	Net	Work	Analy	ysis		Distribu	tion Main		c	
Pipe No.	Node	A No	de B	Length	Diameter	c	Flow	Velocity	Pressure Gradient	loss
				(m)	(mm)		(cum/d)	(m/s)	(o/oo)	(m)
1		139	510	800.00	225.00 44.00	120,00 130,00	37.00 51.00	0.00 0.40	0,00 5.70	$0.00 \\ 2.10$
2	, 1	139 51	304 140	374.00 228.00	150.00	120.00	22,00	0.00	0.00	0.00
6	i	162	163	143.00	44.00	130.00	5.00	0.00	0.10	0.00
7		51	162 135	20,00 178.00	150,00 65,00	120,00 130,00	$33.00 \\ 36.00$	0.00 0.10	0.00 0.40	$0.00 \\ 0.10$
12		134 134	164	84.00	44.00	130.00	3,00	0.00	0.00	0.00
13	}	66	135	265.00	150.00	120.00	226.00	0.10	0.30	0.10 1.20
1/ 19		50 50	66 67	530.00 583.00	100,00 100,00	120.00 120.00	256.00 -95.00	0.40 ~0.10	2,30 -0,40	-0.20
16		67	188	165.00	100.00	120.00	-123.00	-0.20	-0.60	-0.10
20		21	54	59.00	150.00	120.00 120.00	-251.00 89.00	-0.20 0.10	-0.30 0.30	0.00 0.00
2 2		21 23	23 24	88.00 55.00	100.00 150.00	120,00	16.00	0.10	0.00	0.00
2	3	20	24	90.00	100.00	120.00	83.00	0.10	0.30	0.00
2· 2·		20 25	21 52	66.00 110.00	150.00 100.00	120,00 120,00	-90,00 -12,00	-0.10 0.00	-0.10 0.00	0.00 0.00
2		52	53	176.00	100.00	120.00	37.00	0.10	0.10	0.00
2	8	53	60	100,00	100.00	120.00	-34.00	-0.10	-0.10 0.90	0.00 0.10
2		18 18	60 19	134.00 54.00	100.00 150.00	120.00 120.00	149.00 283.00	$0.20 \\ 0.20$	0.40	0.00
3	1	19	52	151.00	100,00	120.00	121.00	0.20	0.60	0.10
3	2	19	55	133.00	100.00 100.00	120.00	99.00 58.00	0.10 0.10	0.40 0.10	0.10 0.00
3		54 9	172 18	100,00 315,00	225.00	120,00 120,00	512.00	0.10	0.10	0.10
3	5 .	9	48	47.00	100.00	120,00	746.00	~1.10	-16.90	-0.80
	6 7	1 48	48 49	265.00 201.00	225.00 100.00	120.00 120.00	851.00 30.00	0.30 0.00	0.40 0.00	$0.10 \\ 0.00$
	8	22	49 49	672.00	150.00	120.00	-497.00	-0.30	-1.10	~0.70
3	9	22	51	596.00	150.00	120.00	91.00	0.10	0.10	0.00
	0	49 148	148 171	536.00 372.00	100,00 50.00	120.00 120.00	-99.00 14.00	-0.10 0.10	$-0.40 \\ 0.30$	-0.20 0.10
	2	69	148	325,00	100.00	120.00	159.00	0.20	1.00	0.30
	3	46	69	90.00	150.00	120.00	217.00	0.10	0.20 0.00	0.00 0.00
	14 15	69 1	149 49	551.00 264.00	100.00 100.00	120.00 120.00	20.00 105.00	0.00 0.20	0.50	0.10
4	6	i	46	401.00	225.00	120.00	-1,428.00	-0.40	-1,10	-0.40
4	17	46 47	47 64	268.00 268.00	100.00 100.00	120,00 120,00	63.00 -223.00	0.10 -0.30	0.20 -1.80	0.10 -0.50
	18 19	63	64	444.00	300.00	120.00	325.00	0.10	0.00	0.00
;	10	46	63	268.00	225.00	120.00	-1,803.00	-0.50	-1.70	-0.50
	51 52	63 158	158 166	47.00 358.00	300.00 50.00	120.00 120.00	-2,156.00 13.00	-0.30 0.10	-0.60	0.00 0.10
	53	157	158	77.00	300.00	120.00	2,187.00	0.40	0.60	0.10
	54	157	170	264.00	44.00	130.00	9.00	0.10	0.30 0.60	$0.10 \\ 0.20$
	55 56	156 2	157 156	300.00 100.00	300.00 300.00	120.00 120.00	2,214.00 2,931.00	0,40 0,50	1.00	0.10
	61	2	203	704.00	350.00	120.00	-4,768.00	-0.60	-1.20	-0.80
	62	2	4	442.00 65.00	225.00 225.00	$120.00 \\ 120.00$	1,785.00 1,692.00	0.50 0.50	1.60 1.50	0.70 0.10
	63 64	4 4	5 61	972.00	65.00	130.00	37.00	0.10	0.50	0.40
1	65	5	6	221.00	150.00	120.00	301.00	0.20	0.40	0.10
	66 67	6 27	27 37	150,00 216,00	150.00 100.00	120.00 120.00	289.00 -104.00	0.20 -0.10	0.40 -0.40	0.10 -0.10
	68	36	37	400.00	150.00	120.00	132.00	0.10	0.10	0.00
	69 70	36	38	563.00	100.00	120.00	37,00 -6.00	0.10 0.00	0.10 0.00	0.00 0.00
	70 72	37 27	38 181	30.00 1,106.00	150,00 150,00	120.00 120.00	299.00	0.00		0.50
	74	39	173	320,00	44.00	130.00	37.00	0.30	3.10	1.00
	76	102 . 39	181 179	92.00 125.00	150,00 150,00	120.00 120.00	-287.00 -166.00	-0.20 -0.10		0.00
	80 82	179	208	104.00	65.00	130.00	-21.00			0.00
	83	102	103	350.00	150.00	120.00	355.00			0.20
	84 86	101 41	102 100	120,00 120.00	44.00 44.00	130,00 130,00	-9.00 -7.00			0.00 0.00
	87	100	101	312.00	37.00	130.00	-6,00	-0.10	-0.30	-0.10
	88	42	43	257.00	100,00	120.00	51,00 51,00			0.00
	89 90	42 43	43 44	257.00 268.00	100.00 150.00	120.00 120.00	74.00			0.00
	91	44	177	391.00	100.00	120.00	17.00	0.00	0.00	0.00
	92 93	44 176	176 177	391.00 90.00	100.00 100.00		17.00 0.00			0.00 0.00
	99	29	112	251.00	65.00		-9.00	0.00	0.00	0,00
í	.00	109	511	400.00	100.00	120.00	71.00			
	.01 .02	108 108	109 183	120.00 228.00			73.00 8.00		0.20	0.00 0.10
	03	107	108	200.00			77.00			0.10

	Net Wo	rk Anal	ysis		Distrib	ution Main		C	
Pipe No.	Node A	Node B	Length	Diameter	c	Flow	Velocity	Pressure Gradient	Loss
			(m)	(mia)		(cum/d)	(m/s)	(0/00)	(m)
104 105		182 107	253.00 40.00	44.00 100.00	130,00 120,00	9.00 81.00	0.10 0.10	0.30 0.30	0.10 0.00
106		113	66.00	150.00	120.00	448.00	0.30	0.90	0.10
107	113	114	265.00	65.00 65.00	130.00	14,00 9.00	0.10 0.00	0.10 0.00	0.00 0.00
108 109		117 118	500.00 318.00	44.00	130.00 130.00	33.00	0.30	2.60	0.80
111	118	119	248.00	75.00	120.00	122.00	0.30	2.40	0.60
113 114		106 106	250.00 400.00	150.00 150.00	120,00 120,00	-334.00 343.00	-0.20	-0,50 0,60	-0.10 0.20
116		105	300.00	44.00	130.00	~14.00	-0.10	-0.50	-0.10
118		526	210,00	100,00	120.00	75.00	0.10	0.20	0.10
119 120		132 500	1,500.00 175.00	150.00 140.00	120,00 130,00	249,00 35.00	0.20 0.00	$0.30 \\ 0.00$	0.50 0.00
125	132	133	363.00	44.00	130.00	13.00	0,10	0.50	0.20
127		64	167.00	225.00	120.00	-68.00 33.00	0.00 0.10	0.00 0.10	0.00
129 130		144 145	284.00 121.00	100.00 44.00	120,00 130,00	4.00	0.10	0.10	0.00
132	45	47	162.00	150,00	120,00	-260.00	~0.20	-0.30	-0.10
133 134		45 57	761.00 25.00	100.00 100.00	120,00 120.00	-210.00 346.00	-0.30 0.50	-1.60 4.10	-1.20 0.10
135		58	120.00	100.00	120.00	134.00	0.20	0.70	0.10
136	58	60	262.00	100.00	120.00	-41.00	-0.10	-0.10	0.00
138 140		59 143	352.00 168.00	97.00 100.00	130.00 120.00	107,00 88,00	0.20 0.10	0.50 0.30	0.20 0.10
141		143	264.00	50.00	120.00	~6.00	0.00		0.00
142		142	202.00	100.00	120.00		0.20	0.80 -0.20	0.20
143 146		142 150	99.00 360.00	100.00 150.00	120.00 120.00	-73.00 87.00	-0.10 0.10	0.00	0.00
147	12	151	163.00	150.00	120.00	-136.00	-0.10	-0.10	0.00
148			35.00	150.00	120.00	48.00	0.00	0.00 0.00	0.00 0.00
149 151		186 155	450.00 132,00	140.00 100.00	130.00 120.00	-49.00 51.00	0.00	0.00	0.00
160	153	154	165,00	100.00	120.00	79.00	0.10	0.30	0.00
161 162		153 14	236,00 475.00	150.00 150.00	120.00 120.00	-222.00 -127.00	-0.10 -0.10	-0.30 -0.10	-0.10 0.00
163			35.00	150.00	120.00	112.00	0.10	0.10	0.00
164	146	147	137.00	150.00	120.00	72.00	0.10	0,00	0.00
167 168		137 152	663.00 66.00	150.00 100.00	120.00 120.00	196.00 131.00	0.10 0.20	0.20 0.70	0.10 0.00
170			150.00	100.00	120.00	-82.00	-0.10	-0.30	0.00
178			165.00		120.00	387.00	0.60 0.10	5.00 0.40	0.80 0.30
176 177			726.00 512.00	44.00 44.00	130.00 130.00	11.00 -12.00	-0.10	-0.40	-0.20
178	3 137	187	277.00	140.00	130.00	97.00	0.10	0.10	0.00
182 183			400.00 441.00	225.00 225.00	120.00 120.00	-64.00 114.00	0.00 0.00	0.00	0.00
184			177.00	150.00	120.00	468.00	0.30	1.00	0.20
188			286.00	100.00	120.00	164.00	0.20	1.00	0.30
186 187			1,210.00 850.00	75.00 100.00	120.00 120.00	-83.00 178.00	-0.20 0.30	-1.20 1.20	-1.40 1.00
19.		1,120	120.00	225.00	120,00	-60.00	0.00	0.00	0.00
19			396.00	100.00	120,00	161.00	0.20 0.10	1.00 0.60	0.40 0.40
194 193			668.00 1,047.00	65.00 65.00	130.00 130.00	42.00 40.00	0.10	0.50	0.40
190	3 128	129	90.00	65.00	130.00	14.00	0.10	0.10	0.00
19' 198			60.00 88.00	44.00 37.00	130.00 130.00	8.00 3.00	0.10 0.00	0.20 0.10	0.00 0.00
199			569.00	100.00	120.00	46.00	0.10	0.10	0.10
200			237.00	100.00	120.00	27.00	0.00	0.00	0.00
20 20			250.00 105.00	150,00 150,00	120.00 120.00	-307,00 208,00	-0.20 0.10	-0.50 0.20	-0.10 0.00
179			500.00	150.00	120.00	40.00	0.00	0.00	0.00
250			215.00	65.00	130.00	-28.00	-0.10	-0.30 0.00	-0.10 0.00
209 213			152.00 334.00	150.00 97.00	120.00 130.00	-67.00 -352.00	0.00 -0.60	-4,20	-1.40
21	4 30	503	334.00	100.00	120.00	172.00	0.30	1.10	0.40
21: 21:			132.00 100.00	75.00 140.00	120.00 130.00	-35.00 17.00	-0.10 0.00	~0.20 0.00	0.00
21				65.00	130.00	22.00		0.20	0.00
21	8 186	501	221.00	140.00	130.00	-148,00	-0.10	-0.10	0.00
11: 30			167.00 554.00	75.00 100.00	120,00 120,00	-116.00 84.00	-0.30	-2.20 0.30	-0.40 0.20
20			250.00	100.00	120.00	61.00	0.10	0.20	0.00
1	7 205	527	250.00	100.00	120.00	37.00	0.10	0.10	0.00
17. 30			577.00 480.00	150.00 150.00	120.00 120.00	401.00 -18.00	0.30 0.00	0.70 0.00	0,40 0,00
30			55.00	100.00	120,00	13.00	0.00	0.00	0.00

	Net Wo	rk Anal	lysis		Distrib	ution Main		c	
Pipe No.	Node A	Node B	Length	Diameter	C	Flow	Velocity	Pressure Gradient	loss
			(m)	(mm)		(cun/d)	(m/s)	(0/00)	(m)
305		172	50.00	100.00	120.00	33.00	0.10	0.10	0.00
306 307		172 25	50.00 75.00	100.00 100.00	120.00 120.00	-54,00 12,00	-0.10 0.00	~0,10 0,00	0,00 0,00
308		178	150.00	150.00	120.00	40.00	0,00	0.00	0.00
77		40	180.00	100,00	120.00	91.00	0.10	0.30	0.10
78		189	60,00	100,00	120.00	21.00	0,00	0.00	0.00
79		101	450.00	44.00	130.00	-8.00	-0.10	-0,20	-0.10
309		42	150,00	150.00	120,00	103.00	0.10	0.10	0.00
310		521	350.00	65.00	130.00	75.00	0.30	1.70	0.60
311 313		522 35	350.00 150.00	65.00 100.00	130.00 120.00	37.00 45.00	0.10 0.10	0.50 0.10	0,20 0.00
301		523	120.00	150.00	120.00	-260.00	-0.20	~0.30	0.00
314		523	180.00	100.00	120.00	298.00	0.40	3.10	0.60
315		524	150.00	75.00	120.00	-59.00	-0.20	-0.60	-0.10
317		600	450.00	97.00	130,00	-449.00	-0.70	-6,60	-3.00
319		526	210,00	75.00	120,00	-37.00	-0.10	-0.30	~0.10
321		528	480.00	65.00	130.00	101.00	0.30	2.90	1.40
322		528	200.00	65.00	130.00	-79.00	-0.30	-1,90	-0.40
11 324		601 527	75.00 50.00	$65,00 \\ 65,00$	$130.00 \\ 130.00$	-74.00 -129.00	-0.30 -0.50	-1.70 -4.60	-0.10
325		123	160,00	140.00	130.00	48.00	0.00	0.00	$-0.20 \\ 0.00$
327		59	352,00	140.00		281.00	0.20	0.50	0.20
328		49	264,00	158.00	130,00	380.00	0,20	0.50	0.10
329	206	527	215.00	150.00	120.00	215.00	0.10	0.20	0.10
330		541	931.00	100.00	120,00	686.00	1.00	14.40	13.40
331		540	434.00	97.00	130.00	513.00	0.80	8.40	3.70
601		139	162.00	150.00	120.00	211.00	0.10	0.20	0.00
602 603		161 93	225.00 662.00	65.00 150.00	130.00 120.00	8,00	$0.00 \\ -0.10$	0.00	0.00
605		132	616,00	150.00	120.00	-149.00 -198.00	-0.10 -0.10	-0.10 -0.20	-0.10 -0.10
606		185	300,00	150.00	120.00	48.00	0,00	0.00	0.00
607		602	1,000.00	200.00	120,00	-811.00	-0.30	-0.70	-0.70
212	22	54	275.00	150.00	120.00	347.00	0.20	0,60	0.20
610		160	931.00	225.00	120.00	-53.00	0.00	0.00	0.00
611		92	228,00	150.00	120.00	-219,00	-0.10	-0.20	-0.10
612		135	690.00	100.00	120.00	-219,00	-0.30	-1.80	-1.20
613 614		610 612	200.00 250.00	97.00 44.00	130.00 130.00	26.00 -26.00	0.00 -0.20	0.00 -1.60	0.00 -0.40
616		542	569.00	97.00	130.00	-77.00	-0.20	-0.30	-0.10
701		606	500.00	250.00	120.00	-1,392.00	-0.30	-0.60	-0.30
702	169	603	50.00	55.00	130,00	-16.00	-0.10	-0.20	0.00
703		153	577.00	140.00	130.00	362.00	0.30		0.40
705			850,00	65.00	130.00	62.00	0.20	1.20	1.00
713		103	350.00	198.00	130.00	798.00	0.30	0.60	0.20
714 715		106 106	400,00 250,00	198.00 198.00	130,00	772.00	$0.30 \\ -0.30$	0,60	0.20
716			40.00	198.00	130.00 130.00	-750.00 535.00	0.20	-0.50 0.30	-0.10 0.00
717			200.00	198.00	130.00	506.00	0.20	0.30	0.10
718	108		120.00	198.00	130.00	479.00	0.20	0.20	0.00
719			400.00	198.00	130,00	466.00	0.20	0.20	0.10
720			132.00	198.00	130.00	-488,00	-0.20	-0.20	0.00
731 732			265,00 500,00	140.00	130.00	105.00	0.10	0.10	0.00
741			104.00	140.00 140.00	130.00 130.00	68.00 -163.00	0.10 -0.10	0.00 -0:20	0,00 0,00
751			630.00	97.00	130.00	26.00	0.00	0.00	0.00
752		612	610.00	65,00	130.00	26.00	0.10	0.30	0.10
761			1,044.00	97.00	130,00	-267.00	-0.40	-2,50	-2.60
762			165.00	97.00	130.00	344.00	0.50	4.00	0.70
771			120.00	140.00	130.00	-197.00	-0.10	-0.20	0.00
772 773			450.00 120.00	140.00	130.00	-174.00	-0.10	-0.20	-0.10
781		100 6	120.00 221.00	140,00 250,00	130.00 120.00	-156.00 1,153.00	-0.10 0.30	-0.20 0.40	0.00
782			150.00	250.00	120.00	1,109.00	0.30	0.40	0.10 0.10
783			1,106.00	250.00	120.00	1,147.00	0.30	0.40	0.50
784	102	181	92.00	250.00	120.00	-1,101.00	-0.30	-0.40	0.00
791			450.00	140.00	130.00	-49.00	0.00	0.00	0.00
792			35.00	140.00	130.00	44.00	0.00	0.00	0.00
793 794			475.00	140.00	130.00		-0.10	-0.10	0.00
798			236.00 104.00	140.00 140.00	130.00 130.00	-201.00 165.00	-0.10 0.10	-0.30 0.20	-0.10 0.00
796			165.00	140.00	130.00	208.00	0.10	0.20	
							******	0.00	V, 00

Net Work Analysis

Distribution Main

File Name

Nuwara011Year2015(2) Dry

Season Network Type Proposed

Demand

Reserver

Year 2015 Hourly Max Water Level Fix Discharge Fix

Except for Follows No.205,206,215,209

Magnification of Demand

1.622

Reservoir	Data			
Node		HWL	LWL	Reservoir
		(MSL)	(MSL)	
203	1	1,927.0	1,927.0	Haddon Hill
208	1	1,930.0	1,930.0	Bonavista
600	1	1,946.0	1,946.0	Nseby
601	1	1,991.0	1,991.0	Piyatisappura
602	ĺ	1,948.0	1,948.0	New Pedro Reserver
603	1	1,980.0	1,980.0	Unique View
604	1	1,925.0	1,925.0	Vijithapura
606	i	1 920 0	1.920.0	Low Area 2

606	1	1,920.0	1,920.0	Low Area 2	
Node Data					
Node		Ground Elev	Demand		
noue		(MSL)	(cum/d)		
i	1	1,881.7	122.0	0	0
2	1	1,885.1	70.0	Õ	Ö
4	1	1,881.8	76.0	Ŏ	0
5.	1	1,881.3	40.0	ŏ	ŏ
6	1	1,883.7	76.0	ŏ	ŏ
9	1	1,881.2	133.0	ů ·	ŏ
10	1	1,903.4	25.0	Õ	ŏ
11	1	1,902.1	86.0	ő	Ŏ.
12	1	1,880.5	66.0	ŏ	Ö
13	1	1,874.2	51.0	. 0	ŏ
13 14	1	1,865.6	66.0	0	. 0
15	1	1,860.5	61.0	ŏ	Ö
16	1	1,860.5	85.0	Ů.	ŏ
18	i	1,885.1	107.0	Ö	ŏ
19	1	1,885.8	85.0	. 0	ŏ
22	1	1,889.4	79.0	Ö	Õ
23	1	1,887.3	82.0	ő	Ŏ
24	1	1,887.7	117.0	. 0	Ö
25	. 1	1,887.0	51.0	Ŏ	0
27	1	1,882.3	75.0	Õ	Ö
28	1	1,879.2	26.0	ŏ	Õ
29	i	1,892.4	13.0	Ō	0
30	1	1,882.6	80.0	Ŏ	0
31	1	1,882.0	93.0	0	0
36	î	1,889.3	51.0	0	0
37	i	1,891.4	47.0	0	0
38	î	1,893.9	42.0	0	0
39	î	1,914.9	50.0	0	0
41	î	1,899.2	44.0	0	0
42	î	1,896.1	38.0	0	. 0
43	1	1,894.8	40.0	0	. 0
44	1	1,893.4	54.0	0	0
45	1	1,884.9	67.0	0	0
46	1	1,878.2	127.0	0	0
47	1	1,880.7	36.0	0 .	0
48	1	1,880.2	101.0	0	0
49	1	1,881.1	160.0	0 -	0
50	1	1,886.3	144.0		0
51	1	1,895.4	47.0	0	0
52	1	1,889.1	97.0	0	0
55	1	1,886.2	89.0	0.	0
56	1	1,902.7	49.0		0
57	1	1,884.1	93.0		0
58	i	1,890.9	119.0		0
60	1	1,889.9	100.0		0
61	1	1,885.4	50.0	. 0	0

en		1 000 9	76.0	۸	0
62	1	1,890.2	76.0	0	
63	1	1,878.7	38.0	0	0
64	1	1,876.5	44.0	0	0
			40.0	Õ	Ö
66	1	1,910.0			
67	1	1,921.5	38.0	0	0
68	1	1,918.6	42.0	0	0
				Õ	Ō
69	1	1,879.5	50.0		
70	i	1,904.5	132.0	0	0
71	1	1,894.5	87.0	0	0
				Ö	Õ
100	1	1,896.6	33.0		
101	1	1,885.9	25.0	0	0
102	1	1,876.7	37.0	0	0
				Ö	0
103	1	1,883.1	50.0		
104	1	1,916.3	19.0	0	0
105	1	1,903.9	17.0	0	0
				Ö	Ô
106	1	1,881.3	43.0		
107	1	1,880.1	32.0	0	0
108	1	1,884.1	30.0	0	0
				0	0
109	1	1,884.6	20.0		
112	1	1,900.7	0.0	0	0
113	1	1,878.5	29.0	0	0
	i	1,897.3	57.0	0	0
114		1,091.3			
117	1	1,907.5	59.0	0	0
118	- 1	1,889.0	37.0	0	0
		1,889.1	64.0	Ö	Ō
119	1				
120	1	1,871.2	113.0	0	0
121	1	1,862.6	109.0	0	0
	í	1,950.0	89.0	0	0
122					
123	1	1,927.3	65.0	0	0
124	1	1,879.6	68.0	0	0
125	Ĩ	1,886.2	108.0	0	0
126	1	1,894.1	107.0	0	0
127	1	1,874.9	54.0	0	0
128	1	1,896.4	38.0	0	. 0
129	1	1,896.0	8.0	0	0
130	1	1,886.4	7.0	0	. 0
131	i	1,875.8	4.0	0	0
132	1	1,886.8	51.0	0	0
133	1	1,898.7	18.0	0	0
134	1	1,924.5	54.0	0	0
135	1	1,915.7	58.0	0	0
136	1	1,944.8	71.0	0	0
137	í	1,905.0	118.0	0	0
139	1	1,905.8	165.0	0	0
140	1	1,899.4	31.0	0	0
141	1	1,890.2	99.0	0	0
		1 000 0		ò	ō.
142	1	1,883.9	103.0		_
143	1	1,888.7	110.0	U ·	0
144	1	1,907.4	39.0	0	0
	î	1,909.3	6.0	0	. 0
145					
146	1	1,876.5	54.0	0	0
147	1	1,878.9	98.0	0	0
148	Î	1,889.6	63.0	Ō	Ó
				0 :	
149	1	1,901.1	28.0		. 0
150	1	1,899.4	118.0	0	0
151	1	1,874.4	76.0	0	0
	i	1,865.9	66.0	Ö	Õ
152		1,000.5			
153	1	1,862.7	71.0	0	0
154	1	1,864.7	66.0	0	0 .
155	j	1,867.6	22.0	0	Ō
156	1	1,884.8	40.0	0	0
157	1	1,881.9	24.0	0	0
158	ī	1,880.3	24.0	0	0
160	ļ	1,903.2	19.0	0	0 -
161	1	1,905.3	11.0	. 0	0
162	1	1,891.8	38.0	0	0
163	1	1,899.3	7.0	0	0
164	1	1,919.8	4.0	0	0
165	1	1,962.5	101.0	0	0
166	1	1,899.0	18.0	0 -	0
169	1	1,917.8	22.0	. 0	0
170	1	1,893.3	13.0	. 0	0
				. 0	ŏ
171	1	1,909.7	19.0		
21	1	1,885.1	97.0	0	0
20	1	1,885.9	83.0	0	0
	-	,	-		

174	1	1,902.4	104.0	0	0
53	ĺ	1,895.7	97.0	0	0
176	i	1,895.0	23.0	0	0
177	i	1,897.3	23.0	0	0
178	!	1,912.8	55.0	0	0
179	1	1,917.5	25.0	0	0
181	1	1,881.0	80.0	0	0
182	1	1,891.9	13.0	0 .	0
183	1	1,899.2	12.0	0	0
185	1	1,902.8	66.0	0	0
186	1	1,885.4	66.0	0	0
187	1	1,903.2	76.0	0	0
188	1	1,931.7	8.0	0	0
189	1	1,921.8	29.0	0	0
300	ĺ	1,903.6	47.0	0	0
301	Î	1,951.4	76.0	0	0
59	i	1,900.0	122.0	0	0
500	ĺ	1,892.8	25.0	. 0	0
501	i	1,886.6	76.0	0	0
502	i	1,885.6	80.0	. 0	0
503	i	1,884.2	76.0	0	0
510	Ī	1,914.5	51.0	0	0
511	ĺ	1,892.1	20.0	0	0
520	i	1,913.6	63.0	0	0
304	i	1,900.4	70.0	0	0
172	í	1,886.0	51.0	0	0
173	1	1,916.0	51.0	0	0
521	1	1,886.0	51.0	0	0
522	t	1,880.0	51.0	0	0
523	1	1,903.0	51.0	0.	0
524	1	1,887.0	51.0	0	0
525	i	1,881.0	51.0	0	0
526	1	1,882.0	51.0	0	0
527	1	1,931.0	30.0	0	0
528	ĺ	1,943.0	30.0	0	0
33	1	1,867.0	51.0	. 0	0
35	1	1,870.0	61.0	0	0
40	1	1,920.0	40.0	0	0
54	1	1,886.0	51.0	0	0
91	1	1,899.4	0.0	0	0
92	1	1,895.4	0.0	0	0
93	1	1,882.0	0.0	0	0
540	1	1,930.0	428.0	0	0
541	1	1,980.0	572.0	0	0
542	1	1,889.1	0.0	0	0
610	1	1,900.0	0.0	0	0
611	1	1,884.6	0.0	0	0
612	1	1,881.3	0.0	0	0
205	1	1,960.0	-68.0	0	0
206	1	1,955.0	-393.0	0	0
215	1	1,979.0	-266.0	0 0	0
209	i	1,960.0	-111.0	U	U

Booster No.	Pump Type		Node B	Pipe No.	Pressure
1.1	3	156	541	330	84.7
2 1	3	112	540	331	24.4

11.7	D . 4 -										
Pipe Pipe		Node	A	Node	B	Diame	ter	Leng	(th	c	Value
1.190	1101	1,0110	••	11000	.,	(10		(m			
	1		39	5	10	225			0.00		120.0
	2		39		04	44			74.0		130.0
	5 6		51 62		40 63	150 44			28.0 13.0		120.0 130.0
	7		04 51		62	150			20.0		120.0
	9		34		35	65			78.0		130.0
	12		34	1	64	44			34.0		130.0
	13		66	1	35	150			65.0		120.0
	14 15		50 50		66 67	100 100			30.0 83.0		120.0 120.0
	16		67	1	188	100			65.0		120.0
	20		21		54	150			59.0		120.0
	21		21		23	100			88.0		120.0
	22		23		24	150			55.0 90.0		120.0 120.0
	23 24		20 20		24 21	100 150			66.0		120.0
	26		25		52	100			10.0		120.0
	27		52		53	100		1	76.0		120.0
	28		53		60				00.0		120.0
	29		18		60 19				34.0 54.0		120.0 120.0
	30 31		18 19		52				51.0	-	120.0
	32		19		55				33.0		120.0
	33		54		172				00.0		120.0
	34		9		18				15.0		120.0
	35 36		9		48 48				47.0 65.0		120.0 120.0
	37		48		49				01.0		120.0
	38		22		49				72.0		120.0
	39		22		51				96.0		120.0
	40		49		148				36.0 72.0		120.0 120.0
	41 42		148 69		171 148).0).0		25.0		120.0
	43		46		69),0		90.0		120.0
	44		69		149		0.0		51.0		120.0
	45		1		49		0.0		264.0		120.0
	46 47		1 46		46 47		5.0 0.0		101.0 268.0		120.0 120.0
	48		47		64		0.0		268.0		120.0
	49		63		64	30	0.0		144.0		120.0
	50		46		6		5.0	4	268.0		120.0
	51 52		63 158		158 160		0.0 0.0		47.0 358.0		120.0 120.0
	53		157		158		0.0	,	77.0		120.0
	54		157		170		4.0	;	264.0		130.0
	55		156		15		0.0		300.0		120.0
	56		2		150 200		0.0		100.0 704.0		120.0 120.0
	61 62		. 2				$0.0 \\ 5.0$		442.0		120.0
	63		4				5.0		65.0		120.0
	64	ļ	4		6	1 6	5.0		972.0		130.0
	65		5				0.0		221.0		120.0
	66 67		$\frac{6}{27}$		2 3		$0.0 \\ 0.0$		150.0 216.0		120.0 120.0
	68		36		3		0.0		400.0		120.0
	69		36			8 10	0.0		563.0		120.0
	70		37				0.0		30.0		120.0
	72		27		18		0.0 4.0	l,	106.0 320.0		120.0 130.0
	74 70		39 102		17 18		0.0		92.0		120.0
	86		39		17		0.0		125.0		120.0
	82	2	179)	20	8 6	55.0		104.0		130.0
	8		102		10		0.0		350.0		120.0
	84 84		10		10 10		14.0 14.0		120.0 120.0		130.0 130.0
	8		10		10		37.0		312.0		130.0
	8	8	4	2	4	3 10	0.0		257.0		120.0
	8		4				0.00		257.0		120.0
	9 9		4: 4:		4 17		50.0 00.0		268.0 391.0		120.0 120.0
	9		4.		17		0.00		391.0		120.0
	9		17		17		0.00		90.0		120.0

