16	Ductile Iron	Demand	0.00	0.00	823.54	356.12	0.00	0.37	0.34e-2	0.00
J-38	J-38	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.02	0.00
J-39	J-39	16	Ductile Iron	Demand	0.00	0.00	823.57	356.14	0.00	0.55	0.04	0.00
J-40	J-40	16	Ductile Iron	Demand	55.01	55.01	823.60	356.15	55.01	0.63	0.03	0.00
J-41	J-41	16	Ductile Iron	Demand	0.00	0.00	823.63	356.17	0.00	0.63	0.04	0.00
J-42	J-42	16	Ductile Iron	Demand	55.01	55.01	823.67	356.18	55.01	0.72	0.04	0.00
J-43	J-43	16	Ductile Iron	Demand	0.00	0.00	823.71	356.20	0.00	0.72	0.01	0.00
J-44	J-44	10	Ductile Iron	Demand	0.00	0.00	823.72	356.20	0.00	1.85	0.05	0.00
J-45	J-45	16	Ductile Iron	Demand	0.00	0.00	824.25	356.43	0.00	1.03	0.09	0.00
J-46	J-46	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.03	0.02	0.00
J-47	J-47	16	Ductile Iron	Demand	0.00	0.00	824.37	356.49	0.00	1.03	0.01	0.00
J-48	J-48	12	Ductile Iron	Demand	46.65	46.65	824.31	356.46	46.65	1.29	0.18	0.00
J-49	J-49	12	Ductile Iron	Demand	0.00	0.00	824.13	356.38	0.00	1.29	0.18	0.00
J-50	J-50	12	Ductile Iron	Demand	46.65	46.65	823.95	356.30	46.65	1.16	0.15	0.00
J-51	J-51	12	Ductile Iron	Demand	0.00	0.00	823.80	356.24	0.00	1.16	0.04	0.00
J-52	J-52	12	Ductile Iron	Demand	0.00	0.00	823.76	356.22	0.00	1.16	0.10	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	1.10	0.05	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.39	0.01	0.00
J-54	J-54	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.37e-2	0.00
J-55	J-55	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.02	0.00
J-56	J-56	12	Ductile Iron	Demand	94.57	94.57	823.51	356.11	94.57	0.13	0.27e-2	0.00
J-57	J-57	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00
J-58	J-58	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00

Scenario: Potable MDD Fire Flow in HDR @ J-19
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-59	J-59	12	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.13	0.24e-2	0.00
J-60	J-60	12	Ductile Iron	Demand	61.42	61.42	823.50	356.11	61.42	0.05	0.49e-3	0.00
J-61	J-61	12	Ductile Iron	Demand	121.63	121.64	823.50	356.11	121.63	0.39	0.02	0.00
J-62	J-62	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.39	0.01	0.00
J-63	J-63	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.32	0.01	0.00
J-64	J-64	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.32	0.01	0.00
J-65	J-65	12	Ductile Iron	Demand	46.04	46.04	823.49	356.11	46.04	0.19	0.47e-2	0.00
J-66	J-66	12	Ductile Iron	Demand	19.64	19.64	823.49	356.10	19.64	0.14	0.36e-2	0.00
J-67	J-67	12	Ductile Iron	Demand	28.34	28.34	823.49	356.10	28.34	0.06	0.43e-3	0.00
J-68	J-68	12	Ductile Iron	Demand	21.27	21.27	823.49	356.10	21.27	0.45e-2	0.00	0.00
J-69	J-69	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-70	J-70	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-71	J-71	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-72	J-72	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.48e-2	0.00
J-73	J-73	12	Ductile Iron	Demand	0.00	0.00	824.33	356.47	0.00	1.46	0.05	0.00
J-74	J-74	12	Ductile Iron	Demand	0.00	0.00	824.28	356.45	0.00	1.46	0.15	0.00
J-75	J-75	12	Ductile Iron	Demand	46.04	46.04	824.13	356.38	46.04	1.33	0.19	0.00
J-76	J-76	12	Ductile Iron	Demand	0.00	0.00	823.94	356.30	0.00	1.33	0.28	0.00
J-77	J-77	12	Ductile Iron	Demand	0.00	0.00	823.66	356.18	0.00	1.33	0.14	0.00
J-78	J-78	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.32	0.01	0.00
J-78	J-78	16	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.34	0.49e-2	0.00
J-79	J-79	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.2e-2	0.00
J-80	J-80	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.01	0.00
J-81	J-81	16	Ductile Iron	Demand	17.12	17.12	823.51	356.11	17.12	0.32	0.01	0.00
J-82	J-82	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.32	0.01	0.00
J-83	J-83	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.32	0.01	0.00
J-84	J-84	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.32	0.27e-2	0.00
J-85	J-85	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.12e-3	0.00
J-86	J-86	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.18e-3	0.00
J-86	J-86	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.29	0.46e-2	0.00
J-87	J-87	10	Ductile Iron	Demand	0.00	0.00	823.47	356.09	0.00	0.29	0.01	0.00
J-88	J-88	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.29	0.02	0.00
J-89	J-89	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.29	0.02	0.00
J-90	J-90	10	Ductile Iron	Demand	73.35	73.36	823.42	356.07	73.35	0.01	0.00	0.00
J-91	J-91	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.01	0.61e-4	0.00
J-92	J-92	10	Ductile Iron	Demand	22.10	22.10	823.42	356.07	22.10	0.10	0.18e-2	0.00
J-93	J-93	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.10	0.18e-2	0.00
J-94	J-94	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.19e-2	0.00
J-95	J-95	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.33e-2	0.00
J-96	J-96	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.10	0.22e-2	0.00
J-97	J-97	10	Ductile Iron	Demand	67.23	67.24	823.43	356.08	67.23	0.37	0.02	0.00
J-98	J-98	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.37	0.02	0.00
J-99	J-99	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.37	0.01	0.00
J-100	J-100	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.46e-2	0.00
J-100	J-100	10	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.44	0.02	0.00
J-101	J-101	10	Ductile Iron	Demand	75.55	75.55	823.52	356.12	75.55	0.13	0.31e-2	0.00
J-102	J-102	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.31e-2	0.00
J-103	J-103	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.4e-2	0.00
J-104	J-104	10	Ductile Iron	Demand	75.55	75.55	823.51	356.11	75.55	0.17	0.01	0.00
J-105	J-105	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.17	0.01	0.00
J-106	J-106	10	Ductile Iron	Demand	75.55	75.55	823.53	356.12	75.55	0.48	0.04	0.00
J-107	J-107	10	Ductile Iron	Demand	0.00	0.00	823.56	356.14	0.00	0.48	0.04	0.00
J-108	J-108	10	Ductile Iron	Demand	0.00	0.00	823.60	356.15	0.00	0.48	0.05	0.00
J-109	J-109	10	Ductile Iron	Demand	75.55	75.55	823.65	356.17	75.55	0.79	0.11	0.00
J-110	J-110	10	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.79	0.02	0.00
J-111	J-111	10	Ductile Iron	Demand	0.00	0.00	823.77	356.23	0.00	2.64	0.48	0.00

Scenario: Potable MDD Fire Flow in HDR @ J-19
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	47.00	16	Ductile Iron	0.00	130.0	712.57	824.36	356.48	0.02	0.34	1.14
J-2	P-3	607.00	16	Ductile Iron	0.00	130.0	712.57	824.35	356.47	0.20	0.34	1.14
J-3	P-4	300.00	16	Ductile Iron	0.00	130.0	592.07	824.14	356.39	0.07	0.24	0.94
J-4	P-5	299.00	16	Ductile Iron	0.00	130.0	592.07	824.07	356.36	0.07	0.24	0.94
J-5	P-6	295.00	16	Ductile Iron	0.00	130.0	592.07	824.00	356.32	0.07	0.24	0.94
J-6	P-7	299.00	16	Ductile Iron	0.00	130.0	471.58	823.93	356.29	0.05	0.16	0.75
J-7	P-8	408.00	16	Ductile Iron	0.00	130.0	471.58	823.88	356.27	0.06	0.16	0.75
J-8	P-9	269.00	16	Ductile Iron	0.00	130.0	471.58	823.82	356.25	0.04	0.16	0.75
J-9	P-10	301.00	16	Ductile Iron	0.00	130.0	351.08	823.78	356.23	0.03	0.09	0.56
J-10	P-11	252.00	16	Ductile Iron	0.00	130.0	351.08	823.75	356.22	0.02	0.09	0.56
J-11	P-12	301.00	16	Ductile Iron	0.00	130.0	351.08	823.73	356.21	0.03	0.09	0.56
J-12	P-13	297.00	16	Ductile Iron	0.00	130.0	230.58	823.70	356.19	0.01	0.04	0.37
J-13	P-14	305.00	16	Ductile Iron	0.00	130.0	230.58	823.69	356.19	0.01	0.04	0.37
J-14	P-15	145.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-15	P-16	202.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-16	P-17	296.00	16	Ductile Iron	0.00	130.0	544.99	823.66	356.18	0.06	0.20	0.87
J-17	P-55	306.00	16	Ductile Iron	0.00	130.0	528.06	823.60	356.15	0.06	0.19	0.84
J-18	P-19	91.00	16	Ductile Iron	0.00	130.0	294.62	823.49	356.11	0.01	0.07	0.47
J-19	P-20	373.00	16	Ductile Iron	0.00	130.0	200.05	823.49	356.10	0.01	0.03	0.32
J-20	P-95	368.00	16	Ductile Iron	0.00	130.0	105.41	823.47	356.10	0.36e-2	0.01	0.17
J-21	P-22	447.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.55e-3	0.12e-2	0.05
J-22	P-23	305.00	16	Ductile Iron	0.00	130.0	-28.12	823.47	356.10	0.31e-3	0.1e-2	0.04
J-23	P-24	293.00	16	Ductile Iron	0.00	130.0	-87.68	823.47	356.10	0.2e-2	0.01	0.14
J-24	P-25	310.00	16	Ductile Iron	0.00	130.0	-147.25	823.47	356.10	0.01	0.02	0.23
J-25	P-92	88.00	16	Ductile Iron	0.00	130.0	-147.25	823.48	356.10	0.16e-2	0.02	0.23
J-26	P-27	43.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.61e-4	0.14e-2	0.06
J-27	P-28	242.00	16	Ductile Iron	0.00	130.0	-91.98	823.48	356.10	0.18e-2	0.01	0.15
J-28	P-29	279.00	16	Ductile Iron	0.00	130.0	-123.74	823.48	356.10	0.37e-2	0.01	0.20
J-29	P-75	111.00	16	Ductile Iron	0.00	130.0	-127.48	823.48	356.10	0.15e-2	0.01	0.20
J-30	P-31	58.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.85e-3	0.01	0.21
J-31	P-32	248.00	16	Ductile Iron	0.00	130.0	-132.73	823.49	356.11	0.37e-2	0.02	0.21
J-32	P-33	254.00	16	Ductile Iron	0.00	130.0	-132.73	823.50	356.11	0.38e-2	0.01	0.21
J-33	P-34	274.00	16	Ductile Iron	0.00	130.0	-195.63	823.50	356.11	0.01	0.03	0.31
J-34	P-35	250.00	16	Ductile Iron	0.00	130.0	-195.63	823.51	356.11	0.01	0.03	0.31
J-35	P-36	223.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-36	P-37	250.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-37	P-111	80.00	16	Ductile Iron	0.00	130.0	-234.07	823.54	356.12	0.34e-2	0.04	0.37
J-38	P-39	262.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.02	0.09	0.55
J-39	P-40	442.00	16	Ductile Iron	0.00	130.0	-342.59	823.57	356.14	0.04	0.09	0.55
J-40	P-41	259.00	16	Ductile Iron	0.00	130.0	-397.60	823.60	356.15	0.03	0.11	0.63
J-41	P-42	309.00	16	Ductile Iron	0.00	130.0	-397.60	823.63	356.17	0.04	0.11	0.63
J-42	P-43	305.00	16	Ductile Iron	0.00	130.0	-452.62	823.67	356.18	0.04	0.15	0.72
J-43	P-44	43.00	16	Ductile Iron	0.00	130.0	-452.62	823.71	356.20	0.01	0.14	0.72
J-44	P-123	37.00	10	Ductile Iron	0.00	130.0	-452.62	823.72	356.20	0.05	1.43	1.85
J-45	P-46	329.00	16	Ductile Iron	0.00	130.0	-646.28	824.25	356.43	0.09	0.28	1.03
J-46	P-47	86.00	16	Ductile Iron	0.00	130.0	-646.28	824.35	356.47	0.02	0.28	1.03
J-47	P-48	36.00	16	Ductile Iron	0.00	130.0	-646.28	824.37	356.49	0.01	0.28	1.03
J-48	P-50	298.00	12	Ductile Iron	0.00	130.0	455.69	824.31	356.46	0.18	0.60	1.29
J-49	P-51	299.00	12	Ductile Iron	0.00	130.0	455.69	824.13	356.38	0.18	0.60	1.29
J-50	P-52	311.00	12	Ductile Iron	0.00	130.0	409.04	823.95	356.30	0.15	0.49	1.16
J-51	P-53	80.00	12	Ductile Iron	0.00	130.0	409.04	823.80	356.24	0.04	0.49	1.16
J-52	P-54	211.00	12	Ductile Iron	0.00	130.0	409.04	823.76	356.22	0.10	0.49	1.16
J-53	P-56	108.00	12	Ductile Iron	0.00	130.0	389.26	823.54	356.13	0.05	0.45	1.10
J-53	P-57	77.00	12	Ductile Iron	0.00	130.0	138.80	823.54	356.13	0.01	0.07	0.39
J-54	P-58	55.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.37e-2	0.07	0.39
J-55	P-59	296.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.02	0.07	0.39
J-56	P-60	334.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.27e-2	0.01	0.13
J-57	P-61	263.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13
J-58	P-62	265.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13

Scenario: Potable MDD Fire Flow in HDR @ J-19
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-59	P-63	298.00	12	Ductile Iron	0.00	130.0	44.22	823.50	356.11	0.24e-2	0.01	0.13
J-60	P-64	329.00	12	Ductile Iron	0.00	130.0	-17.20	823.50	356.11	0.49e-3	0.15e-2	0.05
J-61	P-65	248.00	12	Ductile Iron	0.00	130.0	-138.83	823.50	356.11	0.02	0.07	0.39
J-62	P-83	97.00	12	Ductile Iron	0.00	130.0	-138.83	823.52	356.12	0.01	0.07	0.39
J-63	P-67	245.00	12	Ductile Iron	0.00	130.0	113.68	823.52	356.12	0.01	0.05	0.32
J-64	P-68	302.00	12	Ductile Iron	0.00	130.0	113.68	823.51	356.11	0.01	0.05	0.32
J-65	P-69	268.00	12	Ductile Iron	0.00	130.0	67.65	823.49	356.11	0.47e-2	0.02	0.19
J-66	P-70	387.00	12	Ductile Iron	0.00	130.0	48.01	823.49	356.10	0.36e-2	0.01	0.14
J-67	P-71	247.00	12	Ductile Iron	0.00	130.0	19.67	823.49	356.10	0.43e-3	0.17e-2	0.06
J-68	P-72	318.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-69	P-73	292.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-70	P-74	330.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-71	P-77	96.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-72	P-76	339.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.48e-2	0.01	0.21
J-73	P-79	64.00	12	Ductile Iron	0.00	130.0	514.73	824.33	356.47	0.05	0.75	1.46
J-74	P-80	200.00	12	Ductile Iron	0.00	130.0	514.73	824.28	356.45	0.15	0.75	1.46
J-75	P-81	310.00	12	Ductile Iron	0.00	130.0	468.70	824.13	356.38	0.19	0.63	1.33
J-76	P-82	441.00	12	Ductile Iron	0.00	130.0	468.70	823.94	356.30	0.28	0.63	1.33
J-77	P-85	218.00	12	Ductile Iron	0.00	130.0	468.70	823.66	356.18	0.14	0.63	1.33
J-78	P-84	123.00	12	Ductile Iron	0.00	130.0	113.68	823.53	356.12	0.01	0.05	0.32
J-78	P-86	133.00	16	Ductile Iron	0.00	130.0	216.18	823.53	356.12	0.49e-2	0.04	0.34
J-79	P-87	55.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.2e-2	0.04	0.34
J-80	P-88	313.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.01	0.04	0.34
J-81	P-89	282.00	16	Ductile Iron	0.00	130.0	199.06	823.51	356.11	0.01	0.03	0.32
J-82	P-90	295.00	16	Ductile Iron	0.00	130.0	199.06	823.50	356.11	0.01	0.03	0.32
J-83	P-91	219.00	16	Ductile Iron	0.00	130.0	199.06	823.49	356.10	0.01	0.03	0.32
J-84	P-94	86.00	16	Ductile Iron	0.00	130.0	199.06	823.48	356.10	0.27e-2	0.03	0.32
J-85	P-93	45.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.12e-3	0.27e-2	0.06
J-86	P-96	140.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.18e-3	0.13e-2	0.05
J-86	P-97	96.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.10	0.46e-2	0.05	0.29
J-87	P-98	293.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.09	0.01	0.05	0.29
J-88	P-99	356.00	10	Ductile Iron	0.00	130.0	72.11	823.45	356.09	0.02	0.05	0.29
J-89	P-100	326.00	10	Ductile Iron	0.00	130.0	72.11	823.43	356.08	0.02	0.05	0.29
J-90	P-101	287.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.00	0.00	0.01
J-91	P-102	851.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.61e-4	0.72e-4	0.01
J-92	P-103	306.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-93	P-104	302.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-94	P-105	318.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.19e-2	0.01	0.10
J-95	P-106	561.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.33e-2	0.01	0.10
J-96	P-107	369.00	10	Ductile Iron	0.00	130.0	-23.35	823.43	356.08	0.22e-2	0.01	0.10
J-97	P-108	301.00	10	Ductile Iron	0.00	130.0	-90.58	823.43	356.08	0.02	0.07	0.37
J-98	P-109	298.00	10	Ductile Iron	0.00	130.0	-90.58	823.45	356.09	0.02	0.07	0.37
J-99	P-110	73.00	10	Ductile Iron	0.00	130.0	-90.58	823.47	356.10	0.01	0.07	0.37
J-100	P-112	53.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.46e-2	0.09	0.55
J-100	P-113	152.00	10	Ductile Iron	0.00	130.0	108.53	823.54	356.13	0.02	0.10	0.44
J-101	P-114	276.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-102	P-115	273.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-103	P-116	356.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.4e-2	0.01	0.13
J-104	P-117	355.00	10	Ductile Iron	0.00	130.0	-42.57	823.51	356.11	0.01	0.02	0.17
J-105	P-118	337.00	10	Ductile Iron	0.00	130.0	-42.57	823.52	356.12	0.01	0.02	0.17
J-106	P-119	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.53	356.12	0.04	0.12	0.48
J-107	P-120	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.56	356.14	0.04	0.12	0.48
J-108	P-121	384.00	10	Ductile Iron	0.00	130.0	-118.12	823.60	356.15	0.05	0.12	0.48
J-109	P-122	354.00	10	Ductile Iron	0.00	130.0	-193.67	823.65	356.17	0.11	0.30	0.79
J-110	P-125	66.00	10	Ductile Iron	0.00	130.0	-193.67	823.75	356.22	0.02	0.30	0.79
J-111	P-124	174.00	10	Ductile Iron	0.00	130.0	-646.28	823.77	356.23	0.48	2.77	2.64

Scenario: Potable MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis

HYDRAULIC STATUS:

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Hydraulic status for steady-state conditions
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Balanced        Trials = 5, Accuracy = 0.000007
Flow Supplied   2,375.92 gpm
Flow Demanded   2,375.92 gpm
Flow Stored     0.00 gpm
R-1             Reservoir: Emptying
R-2             Reservoir: Emptying
R-3             Reservoir: Emptying
R-4             Reservoir: Emptying
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Scenario: Potable MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	16	Ductile Iron	Demand	0.00	0.00	824.36	356.48	0.00	1.14	0.02	0.00
J-2	J-2	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.14	0.20	0.00
J-3	J-3	16	Ductile Iron	Demand	120.50	120.50	824.14	356.39	120.50	0.94	0.07	0.00
J-4	J-4	16	Ductile Iron	Demand	0.00	0.00	824.07	356.36	0.00	0.94	0.07	0.00
J-5	J-5	16	Ductile Iron	Demand	0.00	0.00	824.00	356.32	0.00	0.94	0.07	0.00
J-6	J-6	16	Ductile Iron	Demand	120.50	120.50	823.93	356.29	120.50	0.75	0.05	0.00
J-7	J-7	16	Ductile Iron	Demand	0.00	0.00	823.88	356.27	0.00	0.75	0.06	0.00
J-8	J-8	16	Ductile Iron	Demand	0.00	0.00	823.82	356.25	0.00	0.75	0.04	0.00
J-9	J-9	16	Ductile Iron	Demand	120.50	120.50	823.78	356.23	120.50	0.56	0.03	0.00
J-10	J-10	16	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.56	0.02	0.00
J-11	J-11	16	Ductile Iron	Demand	0.00	0.00	823.73	356.21	0.00	0.56	0.03	0.00
J-12	J-12	16	Ductile Iron	Demand	120.50	120.50	823.70	356.19	120.50	0.37	0.01	0.00
J-13	J-13	16	Ductile Iron	Demand	0.00	0.00	823.69	356.19	0.00	0.37	0.01	0.00
J-14	J-14	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-15	J-15	16	Ductile Iron	Demand	0.00	0.00	823.67	356.18	0.00	0.37	0.01	0.00
J-16	J-16	16	Ductile Iron	Demand	94.64	94.64	823.66	356.18	94.64	0.87	0.06	0.00
J-17	J-17	16	Ductile Iron	Demand	16.93	16.93	823.60	356.15	16.93	0.84	0.06	0.00
J-18	J-18	16	Ductile Iron	Demand	94.64	94.64	823.49	356.11	94.64	0.47	0.01	0.00
J-19	J-19	16	Ductile Iron	Demand	94.57	94.57	823.49	356.10	94.57	0.32	0.01	0.00
J-20	J-20	16	Ductile Iron	Demand	94.64	94.64	823.47	356.10	94.64	0.17	0.36e-2	0.00
J-21	J-21	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.55e-3	0.00
J-22	J-22	16	Ductile Iron	Demand	61.42	61.42	823.47	356.10	61.42	0.04	0.31e-3	0.00
J-23	J-23	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.14	0.2e-2	0.00
J-24	J-24	16	Ductile Iron	Demand	59.57	59.57	823.47	356.10	59.57	0.23	0.01	0.00
J-25	J-25	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.23	0.16e-2	0.00
J-26	J-26	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.61e-4	0.00
J-27	J-27	16	Ductile Iron	Demand	53.21	53.21	823.48	356.10	53.21	0.15	0.18e-2	0.00
J-28	J-28	16	Ductile Iron	Demand	31.76	31.76	823.48	356.10	31.76	0.20	0.37e-2	0.00
J-29	J-29	16	Ductile Iron	Demand	3.74	3.74	823.48	356.10	3.74	0.20	0.15e-2	0.00
J-30	J-30	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.85e-3	0.00
J-31	J-31	16	Ductile Iron	Demand	3.65	3.65	823.49	356.11	3.65	0.21	0.37e-2	0.00
J-32	J-32	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.21	0.38e-2	0.00
J-33	J-33	16	Ductile Iron	Demand	62.90	62.90	823.50	356.11	62.90	0.31	0.01	0.00
J-34	J-34	16	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.31	0.01	0.00
J-35	J-35	16	Ductile Iron	Demand	38.44	38.44	823.52	356.12	38.44	0.37	0.01	0.00
J-36	J-36	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.37	0.01	0.00
J-37	J-37	16	Ductile Iron	Demand	0.00	0.00	823.54	356.12	0.00	0.37	0.34e-2	0.00
J-38	J-38	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.02	0.00
J-39	J-39	16	Ductile Iron	Demand	0.00	0.00	823.57	356.14	0.00	0.55	0.04	0.00
J-40	J-40	16	Ductile Iron	Demand	55.01	55.01	823.60	356.15	55.01	0.63	0.03	0.00
J-41	J-41	16	Ductile Iron	Demand	0.00	0.00	823.63	356.17	0.00	0.63	0.04	0.00
J-42	J-42	16	Ductile Iron	Demand	55.01	55.01	823.67	356.18	55.01	0.72	0.04	0.00
J-43	J-43	16	Ductile Iron	Demand	0.00	0.00	823.71	356.20	0.00	0.72	0.01	0.00
J-44	J-44	10	Ductile Iron	Demand	0.00	0.00	823.72	356.20	0.00	1.85	0.05	0.00
J-45	J-45	16	Ductile Iron	Demand	0.00	0.00	824.25	356.43	0.00	1.03	0.09	0.00
J-46	J-46	16	Ductile Iron	Demand	0.00	0.00	824.35	356.47	0.00	1.03	0.02	0.00
J-47	J-47	16	Ductile Iron	Demand	0.00	0.00	824.37	356.49	0.00	1.03	0.01	0.00
J-48	J-48	12	Ductile Iron	Demand	46.65	46.65	824.31	356.46	46.65	1.29	0.18	0.00
J-49	J-49	12	Ductile Iron	Demand	0.00	0.00	824.13	356.38	0.00	1.29	0.18	0.00
J-50	J-50	12	Ductile Iron	Demand	46.65	46.65	823.95	356.30	46.65	1.16	0.15	0.00
J-51	J-51	12	Ductile Iron	Demand	0.00	0.00	823.80	356.24	0.00	1.16	0.04	0.00
J-52	J-52	12	Ductile Iron	Demand	0.00	0.00	823.76	356.22	0.00	1.16	0.10	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	1.10	0.05	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.39	0.01	0.00
J-54	J-54	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.37e-2	0.00
J-55	J-55	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.39	0.02	0.00
J-56	J-56	12	Ductile Iron	Demand	94.57	94.57	823.51	356.11	94.57	0.13	0.27e-2	0.00
J-57	J-57	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00
J-58	J-58	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.13	0.21e-2	0.00

Scenario: Potable MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-59	J-59	12	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.13	0.24e-2	0.00
J-60	J-60	12	Ductile Iron	Demand	61.42	61.42	823.50	356.11	61.42	0.05	0.49e-3	0.00
J-61	J-61	12	Ductile Iron	Demand	121.63	121.64	823.50	356.11	121.63	0.39	0.02	0.00
J-62	J-62	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.39	0.01	0.00
J-63	J-63	12	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.32	0.01	0.00
J-64	J-64	12	Ductile Iron	Demand	0.00	0.00	823.51	356.11	0.00	0.32	0.01	0.00
J-65	J-65	12	Ductile Iron	Demand	46.04	46.04	823.49	356.11	46.04	0.19	0.47e-2	0.00
J-66	J-66	12	Ductile Iron	Demand	19.64	19.64	823.49	356.10	19.64	0.14	0.36e-2	0.00
J-67	J-67	12	Ductile Iron	Demand	28.34	28.34	823.49	356.10	28.34	0.06	0.43e-3	0.00
J-68	J-68	12	Ductile Iron	Demand	21.27	21.27	823.49	356.10	21.27	0.45e-2	0.00	0.00
J-69	J-69	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-70	J-70	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.45e-2	0.00	0.00
J-71	J-71	12	Ductile Iron	Demand	0.00	0.00	823.49	356.10	3,000.00	0.45e-2	0.00	0.00
J-72	J-72	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.21	0.48e-2	0.00
J-73	J-73	12	Ductile Iron	Demand	0.00	0.00	824.33	356.47	0.00	1.46	0.05	0.00
J-74	J-74	12	Ductile Iron	Demand	0.00	0.00	824.28	356.45	0.00	1.46	0.15	0.00
J-75	J-75	12	Ductile Iron	Demand	46.04	46.04	824.13	356.38	46.04	1.33	0.19	0.00
J-76	J-76	12	Ductile Iron	Demand	0.00	0.00	823.94	356.30	0.00	1.33	0.28	0.00
J-77	J-77	12	Ductile Iron	Demand	0.00	0.00	823.66	356.18	0.00	1.33	0.14	0.00
J-78	J-78	12	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.32	0.01	0.00
J-78	J-78	16	Ductile Iron	Demand	0.00	0.00	823.53	356.12	0.00	0.34	0.49e-2	0.00
J-79	J-79	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.2e-2	0.00
J-80	J-80	16	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.34	0.01	0.00
J-81	J-81	16	Ductile Iron	Demand	17.12	17.12	823.51	356.11	17.12	0.32	0.01	0.00
J-82	J-82	16	Ductile Iron	Demand	0.00	0.00	823.50	356.11	0.00	0.32	0.01	0.00
J-83	J-83	16	Ductile Iron	Demand	0.00	0.00	823.49	356.10	0.00	0.32	0.01	0.00
J-84	J-84	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.32	0.27e-2	0.00
J-85	J-85	16	Ductile Iron	Demand	0.00	0.00	823.48	356.10	0.00	0.06	0.12e-3	0.00
J-86	J-86	16	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.05	0.18e-3	0.00
J-86	J-86	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.29	0.46e-2	0.00
J-87	J-87	10	Ductile Iron	Demand	0.00	0.00	823.47	356.09	0.00	0.29	0.01	0.00
J-88	J-88	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.29	0.02	0.00
J-89	J-89	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.29	0.02	0.00
J-90	J-90	10	Ductile Iron	Demand	73.35	73.36	823.42	356.07	73.35	0.01	0.00	0.00
J-91	J-91	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.01	0.61e-4	0.00
J-92	J-92	10	Ductile Iron	Demand	22.10	22.10	823.42	356.07	22.10	0.10	0.18e-2	0.00
J-93	J-93	10	Ductile Iron	Demand	0.00	0.00	823.42	356.07	0.00	0.10	0.18e-2	0.00
J-94	J-94	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.19e-2	0.00
J-95	J-95	10	Ductile Iron	Demand	0.00	0.00	823.42	356.08	0.00	0.10	0.33e-2	0.00
J-96	J-96	10	Ductile Iron	Demand	0.00	0.00	823.43	356.08	0.00	0.10	0.22e-2	0.00
J-97	J-97	10	Ductile Iron	Demand	67.23	67.24	823.43	356.08	67.23	0.37	0.02	0.00
J-98	J-98	10	Ductile Iron	Demand	0.00	0.00	823.45	356.09	0.00	0.37	0.02	0.00
J-99	J-99	10	Ductile Iron	Demand	0.00	0.00	823.47	356.10	0.00	0.37	0.01	0.00
J-100	J-100	16	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.55	0.46e-2	0.00
J-100	J-100	10	Ductile Iron	Demand	0.00	0.00	823.54	356.13	0.00	0.44	0.02	0.00
J-101	J-101	10	Ductile Iron	Demand	75.55	75.55	823.52	356.12	75.55	0.13	0.31e-2	0.00
J-102	J-102	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.31e-2	0.00
J-103	J-103	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.13	0.4e-2	0.00
J-104	J-104	10	Ductile Iron	Demand	75.55	75.55	823.51	356.11	75.55	0.17	0.01	0.00
J-105	J-105	10	Ductile Iron	Demand	0.00	0.00	823.52	356.12	0.00	0.17	0.01	0.00
J-106	J-106	10	Ductile Iron	Demand	75.55	75.55	823.53	356.12	75.55	0.48	0.04	0.00
J-107	J-107	10	Ductile Iron	Demand	0.00	0.00	823.56	356.14	0.00	0.48	0.04	0.00
J-108	J-108	10	Ductile Iron	Demand	0.00	0.00	823.60	356.15	0.00	0.48	0.05	0.00
J-109	J-109	10	Ductile Iron	Demand	75.55	75.55	823.65	356.17	75.55	0.79	0.11	0.00
J-110	J-110	10	Ductile Iron	Demand	0.00	0.00	823.75	356.22	0.00	0.79	0.02	0.00
J-111	J-111	10	Ductile Iron	Demand	0.00	0.00	823.77	356.23	0.00	2.64	0.48	0.00