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109	100.0	120.0	120.0
102	108	183	44.0	228.0	130.0
103	107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0
105	28	107	100.0	40.0	120.0
106	28	113	150.0	66.0	120.0
107	113	114	65.0	265.0	130.0
108	114	117	65.0	500.0	130.0
109	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113	28	106	150.0	250.0	120.0
114	103	106	150.0	400.0	120.0
116	104	105	44.0	300.0	130.0
118	30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0	120.0
120	155	500	140.0	175.0	130.0
125	132	133	44.0 225.0	363.0	130.0 120.0
127 129	31 70	64 144	100.0	167.0 284.0	120.0
130	144	145	44.0	121.0	130.0
132	45	47	150.0	162.0	120.0
133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57	58	100.0	120.0	120.0
136	58	60	100.0	262.0	120.0
138	56	59	97.0	352.0	130.0
140	58	143	100.0	168.0	120.0
141	142	143	50.0	264.0	120.0
142	. 57	142	100.0	202.0	120.0
143	141	142	100.0	99.0	120.0
146	12	150	150.0	360.0	120.0
147	12	151	150.0	163.0	120.0
148	13	151	150.0	35.0	120.0
149	151 154	186 155	140.0 100.0	450.0 132.0	130.0 120.0
151 160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162	13	14	150.0	475.0	120.0
163	13	146	150.0	35.0	120.0
164	146	147	150.0	137.0	120.0
167	11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170	33	. 152	100.0	150.0	120.0
175	56	68	100.0	165.0	120.0
176	68	136	44.0	726.0	130.0
177	136	137	44.0	512.0	130.0
178	137	187	140.0	277.0 400.0	130.0
182	71	124	225.0 225.0	441.0	120.0 120.0
183 184	15 15	124 16	150.0	177.0	120.0
185	16	121	100.0	286.0	120.0
186	120	121	75.0	1,210.0	120.0
187	16	125	100.0	850.0	120.0
191	122	209	225.0	120.0	120.0
193	125	126	100.0	396.0	120.0
194	126	128	65.0	668.0	130.0
195	126	127	65.0	1,047.0	130.0
196	128	129	65.0	90.0	130.0
197	129	130	44.0	60.0	130.0
198	130	131	37.0	88.0	130.0
199	62	520	100.0	569.0	120.0
200	41	42	100.0	237.0	120.0
201	30 5	113 36	150.0 150.0	250.0 105.0	120.0 120.0
203 179	187	300	150.0	500.0	120.0
250	136	301	65.0	215.0	130.0
209	160	300	150.0	152.0	120.0
213	62	524	97.0	334.0	130.0
214	30	503	100.0	334.0	120.0
215	112	511	75.0	132.0	120.0
216	500	501	140.0	100.0	130.0
217	154	501	65.0	104.0	130.0
218	186	501	140.0	221.0	130.0

110	118	503	75.0	167.0	120.0
300	215	301	100.0	554.0	120.0
208	215	300	100.0	250.0	120.0
17	205	527	100.0	250.0	120.0
172	15	153	150.0	577.0	120.0
302	10	70	150.0	480.0	
304	24	25			120.0
305	55	172	100.0	55.0	120.0
			100.0	50.0	120.0
306	20	172	100.0	50.0	120.0
307	23	25	100.0	75.0	120.0
308	40	178	150.0	150.0	120.0
77	39	40	100.0	180.0	120.0
78	40	189	100.0	60.0	120.0
79	100	101	44.0	450.0	130.0
309	41	42	150.0	150.0	120.0
310	119	521	65.0	350.0	130.0
311	521	522	65.0	350.0	130.0
313	33	35	100.0	150.0	120.0
301	11	523	150.0	120.0	120.0
314	59	523	100.0	180.0	120.0
315	502	524	75.0	150.0	120.0
317	524	600	97.0	450.0	130.0
319	525	526	75.0	210.0	120.0
321	527	528	65.0	480.0	130.0
322	134	528	65.0	200.0	130.0
11	165	601	65.0	75.0	130.0
324	188	527	65.0	50.0	130.0
325	122	123	140.0	160.0	130.0
327	56	59	140.0	352.0	130.0
328	1	49	158.0	264.0	130.0
329	206	527	150.0	215.0	120.0
330	156	541	100.0	931.0	120.0
331	112	540	97.0	434.0	130.0
601	91	139	150.0	162.0	120.0
602	91	161	65.0	225.0	130.0
603	70	93	150.0	662.0	120.0
605	93	132	150.0	616.0	120.0
606	93	185	150.0	300.0	120.0
607	56	602	200.0	1,000.0	120.0
212	22	54	150.0	275.0	120.0
610	122	160	225.0	931.0	120.0
611	91	92	150.0	228.0	120.0
612	92	135	100.0	690.0	120.0
613	604	610	97.0	200.0	130.0
614	105	612	44.0	250.0	130.0
616	174	542	97.0	569.0	130.0
701	15	606	250.0	500.0	120.0
702	169	603	55.0	50.0	130.0
703	15	153	140.0	577.0	130.0
705	16	125	65.0	850.0	130.0
713	102	103	198.0	350.0	130.0
714	103	106	198.0	400.0	130.0
715	28	106	198.0	250.0	130.0
716	28	107	198.0	40.0	130.0
717	107	108	198.0	200.0	130.0
718	108	109	198.0	120.0	130.0
719	109	511	198.0	400.0	130.0
720	112	511	198.0	132.0	130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208	140.0	104.0	130.0
751	610	611	97.0	630.0	130.0
752	611	612	65.0	610.0	
761	50	542	97.0		130.0
762	68	542	97.0	1,044.0 165.0	130.0
771	101	102	140.0		130.0
772	100	101	140.0	120.0	130.0
773	41	100	140.0	450.0	130.0
781	5	, 100 6	250.0	120.0	130.0
782	6	27	250.0	221.0	120.0
783	27	181		150.0	120.0
784	102		250.0	1,106.0	120.0
791	151	181 186	250.0	92.0	120.0
792	13	151	140.0	450.0	130.0
793	13		140.0	35.0	130.0
100	10	14	140.0	475.0	130.0

794	14	153	140.0	236.0	130.0
795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0

	Net Work	Analyeie		Distribut	ion Main	D		
Node	Elevation	Demand	Dynamic	Dynamic	Static	v		Leakage
No.	of Pipe		Pressure	Pressure	Pressure			
1	(MSL) 1,881.7	(cum/d) 197.6	(M\$L) 1,918.9	(m) 37.2	(m) 109.3	0,0	0.0	(cum/d)
2		113.4	1,924.1	39.0	105.9	0.0	0.0	
4	1,881.8	123.1	1,921.6	39.8	109,2	0.0	0.0	
: 6	1,881,3	64.8 123.1	1,921.3 1,921.0	$\frac{40.0}{37.3}$	109.7 107.3	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
9		215.5	1,915.1	33.9	109.8	0.0	0.0	
10	1,903.4	40.5	1,924.6	21.1	87.6	0.0	0.0	
11		139.3	1,944.1	42.0	88.9	0.0	0.0	
12 13		106.9 82.6	1,916.3 1,916.4	$\frac{35.9}{42.2}$	110.5 116.8	0.0	$0.0 \\ 0.0$	
14		106.9	1,916,6	51.0	125.4	0.0	0.0	
18		98.8	1,918.7	58.2	130.5	0.0	0.0	
16 18		137.7 173.3	1,917.9 1,914.8	57.4 29.7	130.5 105.9	0.0	$0.0 \\ 0.0$	
18		137.7	1,914.7	28.9	105.2	0.0	0.0	
22	2 1,889.4	128.0	1,915.2	25.8	101.6	0.0	0.0	
23		132.8 189.5	1,914.4 1,914.4	27.1 26.7	103.7 103.3	0.0	$0.0 \\ 0.0$	
2/ 25		82.6	1,914.4	27.4	104.0	0.0	0.0	
2	7 1,882.3	121.5	1,920.8	38,5	108.7	0.0	0.0	
28		42.1	1,917.4	38.2	111.8	0.0	0.0	
29 30		21.1 129.6	1,917.0 1,916.7	24.6 34.1	98.6 108.4	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
3:		150.7	1,922.6	40.6	109.0	0.0	0.0	
30	3 1,889.3	82,6	1,921.2	31.9	101.7	0.0	0.0	
3' 38		76.1 68.0	1,921.1 1,921.1	29.7 27.2	99.6 97.1	0.0 0.0	$0.0 \\ 0.0$	
3		81.0	1,929.8	14.9	76.1	0.0	0.0	
4		71.3	1,918.5	19.3	91.8	0.0	0.0	
4:		61.6	1,918.5	22.4	94.9	0.0	0.0	
4:		64.8 87.5	1,918.3 1,918.3	23.6 24.9	$96.2 \\ 97.6$	0.0	0.0	
4		108.5	1,920.3	35.4	106.1	0.0	0.0	
4		205.7	1,920.8	42.5	112.8	0.0	0.0	
4' 4:		58.3 163.6	1,920.6 1,918.4	39.9 38.2	110.3 110.8	0.0	$0.0 \\ 0.0$	
4		259.2	1,918.4	. 37,3	109.9	0.0	0.0	
5	0 1,886.3	233.3	1,937.0	50.7	104.7	0,0	0.0	
5 5		76.1 157.1	1,915.1	19.7 25.3	95.6 101.9	0.0 0.0	0.0 0.0	
5		144.2	1,914.4 1,914.5	28.3	101.9	0.0	0.0	
5		79.4	1,946.1	43.4	88.3	0.0	0.0	
5		150.7	1,914.6	30.5	106.9	0.0	0.0	
5 6	8 1,890.9 0 1,889.9	192.8 162.0	1,914.3 1,914.3	23.4 24.4	100.1 101.1	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
G		81.0	1,919.7	34.3	105.6	0.0	0.0	
	2 1,890.2	123.1	1,927.4	37.2	100.8	0.0	0.0	
	3 1,878.7 4 1,876.5	61.6 71.3	1,922.7 1,922.6	44.0 46.1	112.3 114.5	$0.0 \\ 0.0$	0.0	
	6 1,910.0	64.8	1,932.3	22,3	81.0	0.0	0.0	
	7 1,921.5	61.6	1,939.6	18.1	69.5	0.0	0.0	
6	8 1,918.6 9 1,879.5	68.0 81.0	1,943.9 1,920.7	25.3 41.2	72.4 111.5	0.0 0.0	$0.0 \\ 0.0$	
	0 1,904.5	213.8	1,924.6	20.1	86.5	0.0	0.0	
	1 1,894.5	140.9	1,918.7	24.2	96.5	0.0	0.0	
10 10		53.5 40.5	1,918.6 1,919.0	22.0 33.1	94.4 105.1	0,0 0.0	$0.0 \\ 0.0$	
10		59.9	1,919.1	42.4	114.3	0.0	0.0	
10	3 1,883.1	.81.0	1,918.5	35.4	107.9	0.0	0.0	
10		30.8	1,926.8		74.7	0.0	0.0	
10 10		27.5 69.7	1,927.5 1,917.8		87.1 109.7	0.0 0.0	0.0	
10	7 1,880.1	51.8	1,917.4	37.3	110.9	0.0	0.0	
10	1,884.1	48.6	1,917.3			0.0	0.0	
10 11		32.4 0.0	1,917.2 1,917.0			0.0 0.0	$0.0 \\ 0.0$	
11		47.0	1,917.2			0.0	0.0	
11	4 1,897.3	92.3	1,917.1	19.8	93,7	0.0	0.0	
11	[7 1,907.5 [8 1,889.0		1,917.0 1,913.5			0.0 0.0	$0.0 \\ 0.0$	
	1,889.1	103.7				0.0	0.0	
12	20 1,871.2	183.1	1,910.6	39.4	119.8	0.0	0.0	
12			1,916.7			0.0	0.0	
	22 1,950.0 23 1,927.3		1,943.8 1,943.8			0.0	$0.0 \\ 0.0$	
12	24 1,879.6	110.2	1,918.7	39.1	111.4	0.0	0.0	
	25 1,886.2	175.0	1,913.6	27.4	104.8	0.0	0.0	

	Net Work	Analysis	!	Distribut	ion Wain	D		
Node	Elevation	Demand	, Dynamic	Dynamic	Static	,,		Leakage
No.	of Pipe		Pressure	Pressure	Pressure			
126	(MSL) 1,894.1	(cum/d) 173.3	(MSL) 1,911.9	(m) 17.8	(m) 96.9	0.0	0.0	(cum/d)
127		87.5	1,909.6	34.7	116.1	0.0	0.0	
128		61.6	1,910.3	13.9	94.6	0.0	0.0	
129 130		13.0 11.3	1,910.3 1,910.2	14.3 23.8	95.0 104.6	0.0 0.0	$0.0 \\ 0.0$	
131		6.5	1,910.2	34.4	115.2	0.0	0.0	
132	1,886.8	82.6	1,925.4	38.6	104.2	0.0	0.0	
133 134		29.2 87.5	1,924.7 1,932.7	26.0	92.3	0.0 0.0	0.0	
135		94.0	1,932.1	8.2 16.4	66.5 75.3	0.0	$0.0 \\ 0.0$	
136	1,944.8	115.0	1,943.2	-1.6	46.2	0.0	0.0	
137		191.2	1,943.8	38.8	86.0	0.0	0.0	
139 140		267.3 50.2	1,926.5 1,915.1	20.7 15.7	85.2 91.6	0.0 0.0	0.0	
141		160.4	1,913.8	23.6	100.8	0.0	0.0	
142		166.9	1,913.9	30.0	107.1	0.0	0.0	
143 144		$\begin{array}{c} 178.2 \\ 63.2 \end{array}$	1,914.0 1,924.5	25.3 17.1	102.3 83.6	0.0 0.0	$0.0 \\ 0.0$	
145		9.7	1,924.5	15.2	81.7	0.0	0.0	
146		87.5	1,916.4	39.9	114.5	0.0	0.0	
147 148		158.8 102.1	1,916.4 1,919.3	37.5 29.7	112.1 101.4	0.0 0.0	$0.0 \\ 0.0$	
149		45.4	1,920.6	19.5	89.9	0.0	0.0	
150	1,899.4	191.2	1,916,3	16.9	91.6	0.0	0.0	
151		123.1	1,916.4	42.0	116.6	0.0	0.0	
152 153		106.9 115.0	1,916.4 1,916.9	50.5 54.2	125,1 128,3	0.0 0.0	$0.0 \\ 0.0$	
154	1,864.7	106.9	1,916.7	52.0	126.3	0.0	0.0	
155		35.6	1,916.6	49.0	123.4	0.0	0.0	
156 157		64.8 38.9	1,923.7 1,923.0	38.9 41.1	106.2 109.1	0.0 0.0	$0.0 \\ 0.0$	
158		38.9	1,922.8	42.5	110.7	0.0	0.0	
160		30.8	1,943.8	40.6	87.8	0.0	0.0	
161 162		17.8 61.6	1,926.6 1,915.1	21.3 23.3	85.7 99.2	0.0 0.0	$0.0 \\ 0.0$	
163		11.3	1,915.1	15.8	91.7	0.0	0.0	
164	1,919.8	6.5	1,932.7	12.9	71.2	0.0	0.0	
165 166		163.6	1,990.5 1,922.3	28.0 23.3	28.5 92.0	0.0	$0.0 \\ 0.0$	
169		29.2 35.6	1,980.0	62.1	73.2	0.0	0.0	
170	1,893.3	21.1	1,922.7	29.4	97.7	0.0	0.0	
171 21		30,8 157.1	1,918.8 1,914.5	9.1 29.4	81.3 105.9	0.0 0.0	$0.0 \\ 0.0$	
20		134.5	1,914.5	28.6	105.1	0.0	0.0	
174	1,902.4	168.5	1,941.7	39,3	88.6	0.0	0.0	
53		157.1	1,914.3	18.6	95.3	0.0	0.0	
176 177		37.3 37.3	1,918.3 1,918.3	23.3 21.0	96.0 93.7	0.0 0.0	$0.0 \\ 0.0$	
178	1,912.8	89.1	1,929.6	16.8	78.2	0.0	0.0	
179		40.5	1,929.9	12.4	73.5	0.0	0.0	
181 182		129.6 21.1	1,919.2 1,917.1	38.2 25.2	110.0 99.1	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
183	1,899.2	19.4	1,917.1	17.9	91.8	0.0	0.0	
185		106.9	1,924.9	22.1	88.2	0.0	0.0	
186 187		106.9 123.1	1,916.5 1,943.8	31.1 40.6	105.6 87.8	0.0 0.0	$0.0 \\ 0.0$	
188		13.0	1,940.6	8,9	59.3	0.0	0.0	
189		47.0	1,929.6	7.8	69.2	0.0	0.0	
300 301		76.1 123.1	1,943.8 1,943.5	40.2 -7.9	87.4 39.6	0.0 0.0	$0.0 \\ 0.0$	
59		197.6	1,945.6	45.6	91.0	0.0	0.0	
500		40.5	1,916.6	23.8	98.2	0.0	0.0	
501 502		123.1 129.6	1,916.6 1,933.0	30.0 47.4	104,4 105,4	0.0 0.0	$0.0 \\ 0.0$	
503		123.1	1,915.1	30.9	106.8	0.0	0.0	•
510	1,914.5	82.6	1,926.5	12.0	76.5	0.0	0.0	
511		32.4	1,917.1	25.0	98.9	0.0	0.0	
520 304		102.1 113.4	1,927.1 1,917.5	13.5 17.1	77.4 90.6	0.0	$0.0 \\ 0.0$	
172	1,886.0	82.6	1,914.5	28.5	105.0	0.0	0.0	
173		82.6	1,925.5	9.5	75.0	0.0	0.0	
521 522		82.6 82.6	1,908.4 1,907.7	22.4 27.7	105.0 111.0	0.0 0.0	$0.0 \\ 0.0$	
523	1,903.0	82.6	1,944.2	41.2	88.0	0.0	0.0	
524		82.6	1,933.4	46.4		0.0	0.0	•
520 520		82.6 82.6	1,916.2 1,916.5	35.2 34.5	110.0 109.0	0.0	$0.0 \\ 0.0$	
OLC.	1,004,0	02.0	1,010.0	0.110	10010	_	7,0	

	Net Work	Analysis	;	Distribut	ion Main	D		
Node	Elevation	Demand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe	Demand	Pressure	Pressure	Pressure			-
	(MSL)	(cum/d)	(MSL)	(m)	(m)			(cun/d)
527	1,931.0	48.6	1,942,8	11.8	60.0	0.0	0.0	
528	1,943.0	48,6	1,934.9	-8.1	48.0	0.0	0.0	
33	1,867.0	82.6	1,916.2	49.2	124.0	0.0	0.0	
35	1,870.0	98.8	1,916.2	46.2	121.0	0.0	0.0	
40	1,920.0	64.8	1,929.6	9.6	71.0	0.0	0.0	
54	1,886.0	82.6	1,914.6	28.6	105,0	0.0	0.0	
91	1,899.4	0.0	1,926.7	27.3	91,6	0.0	0.0	
92	1,895.4	0.0	1,926.9	31.5	95.6	0.0	0.0	
93	1,882.0	0.0	1,924.9	42.9	109.0	0.0	0.0	
540	1,930.0	693.4	1,935.0	5.0	61.0	0.0	0.0	
541	1,980.0	926.6	1,985.0	5.0	11.0	0.0	0.0	
542	1,889.1	0.0	1,942.3	53.2	101.9	0.0	0.0	
610	1,900.0	0.0	1,930.0	30.0	91.0	0.0	0.0	
61	1,884.6	0.0	1,929.9	45.3	106.4	0.0	0.0	
612	2 1,881.3	0.0	1,929.2	47.9	109.7	0.0	0.0	
203		-110.2	1,943.0	-17,1	31.0	0.0	0.0	
200	3 1,955.0	-636.7	1,943.2	-11.8	36.0	0.0	0.0	
213		-430.9	1,944.3	-34.7	12.0	0.0	0.0	
901		-179 8	1 943 8	-16.2	31.0	0.0	0.0	

	Net.	Work	Analy	sis	1	Distribu	tion Main	1)	•
Pipe	Node		•	Length	Diameter	C	Flow	Velocity	Pressure Gradient	loss
No.				(m)	(nn)		(cum/d)	(n/s)	(o/oo)	(m)
	1	139	510	800.00	225.00	120.00	82.00	0.00	0.00	0.00
4	2	139	304	374.00 228.00	44.00 150.00	130,00 120.00	113,00 50,00	0.90 0.00	24,20 0.00	$\frac{9.00}{0.00}$
	5 6	51 162	140 163	143.00	44.00	130.00	11.00	0.10	0.30	0.10
	7	51	162	20.00	150.00	120,00	72.00	0.10	0.00	0.00
	9	134	135	178.00	65.00	130.00	114.00	0.40 0.10	3.70 0.10	$\substack{0.70\\0.00}$
1. 1.		134 66	164 135	84.00 265.00	44.00 150.00	130.00 120.00	6.00 460.00	0.10	1.00	0.30
1		50	66	530.00	100.00	120.00	525,00	0.80	8.80	4.70
1		50	67	583.00	100.00	120.00	-366.00	-0.50 -0.60	-4,50 -6,00	-2.60 -1.00
1 2		67 21	188 54	165.00 59.00	100.00 150.00	120.00 120.00	-428.00 -550.00	-0.40	-1.30	-0.10
2		21	23	88.00	100.00	120.00	195.00	0.30	1.40	0.10
2		23	24	55.00	150.00	120.00	35,00 182,00	$0.00 \\ 0.30$	0.00 1.20	$0.00 \\ 0.10$
2	3 4	20 20	24 21	90.00 66.00	100.00 150.00	120.00 120.00	-198.00	-0.10	-0.20	0.00
	6	25	52	110.00	100.00	120.00	-27.00	0.00	0.00	0.00
2	7	52	53	176.00	100.00	120.00	81.00	0,10 ~0.10	0.30 -0.20	0.10 0.00
	8 9	53 18	60 60	100.00 134.00	100,00 100,00	120.00 120.00	-75.00 327.00	0.50	3,70	0.50
	.9 30	18	19	54.00	150.00	120.00	621.00	0.40	1.70	0.10
3	11	19	52	151.00	100.00	120.00	266,00	0.40	2.50	$0.40 \\ 0.20$
	12	19 54	. 55 172	133.00 100.00	100.00 100.00	120.00 120.00	217.00 127.00	0.30 0.20	1.70 0.60	0.10
	13 34	9	18	315.00	225.00	120.00	1,122.00	0.30	0.70	0.20
3	35	9	48	47.00	100.00		-1,634.00	-2.40	-72.00	$-3.40 \\ 0.50$
	36	1	48	265.00	225.00 100.00	120.00 120.00	1,864.00 66.00	0.50 0.10	1.80 0.20	0.00
	37 38	48 22	49 49	201.00 672.00	150.00	120.00	-1,088.00	-0.70	-4.70	-3.20
	39	22	51	596.00	150.00	120.00	199.00	0.10	0.20	$0.10 \\ -0.90$
	10	49	148	536.00	100.00 50.00	120.00 120.00	-217.00 30.00	-0.30 0.20	-1.70 1.30	0.50
	11 12	148 69	171 148	372.00 325.00	100.00	120.00	349.00	0.50	4.10	1.40
	43	46	69	90.00	150.00	120.00	476.00	0.30	1,00	0.10
	44	69	149	551.00	100.00	120,00 120,00	45.00 231.00	0.10 0.30	0.10 1.90	0.10 0.50
	45 46	1 1	49 46	264.00 401.00	100.00 225.00	120.00	-3,126.00	-0.90	-4.60	-1.90
	47	46	47	268.00	100.00	120.00	138.00	0.20	0.80	0.20
	48	47	64	268.00	100.00	120.00 120.00	-489,00 711,00	-0.70 0.10	-7.70 0.10	-2.10 0.00
	49 50	63 46	64 63	444.00 268.00	300,00 225,00	120.00	-3,947.00	-1.10	-7.10	-1.90
	51	63	158	47.00	300.00	120,00	-4,720.00	-0.80	-2.40	-0.10
	52	158	166	358.00	50.00	120.00	29.00 4,788.00	0.20 0.80	1.20 2.50	0.40 0.20
	53 54	157 157	158 170	77.00 264.00	300.00 44.00	120,00 130,00	21.00	0.20	1.10	0.30
	55	156	157	300.00	300.00	120.00	4,848.00	0.80	2.60	0.80
	56	2	156	100.00	300.00	120.00	5,840.00 -9,431.00	1.00 -1.10	3.60 -4.10	$0.40 \\ -2.90$
	61 62	· 2 2	203 4	704.00 442.00	350.00 225.00	120.00 120.00	3,478.00	1.00	5.60	2.50
	63	4	5	65.00	225.00	120.00	3,274.00	0.90	5.00	0.30
	64	4	61	972.00	65.00	130.00 120.00	81.00 577.00	0.30 0.40	1.90 1.50	$\frac{1.90}{0.30}$
	65 66	5 6	6 27	221.00 150.00	150.00 150.00	120.00	551.00	0.40	1.30	0.20
	67	27	37	216.00	100.00	120.00	-194.00	-0.30	-1.40	-0.30 0.10
	68	36	37	400.00	150.00 100.00	120.00 120.00	263.00 75.00	0.20 0.10	$0.30 \\ 0.20$	0.10
	69 70	36 37	38 38	563.00 30.00	150.00	120.00	-7.00	0.00	0.00	0.00
	72	27	181	1,106.00	150.00	120.00	566.00	0.40	1.40	1.60
	74	39	173	320.00	44.00 150.00	130.00 120.00	82.00 -539.00		13.40 -1.30	4,30 -0.10
	76 80	102 39	181 179	92,00 125.00	150.00	120.00	-364.00		-0.60	-0.10
	82	179	208	104.00	65.00	130.00	-47.00			-0.10
	83	102	103	350.00	150.00		644.00 -20.00			0.60 -0.10
	84 86	101 41	102 100	120.00 120.00	44.00 44.00	130,00 130,00	-16.00			-0.10
	87	100	101	312.00	37,00	130.00	-14.00	-0.10	-1.20	-0.40
	88	42	43	257.00			113.00 113.00			0.10 0.10
	89 90	42 43	43 44	257,00 268,00			162.00		0.10	0.00
	91	44	177	391.00	100.00	120.00	37.00	0.10	0.10	0.00
	92	44	176	391.00			37.00 0.00			0.00
	93 99	176 29	177 112	90.00 251.00			-21.00		-0.20	0.00
	100	109	511	400.00	100.00	120.00	99,00	0.10	0.40	0.20
	101	108	109	120.00					0.40	0.10 0.20
	102 103	108 107	183 108	228.00 200.00			·		0.50	0.10

	Net	Wor!	k Anal	ysis		Distribu	tion Main		D	
Pipe No.	Node		lode B	Length	Diameter	C	Flow	Velocity	Pressure Gradient	Loss
, un				(a)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
104		107	182	253,00	44.00	130.00	21.00	0.20	1.10	0.30
105 106		28 28	107 113	40.00 66.00	100.00 150.00	120,00 120,00	122.00 981.00	0.20 0.60	0.60 3.90	0.00
107		113	114	265,00	65,00	130.00	30.00	0.10	0.30	0.10
108		114	117	500.00	65.00	130.00	19.00	0.10	0.10	0.10
109 111		117 118	118 119	318,00 248,00	44.00 75.00	130.00 120.00	74.00 268.00	0.60 0.70	11.00 10.30	3.50 2.60
113		28	106	250,00	150.00	120.00	-598.00	-0.40	-1.60	-0.40
114		103	106	400.00	150.00	120.00	619.00	0.40	1.70	0.70
116 118		104 30	105 526	300.00 210.00	44.00 100.00	130.00 120.00	-30.00 165.00	-0.20	-2.20 1.00	$-0.70 \\ 0.20$
119		62	132	1,500.00	150.00	120.00	545.00	0.40	1.30	2.00
120		155	500	175.00	140.00	130.00	78.00	0.10	0.00	0.00
125 127		132 31	133 64	363.00 167.00	44.00 225.00	130.00 120.00	29.00 -150.00	0.20	2.00 0.00	$0.70 \\ 0.00$
129		70	144	284.00	100.00	120.00	72.00	0.10	0,20	0.10
130	}	144	145	121.00	44.00	130.00	9.00	0.10	0.30	0.00
132 133		45 9	47 45	$162.00 \\ 761.00$	150.00 100.00	120.00 120.00	-570.00 -461.00	-0.40 -0.70	-1.40 -6.90	-0.20 -5,30
134		9	57	25.00	100.00	120.00	758.00	1.10	17.40	0.40
135	i	57	58	120.00	100.00	120.00	295.00	0.40	3.00	0.40
136		58	60 59	262.00	100.00 97.00	120.00 130.00	-90,00 192,00	-0.10	-0.30 1.40	-0.10 0.50
138 140		56 58	143	352.00 168.00	100.00	120.00	192.00	0.30	1.40	0.20
141	1	142	143	264.00	50.00	120.00	~14.00	-0.10	-0.30	-0.10
142		57	142	202.00	100.00	120.00	312.00	0.50 -0.20	3.40 -1.00	0.70 -0.10
143 146		141 12	142 150	99.00 360.00	100,00 150,00	120.00 120.00	-160.00 191.00	0.10	0.20	0.10
147		12	151	163,00	150.00	120.00	-298.00	-0.20	-0.40	-0.10
148		13	151	35.00	150.00	120.00 130.00	107.00 -108.00	0,10 ~0.10	0.10 -0.10	0.00
149 151		151 154	186 155	450.00 132.00	140.00 100.00	120.00	113.00	0.20	0.50	0.10
160		153	154	165.00	100.00	120.00	174.00	0.30	1.10	0.20
161		14	153	236.00	150.00	120.00	-487.00	-0.30 -0.20	-1.10 -0.40	$-0.30 \\ -0.20$
163 163		13 13	14 146	475.00 35.00	150.00 150.00	$120.00 \\ 120.00$	-279.00 246.00	0.20	-0.40	0.00
164		146	147	137.00	150:00	120.00	158.00	0.10	0.10	0.00
16		11	137	663,00	150.00	120.00	277.00	0.20	$0.40 \\ 2.90$	$0.30 \\ 0.20$
166 179		14 33	152 152	66.00 150.00	100.00 100.00	120.00 120.00	288,00 -181,00	$0.40 \\ -0.30$	-1.20	-0.20
17		56	68	165.00	100.00	120.00	649.00	1.00	13.00	2.10
17		68	136	726.00	44.00	130.00	20.00	0.20	$\frac{1.00}{-1.20}$	0.70 -0.60
17 17		136 137	137 187	512.00 277.00	44.00 140.00	130.00 130.00	-22.00 64.00	-0.20 0.10	0.00	0.00
18		71	124	400.00	225.00	120.00	-140.00	0.00	0.00	0.00
18		15 15	124 16	441.00 177.00	225.00 150.00	120.00 120.00	251.00 1,025.00	0.10 0.70	0.00 4.20	0.00 0.80
18 18		16	121	286.00	100.00	120.00	359.00	0.70	4.40	1.30
18	6	120	121	1,210.00	75.00	120.00	-183.00	-0.50	-5.10	-6.10
18 19		16 122	125 209	850.00 120.00	100.00 225.00	120.00 120.00	391.00 -179.00	0.60 -0.10	5,10 0.00	4.30 0.00
19		125	126	396.00	100,00	120.00	353,00	0.50	4.20	1.70
19	4	126	128	668.00	65.00	130.00	92.00	0.30	2.50	1.60
19 19		126 128	127 129	1,047.00	65.00 65.00	130.00 130.00	87.00 30.00	0.30 0.10	2.20 0.30	2.30 0.00
19		129	130	60.00	44.00	130.00	17.00	0.10	0.80	0.10
19	8	130	. 131	88.00	37.00	130,00	6.00	0.10	0.30	0.00
19 20		62 41	520 42	569.00 237.00	100.00 100.00	120.00 120.00	102.00 61.00	0.10 0.10	0,40 0,20	0.20
20		30	113	250.00	150.00	120.00	-672.00	-0.40	-1.90	-0.50
20	3	5	36	105.00	150.00	120.00	420.00	0.30	0.80	0.10
-17 25		187 136	300 301	500.00 215.00	150.00 65.00	120.00 130.00	-59.00 -72.00	0.00 -0.30	0.00 -1.60	$0.00 \\ -0.30$
20		160	300	152.00	150.00	120.00	-100.00	-0.10	-0.10	0.00
21	.3	62	524	334.00	97.00	130.00	-771.00	-1.20	-17.90	-6.00
21 21		30 112	503 511	334.00 132.00	100.00 75.00	120.00 120.00	378.00 -47.00	0.60 -0.10	4.80 -0.40	1.60 -0.10
21		500	501	100.00	140.00	130.00	37.00	0.00	0.00	0.00
21	7	154	501	104.00	65.00	130.00	48.00	0.20		0.10
21 11		186 118	501 503	221.00 167.00	140.00 75.00	130.00 120.00	-324.00 -254.00	-0.20 -0.70		-0.10 -1.60
30	00	215	301	554.00	100.00	120.00	195.00	0.30	1.40	0.80
20		215	300	250.00		120.00	235.00	0.30		0.50
	17 72	205 15	527 1 53	250.00 577.00	100.00 150.00	120.00 120.00	110.00 879.00	0.20 0.60		0,10 1,80
30	02	10	. 70	480.00	150.00	120.00	-40.00	0.00	0.00	0.00
30)4	24	. 25	55.00	100.00	120.00	28.00	0.00	0.00	0.00

	Net.	Work	Analy	sis	1)istribut	ion Main		D	
Pipe	Node				Diameter	C		Velocity	Pressure Gradient	Loss
No.	noar	,		(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
305	;	55	172	50.00		120.00	73.00	0.10 -0.20	0.20 -0.60	0.00 0.00
306		20	172	50.00	100.00 100.00	120,00 120,00	-118.00 26.00	0.00	0.00	0.00
307		23 40	25 178	75.00 150.00	150.00	120.00	89.00	0.10	0.10	0.00
308 77		40 39	40	180.00	100.00	120.00	200.00	0.30	1.50	0.30
78		40	189	60.00	100,00	120.00	47.00	0.10	0.10 -0.80	0.00 -0.40
79	9	100	101	450.00	44.00 150.00	130.00 120.00	-18.00 227.00	-0.10 0.10	0.30	0.00
309		41 119	42 521	150.00 350.00	65.00	130.00	165.00	0.60	7,30	2.50
310 31		521	522	350.00	65.00	130.00	82.00	0.30	2.00	0.70
31		33	35	150.00	100.00	120.00	98.00	0.10	0.40 -0.80	0.10 -0.10
30		11	523	120.00	150,00 100.00	120.00 120.00	-416,00 499,00	$-0.30 \\ 0.70$	8,00	1.40
31		59 502	523 524	180.00 150.00	75.00	120.00	-129.00	-0.30	-2,70	-0.40
31 31		524	600	450.00	97.00	130.00	-983.00	-1.50	-28.10	-12.60
31		525	526	210.00	75.00	120.00	-82.00	-0.20 0.90	-1.20 16.40	-0.20 7.90
32		527	528	480.00	65,00 65,00	130.00 130.00	257.00 -208.00	-0.70	-11.20	-2.20
32		134 165	528 601	200.00 75.00	65.00	130.00	-163.00	-0,60	-7.10	-0.50
32	-	188	527	50.00	65.00	130.00	-441,00	-1.50	-44.70	-2.20
32		122	123	160,00	140.00	130.00	105.00	0.10 0.40	0.10 1.40	0.00 0.50
. 32	27	56	59	352.00	140.00	130.00 130.00	504.00 833.00	0.40	1.40	0.50
. 32		1 206	49 527	264.00 215.00	158.00 150.00	120.00	636.00	0.40	1.70	0.40
32 33	29 30	256 156	541	931.00	100.00	120.00	926.00	1.40	25.20	23.40
. 3		112	540	434.00	97.00	130.00	693.00	1.10 0.30	14.70 1.00	$6.40 \\ 0.20$
	01	91	139	162.00	150.00 65.00	120.00 130.00	463.00 17.00	0.10	0.10	0.00
	20	91 70	161 93	225.00 662.00	150.00	120.00	-327.00	-0.20	-0.50	-0.30
6 6	03 05	93	132	616.00	150.00	120.00	-434.00	-0.30	-0.90	-0.50
6	06	93	185	300.00	150.00	120.00	106.00	0.10 -0.50	0.10 -1.90	0.00 -1.90
6	07	56	602	1,000.00	200.00 150.00	120.00 120.00	-1,425.00 761.00	0.50		0.70
	12 10	22 122	54 160	275.00 931.00	225,00	120.00	-69.00	0.00	0.00	0.00
	11	91	92	228.00	150.00	120.00	-481.00	-0.30		$-0.20 \\ -5.20$
6	12	92	135	690.00	100.00	120.00	-481.00 58.00	-0.70 0.10		0.00
	13	604	610	200.00 250.00	97.00 44.00	130.00 130.00	-58.00	-0.40		-1.80
6 6	14 16	105 174	612 542	569.00	97.00	130.00	-168.00	-0.30		-0.60
7	01	186	606	500.00	250.00	120.00	-3,048.00	-0.70		-1.30 -0.10
7	702	169	603	50.00	55.00		~35.00 794.00			1.80
	703	15	153 125	577.00 850.00	140.00 65.00		136.00		5.10	4.30
	705 713	16 102	103	350.00	198.00	130.00	1,449.00	0.50		0.60
	714	103	106	400.00	198.00		1,393.00			0.70 -0.40
	715	28	106	250.00	198.00 198.00		-1,345.00 798.00			0.00
	716 717	28 107	107 108	40.00 200.00	198.00		734.00	0.30	0.50	0.10
	718	108	109	120.00	198,00	130.00	675.00	0.30		0.10 0.20
4	719	109	511	400.00			647.00 -666.00			-0.10
	720	112	511 114	132.00 265.00			231.00	·		0.10
	731 732	113 114	117	500.00			149.00	0.10	0.10	0.10
	741	179	208	104.00	140.00		-357.00			-0.10 0.10
	751	610	611	630.00			58.04 58.04			0.60
	752 761	611 50	612 542	610.00 1,044.00			-392.0		0 -5.10	-5.30
	762	68	542			3 (30.00	560.0			1.60 -0.10
	771	101	102	120.00	140.0		-433.0 -380.0			-0.10
	772	100	101				-343.0			~0.10
	773 781	41 5	100				2,211.0	0.5	0 1.50	0.30
	782	6	27	150.00	250.0	0 120.00				0.20 1.60
	783	27	181							-0.10
	784	102 151	181 186) 250.0) 140.0			0 -0.1	0 -0.10	0.00
	791 792	131	151			0 130.00	96.0	0 0.1		0,00
	793	. 13	14	475.00	140.0					-0.20 -0.30
	794	14	153							0.10
	795 796	154 153	501 154							0.20
		100		-						

Net Work Analysis

Distribution Main

Nuvara012Year2015Mean(2) E Dry File Name

Season Network Type Proposed

Demand

Year 2015

Reserver

Day Mean Water Level Fix Discharge Fix

Except for Follows No.205,206,215,209

Magnification of Demand

0.811

Reservoir	Data				
Node		HWL	LWL	Reservoir	
		(MSL)	(MSL)		
203	1	1,927.0	1,927.0	Haddon Hill	
208	1	1,930.0	1,930.0	Bonavista	
600	1	1,946.0	1,946.0	Nseby	
601	i	1,991.0	1,991.0	Piyatisappura	
602	1	1,948.0	1,948.0	New Pedro Reserver	
603	1	1,980.0	1,980.0	Unique View	
604	1	1,925.0	1,925.0 1,920.0	Vijithapura New Loe Area 2	
606	1	1,920.0	1,920.0	HEN TOE VLGT 7	
Node Data					
Node		Ground Elev	Demand		
nouc		(MSL)	(cum/d)		
1	1	1,881.7	122.0	0 ()
ź	i	1,885.1	70.0	0 0	
4	i	1,881.8	76.0)
5	1	1,881.3	40.0	0 (
6	î	1,883.7	76.0	0 (
9	ĩ	1,881.2	133.0)
10	1	1,903.4	25.0)
11	î	1,902.1	86.0	0 (
12	i	1,880.5	66.0)
13	1	1,874.2	51.0)
14	i	1,865.6	66.0)
15	ī	1,860.5	61.0)
16	1	1,860.5	85.0)
18	1	1,885.1	107.0)
19	i	1,885.8	85.0		0
22	1	1,889.4	79.0		0
23	1	1,887.3	82.0		Ò.
24	ï	1,887.7	117.0	. 0	0
25	1	1,887.0	51.0		0
27	1	1,882.3	75.0	0	0
28	1	1,879.2	26.0	0	0
29	1	1,892.4	13.0	0	0
30	1	1,882.6	80.0	0	0
31	1	1,882.0	93.0	0	0
36	1	1,889.3	51.0	0	0
37	1	1,891.4	47.0	0	0
38	1	1,893.9	42.0	0	0
39	1	1,914.9	50.0	0	0
41	1	1,899.2	44.0		0
42	1	1,896.1	38.0		0
43	· 1	1,894.8	40.0		0
44	1	1,893.4	54.0	-	Û
45	1	1,884.9	67.0		0
46	I	1,878.2	127.0		0
47	1	1,880.7	36.0	Ü	0
48	1	1,880.2	101.0		0
49	1	1,881.1	160.0		0
50	1	1,886.3	144.0		0
51	1	1,895.4	47.0		0
52	1	1,889.1	97.0		0
55 50	1	1,886.2	89.0		0
56 57	1	1,902.7	49.0		0
57 50	1	1,884.1	93.0		0
58 en	1	1,890.9	119.0		0
60	1	1,889.9	100.0		0
61	1	1,885.4	50.0	0	v

62		4	4 000 0	70 O	•	۸
64	62	1	1,890.2	76.0	0	0
66						
67 1,921.5 38.0 0 0 68 1,918.6 42.0 0 0 0 69 1,879.5 50.0 0 0 0 0 0 0 0 0 0				44.0		
68	66 -					
1	67					
70		1				
71	69	1				
100	70	1	1,904.5			
101	71	1		87.0		
102	100	1	1,896.6	33.0		
103	101	1	1,885.9	25.0		
104	102	t	1,876.7		0,	
105		i	1,883.1	50.0	0.	0
105		1	1,916.3	19.0	0	0
106 1 1,881.3 43.0 0 0 107 1 1,880.1 32.0 0 0 108 1 1,884.1 30.0 0 0 112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 1,889.0 37.0 0 0 119 1 1,889.0 37.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 109.0 0 0 122 1 1,950.0 89.0 0 0 122 1 1,950.0 89.0 0 0 123 1 1,273.3 65.0 0 0 124 <td></td> <td></td> <td>1,903.9</td> <td>17.0</td> <td>. 0</td> <td>0</td>			1,903.9	17.0	. 0	0
107 1 1,880.1 32.0 0 0 108 1 1,884.1 30.0 0 0 119 1 1,884.6 20.0 0 0 112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 114 1 1,897.3 57.0 0 0 114 1 1,897.3 57.0 0 0 114 1 1,897.3 57.0 0 0 115 1 1,890.0 37.0 0 0 119 1 1,888.1 164.0 0 0 0 120 1 1,871.2 113.0 0 0 0 0 122 1 1,850.6 109.0 0 0 0 0 0 1 1 1 <				43.0	0	0
108 1 1,884.1 30.0 0 0 109 1 1,884.6 20.0 0 0 112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 ,889.0 37.0 0 0 119 1 ,889.1 64.0 0 0 0 120 1 ,1,871.2 113.0 0 0 0 0 121 1 ,862.6 109.0 0 0 0 0 0 122 1 ,950.0 89.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>0</td>					0	0
109 1 1,884.6 20.0 0 0 112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 1,889.0 37.0 0 0 119 1 1,889.1 64.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 109.0 0 0 122 1 1,550.0 89.0 0 0 122 1 1,550.0 89.0 0 0 122 1 1,550.0 89.0 0 0 123 1 1,879.6 68.0 0 0 124 1 1,879.6 68.0 0 0 125 1 1,886.2 108.0 0 0 127 1 <					0	0
112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 3,889.0 37.0 0 0 0 119 1 1,889.1 64.0 0 0 0 0 120 1 1,871.2 113.0 0 0 0 0 1 121 1 1,862.6 109.0 0 0 0 0 0 1 122 1 1,895.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1,884.6		0	0
113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 3889.0 37.0 0 0 119 1 1,889.1 64.0 0 0 0 120 1 1,871.2 113.0 0 0 0 0 121 1 ,662.6 109.0 0 0 0 0 1 122 1,950.0 89.0 0 0 0 0 1 122 1,950.0 89.0 0 0 0 0 0 0 0 0 0 0 0 0 1 22 1,876.0 89.0 0 0 0 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0					0	0
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117 1 1,907.5 59.0 0 0 118 1 1,889.0 37.0 0 0 119 1 1,889.1 64.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 109.0 0 0 122 1 1,950.0 89.0 0 0 123 1 1,927.3 65.0 0 0 123 1 1,927.3 65.0 0 0 124 1 1,879.6 68.0 0 0 0 125 1 1,886.2 108.0 0 0 0 125 1 1,886.4 38.0 0 0 0 128 1 1,896.4 38.0 0 0 0 128 1 1,896.0 8.0 0 0 0 130 1 1,886.4					0	0
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20 1 1,885.9 83.0 0 0						
	20	1	1,885.9	83.0	0	. 0

174	1	1,902.4	104.0	0	0
53	1	1,895.7	97.0	0	0
176	i	1,895.0	23.0	0	0
177	i	1,897.3	23.0	0	0
	1	*	55.0	Ŏ	ŏ
178	-	1,912.8			0
179	1	1,917.5	25.0	0	
181	1	1,881.0	80.0	0	0
182	1	1,891.9	13.0	0	0
183	1	1,899.2	12.0	0	0
185	i	1,902.8	66.0	0	0
186	. 1	1,885.4	66.0	0	0
187	1	1,903.2	76.0	0	0
188	i	1,931.7	8.0	Ö	0
189	i	1,921.8	29.0	Õ	Õ
			47.0	0	Ö
300	i	1,903.6			
301	1	1,951.4	76.0	0	0
59	1	1,900.0	122.0	0	0
500	1	1,892.8	25.0	0	0
501	1	1,886.6	76.0	0 .	0
502	1	1,885.6	80.0	0	0
503	1	1,884.2	76.0	0	0
510	1	1,914.5	51.0	0	0
511	î	1,892.1	20.0	Ö	Ö
520	í	1,913.6	63.0	Õ	ŏ
		•	70.0	0	ŏ
304	1	1,900.4			
172	1	1,886.0	51.0	0	0
173	1	1,916.0	51.0	0	0
521	1	1,886.0	51.0	0	0
522	1	1,880.0	51.0	0	0
523	1	1,903.0	51.0	0	0
524	í	1,887.0	51.0	0	0
525	1	1,881.0	51.0	0	0
526	ī	1,882.0	51.0	0	0
527	• 1	1,931.0	30.0	Ö	Ŏ
528	1	1,943.0	30.0	0	ő
				0	0
33		1,867.0	51.0		
35	1	1,870.0	61.0	0	0.
40	1	1,920.0	40.0	0	0
54	i	1,886.0	51.0	0	0
91	1	1,899.4	0.0	0	0
92	1	1,895.4	0.0	0	0
93	1	1,882.0	0.0	0	0.
540	1	1,930.0	694.0	. 0	0
541	1	1,980.0	928.0	0	10
542	i	1,889.1	0.0	0	Ô
610	î	1,900.0	0.0	Õ	0
611	i	1,884.6	0.0	0	Ö
	1			0	0
612		1,881.3	0.0		
205	1	1,947.0	-68.0	0	0
206	1	1,947.0	-393.0	0	0
215	1	1,947.0	-266.0	0	0
209	1	1,947.0	-111.0	0	0

Booster No.	Pump Type		Node B	Pipe No.	Pressure.
1 1	В	156	541	330	75.0
9 1	R	112	540	331	16.0

Pipe Pipe		Node A	Node B	Diameter	Length	C Value
ı ıpo				(mm).	(≝)	
	1	139	510	225.0 44.0	800.0 374.0	120.0
	2 5	139 51	304 140	150.0	228.0	130.0 120.0
	6	162	163	44.0	143.0	130.0
	7	51	162	150.0	20.0	120.0
	9	134	135	65.0	178.0	130.0
	. 12	134 66	164 135	44.0 150.0	84.0 265.0	130.0 120.0
	14	50	66	100.0	530.0	120.0
	15	50	67	100.0	583.0	120.0
	16	67	188	100.0	165.0	120.0
	20 21	21 21	54 23	150.0 100.0	59.0 88.0	120.0 120.0
	22	23	24	150.0	55.0	120.0
	23	20	24	100.0	90.0	120.0
	24	20	21	150.0	66.0	120.0
	26 27	25 52	52 53	100.0 100.0	110.0 176.0	120.0 120.0
	28	53	60	100.0	100.0	120.0
	29	18	60	100.0	134.0	120.0
	30	18	19 52		54.0 151.0	120.0 120.0
	31 32	19 19	. 55		133.0	120.0
	33	54	172		100.0	120.0
	34	9	18		315.0	120.0
	35 36	9 1	48 48		$\begin{array}{c} 47.0 \\ 265.0 \end{array}$	120.0 120.0
	37	48	49		201.0	120.0
	38	22	49		672.0	120.0
	39 40	22 49	51 148		596.0 536.0	120.0 120.0
	41	148	171		372.0	120.0
	42	69	148	100.0	325.0	120.0
	43	46	69		90.0	120.0
	44 45	· 69	149 49		551.0 264.0	120.0 120.0
	46	. 1	46		401.0	120.0
	47	46	47		268.0	120.0
	48 49	47 63	64 64		268.0 444.0	120.0 120.0
	50	46	63		268.0	120.0
	51	63	158		47.0	120.0
	52 53	158 157			358.0 77.0	120.0 120.0
	54				264.0	130.0
	55	156	157	300.0	300.0	120.0
	56	2	156		100.0	120.0 120.0
	61 62	2 2			704.0 442.0	120.0
	63				65.0	120.0
	64				972.0	130.0
	65 66				221.0 150.0	120.0 120.0
	67				216.0	120.0
	68				400.0	120.0
	69 70				563.0 30.0	120.0 120.0
	. 72				1,106.0	120.0
	74	39	173	3 44.0	320.0	130.0
	76				92.0	120.0
	80 82				125.0 104.0	120.0 130.0
	83	102	10	3 150.0	350.0	120.0
	84				120.0	130.0
	86 87				120.0 312.0	130.0 130.0
	88				257.0	120.0
•	89				257.0	120.0
٠.	90 91				268.0 391.0	120.0 120.0
	92				391.0	120.0
	93	176	17	7 100.0	90.0	120.0

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109	100.0	120.0	120.0
102	108	183	44.0	228.0	130.0
103	107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0
105	28	107	100.0	40.0	120.0
106	28	113	150.0	66.0	120.0
107	113	114	65.0	265.0	130.0
108	114	117	65.0	500.0	130.0
109	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113	28	106	150.0	250.0	120.0
114 116	103 104	106 105	150.0 44.0	400.0 300.0	120.0 130.0
118	30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0	120.0
120	155	500	140.0	175.0	130.0
125	132	133	44.0	363.0	130.0
127	31	64	225.0	167.0	120.0
129	70	144	100.0	284.0	120.0
130	144	145	44.0	121.0	130.0
132	45	47	150.0	162.0	120.0
133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57 50	58	100.0	120.0	120.0
136	58	60	100.0	262.0	120.0
138 140	56 58	59 143	97.0 100.0	352.0 168.0	130.0 120.0
141	142	143	50.0	264.0	120.0
142	57	142	100.0	202.0	120.0
143	141	142	100.0	99.0	120.0
146	12	150	150.0	360.0	120.0
147	12	151	150.0	163.0	120.0
148	. 13	151	150.0	35.0	120.0
149	151	186	140.0	450.0	130.0
151	154	155	100.0	132.0	120.0
160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162 163	13 13	14 146	150.0 150.0	475.0 35.0	120.0 120.0
164	146	147	150.0	137.0	120.0
167	11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170	33	152	100.0	150.0	120.0
175	56	68	100.0	165.0	120.0
176	68	136	44.0	726.0	130.0
177	136	137	44.0	512.0	130.0
178	137	187	140.0	277.0	130.0
182	71	124	225.0	400.0	120.0
183 184	15 15	124 16	225.0 150.0	441.0 177.0	120.0 120.0
185	16	121	100.0	286.0	120.0
186	120	121	75.0	1,210.0	120.0
187	16	125	100.0	850.0	120.0
19 i	122	209	225.0	120.0	120.0
193	125	126	100.0	396.0	120.0
194	126	128	65.0	668.0	130.0
195	126	127	65.0	1,047.0	130.0
196	128	129	65.0	90.0	130.0
197	129	130	44.0	60.0	130.0
198	130	131	37.0	88.0	130.0
199 200	62 41	520 42	100.0 100.0	569.0 237.0	120.0 120.0
201	30	113	150.0	250.0	120.0
203	5	36	150.0	105.0	120.0
179	187	300	150.0	500.0	120.0
250	136	301	65.0	215.0	130.0
209	160	300	150.0	152.0	120.0
213	62	524	97.0	334.0	130.0
214	30	503	100.0	334.0	120.0
215	112	511	75.0	132.0	120.0
216	500	501	140.0	100.0	130.0
217 218	154 186	501 501	65.0 140.0	104.0 221.0	130.0 130.0
610	100	901	1.40.0	441.U	100.0

110	118	503	75.0	167.0	120.0
110					
300	215	301	100.0	554.0	120.0
208	215	300	100.0	250.0	120.0
17	205	527	100.0	250.0	120.0
172	15	153	150.0	577.0	120.0
		70	150.0	480.0	120.0
302	10				
304	24	25	100.0	55.0	120.0
305	55	172	100.0	50.0	120.0
306	20	172	100.0	50.0	120.0
	23	25	100.0	75.0	120.0
307					
308	40	178	150.0	150.0	120.0
77	39	40	100.0	180.0	120.0
78	40	189	100.0	60.0	120.0
79	100	101	44.0	450.0	130.0
			150.0	150.0	120.0
309	41	42			
310	119	521	65.0	350.0	130.0
311	521	522	65.0	350.0	130.0
313	33	35	100.0	150.0	120.0
	11	523	150.0	120.0	120.0
301					120.0
314	59	523	100.0	180.0	
315	502	524	75.0	150.0	120.0
317	524	600	97.0	450.0	130.0
319	525	526	75.0	210.0	120.0
	527	528	65.0	480.0	130.0
321					
322	134	528	65.0	200.0	130.0
11	165	601	65.0	75.0	130.0
324	188	527	65.0	50.0	130.0
325	122	123	140.0	160.0	130.0
	56	59	140.0	352.0	130.0
327				004.0	130.0
328	1	49	158.0	264.0	
329	206	527	150.0	215.0	120.0
330	156	541	100.C	931.0	120.0
331	112	540	97.0	434.0	130.0
601	91	139	150.0	162.0	120.0
602	91	161	65.0	225.0	130.0
		93	150.0	662.0	120.0
603	70				120.0
605	93	132	150.0	616.0	
606	93	. 185	150.0	300.0	120.0
607	56	602	200.0	1,000.0	120.0
212	22	54	150.0	275.0	120.0
610	122	160	225.0	931.0	120.0
611	91	92	150.0	228.0	120.0
				690.0	120.0
612	92	135	100.0		
613	604	610	97.0	200.0	130.0
614	105	612	44.0	250.0	130.0
616	174	542	97.0	569.0	130.0
701	. 15	606	250.0	500.0	120.0
702	169	603	55.0	50.0	130.0
	15	153	140.0	577.0	130.0
703				850.0	130.0
705	16	125	65.0		
713	102	103	198.0	350.0	130.0
714	103	106	198.0	400.0	130.0
715	28	106	198.0	250.0	130.0
716	28	107	198.0	40.0	130.0
717	107	108	198.0	200.0	130.0
				120.0	130.0
718	108	109	198.0		
719	109	511	198.0	400.0	130.0
720	112	511	198.0	132.0	130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208	140.0	104.0	130.0
	610	611	97.0	630.0	130.0
751					130.0
752	611	612	65.0	610.0	
761	50	542	97.0	1,044.0	130.0
762	68	542	97.0	165.0	130.0
771	101	102	140.0	120.0	130.0
772	100	101	140.0	450.0	130.0
773	41	100	140.0	120.0	130.0
		6	250.0	221.0	120.0
781	5				120.0
782	6	27	250.0	150.0	
783	27	181	250.0	1,106.0	120.0
784	102	. 181	250.0	92.0	120.0
791	151	186	140.0	450.0	130.0
792	13	151	140.0	35.0	130.0
793	13	14	140.0	475.0	130.0
	10				

794	14	153	140.0	236.0	130.0
795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0

	Not Worls	Ann I was	•		i 16-1-			
Node	Net Work Elevation	· ·	s Dynamic	Distribut Dynamic	on Main Static	E		
No.	of Pipe	Demand	Pressure	Pressure	Pressure			Leakage
	(MSL)	(cum/d)	(MSL)	(m)	(m)			(cum/d)
1		98,8 56,7	1,924.6	42.9 40.9	109.3 105.9	0.0	$0.0 \\ 0.0$	25,0 23.7
2 4		61.6	1,926.0 1,925.2	43.4	109.2	0.0 0.0	0.0	25.3
5		32,4	1,925.1	43.8	109.7	0,0	0.0	25.5
. 6		61.6	1,925.0	41.3	107.3	0.0	0.0	23.9
9		107.7	1,923.5	42.3	109.8	0.0	0.0	24.6
10 11		20.3 69.7	1,940.1 1,946.9	36.7 44.8	87.6 88.9	0.0 0.0	0.0	$\begin{array}{c} 21.0 \\ 26.2 \end{array}$
12		53.5	1,919.0	38.5	110.5	0.0	0.0	22.2
13	1,874.2	41.3	1,919.0	44.8	116.8	0.0	0.0	26.2
14		53.5	1,919.1	53.5	125.4	0.0	0.0	31.8
15 16		49.4 68.8	1,919.6 1,919.4	59.1 58.9	130.5 130.5	$0.0 \\ 0.0$	0.0	35.6 35.4
18		86.7	1,923,4	38,3	105.9	0.0	0.0	22,1
19	1,885,8	68.8	1,923.4	37.6	105.2	0.0	0.0	21.6
22		64.0	1,923.6	34.1	101.6	0.0	0.0	19.4
23 24		66.4 94.8	1,923.3 1,923.3	36.0 35.6	103.7 103.3	0.0 0.0	$0.0 \\ 0.0$	20.6 20.4
25		41.3	1,923.3	36.3	104.0	0.0	0.0	20.3
27		60.8	1,924.9	42.6	108.7	0.0	0.0	24.8
28		21.1	1,923.6	44.4	111.8	0.0	0.0	25.9
29 30		10.5 64.8	1,923.3 1,923.4	30.9 40.8	98.6 108.4	0.0 0.0	$0.0 \\ 0.0$	17.4 23.6
31		75.3	1,925.6	43.6	109.0	0.0	0.0	25.4
36		41.3	1,925.0	35,7	101.7	0.0	0.0	20.4
37		38.1	1,925.0	33.6	99.6	0.0	0.0	19.1
38		34.0	1,925.0	31.1	97.1	0.0	0.0	17.5
39 41		40.5 35.6	1,930.0 1,924.1	15.1 24.9	76.1 91.8	0.0 0.0	$0.0 \\ 0.0$	$\frac{7.9}{13.7}$
42		30.8	1,924.1	28.0	94.9	0.0	0.0	15.6
43		32,4	1,924.1	29.3	96.2	0.0	0.0	16.4
44		43.7	1,924.1	30.6	97.6	0.0	0.0	17.3
45 46		54.3 102.9	1,925.0 1,925.1	40.1 46.9	106,1 112,8	0,0 0,0	$0.0 \\ 0.0$	$\frac{23.2}{27.6}$
47		29.2	1,925.0	44.3	110.3	0.0	0.0	25.9
48		81.8	1,924.4	44.2	110.8	0.0	0.0	25.9
49		129.6	1,924.4	43.3	109.9	0.0	0.0	25.3
50 51		116.6 38.1	1,944.9 1,923.5	58.6 28.1	104.7 95.6	0.0 0.0	$0.0 \\ 0.0$	$\frac{35.3}{15.7}$
52		78.6	1,923.3	34.2	101.9	0.0	0.0	19.5
55	1,886.2	72.1	1,923.4	37.2	104.8	0.0	0.0	21.3
56		39.7	1,947.5	44.8	88.3	0.0	0.0	26.2
57 58		75.3 96.4	1,923.4 1,923.3	39.3 32.4	106.9 100.1	0.0	$0.0 \\ 0.0$	22.7 18.3
60		81.0	1,923.3	33.4	101.1	0.0	0.0	19.0
61		40.5	1,924.7	39.3	105.6	0.0	0.0	22.7
62		61.6	1,940.8	50.6	100.8	0.0	0.0	30.0
63 64		30.8 35.6	1,925.6 1,925.6	46.9 49.1	112.3 114.5	0.0	0.0	$\begin{array}{c} 27.6 \\ 29.0 \end{array}$
66		32.4	1,943.7	33.6	81.0	0.0	0.0	19.1
67		30.8	1,945.7	24.2	69.5	0.0	0.0	13.3
68		34.0	1,946.9	28.3	72.4	0.0	0.0	15.8
69 70		40.5 106.9	1,925.1 1,940.1	45.6 35.6	111.5 86.5	0.0	0.0	$\frac{26.7}{20.3}$
71		70.5	1,919.6	25,1	96.5	0.0	0.0	13.9
100	1,896.6	26.7	1,924.1	27.5	94.4	0.0	0.0	15.3
101		20.3	1,924,2	38.3	105.1	0.0	0.0	22.1
102 103		30.0 40.5	1,924.3 1,924.0	47.6 40.9	114.3 107.9	0.0 0.0	$0.0 \\ 0.0$	$28.0 \\ 23.7$
104		15.4	1,929.1	12.8	74.7	0.0	0.0	6.6
109	5 1,903.9	13.8	1,929.3	25.4	87.1	0.0	0.0	14.0
100	•	34.8	1,923.8	42,5	109.7	0.0	0.0	24.7
107 108		25.9 24.3	1,923.6 1,923.5	43.5 39.4	110.9 106.9	0.0 0.0	0.0	25.4 22.8
109		16.2	1,923.5	38.9		0.0	0.0	22.4
113		0.0	1,923.4	22,7	90.3	0.0	0.0	12.4
113	3 1,878.5	23,5	1,923.5	45.0	112.5	0.0	0.0	26.4
114		46.2	1,923.5	26.2	93.7	0.0	0.0	14.5
11 ⁴ 118		47.8	1,923.5 1,922.5	16.0 33.5	83.5 102.0	0.0	0.0 0.0	8.4 19.1
113		51.8	1,921.8	32.7	101.9	0.0	0.0	18.6
120	0 1,871.2	91.5	1,917.4	46.2	119.8	0.0	0.0	27.1
12		. 88.3	1,919.1	56.5	128.4	0.0	0.0	33.8
12. 12.		72.1 52.6	1,946.8 1,946.8	-3.2 19.5	41.0 63.7	0.0 0.0	$0.0 \\ 0.0$	0.0 10.5
12		55.1	1,919.6		111.4	0.0	0.0	23.2
12		87.5	1,918.2		104.8	0.0	0.0	18.1
			and the second					

Ne	t Work	Analysis		Distribut	ion Main	E		
Node E	levation	Domand	Dynamic	Dynamic	Static Pressure			Leakage
No. (of Pipe (MSL)	(cum/d)	Pressure (MSL)	Pressure (m)	(m)			(cum/d)
126	1,894.1	86.7	1,917.8	23.7	96.9	0.0	0,0	13.0
127	1,874.9	43.7	1,917.1	42.2	116,1 94,6	0.0 0.0	$0.0 \\ 0.0$	24.6 11.3
128 129	1,896.4 1,896.0	30.8 6.5	1,917.3 1,917.3	$\begin{array}{c} 20.9 \\ 21.3 \end{array}$	95.0	0.0	0.0	11.6
130	1,886.4	5.7	1,917.3	30.9	104.6	0.0	0.0	17.4
131	1,875.8	3.2	1,917.3	41.5	115.2	0.0	0.0	24.1 31.9
132 133	1,886,8 1,898.7	41.3 14.6	1,940.3 1,940.1	53.5 41.4	104.2 92.3	0.0	0.0	24.0
134	1,924,5	43.7	1,943.8	19.3	66.5	0.0	0.0	10.4
135	1,915.7	47.0	1,943.6	27.9	75.3	0.0	0.0	15.6
136	1,944.8	$\begin{array}{c} 57.5 \\ 95.6 \end{array}$	1,946.7 1,946.8	1.9 41.8	46.2 86.0	0.0 0.0	$0.0 \\ 0.0$	$0.8 \\ 24.3$
137 139	1,905.0 1,905.8	133,7	1,942.0	36,2	85.2	0.0	0.0	20.8
140	1,899.4	25.1	1,923.5	24.1	91.6	0.0	0.0	13.3
141	1,890.2	80.2	1,923.2	33.0 39.3	100.8 107.1	0.0	$0.0 \\ 0.0$	18.7 22.7
142 143	1,883.9 1,888.7	83.4 89.1	1,923.2 1,923.2	34.5	102.3	0.0	0.0	19.7
144	1,907.4	31.6	1,940.0	32,6	83.6	0.0	0.0	18.5
145	1,909.3	4.9	1,940.0	30.7	81.7 114.5	0.0	0.0	$\begin{array}{c} 17.3 \\ 24.7 \end{array}$
146 147	1,876.5 1,878.9	43.7 79.4	1,919.0 1,919.0	42.5 40.1	112.1	0.0	0.0	23.2
148	1,889.6	51.0	1,924.7	35.1	101.4	0.0	0.0	20.0
149	1,901.1	22.7	1,925.0	23.9	89.9	0.0	0.0	13.2
150 151	1,899.4 1,874.4	95,6 61,6	1,919.0 1,919.0	19.6 44.6	91.6 116.6	0.0	0.0	10.5 26.1
152	1,865.9	53.5	1,919.0	53.1	125.1	0.0	0.0	31,6
153	1,862.7	57.5	1,919.1	56.4	128.3	0.0	0.0	33.8
154	1,864.7	53.5	1,919.1	54.4 51.5	126.3 123.4	0.0 0.0	0.0	32.4 30.5
155 156	1,867.6 1,884.8	17.8 32.4	1,919.1 1,925,9	41.1	106.2	0.0	0.0	23.8
157	1,881.9	19.4	1,925.7	43.8	109.1	0.0	0.0	25.6
158	1,880.3	19.4	1,925.6	45.3	110.7	0.0	0.0	26.6 25.5
160 161	1,903.2 1,905.3	15,4 8,9	1,946.8 1,942.1	43.6 36.8	87.8 85.7	$0.0 \\ 0.0$	0.0	21.1
162	1,891.8	30.8	1,923.5	31.7	99.2	0.0	0.0	17.9
163	1,899.3	5.7	1,923.5	24.2	91.7	0.0	0.0	13.3
164 165	1,919.8 1,962.5	3.2 81.8	1,943.8 1,990.8		71.2 28.5	0.0	0.0	13.2 15.9
166	1,899.0	14.6	1,925.5		92.0	0.0	0.0	14.7
169	1,917.8	17.8	1,980.0	62.2	73.2	0.0	0.0	37.6
170 171	1,893.3 1,909.7	10.5 15.4	1,925.6 1,924.6		97.7 81.3	0.0 0.0	0.0	18.3 7.8
21	1,885.1	78.6	1,923.3		105.9	0.0	0.0	22.0
20	1,885.9	67.2	1,923.3		105.1	0.0	0.0	21.5
174	1,902.4	84.2 78.6	1,946.3 1,923.3		88.6 95.3	0.0	0.0 0.0	25.6 15.4
53 176	1,895.7 1,895.0	18.6	1,923.3		96.0	0.0	0.0	16.3
177	1,897.3	18.6	1,924.0	26.7	93.7	0.0	0.0	14.9
178	1,912.8		1,929.9 1,930,0		78.2 73.5	0.0	$0.0 \\ 0.0$	9.1 6.4
179 181	1,917.5 1,881.0		1,924.3		110.0	0.0	0.0	25.3
182	1,891.9	10.5	1,923.5	31.6	99.1	0.0	0.0	17.9
183	1,899.2		1,923.5		91.8 88.2	0.0 0.0	0.0 0.0	13.4 21.4
185 186	1,902.8 1,885.4		1,940.2 1,919.0			0.0	0.0	19.1
187	1,903.2	61.6	1,946.8	43.6		0.0	0.0	25.5
188	1,931.7		1,946.0			0.0	0.0	7.4 4.0
189 300	1,921.8 1,903.6		1,929.9 1,946.8	8.1 3 43.2		0.0	0.0	25.2
301	1,951.4		1,946.8	3 -4.6	39,6	0.0	0.0	0.0
59	1,900.0		1,947.3			0.0	0.0	$\begin{array}{c} 27.9 \\ 14.6 \end{array}$
500 501	1,892.8 1,886.6		1,919.1 1,919.1			0.0	0.0	18.4
502	1,885.6		1,942.4	56.8	105.4	0.0	0.0	34.0
503	1,884.2		1,923.0			0.0	0.0	22.4
510 511	1,914.8 1,892.1		1,942.0 1,923.4			0.0	0.0	15.4 17.7
520	1,913.6		1,940.		77.4	0.0	0.0	15.1
304	1,900.4	56.7	1,939.	5 39,1		0.0	0.0	
172 173	1,886.0 1,916.0		1,923.3 1,928.3			0.0	0.0	21.5 6.6
521	1,886.0		1,921.			0.0	0.0	
522	1,880.0	41.3	1,920.	9 40.9	111.0	0.0	0.0	23.7
523 524	1,903.0		1,946.1 1,942.1			0.0 0.0	0.0	
524 525	1,887.0 1,881.0					0.0	0.0	24.6
526	1,882.0					0.0	0.0	24.0