Scenario: Potable MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	47.00	16	Ductile Iron	0.00	130.0	712.57	824.36	356.48	0.02	0.34	1.14
J-2	P-3	607.00	16	Ductile Iron	0.00	130.0	712.57	824.35	356.47	0.20	0.34	1.14
J-3	P-4	300.00	16	Ductile Iron	0.00	130.0	592.07	824.14	356.39	0.07	0.24	0.94
J-4	P-5	299.00	16	Ductile Iron	0.00	130.0	592.07	824.07	356.36	0.07	0.24	0.94
J-5	P-6	295.00	16	Ductile Iron	0.00	130.0	592.07	824.00	356.32	0.07	0.24	0.94
J-6	P-7	299.00	16	Ductile Iron	0.00	130.0	471.58	823.93	356.29	0.05	0.16	0.75
J-7	P-8	408.00	16	Ductile Iron	0.00	130.0	471.58	823.88	356.27	0.06	0.16	0.75
J-8	P-9	269.00	16	Ductile Iron	0.00	130.0	471.58	823.82	356.25	0.04	0.16	0.75
J-9	P-10	301.00	16	Ductile Iron	0.00	130.0	351.08	823.78	356.23	0.03	0.09	0.56
J-10	P-11	252.00	16	Ductile Iron	0.00	130.0	351.08	823.75	356.22	0.02	0.09	0.56
J-11	P-12	301.00	16	Ductile Iron	0.00	130.0	351.08	823.73	356.21	0.03	0.09	0.56
J-12	P-13	297.00	16	Ductile Iron	0.00	130.0	230.58	823.70	356.19	0.01	0.04	0.37
J-13	P-14	305.00	16	Ductile Iron	0.00	130.0	230.58	823.69	356.19	0.01	0.04	0.37
J-14	P-15	145.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-15	P-16	202.00	16	Ductile Iron	0.00	130.0	230.58	823.67	356.18	0.01	0.04	0.37
J-16	P-17	296.00	16	Ductile Iron	0.00	130.0	544.99	823.66	356.18	0.06	0.20	0.87
J-17	P-55	306.00	16	Ductile Iron	0.00	130.0	528.06	823.60	356.15	0.06	0.19	0.84
J-18	P-19	91.00	16	Ductile Iron	0.00	130.0	294.62	823.49	356.11	0.01	0.07	0.47
J-19	P-20	373.00	16	Ductile Iron	0.00	130.0	200.05	823.49	356.10	0.01	0.03	0.32
J-20	P-95	368.00	16	Ductile Iron	0.00	130.0	105.41	823.47	356.10	0.36e-2	0.01	0.17
J-21	P-22	447.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.55e-3	0.12e-2	0.05
J-22	P-23	305.00	16	Ductile Iron	0.00	130.0	-28.12	823.47	356.10	0.31e-3	0.1e-2	0.04
J-23	P-24	293.00	16	Ductile Iron	0.00	130.0	-87.68	823.47	356.10	0.2e-2	0.01	0.14
J-24	P-25	310.00	16	Ductile Iron	0.00	130.0	-147.25	823.47	356.10	0.01	0.02	0.23
J-25	P-92	88.00	16	Ductile Iron	0.00	130.0	-147.25	823.48	356.10	0.16e-2	0.02	0.23
J-26	P-27	43.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.61e-4	0.14e-2	0.06
J-27	P-28	242.00	16	Ductile Iron	0.00	130.0	-91.98	823.48	356.10	0.18e-2	0.01	0.15
J-28	P-29	279.00	16	Ductile Iron	0.00	130.0	-123.74	823.48	356.10	0.37e-2	0.01	0.20
J-29	P-75	111.00	16	Ductile Iron	0.00	130.0	-127.48	823.48	356.10	0.15e-2	0.01	0.20
J-30	P-31	58.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.85e-3	0.01	0.21
J-31	P-32	248.00	16	Ductile Iron	0.00	130.0	-132.73	823.49	356.11	0.37e-2	0.02	0.21
J-32	P-33	254.00	16	Ductile Iron	0.00	130.0	-132.73	823.50	356.11	0.38e-2	0.01	0.21
J-33	P-34	274.00	16	Ductile Iron	0.00	130.0	-195.63	823.50	356.11	0.01	0.03	0.31
J-34	P-35	250.00	16	Ductile Iron	0.00	130.0	-195.63	823.51	356.11	0.01	0.03	0.31
J-35	P-36	223.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-36	P-37	250.00	16	Ductile Iron	0.00	130.0	-234.07	823.52	356.12	0.01	0.04	0.37
J-37	P-111	80.00	16	Ductile Iron	0.00	130.0	-234.07	823.54	356.12	0.34e-2	0.04	0.37
J-38	P-39	262.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.02	0.09	0.55
J-39	P-40	442.00	16	Ductile Iron	0.00	130.0	-342.59	823.57	356.14	0.04	0.09	0.55
J-40	P-41	259.00	16	Ductile Iron	0.00	130.0	-397.60	823.60	356.15	0.03	0.11	0.63
J-41	P-42	309.00	16	Ductile Iron	0.00	130.0	-397.60	823.63	356.17	0.04	0.11	0.63
J-42	P-43	305.00	16	Ductile Iron	0.00	130.0	-452.62	823.67	356.18	0.04	0.15	0.72
J-43	P-44	43.00	16	Ductile Iron	0.00	130.0	-452.62	823.71	356.20	0.01	0.14	0.72
J-44	P-123	37.00	10	Ductile Iron	0.00	130.0	-452.62	823.72	356.20	0.05	1.43	1.85
J-45	P-46	329.00	16	Ductile Iron	0.00	130.0	-646.28	824.25	356.43	0.09	0.28	1.03
J-46	P-47	86.00	16	Ductile Iron	0.00	130.0	-646.28	824.35	356.47	0.02	0.28	1.03
J-47	P-48	36.00	16	Ductile Iron	0.00	130.0	-646.28	824.37	356.49	0.01	0.28	1.03
J-48	P-50	298.00	12	Ductile Iron	0.00	130.0	455.69	824.31	356.46	0.18	0.60	1.29
J-49	P-51	299.00	12	Ductile Iron	0.00	130.0	455.69	824.13	356.38	0.18	0.60	1.29
J-50	P-52	311.00	12	Ductile Iron	0.00	130.0	409.04	823.95	356.30	0.15	0.49	1.16
J-51	P-53	80.00	12	Ductile Iron	0.00	130.0	409.04	823.80	356.24	0.04	0.49	1.16
J-52	P-54	211.00	12	Ductile Iron	0.00	130.0	409.04	823.76	356.22	0.10	0.49	1.16
J-53	P-56	108.00	12	Ductile Iron	0.00	130.0	389.26	823.54	356.13	0.05	0.45	1.10
J-53	P-57	77.00	12	Ductile Iron	0.00	130.0	138.80	823.54	356.13	0.01	0.07	0.39
J-54	P-58	55.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.37e-2	0.07	0.39
J-55	P-59	296.00	12	Ductile Iron	0.00	130.0	138.80	823.53	356.12	0.02	0.07	0.39
J-56	P-60	334.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.27e-2	0.01	0.13
J-57	P-61	263.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13
J-58	P-62	265.00	12	Ductile Iron	0.00	130.0	44.22	823.51	356.11	0.21e-2	0.01	0.13

Scenario: Potable MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-59	P-63	298.00	12	Ductile Iron	0.00	130.0	44.22	823.50	356.11	0.24e-2	0.01	0.13
J-60	P-64	329.00	12	Ductile Iron	0.00	130.0	-17.20	823.50	356.11	0.49e-3	0.15e-2	0.05
J-61	P-65	248.00	12	Ductile Iron	0.00	130.0	-138.83	823.50	356.11	0.02	0.07	0.39
J-62	P-83	97.00	12	Ductile Iron	0.00	130.0	-138.83	823.52	356.12	0.01	0.07	0.39
J-63	P-67	245.00	12	Ductile Iron	0.00	130.0	113.68	823.52	356.12	0.01	0.05	0.32
J-64	P-68	302.00	12	Ductile Iron	0.00	130.0	113.68	823.51	356.11	0.01	0.05	0.32
J-65	P-69	268.00	12	Ductile Iron	0.00	130.0	67.65	823.49	356.11	0.47e-2	0.02	0.19
J-66	P-70	387.00	12	Ductile Iron	0.00	130.0	48.01	823.49	356.10	0.36e-2	0.01	0.14
J-67	P-71	247.00	12	Ductile Iron	0.00	130.0	19.67	823.49	356.10	0.43e-3	0.17e-2	0.06
J-68	P-72	318.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-69	P-73	292.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-70	P-74	330.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-71	P-77	96.00	12	Ductile Iron	0.00	130.0	-1.60	823.49	356.10	0.00	0.00	0.45e-2
J-72	P-76	339.00	16	Ductile Iron	0.00	130.0	-129.07	823.49	356.10	0.48e-2	0.01	0.21
J-73	P-79	64.00	12	Ductile Iron	0.00	130.0	514.73	824.33	356.47	0.05	0.75	1.46
J-74	P-80	200.00	12	Ductile Iron	0.00	130.0	514.73	824.28	356.45	0.15	0.75	1.46
J-75	P-81	310.00	12	Ductile Iron	0.00	130.0	468.70	824.13	356.38	0.19	0.63	1.33
J-76	P-82	441.00	12	Ductile Iron	0.00	130.0	468.70	823.94	356.30	0.28	0.63	1.33
J-77	P-85	218.00	12	Ductile Iron	0.00	130.0	468.70	823.66	356.18	0.14	0.63	1.33
J-78	P-84	123.00	12	Ductile Iron	0.00	130.0	113.68	823.53	356.12	0.01	0.05	0.32
J-78	P-86	133.00	16	Ductile Iron	0.00	130.0	216.18	823.53	356.12	0.49e-2	0.04	0.34
J-79	P-87	55.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.2e-2	0.04	0.34
J-80	P-88	313.00	16	Ductile Iron	0.00	130.0	216.18	823.52	356.12	0.01	0.04	0.34
J-81	P-89	282.00	16	Ductile Iron	0.00	130.0	199.06	823.51	356.11	0.01	0.03	0.32
J-82	P-90	295.00	16	Ductile Iron	0.00	130.0	199.06	823.50	356.11	0.01	0.03	0.32
J-83	P-91	219.00	16	Ductile Iron	0.00	130.0	199.06	823.49	356.10	0.01	0.03	0.32
J-84	P-94	86.00	16	Ductile Iron	0.00	130.0	199.06	823.48	356.10	0.27e-2	0.03	0.32
J-85	P-93	45.00	16	Ductile Iron	0.00	130.0	-38.77	823.48	356.10	0.12e-3	0.27e-2	0.06
J-86	P-96	140.00	16	Ductile Iron	0.00	130.0	33.30	823.47	356.10	0.18e-3	0.13e-2	0.05
J-86	P-97	96.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.10	0.46e-2	0.05	0.29
J-87	P-98	293.00	10	Ductile Iron	0.00	130.0	72.11	823.47	356.09	0.01	0.05	0.29
J-88	P-99	356.00	10	Ductile Iron	0.00	130.0	72.11	823.45	356.09	0.02	0.05	0.29
J-89	P-100	326.00	10	Ductile Iron	0.00	130.0	72.11	823.43	356.08	0.02	0.05	0.29
J-90	P-101	287.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.00	0.00	0.01
J-91	P-102	851.00	10	Ductile Iron	0.00	130.0	-1.25	823.42	356.07	0.61e-4	0.72e-4	0.01
J-92	P-103	306.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-93	P-104	302.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.07	0.18e-2	0.01	0.10
J-94	P-105	318.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.19e-2	0.01	0.10
J-95	P-106	561.00	10	Ductile Iron	0.00	130.0	-23.35	823.42	356.08	0.33e-2	0.01	0.10
J-96	P-107	369.00	10	Ductile Iron	0.00	130.0	-23.35	823.43	356.08	0.22e-2	0.01	0.10
J-97	P-108	301.00	10	Ductile Iron	0.00	130.0	-90.58	823.43	356.08	0.02	0.07	0.37
J-98	P-109	298.00	10	Ductile Iron	0.00	130.0	-90.58	823.45	356.09	0.02	0.07	0.37
J-99	P-110	73.00	10	Ductile Iron	0.00	130.0	-90.58	823.47	356.10	0.01	0.07	0.37
J-100	P-112	53.00	16	Ductile Iron	0.00	130.0	-342.59	823.54	356.13	0.46e-2	0.09	0.55
J-100	P-113	152.00	10	Ductile Iron	0.00	130.0	108.53	823.54	356.13	0.02	0.10	0.44
J-101	P-114	276.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-102	P-115	273.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.31e-2	0.01	0.13
J-103	P-116	356.00	10	Ductile Iron	0.00	130.0	32.98	823.52	356.12	0.4e-2	0.01	0.13
J-104	P-117	355.00	10	Ductile Iron	0.00	130.0	-42.57	823.51	356.11	0.01	0.02	0.17
J-105	P-118	337.00	10	Ductile Iron	0.00	130.0	-42.57	823.52	356.12	0.01	0.02	0.17
J-106	P-119	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.53	356.12	0.04	0.12	0.48
J-107	P-120	320.00	10	Ductile Iron	0.00	130.0	-118.12	823.56	356.14	0.04	0.12	0.48
J-108	P-121	384.00	10	Ductile Iron	0.00	130.0	-118.12	823.60	356.15	0.05	0.12	0.48
J-109	P-122	354.00	10	Ductile Iron	0.00	130.0	-193.67	823.65	356.17	0.11	0.30	0.79
J-110	P-125	66.00	10	Ductile Iron	0.00	130.0	-193.67	823.75	356.22	0.02	0.30	0.79
J-111	P-124	174.00	10	Ductile Iron	0.00	130.0	-646.28	823.77	356.23	0.48	2.77	2.64

Scenario: Potable Peak Hour Demand
Steady State Analysis

HYDRAULIC STATUS:

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Hydraulic status for steady-state conditions
-------------------------------------------------------------
Balanced        Trials = 4, Accuracy = 0.000837
Flow Supplied   4,039.06 gpm
Flow Demanded   4,039.06 gpm
Flow Stored     0.00 gpm
R-1             Reservoir: Emptying
R-2             Reservoir: Emptying
R-3             Reservoir: Emptying
R-4             Reservoir: Emptying
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Scenario: Potable Peak Hour Demand
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	16	Ductile Iron	Demand	0.00	0.00	824.33	356.47	3,000.00	1.93	0.04	0.00
J-2	J-2	16	Ductile Iron	Demand	0.00	0.00	824.29	356.45	3,000.00	1.93	0.54	0.00
J-3	J-3	16	Ductile Iron	Demand	204.84	204.84	823.74	356.21	3,204.84	1.61	0.19	0.00
J-4	J-4	16	Ductile Iron	Demand	0.00	0.00	823.55	356.13	3,000.00	1.61	0.19	0.00
J-5	J-5	16	Ductile Iron	Demand	0.00	0.00	823.36	356.05	3,000.00	1.61	0.19	0.00
J-6	J-6	16	Ductile Iron	Demand	204.84	204.84	823.17	355.97	3,204.84	1.28	0.12	0.00
J-7	J-7	16	Ductile Iron	Demand	0.00	0.00	823.05	355.91	3,000.00	1.28	0.17	0.00
J-8	J-8	16	Ductile Iron	Demand	0.00	0.00	822.88	355.84	3,000.00	1.28	0.11	0.00
J-9	J-9	16	Ductile Iron	Demand	204.84	204.84	822.77	355.79	3,204.84	0.95	0.07	0.00
J-10	J-10	16	Ductile Iron	Demand	0.00	0.00	822.69	355.76	3,000.00	0.95	0.06	0.00
J-11	J-11	16	Ductile Iron	Demand	0.00	0.00	822.63	355.73	3,000.00	0.95	0.07	0.00
J-12	J-12	16	Ductile Iron	Demand	204.84	204.84	822.56	355.70	3,204.84	0.63	0.03	0.00
J-13	J-13	16	Ductile Iron	Demand	0.00	0.00	822.53	355.69	3,000.00	0.63	0.03	0.00
J-14	J-14	16	Ductile Iron	Demand	0.00	0.00	822.49	355.67	3,000.00	0.63	0.02	0.00
J-15	J-15	16	Ductile Iron	Demand	0.00	0.00	822.48	355.67	3,000.00	0.63	0.02	0.00
J-16	J-16	16	Ductile Iron	Demand	160.89	160.89	822.46	355.66	3,160.89	1.48	0.16	0.00
J-17	J-17	16	Ductile Iron	Demand	28.78	28.78	822.29	355.59	3,028.78	1.43	0.16	0.00
J-18	J-18	16	Ductile Iron	Demand	160.89	160.89	822.01	355.46	3,160.89	0.80	0.02	0.00
J-19	J-19	16	Ductile Iron	Demand	160.77	160.77	821.99	355.46	3,160.77	0.54	0.03	0.00
J-20	J-20	16	Ductile Iron	Demand	160.89	160.89	821.96	355.44	3,160.89	0.29	0.01	0.00
J-21	J-21	16	Ductile Iron	Demand	0.00	0.00	821.95	355.44	3,000.00	0.09	0.14e-2	0.00
J-22	J-22	16	Ductile Iron	Demand	104.42	104.42	821.95	355.44	3,104.42	0.08	0.67e-3	0.00
J-23	J-23	16	Ductile Iron	Demand	101.27	101.27	821.95	355.44	3,101.27	0.24	0.01	0.00
J-24	J-24	16	Ductile Iron	Demand	101.27	101.27	821.95	355.44	3,101.27	0.40	0.02	0.00
J-25	J-25	16	Ductile Iron	Demand	0.00	0.00	821.97	355.45	3,000.00	0.40	0.43e-2	0.00
J-26	J-26	16	Ductile Iron	Demand	0.00	0.00	821.97	355.45	3,000.00	0.11	0.18e-3	0.00
J-27	J-27	16	Ductile Iron	Demand	90.46	90.46	821.97	355.45	3,090.46	0.25	0.49e-2	0.00
J-28	J-28	16	Ductile Iron	Demand	53.99	53.99	821.98	355.45	3,053.99	0.34	0.01	0.00
J-29	J-29	16	Ductile Iron	Demand	6.36	6.36	821.99	355.46	3,006.36	0.35	0.41e-2	0.00
J-30	J-30	16	Ductile Iron	Demand	0.00	0.00	822.01	355.46	3,000.00	0.35	0.22e-2	0.00
J-31	J-31	16	Ductile Iron	Demand	6.21	6.21	822.01	355.46	3,006.21	0.36	0.01	0.00
J-32	J-32	16	Ductile Iron	Demand	0.00	0.00	822.02	355.47	3,000.00	0.36	0.01	0.00
J-33	J-33	16	Ductile Iron	Demand	106.93	106.93	822.03	355.47	3,106.93	0.53	0.02	0.00
J-34	J-34	16	Ductile Iron	Demand	0.00	0.00	822.05	355.48	3,000.00	0.53	0.02	0.00
J-35	J-35	16	Ductile Iron	Demand	65.34	65.34	822.07	355.49	3,065.34	0.63	0.03	0.00
J-36	J-36	16	Ductile Iron	Demand	0.00	0.00	822.10	355.50	3,000.00	0.63	0.03	0.00
J-37	J-37	16	Ductile Iron	Demand	0.00	0.00	822.13	355.51	3,000.00	0.63	0.01	0.00
J-38	J-38	16	Ductile Iron	Demand	0.00	0.00	822.15	355.52	3,000.00	0.93	0.06	0.00
J-39	J-39	16	Ductile Iron	Demand	0.00	0.00	822.21	355.55	3,000.00	0.93	0.10	0.00
J-40	J-40	16	Ductile Iron	Demand	93.52	93.52	822.31	355.59	3,093.52	1.08	0.08	0.00
J-41	J-41	16	Ductile Iron	Demand	0.00	0.00	822.39	355.63	3,000.00	1.08	0.09	0.00
J-42	J-42	16	Ductile Iron	Demand	93.52	93.52	822.48	355.67	3,093.52	1.23	0.12	0.00
J-43	J-43	16	Ductile Iron	Demand	0.00	0.00	822.60	355.72	3,000.00	1.23	0.02	0.00
J-44	J-44	10	Ductile Iron	Demand	0.00	0.00	822.62	355.73	3,000.00	3.14	0.14	0.00
J-45	J-45	16	Ductile Iron	Demand	0.00	0.00	824.04	356.34	3,000.00	1.75	0.25	0.00
J-46	J-46	16	Ductile Iron	Demand	0.00	0.00	824.29	356.45	3,000.00	1.75	0.06	0.00
J-47	J-47	16	Ductile Iron	Demand	0.00	0.00	824.35	356.48	3,000.00	1.75	0.03	0.00
J-48	J-48	12	Ductile Iron	Demand	79.30	79.30	824.19	356.41	3,079.30	2.20	0.47	0.00
J-49	J-49	12	Ductile Iron	Demand	0.00	0.00	823.72	356.20	3,000.00	2.20	0.48	0.00
J-50	J-50	12	Ductile Iron	Demand	79.30	79.30	823.24	356.00	3,079.30	1.97	0.41	0.00
J-51	J-51	12	Ductile Iron	Demand	0.00	0.00	822.83	355.82	3,000.00	1.97	0.10	0.00
J-52	J-52	12	Ductile Iron	Demand	0.00	0.00	822.73	355.78	3,000.00	1.97	0.27	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	822.14	355.52	3,000.00	1.88	0.13	0.00
J-53	J-53	12	Ductile Iron	Demand	0.00	0.00	822.14	355.52	3,000.00	0.67	0.01	0.00
J-54	J-54	12	Ductile Iron	Demand	0.00	0.00	822.12	355.51	3,000.00	0.67	0.01	0.00
J-55	J-55	12	Ductile Iron	Demand	0.00	0.00	822.11	355.51	3,000.00	0.67	0.05	0.00
J-56	J-56	12	Ductile Iron	Demand	160.77	160.77	822.06	355.49	3,160.77	0.21	0.01	0.00
J-57	J-57	12	Ductile Iron	Demand	0.00	0.00	822.05	355.48	3,000.00	0.21	0.01	0.00
J-58	J-58	12	Ductile Iron	Demand	0.00	0.00	822.05	355.48	3,000.00	0.21	0.01	0.00

Scenario: Potable Peak Hour Demand
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-59	J-59	12	Ductile Iron	Demand	0.00	0.00	822.04	355.48	3,000.00	0.21	0.01	0.00
J-60	J-60	12	Ductile Iron	Demand	104.42	104.42	822.04	355.48	3,104.42	0.08	0.12e-2	0.00
J-61	J-61	12	Ductile Iron	Demand	206.78	206.78	822.04	355.48	3,206.78	0.67	0.04	0.00
J-62	J-62	12	Ductile Iron	Demand	0.00	0.00	822.08	355.50	3,000.00	0.67	0.02	0.00
J-63	J-63	12	Ductile Iron	Demand	0.00	0.00	822.08	355.50	3,000.00	0.55	0.03	0.00
J-64	J-64	12	Ductile Iron	Demand	0.00	0.00	822.05	355.48	3,000.00	0.55	0.04	0.00
J-65	J-65	12	Ductile Iron	Demand	78.26	78.26	822.02	355.47	3,078.26	0.33	0.01	0.00
J-66	J-66	12	Ductile Iron	Demand	33.38	33.38	822.00	355.46	3,033.38	0.23	0.01	0.00
J-67	J-67	12	Ductile Iron	Demand	48.18	48.18	821.99	355.46	3,048.18	0.09	0.12e-2	0.00
J-68	J-68	12	Ductile Iron	Demand	36.15	36.15	821.99	355.46	3,036.15	0.01	0.00	0.00
J-69	J-69	12	Ductile Iron	Demand	0.00	0.00	821.99	355.46	3,000.00	0.01	0.00	0.00
J-70	J-70	12	Ductile Iron	Demand	0.00	0.00	821.99	355.46	3,000.00	0.01	0.00	0.00
J-71	J-71	12	Ductile Iron	Demand	0.00	0.00	821.99	355.46	3,000.00	0.01	0.00	0.00
J-72	J-72	16	Ductile Iron	Demand	0.00	0.00	821.99	355.46	3,000.00	0.35	0.01	0.00
J-73	J-73	12	Ductile Iron	Demand	0.00	0.00	824.25	356.43	3,000.00	2.48	0.13	0.00
J-74	J-74	12	Ductile Iron	Demand	0.00	0.00	824.12	356.38	3,000.00	2.48	0.40	0.00
J-75	J-75	12	Ductile Iron	Demand	78.26	78.26	823.72	356.20	3,078.26	2.26	0.52	0.00
J-76	J-76	12	Ductile Iron	Demand	0.00	0.00	823.20	355.98	3,000.00	2.26	0.74	0.00
J-77	J-77	12	Ductile Iron	Demand	0.00	0.00	822.46	355.66	3,000.00	2.26	0.37	0.00
J-78	J-78	12	Ductile Iron	Demand	0.00	0.00	822.10	355.50	3,000.00	0.55	0.02	0.00
J-78	J-78	16	Ductile Iron	Demand	0.00	0.00	822.10	355.50	3,000.00	0.59	0.01	0.00
J-79	J-79	16	Ductile Iron	Demand	0.00	0.00	822.09	355.50	3,000.00	0.59	0.01	0.00
J-80	J-80	16	Ductile Iron	Demand	0.00	0.00	822.08	355.49	3,000.00	0.59	0.03	0.00
J-81	J-81	16	Ductile Iron	Demand	29.10	29.10	822.05	355.48	3,029.10	0.54	0.02	0.00
J-82	J-82	16	Ductile Iron	Demand	0.00	0.00	822.02	355.47	3,000.00	0.54	0.02	0.00
J-83	J-83	16	Ductile Iron	Demand	0.00	0.00	822.00	355.46	3,000.00	0.54	0.02	0.00
J-84	J-84	16	Ductile Iron	Demand	0.00	0.00	821.98	355.45	3,000.00	0.54	0.01	0.00
J-85	J-85	16	Ductile Iron	Demand	0.00	0.00	821.97	355.45	3,000.00	0.11	0.18e-3	0.00
J-86	J-86	16	Ductile Iron	Demand	0.00	0.00	821.95	355.44	3,000.00	0.09	0.43e-3	0.00
J-86	J-86	10	Ductile Iron	Demand	0.00	0.00	821.95	355.44	3,000.00	0.50	0.01	0.00
J-87	J-87	10	Ductile Iron	Demand	0.00	0.00	821.94	355.43	3,000.00	0.50	0.04	0.00
J-88	J-88	10	Ductile Iron	Demand	0.00	0.00	821.90	355.42	3,000.00	0.50	0.05	0.00
J-89	J-89	10	Ductile Iron	Demand	0.00	0.00	821.86	355.40	3,000.00	0.50	0.04	0.00
J-90	J-90	10	Ductile Iron	Demand	124.70	124.70	821.81	355.38	3,124.70	0.01	0.61e-4	0.00
J-91	J-91	10	Ductile Iron	Demand	0.00	0.00	821.81	355.38	3,000.00	0.01	0.00	0.00
J-92	J-92	10	Ductile Iron	Demand	37.57	37.57	821.81	355.38	3,037.57	0.16	0.49e-2	0.00
J-93	J-93	10	Ductile Iron	Demand	0.00	0.00	821.82	355.38	3,000.00	0.16	0.48e-2	0.00
J-94	J-94	10	Ductile Iron	Demand	0.00	0.00	821.82	355.38	3,000.00	0.16	0.01	0.00
J-95	J-95	10	Ductile Iron	Demand	0.00	0.00	821.83	355.39	3,000.00	0.16	0.01	0.00
J-96	J-96	10	Ductile Iron	Demand	0.00	0.00	821.84	355.39	3,000.00	0.16	0.01	0.00
J-97	J-97	10	Ductile Iron	Demand	114.30	114.30	821.84	355.39	3,114.30	0.63	0.06	0.00
J-98	J-98	10	Ductile Iron	Demand	0.00	0.00	821.90	355.42	3,000.00	0.63	0.06	0.00
J-99	J-99	10	Ductile Iron	Demand	0.00	0.00	821.96	355.44	3,000.00	0.63	0.01	0.00
J-100	J-100	16	Ductile Iron	Demand	0.00	0.00	822.13	355.52	3,000.00	0.93	0.01	0.00
J-100	J-100	10	Ductile Iron	Demand	0.00	0.00	822.13	355.52	3,000.00	0.75	0.04	0.00
J-101	J-101	10	Ductile Iron	Demand	128.43	128.43	822.09	355.50	3,128.43	0.23	0.01	0.00
J-102	J-102	10	Ductile Iron	Demand	0.00	0.00	822.09	355.50	3,000.00	0.23	0.01	0.00
J-103	J-103	10	Ductile Iron	Demand	0.00	0.00	822.08	355.49	3,000.00	0.23	0.01	0.00
J-104	J-104	10	Ductile Iron	Demand	128.43	128.43	822.07	355.49	3,128.43	0.30	0.02	0.00
J-105	J-105	10	Ductile Iron	Demand	0.00	0.00	822.08	355.50	3,000.00	0.30	0.02	0.00
J-106	J-106	10	Ductile Iron	Demand	128.43	128.43	822.10	355.50	3,128.43	0.82	0.10	0.00
J-107	J-107	10	Ductile Iron	Demand	0.00	0.00	822.20	355.55	3,000.00	0.82	0.10	0.00
J-108	J-108	10	Ductile Iron	Demand	0.00	0.00	822.30	355.59	3,000.00	0.82	0.12	0.00
J-109	J-109	10	Ductile Iron	Demand	128.43	128.43	822.43	355.64	3,128.43	1.34	0.28	0.00
J-110	J-110	10	Ductile Iron	Demand	0.00	0.00	822.71	355.77	3,000.00	1.34	0.05	0.00
J-111	J-111	10	Ductile Iron	Demand	0.00	0.00	822.76	355.79	3,000.00	4.49	1.28	0.00