	Net Work	Analysis	3	Distribut	ion Main	E		
Node	Elevation	Damand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe	Demand	Pressure	Pressure	Pressure			
	(MSL)	(cum/d)	(MSL)	(m)	(m)			(cum/d)
527	1,931.0	24.3	1,946.6	15.6	60.0	0.0	0.0	8.2
528	1,943.0	24.3	1,944.4	1.4	48.0	0.0	0.0	0.6
33	1,867.0	41.3	1,919.0	52.0	124.0	0.0	0.0	30.9
35		49,4	1,918,9	48.9	121.0	0.0	0.0	28.9
40		32.4	1,929.9	9.9	71.0	0.0	0.0	5.0
54		41.3	1,923.4	37.4	105.0	0.0	0.0	21.5
91		0.0	1,942.1	42.7	91.6	0.0	0.0	24.9
92		0.0	1.942.2	46.8	95.6	0.0	0.0	27.5
93		0.0	1.940.2	58.1	109.0	0.0	0.0	34.9
540		562.1	1,935.0	5.0	61.0	0.0	0.0	2.4
541		751.7	1,985.0	5.0	11.0	0.0	0.0	2.4
542	1,889.1	0.0	1,946.4	57.3	101.9	0.0	0.0	34.4
610		0.0	1,930.0	30.0	91.0	0.0	0.0	16.9
611	1,884.6	0.0	1,930.0	45.4	106.4	0.0	0.0	26.6
612		0.0	1,929.8	48.5	109.7	0.0	0,0	28.6
208	1,947.0	-55.I	1,946.6	-0.4	44.0	0.0	0.0	0.0
20€		-318.3	1,946.7	-0.3	44.0	0.0	0.0	0.0
215		-215.5	1,947.0	0.0	44.0	0.0	0.0	0.0
209	,	-89.9	1,946.8	-0.2	. 44.0	0.0	0.0	0.0

	Net	Work	Analy	sis		Distribu	tion Main		E	
Pipe No.	Node			Length	Diameter	C		Velocity	Pressure Gradient	Loss
NO.				(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
1	1	39	510	800.00	225.00	120,00	41,00	0.00	0.00	0.00
2		39	304	374.00	44.00	130.00	56.00	0.40	6.70	2.50
5 6		51 62	140 163	228.00 143.00	150.00 44.00	120.00 130.00	25.00 5.00	0.00 0.00	0,00 0,10	0,00 0,00
7		62 51	162	20.00	150.00	120.00	36,00	0.00	0.00	0,00
9		34	135	178.00	65.00	130,00	57.00	0.20	1.00	0.20
12		.34	164	84,00	44.00	130,00	3.00	0.00	0.00	0.00
13		66	135	265,00	150,00 100,00	120.00 120.00	230.00 262.00	0.10 0.40	0.30 2.40	0.10 1.30
14 15		50 50	66 67	530,00 583.00	100.00	120.00	-183,00	-0.30	-1.30	-0.70
16		67	188	165,00	100.00	120.00	-214.00	-0.30	-1.70	-0.30
20		21	54	59.00	150.00	120.00	-275.00	-0.20	-0.40	0.00
21		21	23	88,00 55,00	100,00 150,00	120.00 120.00	97.00 18.00	0.10	0.40 0.00	$0.00 \\ 0.00$
22 23		23 20	24 24	90.00	100.00	120.00	91.00	0.10	0.30	0.00
24		20	21	66.00	150.00	120.00	-99.00	-0.10	-0.10	0.00
26		25	52	110.00	100.00	120.00	-13.00	0.00	0.00	0.00
27 28		52 53	53 60	$176.00 \\ 100.00$	100.00 100.00	120,00 120,00	40.00 -37.00	0.10 -0.10	0.10 -0.10	0.00 0.00
20 29		18	60	134.00	100.00	120.00	163.00	0.20	1.00	0.10
30		18	19	54.00	150.00	120.00	310.00	0.20	0.50	0.00
31		19	52	151.00	100.00	120,00	133.00	0.20	0.70	0.10
32		19 54	55	133.00 100.00	100.00 100.00	120.00 120.00	108.00 63.00	0.20 0.10	0.50	0.10 0.00
33 34		9	172 18	315.00	225.00	120.00	561,00	0.20	0.20	0.10
35		9	48	47.00	100.00	120,00	-817.00	-1.20	-19.90	-0.90
36		i	48	265.00	225.00	120.00	932.00	0.30	0.50	0.10
37		48	49	201.00 672.00	100.00 150.00	120,00 120,00	33.00 -544.00	0,10 -0.40	0.10 -1.30	0.00 -0.90
38 39		22 22	49 51	596.00	150.00	120.00	99.00	0.10	0.10	0.00
40		49	148	536,00	100.00	120.00	-108.00	-0.20	-0.50	-0.30
41		148	171	372.00	50.00	120.00	15.00	0.10	0.40	0.10
42 43		69 46	148 69	325.00 90.00	100,00 150,00	120.00 120.00	$174.00 \\ 238.00$	0.30 0.20	1,10 0,30	0.40 0.00
43		69	149	551.00	100.00	120.00	22.00	0.00	0.00	0.00
45		1	49	264,00	100.00	120.00	115.00	0.20	0.50	0.10
46		1	46	401.00	225.00		-1,563.00	-0.50	$-1.30 \\ 0.20$	-0.50 0.10
47 48		46 47	47 64	268.00 268.00	100,00 100,00	120.00 120.00	69.00 -244.00	0.10 -0.40	-2.10	-0.60
49		63	64	444.00	300.00	120.00	355.00	0.10	0.00	0.00
50)	46	63	268,00	225,00	120.00	-1,973.00	-0.60	-2.00	-0.50
51		63	158	47.00	300.00	120.00	-2,360.00	-0.40 0.10	-0.70 0.30	0.00 0.10
52 53		158 157	166 158	$358.00 \\ 77.00$	50.00 300.00	120,00 120,00	14.00 2,394.00	0.10	0.70	0.10
54		157	170	264.00	44.00	130.00	10.00	0.10	0.30	0.10
55	Ď	156	157	300.00	300.00	120.00	2,424.00	0.40	0.70	0.20
56		2	156 203	100.00 704.00	300,00 350.00	120.00 120.00	3,208.00 ~5,219.00	0.50 -0.60	1,20 -1,40	$0.10 \\ -1.00$
61 62		2 2	203 4	442,00	225.00	120.00	1,954.00	0.60	1.90	0.80
63		4	ŝ	65.00	225.00	120.00	1,852.00	0.50	1.80	0.10
64		4	61	972.00	65.00	130.00	40.00	0.10	0.50	0.50
69 60		5 6	6 27	221.00 150.00	150.00 150.00	120.00 120.00	329.00 316.00	0,20 0,20	0.50 0.50	0.10 0.10
67		27	37	216.00	100.00	120.00	-114.00	-0.20	-0.50	-0.10
68	В	36	37	400,00	150.00	120,00	145.00	0.10		0.10
69		36	38	563.00	100.00	120.00	41.00	0.10		0.10
70 71		37 27	38 181	30.00 1,106.00	150.00 150.00	120.00 120.00	-7.00 327.00	0.00 0.20		0.00 0.60
7.		39	173	320.00	44.00	130.00	41.00	0.30		1.20
76	6	102	181	92,00	150.00	120.00	-314.00	-0.20		0.00
81		39	179	125,00	150.00	120.00	~182.00 ~23.00	-0.10 -0.10		0.00
8: 8:		179 102	208 103	104.00 350.00	65.00 150.00	130.00 120.00	388.00	0.30		0.20
8		101	102	120.00	44.00	130.00	-10.00	-0.10	-0.30	0.00
8		41	100	120.00	44.00	130.00	-8.00	-0.10		0.00
8		100	101	312.00	37.00	130.00	-7.00	-0.10 0.10		-0.10 0.00
8 8		42 42	43 43	257.00 257.00	100.00 100.00	120.00 120.00	56.00 56.00	0.10		0.00
9		43	44	268.00	150.00		81.00	0.10	0.00	0.00
9	1	44	177	391.00	100.00		18.00	0.00		0.00
	2	44 176	176 177	391.00 90.00	100.00 100.00	120.00 120.00	18.00 0.00	0.00		$0.00 \\ 0.00$
9		29	112	251.00	65.00		-10,00	0,00		0.00
10	10	109	511	400.00	100,00	120.00	78.00	0.10	0.30	0.10
10		108	109	120.00	100.00		80.00	0.10		0.00
10 10		108 107	183 108	228,00 200.00	44.00 100.00		9.00 84.00	0.10 0.10		0.10 0.10
10		101	700	200.00	100.00	10,00	01400	4.10	. 2,00	

	Net Wor	k Anal	ysis		Distribu	tion Main		E.	
Pipe		Node B	Length	Diameter	С	Flow	Velocity	Pressure	Loss
No.	*******		(m)	(nm)		(cum/d)	(m/s)	Gradient (o/oo)	(m)
104		182	253.00	44.00	130.00	10.00	0,10	0,30	0.10
105		107	40.00	100.00 150.00	120,00 120,00	89.00 490.00	$0.10 \\ 0.30$	0.30 1.10	0,00 0,10
106 107		113 114	66.00 265.00	65.00	130.00	15.00	0.10	0.10	0.00
108		117	500.00	65.00	130,00	9,00	0.00	0.00	0.00
109		118	318,00	44.00	130.00	37.00	0.30	3.00	1.00
111 113		119 106	248.00 250.00	75.00 150.00	120.00 120.00	134.00 -365.00	$0.30 \\ -0.20$	2.90 -0.60	$0.70 \\ -0.20$
114		106	400.00	150.00	120.00	376.00	0.30	0.70	0.30
116		105	300.00	44.00	130,00	-15.00	-0.10	-0.60	-0.20
118 119		526 132	210.00 1,500.00	100.00 150.00	120.00 120.00	$82.00 \\ 273.00$	0.10 0.20	0.30 0.40	0.10 0.50
120		500	175.00	140.00	130.00	39.00	0.00	0,00	0.00
125		133	363.00	44.00	130.00	14.00	0.10	0.50	0.20
127 129		64 144	167.00 284.00	225,00 100,00	120.00 120.00	-75.00 36.00	0.00	0.00 0.10	0.00
130		145	121.00	44.00	130.00	4.00	0.00	0.10	0.00
132	45	47	162.00	150.00	120.00	-285.00	0.20	-0.40	-0.10
133		45 57	761.00 25.00	100.00 100.00	120,00 120,00	-230.00 379.00	-0.30 0.60	-1.90 4.80	$-1.50 \\ 0.10$
134 138		. 58	120.00	100.00	120.00	147.00	0.20	0.80	0.10
136		- 60	262,00	100.00	120.00	-45.00	-0.10	-0.10	0.00
138		59	352.00	97.00	130.00	96.00	0.10	0.40	$0.10 \\ 0.10$
140 141		143 143	168.00 264.00	100.00 50.00	120,00 120,00	96.00 -7.00	0.10 0.00	0.40 -0.10	0.10
142		142	202.00	100.00	120.00	156.00	0.20	0.90	0.20
143	141	142	99.00	100.00	120.00	-80.00	-0.10	-0.30	0.00
146		150 151	360.00 163.00	150.00 150.00	120.00 120.00	95.00 -149.00	0.10 -0.10	0.10 -0.10	0.00 0.00
147 148		151	35.00	150.00	120.00	53.00	0.00	0.00	0.00
149	151	186	450.00	140.00	130.00	-54.00	0.00	0.00	0.00
151		155	132.00	100.00	120.00 120.00	56.00 87.00	0.10 0.10	0.10	$0.00 \\ 0.10$
160 161		154 153	165.00 236.00	100.00 150.00	120.00	-243.00	-0.20	-0.30	-0.10
162	2 13	14	475.00	150.00	120.00	-139.00	-0.10	-0.10	-0.10
16		146	35.00	150.00	120.00	123.00	0.10 0.10	0.10	0.00
16 16		147 137	137.00 663.00	150.00 150.00	120.00 120.00	79.00 138.00	0.10	0.10	0.10
16	3 14	152	66.00	100.00	120.00	144.00	0.20	0.80	0.10
17		152	150.00	100.00	120.00	-90.00	-0.10	-0.30 3.60	-0,10 0,60
17: 17:		68 136	165.00 726.00	100,00 44,00	120.00 130.00	324,00 10.00	$0.50 \\ 0.10$	0.30	0.20
17		137	512.00	44.00	130.00	-11.00	-0.10	-0.30	-0.20
17		187	277.00	140.00	130.00	32.00	0.00	. 0.00	0.00
18 18		124 124	400.00 441.00	225,00 225,00	120,00 120.00	-70.00 125.00	0.00	0.00 0.00	0.00
18			177.00	150.00	120.00	512.00	0.30	1.20	0.20
18		121	286.00	100.00	120.00	179.00	0.30	1.20	0.30
18 18		121 125	1,210.00 850.00	75.00 100.00	120.00 120.00	-91.00 195.00	-0.20 0.30	-1.40 1.40	-1.70 - 1.20
19		209	120.00	225,00	120.00	~89.00	0.00	0.00	0.00
19	3 125	126	396.00	100.00	120.00	176.00	0.30	1.20	0.50
19 19		128 127	668.00 1,047.00	65.00 65.00	$130.00 \\ 130.00$	46.00 43.00	0.20 0.10	$0.70 \\ 0.60$	0.50 0.70
19		129	90.00	65.00	130.00	15.00	0.10	0.10	0.00
19	7 129	130	60.00	44,00	130.00	8.00	0.10	0.20	0.00
19 19		131 520	88.00 569.00	37.00 100.00	130.00	3.00 51.00	0.00	$0.10 \\ 0.10$	0,00 0.10
20		42	237.00	100.00	120.00	30.00	0.10	0.10	0.00
20	1 30	113	250.00	150.00	120.00	-336.00	-0.20	-0.50	-0.10
20		36	105.00	150.00 150.00	120.00 120.00	227.00 -29.00	0.10 0.00	0.30 0.00	0.00
17 25		300 301	500.00 215.00	65.00	130.00	-36.00	-0.10	-0.40	-0.10
20	9 160	300	152,00	150.00	120.00	-50.00	0.00	0.00	0.00
21		524	334.00	97.00	130,00	-385,00	-0.60 0.30	-5,00 1.30	-1.70
21 21		503 511	334.00 132.00	100.00 75.00	120.00 120.00	189.00 -38.00	-0.10	-0.30	0.40
21	6 500	501	100.00	140.00	130.00	18.00	0.00	0.00	0,00
21	7 154	501	104.00	65.00	130.00	24.00	0.10	0.20	0.00
21 11		501 503	221.00 167.00	140,00 75,00	130.00 120.00	-162.00 -127.00	-0.10 -0.30	-0.20 -2.60	0.00 -0.40
30			554.00	100.00	120.00	97.00	0.10	0.40	0.20
20	8 215	300	250.00	100.00	120.00	117.00	0.20	0.60	0.10
15	7 205 2 15	527 153	250.00 577.00	100.00 150.00	120.00 120.00	55.00 439.00	0.10 0.30	0.10 0.90	0.00 0.50
30		133 70	480.00	150.00		-20.00	0.00	0.00	0.00
3(55.00	100,00	120.00	14.00	0.00	0.00	0,00

	Net	Work	Analy	vsis		Distribut	ion Main	F		
Pipe No.	Node		de B		Diameter	C		Velocity	Pressure Gradient	Loss
100+				(m)	(mn)		(cum/d)	(m/s)	(0/00)	(m)
305		55	172	50.00	100.00	120.00	36,00	0.10	0,10	0.00
306		20	172	50.00	100.00	120.00	-59,00	-0.10	-0.10	0.00
307		23	25	75.00	100.00	120.00	13,00	0.00	0.00	0.00
308		40	178	150.00	150.00	120.00	44.00	0.00	0.00	0.00
77		39	40	180.00	100.00	120.00	100.00	0.10	0.40	0.10 0.00
78		40	189	60.00	100.00	120.00	23.00	0.00 -0.10	0.00 -0.20	-0.10
79		100	101	450.00	44.00	130.00	~9.00	0.10	0.10	0.00
309		41	42	150.00	150.00	120.00	113.00 82.00	0.10	2,00	0.70
310		119	521	350.00	$65.00 \\ 65.00$	130.00 130.00	41.00	0.10	0.60	0.20
311		521	522	350.00 150.00	100.00	120,00	49.00	0.10	0.10	0.00
313		33 11	35 523	120.00	150.00	120.00	-208.00	-0.10	-0.20	0.00
301 314		59 ·	523	180.00	100.00	120.00	249.00	0.40	2.20	0.40
319		502	524	150.00	75.00	120.00	-64.00	-0.20	-0.70	-0.10
317	, 7	524	600	450.00	97.00	130.00	-491.00	-0.80	-7.80	-3.50
319		525	526	210.00	75.00	120.00	-41.00	-0.10	-0.30	-0.10
32		527	528	480,00	65.00	130.00	128.00	0.50	4.60	2.20
322		134	528	200.00	65.00	130.00	-104.00	-0.40	-3.10	-0.60
1		165	601	75,00	65.00	130.00	-81.00	-0.30	-2.00	-0.10
32		188	527	50.00	65.00	130,00	-220.00	-0.80	-12.40	-0.60
32	5	122	123	160.00	140.00	130.00	52.00	0.00	0.00	0.00
32	7	56	59	352.00	140.00	130.00	252.00	0.20	0.40	0.10
32	8	1	49	264.00	158.00	130.00	416.00	0.30	0.50 0.50	0.10 0.10
32		206	527	215.00	150.00	120,00	318.00	0.20 1.10	17.10	15.90
33		156	541	931.00	100.00	120.00	751.00	0.90	10.00	4.30
33		112	540	434.00	97.00	130.00	562.00 231.00	0.10	0.30	0.00
60		91	139	162.00	150.00	120.00 130.00	8.00	0.00	0.00	0.00
60		91	161	225.00	65.00 150.00	120.00	-163.00	-0.10	-0.10	-0.10
60		70	93 132	662.00 616.00	150.00	120.00	-217.00	-0.10	-0.20	-0.10
60		93 93		300.00	150.00	120.00	53,00	0.00	0.00	0.00
60 60		93 56	602	1,000.00	200,00	120.00	~712.00	-0.30	-0.50	-0.50
21		22	54	275.00	150.00	120.00	380.00	0.30	0.70	0.20
61		122	160	931.00	225.00	120.00	-34.00	0.00	0.00	0.00
61		91	92	228.00	150.00	120.00	-240.00	-0.20	-0.30	-0.10
61		92	135	690.00	100.00	120.00	-240.00	-0.30	-2.10	-1.40
	3	604	610	200,00	97.00		29.00	0.10	0.00	0.00
	14	105	612	250.00	44.00		-29.00	-0.20	-2.00	-0.50
	16	174	542	569.00	97.00		-84.00	-0.10	-0.30	-0.20
	01	186	606	500.00	250.00		-1,524.00	-0.40	-0.70	~0.40 0.00
	02	169	603	50.00	55,00		-17.00	-0.10	-0.30 0.90	0.50
	03	15	153	577.00	140.00		397.00 68.00	0.30 0.20	1.40	1.20
	05	16	125	850.00	65.00		874.00		0.70	0.20
	13	102	103	350.00	198,00 198,00	130.00	846.00		0.70	0.30
	14	103	106 106	400.00 250.00	198.00		-821:00		-0.60	-0.20
	15	28 28	107	40.00	198.00		585.00		0.30	0.00
	16 1 7	107	108		198.00		554.00		0.30	0.10
7	18	108	109				524.00			0.00
	19	109	511	400.00			510.00			0.10
	20	112	511		198.00		-534.00			0.00
	31	113	114	265.00	140.00		115.00			0.00
	32	114	117				74,00			0.00
7	41	179	208				-178.00			0.00
	51	610	611				29,00			0.00
	52	611	612				29.00			-1.50
	761	50	542				-196.00			0.50
	762	68	542				280.00 -216.00			0.00
	771	101	102				-210.00 -190.00			-0.10
	772	100	101				-171.00			0.00
	773	41	100				1,262.0			0.10
	781 799	5 6	27 27						0.50	0.10
	782 783	27	181							0.60
	784	102	181							0.00
	791	151	186						0.00	0.00
	792	13	151					0.00	0.00	0.00
	793	13	14			0 130.00	-126.0			-0.10
	794	14	15		0 140.0					-0.10
	795	154	50:					0.10		0.00
	796	153	15	4 165.0	0 140.0	00 130.00	228.0	0.20	0.30	0.10
										200

Net Work Analysis

Distribution Main

File Name

Nuwara012Year1995Mean(3) F

Season

Wet Network Type Proposed

Demand

Reserver

Year 1995 Day Mean Water Level Fix Discharge Fix

All None

Magnification of Demand

0.739

Reservoir Node	Data	HWL (MSJ.)	LWL (MSL)	Reservoir
203	1	1,927.0	1,927.0	Haddon Hill
205	1	1,955.0	1,955.0	New Water Field
206	ī	1,955.0	1,955.0	Old Water Field
208	Î	1,930.0	1,930.0	Bonavista
209	1	1,960.0	1,960.0	Lovers Leap
215	Î	1,965.0	1,965.0	Gamunu/Brewery
600	i	1,946.0	1,946.0	Nseby
601	í	1,991.0	1,991.0	Piyatisappura
603	ī	1,980.0	1,980.0	Unique View
604	î	1,925.0	1,925.0	Yi ji thapura
606	Î	1,920.0	1,920.0	Low Area 2

Node Dat	a	a 1.03	0		
Node		Ground Elev	Demand		
		(MSL)	(cu∎/d)	0	0
. 1	1	1,881.7	122.0	0	Ö
2	1	1,885.1	70.0	=	0
4	1	1,881.8	76.0	0	0
5	i	1,881.3	40.0	0	0
6	1	1,883.7	76.0	0	0
9	i	1,881.2	133.0	0	-
10	1	1,903.4	25.0	. 0	0
11	i	1,902.1	86.0	0	0
12	1	1,880.5	66.0	0	0
13	1	1,874.2	51.0	0	0
14	1	1,865.6	66.0	0	0
15	1	1,860.5	61.0	0	0
16	1	1,860.5	85.0	0	0
18	1	1,885.1	107.0	0	0
19	1	1,885.8	85.0	0	0
22	1	1,889.4	79.0	0	0
23	1	1,887.3	82.0	0	0
24	1	1,887.7	117.0	0	0
25	1	1.887.0	51.0	0	0
27	1	1.882.3	75.0	0	0
28	ï	1,879.2	26.0	0	0
29	1		13.0	0	0
30	1		80.0	0	0
31	1		93.0	0	0
36	. 1		51.0	. 0	0
37	1		47.0	0	0
38	î		42.0	0	0
39	ì		50.0	0	0
41	í		44.0	0	0
42	. 1		38.0	0	0
43		1,894.8	40.0	0	0
44		1,893.4	54.0	0	0
45		1,884.9	67.0	0	0
46		1 1,878.2	127.0	0	0
47		1,880.7	36.0	0	0
48		1 1,880.2	101.0	0	0
49		1 1,881.1	160.0	. 0	0
		1 1,886.3	144.0	. 0	0
50 51		1 1,895.4	47.0	.0	. 0
		1 1,889.1	97.0	0	0
52			89.0	ŏ	0
55			49.0	Ö	Õ
.56		1 1,902.7	93.0	ő ·	0
57	,	1 1,884.1	90.0	v	

58	1	1,890.9	119.0	0	0
60	1	1,889.9	100.0	0	0
61	i	1,885.4	50.0	0	0
62	i	1,890.2	76.0	Ŏ	Õ
			38.0	ŏ	ŏ
63	1	1,878.7			0
64	i	1,876.5	44.0	0	
66	1	1,910.0	40.0	0	0
67	1	1,921.5	38.0	0	0
68	1	1,918.6	42.0	0	0
69	1	1,879.5	50.0	0	0
70	1	1,904.5	132.0	0	0
71	1	1,894.5	87.0	0	0
100	i	1,896.6	33.0	0	0
101	i	1,885.9	25.0	0	Ō
102	1	1,876.7	37.0	ŏ	ŏ
				Ů	ő
103	1	1,883.1	50.0		
104	į	1,916.3	19.0	0	0
105	1	1,903.9	17.0	0	0
106	1	1,881.3	43.0	0	0
107	1	1,880.1	32.0	0	- 0
108	1	1,884.1	30.0	0	0
109	- 1	1,884.6	20.0	0	0
112	1	1,900.7	0.0	. 0	0
113	i	1,878.5	29.0	0	0
114	1	1,897.3	57.0	Ö	Ö
			59.0	0	Ö
117	1	1,907.5			
118	1	1,889.0	37.0	0	0
119	1	1,889.1	64.0	0	0
120	1	1,871.2	113.0	0	0
121	1	1,862.6	109.0	0	0
122	1	1,950.0	89.0	0	0
123	1	1,927.3	65.0	0	0
124	i	1,879.6	68.0	0	0
125	ĺ	1,886.2	108.0	0	0
126	î	1,894.1	107.0	0	0
127	i	1,874.9	54.0	ŏ	ŏ
				0	0
128	!	1,896.4	38.0		
129	1	1,896.0	8.0	0	0
130	1	1,886.4	7.0	0	0
131	1	1,875.8	4.0	0	0
132	1	1,886.8	51.0	0	0
133	1	1,898.7	18.0	0	0
134	1	1,924.5	54.0	0	0
135	1	1,915.7	58.0	0	0
136	Ī	1,944.8	71.0	0	0
137	î	1,905.0	118.0	0	Ō
	1	1,905.8	165.0	ŏ	ő
139				•	
140	l	1,899.4	31.0	0	0
141	1	1,890.2	99.0	0	0
142	1	1,883.9	103.0	0	0
143	1	1,888.7	110.0	0	0
144	i	1,907.4	39.0	0 .	0
145	- 1	1,909.3	6.0	0	0
146	1	1,876.5	54.0	0 :	0
147	1	1,878.9	98.0	0	0
148	1	1,889.6	63.0	0	0
149	ĺ	1,901.1	28.0	0	0
150	í	1,899.4	118.0	0	Ö
			76.0	0	Õ
151	1	1,874.4			
152	1	1,865.9	66.0	0	0
153	1	1,862.7	71.0	0	. 0
154	1	1,864.7	66.0	0	0
155	1	1,867.6	22.0	0	0
156	1	1,884.8	40.0	0	0
157	1	1,881.9	24.0	0	0
158	1	1,880.3	24.0	0	0
160	i	1,903.2	19.0	0 .	0
161	i	1,905.3	11.0	Ŏ	ŏ
			38.0	0	0
162	1	1,891.8			
163	1	1,899.3	7.0	0	0
164	1	1,919.8	4.0	0	0
165	1	1,962.5	101.0	0	0
166	1	1,899.0	18.0	0	0
169	1	1,917.8	22.0	0	0
170	i	1,893.3	13.0	0	0

				_	
171	1	1,909.7	19.0	0	0
21	1	1,885.1	97.0	0	0
20	1	1,885.9	83.0	0	0
174	1	1,902.4	104.0	0	0
53	1	1,895.7	97.0	0	0
176	ī	1,895.0	23.0	0	0
177	i	1,897.3	23.0	Ô	0
178	i	1,912.8	55.0	Ŏ	Õ
179	i	1,917.5	25.0	Ŏ	ŏ
181	1	1,881.0	80.0	Ö	ŏ
	1	1,891.9	13.0	0	ő
182				0	0
183	i	1,899.2	12.0	0	0
185	1	1,902.8	66.0		
186	1	1,885.4	66.0	0	0
187	1	1,903.2	76.0	0	0
188	1	1,931.7	8.0	0	0
189	1	1,921.8	29.0	0	0
300	1	1,903.6	47.0	0	0
301	1	1,951.4	76.0	0	0
59	1	1,900.0	122.0	0	0
500	i	1,892.8	25.0	0	0
501	1	1,886.6	76.0	0	0
502	1	1,885.6	80.0	0	0
503	1	1,884.2	76.0	0	0
510	ĩ	1,914.5	51.0	0	0
511	i	1,892.1	20.0	0	0
520	i	1,913.6	63.0	ō	Ŏ
304	1	1,900.4	70.0	Ŏ	Ö
172	i	1,886.0	51.0	Ŏ	Ö
173	1	1,916.0	51.0	Ö	ŏ
521	1	1,886.0	51.0	Ŏ	- 0
522	i	1,880.0	51.0	0	Ö
		1,903.0	51.0	0	0
523	1			0	0
524	1	1,887.0	51.0	0	0
525	1	1,881.0	51.0		
526	1	1,882.0	51.0	0	0
527	1	1,931.0	30.0	0	0
528	1	1,943.0	30.0	0	0
33	1	1,867.0	51.0	0	. 0
35	1	1,870.0	61.0	0	. 0
40	1	1,920.0	40.0	0	0
54	1	1,886.0	51.0	0	0
91	1	1,899.4	0.0	0	. 0
92	1	1,895.4	0.0	0	0
93	1	1,882.0	0.0	0	0
540	1	1,930.0	694.0	0	0
541	1	1,980.0	928.0	0	, 0
542	i	1,889.1	0.0	0	0
610	1	1,900.0	0.0	0	. 0
611	. 1	1,884.6	0.0	0	0
612	1	1,881.3	0.0	0	0
		-			

Booster Pump D No. Type	ata Node A	Node B	Pipe No.	Pressure
				(重):
1 B	156	541	330	72.4
2 R	112	540	331	14.7