Scenario: Potable Peak Hour Demand
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	47.00	16	Ductile Iron	0.00	130.0	1,211.37	824.33	356.47	0.04	0.90	1.93
J-2	P-3	607.00	16	Ductile Iron	0.00	130.0	1,211.37	824.29	356.45	0.54	0.90	1.93
J-3	P-4	300.00	16	Ductile Iron	0.00	130.0	1,006.52	823.74	356.21	0.19	0.64	1.61
J-4	P-5	299.00	16	Ductile Iron	0.00	130.0	1,006.52	823.55	356.13	0.19	0.64	1.61
J-5	P-6	295.00	16	Ductile Iron	0.00	130.0	1,006.52	823.36	356.05	0.19	0.64	1.61
J-6	P-7	299.00	16	Ductile Iron	0.00	130.0	801.68	823.17	355.97	0.12	0.42	1.28
J-7	P-8	408.00	16	Ductile Iron	0.00	130.0	801.68	823.05	355.91	0.17	0.42	1.28
J-8	P-9	269.00	16	Ductile Iron	0.00	130.0	801.68	822.88	355.84	0.11	0.42	1.28
J-9	P-10	301.00	16	Ductile Iron	0.00	130.0	596.84	822.77	355.79	0.07	0.24	0.95
J-10	P-11	252.00	16	Ductile Iron	0.00	130.0	596.84	822.69	355.76	0.06	0.24	0.95
J-11	P-12	301.00	16	Ductile Iron	0.00	130.0	596.84	822.63	355.73	0.07	0.24	0.95
J-12	P-13	297.00	16	Ductile Iron	0.00	130.0	391.99	822.56	355.70	0.03	0.11	0.63
J-13	P-14	305.00	16	Ductile Iron	0.00	130.0	391.99	822.53	355.69	0.03	0.11	0.63
J-14	P-15	145.00	16	Ductile Iron	0.00	130.0	391.99	822.49	355.67	0.02	0.11	0.63
J-15	P-16	202.00	16	Ductile Iron	0.00	130.0	391.99	822.48	355.67	0.02	0.11	0.63
J-16	P-17	296.00	16	Ductile Iron	0.00	130.0	926.48	822.46	355.66	0.16	0.55	1.48
J-17	P-55	306.00	16	Ductile Iron	0.00	130.0	897.69	822.29	355.59	0.16	0.51	1.43
J-18	P-19	91.00	16	Ductile Iron	0.00	130.0	500.85	822.01	355.46	0.02	0.17	0.80
J-19	P-20	373.00	16	Ductile Iron	0.00	130.0	340.08	821.99	355.46	0.03	0.09	0.54
J-20	P-95	368.00	16	Ductile Iron	0.00	130.0	179.20	821.96	355.44	0.01	0.03	0.29
J-21	P-22	447.00	16	Ductile Iron	0.00	130.0	56.62	821.95	355.44	0.14e-2	0.31e-2	0.09
J-22	P-23	305.00	16	Ductile Iron	0.00	130.0	-47.80	821.95	355.44	0.67e-3	0.22e-2	0.08
J-23	P-24	293.00	16	Ductile Iron	0.00	130.0	-149.06	821.95	355.44	0.01	0.02	0.24
J-24	P-25	310.00	16	Ductile Iron	0.00	130.0	-250.33	821.95	355.44	0.02	0.05	0.40
J-25	P-92	88.00	16	Ductile Iron	0.00	130.0	-250.33	821.97	355.45	0.43e-2	0.05	0.40
J-26	P-27	43.00	16	Ductile Iron	0.00	130.0	-65.91	821.97	355.45	0.18e-3	0.43e-2	0.11
J-27	P-28	242.00	16	Ductile Iron	0.00	130.0	-156.37	821.97	355.45	0.49e-2	0.02	0.25
J-28	P-29	279.00	16	Ductile Iron	0.00	130.0	-210.36	821.98	355.45	0.01	0.04	0.34
J-29	P-75	111.00	16	Ductile Iron	0.00	130.0	-216.72	821.99	355.46	0.41e-2	0.04	0.35
J-30	P-31	58.00	16	Ductile Iron	0.00	130.0	-219.43	822.01	355.46	0.22e-2	0.04	0.35
J-31	P-32	248.00	16	Ductile Iron	0.00	130.0	-225.64	822.01	355.46	0.01	0.04	0.36
J-32	P-33	254.00	16	Ductile Iron	0.00	130.0	-225.64	822.02	355.47	0.01	0.04	0.36
J-33	P-34	274.00	16	Ductile Iron	0.00	130.0	-332.57	822.03	355.47	0.02	0.08	0.53
J-34	P-35	250.00	16	Ductile Iron	0.00	130.0	-332.57	822.05	355.48	0.02	0.08	0.53
J-35	P-36	223.00	16	Ductile Iron	0.00	130.0	-397.91	822.07	355.49	0.03	0.11	0.63
J-36	P-37	250.00	16	Ductile Iron	0.00	130.0	-397.91	822.10	355.50	0.03	0.11	0.63
J-37	P-111	80.00	16	Ductile Iron	0.00	130.0	-397.91	822.13	355.51	0.01	0.11	0.63
J-38	P-39	262.00	16	Ductile Iron	0.00	130.0	-582.41	822.15	355.52	0.06	0.23	0.93
J-39	P-40	442.00	16	Ductile Iron	0.00	130.0	-582.41	822.21	355.55	0.10	0.23	0.93
J-40	P-41	259.00	16	Ductile Iron	0.00	130.0	-675.93	822.31	355.59	0.08	0.30	1.08
J-41	P-42	309.00	16	Ductile Iron	0.00	130.0	-675.93	822.39	355.63	0.09	0.30	1.08
J-42	P-43	305.00	16	Ductile Iron	0.00	130.0	-769.45	822.48	355.67	0.12	0.39	1.23
J-43	P-44	43.00	16	Ductile Iron	0.00	130.0	-769.45	822.60	355.72	0.02	0.39	1.23
J-44	P-123	37.00	10	Ductile Iron	0.00	130.0	-769.45	822.62	355.73	0.14	3.82	3.14
J-45	P-46	329.00	16	Ductile Iron	0.00	130.0	-1,098.68	824.04	356.34	0.25	0.75	1.75
J-46	P-47	86.00	16	Ductile Iron	0.00	130.0	-1,098.68	824.29	356.45	0.06	0.75	1.75
J-47	P-48	36.00	16	Ductile Iron	0.00	130.0	-1,098.68	824.35	356.48	0.03	0.75	1.75
J-48	P-50	298.00	12	Ductile Iron	0.00	130.0	774.67	824.19	356.41	0.47	1.59	2.20
J-49	P-51	299.00	12	Ductile Iron	0.00	130.0	774.67	823.72	356.20	0.48	1.59	2.20
J-50	P-52	311.00	12	Ductile Iron	0.00	130.0	695.37	823.24	356.00	0.41	1.30	1.97
J-51	P-53	80.00	12	Ductile Iron	0.00	130.0	695.37	822.83	355.82	0.10	1.30	1.97
J-52	P-54	211.00	12	Ductile Iron	0.00	130.0	695.37	822.73	355.78	0.27	1.30	1.97
J-53	P-56	108.00	12	Ductile Iron	0.00	130.0	661.74	822.14	355.52	0.13	1.19	1.88
J-53	P-57	77.00	12	Ductile Iron	0.00	130.0	235.95	822.14	355.52	0.01	0.18	0.67
J-54	P-58	55.00	12	Ductile Iron	0.00	130.0	235.95	822.12	355.51	0.01	0.18	0.67
J-55	P-59	296.00	12	Ductile Iron	0.00	130.0	235.95	822.11	355.51	0.05	0.18	0.67
J-56	P-60	334.00	12	Ductile Iron	0.00	130.0	75.18	822.06	355.49	0.01	0.02	0.21
J-57	P-61	263.00	12	Ductile Iron	0.00	130.0	75.18	822.05	355.48	0.01	0.02	0.21
J-58	P-62	265.00	12	Ductile Iron	0.00	130.0	75.18	822.05	355.48	0.01	0.02	0.21

Scenario: Potable Peak Hour Demand
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-59	P-63	298.00	12	Ductile Iron	0.00	130.0	75.18	822.04	355.48	0.01	0.02	0.21
J-60	P-64	329.00	12	Ductile Iron	0.00	130.0	-29.23	822.04	355.48	0.12e-2	0.37e-2	0.08
J-61	P-65	248.00	12	Ductile Iron	0.00	130.0	-236.01	822.04	355.48	0.04	0.18	0.67
J-62	P-83	97.00	12	Ductile Iron	0.00	130.0	-236.01	822.08	355.50	0.02	0.18	0.67
J-63	P-67	245.00	12	Ductile Iron	0.00	130.0	193.26	822.08	355.50	0.03	0.12	0.55
J-64	P-68	302.00	12	Ductile Iron	0.00	130.0	193.26	822.05	355.48	0.04	0.12	0.55
J-65	P-69	268.00	12	Ductile Iron	0.00	130.0	115.00	822.02	355.47	0.01	0.05	0.33
J-66	P-70	387.00	12	Ductile Iron	0.00	130.0	81.62	822.00	355.46	0.01	0.02	0.23
J-67	P-71	247.00	12	Ductile Iron	0.00	130.0	33.44	821.99	355.46	0.12e-2	0.47e-2	0.09
J-68	P-72	318.00	12	Ductile Iron	0.00	130.0	-2.71	821.99	355.46	0.00	0.00	0.01
J-69	P-73	292.00	12	Ductile Iron	0.00	130.0	-2.71	821.99	355.46	0.00	0.00	0.01
J-70	P-74	330.00	12	Ductile Iron	0.00	130.0	-2.71	821.99	355.46	0.00	0.00	0.01
J-71	P-77	96.00	12	Ductile Iron	0.00	130.0	-2.71	821.99	355.46	0.00	0.00	0.01
J-72	P-76	339.00	16	Ductile Iron	0.00	130.0	-219.43	821.99	355.46	0.01	0.04	0.35
J-73	P-79	64.00	12	Ductile Iron	0.00	130.0	875.04	824.25	356.43	0.13	1.99	2.48
J-74	P-80	200.00	12	Ductile Iron	0.00	130.0	875.04	824.12	356.38	0.40	1.99	2.48
J-75	P-81	310.00	12	Ductile Iron	0.00	130.0	796.78	823.72	356.20	0.52	1.68	2.26
J-76	P-82	441.00	12	Ductile Iron	0.00	130.0	796.78	823.20	355.98	0.74	1.68	2.26
J-77	P-85	218.00	12	Ductile Iron	0.00	130.0	796.78	822.46	355.66	0.37	1.68	2.26
J-78	P-84	123.00	12	Ductile Iron	0.00	130.0	193.26	822.10	355.50	0.02	0.12	0.55
J-78	P-86	133.00	16	Ductile Iron	0.00	130.0	367.51	822.10	355.50	0.01	0.10	0.59
J-79	P-87	55.00	16	Ductile Iron	0.00	130.0	367.51	822.09	355.50	0.01	0.10	0.59
J-80	P-88	313.00	16	Ductile Iron	0.00	130.0	367.51	822.08	355.49	0.03	0.10	0.59
J-81	P-89	282.00	16	Ductile Iron	0.00	130.0	338.41	822.05	355.48	0.02	0.08	0.54
J-82	P-90	295.00	16	Ductile Iron	0.00	130.0	338.41	822.02	355.47	0.02	0.08	0.54
J-83	P-91	219.00	16	Ductile Iron	0.00	130.0	338.41	822.00	355.46	0.02	0.08	0.54
J-84	P-94	86.00	16	Ductile Iron	0.00	130.0	338.41	821.98	355.45	0.01	0.08	0.54
J-85	P-93	45.00	16	Ductile Iron	0.00	130.0	-65.91	821.97	355.45	0.18e-3	0.41e-2	0.11
J-86	P-96	140.00	16	Ductile Iron	0.00	130.0	56.62	821.95	355.44	0.43e-3	0.31e-2	0.09
J-86	P-97	96.00	10	Ductile Iron	0.00	130.0	122.58	821.95	355.44	0.01	0.13	0.50
J-87	P-98	293.00	10	Ductile Iron	0.00	130.0	122.58	821.94	355.43	0.04	0.13	0.50
J-88	P-99	356.00	10	Ductile Iron	0.00	130.0	122.58	821.90	355.42	0.05	0.13	0.50
J-89	P-100	326.00	10	Ductile Iron	0.00	130.0	122.58	821.86	355.40	0.04	0.13	0.50
J-90	P-101	287.00	10	Ductile Iron	0.00	130.0	-2.12	821.81	355.38	0.61e-4	0.21e-3	0.01
J-91	P-102	851.00	10	Ductile Iron	0.00	130.0	-2.12	821.81	355.38	0.00	0.00	0.01
J-92	P-103	306.00	10	Ductile Iron	0.00	130.0	-39.69	821.81	355.38	0.49e-2	0.02	0.16
J-93	P-104	302.00	10	Ductile Iron	0.00	130.0	-39.69	821.82	355.38	0.48e-2	0.02	0.16
J-94	P-105	318.00	10	Ductile Iron	0.00	130.0	-39.69	821.82	355.38	0.01	0.02	0.16
J-95	P-106	561.00	10	Ductile Iron	0.00	130.0	-39.69	821.83	355.39	0.01	0.02	0.16
J-96	P-107	369.00	10	Ductile Iron	0.00	130.0	-39.69	821.84	355.39	0.01	0.02	0.16
J-97	P-108	301.00	10	Ductile Iron	0.00	130.0	-153.99	821.84	355.39	0.06	0.19	0.63
J-98	P-109	298.00	10	Ductile Iron	0.00	130.0	-153.99	821.90	355.42	0.06	0.19	0.63
J-99	P-110	73.00	10	Ductile Iron	0.00	130.0	-153.99	821.96	355.44	0.01	0.19	0.63
J-100	P-112	53.00	16	Ductile Iron	0.00	130.0	-582.41	822.13	355.52	0.01	0.23	0.93
J-100	P-113	152.00	10	Ductile Iron	0.00	130.0	184.49	822.13	355.52	0.04	0.27	0.75
J-101	P-114	276.00	10	Ductile Iron	0.00	130.0	56.06	822.09	355.50	0.01	0.03	0.23
J-102	P-115	273.00	10	Ductile Iron	0.00	130.0	56.06	822.09	355.50	0.01	0.03	0.23
J-103	P-116	356.00	10	Ductile Iron	0.00	130.0	56.06	822.08	355.49	0.01	0.03	0.23
J-104	P-117	355.00	10	Ductile Iron	0.00	130.0	-72.37	822.07	355.49	0.02	0.05	0.30
J-105	P-118	337.00	10	Ductile Iron	0.00	130.0	-72.37	822.08	355.50	0.02	0.05	0.30
J-106	P-119	320.00	10	Ductile Iron	0.00	130.0	-200.80	822.10	355.50	0.10	0.32	0.82
J-107	P-120	320.00	10	Ductile Iron	0.00	130.0	-200.80	822.20	355.55	0.10	0.32	0.82
J-108	P-121	384.00	10	Ductile Iron	0.00	130.0	-200.80	822.30	355.59	0.12	0.32	0.82
J-109	P-122	354.00	10	Ductile Iron	0.00	130.0	-329.23	822.43	355.64	0.28	0.79	1.34
J-110	P-125	66.00	10	Ductile Iron	0.00	130.0	-329.23	822.71	355.77	0.05	0.79	1.34
J-111	P-124	174.00	10	Ductile Iron	0.00	130.0	-1,098.68	822.76	355.79	1.28	7.38	4.49

Appendix B

Recycled Water System

Computer Model Results

Scenario: Recycled Average Daily Demand (ADD)
Steady State Analysis

HYDRAULIC STATUS:

Hydraulic status for steady-state conditions

Balanced Trials = 5, Accuracy = 0.000067
Flow Supplied 436.91 gpm
Flow Demanded 436.91 gpm
Flow Stored 0.00 gpm
R-1 Reservoir: Emptying

Scenario: Recycled Average Daily Demand (ADD)
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	10	PVC	Demand	0.00	0.00	813.08	351.60	0.00	0.79	0.02	0.00
J-2	J-2	10	PVC	Demand	0.00	0.00	813.07	351.60	0.00	0.79	0.12	0.00
J-3	J-3	10	PVC	Demand	16.47	16.47	812.94	351.54	16.47	0.73	0.08	0.00
J-4	J-4	10	PVC	Demand	0.69	0.69	812.86	351.51	0.69	0.72	0.04	0.00
J-5	J-5	8	PVC	Demand	0.00	0.00	812.83	351.49	0.00	1.13	0.24	0.00
J-6	J-6	8	PVC	Demand	83.51	83.51	812.59	351.39	83.51	0.60	0.06	0.00
J-7	J-7	8	PVC	Demand	0.00	0.00	812.53	351.37	0.00	0.05	0.31e-3	0.00
J-7	J-7	6	PVC	Demand	0.00	0.00	812.53	351.37	0.00	0.97	0.15	0.00
J-8	J-8	8	PVC	Demand	3.98	3.98	812.53	351.37	3.98	0.03	0.12e-3	0.00
J-9	J-9	8	PVC	Demand	17.40	17.40	812.53	351.37	17.40	0.08	0.73e-3	0.00
J-10	J-10	8	PVC	Demand	15.98	15.98	812.53	351.37	15.98	0.18	0.01	0.00
J-11	J-11	8	PVC	Demand	0.00	0.00	812.54	351.37	0.00	0.18	0.28e-2	0.00
J-12	J-12	8	PVC	Demand	0.00	0.00	812.54	351.37	0.00	0.18	0.13e-2	0.00
J-13	J-13	8	PVC	Demand	0.00	0.00	812.54	351.37	0.00	0.18	0.01	0.00
J-14	J-14	8	PVC	Demand	0.00	0.00	812.55	351.37	0.00	0.18	0.01	0.00
J-15	J-15	8	PVC	Demand	0.00	0.00	812.56	351.38	0.00	0.18	0.01	0.00
J-16	J-16	8	PVC	Demand	0.00	0.00	812.57	351.38	0.00	0.18	0.27e-2	0.00
J-17	J-17	12	PVC	Demand	0.00	0.00	812.57	351.38	0.00	0.58	0.01	0.00
J-17	J-17	6	PVC	Demand	0.00	0.00	812.57	351.38	0.00	1.00	0.13	0.00
J-18	J-18	12	PVC	Demand	0.00	0.00	812.58	351.39	0.00	0.58	0.06	0.00
J-19	J-19	12	PVC	Demand	16.25	16.25	812.64	351.41	16.25	0.63	0.06	0.00
J-20	J-20	12	PVC	Demand	0.00	0.00	812.70	351.44	0.00	0.63	0.01	0.00
J-21	J-21	12	PVC	Demand	0.00	0.00	812.72	351.45	0.00	0.63	0.07	0.00
J-22	J-22	12	PVC	Demand	21.47	21.47	812.78	351.47	21.47	0.69	0.09	0.00
J-23	J-23	12	PVC	Demand	0.00	0.00	812.87	351.51	0.00	0.69	0.11	0.00
J-24	J-24	12	PVC	Demand	0.00	0.00	812.98	351.56	0.00	0.69	0.10	0.00
J-25	J-25	6	PVC	Demand	1.00	1.00	812.38	351.30	1.00	0.96	0.14	0.00
J-26	J-26	6	PVC	Demand	0.00	0.00	812.24	351.24	0.00	0.96	0.19	0.00
J-27	J-27	6	PVC	Demand	0.00	0.00	812.05	351.16	0.00	0.96	0.06	0.00
J-28	J-28	4	PVC	Demand	0.00	0.00	811.99	351.13	0.00	0.66	0.04	0.00
J-28	J-28	6	PVC	Demand	0.00	0.00	811.99	351.13	0.00	0.66	0.09	0.00
J-29	J-29	4	PVC	Demand	0.00	0.00	811.95	351.11	0.00	0.66	0.17	0.00
J-30	J-30	4	PVC	Demand	0.00	0.00	811.77	351.04	0.00	0.66	0.07	0.00
J-31	J-31	4	PVC	Demand	0.00	0.00	811.70	351.01	0.00	0.66	0.18	0.00
J-32	J-32	4	PVC	Demand	12.95	12.95	811.52	350.93	12.95	0.33	0.06	0.00
J-33	J-33	4	PVC	Demand	0.00	0.00	811.46	350.90	0.00	0.33	0.04	0.00
J-34	J-34	4	PVC	Demand	0.00	0.00	811.42	350.88	0.00	0.33	0.02	0.00
J-35	J-35	4	PVC	Demand	0.00	0.00	811.40	350.88	0.00	0.33	0.03	0.00
J-36	J-36	4	PVC	Demand	11.69	11.69	811.37	350.86	11.69	0.03	0.31e-3	0.00
J-37	J-37	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.61e-4	0.00
J-38	J-38	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.31e-3	0.00
J-39	J-39	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.61e-3	0.00
J-40	J-40	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.24e-3	0.00
J-41	J-41	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.43e-3	0.00
J-42	J-42	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.37e-3	0.00
J-43	J-43	4	PVC	Demand	0.00	0.00	811.37	350.86	0.00	0.03	0.24e-3	0.00
J-44	J-44	4	PVC	Demand	21.64	21.64	811.37	350.86	21.64	0.52	0.06	0.00

Scenario: Recycled Average Daily Demand (ADD)
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-45	J-45	4	PVC	Demand	5.60	5.60	811.43	350.89	5.60	0.67	0.14	0.00
J-46	J-46	4	PVC	Demand	0.00	0.00	811.58	350.95	0.00	0.67	0.12	0.00
J-47	J-47	4	PVC	Demand	0.00	0.00	811.70	351.01	0.00	0.67	0.03	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	811.73	351.02	0.00	0.99	0.07	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	811.73	351.02	0.00	0.86	0.14	0.00
J-49	J-49	6	PVC	Demand	0.00	0.00	811.80	351.05	0.00	0.99	0.19	0.00
J-50	J-50	6	PVC	Demand	0.00	0.00	812.00	351.13	0.00	0.99	0.17	0.00
J-51	J-51	6	PVC	Demand	0.00	0.00	812.17	351.21	0.00	0.99	0.19	0.00
J-52	J-52	6	PVC	Demand	0.00	0.00	812.36	351.29	0.00	0.99	0.16	0.00
J-53	J-53	6	PVC	Demand	0.00	0.00	812.52	351.36	0.00	0.99	0.05	0.00
J-54	J-54	6	PVC	Demand	0.94	0.94	811.89	351.09	0.94	0.65	0.10	0.00
J-55	J-55	6	PVC	Demand	21.68	21.68	811.80	351.05	21.68	0.41	0.06	0.00
J-56	J-56	6	PVC	Demand	21.02	21.02	811.74	351.02	21.02	0.17	0.01	0.00
J-57	J-57	6	PVC	Demand	9.06	9.06	812.44	351.33	9.06	0.90	0.08	0.00
J-58	J-58	6	PVC	Demand	0.00	0.00	812.36	351.29	0.00	0.90	0.16	0.00
J-59	J-59	6	PVC	Demand	0.00	0.00	812.19	351.22	0.00	0.90	0.13	0.00
J-60	J-60	6	PVC	Demand	6.40	6.40	812.06	351.16	6.40	0.83	0.21	0.00
J-61	J-61	6	PVC	Demand	8.33	8.33	811.86	351.07	8.33	0.73	0.14	0.00
J-62	J-62	6	PVC	Demand	0.00	0.00	811.72	351.01	0.00	0.73	0.08	0.00
J-63	J-63	6	PVC	Demand	0.00	0.00	811.64	350.98	0.00	0.73	0.08	0.00
J-64	J-64	6	PVC	Demand	0.00	0.00	811.56	350.94	0.00	0.73	0.09	0.00
J-65	J-65	6	PVC	Demand	0.00	0.00	811.47	350.91	0.00	0.73	0.05	0.00
J-66	J-66	6	PVC	Demand	0.00	0.00	811.42	350.89	0.00	1.45	0.45	0.00
J-67	J-67	6	PVC	Demand	0.44	0.44	811.60	350.96	0.44	0.86	0.11	0.00
J-68	J-68	6	PVC	Demand	12.52	12.52	811.49	350.91	12.52	0.72	0.06	0.00
J-69	J-69	6	PVC	Demand	13.96	13.96	810.98	350.69	13.96	1.29	0.32	0.00
J-70	J-70	6	PVC	Demand	11.10	11.10	810.66	350.56	11.10	1.17	0.39	0.00
J-71	J-71	6	PVC	Demand	1.05	1.05	810.27	350.39	1.05	1.15	0.20	0.00
J-72	J-72	6	PVC	Demand	12.52	12.52	810.07	350.30	12.52	1.01	0.32	0.00
J-73	J-73	6	PVC	Demand	0.00	0.00	809.75	350.16	0.00	1.01	0.08	0.00
J-74	J-74	4	PVC	Demand	0.00	0.00	809.66	350.13	0.00	1.13	0.44	0.00
J-74	J-74	6	PVC	Demand	0.00	0.00	809.66	350.13	0.00	0.51	0.04	0.00
J-75	J-75	4	PVC	Demand	19.42	19.42	809.22	349.94	19.42	0.64	0.15	0.00
J-76	J-76	4	PVC	Demand	0.00	0.00	809.07	349.87	0.00	0.64	0.08	0.00
J-77	J-77	4	PVC	Demand	0.00	0.00	808.99	349.84	0.00	0.64	0.16	0.00
J-78	J-78	4	PVC	Demand	0.00	0.00	808.83	349.76	0.00	0.64	0.22	0.00
J-79	J-79	4	PVC	Demand	53.33	53.33	808.61	349.67	53.33	0.72	0.35	0.00
J-80	J-80	4	PVC	Demand	0.00	0.00	808.96	349.82	0.00	0.72	0.14	0.00
J-81	J-81	4	PVC	Demand	0.00	0.00	809.10	349.88	0.00	0.72	0.19	0.00
J-82	J-82	4	PVC	Demand	0.00	0.00	809.29	349.96	0.00	0.72	0.19	0.00
J-83	J-83	6	PVC	Demand	0.00	0.00	809.48	350.05	0.00	0.00	0.00	0.00
J-84	J-84	6	PVC	Demand	7.40	7.40	809.63	350.11	7.40	0.42	0.05	0.00
J-85	J-85	6	PVC	Demand	7.78	7.78	809.58	350.09	7.78	0.34	0.05	0.00
J-86	J-86	6	PVC	Demand	1.03	1.03	809.53	350.07	1.03	0.32	0.03	0.00
J-87	J-87	6	PVC	Demand	0.30	0.30	809.50	350.05	0.30	0.32	0.02	0.00

Scenario: Recycled Average Daily Demand (ADD)
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	69.00	10	PVC	0.00	150.0	194.48	813.08	351.60	0.02	0.23	0.79
J-2	P-3	538.00	10	PVC	0.00	150.0	194.48	813.07	351.60	0.12	0.23	0.79
J-3	P-4	400.00	10	PVC	0.00	150.0	178.01	812.94	351.54	0.08	0.20	0.73
J-4	P-5	196.00	10	PVC	0.00	150.0	177.32	812.86	351.51	0.04	0.19	0.72
J-5	P-6	409.00	8	PVC	0.00	150.0	177.32	812.83	351.49	0.24	0.57	1.13
J-6	P-7	320.00	8	PVC	0.00	150.0	93.81	812.59	351.39	0.06	0.18	0.60
J-7	P-8	145.00	8	PVC	0.00	150.0	8.56	812.53	351.37	0.31e-3	0.21e-2	0.05
J-7	P-26	250.00	6	PVC	0.00	150.0	85.25	812.53	351.37	0.15	0.60	0.97
J-8	P-9	183.00	8	PVC	0.00	150.0	4.58	812.53	351.37	0.12e-3	0.67e-3	0.03
J-9	P-10	165.00	8	PVC	0.00	150.0	-12.82	812.53	351.37	0.73e-3	0.44e-2	0.08
J-10	P-11	307.00	8	PVC	0.00	150.0	-28.80	812.53	351.37	0.01	0.02	0.18
J-11	P-12	140.00	8	PVC	0.00	150.0	-28.80	812.54	351.37	0.28e-2	0.02	0.18
J-12	P-13	66.00	8	PVC	0.00	150.0	-28.80	812.54	351.37	0.13e-2	0.02	0.18
J-13	P-14	289.00	8	PVC	0.00	150.0	-28.80	812.54	351.37	0.01	0.02	0.18
J-14	P-15	415.00	8	PVC	0.00	150.0	-28.80	812.55	351.37	0.01	0.02	0.18
J-15	P-16	411.00	8	PVC	0.00	150.0	-28.80	812.56	351.38	0.01	0.02	0.18
J-16	P-17	138.00	8	PVC	0.00	150.0	-28.80	812.57	351.38	0.27e-2	0.02	0.18
J-17	P-18	134.00	12	PVC	0.00	150.0	-204.71	812.57	351.38	0.01	0.10	0.58
J-17	P-60	203.00	6	PVC	0.00	150.0	88.46	812.57	351.38	0.13	0.64	1.00
J-18	P-19	538.00	12	PVC	0.00	150.0	-204.71	812.58	351.39	0.06	0.10	0.58
J-19	P-20	538.00	12	PVC	0.00	150.0	-220.96	812.64	351.41	0.06	0.12	0.63
J-20	P-21	104.00	12	PVC	0.00	150.0	-220.96	812.70	351.44	0.01	0.12	0.63
J-21	P-22	560.00	12	PVC	0.00	150.0	-220.96	812.72	351.45	0.07	0.12	0.63
J-22	P-23	630.00	12	PVC	0.00	150.0	-242.43	812.78	351.47	0.09	0.14	0.69
J-23	P-24	764.00	12	PVC	0.00	150.0	-242.43	812.87	351.51	0.11	0.14	0.69
J-24	P-25	700.00	12	PVC	0.00	150.0	-242.43	812.98	351.56	0.10	0.14	0.69
J-25	P-27	241.00	6	PVC	0.00	150.0	84.25	812.38	351.30	0.14	0.59	0.96
J-26	P-28	320.00	6	PVC	0.00	150.0	84.25	812.24	351.24	0.19	0.59	0.96
J-27	P-29	110.00	6	PVC	0.00	150.0	84.25	812.05	351.16	0.06	0.59	0.96
J-28	P-30	85.00	4	PVC	0.00	150.0	25.76	811.99	351.13	0.04	0.47	0.66
J-28	P-56	312.00	6	PVC	0.00	150.0	58.49	811.99	351.13	0.09	0.30	0.66
J-29	P-31	369.00	4	PVC	0.00	150.0	25.76	811.95	351.11	0.17	0.47	0.66
J-30	P-32	148.00	4	PVC	0.00	150.0	25.76	811.77	351.04	0.07	0.47	0.66
J-31	P-33	388.00	4	PVC	0.00	150.0	25.76	811.70	351.01	0.18	0.47	0.66
J-32	P-34	484.00	4	PVC	0.00	150.0	12.81	811.52	350.93	0.06	0.13	0.33
J-33	P-35	299.00	4	PVC	0.00	150.0	12.81	811.46	350.90	0.04	0.13	0.33
J-34	P-36	137.00	4	PVC	0.00	150.0	12.81	811.42	350.88	0.02	0.13	0.33
J-35	P-37	203.00	4	PVC	0.00	150.0	12.81	811.40	350.88	0.03	0.13	0.33
J-36	P-38	219.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.31e-3	0.14e-2	0.03
J-37	P-39	70.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.61e-4	0.87e-3	0.03
J-38	P-40	186.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.31e-3	0.16e-2	0.03
J-39	P-41	417.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.61e-3	0.15e-2	0.03
J-40	P-42	169.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.24e-3	0.14e-2	0.03
J-41	P-43	320.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.43e-3	0.13e-2	0.03
J-42	P-44	254.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.37e-3	0.14e-2	0.03
J-43	P-45	159.00	4	PVC	0.00	150.0	1.12	811.37	350.86	0.24e-3	0.15e-2	0.03
J-44	P-46	205.00	4	PVC	0.00	150.0	-20.52	811.37	350.86	0.06	0.31	0.52

Scenario: Recycled Average Daily Demand (ADD)
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-45	P-47	291.00	4	PVC	0.00	150.0	-26.12	811.43	350.89	0.14	0.49	0.67
J-46	P-48	255.00	4	PVC	0.00	150.0	-26.12	811.58	350.95	0.12	0.49	0.67
J-47	P-49	64.00	4	PVC	0.00	150.0	-26.12	811.70	351.01	0.03	0.49	0.67
J-48	P-50	116.00	6	PVC	0.00	150.0	-87.45	811.73	351.02	0.07	0.63	0.99
J-48	P-70	277.00	6	PVC	0.00	150.0	76.18	811.73	351.02	0.14	0.49	0.86
J-49	P-51	306.00	6	PVC	0.00	150.0	-87.45	811.80	351.05	0.19	0.63	0.99
J-50	P-52	267.00	6	PVC	0.00	150.0	-87.45	812.00	351.13	0.17	0.63	0.99
J-51	P-53	302.00	6	PVC	0.00	150.0	-87.45	812.17	351.21	0.19	0.63	0.99
J-52	P-54	257.00	6	PVC	0.00	150.0	-87.45	812.36	351.29	0.16	0.63	0.99
J-53	P-55	81.00	6	PVC	0.00	150.0	-87.45	812.52	351.36	0.05	0.63	0.99
J-54	P-57	335.00	6	PVC	0.00	150.0	57.55	811.89	351.09	0.10	0.29	0.65
J-55	P-58	460.00	6	PVC	0.00	150.0	35.87	811.80	351.05	0.06	0.12	0.41
J-56	P-59	449.00	6	PVC	0.00	150.0	14.85	811.74	351.02	0.01	0.02	0.17
J-57	P-61	153.00	6	PVC	0.00	150.0	79.40	812.44	351.33	0.08	0.53	0.90
J-58	P-62	311.00	6	PVC	0.00	150.0	79.40	812.36	351.29	0.16	0.53	0.90
J-59	P-63	246.00	6	PVC	0.00	150.0	79.40	812.19	351.22	0.13	0.53	0.90
J-60	P-64	454.00	6	PVC	0.00	150.0	73.00	812.06	351.16	0.21	0.45	0.83
J-61	P-65	386.00	6	PVC	0.00	150.0	64.67	811.86	351.07	0.14	0.36	0.73
J-62	P-66	232.00	6	PVC	0.00	150.0	64.67	811.72	351.01	0.08	0.36	0.73
J-63	P-67	223.00	6	PVC	0.00	150.0	64.67	811.64	350.98	0.08	0.36	0.73
J-64	P-68	243.00	6	PVC	0.00	150.0	64.67	811.56	350.94	0.09	0.36	0.73
J-65	P-69	125.00	6	PVC	0.00	150.0	64.67	811.47	350.91	0.05	0.36	0.73
J-66	P-73	350.00	6	PVC	0.00	150.0	127.89	811.42	350.89	0.45	1.27	1.45
J-67	P-71	226.00	6	PVC	0.00	150.0	75.74	811.60	350.96	0.11	0.48	0.86
J-68	P-72	184.00	6	PVC	0.00	150.0	63.22	811.49	350.91	0.06	0.35	0.72
J-69	P-74	309.00	6	PVC	0.00	150.0	113.93	810.98	350.69	0.32	1.03	1.29
J-70	P-75	456.00	6	PVC	0.00	150.0	102.83	810.66	350.56	0.39	0.85	1.17
J-71	P-76	238.00	6	PVC	0.00	150.0	101.78	810.27	350.39	0.20	0.84	1.15
J-72	P-77	495.00	6	PVC	0.00	150.0	89.26	810.07	350.30	0.32	0.66	1.01
J-73	P-78	124.00	6	PVC	0.00	150.0	89.26	809.75	350.16	0.08	0.66	1.01
J-74	P-79	339.00	4	PVC	0.00	150.0	44.45	809.66	350.13	0.44	1.30	1.13
J-74	P-88	208.00	6	PVC	0.00	150.0	44.81	809.66	350.13	0.04	0.18	0.51
J-75	P-80	337.00	4	PVC	0.00	150.0	25.03	809.22	349.94	0.15	0.45	0.64
J-76	P-81	179.00	4	PVC	0.00	150.0	25.03	809.07	349.87	0.08	0.45	0.64
J-77	P-82	365.00	4	PVC	0.00	150.0	25.03	808.99	349.84	0.16	0.45	0.64
J-78	P-83	492.00	4	PVC	0.00	150.0	25.03	808.83	349.76	0.22	0.45	0.64
J-79	P-84	627.00	4	PVC	0.00	150.0	-28.30	808.61	349.67	0.35	0.56	0.72
J-80	P-85	248.00	4	PVC	0.00	150.0	-28.30	808.96	349.82	0.14	0.56	0.72
J-81	P-86	337.00	4	PVC	0.00	150.0	-28.30	809.10	349.88	0.19	0.56	0.72
J-82	P-87	334.00	4	PVC	0.00	150.0	-28.30	809.29	349.96	0.19	0.56	0.72
J-83	P-93	517.00	6	PVC	0.00	150.0	0.00	809.48	350.05	0.00	0.00	0.00
J-84	P-89	384.00	6	PVC	0.00	150.0	37.41	809.63	350.11	0.05	0.13	0.42
J-85	P-90	586.00	6	PVC	0.00	150.0	29.63	809.58	350.09	0.05	0.09	0.34
J-86	P-91	386.00	6	PVC	0.00	150.0	28.60	809.53	350.07	0.03	0.08	0.32
J-87	P-92	215.00	6	PVC	0.00	150.0	28.30	809.50	350.05	0.02	0.08	0.32

Scenario: Recycled MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis

HYDRAULIC STATUS:

Hydraulic status for steady-state conditions

Balanced Trials = 5, Accuracy = 0.000002
Flow Supplied 873.82 gpm
Flow Demanded 873.82 gpm
Flow Stored 0.00 gpm
R-1 Reservoir: Emptying

Scenario: Recycled MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	10	PVC	Demand	0.00	0.00	810.19	350.36	0.00	1.59	0.06	0.00
J-2	J-2	10	PVC	Demand	0.00	0.00	810.14	350.33	0.00	1.59	0.45	0.00
J-3	J-3	10	PVC	Demand	32.94	32.94	809.69	350.14	32.94	1.45	0.28	0.00
J-4	J-4	10	PVC	Demand	1.38	1.38	809.41	350.02	1.38	1.45	0.14	0.00
J-5	J-5	8	PVC	Demand	0.00	0.00	809.27	349.96	0.00	2.26	0.85	0.00
J-6	J-6	8	PVC	Demand	167.02	167.02	808.42	349.59	167.02	1.20	0.20	0.00
J-7	J-7	8	PVC	Demand	0.00	0.00	808.22	349.50	0.00	0.11	0.11e-2	0.00
J-7	J-7	6	PVC	Demand	0.00	0.00	808.22	349.50	0.00	1.93	0.54	0.00
J-8	J-8	8	PVC	Demand	7.96	7.96	808.22	349.50	7.96	0.06	0.43e-3	0.00
J-9	J-9	8	PVC	Demand	34.80	34.80	808.22	349.50	34.80	0.16	0.26e-2	0.00
J-10	J-10	8	PVC	Demand	31.96	31.96	808.22	349.50	31.96	0.37	0.02	0.00
J-11	J-11	8	PVC	Demand	0.00	0.00	808.24	349.51	0.00	0.37	0.01	0.00
J-12	J-12	8	PVC	Demand	0.00	0.00	808.25	349.52	0.00	0.37	0.48e-2	0.00
J-13	J-13	8	PVC	Demand	0.00	0.00	808.26	349.52	0.00	0.37	0.02	0.00
J-14	J-14	8	PVC	Demand	0.00	0.00	808.28	349.53	0.00	0.37	0.03	0.00
J-15	J-15	8	PVC	Demand	0.00	0.00	808.31	349.54	0.00	0.37	0.03	0.00
J-16	J-16	8	PVC	Demand	0.00	0.00	808.34	349.55	0.00	0.37	0.01	0.00
J-17	J-17	12	PVC	Demand	0.00	0.00	808.35	349.56	0.00	1.16	0.05	0.00
J-17	J-17	6	PVC	Demand	0.00	0.00	808.35	349.56	0.00	2.01	0.47	0.00
J-18	J-18	12	PVC	Demand	0.00	0.00	808.40	349.58	0.00	1.16	0.20	0.00
J-19	J-19	12	PVC	Demand	32.50	32.50	808.60	349.67	32.50	1.25	0.23	0.00
J-20	J-20	12	PVC	Demand	0.00	0.00	808.83	349.77	0.00	1.25	0.04	0.00
J-21	J-21	12	PVC	Demand	0.00	0.00	808.88	349.79	0.00	1.25	0.24	0.00
J-22	J-22	12	PVC	Demand	42.94	42.94	809.12	349.89	42.94	1.38	0.32	0.00
J-23	J-23	12	PVC	Demand	0.00	0.00	809.44	350.03	0.00	1.38	0.39	0.00
J-24	J-24	12	PVC	Demand	0.00	0.00	809.84	350.20	0.00	1.38	0.36	0.00
J-25	J-25	6	PVC	Demand	2.00	2.00	807.68	349.27	2.00	1.91	0.51	0.00
J-26	J-26	6	PVC	Demand	0.00	0.00	807.17	349.05	0.00	1.91	0.68	0.00
J-27	J-27	6	PVC	Demand	0.00	0.00	806.49	348.75	0.00	1.91	0.23	0.00
J-28	J-28	4	PVC	Demand	0.00	0.00	806.25	348.65	0.00	1.32	0.15	0.00
J-28	J-28	6	PVC	Demand	0.00	0.00	806.25	348.65	0.00	1.33	0.34	0.00
J-29	J-29	4	PVC	Demand	0.00	0.00	806.11	348.59	0.00	1.32	0.63	0.00
J-30	J-30	4	PVC	Demand	0.00	0.00	805.48	348.32	0.00	1.32	0.25	0.00
J-31	J-31	4	PVC	Demand	0.00	0.00	805.22	348.21	0.00	1.32	0.66	0.00
J-32	J-32	4	PVC	Demand	25.90	25.90	804.56	347.92	25.90	0.65	0.23	0.00
J-33	J-33	4	PVC	Demand	0.00	0.00	804.33	347.82	0.00	0.65	0.14	0.00
J-34	J-34	4	PVC	Demand	0.00	0.00	804.19	347.76	0.00	0.65	0.06	0.00
J-35	J-35	4	PVC	Demand	0.00	0.00	804.13	347.73	0.00	0.65	0.10	0.00
J-36	J-36	4	PVC	Demand	23.38	23.38	804.03	347.69	23.38	0.06	0.11e-2	0.00
J-37	J-37	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.37e-3	0.00
J-38	J-38	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.98e-3	0.00
J-39	J-39	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.21e-2	0.00
J-40	J-40	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.92e-3	0.00
J-41	J-41	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.16e-2	0.00
J-42	J-42	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.13e-2	0.00
J-43	J-43	4	PVC	Demand	0.00	0.00	804.03	347.69	0.00	0.06	0.85e-3	0.00
J-44	J-44	4	PVC	Demand	43.28	43.28	804.03	347.69	43.28	1.05	0.23	0.00

Scenario: Recycled MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-45	J-45	4	PVC	Demand	11.20	11.20	804.26	347.79	11.20	1.33	0.51	0.00
J-46	J-46	4	PVC	Demand	0.00	0.00	804.77	348.01	0.00	1.33	0.45	0.00
J-47	J-47	4	PVC	Demand	0.00	0.00	805.21	348.20	0.00	1.33	0.11	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	805.32	348.25	0.00	1.98	0.26	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	805.32	348.25	0.00	1.73	0.49	0.00
J-49	J-49	6	PVC	Demand	0.00	0.00	805.59	348.36	0.00	1.98	0.70	0.00
J-50	J-50	6	PVC	Demand	0.00	0.00	806.28	348.66	0.00	1.98	0.61	0.00
J-51	J-51	6	PVC	Demand	0.00	0.00	806.89	348.93	0.00	1.98	0.69	0.00
J-52	J-52	6	PVC	Demand	0.00	0.00	807.58	349.22	0.00	1.98	0.58	0.00
J-53	J-53	6	PVC	Demand	0.00	0.00	808.16	349.48	0.00	1.98	0.18	0.00
J-54	J-54	6	PVC	Demand	1.88	1.88	805.92	348.50	1.88	1.31	0.35	0.00
J-55	J-55	6	PVC	Demand	43.36	43.36	805.56	348.35	43.36	0.81	0.20	0.00
J-56	J-56	6	PVC	Demand	42.04	42.04	805.36	348.27	42.04	0.34	0.04	0.00
J-57	J-57	6	PVC	Demand	18.12	18.12	807.88	349.35	18.12	1.80	0.29	0.00
J-58	J-58	6	PVC	Demand	0.00	0.00	807.59	349.23	0.00	1.80	0.59	0.00
J-59	J-59	6	PVC	Demand	0.00	0.00	806.99	348.97	0.00	1.80	0.47	0.00
J-60	J-60	6	PVC	Demand	12.80	12.80	806.53	348.77	12.80	1.66	0.74	0.00
J-61	J-61	6	PVC	Demand	16.66	16.66	805.79	348.45	16.66	1.47	0.50	0.00
J-62	J-62	6	PVC	Demand	0.00	0.00	805.28	348.23	0.00	1.47	0.30	0.00
J-63	J-63	6	PVC	Demand	0.00	0.00	804.98	348.10	0.00	1.47	0.29	0.00
J-64	J-64	6	PVC	Demand	0.00	0.00	804.69	347.98	0.00	1.47	0.32	0.00
J-65	J-65	6	PVC	Demand	0.00	0.00	804.38	347.84	0.00	1.47	0.16	0.00
J-66	J-66	6	PVC	Demand	0.00	0.00	804.21	347.77	0.00	2.90	1.61	0.00
J-67	J-67	6	PVC	Demand	0.88	0.88	804.84	348.04	0.88	1.72	0.39	0.00
J-68	J-68	6	PVC	Demand	25.04	25.04	804.44	347.87	25.04	1.43	0.23	0.00
J-69	J-69	6	PVC	Demand	27.92	27.92	802.60	347.07	27.92	2.59	1.15	0.00
J-70	J-70	6	PVC	Demand	22.20	22.20	801.46	346.58	22.20	2.33	1.40	0.00
J-71	J-71	6	PVC	Demand	2.10	2.10	800.06	345.97	2.10	2.31	0.72	0.00
J-72	J-72	6	PVC	Demand	25.04	25.04	799.34	345.66	25.04	2.03	1.17	0.00
J-73	J-73	6	PVC	Demand	0.00	0.00	798.17	345.16	0.00	2.03	0.29	0.00
J-74	J-74	4	PVC	Demand	0.00	0.00	797.88	345.03	0.00	2.27	1.59	0.00
J-74	J-74	6	PVC	Demand	0.00	0.00	797.88	345.03	0.00	1.02	0.14	0.00
J-75	J-75	4	PVC	Demand	38.84	38.84	796.29	344.34	38.84	1.28	0.55	0.00
J-76	J-76	4	PVC	Demand	0.00	0.00	795.74	344.11	0.00	1.28	0.29	0.00
J-77	J-77	4	PVC	Demand	0.00	0.00	795.45	343.98	0.00	1.28	0.59	0.00
J-78	J-78	4	PVC	Demand	0.00	0.00	794.86	343.72	0.00	1.28	0.80	0.00
J-79	J-79	4	PVC	Demand	106.66	106.66	794.06	343.38	106.66	1.44	1.27	0.00
J-80	J-80	4	PVC	Demand	0.00	0.00	795.34	343.93	0.00	1.44	0.50	0.00
J-81	J-81	4	PVC	Demand	0.00	0.00	795.84	344.15	0.00	1.44	0.68	0.00
J-82	J-82	4	PVC	Demand	0.00	0.00	796.53	344.45	0.00	1.44	0.68	0.00
J-83	J-83	6	PVC	Demand	0.00	0.00	797.21	344.74	0.00	0.00	0.00	0.00
J-84	J-84	6	PVC	Demand	14.80	14.80	797.74	344.97	14.80	0.85	0.18	0.00
J-85	J-85	6	PVC	Demand	15.56	15.56	797.56	344.89	15.56	0.67	0.18	0.00
J-86	J-86	6	PVC	Demand	2.06	2.06	797.38	344.81	2.06	0.65	0.11	0.00
J-87	J-87	6	PVC	Demand	0.60	0.60	797.27	344.76	0.60	0.64	0.06	0.00

Scenario: Recycled MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	69.00	10	PVC	0.00	150.0	388.96	810.19	350.36	0.06	0.83	1.59
J-2	P-3	538.00	10	PVC	0.00	150.0	388.96	810.14	350.33	0.45	0.83	1.59
J-3	P-4	400.00	10	PVC	0.00	150.0	356.02	809.69	350.14	0.28	0.70	1.45
J-4	P-5	196.00	10	PVC	0.00	150.0	354.64	809.41	350.02	0.14	0.70	1.45
J-5	P-6	409.00	8	PVC	0.00	150.0	354.64	809.27	349.96	0.85	2.07	2.26
J-6	P-7	320.00	8	PVC	0.00	150.0	187.62	808.42	349.59	0.20	0.64	1.20
J-7	P-8	145.00	8	PVC	0.00	150.0	17.12	808.22	349.50	0.11e-2	0.01	0.11
J-7	P-26	250.00	6	PVC	0.00	150.0	170.50	808.22	349.50	0.54	2.17	1.93
J-8	P-9	183.00	8	PVC	0.00	150.0	9.16	808.22	349.50	0.43e-3	0.23e-2	0.06
J-9	P-10	165.00	8	PVC	0.00	150.0	-25.64	808.22	349.50	0.26e-2	0.02	0.16
J-10	P-11	307.00	8	PVC	0.00	150.0	-57.60	808.22	349.50	0.02	0.07	0.37
J-11	P-12	140.00	8	PVC	0.00	150.0	-57.60	808.24	349.51	0.01	0.07	0.37
J-12	P-13	66.00	8	PVC	0.00	150.0	-57.60	808.25	349.52	0.48e-2	0.07	0.37
J-13	P-14	289.00	8	PVC	0.00	150.0	-57.60	808.26	349.52	0.02	0.07	0.37
J-14	P-15	415.00	8	PVC	0.00	150.0	-57.60	808.28	349.53	0.03	0.07	0.37
J-15	P-16	411.00	8	PVC	0.00	150.0	-57.60	808.31	349.54	0.03	0.07	0.37
J-16	P-17	138.00	8	PVC	0.00	150.0	-57.60	808.34	349.55	0.01	0.07	0.37
J-17	P-18	134.00	12	PVC	0.00	150.0	-409.42	808.35	349.56	0.05	0.38	1.16
J-17	P-60	203.00	6	PVC	0.00	150.0	176.91	808.35	349.56	0.47	2.32	2.01
J-18	P-19	538.00	12	PVC	0.00	150.0	-409.42	808.40	349.58	0.20	0.38	1.16
J-19	P-20	538.00	12	PVC	0.00	150.0	-441.92	808.60	349.67	0.23	0.43	1.25
J-20	P-21	104.00	12	PVC	0.00	150.0	-441.92	808.83	349.77	0.04	0.43	1.25
J-21	P-22	560.00	12	PVC	0.00	150.0	-441.92	808.88	349.79	0.24	0.43	1.25
J-22	P-23	630.00	12	PVC	0.00	150.0	-484.86	809.12	349.89	0.32	0.51	1.38
J-23	P-24	764.00	12	PVC	0.00	150.0	-484.86	809.44	350.03	0.39	0.51	1.38
J-24	P-25	700.00	12	PVC	0.00	150.0	-484.86	809.84	350.20	0.36	0.51	1.38
J-25	P-27	241.00	6	PVC	0.00	150.0	168.50	807.68	349.27	0.51	2.12	1.91
J-26	P-28	320.00	6	PVC	0.00	150.0	168.50	807.17	349.05	0.68	2.12	1.91
J-27	P-29	110.00	6	PVC	0.00	150.0	168.50	806.49	348.75	0.23	2.12	1.91
J-28	P-30	85.00	4	PVC	0.00	150.0	51.52	806.25	348.65	0.15	1.71	1.32
J-28	P-56	312.00	6	PVC	0.00	150.0	116.98	806.25	348.65	0.34	1.08	1.33
J-29	P-31	369.00	4	PVC	0.00	150.0	51.52	806.11	348.59	0.63	1.71	1.32
J-30	P-32	148.00	4	PVC	0.00	150.0	51.52	805.48	348.32	0.25	1.71	1.32
J-31	P-33	388.00	4	PVC	0.00	150.0	51.52	805.22	348.21	0.66	1.71	1.32
J-32	P-34	484.00	4	PVC	0.00	150.0	25.62	804.56	347.92	0.23	0.47	0.65
J-33	P-35	299.00	4	PVC	0.00	150.0	25.62	804.33	347.82	0.14	0.47	0.65
J-34	P-36	137.00	4	PVC	0.00	150.0	25.62	804.19	347.76	0.06	0.47	0.65
J-35	P-37	203.00	4	PVC	0.00	150.0	25.62	804.13	347.73	0.10	0.47	0.65
J-36	P-38	219.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.11e-2	0.01	0.06
J-37	P-39	70.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.37e-3	0.01	0.06
J-38	P-40	186.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.98e-3	0.01	0.06
J-39	P-41	417.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.21e-2	0.01	0.06
J-40	P-42	169.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.92e-3	0.01	0.06
J-41	P-43	320.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.16e-2	0.01	0.06
J-42	P-44	254.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.13e-2	0.01	0.06
J-43	P-45	159.00	4	PVC	0.00	150.0	2.24	804.03	347.69	0.85e-3	0.01	0.06
J-44	P-46	205.00	4	PVC	0.00	150.0	-41.04	804.03	347.69	0.23	1.12	1.05