Pipe Pipe	Data	ode A. Noc	ie B Di	ameter	Length	C Yalue
Tipo	110. 11	otto it not		(mm)	(m)	
	1	139	510	225.0	800.0	120.0
	2	139	304	44.0	374.0	130.0
	5	51	140	150.0	228.0	120.0
	6	162	163	44.0	143.0	130.0
	7	51	162	150.0	20.0 178.0	120.0 130.0
	9 12	134 134	135 164	$65.0 \\ 44.0$	84.0	130.0
	13	66	135	150.0	265.0	120.0
	14	50	66	100.0	530.0	120.0
	15	50	67	100.0	583.0	120.0
	16	67	188	100.0	165.0	120.0
	20	21	54	150.0	59.0	120.0
	21 22	21 23	23 24	100.0 150.0	88.0 55.0	120.0 120.0
	23	20 20	24	100.0	90.0	120.0
	24	20	21	150.0	66.0	120.0
	26	25	52	100.0	110.0	120.0
	27	52	53	100.0	176.0	120.0
	28	53	60	100.0	100.0	120.0
	29	18	60	100.0 150.0	134.0 54.0	120.0 120.0
	30 31	18 19	19 52	100.0	151.0	120.0
	32	19	55	100.0	133.0	120.0
	33	54	172	100.0	100.0	120.0
	34	. 9	18	225.0	315.0	120.0
	35	9	48	100.0	47.0	120.0
	36	1	48	225.0	265.0	120.0 120.0
	37 38	48 22	49 49	100.0 150.0	201.0 672.0	120.0
	39	22	51	150.0	596.0	120.0
	40	49	148	100.0	536.0	120.0
	41	148	171	50.0	372.0	120.0
	42	69	148	100.0	325.0	120.0
	43	46	69	150.0	90.0	120.0 120.0
	44 45	69 1	149 49	100.0 100.0	551.0 264.0	120.0
	46	i	46	225.0	401.0	120.0
	47	46	47	100.0	268.0	120.0
	48	47	64	100.0	268.0	120.0
	49	63	64	300.0	444.0	120.0
	50	46	63	225.0	268.0	120.0 120.0
	51 52	63 158	158 166	300.0 50.0	47.0 358.0	120.0
	53	157	158	300.0	77.0	120.0
	54	157	170	44.0	264.0	130.0
	55	156	157	300.0	300.0	120.0
	56	2	156	300.0	100.0	120.0
	61	2	203	350.0	704.0 442.0	120.0 120.0
	62 63	2 4	4 5	$225.0 \\ 225.0$	65.0	120.0
	64	4	61	65.0	972.0	130.0
	65	5	6	150.0	221.0	120.0
	66	6	27	150.0	150.0	120.0
	67	27	37	100.0	216.0	120.0
	68	36	37	150.0	400.0 563.0	120.0 120.0
	69 70	36 37	38 38	100.0 150.0	30.0	120.0
	72	27	181	150.0	1,106.0	120.0
	74	39	173	44.0	320.0	130.0
	76	102	181	150.0	92.0	
	80	39	179	150.0	125.0	120.0
	82	179	208	65.0	104.0 350.0	130.0 120.0
	83 84	102 101	103 102	150.0 44.0	120.0	130.0
	86	41	102	44.0	120.0	130.0
	87	100	101	37.0	312.0	130.0
	88	42	43	100.0	257.0	
	89		43	100.0	257.0	
	90		44 177		268.0 391.0	
	91 92	44 44	177 176		391.0	
	93		177		90.0	

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109	100.0	120.0	120.0
102	108	183	44.0	228.0	130.0
103	107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0 120.0
105	28 28	107 113	100.0 150.0	$\begin{array}{c} 40.0 \\ 66.0 \end{array}$	120.0
106 107	20 113	114	65.0	265.0	130.0
108	114	117	65.0	500.0	130.0
109	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113	28	106	150.0	250.0	120.0
114	103	106 105	150.0 44.0	400.0 300.0	120.0 130.0
116 118	104 30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0	120.0
120	155	500	140.0	175.0	130.0
125	132	133	44.0	363.0	130.0
127	31	64	225.0	167.0	120.0 120.0
129	70	144 145	100.0 44.0	284.0 121.0	130.0
130 132	144 45	47	150.0	162.0	120.0
133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57	58	100.0	120.0	120.0
136	58	60	100.0	$\begin{array}{c} 262.0 \\ 352.0 \end{array}$	120.0 130.0
138	56 58	59 143	97.0 100.0	168.0	120.0
140 141	142	143	50.0	264.0	120.0
142	57	142	100.0	202.0	120.0
143	141	142	100.0	99.0	120.0
146	12	150	150.0	360.0	120.0
147	12	151	150.0	163.0 35.0	120.0 120.0
148 149	13 151	151 186	150.0 140.0	450.0	130.0
151	154	155	100.0	132.0	120.0
160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162	. 13	14	150.0	475.0	120.0 120.0
163	13	146 147	150.0 150.0	$35.0 \\ 137.0$	120.0
164 167	146 11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170	33	152	100.0	150.0	120.0
175	56	68	100.0	165.0	120.0 130.0
176	68	136	44.0	726.0 512.0	130.0
177 178	136 137	137 187	44.0 140.0	277.0	130.0
182	71	124	225.0	400.0	120.0
183	15	124	225.0	441.0	120.0
184	15	16	150.0	177.0	120.0
185	16	121 121	100.0 75.0	286.0 1,210.0	120.0 120.0
186 187	120 16	125	100.0	850.0	120.0
191	122	209	225.0	120.0	120.0
193	125	126	100.0	396.0	120.0
194	126	128	65.0	668.0	130.0
195	126	127	65.0	1,047.0	130.0 130.0
196	128 129	129 130	65.0 44.0	60.0	130.0
197 198	130	131	37.0	88.0	130.0
199	62	520	100.0	569.0	120.0
200	41	42	100.0	237.0	120.0
201	30	113	150.0	250.0	120.0 120.0
203	5 197	36 300		105,0 500.0	120.0
179 250	187 136	301		215.0	130.0
209	160	300			120.0
213	62	524	97.0	334.0	130.0
214	30	503			120.0
215	112	511			120.0 130.0
216 217	500 154	501 501			130.0
218	186	501			130.0
-10		5 7 2			100

110	118	503	75.0	167.0	120.0
300	215	301	100.0	554.0	120.0
208	215	300	100.0	250.0	120.0
17	205	527	100.0	250.0	120.0
172	15	153	150.0	577.0	120.0
302	10	70	150.0	480.0	120.0
304	24	25	100.0	55.0	120.0
305	55	172	100.0	50.0	120.0
306	20	172	100.0	50.0	120.0
307	23	25	100.0	75.0	120.0
308	40	178	150.0	150.0	120.0
77	39	40	100.0	180.0	120.0
78	40	189	100.0	60.0	120.0
79	100	101	44.0	450.0	130.0
309	41	42	150.0	150.0	120.0
310	119	521	65.0	350.0	130.0
311	521	522	65.0	350.0	130.0
313 301	33 11	35 523	100.0 150.0	150.0 120.0	120.0 120.0
314	59	523	100.0	180.0	120.0
315	502	524	75.0	150.0	120.0
317	524	600	97.0	450.0	130.0
319	525	526	75.0	210.0	120.0
321	527	528	65.0	480.0	130.0
322	134	528	65.0	200.0	130.0
11	165	601	65.0	75.0	130.0
324	188	527	65.0	50.0	130.0
325	122	123	140.0	160.0	130.0
327	56	59	140.0	352.0	130.0
328	1	49	158.0	264.0	130.0
329	206	527	150.0	215.0	120.0
330	156	541	100.0	931.0	120.0
331	112	540	97.0	434.0	130.0
601	91	139	150.0	162.0	120.0
602	91	161	65.0	225.0	130.0
603	70	93	150.0	662.0	120.0
605	93	132	150.0	616.0	120.0
606	93	185	150.0	300.0	120.0
212 610	22 122	54 160	150.0 225.0	275.0	120.0
611	91	92	150.0	931.0 228.0	120.0 120.0
612	92	135	100.0	690.0	120.0
613	604	610	97.0	200.0	130.0
614	105	612	44.0	250.0	130.0
616	174	542	97.0	569.0	130.0
701	15	606	250.0	500.0	120.0
702	169	603	55.0	50.0	130.0
703	15	153	140.0	577.0	130.0
705	16	125	65.0	850.0	130.0
713	102	103	198.0	350.0	130.0
714	103	106	198.0	400.0	130.0
715	28	106	198.0	250.0	130.0
716 717	28 107	107	198.0	40.0	130.0
718	107	108 109	198.0 198.0	200.0 120.0	130.0
719	109	511	198.0	400.0	130.0 130.0
720	112	511	198.0	132.0	130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208	140.0	104.0	130.0
751	610	611	97.0	630.0	130.0
752	611	612	65.0	610.0	130.0
761	50	542	97.0	1,044.0	130.0
762	68	542	97.0	165.0	130.0
771	101	102	140.0	120.0	130.0
772	100	101	140.0	450.0	130.0
773	41	100	140.0	120.0	130.0
781	5	6	250.0	221.0	120.0
782	6	27	250.0	150.0	120.0
783 784	27	181	250.0	1,106.0	120.0
784 791	102 151	181	250.0	92.0	120.0
791	131	186 151	140.0 140.0	450.0 35.0	130.0 130.0
793	13	14	140.0	475.0	130.0
794	14	153	140.0	236.0	130.0
1	* *	100		20010	10000

795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0

	No	+ Wanb	Analysis		Distribut	ion Main	F		
Node		levation	-	Dynamic	Dynamic	Static	r		Leakage
No.	•	of Pipe	Demand	Pressure	Pressure	Pressure			(cum/d)
1	l	(MSL) 1,881.7	(cum/d) 90,3	(MSL) 1,924.9	(m) 43,2	(正) 109.3	0.0	0.0	25.2
	2	1,885,1	51.8	1,926.2	41.1	105.9	0.0	0.0	23.8
1	1	1,881.8	56.2	1,925.5	43.6	109.2	0.0	0.0	25.5
	5 6	1,881.3 1,883.7	29,6 56,2	1,925.4 1,925.3	44.1 41.6	109.7 107.3	0,0 0,0	$0.0 \\ 0.0$	25.7 24.1
	9	1,881.2	98.4	1,924.0	42.8	109.8	0.0	0.0	24,9
10	0	1,903.4	18.5	1,941.0	37.6	87.6	0.0	0.0	21.6
1 1:		1,902.1	63.6 48.8	1,958,1 1,919.2	56.0 38.6	88.9 110.5	0.0 0.0	$0.0 \\ 0.0$	$33.5 \\ 22.3$
1:		1,880.5 1,874.2	37.7	1,919.2	45.0	116.8	0.0	0.0	26.3
1	4	1,865.6	48.8	1,919.2	53.6	125.4	0.0	0.0	31.9
1. 1		1,860.5 1,860.5	$45.1 \\ 62.9$	1,919.7 1,919.5	59.2 59.0	130.5 130.5	0.0 0.0	$0.0 \\ 0.0$	35.6 35.5
1.		1,885.1	79.2	1,924.0	38.9	105.9	0.0	0.0	22.4
1	9	1,885.8	62.9	1,924.0	38.2	105.2	0.0	0.0	22.0
2	2	1,889.4 1,887.3	58.5 60.7	1,924.1 1,923.9	34.7 36.6	101.6 103.7	0.0	$0.0 \\ 0.0$	19.8 21.0
	4	1,887.7	86.6	1,923.9	36.2	103.3	0.0	0.0	20.7
2	.5	1,887.0	37.7	1,923.9	36.9	104.0	0.0	0.0	21.2
	:7 :8	1,882.3 1,879.2	55.5 19.2	1,925,2 1,924,1	42.9 44.9	$108.7 \\ 111.8$	$0.0 \\ 0.0$	$0.0 \\ 0.0$	$\begin{array}{c} 25.0 \\ 26.3 \end{array}$
	9	1,892.4	9.6	1,923.9	31.5	98.6	0.0	0.0	17.8
3	0	1,882.6	59.2	1,924.0	41.4	108.4	0.0	0.0	24.0
	11 16	1,882,0 1,889,3	68.8 37.7	1,925.8 1,925.3	43.8 36.0	109.0 101.7	0.0	$0.0 \\ 0.0$	$\begin{array}{c} 25.6 \\ 20.6 \end{array}$
	37	1,891.4	34.8	1,925.3	33.9	99.6	0.0	0.0	19.3
3	38	1,893.9	31.1	1,925.3	31.4	97.1	0.0	0.0	17.7
	39	1,914.9	37.0 32.6	1,930.0 1,924.6	15.1 25.4	76.1 91.8	0.0 0.0	0.0	$7.9 \\ 14.0$
	11 12	1,899.2 1,896.1	28.1	1,924.6	28.4	94.9	0.0	0.0	15.9
4	13	1,894.8	29.6	1,924.5	29.7	96.2	0.0	0.0	16.7
	14 15	1,893.4	40.0 49.6	1,924.5 1,925.3	31.1 40.4	97.6 106.1	$0.0 \\ 0.0$	$0.0 \\ 0.0$	$\begin{array}{c} 17.6 \\ 23.4 \end{array}$
	16 16	1,884.9 1,878.2	94.0	1,925.4	47.2	112.8	0.0	0.0	27.7
. 4	47	1,880.7	26.6	1,925.3	44.6	110.3	0.0	0.0	26.1
	48 49	1,880.2 1,881.1	74.7 118.4	1,924.8 1,924.8	44.6 43.7	110.8 109.9	0,0 0.0	0.0	26.1 25.5
	50	1,886.3	106.6	1,954.1	67.8	104.7	0.0	0.0	41.3
	51	1,895.4	34.8	1,924.1	28.7	95.6	0.0	0.0	16.0
	52 55	1,889.1 1,886.2	71.8 65.9	1,923.9 1,923.9	34.8 37.7	101.9 104.8	0.0 0.0	$0.0 \\ 0.0$	$\frac{19.8}{21.7}$
	56	1,902.7	36.3	1,957.0	54.3	88.3	0.0	0.0	32,4
	57	1,884.1	68.8	1,923.9		106.9	0.0	0.0	$23.0 \\ 18.7$
	58 60	1,890.9 1,889.9	88.1 74.0	1,923.9 1,923.9		100.1 101.1	0.0 0.0	$0.0 \\ 0.0$	19.3
	61	1,885.4	37.0	1,925.0	39.6	105.6	0.0	0.0	22.9
	62	1,890.2	56.2 28.1	1,941.6		100.8 112.3	0.0 0.0	$0.0 \\ 0.0$	30.5 27.7
	63 64	1,878.7 1,876.5	32.6	1,925.8 1,925.8		114.5	0.0	0.0	29.1
	66	1,910.0	29.6	1,952.9	42.9	81.0	0.0	0.0	25.0
	67	1,921.5 1,918.6	28.1 31.1	1,954.4 1,956.5	32.9 37.9	$69.5 \\ 72.4$	0.0	$0.0 \\ 0.0$	18.7 21.8
	68 69	1,879.5	37.0	1,925.4	45.9	111.5	0.0	0.0	26.9
	70	1,904.5	97.7	1,941.0		86.5	0.0	0.0	20.9
	71 00	1,894.5 1,896.6	64.4 24.4	1,919.7 1,924.6		96.5 94.4	0.0 0.0	$0.0 \\ 0.0$	13.9 15.6
	01	1,885.9		1,924.7		105.1	0.0	0.0	22.4
	02	1,876.7		1,924.7		114.3	0.0	0.0	28.3
	03 104	1,883.1 1,916.3		1,924.5 1,929.3		107.9 74.7	0.0	0.0 0.0	$\substack{24.0\\6.7}$
	105	1,903.9		1,929.4		87.1	0.0	0.0	14.1
	106	1,881.3		1,924.		109.7	0.0	0.0	25.0
	107 108	1,880.1 1,884.1		1,924. 1,924.			0.0 0.0	$0.0 \\ 0.0$	25.7 23.1
	109	1,884.6		1,924.	39.4	106.4	0.0	0,0	22.8
	112	1,900.7					0.0	0.0 0.0	12.7 26.7
	113 114	1,878.5 1,897.3					0.0	0.0	26.7 14.9
	117	1,907.5	43.7	1,924.	0 16.5	83.5	0.0	0.0	8.8
	118	1,889.0			2 34.2		0.0	0.0	19.5
	119 120	1,889.1 1,871.2					0.0 0.0	0.0	19.1 27.4
	121	1,862.6	80.7	1,919.	2 56.6	128.4	0.0	0.0	33.9
	122	1,950.0					0.0	0.0	5.0 18.5
	123 124	1,927.3 1,879.6					0.0 0.0	0.0	23.2
	125	1,886.2					0.0	0.0	18.3

	Net Work	Analysis		Distribut		F		
Node	Elevation	Demand	Dynamic	Dynamic Pressure	Statie Pressure			Leakage
No.	of Pipe (MSL)	(com/d)	Pressure (MSL)	(m)	(m)			(cum/d)
126	1,894.1	79.2	1,918.1	24.0	96,9	0.0	0.0	13.2 24.8
127 128		40.0 28.1	1,917.6 1,917.7	$\frac{42.7}{21.3}$	116.1 94.6	$0.0 \\ 0.0$	0.0 0.0	24.8 11.6
120		5.9	1,917.7	21.7	95.0	0.0	0.0	11,8
130	1,886.4	5.2	1,917.7	31.3	104.6	0.0	0.0	17.7
131 132		3.0 37.7	1,917.7 1,941.2	41.9 54.4	115.2 104.2	$0.0 \\ 0.0$	$0.0 \\ 0.0$	24.4 32.4
133		13.3	1,941.0	42.3	92.3	0.0	0.0	24.6
134	1,924.5	40.0	1,952.9	28.4	66.5	0.0	0.0	15.9
135 136		42.9 52.5	1,952.8 1,962.3	37.1 17.5	75.3 46.2	0.0 0.0	$0.0 \\ 0.0$	$\substack{21.3\\9.3}$
137		87.3	1,958.9	53.9	86.0	0.0	0.0	32.1
139		122.1	1,951.5	45.7	85.2	0.0	0.0	26.8 13.6
140 141		22.9 73.3	1,924.1 1,923.8	$\frac{24.7}{33.6}$	91.6 100.8	0.0	$0.0 \\ 0.0$	19.1
142		76.2	1,923.8	39.9	107.1	0.0	0.0	23.1
143		81.4	1,923.8	35.1	102.3 83.6	0.0 0.0	0.0	20.0 19.1
144 145		28.9 4.4	1,941.0 1,941.0	$33.6 \\ 31.6$	81.7	0.0	$0.0 \\ 0.0$	17.9
. 146		40.0	1,919.2	42.7	114.5	0.0	0.0	24.8
147		72.5	1,919.2	$\frac{40.3}{35.4}$	112.1	0.0 0.0	$0.0 \\ 0.0$	$\frac{23.3}{20.3}$
148 149		46.6 20.7	1,925.0 1,925.3	24.2	101.4 89.9	0.0	0.0	13.3
150		87.3	1,919.1	19.7	91.6	0.0	0.0	10.6
151		56.2	1,919.2	44.8 53.3	116.6 125.1	$0.0 \\ 0.0$	$0.0 \\ 0.0$	26.2 31.7
152 153		48.8 52.5	1,919.2	56.6	128.3	0.0	0.0	33,9
154	1,864.7	48.8	1,919.2	54.5	126.3	0.0	0.0	32.5
159		16.3	1,919.2	51.6 41.3	123,4 106,2	0.0 0.0	$0.0 \\ 0.0$	$\frac{30.6}{23.9}$
150 151		29.6 17.8	1,926.1 1,925.9	44.0	100.2	0.0	0.0	25.7
158	3 1,880.3	17.8	1,925.8	45.5	110.7	0.0	0.0	26.7
160		14.1 8.1	1,960.0 1,951.6	56.8 46.3	87.8 85.7	0.0 0.0	0.0	$\frac{34.0}{27.1}$
16 16		28.1	1,931.6	32.3	99.2	0.0	0.0	18.3
16	3 1,899.3	5.2	1,924.1	24.8	91.7	0.0	0.0	13.6
16- 16		3.0 74.7	1,952.9 1,990.9	33,1 28,4	71.2 28.5	0.0	$0.0 \\ 0.0$	18.8 15.9
16		13.3	1,925.8	26.8	92.0	0.0	0.0	14.9
16		16.3	1,980.0	62.2	73.2	0.0	0.0	37.6 18.4
17 17		9.6 14.1	1,925.8 1,924.9	32.5 15.2	97.7 81.3	0.0 0.0	$0.0 \\ 0.0$	8.0
2	1 1,885.1	71.8	1,923.9	38.8	105.9	0.0	0.0	22.4
2		61.4	1,923.9	38.0	105.1 88.6	0.0 0.0	$0.0 \\ 0.0$	21.9 31.8
17 5	4 1,902.4 3 1.895.7	77.0 71.8	1,955.9 1,923.9	53.5 28.2	95.3	0.0	0.0	15.7
17	•	17.0	1,924.5	29.5	96.0	0.0	0.0	16.6
17		17.0 40.7	1,924.5 1,929.9	27.2 17.1	93.7 78.2	0.0 0.0	$0.0 \\ 0.0$	15.1 9.1
17 17		18.5	1,930.0		73.5	0.0	0.0	6.4
18	1 1,881.0	59.2	1,924.7	43.7	110.0	0.0	0.0	25.5
18 18		9.6 8.9	1,924.1 1,924.0		99.1 91.8	0.0 0.0	0.0	18.2 13.7
18		48.8	1,941.1		88.2	0.0	0.0	22.0
18		48.8	1,919.2		105.6 87.8	$0.0 \\ 0.0$	$0.0 \\ 0.0$	$19.2 \\ 33.6$
18 18		56.2 5.9	1,959.3 1,954.6		59.3	0.0	0.0	12.5
18	1,921.8	21.5	1,929.9	8.1	69.2	0.0	0.0	4.0
30			1,960.1 1,964.0		87.4 39.6	0.0 0.0	$0.0 \\ 0.0$	33.8 6.5
30	1,951.4 59 1,900.0		1,957.1		91.0	0.0	0.0	34.2
50	0 1,892.8	18,5	1,919.2	26.4	98.2	0.0	0.0	14.7
50 50			1,919.2 1,942.9			0.0 0.0	$0.0 \\ 0.0$	18.5 34,4
5(1,923.6			0,0	0.0	22.7
5,1	1,914.5	37.7	1,951.5			0.0	0.0	21.3
51 53	l1 1,892.1 20 1,913.6		1,924.0 1,941.6			0.0	0.0 0.0	18.0 15.6
	20 1,913.0 04 1,900.4	51.8	1,949.4	49.0	90.6	0.0	0.0	28.9
	72 1,886.0	37.7	1,923.9	37.9		0.0	0.0	$\frac{21.8}{6.7}$
	73 1,916.0 21 1,886.0		1,929.0 1,922.0			0.0 0.0	0.0	20.6
5	22 1,880.0	37.7	1,921.8	3 41.9	111.0	0.0	0.0	.24.3
	23 1,903.0					0.0 0.0	0.0	32.9 33.5
	24 1,887.0 25 1,881.0		1,923.8			0.0	0.0	24.9
	26 1,882.0		1,923.9		109.0	0.0	0.0	24.4
					4.7.4.00			

	Net Work	Analysis		Distribut	ion Main	F		
Node No.	Elevation of Pipe	Demand	Dynamic Pressure	Dynamic Pressure	Static Pressure			Leakage
	(MSL)	(cua/d)	(MSL)	(m)	(n)			(cum/d)
527		22,2	1,955.0	23.9	60.0	0.0	0.0	13.2
528		22.2	1,953.4	10.4	48,0	0.0	0.0	5.2
33	•	37,7	1,919.1	52.1	124.0	0.0	0.0	31.0
35		45.1	1,919.1	49.1	121.0	0.0	0.0	29.0
40	•	29.6	1,929.9	9.9	71.0	0.0	0.0	5.0
54	•	37,7	1.923.9	37.9	105.0	0.0	0.0	21.8
91	•	0.0	1,951.6	52.2	91.6	0.0	0.0	31.0
92		0.0	1,951.6	56.2	95.6	0.0	0.0	33.6
93		0.0	1.941.1	59.0	109.0	0.0	0.0	35.5
540		513.6	1.935.0	5.0	61.0	0.0	0.0	2.3
541		686.7	1,985.0	5.0	11.0	0.0	0.0	2.4
542		0.0	1,956.0	66.9	101.9	0.0	0.0	40.8
610		0.0	1,930.0	30.0	91.0	0.0	0.0	16.9
611		0.0	1,930.0	45.4	106.4	0.0	0.0	26.6
612		0.0	1,929,8	48.5	109.7	0.0	0.0	28.6

	Net W	ork Ana	lysis		Distrib	ution Main		F	
Pipe	Node A	Node B	Length	Diameter	С	Flow	Velocity	Pressure	Loss
No.			(m) ·	(mm)		(cum/d)	(m/s)	Gradient (o/oo)	(m)
1	139		800.00	225.00	120.00	37.00	0.00	0.00	0.00
2	139		374,00	44.00	130.00	51.00	0.40	5.70	2.10
5 6	51 162		228.00 143.00	150.00 44.00	120.00 130.00	22.00 5.00	0.00	0.00 0.10	0.00 0.00
7	51		20.00	150.00	120.00	33.00	0.00	0.00	0.00
9	134	135	178.00	65.00	130.00	42.00	0.10	0.60	0.10
12 13			84.00 265.00	44.00 150.00	130.00 120.00	$\frac{3.00}{219.00}$	0.00	0.00 0.20	$0.00 \\ 0.10$
14			530.00	100.00	120.00	249.00	0.40	2,20	1,20
15	50	67	583.00	100.00	120.00	-128,00	-0.20	-0.70	-0.40
16 20			165.00 59.00	100.00 150.00	120.00 120.00	-156.00 -251.00	-0,20 -0,20	-0.90 -0.30	-0,10 0.00
20 21			88.00	100.00	120,00	-231.00 89.00	0.10	0.30	0.00
22	. 23	3 24	55.00	150.00	120.00	16.00	0.00	0.00	0.00
23			90.00	100.00	120.00	83.00	0.10	0.30	0.00
24 26			66.00 110.00	150.00 100.00	120.00 120.00	-90.00 -12,00	-0.10 0.00	-0,10 0,00	0.00 0.00
27			176.00	100.00	120.00	37.00	0.10	0.10	.0.00
28			100.00	100.00	120.00		-0.10	-0.10	0.00
29			134.00 54.00	100.00 150.00	120,00 120,00	149.00 283.00	0.20 0.20	0.90 0.40	0.10 0.00
31			151.00	100.00	120.00	121.00	0.20	0.60	0.10
32	19	55	133.00	100.00	120.00	99.00	0.10	0.40	0.10
33		172	100.00 315.00	100.00 225.00	120.00 120.00	58.00 512.00	0.10 0.10	0.10 0.20	0.00 0.10
34 35) 48	47.00	100.00	120.00	-746.00	-1.10	-16.90	-0.80
36]	48	265.00	225.00	120.00	851.00	0.30	0.40	0.10
37	48		201.00	100.00	120.00	30.00	0.00	0.00	0.00
38 39			672.00 596.00	150.00 150.00	120,00 120,00	-497.00 91.00	-0.30 0.10	-1.10	-0.70 0.00
40			536.00	100.00	120.00	-99.00	-0.10	-0.40	-0.20
41			372.00	50.00	120,00	14.00	0.10	0.30	0.10
42 43			325.00 90.00	100,00 150.00	120.00 120.00	159.00 217.00	0.20 0.10	1.00 0.20	$0.30 \\ 0.00$
44			551.00	100.00	120.00	20.00	0.00	0.00	0.00
45	i :	1 49	264.00	100.00	120.00	105.00	0.20	0.50	0.10
46 47			401.00 268.00	225.00 100.00	120.00 120.00	-1,428.00 63,00	-0.40 0.10	$\substack{-1.10\\0.20}$	~0.40 0.10
48			268.00	100.00	120.00	-223.00	-0.30	-1.80	-0.50
49	6:	3 64	444.00	300.00	120.00	325.00	0.10	0.00	0.00
50			268.00	225.00	120.00 120.00	-1,803.00	-0.50 -0.30	-1.70 -0.60	-0.50 0.00
51 52			47.00 358.00	300.00 50.00	120.00	-2,156,00 13,00	0.10	0.30	0.10
53		7 158	77.00	300.00	120.00	2,187.00	0.40	0.60	0.10
54			264.00		130.00	9.00	0.10	0.30	0.10
55 56		5 157 2 156	300.00 100.00	300.00 300.00	120.00 120.00	2,214.00 2,931.00	0,40 0,50	0,60 1.00	0.20 0.10
61		2 203	704.00	350.00	120.00	-4,768.00	-0.60	-1.20	-0.80
62		2 4	442.00	225.00	120.00	1,785.00	0.50	1.60	0.70
63 64		4 5 4 61	65.00 972.00	225,00 65,00	120.00 130.00	1,692.00 37.00	0.50 0.10	1.50 0.50	0.10 0.40
65	j	5 6	221.00	150.00	120.00	301.00		0.40	0.10
66	}	6 27	150.00	150.00	120.00	289.00	0.20	0.40	0.10
67 68			216.00 400.00	100.00 150.00	120.00 120.00	-104.00 132.00	-0.10 0.10	-0.40 0.10	-0.10 0.00
69			563.00	100.00	120.00	37.00	0.10	0.10	0.00
70			30.00	150.00	120.00	-6.00	0.00	0.00	0.00
72 74			1,106.00 320.00	150,00 44.00	120.00 130.00	299.00 37.00	0.20 0.30	0.40 3,10	$0.50 \\ 1.00$
76			92.00	150.00	120.00	-287.00		-0.40	0.00
80) 3	9 179	125.00	150.00	120,00	-166.00	-0.10	-0.10	0.00
82			104.00	65.00	130.00	-21.00	-0.10 0.20	-0.20 0.60	0.00 0.20
82 84			350.00 120.00	150.00 44.00	120.00 130.00	355.00 -9.00	-0.10	-0.20	0.20
86		1 100	120.00	44.00		-7.00	-0.10	-0.20	0.00
8	7 10	0 101	312.00	37.00	130.00	-6.00	-0.10	-0.30	-0.10
		2 43 2 43	257.00 257.00	100.00 100.00	120.00 120.00	51,00 51,00	0.10 0.10	0.10 0.10	$0.00 \\ 0.00$
90) 4		268.00	150.00	120.00	74.00	0.10	0.00	0.00
9:	i 4	4 17.7	391.00	100.00	120,00	17.00	0.00	0,00	0.00
9; 9;		4 176 6 177	391.00 90.00	100,00 100,00	120,00 120,00	17.00 0.00	0.00	0.00 0.00	0.00
99			251.00	65.00	130.00	-9.00	0.00		0.00
100	0 10	9 511	400.00	100.00	120.00	71.00	0.10	0.20	0.10
10: 10:			120.00 228.00	100.00 44.00	120.00 130.00	73.00 8.00	0.10 0.10	0,20 0,20	0.00 0.10
10.				100.00	120.00	77.00	0.10	0.20	0.10
~ ~ ~		100							***