Scenario: Recycled MDD Fire Flow in L-MDR @ J-71
Fire Flow Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-45	P-47	291.00	4	PVC	0.00	150.0	-52.24	804.26	347.79	0.51	1.75	1.33
J-46	P-48	255.00	4	PVC	0.00	150.0	-52.24	804.77	348.01	0.45	1.75	1.33
J-47	P-49	64.00	4	PVC	0.00	150.0	-52.24	805.21	348.20	0.11	1.75	1.33
J-48	P-50	116.00	6	PVC	0.00	150.0	-174.91	805.32	348.25	0.26	2.28	1.98
J-48	P-70	277.00	6	PVC	0.00	150.0	152.37	805.32	348.25	0.49	1.76	1.73
J-49	P-51	306.00	6	PVC	0.00	150.0	-174.91	805.59	348.36	0.70	2.28	1.98
J-50	P-52	267.00	6	PVC	0.00	150.0	-174.91	806.28	348.66	0.61	2.28	1.98
J-51	P-53	302.00	6	PVC	0.00	150.0	-174.91	806.89	348.93	0.69	2.28	1.98
J-52	P-54	257.00	6	PVC	0.00	150.0	-174.91	807.58	349.22	0.58	2.28	1.98
J-53	P-55	81.00	6	PVC	0.00	150.0	-174.91	808.16	349.48	0.18	2.27	1.98
J-54	P-57	335.00	6	PVC	0.00	150.0	115.10	805.92	348.50	0.35	1.05	1.31
J-55	P-58	460.00	6	PVC	0.00	150.0	71.74	805.56	348.35	0.20	0.44	0.81
J-56	P-59	449.00	6	PVC	0.00	150.0	29.70	805.36	348.27	0.04	0.09	0.34
J-57	P-61	153.00	6	PVC	0.00	150.0	158.79	807.88	349.35	0.29	1.90	1.80
J-58	P-62	311.00	6	PVC	0.00	150.0	158.79	807.59	349.23	0.59	1.90	1.80
J-59	P-63	246.00	6	PVC	0.00	150.0	158.79	806.99	348.97	0.47	1.90	1.80
J-60	P-64	454.00	6	PVC	0.00	150.0	145.99	806.53	348.77	0.74	1.63	1.66
J-61	P-65	386.00	6	PVC	0.00	150.0	129.33	805.79	348.45	0.50	1.30	1.47
J-62	P-66	232.00	6	PVC	0.00	150.0	129.33	805.28	348.23	0.30	1.30	1.47
J-63	P-67	223.00	6	PVC	0.00	150.0	129.33	804.98	348.10	0.29	1.30	1.47
J-64	P-68	243.00	6	PVC	0.00	150.0	129.33	804.69	347.98	0.32	1.30	1.47
J-65	P-69	125.00	6	PVC	0.00	150.0	129.33	804.38	347.84	0.16	1.30	1.47
J-66	P-73	350.00	6	PVC	0.00	150.0	255.78	804.21	347.77	1.61	4.60	2.90
J-67	P-71	226.00	6	PVC	0.00	150.0	151.49	804.84	348.04	0.39	1.74	1.72
J-68	P-72	184.00	6	PVC	0.00	150.0	126.45	804.44	347.87	0.23	1.25	1.43
J-69	P-74	309.00	6	PVC	0.00	150.0	227.86	802.60	347.07	1.15	3.71	2.59
J-70	P-75	456.00	6	PVC	0.00	150.0	205.66	801.46	346.58	1.40	3.07	2.33
J-71	P-76	238.00	6	PVC	0.00	150.0	203.56	800.06	345.97	0.72	3.01	2.31
J-72	P-77	495.00	6	PVC	0.00	150.0	178.52	799.34	345.66	1.17	2.36	2.03
J-73	P-78	124.00	6	PVC	0.00	150.0	178.52	798.17	345.16	0.29	2.36	2.03
J-74	P-79	339.00	4	PVC	0.00	150.0	88.90	797.88	345.03	1.59	4.69	2.27
J-74	P-88	208.00	6	PVC	0.00	150.0	89.62	797.88	345.03	0.14	0.66	1.02
J-75	P-80	337.00	4	PVC	0.00	150.0	50.06	796.29	344.34	0.55	1.62	1.28
J-76	P-81	179.00	4	PVC	0.00	150.0	50.06	795.74	344.11	0.29	1.62	1.28
J-77	P-82	365.00	4	PVC	0.00	150.0	50.06	795.45	343.98	0.59	1.62	1.28
J-78	P-83	492.00	4	PVC	0.00	150.0	50.06	794.86	343.72	0.80	1.62	1.28
J-79	P-84	627.00	4	PVC	0.00	150.0	-56.60	794.06	343.38	1.27	2.03	1.44
J-80	P-85	248.00	4	PVC	0.00	150.0	-56.60	795.34	343.93	0.50	2.03	1.44
J-81	P-86	337.00	4	PVC	0.00	150.0	-56.60	795.84	344.15	0.68	2.03	1.44
J-82	P-87	334.00	4	PVC	0.00	150.0	-56.60	796.53	344.45	0.68	2.03	1.44
J-83	P-93	517.00	6	PVC	0.00	150.0	0.00	797.21	344.74	0.00	0.00	0.00
J-84	P-89	384.00	6	PVC	0.00	150.0	74.82	797.74	344.97	0.18	0.47	0.85
J-85	P-90	586.00	6	PVC	0.00	150.0	59.26	797.56	344.89	0.18	0.31	0.67
J-86	P-91	386.00	6	PVC	0.00	150.0	57.20	797.38	344.81	0.11	0.29	0.65
J-87	P-92	215.00	6	PVC	0.00	150.0	56.60	797.27	344.76	0.06	0.28	0.64

Scenario: Recycled Peak Hour Demand
Steady State Analysis

HYDRAULIC STATUS:

Hydraulic status for steady-state conditions

Balanced Trials = 4, Accuracy = 0.000322
Flow Supplied 1,310.73 gpm
Flow Demanded 1,310.73 gpm
Flow Stored 0.00 gpm
R-1 Reservoir: Emptying

Scenario: Recycled Peak Hour Demand
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-1	J-1	10	PVC	Demand	0.00	0.00	805.73	348.42	0.00	2.38	0.12	0.00
J-2	J-2	10	PVC	Demand	0.00	0.00	805.61	348.37	0.00	2.38	0.94	0.00
J-3	J-3	10	PVC	Demand	49.41	49.41	804.66	347.96	49.41	2.18	0.60	0.00
J-4	J-4	10	PVC	Demand	2.07	2.07	804.07	347.71	2.07	2.17	0.29	0.00
J-5	J-5	8	PVC	Demand	0.00	0.00	803.78	347.58	0.00	3.40	1.79	0.00
J-6	J-6	8	PVC	Demand	250.53	250.53	801.98	346.80	250.53	1.80	0.43	0.00
J-7	J-7	8	PVC	Demand	0.00	0.00	801.55	346.62	0.00	0.16	0.23e-2	0.00
J-7	J-7	6	PVC	Demand	0.00	0.00	801.55	346.62	0.00	2.90	1.15	0.00
J-8	J-8	8	PVC	Demand	11.94	11.94	801.55	346.62	11.94	0.09	0.92e-3	0.00
J-9	J-9	8	PVC	Demand	52.20	52.20	801.55	346.62	52.20	0.25	0.01	0.00
J-10	J-10	8	PVC	Demand	47.94	47.94	801.55	346.62	47.94	0.55	0.05	0.00
J-11	J-11	8	PVC	Demand	0.00	0.00	801.60	346.64	0.00	0.55	0.02	0.00
J-12	J-12	8	PVC	Demand	0.00	0.00	801.62	346.65	0.00	0.55	0.01	0.00
J-13	J-13	8	PVC	Demand	0.00	0.00	801.63	346.65	0.00	0.55	0.04	0.00
J-14	J-14	8	PVC	Demand	0.00	0.00	801.68	346.67	0.00	0.55	0.06	0.00
J-15	J-15	8	PVC	Demand	0.00	0.00	801.74	346.70	0.00	0.55	0.06	0.00
J-16	J-16	8	PVC	Demand	0.00	0.00	801.80	346.73	0.00	0.55	0.02	0.00
J-17	J-17	12	PVC	Demand	0.00	0.00	801.82	346.73	0.00	1.74	0.11	0.00
J-17	J-17	6	PVC	Demand	0.00	0.00	801.82	346.73	0.00	3.01	1.00	0.00
J-18	J-18	12	PVC	Demand	0.00	0.00	801.93	346.78	0.00	1.74	0.43	0.00
J-19	J-19	12	PVC	Demand	48.75	48.75	802.36	346.97	48.75	1.88	0.49	0.00
J-20	J-20	12	PVC	Demand	0.00	0.00	802.85	347.18	0.00	1.88	0.10	0.00
J-21	J-21	12	PVC	Demand	0.00	0.00	802.94	347.22	0.00	1.88	0.51	0.00
J-22	J-22	12	PVC	Demand	64.41	64.41	803.46	347.44	64.41	2.06	0.68	0.00
J-23	J-23	12	PVC	Demand	0.00	0.00	804.14	347.74	0.00	2.06	0.83	0.00
J-24	J-24	12	PVC	Demand	0.00	0.00	804.97	348.10	0.00	2.06	0.76	0.00
J-25	J-25	6	PVC	Demand	3.00	3.00	800.40	346.12	3.00	2.87	1.08	0.00
J-26	J-26	6	PVC	Demand	0.00	0.00	799.32	345.65	0.00	2.87	1.44	0.00
J-27	J-27	6	PVC	Demand	0.00	0.00	797.88	345.03	0.00	2.87	0.49	0.00
J-28	J-28	4	PVC	Demand	0.00	0.00	797.39	344.82	0.00	1.97	0.31	0.00
J-28	J-28	6	PVC	Demand	0.00	0.00	797.39	344.82	0.00	1.99	0.71	0.00
J-29	J-29	4	PVC	Demand	0.00	0.00	797.08	344.68	0.00	1.97	1.33	0.00
J-30	J-30	4	PVC	Demand	0.00	0.00	795.74	344.11	0.00	1.97	0.54	0.00
J-31	J-31	4	PVC	Demand	0.00	0.00	795.21	343.87	0.00	1.97	1.40	0.00
J-32	J-32	4	PVC	Demand	38.85	38.85	793.80	343.27	38.85	0.98	0.48	0.00
J-33	J-33	4	PVC	Demand	0.00	0.00	793.32	343.06	0.00	0.98	0.30	0.00
J-34	J-34	4	PVC	Demand	0.00	0.00	793.03	342.93	0.00	0.98	0.14	0.00
J-35	J-35	4	PVC	Demand	0.00	0.00	792.89	342.87	0.00	0.98	0.20	0.00
J-36	J-36	4	PVC	Demand	35.07	35.07	792.69	342.79	35.07	0.09	0.24e-2	0.00
J-37	J-37	4	PVC	Demand	0.00	0.00	792.69	342.78	0.00	0.09	0.79e-3	0.00
J-38	J-38	4	PVC	Demand	0.00	0.00	792.69	342.78	0.00	0.09	0.2e-2	0.00
J-39	J-39	4	PVC	Demand	0.00	0.00	792.68	342.78	0.00	0.09	0.46e-2	0.00
J-40	J-40	4	PVC	Demand	0.00	0.00	792.68	342.78	0.00	0.09	0.18e-2	0.00
J-41	J-41	4	PVC	Demand	0.00	0.00	792.68	342.78	0.00	0.09	0.35e-2	0.00
J-42	J-42	4	PVC	Demand	0.00	0.00	792.67	342.78	0.00	0.09	0.27e-2	0.00
J-43	J-43	4	PVC	Demand	0.00	0.00	792.67	342.78	0.00	0.09	0.18e-2	0.00
J-44	J-44	4	PVC	Demand	64.92	64.92	792.67	342.78	64.92	1.57	0.49	0.00

Scenario: Recycled Peak Hour Demand
Steady State Analysis
Junction Report

	Node Label	Dia. (in)	Material	Demand Type	Demand (gpm)	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Total Needed Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Elev. (ft)
J-45	J-45	4	PVC	Demand	16.80	16.80	793.16	342.99	16.80	2.00	1.08	0.00
J-46	J-46	4	PVC	Demand	0.00	0.00	794.24	343.45	0.00	2.00	0.95	0.00
J-47	J-47	4	PVC	Demand	0.00	0.00	795.18	343.86	0.00	2.00	0.24	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	795.42	343.97	0.00	2.98	0.56	0.00
J-48	J-48	6	PVC	Demand	0.00	0.00	795.42	343.97	0.00	2.59	1.03	0.00
J-49	J-49	6	PVC	Demand	0.00	0.00	795.98	344.21	0.00	2.98	1.47	0.00
J-50	J-50	6	PVC	Demand	0.00	0.00	797.45	344.85	0.00	2.98	1.29	0.00
J-51	J-51	6	PVC	Demand	0.00	0.00	798.74	345.40	0.00	2.98	1.45	0.00
J-52	J-52	6	PVC	Demand	0.00	0.00	800.19	346.03	0.00	2.98	1.24	0.00
J-53	J-53	6	PVC	Demand	0.00	0.00	801.43	346.57	0.00	2.98	0.39	0.00
J-54	J-54	6	PVC	Demand	2.82	2.82	796.67	344.51	2.82	1.96	0.74	0.00
J-55	J-55	6	PVC	Demand	65.04	65.04	795.93	344.19	65.04	1.22	0.43	0.00
J-56	J-56	6	PVC	Demand	63.06	63.06	795.50	344.00	63.06	0.51	0.08	0.00
J-57	J-57	6	PVC	Demand	27.18	27.18	800.82	346.30	27.18	2.70	0.62	0.00
J-58	J-58	6	PVC	Demand	0.00	0.00	800.21	346.04	0.00	2.70	1.25	0.00
J-59	J-59	6	PVC	Demand	0.00	0.00	798.95	345.49	0.00	2.70	0.99	0.00
J-60	J-60	6	PVC	Demand	19.20	19.20	797.96	345.07	19.20	2.48	1.57	0.00
J-61	J-61	6	PVC	Demand	24.99	24.99	796.40	344.39	24.99	2.20	1.06	0.00
J-62	J-62	6	PVC	Demand	0.00	0.00	795.33	343.93	0.00	2.20	0.64	0.00
J-63	J-63	6	PVC	Demand	0.00	0.00	794.69	343.65	0.00	2.20	0.61	0.00
J-64	J-64	6	PVC	Demand	0.00	0.00	794.08	343.39	0.00	2.20	0.67	0.00
J-65	J-65	6	PVC	Demand	0.00	0.00	793.41	343.10	0.00	2.20	0.34	0.00
J-66	J-66	6	PVC	Demand	0.00	0.00	793.07	342.95	0.00	4.35	3.41	0.00
J-67	J-67	6	PVC	Demand	1.32	1.32	794.39	343.52	1.32	2.58	0.83	0.00
J-68	J-68	6	PVC	Demand	37.56	37.56	793.55	343.16	37.56	2.15	0.49	0.00
J-69	J-69	6	PVC	Demand	41.88	41.88	789.66	341.47	41.88	3.88	2.43	0.00
J-70	J-70	6	PVC	Demand	33.30	33.30	787.23	340.43	33.30	3.50	2.96	0.00
J-71	J-71	6	PVC	Demand	3.15	3.15	784.27	339.14	3.15	3.46	1.52	0.00
J-72	J-72	6	PVC	Demand	37.56	37.56	782.75	338.49	37.56	3.04	2.48	0.00
J-73	J-73	6	PVC	Demand	0.00	0.00	780.27	337.42	0.00	3.04	0.62	0.00
J-74	J-74	4	PVC	Demand	0.00	0.00	779.65	337.15	0.00	3.40	3.36	0.00
J-74	J-74	6	PVC	Demand	0.00	0.00	779.65	337.15	0.00	1.53	0.29	0.00
J-75	J-75	4	PVC	Demand	58.26	58.26	776.29	335.69	58.26	1.92	1.16	0.00
J-76	J-76	4	PVC	Demand	0.00	0.00	775.13	335.19	0.00	1.92	0.61	0.00
J-77	J-77	4	PVC	Demand	0.00	0.00	774.52	334.93	0.00	1.92	1.25	0.00
J-78	J-78	4	PVC	Demand	0.00	0.00	773.27	334.39	0.00	1.92	1.69	0.00
J-79	J-79	4	PVC	Demand	159.99	159.99	771.58	333.66	159.99	2.17	2.70	0.00
J-80	J-80	4	PVC	Demand	0.00	0.00	774.28	334.82	0.00	2.17	1.07	0.00
J-81	J-81	4	PVC	Demand	0.00	0.00	775.34	335.28	0.00	2.17	1.45	0.00
J-82	J-82	4	PVC	Demand	0.00	0.00	776.79	335.91	0.00	2.17	1.44	0.00
J-83	J-83	6	PVC	Demand	0.00	0.00	778.23	336.53	0.00	0.00	0.00	0.00
J-84	J-84	6	PVC	Demand	22.20	22.20	779.36	337.02	22.20	1.27	0.38	0.00
J-85	J-85	6	PVC	Demand	23.34	23.34	778.98	336.86	23.34	1.01	0.38	0.00
J-86	J-86	6	PVC	Demand	3.09	3.09	778.60	336.69	3.09	0.97	0.24	0.00
J-87	J-87	6	PVC	Demand	0.90	0.90	778.36	336.59	0.90	0.96	0.13	0.00

Scenario: Recycled Peak Hour Demand
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-1	P-2	69.00	10	PVC	0.00	150.0	583.45	805.73	348.42	0.12	1.76	2.38
J-2	P-3	538.00	10	PVC	0.00	150.0	583.45	805.61	348.37	0.94	1.76	2.38
J-3	P-4	400.00	10	PVC	0.00	150.0	534.04	804.66	347.96	0.60	1.49	2.18
J-4	P-5	196.00	10	PVC	0.00	150.0	531.97	804.07	347.71	0.29	1.48	2.17
J-5	P-6	409.00	8	PVC	0.00	150.0	531.97	803.78	347.58	1.79	4.39	3.40
J-6	P-7	320.00	8	PVC	0.00	150.0	281.44	801.98	346.80	0.43	1.35	1.80
J-7	P-8	145.00	8	PVC	0.00	150.0	25.69	801.55	346.62	0.23e-2	0.02	0.16
J-7	P-26	250.00	6	PVC	0.00	150.0	255.75	801.55	346.62	1.15	4.59	2.90
J-8	P-9	183.00	8	PVC	0.00	150.0	13.75	801.55	346.62	0.92e-3	0.01	0.09
J-9	P-10	165.00	8	PVC	0.00	150.0	-38.45	801.55	346.62	0.01	0.03	0.25
J-10	P-11	307.00	8	PVC	0.00	150.0	-86.39	801.55	346.62	0.05	0.15	0.55
J-11	P-12	140.00	8	PVC	0.00	150.0	-86.39	801.60	346.64	0.02	0.15	0.55
J-12	P-13	66.00	8	PVC	0.00	150.0	-86.39	801.62	346.65	0.01	0.15	0.55
J-13	P-14	289.00	8	PVC	0.00	150.0	-86.39	801.63	346.65	0.04	0.15	0.55
J-14	P-15	415.00	8	PVC	0.00	150.0	-86.39	801.68	346.67	0.06	0.15	0.55
J-15	P-16	411.00	8	PVC	0.00	150.0	-86.39	801.74	346.70	0.06	0.15	0.55
J-16	P-17	138.00	8	PVC	0.00	150.0	-86.39	801.80	346.73	0.02	0.15	0.55
J-17	P-18	134.00	12	PVC	0.00	150.0	-614.12	801.82	346.73	0.11	0.79	1.74
J-17	P-60	203.00	6	PVC	0.00	150.0	265.37	801.82	346.73	1.00	4.92	3.01
J-18	P-19	538.00	12	PVC	0.00	150.0	-614.12	801.93	346.78	0.43	0.79	1.74
J-19	P-20	538.00	12	PVC	0.00	150.0	-662.87	802.36	346.97	0.49	0.92	1.88
J-20	P-21	104.00	12	PVC	0.00	150.0	-662.87	802.85	347.18	0.10	0.91	1.88
J-21	P-22	560.00	12	PVC	0.00	150.0	-662.87	802.94	347.22	0.51	0.92	1.88
J-22	P-23	630.00	12	PVC	0.00	150.0	-727.28	803.46	347.44	0.68	1.09	2.06
J-23	P-24	764.00	12	PVC	0.00	150.0	-727.28	804.14	347.74	0.83	1.09	2.06
J-24	P-25	700.00	12	PVC	0.00	150.0	-727.28	804.97	348.10	0.76	1.09	2.06
J-25	P-27	241.00	6	PVC	0.00	150.0	252.75	800.40	346.12	1.08	4.50	2.87
J-26	P-28	320.00	6	PVC	0.00	150.0	252.75	799.32	345.65	1.44	4.50	2.87
J-27	P-29	110.00	6	PVC	0.00	150.0	252.75	797.88	345.03	0.49	4.50	2.87
J-28	P-30	85.00	4	PVC	0.00	150.0	77.28	797.39	344.82	0.31	3.62	1.97
J-28	P-56	312.00	6	PVC	0.00	150.0	175.47	797.39	344.82	0.71	2.29	1.99
J-29	P-31	369.00	4	PVC	0.00	150.0	77.28	797.08	344.68	1.33	3.62	1.97
J-30	P-32	148.00	4	PVC	0.00	150.0	77.28	795.74	344.11	0.54	3.62	1.97
J-31	P-33	388.00	4	PVC	0.00	150.0	77.28	795.21	343.87	1.40	3.62	1.97
J-32	P-34	484.00	4	PVC	0.00	150.0	38.43	793.80	343.27	0.48	0.99	0.98
J-33	P-35	299.00	4	PVC	0.00	150.0	38.43	793.32	343.06	0.30	0.99	0.98
J-34	P-36	137.00	4	PVC	0.00	150.0	38.43	793.03	342.93	0.14	0.99	0.98
J-35	P-37	203.00	4	PVC	0.00	150.0	38.43	792.89	342.87	0.20	0.99	0.98
J-36	P-38	219.00	4	PVC	0.00	150.0	3.36	792.69	342.79	0.24e-2	0.01	0.09
J-37	P-39	70.00	4	PVC	0.00	150.0	3.36	792.69	342.78	0.79e-3	0.01	0.09
J-38	P-40	186.00	4	PVC	0.00	150.0	3.36	792.69	342.78	0.2e-2	0.01	0.09
J-39	P-41	417.00	4	PVC	0.00	150.0	3.36	792.68	342.78	0.46e-2	0.01	0.09
J-40	P-42	169.00	4	PVC	0.00	150.0	3.36	792.68	342.78	0.18e-2	0.01	0.09
J-41	P-43	320.00	4	PVC	0.00	150.0	3.36	792.68	342.78	0.35e-2	0.01	0.09
J-42	P-44	254.00	4	PVC	0.00	150.0	3.36	792.67	342.78	0.27e-2	0.01	0.09
J-43	P-45	159.00	4	PVC	0.00	150.0	3.36	792.67	342.78	0.18e-2	0.01	0.09
J-44	P-46	205.00	4	PVC	0.00	150.0	-61.56	792.67	342.78	0.49	2.37	1.57

Scenario: Recycled Peak Hour Demand
Steady State Analysis
Pipe Report

	Node Label	Length (ft)	Dia. (in)	Material	Elev. (ft)	Roughness	Discharge (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Headloss (ft)	Friction Slope (ft/1000ft)	Velocity (ft/s)
J-45	P-47	291.00	4	PVC	0.00	150.0	-78.36	793.16	342.99	1.08	3.71	2.00
J-46	P-48	255.00	4	PVC	0.00	150.0	-78.36	794.24	343.45	0.95	3.71	2.00
J-47	P-49	64.00	4	PVC	0.00	150.0	-78.36	795.18	343.86	0.24	3.71	2.00
J-48	P-50	116.00	6	PVC	0.00	150.0	-262.36	795.42	343.97	0.56	4.82	2.98
J-48	P-70	277.00	6	PVC	0.00	150.0	228.55	795.42	343.97	1.03	3.73	2.59
J-49	P-51	306.00	6	PVC	0.00	150.0	-262.36	795.98	344.21	1.47	4.82	2.98
J-50	P-52	267.00	6	PVC	0.00	150.0	-262.36	797.45	344.85	1.29	4.82	2.98
J-51	P-53	302.00	6	PVC	0.00	150.0	-262.36	798.74	345.40	1.45	4.82	2.98
J-52	P-54	257.00	6	PVC	0.00	150.0	-262.36	800.19	346.03	1.24	4.82	2.98
J-53	P-55	81.00	6	PVC	0.00	150.0	-262.36	801.43	346.57	0.39	4.82	2.98
J-54	P-57	335.00	6	PVC	0.00	150.0	172.65	796.67	344.51	0.74	2.22	1.96
J-55	P-58	460.00	6	PVC	0.00	150.0	107.61	795.93	344.19	0.43	0.93	1.22
J-56	P-59	449.00	6	PVC	0.00	150.0	44.55	795.50	344.00	0.08	0.18	0.51
J-57	P-61	153.00	6	PVC	0.00	150.0	238.19	800.82	346.30	0.62	4.03	2.70
J-58	P-62	311.00	6	PVC	0.00	150.0	238.19	800.21	346.04	1.25	4.03	2.70
J-59	P-63	246.00	6	PVC	0.00	150.0	238.19	798.95	345.49	0.99	4.03	2.70
J-60	P-64	454.00	6	PVC	0.00	150.0	218.99	797.96	345.07	1.57	3.45	2.48
J-61	P-65	386.00	6	PVC	0.00	150.0	194.00	796.40	344.39	1.06	2.76	2.20
J-62	P-66	232.00	6	PVC	0.00	150.0	194.00	795.33	343.93	0.64	2.76	2.20
J-63	P-67	223.00	6	PVC	0.00	150.0	194.00	794.69	343.65	0.61	2.76	2.20
J-64	P-68	243.00	6	PVC	0.00	150.0	194.00	794.08	343.39	0.67	2.76	2.20
J-65	P-69	125.00	6	PVC	0.00	150.0	194.00	793.41	343.10	0.34	2.76	2.20
J-66	P-73	350.00	6	PVC	0.00	150.0	383.67	793.07	342.95	3.41	9.73	4.35
J-67	P-71	226.00	6	PVC	0.00	150.0	227.23	794.39	343.52	0.83	3.69	2.58
J-68	P-72	184.00	6	PVC	0.00	150.0	189.67	793.55	343.16	0.49	2.64	2.15
J-69	P-74	309.00	6	PVC	0.00	150.0	341.79	789.66	341.47	2.43	7.86	3.88
J-70	P-75	456.00	6	PVC	0.00	150.0	308.49	787.23	340.43	2.96	6.50	3.50
J-71	P-76	238.00	6	PVC	0.00	150.0	305.34	784.27	339.14	1.52	6.38	3.46
J-72	P-77	495.00	6	PVC	0.00	150.0	267.78	782.75	338.49	2.48	5.00	3.04
J-73	P-78	124.00	6	PVC	0.00	150.0	267.78	780.27	337.42	0.62	5.00	3.04
J-74	P-79	339.00	4	PVC	0.00	150.0	133.35	779.65	337.15	3.36	9.92	3.40
J-74	P-88	208.00	6	PVC	0.00	150.0	134.43	779.65	337.15	0.29	1.40	1.53
J-75	P-80	337.00	4	PVC	0.00	150.0	75.10	776.29	335.69	1.16	3.43	1.92
J-76	P-81	179.00	4	PVC	0.00	150.0	75.10	775.13	335.19	0.61	3.43	1.92
J-77	P-82	365.00	4	PVC	0.00	150.0	75.10	774.52	334.93	1.25	3.43	1.92
J-78	P-83	492.00	4	PVC	0.00	150.0	75.10	773.27	334.39	1.69	3.43	1.92
J-79	P-84	627.00	4	PVC	0.00	150.0	-84.90	771.58	333.66	2.70	4.30	2.17
J-80	P-85	248.00	4	PVC	0.00	150.0	-84.90	774.28	334.82	1.07	4.30	2.17
J-81	P-86	337.00	4	PVC	0.00	150.0	-84.90	775.34	335.28	1.45	4.30	2.17
J-82	P-87	334.00	4	PVC	0.00	150.0	-84.90	776.79	335.91	1.44	4.30	2.17
J-83	P-93	517.00	6	PVC	0.00	150.0	0.00	778.23	336.53	0.00	0.00	0.00
J-84	P-89	384.00	6	PVC	0.00	150.0	112.23	779.36	337.02	0.38	1.00	1.27
J-85	P-90	586.00	6	PVC	0.00	150.0	88.89	778.98	336.86	0.38	0.65	1.01
J-86	P-91	386.00	6	PVC	0.00	150.0	85.80	778.60	336.69	0.24	0.61	0.97
J-87	P-92	215.00	6	PVC	0.00	150.0	84.90	778.36	336.59	0.13	0.60	0.96

Appendix C

Drainage

Computer Model Results

DESCRIPTION OF STUDY:
25 YEAR
CHAFFEY MAIN
POND C

[SAN BERNARDINO COUNTY]

FILE NAME:01P-CHAF.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 8:55 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						889	.0103	..	INITIAL SUBAREA
	2.9		B	Sch				0.27						
1020.01	4.3	7.2	C	Sch		15.5	2.09	0.16	0.206	12.3				
											583	.0091	2.5	VALLEY CHANNEL
														VELOCITY PER
1030.01					3.9						So =.0091			LACFCD MANUAL
1030.01	12.6	19.81	C	Sch		19.4	1.83	0.16	0.179	29.4				ADD SUBAREA
											281	.0078	2.9	VALLEY CHANNEL
														VELOCITY PER
1040.01					1.6						So =.0078			LACFCD MANUAL
1040.01	14.6	34.40	C	Sch		21.0	1.75	0.16	0.172	48.7				ADD SUBAREA
											1186	.0048	7.6	Qpipe= 48.72
														n=.0130 D= 2.35
1050.01					2.6									39.0"-PIPE
1050.01		34.4				23.6	1.63			48.7				FOR CONFLUENCE
					..						659	.0082	..	INITIAL SUBAREA
	6.0		B	Sch				0.27						
2020.01	0.7	6.6	C	Sch		14.4	2.19	0.16	0.260	11.5				
											363	.0107	2.7	VALLEY CHANNEL
														VELOCITY PER
2030.01					2.3						So =.0107			LACFCD MANUAL
	6.3		B	Sch				0.27						
2030.01	4.2	17.22	C	Sch		16.7	2.00	0.16	0.241	27.3				ADD SUBAREA
											651	.0118	3.5	VALLEY CHANNEL
														VELOCITY PER
2040.01					3.1						So =.0118			LACFCD MANUAL
	1.8		B	Sch				0.27						
2040.01	15.8	34.82	C	Sch		19.8	1.81	0.16	0.207	50.3				ADD SUBAREA

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+-+-----------------------------------------------------------------------------------------------------------+-+
| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR                                                                                                  | |
| |  CHAFFEY MAIN                                                                                             | |
| |  POND C                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:01P-CHAF.DAT                    *ENGLISH UNITS*            | CALCULATED BY:                | |
| |  TIME/DATE OF STUDY:  8:55  12/17/2002                                |    CHECKED BY:                | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)               | PAGE NUMBER   2 OF            | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    96.2 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  19.8                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.319 (in/hr); Ap = 0.600; Fm =  0.191 (in/hr)    |   CONFLUENCE  | |
| |     1050.01|     EFFECTIVE AREA =      63.61 (Acres);  TOTAL AREA =      69.22 (Acres)|   Q=      96.2| |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |            |   96.19     19.76    0.319     0.60    0.191      1.81    63.606   2010.0|               | |
| |            |   93.24     23.61    0.316     0.60    0.190      1.63    69.220   1010.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------|1322|.0048| 8.8|Qpipe=    96.19| |
| |            |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 3.26| |
| |     1060.01|       |      |         | 2.5|     |    |    |     |      |    |     |    |   48.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1060.01|       |  63.6|   |     |----| 22.3|    |    |     |  96.2|----|-----|----|STREAM SUMMARY | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| | EFFECTIVE AREA =     63.61 Acres   TOTAL AREA =     69.22 Acres  PEAK FLOW RATE =     96.19 cfs        | |
| | TIME OF CONCENTRATION(MIN.)=   22.27  MEAN VALUES: Fp =  0.319 (in/hr); Ap = 0.600; Fm =  0.191 (in/hr)| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |            |     PEAK FLOW RATE TABLE                                                  |               | |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |            |   96.19     22.27    0.319     0.60    0.191      1.69    63.606   2010.0|               | |
| |            |   93.24     26.12    0.316     0.60    0.190      1.53    69.220   1010.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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DESCRIPTION OF STUDY:
25 YEAR CHINO
CHAFFEY SUBAREA 3000.01 SERIES
POND C

[SAN BERNARDINO COUNTY]

FILE NAME:01P3CHAF.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 9:10 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						638	.0141	..	INITIAL SUBAREA
3020.01	9.4	9.4	C	Sch		12.8	2.35	0.16	0.163	18.4				
											871	.0073	2.5	VALLEY CHANNEL
3030.01					5.8						So =.0073			VELOCITY PER LACFCD MANUAL
3030.01	17.8	27.14	C	Sch		18.6	1.88	0.16	0.163	41.9				
3030.01		27.1				18.6				41.9				STREAM SUMMARY

EFFECTIVE AREA = 27.14 Acres TOTAL AREA = 27.14 Acres PEAK FLOW RATE = 41.93 cfs
TIME OF CONCENTRATION(MIN.)= 18.57 MEAN VALUES: Fp = 0.272 (in/hr); Ap = 0.600; Fm = 0.163 (in/hr)

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| |  DESCRIPTION OF STUDY:                                                                                | |
| |  25 YEAR                                                                                              | |
| |  DIRECT FLOW TO DITCH                                                                                 | |
| |  NORTHERN SECTION                                                                                     | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:02P1DICH.DAT                      *ENGLISH UNITS*            | CALCULATED BY:                | |
| |  TIME/DATE OF STUDY: 16: 7  12/16/2002                                  |    CHECKED BY:                | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                 | PAGE NUMBER   1 OF            | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 993|.0106| .. |INITIAL SUBAREA| |
| |     1020.02|   10.0|  10.0| B |Condo|----| 14.1|2.21|0.16|0.158|  18.5|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 419|.0093| 2.8|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1030.02|       |      |   |     | 2.5|     |    |    |     |      | So =.0093|    | LACFCD MANUAL | |
| |             |    5.9|      | B | Park|    |     |    |0.38|     |      |    |     |    |               | |
| |             |    9.4|      | B | Com |    |     |    |0.05|     |      |    |     |    |               | |
| |     1030.02|    4.1| 29.40| B | Apt |----| 16.6|2.01|0.09|0.158|  49.0|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 357|.0101| 3.9|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1040.02|       |      |   |     | 1.5|     |    |    |     |      | So =.0101|    | LACFCD MANUAL | |
| |             |    8.0|      | B | Com |    |     |    |0.05|     |      |    |     |    |               | |
| |     1040.02|    6.8| 44.12| B | Apt |----| 18.1|1.91|0.09|0.127|  70.6|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------|1371|.0044| 8.1|Qpipe=    70.64| |
| |             |       |      |             |     |    |    |     |      |    |     |    |n=.0130 D= 2.78| |
| |     1050.02|       |      |         | 2.8|     |    |    |     |      |    |     |    |    45.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1050.02|       |  44.1|   |     |----| 21.0|1.75|    |     |  70.6|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 417|.0103| .. |INITIAL SUBAREA| |
| |     2020.02|    5.0|   5.0| B | Apt |----|  9.0|2.90|0.09|0.090|  12.7|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 579|.0112| 2.8|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     2030.02|       |      |   |     | 3.4|     |    |    |     |      | So =.0112|    | LACFCD MANUAL | |
| |     2030.02|    7.8| 12.89| B | Apt |----| 12.5|2.39|0.09|0.090|  26.7|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    89.9 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  21.0                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.263; Fm =  0.119 (in/hr)    |   CONFLUENCE  | |
| |     1050.02|     EFFECTIVE AREA =      57.01 (Acres);  TOTAL AREA =      57.01 (Acres)|   Q=      89.9| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   85.22     12.46    0.452     0.25    0.115      2.39    39.098   2010.0|               | |
| |             |   89.86     20.98    0.452     0.26    0.119      1.75    57.010   1010.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
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DESCRIPTION OF STUDY:
25 YEAR
DIRECT FLOW TO DITCH
NORTHERN SECTION

[SAN BERNARDINO COUNTY]

FILE NAME:02P1DICH.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16: 7 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 2 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
											247	.0045	8.5	Qpipe= 89.86
														n=.0130 D= 3.15
1060.02					0.5									48.0"-PIPE
1060.02		57.0				21.5				89.9				STREAM SUMMARY

EFFECTIVE AREA = 57.01 Acres TOTAL AREA = 57.01 Acres PEAK FLOW RATE = 89.86 cfs
TIME OF CONCENTRATION(MIN.)= 21.46 MEAN VALUES: Fp = 0.452 (in/hr); Ap = 0.263; Fm = 0.119 (in/hr)

PEAK FLOW RATE TABLE

Q(cfs)	Tc(min)	Fp(avg)	Ap(avg)	Fm(avg)	I(in/hr)	Ae(Acres)	NODE
85.22	12.95	0.452	0.25	0.115	2.33	39.098	2010.0
89.86	21.46	0.452	0.26	0.119	1.72	57.010	1010.0

DESCRIPTION OF STUDY:
25 YEAR
DIRECT FLOW TO DITCH
SOUTHERN SECTION

[SAN BERNARDINO COUNTY]

FILE NAME:03P-DICH.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 9: 3 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..					973	.0148	..		INITIAL SUBAREA
	2.8		B	6D/AC				0.23						
1020.03	6.6	9.4	C	6D/AC		14.2	2.21	0.14	0.163	17.4				
										833	.0092	2.8		VALLEY CHANNEL
														VELOCITY PER
1030.03					5.0					So =.0092				LACFCD MANUAL
1030.03	11.1	20.50	C	6D/AC		19.2	1.84	0.14	0.148	31.3				ADD SUBAREA
										230	.0022	5.1		Qpipe= 31.29
														n=.0130 D= 2.27
1040.03					0.8									39.0"-PIPE
1040.03		20.5				19.9				31.3				STREAM SUMMARY

EFFECTIVE AREA = 20.50 Acres TOTAL AREA = 20.50 Acres PEAK FLOW RATE = 31.29 cfs
TIME OF CONCENTRATION(MIN.)= 19.92 MEAN VALUES: Fp = 0.297 (in/hr); Ap = 0.500; Fm = 0.148 (in/hr)

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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MIN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MIN.DAT                      *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                 |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                | PAGE NUMBER   1 OF             | |
| |------------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]------------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 646|.0111| .. |INITIAL SUBAREA| |
| |      2120.04|    2.9|   2.9| B | Park|----| 15.8|2.07|0.38|0.384|   4.4|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      |1025|.0080| 1.8|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |      2130.04|       |      |   |     | 9.3|     |    |    |     |      | So =.0080|    | LACFCD MANUAL | |
| |      2130.04|    4.7|  7.52| B | Park|----| 25.1|1.57|0.38|0.384|   8.0|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 150|.0033| 4.3|Qpipe=     8.01| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 1.15| |
| |      2230.04|       |      |         | 0.6|     |    |    |     |      |    |     |    |    24.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      2230.04|       |   7.5|   |     |----| 25.7|1.55|    |     |   8.0|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 623|.0117| .. |INITIAL SUBAREA| |
| |      2220.04|    6.4|   6.4| B |6D/AC|----| 12.4|2.39|0.23|0.226|  12.5|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 737|.0091| 2.5|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |      2230.04|       |      |   |     | 4.9|     |    |    |     |      | So =.0091|    | LACFCD MANUAL | |
| |      2230.04|    9.0| 15.39| B |6D/AC|----| 17.3|1.96|0.23|0.226|  24.1|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    31.4 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  17.3                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.586; Fm =  0.265 (in/hr)    |   CONFLUENCE  | |
| |      2230.04|     EFFECTIVE AREA =      20.44 (Acres);  TOTAL AREA =      22.91 (Acres)|   Q=      31.4| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   31.36     17.28    0.452     0.59    0.265      1.96    20.440   2210.0|               | |
| |             |   26.28     25.73    0.452     0.61    0.278      1.55    22.910   2110.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 529|.0036| 6.1|Qpipe=    31.36| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 2.04| |
| |      2320.04|       |      |         | 1.4|     |    |    |     |      |    |     |    |    36.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      2320.04|       |  20.4|   |     |----| 18.7|1.87|    |     |  31.4|----|-----|----|FOR CONFLUENCE | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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| |  DESCRIPTION OF STUDY:                                                                                          | |
| |  25 YEAR CHINO                                                                                                  | |
| |  MIN AVE TRUNKLINE                                                                                              | |
| |  POND A                                                                                                         | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   2 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 801|.0094| .. |INITIAL SUBAREA| |
| |     2320.04|    9.0|   9.0| B |6D/AC|----| 14.4|2.19|0.23|0.226|  15.9|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    44.8 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  14.4                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.555; Fm =  0.251 (in/hr)    |   CONFLUENCE  | |
| |     2320.04|     EFFECTIVE AREA =      24.64 (Acres);  TOTAL AREA =      31.87 (Acres)|   Q=      44.8| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   44.76     14.36    0.452     0.56    0.251      2.19    24.640   2310.0|               | |
| |             |   44.62     18.72    0.452     0.56    0.253      1.87    29.400   2210.0|               | |
| |             |   36.51     27.24    0.452     0.58    0.263      1.49    31.870   2110.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 380|.0034| 6.5|Qpipe=    44.76| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 2.53| |
| |     1020.04|       |      |         | 1.0|     |    |    |     |      |    |     |    |   39.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1020.04|     MAIN-STREAM COPIED ONTO MEMORY BANK # 1                              |               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      |1037|.0129| .. |INITIAL SUBAREA| |
| |     1010.04|    7.2|   7.2| B |6D/AC|----| 14.9|2.14|0.23|0.226|  12.5|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1010.04|       |   7.2|   |     |----| 14.9|2.14|    |     |  12.5|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 983|.0069| .. |INITIAL SUBAREA| |
| |     1010.04|    6.6|   6.6| B |6D/AC|----| 16.6|2.01|0.23|0.226|  10.5|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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| |  DESCRIPTION OF STUDY:                                                                                          | |
| |  25 YEAR CHINO                                                                                                  | |
| |  MIN AVE TRUNKLINE                                                                                              | |
| |  POND A                                                                                                         | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   3 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS   | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES   | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    22.7 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  14.9                    |    LARGEST     | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.500; Fm =  0.226 (in/hr)    |   CONFLUENCE   | |
| |     1010.04|     EFFECTIVE AREA =      13.14 (Acres);  TOTAL AREA =      13.78 (Acres)|   Q=      22.7| |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |            |   22.66     14.93    0.452     0.50    0.226      2.14    13.136   2410.0|                | |
| |            |   22.17     16.56    0.452     0.50    0.226      2.01    13.780   3410.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 736|.0179|10.4|Qpipe=    22.66| |
| |            |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 1.31| |
| |     1020.04|       |      |         | 1.2|     |    |    |     |      |    |     |    |    24.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |     1020.04|     MEMORY BANK # 1 CONFLUENCED WITH MAIN-STREAM                          |                | |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |            |   67.05     15.34    0.452     0.54    0.242      2.11    37.146   2310.0|                | |
| |            |   67.39     16.11    0.452     0.54    0.243      2.05    38.618   2410.0|                | |
| |            |   66.85     17.75    0.452     0.54    0.243      1.93    41.047   3410.0|                | |
| |            |   65.27     19.70    0.452     0.54    0.245      1.81    43.180   2210.0|                | |
| |            |   52.55     28.27    0.452     0.56    0.252      1.46    45.650   2110.0|                | |
| |            |     TOTAL AREA=     45.650                                                 |                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |     1020.04|     MAIN-STREAM COPIED ONTO MEMORY BANK # 2                               |                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |            |       |      |   |     | .. |     |    |    |     |      | 685|.0105| .. |INITIAL SUBAREA| |
| |     3120.04|    5.0|   5.0| B |2D/AC|----| 14.8|2.15|0.32|0.316|   8.3|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 735|.0107| 2.5|VALLEY CHANNEL | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER   | |
| |     3130.04|       |      |   |     | 5.0|     |    |    |     |      | So =.0107|    | LACFCD MANUAL | |
| |     3130.04|    6.0| 11.01| B |2D/AC|----| 19.8|1.81|0.32|0.316|  14.8|----|-----|----|  ADD SUBAREA   | |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 310|.0058| 6.0|Qpipe=    14.79| |
| |            |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 1.46| |
| |     3230.04|       |      |         | 0.9|     |    |    |     |      |    |     |    |    24.0"-PIPE | |
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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MIN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                      *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                 |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                | PAGE NUMBER   4 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      3230.04|       |  11.0|   |     |----| 20.7|1.76|    |     |  14.8|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 659|.0102| .. |INITIAL SUBAREA| |
| |      3220.04|    6.6|   6.6| B |6D/AC|----| 13.1|2.32|0.23|0.226|  12.4|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 735|.0105| 2.7|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |      3230.04|       |      |   |     | 4.5|     |    |    |     |      | So =.0105|    | LACFCD MANUAL | |
| |      3230.04|    8.1| 14.66| B |6D/AC|----| 17.6|1.94|0.23|0.226|  22.6|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    36.8 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  17.6                   |    LARGEST     | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.578; Fm =  0.261 (in/hr)    |   CONFLUENCE   | |
| |      3230.04|     EFFECTIVE AREA =      24.04 (Acres);  TOTAL AREA =      25.67 (Acres)|   Q=      36.8| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |             |   36.78     17.60    0.452     0.58    0.261      1.94    24.043   3210.0|                | |
| |             |   35.08     20.65    0.452     0.59    0.265      1.76    25.670   3110.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 480|.0060| 7.7|Qpipe=    36.78| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 2.07| |
| |      3320.04|       |      |           | 1.0|     |    |    |     |      |    |     |    |    33.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      3320.04|       |  24.0|   |     |----| 18.6|1.88|    |     |  36.8|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 792|.0100| .. |INITIAL SUBAREA| |
| |      3320.04|    8.1|   8.1| B |6D/AC|----| 14.1|2.22|0.23|0.226|  14.5|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MIN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                      *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                 |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                | PAGE NUMBER   5 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    48.8 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  18.6                   |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.558; Fm =  0.252 (in/hr)    |   CONFLUENCE  | |
| |     3320.04|     EFFECTIVE AREA =      32.16 (Acres);  TOTAL AREA =      33.79 (Acres)|   Q=      48.8| |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |            |   48.27     14.11    0.452     0.55    0.250      2.22    26.320   3310.0|               | |
| |            |   48.83     18.65    0.452     0.56    0.252      1.88    32.163   3210.0|               | |
| |            |   45.94     21.70    0.452     0.57    0.255      1.71    33.790   3110.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 331|.0057| 7.9|Qpipe=    48.83| |
| |            |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 2.44| |
| |     1020.04|       |      |         | 0.7|     |    |    |     |      |    |     |    |   36.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1020.04|     MEMORY BANK # 2 CONFLUENCED WITH MAIN-STREAM                          |               | |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |            |  114.56     14.81    0.452     0.54    0.246      2.15    62.180   3310.0|               | |
| |            |  115.39     15.34    0.452     0.54    0.246      2.11    64.150   2310.0|               | |
| |            |  115.82     16.11    0.452     0.54    0.246      2.05    66.618   2410.0|               | |
| |            |  115.49     17.75    0.452     0.55    0.247      1.93    71.155   3410.0|               | |
| |            |  114.39     19.34    0.452     0.55    0.248      1.83    74.952   3210.0|               | |
| |            |  113.76     19.70    0.452     0.55    0.248      1.81    75.534   2210.0|               | |
| |            |  107.20     22.40    0.452     0.55    0.251      1.68    77.748   3110.0|               | |
| |            |   91.42     28.27    0.452     0.56    0.254      1.46    79.440   2110.0|               | |
| |            |     TOTAL AREA=     79.440                                                |               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1020.04|     MEMORY BANK # 1 CLEARED                                               |               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1020.04|     MEMORY BANK # 2 CLEARED                                               |               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 597|.0095|12.2|Qpipe=   115.82| |
| |            |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 2.82| |
| |     1030.04|       |      |         | 0.8|     |    |    |     |      |    |     |    |   48.0"-PIPE | |
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| |  DESCRIPTION OF STUDY:                                                                                          | |
| |  25 YEAR CHINO                                                                                                  | |
| |  MIN AVE TRUNKLINE                                                                                              | |
| |  POND A                                                                                                         | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   6 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS   | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES   | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |      1030.04|       |  66.6|   |     |----| 16.9|1.99|    |     | 115.8|----|-----|----|FOR CONFLUENCE  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |             |       |      |   |     | .. |     |    |    |     |      |1032|.0067| .. |INITIAL SUBAREA| |
| |      1030.04|    7.2|   7.2| B |6D/AC|----| 17.0|1.98|0.23|0.226|  11.4|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =   127.2 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  17.0                   |    LARGEST     | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.540; Fm =  0.244 (in/hr)    |   CONFLUENCE   | |
| |      1030.04|     EFFECTIVE AREA =      74.03 (Acres);  TOTAL AREA =      86.65 (Acres)|   Q=     127.2| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |             |  125.66     15.65    0.452     0.54    0.244      2.08    68.817   3310.0|                | |
| |             |  126.60     16.15    0.452     0.54    0.244      2.04    71.002   2310.0|                | |
| |             |  127.20     16.93    0.452     0.54    0.244      1.99    73.798   2410.0|                | |
| |             |  127.20     17.00    0.452     0.54    0.244      1.98    74.026   4410.0|                | |
| |             |  126.22     18.56    0.452     0.54    0.245      1.88    78.365   3410.0|                | |
| |             |  124.53     20.18    0.452     0.54    0.246      1.79    82.162   3210.0|                | |
| |             |  123.78     20.54    0.452     0.54    0.246      1.77    82.744   2210.0|                | |
| |             |  116.39     23.24    0.452     0.55    0.249      1.64    84.958   3110.0|                | |
| |             |   99.26     29.15    0.452     0.56    0.251      1.43    86.650   2110.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 719|.0095|12.3|Qpipe=   127.20| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 3.06| |
| |      1040.04|       |      |         | 1.0|     |    |    |     |      |    |     |    |   48.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |      1040.04|     MAIN-STREAM COPIED ONTO MEMORY BANK # 1                            |                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 674|.0088| .. |INITIAL SUBAREA| |
| |      4120.04|    3.0|   3.0| B | Park|----| 16.9|1.99|0.38|0.384|   4.3|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 807|.0083| 1.9|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER   | |
| |      4130.04|       |      |   |     | 7.2|     |    |    |     |      | So =.0083|    | LACFCD MANUAL | |
| |      4130.04|    3.5|  6.47| B | Park|----| 24.1|1.61|0.38|0.384|   7.1|----|-----|----|  ADD SUBAREA   | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |                | |
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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MTN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   7 OF            | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 150|.0047| 4.7|Qpipe=     7.12| |
| |             |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 0.97| |
| |      4230.04|       |      |          | 0.5|     |    |    |     |      |    |     |    |    24.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      4230.04|       |   6.5|   |     |----| 24.6|1.59|    |     |   7.1|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 668|.0075| .. |INITIAL SUBAREA| |
| |      4220.04|    7.2|   7.2| B |6D/AC|----| 14.0|2.23|0.23|0.226|  13.1|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 718|.0097| 2.6|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |      4230.04|       |      |   |     | 4.5|     |    |    |     |      | So =.0097|    | LACFCD MANUAL | |
| |      4230.04|    8.7| 15.98| B |6D/AC|----| 18.5|1.88|0.23|0.226|  23.9|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    30.5 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  18.5                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.582; Fm =  0.263 (in/hr)    |   CONFLUENCE  | |
| |      4230.04|     EFFECTIVE AREA =      20.84 (Acres);  TOTAL AREA =      22.45 (Acres)|   Q=      30.5| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |             |   30.53     18.49    0.452     0.58    0.263      1.88    20.838   4210.0|                | |
| |             |   26.70     24.63    0.452     0.60    0.272      1.59    22.450   4110.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 529|.0043| 6.5|Qpipe=    30.53| |
| |             |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 2.04| |
| |      4320.04|       |      |          | 1.4|     |    |    |     |      |    |     |    |    33.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      4320.04|       |  20.8|   |     |----| 19.9|1.81|    |     |  30.5|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 782|.0095| .. |INITIAL SUBAREA| |
| |      4320.04|    8.6|   8.6| B |6D/AC|----| 14.2|2.21|0.23|0.226|  15.3|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MTN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   8 OF            | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    42.8 (cfs)                          |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  14.2                     |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.552; Fm =  0.249 (in/hr)    |   CONFLUENCE  | |
| |      4320.04|     EFFECTIVE AREA =      23.46 (Acres);  TOTAL AREA =      31.01 (Acres)|   Q=      42.8| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |             |   42.80     14.19    0.452     0.55    0.249      2.21    23.456   4310.0|                | |
| |             |   42.70     19.85    0.452     0.56    0.252      1.81    29.398   4210.0|                | |
| |             |   36.78     26.02    0.452     0.57    0.259      1.54    31.010   4110.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 365|.0044| 6.9|Qpipe=    42.80| |
| |             |       |      |             |     |    |    |     |      |    |     |    |n=.0130 D= 2.44| |
| |      1040.04|       |      |         | 0.9|     |    |    |     |      |    |     |    |    36.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      1040.04|     MEMORY BANK # 1 CONFLUENCED WITH MAIN-STREAM                          |                | |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |             |  164.57     15.07    0.452     0.54    0.245      2.13    85.845   4310.0|                | |
| |             |  168.43     16.62    0.452     0.54    0.246      2.01    93.903   3310.0|                | |
| |             |  169.36     17.13    0.452     0.54    0.246      1.97    96.622   2310.0|                | |
| |             |  169.95     17.90    0.452     0.54    0.246      1.92   100.227   2410.0|                | |
| |             |  169.95     17.97    0.452     0.54    0.246      1.92   100.529   4410.0|                | |
| |             |  168.94     19.54    0.452     0.55    0.247      1.82   106.510   3410.0|                | |
| |             |  167.67     20.73    0.452     0.55    0.247      1.76   110.565   4210.0|                | |
| |             |  166.82     21.15    0.452     0.55    0.248      1.74   111.671   3210.0|                | |
| |             |  165.73     21.51    0.452     0.55    0.248      1.72   112.347   2210.0|                | |
| |             |  155.75     24.22    0.452     0.55    0.250      1.60   115.269   3110.0|                | |
| |             |  145.46     26.91    0.452     0.56    0.252      1.50   116.730   4110.0|                | |
| |             |  133.09     30.18    0.452     0.56    0.253      1.40   117.660   2110.0|                | |
| |             |     TOTAL AREA=    117.660                                                  |                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      1040.04|     MEMORY BANK # 1 CLEARED                                               |                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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DESCRIPTION OF STUDY:
25 YEAR CHINO
MIN AVE TRUNKLINE
POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04P1MIN.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:33 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 9 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (cfs)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
1040.04	MAIN-STREAM COPIED ONTO MEMORY BANK # 1													
					..						1078	.0065	..	INITIAL SUBAREA
5120.04	9.9	9.9	B	Sch	----	18.4	1.89	0.27	0.271	14.4	----	----	----	----
											489	.0094	2.7	VALLEY CHANNEL VELOCITY PER
5130.04					3.1						So =.0094			LACFCD MANUAL
	7.2		B	Park				0.38						
	3.5		B	Sch				0.27						
5130.04	5.8	26.28	B	6D/AC	----	21.5	1.72	0.23	0.292	33.8	----	----	----	ADD SUBAREA
											340	.0091	3.3	VALLEY CHANNEL VELOCITY PER
5140.04					1.7						So =.0091			LACFCD MANUAL
5140.04	5.8	32.03	B	6D/AC	----	23.2	1.64	0.23	0.280	39.3	----	----	----	ADD SUBAREA
5140.04		32.0			----	23.2	1.64			39.3	----	----	----	FOR CONFLUENCE
					..						755	.0109	..	INITIAL SUBAREA
5220.04	2.6	2.6	B	6D/AC	----	13.6	2.26	0.23	0.226	4.8	----	----	----	----
											315	.0044	4.2	Qpipe= 4.84
														n=.0130 D= 0.79
5140.04					1.3									24.0"-PIPE

CONFLUENCE ANALYSIS FOR POINT# 5140.04

PEAK FLOW RATE = 42.9 (cfs)
TIME OF CONCENTRATION(MIN.) = 23.2
MEAN VALUES: Fp = 0.452 (in/hr); Ap = 0.611; Fm = 0.276 (in/hr)
EFFECTIVE AREA = 34.67 (Acres); TOTAL AREA = 34.67 (Acres)

LARGEST CONFLUENCE Q= 42.9

Q(cfs)	Tc(min)	Fp(avg)	Ap(avg)	Fm(avg)	I(in/hr)	Ae(Acres)	NODE
39.34	14.87	0.452	0.61	0.274	2.15	23.160	5210.0
42.90	23.20	0.452	0.61	0.276	1.64	34.670	5110.0

DESCRIPTION OF STUDY:
25 YEAR CHINO
MIN AVE TRUNKLINE
POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04P1MIN.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:33 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 10 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (cfs)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
										415	.0101	9.8		Qpipe= 42.90 n=.0130 D= 1.91
1040.04					0.7									33.0"-PIPE
1040.04	MEMORY BANK # 1 CONFLUENCED WITH MAIN-STREAM													

Q(cfs)	Tc(min)	Fp(avg)	Ap(avg)	Fm(avg)	I(in/hr)	Ae(Acres)	NODE
203.49	15.07	0.452	0.56	0.251	2.13	108.207	4310.0
205.25	15.61	0.452	0.56	0.251	2.09	111.798	5210.0
208.20	16.62	0.452	0.56	0.252	2.01	118.469	3310.0
209.35	17.13	0.452	0.56	0.252	1.97	121.892	2310.0
210.27	17.90	0.452	0.56	0.252	1.92	126.566	2410.0
210.30	17.97	0.452	0.56	0.252	1.92	126.966	4410.0
209.96	19.54	0.452	0.56	0.253	1.82	135.115	3410.0
209.21	20.73	0.452	0.56	0.253	1.76	140.824	4210.0
208.54	21.15	0.452	0.56	0.254	1.74	142.517	3210.0
207.60	21.51	0.452	0.56	0.254	1.72	143.691	2210.0
199.80	23.91	0.452	0.57	0.256	1.62	149.601	5110.0
198.24	24.22	0.452	0.57	0.256	1.60	149.939	3110.0
184.83	26.91	0.452	0.57	0.258	1.50	151.400	4110.0
169.25	30.18	0.452	0.57	0.258	1.40	152.330	2110.0

TOTAL AREA= 152.330

1040.04	MEMORY BANK # 1 CLEARED													
										658	.0094	13.8		Qpipe= 210.30 n=.0130 D= 3.80
1050.04					0.8									57.0"-PIPE
1050.04		127.0				18.8	1.87			210.3				FOR CONFLUENCE
					..					1078	.0062	..		INITIAL SUBAREA
1050.04	7.7	7.7	B	6D/AC		17.6	1.94	0.23	0.226	12.0				