	Net Wo	ork Anal	lysis		Distribu	ntion Main		F	
Pipe No.	Node A	Node B	Length	Diameter	С	Flow	Velocity	Pressure Gradient	Loss
NU.			(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
104	107	182	253,00	44.00	130.00	9.00	0,10	0.30	0.10
105			40.00	100.00	120.00	81.00	0.10	0.30	0.00
106			66.00	150.00	120.00	448,00	0.30	0.90	0.10
107 108			265,00 500,00	65,00 65,00	130,00 130.00	14,00 9.00	$0.10 \\ 0.00$	0.10 0.00	0.00
109			318.00	44.00	130.00	33,00	0.30	2.60	0.80
111			248.00	75.00	120.00	122.00	0.30	2.40	0.60
113			250,00	150.00	120.00	-334.00	-0.20	-0.50	-0.10
114			400.00	150.00	120.00	343.00	0.20	0.60	0.20
116 118			300.00 210.00	44.00 100.00	130,00 120,00	~14,00 75,00	-0.10 0.10	~0.50 0.20	-0.10 0.10
119			1,500.00	150.00	120.00	249.00	0.20	0.30	0.50
120			175.00	140.00	130.00	35,00	0.00	0.00	0.00
125			363.00	44.00	130.00	13.00	0.10	0.50	0.20
127			167.00	225.00	120.00	-68.00	0.00	0.00	0.00
129 130			284.00 121.00	100.00 44.00	120.00 130.00	33.00 4.00	0.10 0.00	0.10	0.00 0.00
132			162.00	150.00	120,00	-260.00	-0.20	-0.30	-0.10
133			761.00	100.00	120.00	-210.00	-0.30	-1.60	-1,20
134	9	57	25.00	100.00	120.00	346,00	0.50	4,10	0.10
135			120.00	100.00	120.00	134.00	0.20	0.70	0.10
136			262,00	100.00	120,00	-41.00	-0.10	-0.10	0.00
138 140			352.00 168.00	97,00 100.00	130,00 120.00	-85,00 88,00	-0.10 0.10	$-0.30 \\ 0.30$	$-0.10 \\ 0.10$
141			264.00	50.00	120.00	-6.00	0.00	-0.10	0.00
142			202,00	100.00	120.00	142.00	0.20	0.80	0.20
143	3 141	142	99.00	100.00	120.00	-73.00	-0.10	-0.20	0.00
146			360.00	150.00	120.00	87.00	0.10	0.00	0.00
147			163.00	150.00	120.00	-136.00	-0.10	-0.10	0.00
148 149			35.00 450.00	150.00 140.00	120.00 130.00	48.00 -49.00	0.00	0.00	$0.00 \\ 0.00$
151			132.00	100.00	120.00	51.00	0.10	0.10	0.00
160			165.00	100.00	120,00	79.00	0.10	0.30	0.00
161	[[4	153	236.00	150.00	120.00	-222.00	-0.10	-0.30	-0.10
162			475.00	150.00	120.00	-127.00	-0.10	-0.10	0.00
163			35.00	150.00	120.00	112.00	0.10 0.10	0.10 0.00	0.00 0.00
164 167			137.00 663.00	150.00 150.00	120.00 120.00	72.00 -501.00	-0.30	-1.10	-0.70
168			66.00	100.00	120.00	131.00	0.20	0.70	0.00
170	0 3	3 152	150,00	100.00	120,00	-82.00	-0.10	-0.30	0.00
173			165.00	100.00	120.00	273.00	0.40	2,60	0.40
170			726.00	44.00	130.00	-62.00	-0.50	-7.90	-5.80
17° 178			512,00 277,00	44.00 140.00	130,00 130,00	56.00 -532.00	$0.40 \\ -0.40$	6.70 -1.50	3.40 -0.40
18			400.00	225.00	120.00	-64.00	0.00	0.00	0.00
18			441.00	225,00	120.00	114.00	0.00	0.00	0.00
18-			177.00	150.00	120.00	468.00	0.30	1.00	0.20
18			286.00	100.00	120.00	164.00	0.20	1.00	0.30
18 18			1,210.00 850.00	75.00 100.00	120,00 120,00	-83.00 178.00	-0.20 0.30	-1.20 1.20	-1.40 1.00
19				225,00	120.00	63,00	0.00	0.00	0.00
19				100.00	120.00	161.00	0.20	1.00	0.40
19			668.00	65.00	130.00	42.00	0.10	0,60	0.40
19			1,047.00	65.00	130,00	40.00	0.10	0.50	0.60
19 19			90,00 60.00	65.00 44.00	130.00 130.00	14.00 8.00	0.10 0.10	0.10 0.20	0.00
19			88.00	37.00	130.00	3.00	0.00	0.10	0.00
19				100.00	120,00	46.00	0.10	0.10	0.10
20				100.00	120.00	27.00	0.00	0.00	0.00
20		0 113		150.00	120.00	-307.00	-0,20	-0.50	-0.10
20 17		5 36 7 300		150.00 150.00	120.00 120.00	208,00 -588.00	0.10 -0.40		0.00 -0.80
25				65.00	130.00	-171.00	-0.40		-1.70
20				150,00	120.00	-191.00	-0.10		0.00
21	3 6	2 524	334.00	97.00	130.00	-352.00	-0.60	-4.20	-1.40
21		0 503		100.00	120.00	172.00	0.30		0.40
21				75.00	120.00	-35.00	-0.10		0.00
21 21				140.00 65.00	130.00 130.00	17.00 22.00	0.00 0.10		0.00
21				140.00	130.00	-148.00	-0.10		0.00
11				75.00	120.00	-116.00	-0.30	-2.20	-0.40
30	0 21	5 301	554.00	100.00	120.00	227.00	0.30	1,90	1.00
20				100.00	120.00	814.00	1.20		5.00
1 17		5 527 5 153		100.00 150.00	120.00	70.00	0.10 0.30		0.10 0.40
30		o 103 0 70		150.00	120.00 120.00	401.00 -18.00	0.30		0.40
30		4 25		100.00	120.00	13.00	0.00		0.00

	Net	Work	Anal	ysis		Distribu	ition Main		F	
Pipe No.	Node		de B	Length	Diameter	C	Flow	Velocity	Pressure Gradient	Loss
10.				(m)	(mm)		(cwa/d)	(m/s)	(0/00)	(m)
305		55	172	50,00	100.00	120,00	33.00	0.10	0.10	0.00
306		20	172	50,00	100.00	120,00	-54.00	-0.10	-0.10	0.00
307		23	25	75.00	100.00	120.00	12,00	0.00	0.00	0.00
308		40	178	150.00	150.00	120.00	40.00	0.00	0.00	0,00 0,10
77		39	40	180.00	100.00	120.00	91,00	$0.10 \\ 0.00$	0.30 0.00	0.10
78		40	189	60.00	100.00 44.00	120.00 130.00	21.00 -8.00	-0.10	-0.20	-0.10
79		100 41	101 42	450.00 150.00	150.00	120.00	103,00	0.10	0.10	0.00
309 310		119	521	350.00	65.00	130.00	75.00	0.30	1.70	0.60
311		521	522	350.00	65.00	130.00	37.00	0.10	0.50	0.20
313		33	35	150.00	100.00	120.00	45.00	0.10	0.10	0.00
301		11	523	120.00	150.00	120.00	437.00	0.30	0.90	0.10
314		59	523	180.00	100.00	120.00	-399,00	-0.60	-5.30	-1.00
315		502	524	150.00	75.00	120.00	-59.00	-0.20	-0.60	-0.10
317		524	600	450.00	97.00	130.00	-449.00	-0.70 -0.10	-6.60 -0.30	-3.00 -0.10
319		525	526	210.00	75.00	120.00	-37.00 108.00	0.40	3.30	1.60
321		527	528 528	480.00	65.00 65.00	130,00 130,00	-85.00	~0.40 ~0.30	-2.20	-0.40
322 11		134 165	601	200.00 75.00	65.00	130.00	-74,00	-0.30	-1.70	-0.10
324		188	527	50.00	65.00	130.00	-162.00	-0.60	-7.00	-0.30
325		122	123	160.00	140.00	130.00	48.00	0.00	0.00	0.00
327		56	59	352.00	140.00	130.00	-224.00	-0.20	-0.30	-0.10
328		1	49	264,00	158.00	130.00	380.00	0.20	0.50	0.10
329)	206	527	215.00	150.00	120.00	222.00	0.10	0.30	0.10
336		156	541	931.00	100.00	120,00	686.00	1.00	14.40	13.40
33:		112	540	434.00	97.00	130.00	513.00	0.80	8.40	$\frac{3.70}{0.00}$
60		91	139	162.00		120.00	211.00 8.00	0.10 0.00	0.20 0.00	0.00
602		91	161	225.00	65.00 150.00	130.00 120.00	-149.00	-0.10	-0.10	-0.10
60:		70 93	93 132	662.00 616.00	150.00	120.00	-198.00	-0.10	-0.20	-0.10
60: 60:		93	185	300.00	150.00	120.00	48.00	0.00	0.00	0.00
213		22	54	275.00	150.00	120.00	347.00	0.20	0.60	0.20
61		122	160	931,00	225.00	120.00	-177.00	-0.10	0.00	0.00
61		91		228.00	150.00	120.00	-219.00	-0.10	-0.20	-0.10
61		92	135	690.00	100.00	120.00	-219.00	-0.30	-1.80	-1.20
61	3	604	610	200.00	97.00	130.00	26.00	0.00	0.00	0.00
61		105	612	250.00	44.00	130.00	-26.00	-0.20	-1.60	-0.40 -0.10
61		174	542	569.00	97.00	130,00	-77.00 $-1,392.00$	-0.10 -0.30	-0.30 -0.60	-0.10
70		186	606	500.00	250.00 55.00	120.00 130.00	-1,392.00	-0.10	-0.20	0.00
70 70		169 15	603 153	50.00 577.00	140.00	130.00	362,00	0.30	0,70	0.40
70		16	125	850,00	65.00	130.00	62.00	0,20	1.20	1.00
71		102	103	350.00	198.00	130.00	798,00	0.30	0.60	0.20
71		103	106	400.00	198.00		772.00	0.30	0.60	0.20
71		28	106	250.00	198.00	130.00	-750.00	-0.30	-0.50	-0.10
71	6	28	107	40.00	198.00	130.00	535.00	0.20	0.30	0.00
71	7	107	108	200.00	198.00	130.00	506.00	0.20	0.30	0.10
71		108	109	120,00	198.00		479.00	0.20	0.20	$0.00 \\ 0.10$
71		109	511	400.00	198.00	130.00	466,00	$0.20 \\ -0.20$	0.20 -0.20	0.10
72		112	511	132.00	198,00	130.00 130.00	-488.00 105.00	0.10	0.10	0.00
73		113 114	114 117	265,00 500.00	140.00 140.00	130.00	68.00	0.10	0.00	0.00
73 74		179	208	104.00	140.00	130,00	-163,00	-0.10	-0.20	0.00
75		610	611	630.00	97.00	130.00	26,00	0.00	0.00	0.00
75		611	612	610.00	65.00	130.00	26.00	0.10	0.30	0.10
76		50	542	1,044.00	97.00	130.00	-227.00	-0.40	-1,90	-2.00
76		68	542	165.00	97.00	130.00	304.00	0.50	3.20	0.50
77		101	102	120.00	140.00	130.00	-197.00	-0.10	-0.20	0.00
	/2	100	101	450.00	140.00	130.00	-174,00	-0.10	-0.20	-0.10
77		41	100	120.00	140.00	130.00	-156,00	-0.10 0.30	-0.20 0.40	0.10
78		- 5	6	221,00	250,00	120.00	1,153.00 1,109.00	0.30	0.40	0.10
	32	6 27	27	150.00 1,106.00	250,00 250,00		1,109.00	0.30	0.40	0.50
	33 34	27 102	181	92.00	250,00		-1,101.00	-0.30	-0.40	0.00
	91	151	186	450.00	140.00	and the second second	-49.00	0.00	0.00	0.00
	92	13	151	35.00	140.00		44.00	0.00	0.00	0.00
	93	13	14	475.00	140.00	130.00	-115.00	-0,10	-0.10	0.00
. 7	94	14	153	236.00	140,00	130.00	-201.00	-0.10	-0.30	~0.10
7	95	154	501	104.00	140.00		165.00		0.20	0.00
	96	153	154	165.00	140.00	130.00	208.00	0.20	0.30	0.00

Net Work Analysis

Distribution Main

File Name Season Network Type	Nuwara011Year201 Wet Proposed	15(3)	G
Demand	Year 2015		
Reserver	Hourly Max Water Level Fix Discharge Fix		All None
Magnification	of Demand	1.622	
Reservoir Dat			
Node	HWL	LWL	Reservoir
	(MSL)	(MSL)	
203 1	1,927.0	1,927.0	Haddon Hill
205 1	1,955.0	1,955.0	New Water Field
206 1	1,955.0	1,955.0	Old Water Field
208 1	1,930.0	1,930.0	Bonavista
209 1	1,960.0	1,960.0	Lovers Leap
215 1	1,965.0	1,965.0	Gamunu/Brevery
600 1	1,946.0	1,946.0	Nseby
601 1	1,991.0	1,991.0	Piyatisappura
603 1	1,980.0	1,980.0	Unique View
604 1 606 1	1,925.0	1,925.0	Vijithapura
000 1	1,920.0	1,920.0	Low Area 2
Node Data			
Node Data	Ground Elev	Demand	
noue	(MSL)	(cum/d)	
1 1		122.0	0 0
2 1		70.0	0 0
4 1		76.0	0 0
5 1		40.0	0 0
6 1	1,883.7	76.0	. 0 0
9 1		133.0	0 0
10 1		25.0	0 0
ii i	-,	86.0	0 0
12 1	-,	66.0	0 0
13 i	-,	51.0	0 0
14 1		66.0	0 0
15 1	-,	61.0	0 . 0
16 1	*	85.0	0 0
18 1	•	107.0	0 0
19 1	-,	85.0	0 0
22 1		79.0	0 0
23 1	1,887.3	82.0	0 0
24 1	1,887.7	117.0	0 0
2 5 1		51.0	0 0
27 1		75.0	0 0
28 1		26.0	0 0
29 1		13.0	0 0
30 1		80.0	. 0 0
31 1		93.0	
36 1		51.0	0 0
37 1		47.0	0 0
38 1		42.0	0 0
39 1		50.0	0 0
41 1		44.0	. 0 0
42 1 43 1		38.0 40.0	0 0
44 1		54.0	0 0
45 1		67.0	0 0
46 1		127.0	0 0
47 1		36.0	0 0
48 1		101.0	0 0
49		160.0	Ŏ Ö
50 1		144.0	Ŏ Ŏ
51 1		47.0	0 0
52 1		97.0	o o
55 1		89.0	0 0
56 1	1,902.7	49.0	0 0
57 1	1,884.1	93.0	0 0

58	1	1,890.9	119.0	0	0
60	i	1,889.9	100.0	0	0
61	1	1,885.4	50.0	0	0
62	1	1,890.2	76.0	0	0
63	1	1,878.7	38.0	0	0
	i	1,876.5	44.0	0	0
64					
66	1	1,910.0	40.0	0	0
67	1	1,921.5	38.0	0	0
68	1	1,918.6	42.0	0	0
			50.0	ŏ	ŏ
69	1	1,879.5			
70	1	1,904.5	132.0	0	0
71	1	1,894.5	87.0	0	0
100	ī	1,896.6	33.0	0	0
				Ö	ŏ
101	1	1,885.9	25.0		
102	1	1,876.7	37.0	0	0
103	1	1,883.1	50.0	0	0
104	ĺ	1,916.3	19.0	0	0
				Ö	ŏ
105	1	1,903.9	17.0		
106	1	1,881.3	43.0	0	0
107	· 1	1,880.1	32.0	0	0
108	1	1,884.1	30.0	0	0
		1,884.6	20.0	Ö	Ō
109	ļ				
112	1	1,900.7	0.0	0	0
113	1	1,878.5	29.0	0 -	0
114	í	1,897.3	57.0	0	0
117	i	1,907.5	59.0	Õ	ō
118	1	1,889.0	37.0	0	0
119	i	1,889.1	64.0	0	0
120	i	1,871.2	113.0	0 -	0
121	ĺ	1,862.6	109.0	0	0
122	1	1,950.0	89.0	0	0
123	1	1,927.3	65.0	0	0
124	i	1,879.6	68.0	0	0
125	i	1,886.2	108.0	0	0 -
			100.0		Õ
126	1	1,894.1	107.0	0	
127	1	1,874.9	54.0	0	0
128	1	1,896.4	38.0	0	0
129	Î	1,896.0	8.0	0	0
					Ö
130	1	1,886.4	7.0	0 -	
131	- 1	1,875.8	4.0	0	0
132	1	1,886.8	51.0	0	0
133	î	1,898.7	18.0	0	0
					Ŏ.
134	1	1,924.5	54.0	Ö	
135	1	1,915.7	58.0	0	. 0
136	1	1,944.8	71.0	0	0
137	ī	1,905.0	118.0	0	0
			165.0	ŏ	ŏ
139	1	1,905.8			
140	1	1,899.4	31.0	0	0
141	1	1,890.2	99.0	0	0
142	1	1,883.9	103.0	0	0
143	î	1,888.7	110.0	0	0
					ŏ
144	1	1,907.4	39.0	0	
145	1	1,909.3	6.0	0	0
146	1	1,876.5	54.0	0	0
147	. 1	1,878.9	98.0	0	. 0
			63.0	Ö	Ō
148	1	1,889.6			
149	1	1,901.1	28.0	0	0
150	1	1,899.4	118.0	0	0
151	1	1,874.4	76.0	0	0
152	1		66.0	0	0
		1,865.9			
153	1	1,862.7	71.0	0	0
154	1	1,864.7	66.0	0	0
155	1	1,867.6	22.0	0	0
156	1	1,884.8	40.0	Ō	0
			94 0	· Ö	Õ
157	1	1,881.9	24.0		
158	1	1,880.3	24.0	0	0
160	1	1,903.2	19.0	0	0
161	i	1,905.3	11.0	0	0
			38.0	ő	Ö
162	i	1,891.8			0
163	. 1	1,899.3	7.0	0	
164	. 1	1,919.8	4.0	0	0
165	í	1,962.5	101.0	. 0	0
166	. 1	1,899.0	18.0	· 0	0
169	1	1,917.8	22.0	Ō	0
				. 0	ŏ
170	. 1	1,893.3	13.0	U	v

171	1	1,909.7	19.0	0	0
21	ĺ	1,885.1	97.0	0	0
20	i	1,885.9	83.0	0	0
174	1	1,902.4	104.0	0	0
53	i	1,895.7	97.0	0	0
176	ī	1,895.0	23.0	0	6
177	i	1,897.3	23.0	0	0
178	i	1,912.8	55.0	0	0
179	i	1,917.5	25.0	0	0
181	i	1,881.0	80.0	0	0
182	i	1,891.9	13.0	0	0
183	i	1,899.2	12.0	0	0
185	i	1,902.8	66.0	0	0
186	i	1,885.4	66.0	0	0
187	i	1,903.2	76.0	0	0
188	í	1,931.7	8.0	0	0
189	i	1,921.8	29.0	0	. 0
300	i	1,903.6	47.0	. 0	0
301	î	1,951.4	76.0	0	0
59	i	1,900.0	122.0	0	0
500	i	1,892.8	25.0	0	0
501	i	1,886.6	76.0	0	0
502	i	1,885.6	80.0	0	0
503	î	1,884.2	76.0	0	0
510	ĺ	1,914.5	51.0	0	0
511	ĺ	1,892.1	20.0	0	0
520	1	1,913.6	63.0	0	0
304	ī	1,900.4	70.0	0	. 0
172	1	1,886.0	51.0	0	0
173	1	1,916.0	51.0	0	0
521	1	1,886.0	51.0	. 0	0
522	i	1,880.0	51.0	0	0
523	1	1,903.0	51.0	0 .	0
524	1	1,887.0	51.0	0	0
525	1	1,881.0	51.0	0	0
526	1	1,882.0	51.0	0	0
527	1	1,931.0	30.0	. 0	0
528	1	1,943.0	30.0	0	0
33	1	1,867.0	51.0	0	0
35	ĺ	1,870.0	61.0	0	0
40	1	1,920.0	40.0	0	0
54	1	1,886.0	51.0	0	0
91	1	1,899.4	0.0	0	0
92	1	1,895.4	0.0	0 -	0
93	1	1,882.0	0.0	0	0
540	1	1,930.0	428.0	0 -	0
541	1	1,980.0	572.0	0	0
542	1	1,889.1	0.0	0	0
610	1	1,900.0	0.0	0	0
611	i	1,884.6	0.0	0	0
612	1	1,881.3	0.0	0	0

Booster	Pump	Data							
No.	Type	Node	A	Node	В	Pipe	No.	Pre	essure
									(∎)
1	B		156		541		330		84.7
2	R		112		540		331		24.4

ipe ipe	Data No.	Node A	Node B	Diamete	r Length	C Value
-				(mm)	(m)	120.0
	1 2	139 139	510 304	225.0 44.0		
	5	51	140	150.0		
	6	162	163	44.0		
	7	51	162	150.0		
	9 12	134 134	135 164	65.0 44.0		
	13	66	135	150.0		
	14	50	66	100.0	530.	0 120.0
	15	50	67			
	16 20	67 21	188 54			
	21	21	23			
	22	23	24	150.0		
	23	20 20	24 21			
	24 26	25	52			
	27	52	53	100.0	176.	0 120.0
	28	53	60			
	29 30	18 18				
	31	19				
	32	19	55	100.0	133.	0 120.0
	33	54				
	34 35	9				
	36	i				
٠.	37	48				
	38 39	22 22				
	39 40	49				
	41	148	171			
	42					
	43 44					
	45	1	49	9 100.	0 264	.0 120.0
	46					
	47 48					
	49					.0 120.0
	50	1 46				
	51 52					
	53					
	54	15'	7 17	0 44.	0 264	
	55					
	5€ 61		2 15 2 20			
	62	2 :	2	4 225.	.0 442	.0 120.0
	63			5 225.		.0 120.0
	64 69		46 5	1 65. 6 150.		
	66		6 2	7 150.		.0 120.0
	6'			7 100.		
	68			17 150. 18 100.		
	7			18 150.		120.0
	73	2 2	7 18	31 150		
	7.					0.0 130.0 2.0 120.0
	7: 8:		2 18 9 17			
	8		9 20)8 65	.0 104	1.0 130.0
	8).0 120.0).0 130.0
	8 8)2 44)0 44).0 130.0
	8			01 37	.0 312	2.0 130.0
	- 8	8 4	2 4	43 100		7.0 120.0
	8 q			43 100 44 150		7.0 120.0 8.0 120.0
				77 100		1.0 120.0
	. 9	2 4	14 1	76 100	.0 39	1.0 120.0
	9	3 17	76 [1]	77 100	.0 9	0.0 120.0

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109	100.0	120.0	120.0
102	108	183	44.0	228.0	130.0
103	107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0
105	28	107	100.0	40.0	120.0
106	28	113	150.0	$\begin{array}{c} 66.0 \\ 265.0 \end{array}$	120.0 130.0
107 108	113 114	114 117	$\begin{array}{c} 65.0 \\ 65.0 \end{array}$	500.0	130.0
100	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113	28	106	150.0	250.0	120.0
114	103	106	150.0	400.0	120.0
116	104	105	44.0	300.0	130.0
118	30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0	120.0
120	155	500	140.0	175.0	130.0
125	132	133	44.0	363.0	130.0
127	31	64	225.0	167.0	120.0
129	70	144 145	100.0 44.0	284.0 121.0	120.0 130.0
130 132	144 45	47	150.0	162.0	120.0
133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57	58	100.0	120.0	120.0
136	58	60	100.0	262.0	120.0
138	56	59	97.0	352.0	130.0
140	58	143	100.0	168.0	120.0
141	142	143	50.0	264.0	120.0
142	57	142	100.0	202.0	120.0
143	141	142	100.0	99.0	120.0
146	12	150	150.0	360.0	120.0
147	12 13	151 151	150.0 150.0	163.0 35.0	120.0 120.0
148 149	151	186	140.0	450.0	130.0
151	154	155	100.0	.132.0	120.0
160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162	13	14	150.0	475.0	120.0
163	13	146	150.0	35.0	120.0
164	146	147	150.0	137.0	120.0
167	11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170 175	33 56	152 68	100.0 100.0	150.0 165.0	120.0 120.0
176	68	136	44.0	726.0	130.0
177	136	137	44.0	512.0	130.0
178	137	187	140.0	277.0	130.0
182	71	124	225.0	400.0	120.0
183	15	124	225.0	441.0	120.0
184	15	16	150.0	177.0	120.0
185	16	121	100.0	286.0	120.0
186	120	121	75.0	1,210.0	120.0
187	- 16	125	100.0	850.0	120.0
191 193	122 125	209 126	225.0	120.0 396.0	120.0 120.0
194	126	128	100.0 65.0	668.0	130.0
195	126	127	65.0	1,047.0	130.0
196	128	129	65.0	90.0	130.0
197	129	130	44.0	60.0	130.0
198	130	131	37.0	88.0	130.0
199	62	520	100.0	569.0	120.0
200	41	42	100.0	237.0	120.0
201	30	113	150.0	250.0	120.0
203	5	36	150.0	105.0	120.0
179	187	300	150.0	500.0	120.0
250	136	301	65.0 150.0	215.0 152.0	130.0 120.0
209 213	160 62	300 524	97.0	334.0	130.0
214	30	503	100.0	334.0	120.0
215	112	511	75.0	132.0	120.0
216	500	501	140.0	100.0	130.0
217	154	501	65.0	104.0	130.0
218	186	501	140.0	221.0	130.0

110	118	503	75.0	167.0	120.0
300	215	301	100.0	554.0	120.0
208	215	300	100.0	250.0	120.0
17	205	527	100.0	250.0	120.0
172	15	153	150.0	577.0	120.0
302	10	70	150.0	480.0	120.0
304	24	25	100.0	55.0	120.0
305	55	172	100.0	50.0	120.0
306	20	172	100.0	50.0	120.0
307	23	25	100.0	75.0	120.0
308	40 39	178 40	150.0	150.0 180.0	120.0 120.0
77 78	39 40	189	100.0 100.0	60.0	120.0
79	100	101	44.0	450.0	130.0
309	41	42	150.0	150.0	120.0
310	119	521	65.0	350.0	130.0
311	521	522	65.0	350.0	130.0
313	33	35	100.0	150.0	120.0
301	11	523	150.0	120.0	120.0
314	59	523	100.0	180.0	120.0
315	502	524	75.0	150.0	120.0
317	524	600	97.0	450.0	130.0
319	525	526	75.0	210.0	120.0
321	527	528	65.0	480.0	130.0
322	134	528	65.0	200.0	130.0 130.0
11	165 188	601 527	65.0 65.0	75.0 50.0	130.0
324 325	122	123	140.0	160.0	130.0
327	56	59	140.0	352.0	130.0
328	1	49	158.0	264.0	130.0
329	206	527	150.0	215.0	120.0
330	156	541	100.0	931.0	120.0
331	112	540	97.0	434.0	130.0
601	91	139	150.0	162.0	120.0
602	91	161	65.0	225.0	130.0
603	70	93	150.0	662.0	120.0
605	93	132	150.0	616.0	120.0
606	93	185	150.0	300.0	120.0
212	22	54	150.0	275.0	120.0
610	122	160 92	225.0 150.0	931.0 228.0	120.0 120.0
611 612	91 92	135	100.0	690.0	120.0
613	604	610	97.0	200.0	130.0
614	105	612	44.0	250.0	130.0
616	174	542	97.0	569.0	130.0
701	15	606	250.0	500.0	120.0
702	169	603	55.0	50.0	130.0
703	15	153	140.0	577.0	130.0
705	16	125	65.0	850.0	130.0
713	102	103	198.0	350.0	130.0
714	103	106	198.0	400.0	130.0
715	28	106	198.0	250.0	130.0 130.0
716 717	28 107	107 108	198.0 198.0	40.0 200.0	130.0
718	108	109	198.0	120.0	130.0
719	109	511	198.0	400.0	130.0
720	112	511	198.0	132.0	130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208	140.0	104.0	130.0
751	610	611	97.0	630.0	130.0
752	611	612	65.0	610.0	130.0
761	50	542	97.0	1,044.0	130.0
762	68	542	97.0	165.0	130.0
771	101	102		120.0	130.0 130.0
772	100	101	140.0	450.0 120.0	130.0
773 781	41	100 6	140.0 250.0	221.0	120.0
782	. 6	27	250.0	150.0	120.0
783	27	181	250.0	1,106.0	120.0
784	102	181	250.0	92.0	120.0
791	151	186	140.0	450.0	130.0
792	13	151	140.0	35.0	130.0
793	13	14	140.0	475.0	130.0
794	14	153	140.0	236.0	130.0

795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0

Node No.		et Work Elevation of Pipe	Analysis Demand	Dynamic Pressure	Distribut Dynamic Pressure	ion Main Static Pressure	G		Leakage
no.		(MSL)	(cum/d)	(MSL)	(m)	(n)			(cum/d)
	1	1,881.7	197,6	1,918.9	37.2	109.3	0.0	0.0	
	2	1,885.1	113.4	1,924.1	39.0	105.9	0.0	0.0	
	4	1,881.8	123.1	1,921,6	39.8	109.2	0.0	$0.0 \\ 0.0$	
	5	1,881.3	64.8	1,921.3	40.0	109.7 107.3	0.0 0.0	0.0	
	6	1,883.7	123.1 215.5	1,921.0 1,915.1	$\frac{37.3}{33.9}$	107.8	0.0	0.0	
1	9 10	1,881.2 1,903.4	40.5	1,924.6	21.1	87.6	0.0	0.0	
	11	1,902.1	139.3	1,953.3	51,2	88.9	0.0	0.0	
	12	1,880.5	106.9	1,916.3	35.9	110.5	0.0	0.0	
	13	1,874.2	82.6	1,916.4	42.2	116.8	0.0	$0.0 \\ 0.0$	
	14	1,865.6	106.9	1,916.6	51.0 58.2	$\begin{array}{c} 125.4 \\ 130.5 \end{array}$	0.0 0.0	0.0	
	15 16	1,860.5 1,860.5	98.8 137.7	1,918.7 1,917.9	57.4	130.5	0.0	0.0	
	18	1,885.1	173.3	1,914.8	29.7	105.9	0.0	0.0	
	19	1,885.8	137.7	1,914.7	28.9	105.2	0.0	0.0	
	22	1,889.4	128.0	1,915.2	25.8	101.6	0.0	0.0	
	23	1,887.3	132.8	1,914.4	27.1	103.7	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
	24	1,887.7 1,887.0	189.5 82.6	1,914.4 1,914.4	26.7 27.4	103.3 104.0	0.0	0.0	
	25 27	1,882.3	121.5	1,920.8	38.5	108.7	0.0	0.0	
	28	1,879.2	42.1	1,917.4	38.2	111.8	0.0	0.0	
	29	1,892.4	21.1	1,917.0	24.6	98.6	0.0	0.0	
	30	1,882.6	129.6	1,916.7	34.1	108.4	0.0	0.0	
	31	1,882.0	150.7	1,922.6	40.6 31.9	$109.0 \\ 101.7$	0.0	0.0	
	36	1,889.3 1,891.4	82,6 76,1	1,921.2 1,921.1	29.7	99.6	0.0	0.0	
	37 38	1,893.9	68.0	1,921.1	27.2	97.1	0.0	0.0	
	39	1,914.9	81.0	1,929.8	14.9	76.1	0.0	0.0	
	41	1,899.2	71.3	1,918.5	19.3	91.8	0.0	0.0	
	42	1,896.1	61.6	1,918.5	22.4	94.9	0.0 0.0	$0.0 \\ 0.0$	
	43	1,894.8	64.8	1,918.3 1,918.3	23.6 24.9	$96.2 \\ 97.6$	0.0	0.0	
	44 45	1,893.4 1,884.9	87.5 108.5	1,920.3	35.4	106.1	0.0	0.0	
	46	1,878.2	205.7	1,920.8	42.5	112.8	0.0	0.0	
	47	1,880.7	58,3	1,920.6	39.9	110.3	0.0	0.0	
	48	1,880.2	163.6	1,918.4	38.2	110.8	$0.0 \\ 0.0$	$0.0 \\ 0.0$	
	49	1,881.1	259.2	1,918.4		109.9 104.7	0.0	0.0	
	50 51	1,886.3 1,895.4	233.3 76.1	1,945.7 1,915.1		95.6	0.0	0.0	
	52	1,889.1	157.1	1,914.4			0.0	0.0	
	55	1,886.2	144.2	1,914.5	28.3		0.0	0.0	
	56	1,902.7	79,4	1,950.1			0.0	$0.0 \\ 0.0$	
	57	1,884.1	150.7 192.8	1,914.6 1,914.3			0.0	0.0	
	58 60	1,890.9 1,889.9	162.0	1,914.3			0.0	0.0	
	61	1,885.4	81.0	1,919.7			0.0	0.0	
	62	1,890.2	123.1	1,927.4			0.0	0.0	
	63	1,878.7	61.6	1,922.7			0.0	0.0	
	64	1,876.5		1,922.6 1,941.5			0.0	0.0	
	66 67	1,910.0 1,921.5		1,949.8			0.0	0.0	
	68	1,918.6		1,949.2	30.6	72.4	0.0	0.0	
	69	1,879.5	81.0	1,920.7			0.0	0.0	
	70	1,904.5		1,924.6			$0.0 \\ 0.0$	0.0	
	71 100	1,894.5 1.896.6		1,918.7 1,918.6			0.0	0.0	
	101	1,885.9		1,919.0			0.0	0.0	
	102		59.9	1,919.	42.4	114.3	0.0	0.0	
	103		81.0				0.0	0.0	
	104						0.0	0.0	
	105 106						0.0	0.0	
	107						0.0	0.0	
	108					106.9	0.0	0.0	
	109			1,917.			0.0	0.0	
	112						0.0	0.0 0.0	
	113						0.0	0.0	
	114 117						0.0	0.0	
	118			1,913.	5 24.	5 102.0	0.0	0.0	
	119	1,889.	1 103.7	1,911.	0 21.		0.0	0.0	
	120						0.0 0.0	0.0	
	121						0.0	0.0	
	122 123				0 32.	6 63.7	0.0	0.0	١.
	124	1 1,879.	6 110.2	1,918.	7 39.	1 111.4	0.0	0.0	
	125	5 1,886.	2 175.0) 1,913.	6 27.	4 104.8	0.0	0.0	
						1			

	Net Work	Analysis		Distribut		G		
Node	Elevation	Demand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe (MSL)	(cum/d)	Pressure (MSL)	Pressure (m)	Pressure (m)			(cum/d)
126		173.3	1,911.9	17.8	96.9	0.0	0.0	(Cus/u)
127		87.5	1,909.6	34.7	116.1	0.0	0.0	
128	1,896.4	61.6	1,910.3	13.9	94.6	0.0	0.0	
129		13.0	1,910.3	14.3	95.0	0.0	0.0	
130 131		11.3 6.5	1,910.2 1,910.2	23,8 34,4	104.6 115.2	0,0 0.0	$0.0 \\ 0.0$	
132		82.6	1,925.4	38.6	104.2	0.0	0.0	
133		29.2	1,924.7	26.0	92.3	0.0	0.0	
134		87.5	1,942.2	17.7	66.5	0.0	0.0	
135		94.0	1,941.2 1,958.9	25.5 14.1	75.3 46.2	0.0 0.0	$0.0 \\ 0.0$	
136 137		115.0 191.2	1,955.6	50.6	86.0	0.0	0.0	
139	•	267.3	1,935.7	29,9	85.2	0.0	0.0	
140		50.2	1,915.1	15.7	91.6	0.0	0.0	
141		160.4	1,913.8	23.6	100.8	0.0	$0.0 \\ 0.0$	
142 143		166.9 178.2	1,913.9 1,914.0	30.0 25.3	107.1 102.3	0.0 0.0	0.0	
144		63.2	1,924.5	17.1	83,6	0.0	0.0	
145		9.7	1,924.5	15.2	81.7	0.0	0.0	
146		87.5	1,916.4	39.9	114.5	0.0	0.0	
147		158.8	1,916.4	37.5 29.7	112.1 101.4	0,0 0,0	$0.0 \\ 0.0$	
148 149		102.1 45.4	1,919.3 1,920.6	19.5	89.9	0.0	0.0	
150		191.2	1,916.3	16.9	91.6	0.0	0.0	
151		123.1	1,916.4	42.0	116.6	0.0	0.0	
152		106.9	1,916.4	50.5	125.1	0.0	0.0	
153 154		115.0 106.9	1,916.9 1,916.7	54.2 52.0	128.3 126.3	0.0 0.0	$0.0 \\ 0.0$	
158		35.6	1,916.6	49.0	123.4	0.0	0.0	
156		64.8	1,923.7	38.9	106.2	.0.0	0.0	
15		38.9	1,923.0	41.1	109.1	0.0	0.0	
158		38.9 30.8	1,922.8 1,959.8	42.5 56.6	110.7 87.8	0.0	$0.0 \\ 0.0$	
160 163		17.8	1,935.8	30.5	85,7	0.0	0.0	
162		61.6	1,915.1	23.3	99.2	0.0	0.0	
163		11.3	1,915.1	15.8	91.7	0.0	0.0	
164		6.5	1,942.2	22.4	71.2	0.0	0.0	
169 160		163.6 29.2	1,990.5 1,922.3	28.0 23.3	28.5 92.0	0.0	0.0	
16		35.6	1,980.0		73.2	0.0	0.0	*
170	0 1,893.3	21.1	1,922.7	29.4	97.7	0.0	0.0	
17		30.8	1,918.8		81.3	0.0	0.0	
2 2		157.1 134.5	1,914.5 1,914.5	29.4 28.6	105.9 105.1	0.0	$0.0 \\ 0.0$	
17		168.5	1,947.6		88.6	0.0	0.0	
5		157.1	1,914.3	18.6	95.3	0.0	0.0	
17			1,918.3			0.0	0.0	
17		37.3	1,918.3		93.7 78.2	0.0 0.0	0.0	
17. 17		89.1 40.5	1,929.6 1,929.9			0.0	0.0	
18		129.6	1,919.2			0.0	0.0	
18	2 1,891.9	21.1	1,917.1	25.2	99.1	0.0	0.0	,
18		19.4	1,917.1			0.0	0.0	
18 18		106.9 106.9	1,924.9 1,916.5			0.0 0.0	$0.0 \\ 0.0$	
18		123.1	1,957.0			0.0	0.0	
18	8 1,931.7	13.0	1,951.3	19.6	59.3	0.0	0.0	
18		47.0	1,929.6			0.0	0.0	
30 30		76.1 123.1	1,959.7 1,962.4			0.0	0.0	
	ig 1,931.4		1,950.4			0.0	0.0	
50			1,916.6	23.8	98.2	0.0	0.0	
50			1,916.6			0.0	0.0	
50 50			1,933.0 1,915.1			0.0	0.0	
50 51			1,915.1			0.0	0.0	
51		32.4	1,917.1			0.0	0.0	
52	20 1,913.6	102.1	1,927.1	13.5	77.4	0.0	0.0	
30			1,926.6			0.0	0.0	
17 17			1,914.5 1,925.5			0.0	0.0	
52			1,925,3			0.0	0.0	
52			1,907.7			0.0	0.0	
52	23 1,903.0	82.6	1,953.0	50.0		0.0	0.0	
52 52			1,933.4 1,916.2			0.0 0.0	0.0	
	25 1,001.0 26 1,882.0		1,916.5			0.0	0.0	76 .7
32	,	52.10	-,02010					

	Net Work	Analysis	3	Distribut	ion Main	G		
Node	Elevation	Demand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe		Pressure	Pressure	Pressure			
	(MSL)	(cum/d)	(MSL)	(n)	(m)			(cum/d)
527	1,931.0	48.6	1,954.6	23,6	60.0	0.0	0.0	
528	1,943.0	48.6	1,945.0	2.0	48.0	0.0	0.0	
33	1,867.0	82.6	1,916.2	49.2	124.0	0,0	0.0	
35	1,870.0	98.8	1,916.2	46.2	121.0	0,0	0.0	
40	1,920.0	64.8	1,929.6	9.6	71.0	0.0	0.0	
54		82.6	1,914.6	28.6	105.0	0.0	0.0	
91	1,899.4	0.0	1,935.8	36.4	91.6	0,0	0.0	
92	1,895.4	0.0	1,936.1	40.7	95.6	0.0	0.0	
93	1,882.0	0.0	1,924.9	42.9	109.0	0.0	0.0	
540	1,930.0	693.4	1,935.0	5.0	61.0	0.0	0.0	
541	1,980.0	926.6	1,985.0	5.0	11.0	0.0	0.0	
542	1,889,1	0.0	1,948.2	59.1	101.9	0.0	0.0	
610	1,900.0	0.0	1,930.0	30.0	91.0	0.0	0.0	
611	•	0.0	1,929.9	45.3	106.4	0.0	0.0	
612		0.0	1,929.2	47.9	109.7	0.0	0.0	

	Net	Work	Analy	sis	I)istribut	tion Main		G	
Pipe No.		le A No			Diameter	C	Flow	Velocity	Pressure Gradient	loss
			510	(m)	(mm)	100.00	(cum/d)	(n/s)	(o/oo) 0.00	(m) 0.00
	i 2	139 139	510 304	800.00 374.00		120,00 130,00	82.00 113.00	0.00 0.90	24,20	9.00
ļ	5	51	140	228.00		120.00 130.00	50.00 11.00	0.00 0.10	0.00 0.30	0.00 0.10
	6 7	162 51	163 162	143.00 20.00	44.00 150.00	120.00	72.00	0.10	0.00	0.00
	9	134	135	178.00 84.00	65.00 44.00	130.00 130.00	142.00 6.00	$0.50 \\ 0.10$	5,50 0,10	1.00 0.00
1 1		134 66	164 135	265.00	150,00	120.00	432.00	0.30	0.80	0.20
1		50 50	66 67	530.00 583.00	100.00 100.00	120.00 120.00	497.00 -469.00	0.70 -0.70	8.00 -7.10	4.20 -4.20
1	6	67	188	165.00	100.00	120.00	-530.00	-0.80	-9.00 -1.20	-1.50 -0.10
	0 1	21 21	54 23	59.00 88.00	150.00 100.00	120.00 120.00	-550.00 195.00	$-0.40 \\ 0.30$	-1.30 1.40	0.10
2	2	23	24	55.00	150.00 100.00	120.00 120.00	35.00 182.00	$0.00 \\ 0.30$	0.00 1.20	0.00 0.10
	:3 :4	20 20	24 21	90.00 66.00	150.00	120.00	-198.00	-0.10	-0,20	0.00
	26 27	25 52	52 53	110.00 176.00	100.00 100.00	120.00 120.00	-27.00 81.00	0.00	0.00 0.30	0.00 0.10
2	28	53	60	100.00	100.00	120.00	-75.00	-0.10	-0.20	0.00
	29 30	18 18	60 19	134.00 54.00	100.00 150.00	120.00 120.00	327.00 621.00	0.50 0.40	$\frac{3.70}{1.70}$	$\substack{0.50\\0.10}$
	31	19	52	151.00	100,00	120.00	266.00	$0.40 \\ 0.30$	2.50 1.70	$0.40 \\ 0.20$
	32 33	19 54	55 172	133.00 100.00	100.00 100.00	120.00 120.00	217.00 127.00	0.20	0.60	0.10
:	34	9	18	315.00 47.00	225.00 100.00	120.00 120.00	1,122.00 -1,634.00	0.30 -2.40	0.70 -72.00	0.20 -3.40
	35 36	9 1	48 48	265.00	225.00	120.00	1,864.00	0.50	1.80	0.50
	37 38	48 22	49 49	201.00 672.00	100.00 150.00	120.00 120.00	66.00 -1,088.00	0.10 -0.70	0.20 -4.70	0.00 -3.20
	39	22	51	596.00	150.00	120.00	199.00	0.10	0.20	0.10 -0.90
	40 41	49 148	148 171	536.00 372.00	100.00 50.00	120,00 120.00	-217.00 30.00	~0.30 . 0.20	-1.70 1.30	0.50
	42	69	148	325,00	100.00	120.00 120.00	349.00 476.00	0.50 0.30	4.10 1.00	1.40 0.10
	43 44	46 69	69 149	90.00 551.00	150.00 100.00	120.00	45.00	0.10	0.10	0.10
	45 46	1 1	49 46	264.00 401.00	100.00 225.00	120.00 120.00	231.00 -3,126.00	0.30 -0.90	1,90 -4.60	0.50 -1.90
	40 47	46	47	268.00	100.00	120,00	138.00	0,20	0.80	0.20
	48 49	47 63	64 64	268.00 444.00	100.00 300.00	120.00 120.00	-489.00 711.00	-0.70 0.10	$-7.70 \\ 0.10$	-2.10
	50	46	63	268.00	225.00	120.00 120.00	-3,947.00 -4,720.00	-1.10 -0.80	-7.10 -2.40	-1.90 -0.10
	51 52	63 158	158 166	47,00 358,00	300.00 50.00	120.00	29.00	0.20	1.20	0.40
	53 54	157 157	158 170	77.00 264.00	300,00 44,00	120,00 130.00	4,788.00 21.00	0.80 0.20		0.20 0.30
	55	156	157	300.00	300.00	120.00	4,848.00	0.80	2.60	0.80 0.40
	56 61	2 2	156 203	100,00 704,00	300.00 350.00	120.00 120.00	5,840.00 -9,431.00	1.00 -1.10	-4.10	-2.90
	62	2	4	442.00 65.00	225,00 225,00	120.00 120.00	3,478.00 3,274.00	1.00 0.90		2.50 0.30
	63 64	4 4	5 61	972.00	65.00	130.00	81.00	0.30	1.90	1.90
	65 66	5 6	6 27	221.00 150.00	150.00 150.00	120.00 120.00	577.00 551.00			$0.30 \\ 0.20$
•	67	27	37	216,00	100,00	120.00	-194.00	-0'.30	-1.40	-0.30 0.10
	68 69	36 36	37 38	400.00 563.00	150.00 100.00		263.00 75.00	0,10	0.20	0.10
	70	37	38 181	30,00	150.00 150.00		-7.00 566.00			0.00 1.60
	72 74	27 39	173	320.00	44.00	130,00	82.00	0.60	13.40	4.30
	76 80	102 39	181 179	92.00 125.00	150.00 150.00		-539,00 -364.00			-0.10 -0.10
	82	179	208	104.00	65.00	130.00	-47.00 644.00	-0,20		$-0.10 \\ 0.60$
	83 84	102 101	103 102	350,00 120,00	150.00 44.00		-20.00	-0.20	-1.00	-0.10
	86 87	41 100	100 101	120.00 312.00			-16,00 -14,00			-0.10 -0.40
	88	42	43	257.00	100.00	120.00	113.00	0.20	0.50	0.10
	89 90	42 43	43 44	257,00 268,00			113.00 162.00		0.10	0.10 0.00
	91	44	177	391.00	100.00	120.00	37.00 37.00	0.10	0.10	0.00 0.00
	92 93	44 176	176 177	391,00 90,00	100.00	120.00	0.00	0.0	0.00	0.00
	99 100	29 109	112 511	251.00 400.00			-21.00 99.00			$0.00 \\ 0.20$
	101	108	109	120.00	100.00	120.00	103.00	0.10	0 0.40	0.10 0.20
	102 103	108 107	183 108	228.00 200.00			19.00 112.0		the state of the s	0.10
									1.	

Net Work Analysis Distribution Main G	
Pipe Node & Node B Length Diameter C Flow Velocity Grad	sure lient
NO. (m) (mn) (cum/d) (m/s) (o/	(m)
104 107 182 253.00 44.00 130.00 21.00 0.20	1.10 0.30 0.60 0.00
	3,90 0.30
107 113 114 265.00 65.00 130.00 30.00 0.10	0.30 0.10
100 111 111 000100 100 100 00 00 11	0.10 0.10 11.00 3.50
	10.30 2.60
113 28 106 250.00 150.00 120.00 -598.00 -0.40 -	-1.60 -0.40
114 103 106 400.00 150.00 120.00 619.00 0.40 116 104 105 300.00 44.00 130.00 -30.00 -0.20	1.70 0.70 -2.20 -0.70
118 30 526 210.00 100.00 120.00 165.00 0.20	1.00 0.20
119 62 132 1,500.00 150.00 120.00 545.00 0.40	1.30 2.00 0.00 0.00
120 155 500 175.00 140.00 130.00 78.00 0.10 125 132 133 363.00 44.00 130.00 29.00 0.20	2.00 0.70
127 31 64 167.00 225.00 120.00 -150.00 0.00	0.00 0.00
129 70 144 284.00 100.00 120.00 72.00 0.10 130 144 145 121.00 44.00 130.00 9.00 0.10	0.20 0.10 0.30 0.00
132 45 47 162.00 150.00 120.00 -570.00 -0.40	-1.40 -0.20
133 9 45 761.00 100.00 120.00 -461.00 -0.70	-6.90 -5.30 17.40 0.40
104	17,40 0.40 3,00 0.40
136 58 60 262,00 100,00 120,00 -90,00 -0,10	-0.30 -0.10
138 56 59 352.00 97.00 130.00 -136.00 -0.20	-0.70 -0.30 1.40 0.20
140 58 143 168.00 100.00 120.00 192.00 0.30 141 142 143 264.00 50.00 120.00 -14.00 -0.10	-0.30 -0.10
142 57 142 202.00 100.00 120.00 312.00 0.50	3.40 0.70
143 141 142 99.00 100.00 120.00 -160.00 -0.20	-1.00 -0.10 0.20 0.10
147 12 151 163.00 150.00 120.00 -298.00 -0.20	-0.40 -0.10
148 13 151 35.00 150.00 120.00 107.00 0.10	0.10 0.00
149 101 100 100 100 100 100 100 0 0 00	-0.10 0.00 0.50 0.10
160 153 154 165.00 100.00 120.00 174.00 0.30	1.10 0.20
161 14 153 236.00 150.00 120.00 -487.00 -0.30	-1.10 -0.30 -0.40 -0.20
162 13 14 475.00 150.00 120.00 -279.00 -0.20 163 13 146 35.00 150.00 120.00 246.00 0.20	0.30 0.00
164 146 147 137.00 150.00 120.00 158.00 0.10	0.10 0.00
167 11 137 663.00 150.00 120.00 -914.00 -0.60	-3.40 -2.30 2.90 0.20
	-1.20 -0.20
175 56 68 165.00 100.00 120.00 415.00 0.60	5.70 0.90 -13.40 -9,70
176 60 120.00 41.00 100.00	-13.40 -9.70 6.50 3.40
178 137 187 277.00 140.00 130.00 -1,049.00 -0.80	-5.30 -1.50
182 71 124 400.00 225.00 120.00 -140.00 0.00	0.00 0.00 0.00 0.00
183 15 124 441.00 225.00 120.00 251.00 0.10 184 15 16 177.00 150.00 120.00 1,025.00 0.70	4.20 0.80
185 16 121 286,00 100.00 120.00 359.00 0.50	4.40 1.30
186 120 121 1,210.00 75.00 120.00 -183.00 -0.50 187 16 125 850.00 100.00 120.00 391.00 0.60	-5.10 -6.10 5.10 4.30
187 16 125 850.00 100.00 120.00 391.00 0.60 191 122 209 120.00 225.00 120.00 -687.00 -0.20	-0.30 0.00
193 125 126 396.00 100.00 120.00 353.00 0.50	4.20 1.70 2.50 1.60
194 126 128 668.00 65.00 130.00 92.00 0.30 195 126 127 1,047.00 65.00 130.00 87.00 0.30	2.20 2.30
196 128 129 90.00 65.00 130.00 30.00 0.10	0.30 0.00
197 129 130 60.00 44.00 130.00 17.00 0.10	0.80 0.10 0.30 0.00
198 130 131 88.00 37.00 130.00 6.00 0.10 199 62 520 569.00 100.00 120.00 102.00 0.10	0.40 0.20
200 41 42 237.00 100.00 120.00 61.00 0.10	$ \begin{array}{ccc} 0.20 & 0.00 \\ -1.90 & -0.50 \end{array} $
201 30 113 250.00 150.00 120.00 -672.00 -0.40 203 5 36 105.00 150.00 120.00 420.00 0.30	$ \begin{array}{ccc} -1.90 & -0.50 \\ 0.80 & 0.10 \end{array} $
179 187 300 500.00 150.00 120.00 -1,172.00 -0.80	-5.40 -2.70
250 136 301 215.00 65.00 130.00 -253.00 -0.90	-16.00 -3.50 0.80 0.10
209 160 300 152.00 150.00 120.00 407.00 0.30 213 62 524 334.00 97.00 130.00 -771.00 -1.20	-17.90 -6.00
214 30 503 334.00 100.00 120.00 378.00 0.60	4.80 1.60
215 112 511 132.00 75.00 120.00 -47.00 -0.10	-0.40 -0.10 0.00
217 154 501 104,00 65,00 130,00 48,00 0,20	0.70 0.10
218 186 501 221.00 140.00 130.00 -324.00 -0.20	-0.60 -0.10 -9.40 -1.60
110 118 503 167.00 75.00 120.00 -254.00 -0.70 300 215 301 554.00 100.00 120.00 376.00 0.60	-9.40 -1.60 $4.80 2.60$
208 215 300 250.00 100.00 120.00 841.00 1.20	21,10 5.30
17 205 527 250.00 100.00 120.00 211.00 0.30	1.60 0.40 3.20 1.80
172 15 153 577.00 150.00 120.00 879.00 0.60 302 10 70 480.00 150.00 120.00 -40.00 0.00	0.00 0.00
304 24 25 55.00 100.00 120.00 28.00 0.00	0.00 0.00

Pipe No. Sode Node B Length Diaseter C Flow Velocity Pipe Case		Net Wo	rk Anal	ysis		Distribu	tion Main		G	
(m)							Flow	Velocity	Gradient	
1906 20										
1977 23 25 75.00 100.00 120.00 26.00 0.00 0.00 0.00 0.00 177 39 40 180.00 100.00 120.00 200.00 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 1.50 0.30 0.00 1.50 0.10 0.00 1.50 0.00 1.50 0.10 0.00 1.50 0.10 0.00 1.50 0.10 0.00 1.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.										
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) 1,10	
				165,00						

Net Work Analysis Distribution Main File Name Nuvara011Year2015(4) Wet Season Proposed Network Type Year 2015 Demand Day Mean Water Level Fix All Reserver None Discharge Fix Magnification of Demand 0.811 Reservoir Data LWL Reservoir HVL Node (MSL) (MSL) Haddon Hill 1,927.0 203 1,927.0 1,955.0 New Water Field 205 1,955.0 Old Water Field 1,955.0 1,955.0 206 208 1,930.0 1,930.0 Bonavista 1,960.0 Lovers Leap 1,960.0 209 1,965.0 Gamunu/Brevery 215 1,965.0 1,946.0 1,946.0 Nseby 600 1,991.0 1,991.0 Piyatisappura 601 Unique View 1,980.0 1,980.0 603 1,925.0 604 1,925.0 **Vijithapura** 1,920.0 Low Area 2 1,920.0 606 Node Data Ground Elev Demand Node (cum/d) (MSL) 0 O 1,881.7 122.0 1,885.1 70.0 0 2 76.0 0 4 1,881.8 0 1,881.3 40.0 5 76.0 0 1,883.7 6 133.0 0 1,881.2 0 Ω 1,903.4 25.0 10 1,902.1 86.0 Ó 0 11 0 66.0 1,880.5 12 0 0 1,874.2 51.0 13 1,865.6 66.0 0 0 14 0 0 1,860.5 61.0 15 0 0 1,860.5 85.0 16 0 18 1,885.1 107.0 0 Û 0 85.0 1,885.8 19 0 0 22 1,889.4 79.0 0 0 23 1.887.3 82.0 117.0 0 1.887.7 24 Ö 0 25 1,887.0 51.0 27 28 0 0 1,882.3 75.0 1,879.2 26.0 0 0 1,892.4 13.0 0 0 30 1,882.6 80.0 93.0 0 31 1,882.0 0 0 1,889.3 51.0 36 0 0 37 1,891.4 47.0 0 1,893.9 42.0 0 38 0 0 1,914.9 50.0 39 0 41 1,899.2 44.0 0 38.0 0 0 1,896.1 42 0 0 1,894.8 40.0 43 n 0 44 1,893.4 54.0 45 1.884.9 67.0 0 0 0 0 1,878.2 127.0 46 0 47 1,880.7 36.0 0 0 1,880.2 101.0 48 0 0 160.0 1,881.1 49 0 0 50 1,886.3 144.0 0 47.0 0 1,895.4 51 97.0 0 0 1,889.1

52

55

56

57

1,886.2

1,902.7

1,884.1

0

0

0

0

0

89.0

49.0

93.0

c o	1	1,890.9	119.0	0	0
58	1				
60	1	1,889.9	100.0	0	0
61	1	1,885.4	50.0	0	0
62	1	1,890.2	76.0	0	0
				0	0
63	1	1,878.7	38.0		
64	ĺ	1,876.5	44.0	0	0
66	1	1,910.0	40.0	0	0
				Ö	Ó
67	1	1,921.5	38.0		
68	1	1,918.6	42.0	0	0
69	1	1,879.5	50.0	0	0
			132.0	Ö	0
70	1	1,904.5			
71	j	1,894.5	87.0	0	0
100	1	1,896.6	33.0	0	0
	i	1,885.9	25.0	0	0
101					
102	1	1,876.7	37.0	0 -	0
103	1	1,883.1	50.0	0	0
104	1	1,916.3	19.0	0	0
				. 0	0
105	1	1,903.9	17.0		
106	1	1,881.3	43.0	0	0
107	ĺ	1,880.1	32.0	0	0
			30.0	0	0
108	1	1,884.1			
109	1	1,884.6	20.0	0	0
112	1	1,900.7	0.0	0	0
113	1	1,878.5	29.0	0	0
				ŏ	0
114	1	1,897.3	57.0		
117	ĺ	1,907.5	59.0	0	0
118	1	1,889.0	37.0	0	0
			64.0	0	0
119	1	1,889.1			
120	ĺ	1,871.2	113.0	0	0
121	1	1,862.6	109.0	0	. 0
122	1	1,950.0	89.0	0	0
				Õ	ŏ
123	1	1,927.3	65.0		
124	1	1,879.6	68.0	0	0
125	1	1,886.2	108.0	0	0
			107.0	Õ	0
126	1	1,894.1			
127	1	1,874.9	54.0	0	0
128	1	1,896.4	38.0	0	0
129	i	1,896.0	8.0	0	0
					Ö
130	1	1,886.4	7.0	0	
131	1	1,875.8	4.0	0	0
132	1	1,886.8	51.0	0	0
			18.0	0	0
133	1	1,898.7			
134	1	1,924.5	54.0	0	. 0
135	· 1	1,915.7	58.0	0	0
136	ī	1,944.8	71.0	0	0
				Õ	ŏ
137	1	1,905.0	118.0		
139	1	1,905.8	165.0	0	. 0
140	1	1,899.4	31.0	0	0
141	i	1,890.2	99.0	0	0
142	1	1,883.9	103.0	0	0
143	1	1,888.7	110.0	0	0
144	1	1,907.4	39.0	0	0
			6.0	0	0
145	1	1,909.3			
146	1	1,876.5	54.0	0	0
147	i	1,878.9	98.0	. 0	0
148	ī	1,889.6	63.0	0	0
				Ö	ő
149	1	1,901.1	28.0		
150	1	1,899.4	118.0	0	0
151	1	1,874.4	76.0	0	0
152	i	1,865.9	66.0	0	0
153	1	1,862.7	71.0	0	0
154	1	1,864.7	66.0	0	. 0
155	ī	1,867.6	22.0	0	0
				. 0	Ō
156	1	1,884.8	40.0		
157	1	1,881.9	24.0	0	0
158	1	1,880.3	24.0	0	0
			19.0	Ŏ.	Ō
160	1	1,903.2			
161	1	1,905.3	11.0	0	0
162	1	1,891.8	38.0	0	0
	1	1,899.3	7.0	Ö	0
163					
164	1	1,919.8	4.0	0	0
165	1	1,962.5	101.0	0	0
166	í	1,899.0	18.0	0	0
				. 0	Ŏ
169	1	1,917.8	22.0		
170	i	1,893.3	13.0	0	0

171	1	1,909.7	19.0	0	0
21	1	1,885.1	97.0	0	0
20	1	1,885.9	83.0	0	0
174	1	1,902.4	104.0	0	0
53	1	1,895.7	97.0	0	0
176	i	1,895.0	23.0	0	0
177	1	1,897.3	23.0	0	0
178	1	1,912.8	55.0	0	0
179	i	1,917.5	25.0	0	0
181	ī	1,881.0	80.0	0	0
182	î	1,891.9	13.0	0	0
183	Ī	1,899.2	12.0	0	0
185	Ī	1,902.8	66.0	0	0
186	ī	1,885.4	66.0	0	0
187	ī	1,903.2	76.0	0	0
188	Ī	1,931.7	8.0	. 0	0
189	ī	1,921.8	29.0	0	0
300	i	1,903.6	47.0	0	0
301	i	1,951.4	76.0	0	0
59	i	1,900.0	122.0	0	0
500	1	1,892.8	25.0	0	0
501	i	1,886.6	76.0	0	0
502	i	1,885.6	80.0	0	0
503	i	1,884.2	76.0	0	0
510	i	1,914.5	51.0	0	0
511	i	1,892.1	20.0	0	0
520	i	1,913.6	63.0	0	0
304	i	1,900.4	70.0	0	0
172	i	1,886.0	51.0	0	0
173	1	1,916.0	51.0	0	0
521	i	1,886.0	51.0	0	. 0
522	i	1,880.0	51.0	0	0
523	î	1,903.0	51.0	0	0
524	i	1,887.0	51.0	0	0
525	î	1,881.0	51.0	0	0
526	ĺ	1,882.0	51.0	0	0
527	i	1,931.0	30.0	0	0
528	i	1,943.0	30.0	. 0	0
33	1	1,867.0	51.0	0	0
35	ĩ	1,870.0	61.0	0	0
40	1	1,920.0	40.0	0	0
54	ī	1,886.0	51.0	0	0
91	ī	1,899.4	0.0	0	0
92	ī	1,895.4	0.0	0	0
93	i	1,882.0	0.0	0	0
540	î	1,930.0	694.0	0	0
541	i	1,980.0	928.0	0	. 0
542	i	1,889.1	0.0	0	0
610	i i	1,900.0	0.0	0 .	0
611	ì	1,884.6	0.0	0	- 0
612	ī	1,881.3	0.0	0	0
	_	•			

Booster No.	Pump Type	Data Node A	Node B	Pipe No.	Pressure
,,,,,	13 իշ	noue n	11000	1100 1100	(m)
1	В	156.0	541.0	330	75.0
2	В	112.0	540.0	331	16.0

Pipe Pipe	Data No. No	ode A No	de B Di	ameter	Length	C Value
•				(mm)	(m)	
	1	139	510	225.0	800.0	120.0
	2	139	304	44.0	374.0	130.0
	5	51	140	150.0	228.0	120.0
	6	162	163	44.0	143.0	130.0
	7	51	162	150.0	20.0	120.0
	9	134	135	65.0	178.0	130.0
	12	134	164	44.0	84.0	130.0
	13	66	135	150.0	265.0	120.0
	14	50	66	100.0	530.0	120.0
	15	50	67	100.0	583.0	120.0
	16	67	188	100.0	165.0	120.0
	20	21	54	150.0	59.0 88.0	120.0 120.0
	21 22	21 23	23 24	100.0 150.0	55.0	120.0
	23	20	24	100.0	90.0	120.0
	24	20	21	150.0	66.0	120.0
	26	25	52	100.0	110.0	120.0
	27	52	53	100.0	176.0	120.0
	28	53	60	100.0	100.0	120.0
	29	18	60	100.0	134.0	120.0
	30	18	19	150.0	54.0	120.0
	31	19	52	100.0	151.0	120.0
	32	19	55	100.0	133.0	120.0
	33	54	172	100.0	100.0 315.0	120.0 120.0
	34 25	9 9	18 48	225.0 100.0	47.0	120.0
	$\frac{35}{36}$	1	48	225.0	265.0	120.0
	37	48	49	100.0	201.0	120.0
	38	22	49	150.0	672.0	120.0
	39	22	51	150.0	596.0	120.0
*	40	49	148	100.0	536.0	120.0
	41	148	171	50.0	372.0	120.0
	42	69	148	100.0	325.0	120.0
	43	46	69	150.0	90.0	120.0
	44	69	149	100.0	551.0	120.0
	45	1	49	100.0	264.0 401.0	120.0 120.0
	46 47	1 46	46 47	225.0 100.0	268.0	120.0
	48	47	64	100.0	268.0	120.0
	49	63	64	300.0	444.0	120.0
	50	46	63	225.0	268.0	120.0
	51	63	158	300.0	47.0	120.0
	52	158	166	50.0	358.0	120.0
	53	157	158	300.0	77.0	120.0
	54	157	170	44.0	264.0	130.0
	55	156	157	300.0	300.0	120.0
	56	2	156	300.0	100.0 704.0	120.0 120.0
	61 62	2 2	203 4	$350.0 \\ 225.0$	442.0	120.0
	63	4	5	225.0	65.0	120.0
	64	4	61	65.0	972.0	130.0
	65	5	6	150.0	221.0	120.0
	66	6	27	150.0	150.0	120.0
	67	27	37	100.0	216.0	120.0
	68	36	37	150.0	400.0	120.0
	69	36	38	100.0	563.0	120.0
	. 70	37	38	150.0	30.0	120.0
	72	27	181	150.0 44.0	1,106.0 320.0	120.0 130.0
	74 76	39 102	173 181	150.0	92.0	120.0
	80	39	179	150.0	125.0	120.0
	82	179	208	65.0	104.0	130.0
	83	102	103	150.0	350.0	120.0
	84	101	102	44.0	120.0	130.0
	86	41	100	44.0	120.0	130.0
	87	100	101	37.0	312.0	130.0
	88	42	43	100.0	257.0	
	89 00	42	43	100.0	257.0 268.0	
	90 91	43 44	44 177	150.0 100.0	391.0	
	91 92	44	176	100.0	391.0	
	93	176	177		90.0	
						_

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109	100.0	120.0	120.0
102	108	183	44.0	228.0	130.0
103	107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0
105	28	107	100.0	40.0	120.0
106	28	113	150.0	66.0	120.0
107	113	114	65.0	265.0	130.0
108	114	117	65.0	500.0	130.0
109	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113	28	106	150.0	250.0	120.0
114	103	106	150.0	400.0	120.0
116	104	105	44.0	300.0	130.0
118	30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0	120.0
120	155	500	140.0	175.0	130.0
125	132	133	44.0	363.0	130.0
127	31	64	225.0	167.0	120.0
129	70	144	100.0	284.0	120.0
130	144	145	44.0	121.0	130.0
132	45	47	150.0	162.0	120.0
133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57	58	100.0	120.0	120.0
136	58	60	100.0	262.0	120.0
138	56 50	59	97.0	352.0	130.0
140	58	143	100.0	168.0	120.0 120.0
141 142	142 57	143 142	50.0 100.0	$264.0 \\ 202.0$	120.0
143	141	142	100.0	99.0	120.0
146	12	150	150.0	360.0	120.0
147	12	151	150.0	163.0	120.0
148	13	151	150.0	35.0	120.0
149	151	186	140.0	450.0	130.0
151	154	155	100.0	132.0	120.0
160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162	13	14	150.0	475.0	120.0
163	13	146	150.0	35.0	120.0
164	146	147	150.0	137.0	120.0
167	11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170	33	152	100.0	150.0	120.0
175	56	68	100.0	165.0	120.0
176	68	136	44.0	726.0	130.0
177	136	137	44.0	512.0	130.0
178	137	187	140.0	277.0	130.0
182	71	124	225.0	400.0	120.0
183	15	124	225.0	441.0	120.0
184	15	16	150.0	177.0	120.0
185	16	121	100.0	286.0	120.0
186	120	121	75.0	1,210.0	120.0
187	16	125 209	100.0 225.0	850.0 120.0	120.0 120.0
191	122 125	126	100.0	396.0	120.0
193 194	126	128	65.0	668.0	130.0
195	126	127	65.0	1,047.0	130.0
196	128	129	65.0	90.0	130.0
197	129	130	44.0	60.0	130.0
198	130	131	37.0	88.0	130.0
199	62	520	100.0	569.0	120.0
200	41	42	100.0	237.0	120.0
201	30	113	150.0	250.0	120.0
203	- 5	36	150.0	105.0	120.0
179	187	300	150.0	500.0	120.0
250	136	301	65.0	215.0	130.0
209	160	300	150.0	152.0	120.0
213	62	524	97.0	334.0	130.0
214	30	503	100.0	334.0	120.0
215	112	511	75.0	132.0	120.0
216	500	501	140.0	100.0	130.0
217	154	501	65.0	104.0	130.0
218	186	501	140.0	221.0	130.0