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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  MIN AVE TRUNKLINE                                                                                        | |
| |  POND A                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:04P1MTN.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 16:33  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER  11 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =   221.7 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  18.8                   |    LARGEST     | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.554; Fm =  0.250 (in/hr)    |   CONFLUENCE   | |
| |     1050.04|     EFFECTIVE AREA =     134.70 (Acres);  TOTAL AREA =     160.06 (Acres)|   Q=     221.7| |
| |            |  Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |            | 215.06    15.86    0.452     0.55    0.250      2.07   115.193   4310.0|                | |
| |            | 216.94    16.40    0.452     0.55    0.250      2.03   119.021   5210.0|                | |
| |            | 220.13    17.41    0.452     0.55    0.250      1.95   126.138   3310.0|                | |
| |            | 220.47    17.55    0.452     0.55    0.250      1.94   127.123   6410.0|                | |
| |            | 221.14    17.92    0.452     0.55    0.250      1.92   129.622   2310.0|                | |
| |            | 221.73    18.69    0.452     0.55    0.250      1.87   134.296   2410.0|                | |
| |            | 221.73    18.76    0.452     0.55    0.250      1.87   134.696   4410.0|                | |
| |            | 220.78    20.33    0.452     0.56    0.251      1.78   142.845   3410.0|                | |
| |            | 219.61    21.52    0.452     0.56    0.252      1.72   148.554   4210.0|                | |
| |            | 218.80    21.95    0.452     0.56    0.252      1.70   150.247   3210.0|                | |
| |            | 217.74    22.31    0.452     0.56    0.253      1.68   151.421   2210.0|                | |
| |            | 209.24    24.71    0.452     0.56    0.255      1.58   157.331   5110.0|                | |
| |            | 207.61    25.02    0.452     0.56    0.255      1.57   157.669   3110.0|                | |
| |            | 193.54    27.73    0.452     0.57    0.256      1.48   159.130   4110.0|                | |
| |            | 177.29    31.01    0.452     0.57    0.257      1.38   160.060   2110.0|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------| 316|.0095|14.2|Qpipe=   221.73| |
| |            |       |      |              |     |    |    |     |      |    |     |    |n=.0130 D= 3.70| |
| |     1060.04|       |      |         | 0.4|     |    |    |     |      |    |     |    |   60.0"-PIPE  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1060.04|       | 134.7|   |     |----| 19.1|    |    |     | 221.7|----|-----|----|STREAM SUMMARY | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| | EFFECTIVE AREA =    134.70 Acres   TOTAL AREA =    160.06 Acres  PEAK FLOW RATE =    221.73 cfs        | |
| | TIME OF CONCENTRATION(MIN.)=   19.13  MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.554; Fm =  0.250 (in/hr)| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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DESCRIPTION OF STUDY:
25 YEAR CHINO
MIN AVE TRUNKLINE
POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04P1MIN.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:33 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 12 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES

PEAK FLOW RATE TABLE

Q(cfs)	Tc(min)	Fp(avg)	Ap(avg)	Fm(avg)	I(in/hr)	Ae(Acres)	NODE
215.06	16.24	0.452	0.55	0.250	2.04	115.193	4310.0
216.94	16.77	0.452	0.55	0.250	2.00	119.021	5210.0
220.13	17.78	0.452	0.55	0.250	1.93	126.138	3310.0
220.47	17.92	0.452	0.55	0.250	1.92	127.123	6410.0
221.14	18.29	0.452	0.55	0.250	1.90	129.622	2310.0
221.73	19.06	0.452	0.55	0.250	1.85	134.296	2410.0
221.73	19.13	0.452	0.55	0.250	1.85	134.696	4410.0
220.78	20.70	0.452	0.56	0.251	1.76	142.845	3410.0
219.61	21.89	0.452	0.56	0.252	1.70	148.554	4210.0
218.80	22.32	0.452	0.56	0.252	1.68	150.247	3210.0
217.74	22.68	0.452	0.56	0.253	1.67	151.421	2210.0
209.24	25.09	0.452	0.56	0.255	1.57	157.331	5110.0
207.61	25.40	0.452	0.56	0.255	1.56	157.669	3110.0
193.54	28.11	0.452	0.57	0.256	1.47	159.130	4110.0
177.29	31.40	0.452	0.57	0.257	1.37	160.060	2110.0

DESCRIPTION OF STUDY:
25 YEAR CHINO
6100.04 SUBAREA
TRIB TO POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04MIN61.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:36 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						724	.0116	..	INITIAL SUBAREA
	1.9		B	Park				0.38						
6120.04	1.6	3.5	C	Park		16.4	2.02	0.23	0.313	5.4				
											906	.0070	1.8	VALLEY CHANNEL
														VELOCITY PER
6130.04					8.4						So =.0070			LACFCD MANUAL
6130.04	5.2	8.71	C	Park		24.8	1.58	0.23	0.264	10.3				ADD SUBAREA
6130.04		8.7				24.8				10.3				STREAM SUMMARY

EFFECTIVE AREA = 8.71 Acres TOTAL AREA = 8.71 Acres PEAK FLOW RATE = 10.30 cfs
TIME OF CONCENTRATION(MIN.)= 24.85 MEAN VALUES: Fp = 0.311 (in/hr); Ap = 0.850; Fm = 0.264 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR CHINO
6200.04 SUBAREA
TRIB TO POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04MIN62.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:38 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						722	.0087	..	INITIAL SUBAREA
	7.3		B	6D/AC				0.23						
6220.04	0.7	8.0	C	6D/AC		14.0	2.23	0.14	0.218	14.5				
											805	.0097	2.7	VALLEY CHANNEL
														VELOCITY PER
6230.04					5.0						So =.0097			LACFCD MANUAL
	3.9		B	6D/AC				0.23						
6230.04	5.9	17.80	C	6D/AC		18.9	1.86	0.14	0.193	26.7				ADD SUBAREA
6230.04		17.8				18.9				26.7				STREAM SUMMARY

EFFECTIVE AREA = 17.80 Acres TOTAL AREA = 17.80 Acres PEAK FLOW RATE = 26.69 cfs
TIME OF CONCENTRATION(MIN.)= 18.93 MEAN VALUES: Fp = 0.385 (in/hr); Ap = 0.500; Fm = 0.193 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR CHINO
6300.04 SUBAREA
TRIB TO POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04MIN63.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 11:35 12/13/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						711	.0060	..	INITIAL SUBAREA
6320.04	6.3	6.3	B	6D/AC		14.9	2.14	0.23	0.226	10.9				
6320.04		6.3				14.9				10.9				STREAM SUMMARY

EFFECTIVE AREA = 6.33 Acres TOTAL AREA = 6.33 Acres PEAK FLOW RATE = 10.91 cfs
TIME OF CONCENTRATION(MIN.)= 14.94 MEAN VALUES: Fp = 0.452 (in/hr); Ap = 0.500; Fm = 0.226 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR
7100.04 SUBAREA
TRIB TO POND A

[SAN BERNARDINO COUNTY]

FILE NAME:04MIN71.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 16:41 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						540	.0150	..	INITIAL SUBAREA
7120.04	4.8	4.8	B	6D/AC		11.2	2.55	0.23	0.226	10.0				
											442	.0088	2.3	VALLEY CHANNEL
7130.04					3.1						So =.0088			VELOCITY PER LACFCD MANUAL
7130.04	5.9	10.67	B	6D/AC		14.3	2.20	0.23	0.226	18.9				ADD SUBAREA
7130.04		10.7				14.3				18.9				STREAM SUMMARY

EFFECTIVE AREA = 10.67 Acres TOTAL AREA = 10.67 Acres PEAK FLOW RATE = 18.95 cfs
TIME OF CONCENTRATION(MIN.)= 14.30 MEAN VALUES: Fp = 0.452 (in/hr); Ap = 0.500; Fm = 0.226 (in/hr)

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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  EAST OF CYPRESS - NORTH SYSTEM                                                                           | |
| |  POND B                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:05CYP.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 11:23  12/17/2002                                 |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                | PAGE NUMBER   1 OF             | |
| |------------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]------------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 952|.0007| .. |INITIAL SUBAREA| |
| |     1020.05|    9.8|   9.8| B |2D/AC|----| 28.8|1.44|0.32|0.316|   9.9|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 998|.0116| 2.7|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1030.05|       |      |   |     | 6.2|     |    |    |     |      | So =.0116|    | LACFCD MANUAL | |
| |             |   12.1|      | B |2D/AC|    |     |    |0.32|     |      |    |     |    |               | |
| |     1030.05|    4.9| 26.87| C |2D/AC|----| 35.0|1.29|0.19|0.293|  24.0|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 640|.0066| 7.1|Qpipe=    23.99| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 1.63| |
| |     1040.05|       |      |          | 1.5|     |    |    |     |      |    |     |    |   30.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1040.05|       |  26.9|   |     |----| 36.5|1.25|    |     |  24.0|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 804|.0063| .. |INITIAL SUBAREA| |
| |     2020.05|    6.5|   6.5| B |6D/AC|----| 15.5|2.09|0.23|0.226|  10.9|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 560|.0123| 2.8|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1040.05|       |      |   |     | 3.3|     |    |    |     |      | So =.0123|    | LACFCD MANUAL | |
| |             |    8.8|      | B |6D/AC|    |     |    |0.23|     |      |    |     |    |               | |
| |     1040.05|    2.2| 17.43| C |6D/AC|----| 18.8|1.86|0.14|0.215|  25.9|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    46.1 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  18.8                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.424 (in/hr); Ap = 0.589; Fm =  0.249 (in/hr)    |   CONFLUENCE  | |
| |     1040.05|     EFFECTIVE AREA =      31.29 (Acres);  TOTAL AREA =      44.30 (Acres)|   Q=      46.1| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   46.12     18.84    0.424     0.59    0.249      1.86    31.295   2010.1|               | |
| |             |   40.27     36.51    0.422     0.62    0.262      1.25    44.300   1010.0|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 608|.0115|10.2|Qpipe=    46.12| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 1.96| |
| |     1050.05|       |      |          | 1.0|     |    |    |     |      |    |     |    |   33.0"-PIPE | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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DESCRIPTION OF STUDY:
25 YEAR CHINO
EAST OF CYPRESS - NORTH SYSTEM
POND B

[SAN BERNARDINO COUNTY]

FILE NAME:05CYP.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 11:23 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 2 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (cfs)	Q-SUM (ft)	PATH ft/ft	SLOPE FPS.	V	HYDRAULICS AND NOTES
1050.05		31.3				19.8				46.1				STREAM SUMMARY

EFFECTIVE AREA = 31.29 Acres TOTAL AREA = 44.30 Acres PEAK FLOW RATE = 46.12 cfs
TIME OF CONCENTRATION(MIN.)= 19.83 MEAN VALUES: Fp = 0.424 (in/hr); Ap = 0.589; Fm = 0.249 (in/hr)

PEAK FLOW RATE TABLE

Q(cfs)	Tc(min)	Fp(avg)	Ap(avg)	Fm(avg)	I(in/hr)	Ae(Acres)	NODE
46.12	19.83	0.424	0.59	0.249	1.81	31.295	2010.1
40.27	37.56	0.422	0.62	0.262	1.23	44.300	1010.0

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| |  DESCRIPTION OF STUDY:                                                                                          | |
| |  25 YEAR CHINO                                                                                                  | |
| |  EASTERN LINE                                                                                                   | |
| |  POND B                                                                                                         | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:06CYP.DAT                          *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 17:34  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   1 OF             | |
| |------------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]------------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 441|.0147| .. |INITIAL SUBAREA| |
| |     1020.06|    5.3|   5.3| B |6D/AC|----| 10.3|2.67|0.23|0.226|  11.7|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 858|.0093| 2.5|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1030.06|       |      |   |     | 5.7|     |    |    |     |      | So =.0093|    | LACFCD MANUAL | |
| |     1030.06|    5.5| 10.83| B |6D/AC|----| 16.0|2.05|0.23|0.226|  17.8|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1030.06|       |  10.8|   |     |----| 16.0|2.05|    |     |  17.8|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      |1128|.0009| .. |INITIAL SUBAREA| |
| |     1030.06|    9.4|   9.4| B |6D/AC|----| 26.4|1.52|0.23|0.226|  11.0|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    27.2 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  16.0                    |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.500; Fm =  0.226 (in/hr)    |   CONFLUENCE  | |
| |     1030.06|     EFFECTIVE AREA =      16.54 (Acres);  TOTAL AREA =      20.23 (Acres)|   Q=      27.2| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   27.20     16.02    0.452     0.50    0.226      2.05    16.539   1010.1|               | |
| |             |   23.61     26.38    0.452     0.50    0.226      1.52    20.230   5010.1|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------|1127|.0019| 4.4|Qpipe=    27.20| |
| |             |       |      |               |     |    |    |     |      |    |     |    |n=.0130 D= 2.45| |
| |     1040.06|       |      |         | 4.3|     |    |    |     |      |    |     |    |    36.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1040.06|       |  16.5|   |     |----| 20.3|1.78|    |     |  27.2|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      |1182|.0089| .. |INITIAL SUBAREA| |
| |     2020.06|    9.2|   9.2| B |6D/AC|----| 17.0|1.99|0.23|0.226|  14.5|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 608|.0038| 1.7|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1040.06|       |      |   |     | 6.0|     |    |    |     |      | So =.0038|    | LACFCD MANUAL | |
| |     1040.06|   13.7| 22.83| B |6D/AC|----| 22.9|1.66|0.23|0.226|  29.4|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1040.06|       |  40.3|   |     |----| 22.9|1.66|    |     |  55.7|----|-----|----|FOR CONFLUENCE | |
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| |  DESCRIPTION OF STUDY:                                                                              | |
| |  25 YEAR CHINO                                                                                      | |
| |  EASTERN LINE                                                                                       | |
| |  POND B                                                                                             | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:06CYP.DAT                        *ENGLISH UNITS*            | CALCULATED BY:                | |
| |  TIME/DATE OF STUDY: 17:34  12/16/2002                                 |    CHECKED BY:                | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                | PAGE NUMBER   2 OF            | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      | 749|.0007| .. |INITIAL SUBAREA| |
| |      6020.06|    6.0|   6.0| B |6D/AC|----| 23.7|1.62|0.23|0.226|   7.6|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 795|.0006| 0.7|VALLEY CHANNEL | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |      1040.06|       |      |   |     |18.0|     |    |    |     |      | So =.0010|    | LACFCD MANUAL | |
| |      1040.06|    9.4| 15.44| B |6D/AC|----| 41.7|1.16|0.23|0.226|  12.9|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    66.6 (cfs)                        |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  22.9                   |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.452 (in/hr); Ap = 0.500; Fm =  0.226 (in/hr)    |   CONFLUENCE  | |
| |      1040.06|     EFFECTIVE AREA =      48.81 (Acres);  TOTAL AREA =      58.50 (Acres)|   Q=      66.6| |
| |             |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             |   66.01     20.29    0.452     0.50    0.226      1.78    44.244   1010.1|               | |
| |             |   66.60     22.94    0.452     0.50    0.226      1.66    48.807   2010.1|               | |
| |             |   59.44     30.70    0.452     0.50    0.226      1.39    54.433   5010.1|               | |
| |             |   50.95     41.68    0.452     0.50    0.226      1.16    58.500   6010.1|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 573|.0019| 5.6|Qpipe=    66.60| |
| |             |       |      |             |     |    |    |     |      |    |     |    |n=.0130 D= 3.30| |
| |      1050.06|       |      |         | 1.7|     |    |    |     |      |    |     |    |    51.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |      1050.06|       |  48.8|   |     |----| 24.6|1.59|    |     |  66.6|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     | .. |     |    |    |     |      |1014|.0089| .. |INITIAL SUBAREA| |
| |             |    4.5|      | B |6D/AC|    |     |    |0.23|     |      |----|-----|----|---------------| |
| |      1050.06|    4.5|   9.1| C |6D/AC|----| 15.9|2.06|0.14|0.181|  15.4|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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| |  DESCRIPTION OF STUDY:                                                                                          | |
| |  25 YEAR CHINO                                                                                                  | |
| |  EASTERN LINE                                                                                                   | |
| |  POND B                                                                                                         | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:06CYP.DAT                          *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 17:34  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   3 OF             | |
| |------------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]------------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS   | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES   | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =    78.4 (cfs)                        |                | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  22.0                    |    LARGEST     | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.437 (in/hr); Ap = 0.500; Fm =  0.218 (in/hr)    |   CONFLUENCE   | |
| |     1050.06|     EFFECTIVE AREA =      53.32 (Acres);  TOTAL AREA =      67.58 (Acres)|   Q=      78.4| |
| |            |   Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |                | |
| |            |   74.97     15.95    0.432     0.50    0.216      2.06    41.174   3010.1|                | |
| |            |   78.41     21.99    0.437     0.50    0.218      1.70    53.324   1010.1|                | |
| |            |   78.08     24.64    0.438     0.50    0.219      1.59    57.887   2010.1|                | |
| |            |   68.95     32.47    0.439     0.50    0.220      1.34    63.513   5010.1|                | |
| |            |   58.69     43.47    0.440     0.50    0.220      1.13    67.580   6010.1|                | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 659|.0018| 5.7|Qpipe=    78.41| |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |n=.0130 D= 3.63| |
| |     1060.06|       |      |   |     | 1.9|     |    |    |     |      |    |     |    |    54.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |     1060.06|       |  53.3|   |     |----| 23.9|1.62|    |     |  78.4|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |            |       |      |   |     | .. |     |    |    |     |      | 802|.0069| .. |INITIAL SUBAREA| |
| |     4020.06|    5.1|   5.1| C |6D/AC|----| 15.3|2.11|0.14|0.136|   9.0|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 441|.0107| 2.5|VALLEY CHANNEL | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1060.06|       |      |   |     | 2.9|     |    |    |     |      | So =.0107|    | LACFCD MANUAL | |
| |     1060.06|    6.7| 11.74| C |6D/AC|----| 18.2|1.90|0.14|0.136|  18.7|----|-----|----|  ADD SUBAREA  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |     1060.06|       |  53.6|   |     |----| 18.2|1.90|    |     |  93.8|----|-----|----|FOR CONFLUENCE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|----------------| |
| |            |       |      |   |     | .. |     |    |    |     |      |1004|.0005| .. |INITIAL SUBAREA| |
| |     7020.06|    7.6|   7.6| B |6D/AC|----| 28.3|1.46|0.23|0.226|   8.5|----|-----|----|----------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|      | 313|.0016| 1.0|VALLEY CHANNEL | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    | VELOCITY PER  | |
| |     1060.06|       |      |   |     | 5.4|     |    |    |     |      | So =.0016|    | LACFCD MANUAL | |
| |            |    1.3|      | B |6D/AC|    |     |    |0.23|     |      |    |     |    |                | |
| |     1060.06|    3.0| 11.99| C |6D/AC|----| 33.7|1.31|0.14|0.203|  12.0|----|-----|----|  ADD SUBAREA  | |
| |            |       |      |   |     |    |     |    |    |     |      |    |     |    |                | |
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| |  DESCRIPTION OF STUDY:                                                                                    | |
| |  25 YEAR CHINO                                                                                            | |
| |  EASTERN LINE                                                                                             | |
| |  POND B                                                                                                   | |
| |-----------------------------------------[SAN BERNARDINO COUNTY]-----------------------------------------| |
| |  FILE NAME:06CYP.DAT                          *ENGLISH UNITS*            | CALCULATED BY:                 | |
| |  TIME/DATE OF STUDY: 17:34  12/16/2002                                   |    CHECKED BY:                 | |
| |  25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)                  | PAGE NUMBER   4 OF             | |
| |-----------------------------[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]-----------------------------| |
| |CONCENTRATION| AREA (ACRES) |SOIL|DEV.| Tt |  Tc | I  | Fm |  Fm |Q-SUM |PATH|SLOPE| V  |   HYDRAULICS  | |
| | POINT NUMBER|SUBAREA|  SUM |TYPE|TYPE|MIN.| MIN.| (in/hr) |(Avg)|(cfs) |(ft)|ft/ft|FPS.|    AND NOTES  | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |  CONFLUENCE |                  PEAK FLOW RATE =   104.9 (cfs)                          |               | |
| |   ANALYSIS  |                  TIME OF CONCENTRATION(MIN.) =  23.9                     |    LARGEST    | |
| |  FOR POINT# |     MEAN VALUES: Fp =  0.407 (in/hr); Ap = 0.500; Fm =  0.203 (in/hr)    |   CONFLUENCE  | |
| |     1060.06|     EFFECTIVE AREA =      73.57 (Acres);  TOTAL AREA =      91.31 (Acres)|   Q=     104.9| |
| |             |  Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             | 103.35     17.88    0.398     0.50    0.199      1.92    59.059   3010.1|               | |
| |             | 103.72     18.21    0.398     0.50    0.199      1.90    60.064   4010.1|               | |
| |             | 104.85     23.91    0.407     0.50    0.203      1.62    73.571   1010.1|               | |
| |             | 103.84     26.56    0.409     0.50    0.205      1.52    79.077   2010.1|               | |
| |             |  94.26     33.70    0.412     0.50    0.206      1.31    86.732   7010.1|               | |
| |             |  93.04     34.42    0.412     0.50    0.206      1.30    87.243   5010.1|               | |
| |             |  78.51     45.50    0.414     0.50    0.207      1.10    91.310   6010.1|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |-------------|-------|------|---|-----|    |-----|----|----|-----|------| 328|.0018| 6.1|Qpipe=   104.85| |
| |             |       |      |             |     |    |    |     |      |    |     |    |n=.0130 D= 4.06| |
| |     1070.06|       |      |         | 0.9|     |    |    |     |      |    |     |    |   60.0"-PIPE | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |     1070.06|       |  73.6|   |     |----| 24.8|    |    |     | 104.9|----|-----|----|STREAM SUMMARY | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| | EFFECTIVE AREA =     73.57 Acres   TOTAL AREA =     91.31 Acres  PEAK FLOW RATE =    104.85 cfs       | |
| | TIME OF CONCENTRATION(MIN.)=   24.80  MEAN VALUES: Fp =  0.407 (in/hr); Ap = 0.500; Fm =  0.203 (in/hr)| |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |     PEAK FLOW RATE TABLE                                                 |               | |
| |             |  Q(cfs)   Tc(min)  Fp(avg)  Ap(avg)  Fm(avg)  I(in/hr)  Ae(Acres)  NODE |               | |
| |             | 103.35     18.77    0.398     0.50    0.199      1.87    59.059   3010.1|               | |
| |             | 103.72     19.10    0.398     0.50    0.199      1.85    60.064   4010.1|               | |
| |             | 104.85     24.80    0.407     0.50    0.203      1.58    73.571   1010.1|               | |
| |             | 103.84     27.45    0.409     0.50    0.205      1.49    79.077   2010.1|               | |
| |             |  94.26     34.60    0.412     0.50    0.206      1.29    86.732   7010.1|               | |
| |             |  93.04     35.32    0.412     0.50    0.206      1.28    87.243   5010.1|               | |
| |             |  78.51     46.46    0.414     0.50    0.207      1.08    91.310   6010.1|               | |
| |-------------|-------|------|---|-----|----|-----|----|----|-----|------|----|-----|----|---------------| |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
| |             |       |      |   |     |    |     |    |    |     |      |    |     |    |               | |
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DESCRIPTION OF STUDY:
25 YEAR CHINO
EASTERN SIDE 2000.08 SERIES
POND B

[SAN BERNARDINO COUNTY]

FILE NAME:08CYP20.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 11:26 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..					769	.0273	..		INITIAL SUBAREA
	4.3		B	6D/AC				0.23						
2020.08	5.3	9.6	C	6D/AC		11.4	2.52	0.14	0.177	20.3				
2020.08		9.6				11.4				20.3				STREAM SUMMARY

EFFECTIVE AREA = 9.61 Acres TOTAL AREA = 9.61 Acres PEAK FLOW RATE = 20.26 cfs
TIME OF CONCENTRATION(MIN.)= 11.40 MEAN VALUES: Fp = 0.353 (in/hr); Ap = 0.500; Fm = 0.177 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR CHINO
EASTERN SIDE 3000.08 SERIES
POND B

[SAN BERNARDINO COUNTY]

FILE NAME:08CYP30.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 11:27 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm	Fm (Avg)	Q-SUM (cfs)	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..						1060	.0075	..	INITIAL SUBAREA
	1.6		B	6D/AC				0.23						
3020.08	5.3	6.8	C	6D/AC		16.8	2.00	0.14	0.157	11.3				
3020.08		6.8				16.8				11.3				STREAM SUMMARY

EFFECTIVE AREA = 6.84 Acres TOTAL AREA = 6.84 Acres PEAK FLOW RATE = 11.32 cfs
TIME OF CONCENTRATION(MIN.)= 16.81 MEAN VALUES: Fp = 0.314 (in/hr); Ap = 0.500; Fm = 0.157 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR CHINO
EASTERN SIDE 4000.08 SERIES
POND B

[SAN BERNARDINO COUNTY]

FILE NAME:08CYP40.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 11:28 12/17/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (cfs)	Q-SUM	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..					509	.0102	..		INITIAL SUBAREA
	1.6		B	6D/AC			0.23							
4020.08	2.4	3.9	C	6D/AC		11.8	2.47	0.14	0.172	8.2				
4020.08		3.9				11.8				8.2				STREAM SUMMARY

EFFECTIVE AREA = 3.95 Acres TOTAL AREA = 3.95 Acres PEAK FLOW RATE = 8.17 cfs
TIME OF CONCENTRATION(MIN.)= 11.77 MEAN VALUES: Fp = 0.344 (in/hr); Ap = 0.500; Fm = 0.172 (in/hr)

DESCRIPTION OF STUDY:
25 YEAR CHINO
EASTERN SIDE 5000.08 SERIES
POND B

[SAN BERNARDINO COUNTY]

FILE NAME:08CYP50.DAT *ENGLISH UNITS* CALCULATED BY:
TIME/DATE OF STUDY: 17:57 12/16/2002 CHECKED BY:
25.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES) PAGE NUMBER 1 OF

[(c) 1983-2002 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SUM	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I (in/hr)	Fm (Avg)	Fm (cfs)	Q-SUM	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
					..					472	.0040	..		INITIAL SUBAREA
5020.08	2.7	2.7	B	6D/AC	----	13.8	2.25	0.23	0.226	4.9	----	----	----	
5020.08		2.7			----	13.8				4.9	----	----	----	STREAM SUMMARY

EFFECTIVE AREA = 2.67 Acres TOTAL AREA = 2.67 Acres PEAK FLOW RATE = 4.86 cfs
TIME OF CONCENTRATION(MIN.)= 13.76 MEAN VALUES: Fp = 0.452 (in/hr); Ap = 0.500; Fm = 0.226 (in/hr)

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            F L O O D   R O U T I N G   A N A L Y S I S
         USING COUNTY HYDROLOGY MANUAL OF SAN BERNARDINO(1986)
        (c) Copyright 1989-2002 Advanced Engineering Software (aes)
           Ver. 8.0  Release Date: 01/01/2002  License ID 1404

                        Analysis prepared by:

                      ASSOCIATED ENGINEERS, Inc.
                      Consulting Civil Engineers
          3311 E. Shelby Street  Ontario, California  91764-4872
                 (909) 980-1982    Fax: (909) 941-0891

 ************************* DESCRIPTION OF STUDY *************************
* 25 YEAR - POND A                                                      *
* RETENTION                                                             *
*                                                                       *
 *************************************************************************

  FILE NAME: PONDA.DAT
  TIME/DATE OF STUDY: 14:50 12/18/2002


****************************************************************************
  FLOW PROCESS FROM NODE     1.00 TO NODE     1.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
============================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =     219.960 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.255 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         VALLEY(DEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.207
         LOW LOSS FRACTION = 0.264
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.35
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.70
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  0.93
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.65
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.35
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  4.60

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.990
          30-MINUTE FACTOR = 0.990
           1-HOUR FACTOR = 0.990
           3-HOUR FACTOR = 0.999
           6-HOUR FACTOR = 0.999
          24-HOUR FACTOR = 1.000

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  32.680


         RUNOFF HYDROGRAPH LISTING LIMITS:
         MODEL TIME(HOURS) FOR BEGINNING OF RESULTS =  14.00
         MODEL TIME(HOURS) FOR END OF RESULTS =  18.00
```

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	2.108	56.073
2	13.049	291.036
3	34.117	560.441
4	61.007	715.318
5	80.972	531.104
6	91.161	271.029
7	96.095	131.264
8	98.154	54.765
9	98.802	17.247
10	99.377	15.282
11	99.751	9.950
12	99.938	4.975
13	100.000	1.658

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 20.6333
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 63.6145

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN FIVE-MINUTE UNIT INTERVALS (CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME (HRS)	VOLUME (AF)	Q (CFS)	0.	100.0	200.0	300.0	400.0
14.000	25.4745	42.48	. Q	.	V .	.	.
14.083	25.7725	43.27	. Q	.	V .	.	.
14.167	26.0773	44.26	. Q	.	V .	.	.
14.250	26.3904	45.46	. Q	.	V .	.	.
14.333	26.7128	46.81	. Q	.	V .	.	.
14.417	27.0440	48.09	. Q	.	V .	.	.
14.500	27.3835	49.29	. Q	.	V .	.	.
14.583	27.7310	50.47	. Q	.	V .	.	.
14.667	28.0870	51.69	. Q	.	V .	.	.
14.750	28.4518	52.96	. Q	.	V .	.	.
14.833	28.8261	54.35	. Q	.	V .	.	.
14.917	29.2107	55.84	. Q	.	V .	.	.
15.000	29.6067	57.49	. Q	.	V .	.	.
15.083	30.0149	59.27	. Q	.	V .	.	.
15.167	30.4368	61.27	. Q	.	V.	.	.
15.250	30.8738	63.46	. Q	.	V.	.	.
15.333	31.3281	65.96	. Q	.	V.	.	.
15.417	31.7990	68.38	. Q	.	V.	.	.
15.500	32.2788	69.67	. Q	.	V	.	.
15.583	32.7584	69.63	. Q	.	V	.	.
15.667	33.2359	69.34	. Q	.	V	.	.
15.750	33.7259	71.15	. Q	.	.V	.	.
15.833	34.2489	75.94	. Q	.	.V	.	.
15.917	34.8271	83.95	. Q	.	.V	.	.
16.000	35.5097	99.12	. Q.		. V	.	.
16.083	36.4682	139.17	.	. Q	. V	.	.
16.167	38.0407	228.33	.	.	. QV	.	.
16.250	40.2006	313.62	.	.	. V	.Q	.
16.333	42.5736	344.56	.	.	. V	. Q	.
16.417	44.4433	271.48	.	.	. Q	.	.
16.500	45.6764	179.04	.	. Q	. V	.	.
16.583	46.5369	124.94	.	. Q	. V.		.
16.667	47.1876	94.48	. Q.		. V.		.
16.750	47.7249	78.02	. Q	.	. V		.
16.833	48.2206	71.97	. Q	.	. V		.
16.917	48.6735	65.76	. Q	.	. V		.
17.000	49.0886	60.27	. Q	.	. V		.
17.083	49.4729	55.81	. Q	.	. .V		.
17.167	49.8332	52.31	. Q	.	. .V		.
17.250	50.1745	49.55	. Q	.	. .V		.
17.333	50.4983	47.02	. Q	.	. .V		.
17.417	50.8071	44.84	. Q	.	. .V		.
17.500	51.1035	43.03	. Q	.	. . V		.
17.583	51.3892	41.48	. Q	.	. . V		.
17.667	51.6655	40.13	. Q	.	. . V		.
17.750	51.9336	38.92	. Q	.	. . V		.
17.833	52.1940	37.81	. Q	.	. . V		.
17.917	52.4474	36.80	. Q	.	. . V		.
18.000	52.6945	35.87	. Q	.	. . V		.

END OF FLOODSCx ROUTING ANALYSIS

Pond A

*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 4.60 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp(in./hr.)	YIELD
1	10.71	92.00	97.(86.)	0.036	0.926
2	2.68	92.00	98.(91.)	0.000	0.949
3	15.86	85.00	90.(74.)	0.200	0.787
4	6.84	85.00	96.(83.)	0.052	0.906
5	13.35	60.00	76.(56.)	0.452	0.668
6	142.73	50.00	76.(56.)	0.452	0.715
7	6.60	50.00	86.(69.)	0.272	0.811
8	11.01	70.00	76.(56.)	0.452	0.621
9	7.18	85.00	89.(72.)	0.218	0.769

TOTAL AREA (Acres) = 216.96

AREA-AVERAGED LOSS RATE, $\overline{Fm}$ (in./hr.) = 0.207

AREA-AVERAGED LOW LOSS FRACTION, $\overline{Y}$ = 0.264

NOTES:
1 IS POND* WITH SOIL TYPE B AS BARREN
2 IS POND* WITH SOIL TYPE C AS BARREN
3 IS EASEMENT WITH SOIL TYPE B AS TURF POOR
4 IS EASEMENT WITH SOIL TYPE C AS TURF POOR
5 IS SCHOOL WITH SOIL TYPE B AS LANDSCAPED
6 IS L-MDR WITH SOIL TYPE B AS LANDSCAPED
7 IS L-MDR WITH SOIL TYPE C AS LANDSCAPED
8 IS ER WITH SOIL TYPE B AS LANDSCAPED
9 IS PARK WITH SOIL TYPE B AS TURF GOOD

* POND AREA INCLUDES HALFWIDTH ROADWAY

Solve For: Discharge – Pond A

Culvert Summary					
Allowable HW Elevation	633.10	ft	Headwater Depth/Height	2.50	
Computed Headwater Elevation	633.10	ft	Discharge	24.15	cfs
Inlet Control HW Elev.	631.79	ft	Tailwater Elevation	629.10	ft
Outlet Control HW Elev.	633.10	ft	Control Type	Outlet Control	

Grades					
Upstream Invert	628.10	ft	Downstream Invert	627.10	ft
Length	230.00	ft	Constructed Slope	0.004348	ft/ft

Hydraulic Profile					
Profile	PressureProfile		Depth, Downstream	2.00	ft
Slope Type	N/A		Normal Depth	N/A	ft
Flow Regime	N/A		Critical Depth	1.74	ft
Velocity Downstream	7.69	ft/s	Critical Slope	0.010403	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	2.00	ft
Section Size	24 inch		Rise	2.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	633.10	ft	Upstream Velocity Head	0.92	ft
Ke	0.50		Entrance Loss	0.46	ft

Inlet Control Properties					
Inlet Control HW Elev.	631.79	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	3.1	ft^2
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

```
****************************************************************************

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                        Analysis prepared by:

                      ASSOCIATED ENGINEERS, Inc.
                      Consulting Civil Engineers
          3311 E. Shelby Street  Ontario, California  91764-4872
                 (909) 980-1982    Fax: (909) 941-0891

 ************************* DESCRIPTION OF STUDY *************************
* 25 YEAR - POND B                                                      *
* RETENTION                                                             *
*                                                                       *
 *************************************************************************

  FILE NAME: PONDB.DAT
  TIME/DATE OF STUDY: 14:55 12/18/2002


****************************************************************************
  FLOW PROCESS FROM NODE     1.00 TO NODE     1.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
============================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =     166.380 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.331 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         VALLEY(DEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.209
         LOW LOSS FRACTION = 0.267
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.35
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.70
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  0.93
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.65
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.35
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  4.60

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.993
          30-MINUTE FACTOR = 0.993
           1-HOUR FACTOR = 0.993
           3-HOUR FACTOR = 0.999
           6-HOUR FACTOR = 0.999
          24-HOUR FACTOR = 1.000

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  25.176


         RUNOFF HYDROGRAPH LISTING LIMITS:
         MODEL TIME(HOURS) FOR BEGINNING OF RESULTS =  14.00
         MODEL TIME(HOURS) FOR END OF RESULTS =  18.00
```

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	1.508	30.352
2	7.515	120.860
3	21.073	272.808
4	39.070	362.135
5	60.241	425.997
6	77.008	337.381
7	87.239	205.855
8	92.968	115.270
9	96.290	66.844
10	97.994	34.301
11	98.550	11.187
12	99.022	9.499
13	99.494	9.499
14	99.967	9.499
15	100.000	0.673

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 15.7805
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 47.9524

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN FIVE-MINUTE UNIT INTERVALS (CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME (HRS)	VOLUME (AF)	Q (CFS)	0.	75.0	150.0	225.0	300.0
14.000	18.9804	31.49	. Q	. V	.	.	.
14.083	19.2012	32.06	. Q	. V	.	.	.
14.167	19.4264	32.70	. Q	. V	.	.	.
14.250	19.6568	33.47	. Q	. V	.	.	.
14.333	19.8932	34.31	. Q	. V	.	.	.
14.417	20.1359	35.24	. Q	. V	.	.	.
14.500	20.3849	36.16	. Q	. V	.	.	.
14.583	20.6401	37.06	. Q	. V	.	.	.
14.667	20.9015	37.96	. Q	. V	.	.	.
14.750	21.1694	38.90	. Q	. V	.	.	.
14.833	21.4441	39.88	. Q	. V	.	.	.
14.917	21.7260	40.94	. Q	. V	.	.	.
15.000	22.0158	42.08	. Q	. V	.	.	.
15.083	22.3143	43.34	. Q	. V	.	.	.
15.167	22.6223	44.71	. Q	. V	.	.	.
15.250	22.9408	46.25	. Q	. V	.	.	.
15.333	23.2709	47.93	. Q	. V	.	.	.
15.417	23.6129	49.66	. Q	. V	.	.	.
15.500	23.9643	51.03	. Q	. V	.	.	.
15.583	24.3208	51.76	. Q	. V		.	.
15.667	24.6811	52.31	. Q	. V		.	.
15.750	25.0464	53.04	. Q	. V		.	.
15.833	25.4255	55.04	. Q	. V		.	.
15.917	25.8343	59.36	. Q	. V		.	.
16.000	26.2988	67.45	. Q	. V		.	.
16.083	26.9097	88.70	. Q	. V		.	.
16.167	27.7970	128.83	.	. Q	. V	.	.
16.250	29.0512	182.11	.	.	. Q	.	.
16.333	30.5059	211.22	.	.	. V	Q .	.
16.417	32.0331	221.76	.	.	. V	Q.	.
16.500	33.3048	184.65	.	.	. Q	V .	.
16.583	34.2406	135.88	.	.	Q .	V .	.
16.667	34.9343	100.73	.	. Q	.	V.	.
16.750	35.4843	79.85	.	Q	.	V.	.
16.833	35.9331	65.16	.	Q .	.	V.	.
16.917	36.3089	54.58	.	Q .	.	V	.
17.000	36.6578	50.65	.	Q .	.	V	.
17.083	36.9858	47.63	.	Q .	.	V	.
17.167	37.2935	44.67	.	Q .	.	.V	.
17.250	37.5671	39.74	.	Q .	.	.V	.
17.333	37.8246	37.38	. Q	.	.	.V	.
17.417	38.0691	35.51	. Q	.	.	.V	.
17.500	38.3029	33.93	. Q	.	.	.V	.
17.583	38.5270	32.55	. Q	.	.	. V	.
17.667	38.7430	31.36	. Q	.	.	. V	.
17.750	38.9517	30.31	. Q	.	.	. V	.
17.833	39.1540	29.37	. Q	.	.	. V	.
17.917	39.3505	28.53	. Q	.	.	. V	.
18.000	39.5417	27.76	. Q	.	.	. V	.

END OF FLOODSCx ROUTING ANALYSIS

PondB

*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 4.60 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp(in./hr.)	YIELD
1	7.70	100.00	97.(86.)	0.036	0.924
2	97.39	50.00	76.(56.)	0.452	0.715
3	34.42	50.00	86.(69.)	0.272	0.811
4	21.93	70.00	76.(56.)	0.452	0.621
5	4.94	70.00	86.(69.)	0.272	0.756

TOTAL AREA (Acres) = 166.38

AREA-AVERAGED LOSS RATE, $\overline{Fm}$ (in./hr.) = 0.209

AREA-AVERAGED LOW LOSS FRACTION, $\overline{Y}$ = 0.267

NOTES:
1 IS POND WITH SOIL TYPE B AS BARREN
2 IS L-MDR WITH SOIL TYPE B AS LANDSCAPED
3 IS L-MDR WITH SOIL TYPE C AS LANDSCAPED
4 IS ER WITH SOIL TYPE B AS LANDSCAPED
5 IS ER WITH SOIL TYPE C AS LANDSCAPED

Solve For: Discharge – Pond B

Culvert Summary			
Allowable HW Elevation	641.70 ft	Headwater Depth/Height	1.43
Computed Headwater Elevation	641.70 ft	Discharge	160.26 cfs
Inlet Control HW Elev.	641.63 ft	Tailwater Elevation	635.20 ft
Outlet Control HW Elev.	641.70 ft	Control Type	Entrance Control

Grades			
Upstream Invert	636.70 ft	Downstream Invert	631.70 ft
Length	50.00 ft	Constructed Slope	0.100000 ft/ft

Hydraulic Profile			
Profile	CompositeS1 S2	Depth, Downstream	3.50 ft
Slope Type	Steep	Normal Depth	1.20 ft
Flow Regime	N/A	Critical Depth	2.80 ft
Velocity Downstream	8.33 ft/s	Critical Slope	0.006655 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	3.50 ft
Section Size	42 inch	Rise	3.50 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	641.70 ft	Upstream Velocity Head	1.47 ft
Ke	0.50	Entrance Loss	0.73 ft

Inlet Control Properties			
Inlet Control HW Elev.	641.63 ft	Flow Control	N/A
Inlet Type	Square edge w/headwall	Area Full	19.2 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

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****************************************************************************

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                        Analysis prepared by:

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          3311 E. Shelby Street  Ontario, California  91764-4872
                 (909) 980-1982    Fax: (909) 941-0891

 ************************* DESCRIPTION OF STUDY *************************
* 25 YEAR CHAFFEY - POND C                                               *
* RETENTION                                                              *
*                                                                        *
 ************************************************************************

  FILE NAME: PONDC.DAT
  TIME/DATE OF STUDY: 13:36 12/18/2002


****************************************************************************
  FLOW PROCESS FROM NODE     1.00 TO NODE     1.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
============================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =     102.720 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.297 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         VALLEY(DEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.171
         LOW LOSS FRACTION = 0.226
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.35
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.70
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  0.93
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.65
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.35
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  4.60

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.995
          30-MINUTE FACTOR = 0.995
           1-HOUR FACTOR = 0.995
           3-HOUR FACTOR = 0.999
           6-HOUR FACTOR = 1.000
          24-HOUR FACTOR = 1.000

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  28.058


         RUNOFF HYDROGRAPH LISTING LIMITS:
         MODEL TIME(HOURS) FOR BEGINNING OF RESULTS =  14.50
         MODEL TIME(HOURS) FOR END OF RESULTS =  18.00
```

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	1.722	21.389
2	9.489	96.486
3	25.768	202.234
4	47.547	270.549
5	69.778	276.168
6	84.000	176.687
7	91.734	96.071
8	95.925	52.067
9	97.948	25.122
10	98.592	8.001
11	99.118	6.534
12	99.644	6.534
13	100.000	4.428

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 8.2321
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 31.1197

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0. 50.0 100.0 150.0 200.0
14.500	13.3571	23.75	. Q . V . . .
14.583	13.5247	24.33	. Q . V . . .
14.667	13.6963	24.92	. Q . V . . .
14.750	13.8722	25.54	. Q . V . . .
14.833	14.0525	26.19	. Q . V . . .
14.917	14.2378	26.90	. Q . V . . .
15.000	14.4284	27.67	. Q . V . . .
15.083	14.6248	28.52	. Q . V . . .
15.167	14.8276	29.45	. Q . V. . .
15.250	15.0376	30.49	. Q . V. . .
15.333	15.2555	31.64	. Q . V. . .
15.417	15.4815	32.81	. Q . V. . .
15.500	15.7132	33.64	. Q . V . .
15.583	15.9473	33.99	. Q . V . .
15.667	16.1826	34.18	. Q . V . .
15.750	16.4220	34.75	. Q . .V . .
15.833	16.6734	36.50	. Q . .V . .
15.917	16.9477	39.84	. Q . .V . .
16.000	17.2641	45.94	. Q. . V . .
16.083	17.6883	61.59	. . Q . V . .
16.167	18.3298	93.15	. . Q . V . .
16.250	19.2223	129.59	. . . VQ . .
16.333	20.2447	148.46	. . . V Q. .
16.417	21.2240	142.20	. . . VQ . .
16.500	21.9491	105.28	. . .Q V . .
16.583	22.4641	74.78	. . Q . V . .
16.667	22.8529	56.45	. .Q . V. .
16.750	23.1615	44.81	. Q . . V. .
16.833	23.4168	37.07	. Q . . V .
16.917	23.6521	34.16	. Q . . V .
17.000	23.8721	31.94	. Q . . V .
17.083	24.0742	29.35	. Q . . V .
17.167	24.2563	26.44	. Q . . .V .
17.250	24.4283	24.97	. Q . . .V .
17.333	24.5916	23.71	. Q . . .V .
17.417	24.7472	22.60	. Q . . .V .
17.500	24.8962	21.63	. Q . . . V .
17.583	25.0395	20.80	. Q . . . V .
17.667	25.1778	20.08	. Q . . . V .
17.750	25.3117	19.44	. Q . . . V .
17.833	25.4416	18.87	. Q . . . V .
17.917	25.5680	18.35	. Q . . . V .
18.000	25.6910	17.86	. Q . . . V .

END OF FLOODSCx ROUTING ANALYSIS

Pond C

*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 4.60 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp(in./hr.)	YIELD
1	16.98	60.00	76.(56.)	0.452	0.668
2	79.38	60.00	86.(69.)	0.272	0.783
3	6.36	100.00	98.(91.)	0.000	0.949

TOTAL AREA (Acres) = 102.72

AREA-AVERAGED LOSS RATE, $\overline{Fm}$ (in./hr.) = 0.171

AREA-AVERAGED LOW LOSS FRACTION, $\overline{Y}$ = 0.226

NOTES:
1 IS SCHOOL WITH SOIL TYPE B AS LANDSCAPED
2 IS SCHOOL WITH SOIL TYPE C AS LANDSCAPED
3 IS POND WITH SOIL TYPE C AS BARREN

Solve For: Discharge – Pond C

Culvert Summary					
Allowable HW Elevation	633.10	ft	Headwater Depth/Height	3.33	
Computed Headwater Elevation	633.10	ft	Discharge	17.74	cfs
Inlet Control HW Elev.	633.10	ft	Tailwater Elevation	628.25	ft
Outlet Control HW Elev.	632.18	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	628.10	ft	Downstream Invert	627.50	ft
Length	30.00	ft	Constructed Slope	0.020000	ft/ft

Hydraulic Profile					
Profile	CompositeM2 PressureProfile		Depth, Downstream	1.45	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	1.45	ft
Velocity Downstream	10.15	ft/s	Critical Slope	0.024975	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	1.50	ft
Section Size	18 inch		Rise	1.50	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	632.18	ft	Upstream Velocity Head	1.57	ft
Ke	0.50		Entrance Loss	0.78	ft

Inlet Control Properties					
Inlet Control HW Elev.	633.10	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	1.8	ft^2
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Pond B to Magnolia Channel drain

Comments: Minimum Discharge 28.6 cfs

TG @ Cyp. Chan. ~50' N of s'ly PL: 641.4'
Chan. depth: 10'
Conc. thick.: 1'
Clearance: 1'
HW @ .75 of 60" at base of Cyp. Chan.

TG @ Mag. Chan. RCB outlet ~60' S of s'ly PL: 631.3'
Chan. depth: 7.5'
TW @ .75 of 7.5' at base of Mag. Chan.

Length - Cyp. to s'ly PL @ Mag. via C-Loop: 2300'
Length - s'ly PL @ Mag. to daylight: 60'

Solve For: Discharge

Culvert Summary					
Allowable HW Elevation	635.15	ft	Headwater Depth/Height	3.58	
Computed Headwater Elevation	636.13	ft	Discharge	31.74	cfs
Inlet Control HW Elev.	629.43	ft	Tailwater Elevation	629.43	ft
Outlet Control HW Elev.	636.13	ft	Control Type	Outlet Control	

Grades					
Upstream Invert	625.40	ft	Downstream Invert	623.80	ft
Length	2,360.00	ft	Constructed Slope	0.000262	ft/ft

Hydraulic Profile					
Profile	PressureProfile		Depth, Downstream	5.63	ft
Slope Type	N/A		Normal Depth	N/A	ft
Flow Regime	N/A		Critical Depth	1.83	ft
Velocity Downstream	4.49	ft/s	Critical Slope	0.004790	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	3.00	ft
Section Size	36 inch		Rise	3.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	636.13	ft	Upstream Velocity Head	0.31	ft
Ke	0.20		Entrance Loss	0.06	ft

Inlet Control Properties					
Inlet Control HW Elev.	629.43	ft	Flow Control	N/A	
Inlet Type	Beveled ring, 33.7° bevels		Area Full	7.1	ft^2
K	0.00180		HDS 5 Chart	3	
M	2.50000		HDS 5 Scale	B	
C	0.02430		Equation Form	1	
Y	0.83000				

DATE: 1/ 8/2003
TIME: 17:36

F0515P

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	1	0	0.00	7.00	12.00	2.00	2.00	0.00										
CD	2	3	1	1.00	7.50	15.00	2.00	2.00	0.00										
CD	4	1	0	0.00	7.50	15.00	2.00	2.00	0.00										

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

00-170 CHINO

HEADING LINE NO 2 IS -

MAGNOLIA CHANNEL @ KIMBALL AVENUE WITH NEW DESIGN

HEADING LINE NO 3 IS -

BRIDGES, STEEPER RUN, IGNORING JUNCTIONS, 1143 CFS

WATER SURFACE PROFILE - ELEMENT CARD LISTING

```
ELEMENT NO   1 IS A SYSTEM OUTLET     *         *     *
                  U/S DATA   STATION    INVERT  SECT                                  W S ELEV
                               900.00  571.41    1                                     576.68

ELEMENT NO   2 IS A REACH             *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                               921.50  571.46    1             0.023                                 0.00   0.00    0.00     0

ELEMENT NO   3 IS A TRANSITION        *         *     *
                  U/S DATA   STATION    INVERT  SECT              N
                               961.50  571.56    4             0.023

ELEMENT NO   4 IS A BRIDGE EXIT                     *
                  U/S DATA   STATION    INVERT  SECT
                               961.50  571.56    2

ELEMENT NO   5 IS A REACH             *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                              1039.55  572.21    2             0.013                                 0.00   0.00    0.00     0

ELEMENT NO   6 IS A BRIDGE ENTRANCE                 *
                  U/S DATA   STATION    INVERT  SECT             FP
                              1039.55  572.21    2             0.967

ELEMENT NO   7 IS A TRANSITION        *         *     *
                  U/S DATA   STATION    INVERT  SECT              N
                              1079.55  572.54    4             0.023

ELEMENT NO   8 IS A REACH             *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                              1100.00  572.71    4             0.023                                 0.00   0.00    0.00     0

ELEMENT NO   9 IS A SYSTEM HEADWORKS                *                     *
                  U/S DATA   STATION    INVERT  SECT                                  W S ELEV
                              1100.00  572.71    4                                     577.46
NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING
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WATER SURFACE PROFILE LISTING

00-170 CHINO
MAGNOLIA CHANNEL @ KIMBALL AVENUE WITH NEW DESIGN
BRIDGES, STEEPER RUN, IGNORING JUNCTIONS, 1143 CFS

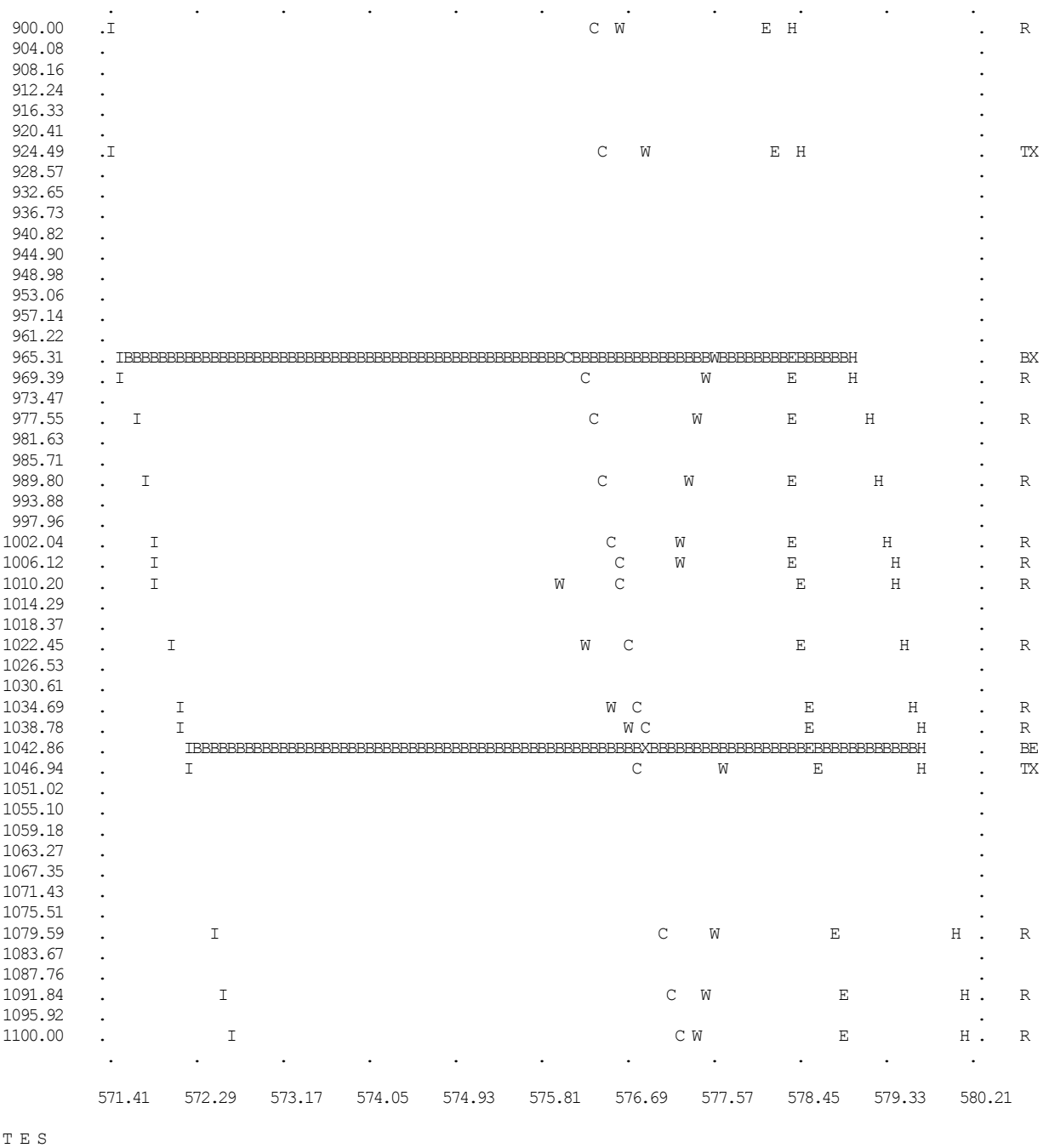
STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
900.00	571.41	5.270	576.680	1143.0	9.62	1.438	578.118	0.00	4.968		7.00	12.00	2.00	0	0.00
21.50	0.00233					.004185	0.09			6.183			2.00		
921.50	571.46	5.434	576.894	1143.0	9.20	1.314	578.208	0.00	4.968		7.00	12.00	2.00	0	0.00
TRANS STR	0.00250					.002897	0.12						2.00		
961.50	571.56	6.075	577.635	1143.0	6.93	0.746	578.381	0.00	4.578		7.50	15.00	2.00	0	0.00
BRIDGE EXIT													2.00		
961.50	571.56	5.975	577.535	1143.0	7.37	0.844	578.379	0.00	4.702		7.50	15.00	2.00	1	1.00
14.84	0.00833					.001053	0.02			3.377			2.00		
976.34	571.68	5.783	577.467	1143.0	7.73	0.928	578.395	0.00	4.702		7.50	15.00	2.00	1	1.00
13.23	0.00833					.001195	0.02			3.377			2.00		
989.57	571.79	5.595	577.389	1143.0	8.11	1.021	578.410	0.00	4.702		7.50	15.00	2.00	1	1.00
11.48	0.00833					.001357	0.02			3.377			2.00		
1001.05	571.89	5.413	577.302	1143.0	8.50	1.123	578.425	0.00	4.702		7.50	15.00	2.00	1	1.00
4.68	0.00833					.001486	0.01			3.377			2.00		
1005.73	571.93	5.332	577.260	1143.0	8.69	1.173	578.433	0.00	4.702		7.50	15.00	2.00	1	1.00
HYDRAULIC JUMP													2.00		
1005.73	571.93	4.114	576.042	1143.0	12.50	2.425	578.467	0.00	4.702		7.50	15.00	2.00	1	1.00
15.26	0.00833					.003837	0.06			3.377			2.00		
1020.99	572.05	4.241	576.296	1143.0	11.99	2.231	578.527	0.00	4.702		7.50	15.00	2.00	1	1.00
10.95	0.00833					.003403	0.04			3.377			2.00		
1031.94	572.15	4.390	576.537	1143.0	11.43	2.028	578.565	0.00	4.702		7.50	15.00	2.00	1	1.00
5.85	0.00833					.002993	0.02			3.377			2.00		

WATER SURFACE PROFILE LISTING

00-170 CHINO
MAGNOLIA CHANNEL @ KIMBALL AVENUE WITH NEW DESIGN
BRIDGES, STEEPER RUN, IGNORING JUNCTIONS, 1143 CFS

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
1037.79	572.20	4.543	576.738	1143.0	10.90	1.844	578.582	0.00	4.702		7.50	15.00	2.00	1	1.00
1.76	0.00833					.002633	0.00			3.377			2.00		
1039.55	572.21	4.702	576.912	1143.0	10.39	1.675	578.587	0.00	4.702		7.50	15.00	2.00	1	1.00
BRIDGE ENTRANCE													2.00		
1039.55	572.21	5.454	577.664	1143.0	8.09	1.016	578.680	0.00	4.578		7.50	15.00	2.00	0	0.00
TRANS STR	0.00825					.003321	0.13						2.00		
1079.55	572.54	5.072	577.612	1143.0	8.96	1.247	578.859	0.00	4.578		7.50	15.00	2.00	0	0.00
10.59	0.00831					.004053	0.04			4.130			2.00		
1090.14	572.63	4.902	577.530	1143.0	9.40	1.372	578.902	0.00	4.578		7.50	15.00	2.00	0	0.00
7.55	0.00831					.004625	0.03			4.130			2.00		
1097.69	572.69	4.737	577.428	1143.0	9.86	1.509	578.937	0.00	4.578		7.50	15.00	2.00	0	0.00
2.31	0.00831					.005108	0.01			4.130			2.00		
1100.00	572.71	4.652	577.362	1143.0	10.11	1.587	578.949	0.00	4.578		7.50	15.00	2.00	0	0.00

00-170 CHINO
MAGNOLIA CHANNEL @ KIMBALL AVENUE WITH NEW DESIGN
BRIDGES, STEEPER RUN, IGNORING JUNCTIONS, 1143 CFS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