110	118	503	75.0	167.0	120.0
300	215	301	100.0	554.0	120.0
208	215	300	100.0	250.0	120.0
17 172	205	527	100.0	250.0	120.0
302	15 10	153 70	150.0 150.0	577.0 480.0	120.0 120.0
304	24	25	100.0	55.0	120.0
305	55	172	100.0	50.0	120.0
306	20	172	100.0	50.0	120.0
307	23	25	100.0	75.0	120.0
308	40	178	150.0	150.0	120.0
77	39	40	100.0	180.0	120.0
78 79	40 100	189 101	100.0 44.0	60.0 450.0	$\substack{120.0\\130.0}$
309	41	42	150.0	150.0	120.0
310	119	521	65.0	350.0	130.0
311	521	522	65.0	350.0	130.0
313	33	35	100.0	150.0	120.0
301	. 11	523	150.0	120.0	120.0
314 315	59 - 502	523 524	100.0 75.0	180.0 150.0	120.0 120.0
317	524	600	97.0	450.0	130.0
319	525	526	75.0	210.0	120.0
321	527	528	65.0	480.0	130.0
322	. 134	528	65.0	200.0	130.0
11	165	601	65.0	75.0	130.0
324	188	527	65.0	50.0	130.0
$\frac{325}{327}$	122 56	123 59	140.0 140.0	160.0 352.0	130.0 130.0
328	1	49	158.0	264.0	130.0
329	206	527	150.0	215.0	120.0
330	156	541	100.0	931.0	120.0
331	112	540	97.0	434.0	130.0
601	91	139	150.0	162.0	120.0
602 603	91 70	161 93	65.0 150.0	225.0 662.0	130.0 120.0
605	93	132	150.0	616.0	120.0
606	93	185	150.0	300.0	120.0
212	22	54	150.0	275.0	120.0
610	122	160	225.0	931.0	120.0
611	91	92	150.0	228.0	120.0
612 613	92 604	135 610	$100.0 \\ 97.0$	690.0 200.0	$120.0 \\ 130.0$
614	105	612	44.0	250.0	130.0
616	174	542	97.0	569.0	130.0
701	15	606	250.0	500.0	120.0
702	169	603	55.0	50.0	130.0
703	15	153	140.0	577.0	130.0
705 713	16 102	125 103	65.0 198.0	850.0 350.0	130.0 130.0
714	102	106	198.0	400.0	130.0
715	28	106	198.0	250.0	130.0
716	28	107	198.0	40.0	130.0
717	107	108	198.0	200.0	130.0
718	108	109	198.0	120.0	130.0
719 720	109 112	511 511	198.0 198.0	400.0 132.0	130.0 130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208	140.0	104.0	130.0
751	610	611	97.0	630.0	130.0
752	611	612	65.0	610.0	130.0
761 762	50 68	542 542	97.0 97.0	1,044.0 165.0	130.0 130.0
771	101	102	140.0	120.0	130.0
772	100	101	140.0	450.0	130.0
773	41	100	140.0	120.0	130.0
781	5	6	250.0	221.0	120.0
782	6	27	250.0	150.0	120.0
783 784	27 102	181 181	250.0 250.0	1,106.0 92.0	120.0 120.0
791	151	186	140.0	450.0	130.0
792	13	151	140.0	35.0	130.0
793	13	14	140.0	475.0	130.0
794	14	153	140.0	236.0	130.0

795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0

	Wat Wash	4 m n 1 m n d .	_	n: 1 : 1 1		**		
Node	Net Work Elevation	•	S Dynamic	Distribut Dynamic	on Main Static	11		
No.	of Pipe	Demand	Pressure	Pressure	Pressure			Leakage
	(MSL)	(cum/d)	(MSL)	(m)	(m)			(cum/d)
1 2		98.8 56.7	1,924.6 1,926.0	42.9 40.9	109.3 105.9	0.0	0.0	25.0
4		61.6	1,925.2	43.4	109.2	$0.0 \\ 0.0$	$0.0 \\ 0.0$	$\begin{array}{c} 23.7 \\ 25.3 \end{array}$
5		32.4	1,925.1	43,8	109.7	0.0	0.0	25.5
6		61.6	1,925.0	41.3	107.3	0.0	0.0	23.9
9		107.7	1,923,5	42.3	109.8	0.0	0.0	24.6
10 11		$\frac{20.3}{69.7}$	1,940,1 1,957,9	36.7 55.8	87.6 88.9	0.0 0.0	$0.0 \\ 0.0$	$\frac{21.0}{33.4}$
12		53.5	1,919.0	38.5	110.5	0.0	0.0	22.2
13	1,874.2	41.3	1,919.0	44.8	116.8	0.0	0.0	26.2
14 15		53.5 49.4	1,919.1 1,919.6	53.5 59.1	125.4	0.0	0.0	31.8
16		68.8	1,919.4	58.9	130.5 130.5	0.0 0.0	$0.0 \\ 0.0$	$35.6 \\ 35.4$
18		86.7	1,923.4	38.3	105.9	0.0	0.0	22.1
19		68.8	1,923.4	37.6	105.2	0.0	0.0	21.6
22 23		64.0 66.4	1,923.6 1,923.3	34.1 36.0	101.6 103.7	0.0	0.0	19.4
24		94.8	1,923.3	35.6	103.7	0.0	$0.0 \\ 0.0$	20.6 20.4
25	1,887.0	41.3	1,923.3	36.3	104.0	0.0	0.0	20.8
27		60.8	1,924.9	42.6	108.7	0.0	0.0	24.8
28 29		21.1 10.5	1,923.6 1,923.3	44.4 30.9	111.8 98.6	0.0	0.0 0.0	$25.9 \\ 17.4$
30		64.8	1,923.4	40.8	108.4	0.0	0.0	23.6
31	1,882.0	75.3	1,925.6	43.6	109.0	0.0	0.0	25.4
36		41.3	1,925.0	35.7	101.7	0.0	0.0	20.4
37 38		38.1 34.0	1,925.0 1,925.0	$33.6 \\ 31.1$	99.6 97.1	0.0	0.0 0.0	19.1 17.5
39		40.5	1,930.0	15.1	76.1	0.0	0.0	7,9
41		35.6	1,924.1	24,9	91.8	0.0	0.0	13,7
42 43		30.8	1,924.1	28.0	94.9	0.0	0.0	15.6
43		32.4 43.7	1,924.1 1,924.1	29.3 30.6	96.2 97.6	0.0	$0.0 \\ 0.0$	16.4 17.3
45	1,884.9	54.3	1,925.0	40.1	106.1	0.0	0.0	23,2
46		102.9	1,925.1	46.9	112.8	0.0	0.0	27.6
47 48		29.2 81.8	1,925.0	44.3	110.3	0.0	0.0	25.9
49		129.6	1,924.4 1,924.4	44.2 43.3	110.8 109,9	0.0	0.0 0.0	25.9 25.3
50	1,886.3	116.6	1,953.7	67.3	104.7	0.0	0.0	41.0
51		38.1	1,923.5	28.1	95.6	0.0	0.0	15.7
52 55		78.6 72.1	1,923.3 1,923.4	34.2 37.2	101.9 104.8	0.0	0.0	19.5
56		39.7	1,956.6	53.9	88.3	0.0 0.0	$0.0 \\ 0.0$	21.3 32.1
57		75.3	1,923.4	39.3	106.9	0.0	0.0	22.7
58 60		96.4	1,923.3	32.4	100.1	0.0	0.0	18.3
61		81.0 40.5	1,923.3 1,924.7	$\frac{33.4}{39.3}$	101.1 105.6	0.0 0.0	0.0 0.0	19.0 22.7
62			1,940.8	50.6	100.8	0.0	0.0	30.0
63	•	30.8	1,925.6	46.9	112.3	0.0	0.0	27.6
64 66		35.6 32.4	1,925.6 1,952.3	49.1 42.3	114.5	0.0	0.0	29.0
67	•	30.8	1,954.2	32.7	81.0 69.5	0.0 0.0	$0.0 \\ 0.0$	24.6 18.5
68	1,918.6	34.0	1,956.1	37.5	72,4	0.0	0,0	21.6
69		40.5	1,925.1	45.6	111.5	0.0	0.0	26.7
70 71		106.9 70.5	1,940.1 1,919.6	35.6 25.1	86.5 96.5	0.0 0.0	$0.0 \\ 0.0$	20.3 13.9
100		26.7	1,924.1	27.5	94.4	0.0	0.0	15.3
101		20.3	1,924.2	38.3	105.1	0.0	0.0	22.1
102 103	•	$30.0 \\ 40.5$	1,924.3	47.6	114.3	0.0	0.0	28.0
103		15.4	1,924.0 1,929.1	40.9 12.8	107.9 74.7	0.0	$0.0 \\ 0.0$	23.7 6.6
105		13.8	1,929.3	25.4	87.1	0.0	0.0	14.0
106		34.8		42.5	109.7	0.0	0.0	24.7
107 108		25.9 24.3	1,923.6	43.5	110.9	0.0	0.0	25,4
109		16.2	1,923.5 1,923.5	39.4 38.9	106.9 106.4	0.0	0.0	22.8 22.4
112	1,900.7	0.0	1,923.4	22,7	90.3	0.0	0.0	12.4
113	,	23.5	1,923.5	45.0	112.5	0.0	0.0	26.4
114 117		46.2 47.8	1,923.5 1,923.5	26.2 16.0	93.7 83.5	0.0	0.0	14.5
118		30.0	1,923,5	33.5	102.0	0.0 0.0	$0.0 \\ 0.0$	8.4 19.1
119	1,889.1	51.8	1,921.8	32.7	101.9	0.0	0.0	18.6
120		91.5	1,917.4	46.2	119.8	0.0	0.0	27.1
121 122		88.3 72.1	1,919.1 1,960.0	56.5 10.0	128,4 41,0	0.0 0.0	0.0	33.8 5.0
123		52.6	1,960.0	32.7	63.7	0.0	0.0	18.5
124		55.1	1,919.6	40.0	111.4	0.0	0.0	23,2
125	1,886.2	87.5	1,918.2	32,0	104.8	0.0	0.0	18.1

	Net Work	Analysis	l.	Distribut	ian Main	Ħ		
Node	Elevation	Demand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe		Pressure	Pressure	Pressure			(cum/d)
126	(MSL) 1,894.1	(cum/d) 86.7	(MSL) 1,917.8	(m) 23.7	(m) 96.9	0.0	0.0	13.0
127		43.7	1,917.1	42.2	116.1	0.0	0.0	24.6
128		30.8	1,917.3	20.9	94.6	0.0	0.0	11.3
129 130		6.5 5.7	1,917.3 1,917.3	21.3 30.9	95.0 104.6	0.0 0.0	$0.0 \\ 0.0$	11.6 17.4
131		3.2	1,917.3	41.5	115.2	0.0	0.0	24.1
132	1,886.8	41.3	1,940.3	53.5	104.2	0.0	0.0	31.9
133		14.6	1,940.1	41.4	92.3	0.0	0.0	24.0 15.6
134 135		43.7 47.0	1,952.4 1,952.2	$\frac{27.9}{36.5}$	66.5 75.3	0.0 0.0	$0.0 \\ 0.0$	20.9
136		57.5	1,962.1	17.3	46.2	0.0	0.0	9,2
137	1,905.0	95.6	1,958.7	53.7	86.0	0.0	0.0	32.0
139 140		133.7 25.1	1,950.7 1,923.5	44.9 24.1	$\begin{array}{c} 85.2 \\ 91.6 \end{array}$	0.0 0.0	$0.0 \\ 0.0$	$\frac{26.3}{13.3}$
141		80.2	1,923.2	33.0	100.8	0.0	0.0	18.7
142	1,883.9	83.4	1,923.2	39.3	107.1	0.0	0.0	22.7
143		89.1	1,923.2	34.5	102.3	0.0	$0.0 \\ 0.0$	19.7 18.5
144 145		31.6 4.9	1,940.0 1,940.0	32.6 30.7	83.6 81.7	0.0 0.0	0.0	17.3
146		43.7	1,919.0	42.5	114.5	0.0	0.0	24.7
147	1,878.9	79.4	1,919.0	40.1	112.1	0.0	0.0	23.2
148 149		51.0 22.7	1,924.7 1,925.0	35.1 23.9	101.4 89.9	0.0 0.0	•0.0 0.0	$\begin{array}{c} 20.0 \\ 13.2 \end{array}$
150		95.6	1,919.0	19.6	91.6	0.0	0.0	10.5
151	1,874.4	61.6	1,919.0	44.6	116.6	0.0	0.0	26.1
152		53.5	1,919.0	53.1	125.1	0.0 0.0	$0.0 \\ 0.0$	31.6 33.8
153 154		57.5 53.5	1,919.1 1,919.1	56.4 54.4	128.3 126.3	0.0	0.0	32.4
158		17.8	1,919.1	51.5	123.4	0.0	0.0	30.5
156		32.4	1,925.9	41.1	106.2	0.0	0.0	23.8
155 158		19.4 19.4	1,925.7 1,925.6	43.8 45.3	109.1 110.7	0.0	$0.0 \\ 0.0$	25.6 26.6
160		15.4	1,960.0	56.8	87.8	0.0	0.0	34.0
161	1,905.3	8.9	1,950.7	45.4	85.7	0.0	0.0	26.6
162		30.8	1,923,5	31.7 24.2	99.2 91.7	0.0	$0.0 \\ 0.0$	17.9 13.3
16: 16:		5.7 3.2	1,923.5 1,952.4	32.6	71.2	0.0	0.0	18.5
16		81.8	1,990.8	28.4	28.5	0.0	0.0	15.9
160		14.6	1,925.5	26.5	92.0	0.0	0.0	14.7
169 170		17.8 10.5	1,980.0 1,925.6	62.2 32.3	73.2 97.7	0.0 0.0	$0.0 \\ 0.0$	37.6 18.3
17.		15.4	1,924.6	14.9	81.3	0.0	0.0	7.8
2	1,885.1	78.6	1,923.3	38.3	105.9	0.0	0.0	22.0
- 29 17-		67.2 84.2	1,923.3 1,955.4	37.4 53.0	105.1 88.6	0.0	0.0	$\begin{array}{c} 21.5 \\ 31.5 \end{array}$
5.		78.6	1,923.3	27.6	95.3	0.0	0.0	15.4
17	6 1,895,0	18.6	1,924.0	29.0	96.0	0.0	0.0	16.3
17		18.6	1,924.0	26.7	93,7 78,2	0.0 0.0	$0.0 \\ 0.0$	14.9 9.1
17: 17		$\frac{44.5}{20.3}$	1,929.9 1,930.0	17.1 12.5	73.5	0.0	0.0	6.4
18		64.8	1,924.3	43.3	110.0	0.0	0.0	25.3
18		10.5	1,923.5	31.6	99.1	0.0	0.0	$\begin{array}{c} 17.9 \\ 13.4 \end{array}$
18 18		9.7 53.5	1,923.5 1,940.2	24.3 37.4	91.8 88.2	0.0	0.0	21.4
18	6 1,885.4	53.5	1,919.0	33.6	105.6	0.0	0.0	19.1
18		61.6	1,959.2		87.8	0.0	0.0	33.5
18 18		$6.5 \\ 23.5$	1,954.4 1,929.9	22.7 8.1	59.3 69.2	0.0 0.0	$0.0 \\ 0.0$	12.4 4.0
30		38.1	1,960.0		87.4	0.0	0.0	33.8
30		61.6	1,963.9		39.6	0.0	0.0	6.4
5 50		98.8 20.3	1,956.7 1,919.1		91.0 98.2	0.0 0.0	$0.0 \\ 0.0$	34.0 14.6
50		61.6	1,919.1		104.4	0.0	0.0	18.4
50	2 1,885.6	64.8	1,942.4	56.8	105,4	0.0	0.0	34.0
50		61.6	1,923.0		106.8	0.0	0.0	22.4
51 51		41.3 16.2	1,950.7 1,923.4		76.5 98.9	0.0	$0.0 \\ 0.0$	20.7 17.7
52		51,0	1,940.8	27.2	77.4	0.0	0.0	15.1
30	1,900.4	56.7	1,948.2	47.8	90.6	0.0	0.0	28.1
17 17		41.3 41.3	1,923.3 1,928.8		105.0 75.0	0.0 0.0	0.0 0.0	21.5 6.6
52		41.3	1,920.0		105.0	0.0	0.0	20.1
- 52	22 1,880.0	41.3	1,920.9	40.9	111.0	0.0	0.0	23.7
52		41.3	1,957.8		88.0	0.0 0.0	0.0	$\frac{32.7}{33.2}$
52 52		41.3 41.3	1,942.5 1,923.3			0.0 0.0	0.0	24.6
52		41.3	1,923.3			0.0	0.0	24.0

	Net Work	Analysis		Distribut	ion Main	H		
Node	Elevation	Demand	Dynamic	Dynamic	Static			Leakage
No.	of Pipe	Demanu	Pressure	Pressure	Pressure			-
	(MSL)	(cum/d)	(MSL)	(m)	(w)			(cum/d)
527	1,931.0	24.3	1,954.9	23.9	60,0	0.0	0.0	13.2
528	•	24.3	1,952.9	9.9	48.0	0.0	0.0	5.0
33		41.3	1.919.0	52.0	124.0	0.0	0.0	30.9
35	- 7	49.4	1,918.9	48,9	121.0	0.0	0.0	28.9
40		32.4	1,929.9	9,9	71.0	0.0	0.0	5.0
54	,	41.3	1,923.4	37.4	105.0	0.0	0.0	21.5
91	,	0.0	1,950.7	51.3	91.6	0.0	0.0	30.4
92	,	0.0	1,950.8	55.4	95.6	0.0	0.0	33.1
93		0.0	1,940.2	58.1	109.0	0.0	0.0	34.9
540		562.1	1,935.0	5.0	61.0	0.0	0.0	2.4
541	,	751.7	1,985.0	5.0	11.0	0.0	0.0	2.4
542 542		0.0	1,955.6	66.5	101.9	0.0	0.0	40.5
		0.0	1,930.0	30.0	91.0	0.0	0.0	16.9
610		0.0	1,930.0	45.4	106.4	0.0	0.0	26.6
611			1,929.8	48.5	109.7	0.0	0.0	28,6
612	2 1,881.3	0.0	1,828.0	40.0	100.1		3.0	

	Net	Work	Analy	รเร	ı)istribul	tion Main	l	5	
Pipe	Node				Diameter .	C		Velocity	Pressure Gradient	Loss
No.	Nous	7, 1100	10 5	(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
1	1	139	510	800.00	225.00	120.00	41.00	0.00	0.00	0.00
4	2 1	139	304	374.00	44.00	130.00	56.00	0,40 0.00	$\substack{6.70 \\ 0.00}$	$2.50 \\ 0.00$
		51 162	140 163	228,00 143,00	150.00 44.00	120.00 130.00	$\substack{25.00 \\ 5.00}$	0.00	0.10	0.00
	, . 7	51	162	20.00	150.00	120.00	36.00	0.00	0.00	0,00
:	9	134	135	178.00	65.00	130.00	51.00	0.20	0.80 0.00	0.10 0.00
13		134 66	164 135	84.00 265.00	44.00 150.00	130.00 120.00	3.00 236,00	0.00 0.10	0.30	0.10
13 1-		50	66	530.00	100.00	120.00	268.00	0.40	2.50	1.40
1	5	50	67	583.00	100,00	120.00	-158.00	-0.20	-1.00 -1.30	-0.60 -0.20
1		67 21	188 54	165.00 59.00	100.00 150.00	120.00 120.00	-189.00 -275.00	-0.30 -0.20	-0.40	0.00
2 2		21	23	88.00	100.00	120.00	97.00	0.10	0.40	0.00
2	2	23	24	55.00	150.00	120.00	18.00	0.00	$0.00 \\ 0.30$	$0.00 \\ 0.00$
2		20 20	24 21	90.00 66.00	100.00 150.00	120.00 120.00	91.00 -99.00	0.10 -0.10	-0.10	0.00
	4 6	25 25	52	110.00	100.00	120.00	-13,00	0.00	0.00	0.00
2	7	52	53	176.00	100.00	120.00	40.00	0.10	0.10	$0.00 \\ 0.00$
	8	53	60	100.00 134.00	100.00 100.00	120,00 120,00	-37.00 163.00	-0.10 0.20	-0.10 1.00	0.10
	9 .	18 18	60 19	54.00	150,00	120.00	310.00	0.20	0.50	0.00
	i	19	52	151.00	100.00	120.00	133.00	0.20	0.70	0.10
	2	19	55	133.00	100,00	120.00 120.00	108.00 63.00	$0.20 \\ 0.10$	$0.50 \\ 0.20$	0.10 0.00
	13 14	54 9	172 18	100.00 315.00	100.00 225.00	120.00	561.00	0.20	0.20	0.10
	35	9	48	47,00	100.00	120.00	-817.00	-1.20	-19.90	-0.90
3	36	1	48	265.00	225.00	120.00 120.00	932.00 33.00	0.30	0,50 0,10	0.10 0.00
	37 38	48 22	49 49	201.00 672.00	100.00 150.00	120.00	-544.00	-0.40	-1.30	-0.90
	39	22	51	596.00	150.00	120.00	99.00	0.10	0.10	0.00
. 4	10	49	148	536.00	100.00	120.00	-108.00 15.00	-0,20 0,10	-0.50 0.40	-0.30 0.10
	11 12	148 69	171 148	372.00 325.00	50.00 100.00	120.00 120.00	174.00	0.30	1.10	0.40
	43	46	69	90.00	150.00	120.00	238.00	0.20	0.30	0.00
	44	69	149	551.00	100.00	120.00	22.00 115.00	0.00 0.20	0.00 0.50	$0.00 \\ 0.10$
	45 46	1 1	49 46	264.00 401.00	100.00 225.00	120.00 120.00	-1,563.00	-0.50	-1.30	-0.50
	47	46	47	268.00	100.00	120.00	69.00	0.10	0.20	0.10
	48	47	64	268.00	100.00	120.00 120.00	-244.00 355.00	-0,40 0.10	-2.10 0.00	-0,60 0,00
	49 50	63 46	64 63	444.00 268.00	300.00 225.00	120.00	-1,973.00	-0.60	-2,00	-0.50
	51	63	158	47.00	300.00	120.00	-2,360.00	-0.40	-0,70	0.00
	52	158	166	358.00	50.00	120.00	14.00 2,394.00	0.10 0.40	$0.30 \\ 0.70$	0.10
	53 54	157 157	158 170	77.00 264.00	300.00 44.00	120.00 130.00	10.00	0.10	0.30	0.10
	55	156	157	300.00	300.00	120.00	2,424.00	0,40	0.70	0.20
	56	2	156	100.00	300.00 350.00	120.00 120.00	3,208.00 -5,219.00	0.50 -0.60	1.20 -1.40	0.10 -1.00
	61 62	2 2	203	704,00 442.00	225.00	120.00	1,954.00	0.60	1.90	0.80
	63	4	5	65.00	225.00	120.00	1,852.00	0.50	1.80	0.10 0.50
	64	4	61	972.00 221.00	65.00 150.00	130.00 120.00	40.00 329.00	0,10 0,20	0.50 0.50	0.10
	65 66	. 6	6 . 27	150.00	150.00	120.00	316.00	0.20	0.50	0.10
	67	27	37	216.00	100.00	120.00	-114.00	-0,20 0.10	-0.50 0.10	-0.10 0.10
	68 69	36 36	37 38	400.00 563.00	150.00 100.00	120.00 120.00	145,00 41.00	0.10	0.10	0.10
	70	37	38	30.00	150.00	120.00	-7.00	0.00	0.00	0.00
	72 .	27	181	1,106.00	150.00	120.00	327.00	0.20 0.30	0.50 3,70	0,60 1,20
	74 76	39 102	173 181	320.00 92.00	44.00 150.00	130.00 120.00	41.00 -314.00	-0.20	-0.50	0.00
	80	39	179	125.00	150.00	1	-182.00	-0.10	-0.20	0.00
	82	179	208	104.00	65.00		-23.00	-0.10 0.30		0.00 0.20
	83	102 101	103 102	350.00 120.00	150.00 44.00		388.00 ~10.00	-0.10		0.00
	84 86	41	102	120.00	44.00		-8.00	-0.10	-0.20	0.00
	87	100	101	312.00	37.00		-7.00	-0.10		-0.10 0.00
	88 89	42 42	43 43	257.00 257.00	100.00 100.00		56.00 56.00	0,10 0.10		0.00
	89 90	43	43	268.00			81.00	0,10	0.00	0.00
	91	44	177	391.00	100.00			0.00 0.00		0.00
	92	44 176	176 177	391.00 90.00			18.00 0.00	0.00	0.00	0.00
	93 99	29	112	251.00		130.00	-10.00	0.00	0.00	0.00
	100	109	511	400,00	100.00					0.10 0.00
	101 102	108 108	109 183	120.00 228.00			80.00 9.00		0.30	0,10
	103	107	108	200.00			84.00			0.10

	Net Wo	rk Anal	vsis		Bistribu	tion Main		H	
Pipe No.	Node A	Node B	Length	Diameter	С	Flow	Velocity	Pressure Gradient	Loss
NO.			(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
104	107	182	253.00	44.00	130,00	10,00	0.10	0,30	0.10
105		107	40.00	100.00	120.00	89,00	0.10	0.30	0.00
106	28	113	66.00	150.00	120.00	490.00	0.30	1.10	0.10
107		114	265.00	65.00	130.00	15.00	0.10	0.10	0.00
108		117	500.00	65.00 44.00	130,00 130,00	9,00 37,00	0.00 0.30	0.00 3.00	$0.00 \\ 1.00$
109 111		118 119	318.00 248.00	75.00	120.00	134.00	0.30	2,90	0.70
113		106	250.00	150.00	120.00	-365.00	-0,20	-0.60	-0.20
114		106	400.00	150.00	120.00	376,00	0.30	0.70	0.30
110	6 104	105	300.00	44.00	130.00	-15.00	-0.10	-0.60	-0.20
118		526	210.00	100.00	120.00	82.00	0.10	0.30	0.10
119		132	1,500,00	150.00	120.00	273.00	0.20	0.40 0.00	0.50 0.00
120 125		500 133	175.00 363.00	140.00 44.00	130.00 130.00	39.00 14.00	0.00 0.10	0.50	0.20
127		64	167.00	225,00	120.00	-75.00	0.00	0.00	0.00
129		144	284.00	100.00	120.00	36.00	0.10	0.10	0.00
130		145	121.00	44.00	130,00	4.00	0.00	0.10	0.00
132	3 45	47	162.00	150.00	120.00	-285.00	-0.20	-0.40	-0.10
133	3 9	45	761.00	100.00	120.00	-230.00	-0.30	-1.90	-1.50
134		57	25.00	100.00	120.00	379.00	0.60 0.20	4.80 0.80	0.10 0.10
135		58 60	120.00 262.00	100.00 100.00	120.00 120.00	147.00 -45.00	-0.10	-0.10	0.10
136 138		59	352.00	97.00	130.00	-88.00	-0.10	-0.30	-0.10
140			168.00	100.00	120.00	96.00	0.10	0.40	0.10
14			264.00	50.00	120.00	-7.00	0.00	-0.10	0.00
142	2 57	142	202,00	100.00	120.00	156.00	0.20	0.90	0.20
143		142	99.00	100.00	120.00	-80.00	-0.10	-0.30	0.00
141	6 12	150	360.00	150.00	120.00	95.00	0.10	0.10 -0.10	0.00
14'		151 151	163.00 35.00	150.00 150.00	120.00 120.00	-149.00 53.00	-0.10 0.00	0,00	0.00
148 149		186	450,00	140.00	130.00	-54.00	0.00	0,00	0.00
15			132.00	100.00	120.00	56.00	0.10	0.10	0.00
16		154	165.00	100,00	120.00	87.00	0.10	0,30	0.10
16	1 14	153	236,00	150.00	120.00	-243.00	-0.20	-0.30	-0.10
16			475,00	150.00	120.00	-139.00	-0.10	-0.10	-0.10
16			35.00	150.00	120.00	123.00	0.10	0.10	0.00
16			137.00	150,00 150,00	120,00 120,00	79.00 -531,00	0.10 -0.30	0.00 -1.30	-0.80
16 16			663.00 66.00	100.00	120.00	144.00	0.20	0.80	0,10
17			150.00	100.00	120.00	-90,00	-0.10	~0.30	-0.10
17			165,00	100.00	120.00	281.00	0.40	. 2.80	0.50
17	6 68	136	726.00	44.00	130,00	-63.00	-0.50	-8.20	-6.00
17			512.00	44.00	130,00	56.00	0.40		3.40
17			277.00	140.00	130.00	-570.00	-0.40		-0.50 0.00
18 18			400.00 441.00	225.00 225.00	120.00 120.00	-70.00 125.00	0.00		0.00
18			177.00	150.00	120.00	512.00	0.30		0.20
18			286,00	100.00	120.00	179.00	0.30		0.30
18			1,210.00	75.00	120.00	-91.00	-0.20	-1.40	-1.70
18			850.00	100.00	120.00	195,00	0.30	1.40	1.20
19			120.00	225.00	120.00	6,00	0.00		0.00
19			396,00 668,00	100.00 65.00	120,00 130,00	176.00 46.00	0.30 0.20		0.50 0.50
19 19			1,047.00	65,00	130.00	43.00	0.10		0.70
19			90.00	65.00	130,00	15,00	0.10		0.00
18			60.00	44.00	130.00	8.00	0.10		0.00
19	130		88.00	37.00	130.00	3,00	0.00		0.00
18			569,00	100.00	120.00	51.00	0.10		0,10
20			237.00	100.00	120.00	30.00	0.10		0.00 -0.10
20 20			250.00 105.00	150.00 150.00	120,00 120,00	-336.00 227.00	-0,20 0,10		0.00
17			500.00	150.00	120.00	-631.00	-0.40		-0.90
25			215.00	65.00	130.00	-177.00	-0.60		-1.80
	09 160		152.00	150.00	120.00	-146.00		-0.10	0.00
21			334.00	97.00	130.00	-385.00	-0.60		-1.70
2:			334.00	100.00	120.00	189,00	0.30		0.40
2			132.00	75.00	120.00	-38.00	-0.10		0.00
	16 50		100,00	140.00 65.00		18.00 24.00	0.00 0.10		0.00
	17 15 18 18		104.00 221.00	140.00		-162 00	-0.10		0.00
	10 11		167.00	75.00		-127.00	-0.30		-0.40
	00 21		554.00	100.00		238.00	0.30	2.00	1.10
2	08 21	5 300	250,00	100.00	120.00	816,00	1.20	19.90	5.00
	17 20		250.00			82.00			0.10
	72 1		577.00			439,00			0.50 0.00
	02 1 04 2	0 70 4 25	480.00 55.00			-20,00 14,00			0.00
o,	4	. 20	00.00	100.00	320100	11,00		. *1**	

		Net Wo	rk Anal	vsis		Distriba	tion Main		Н	
Pi No	pe	Node A	Node B	Length	Diameter	С	Flow	Velocity	Pressure Gradient	Loss
N	J.			(m)	(mm)		(cum/d)	(m/s)	(0/00)	(m)
	305	55	172	50.00	100.00	120,00	36,00	0.10	0.10	0.00
	306	20	172	50,00	100.00	120.00	-59,00	-0.10	-0.10	0.00
	307	23	25	75,00	100.00	120.00	13.00	0.00	0.00	0.00
	308		178	150.00	150.00	120.00	44.00	0.00	0.00	0.00
	77		40	180,00	100.00	120.00	100.00	0.10	0.40 0.00	0.10 0.00
	78		189	~~.~	100.00 44.00	120.00 130.00	23.00 -9.00	0,00 -0,10	-0.20	-0.10
	79		101 42	450.00 150.00	150.00	120.00	113,00	0.10	0.10	0.00
	309		521	350.00	65.00	130.00	82,00	0.30	2,00	0.70
	310 311	52i	522	350.00	65.00	130.00	41.00	0.10	0.60	0.20
	313		35	150.00	100.00	120.00	49,00	0.10	0.10	0.00
	301		523	120,00	150.00	120.00	461.00	0.30	1.00	0.10
	314			180.00	100.00	120.00	-420.00	-0.60	-5.80	-1.10
	315		524	150.00	75.00	120,00	-64,00	-0.20	-0.70	-0,10
	317			450.00	97.00	130.00	-491.00	-0.80	-7.80	-3.50
	319			210.00	75.00	120.00	-41.00	-0.10	-0.30 4.20	-0.10 2.00
	321			480.00	65.00	130.00	122.00	0.40 -0.30	-2.80	-0.60
	322			200.00	65.00 65.00	130.00 130.00	-98.00 -81.00	-0.30	-2.00	-0.10
	11			75.00 50.00	65.00	130.00	-196,00	-0.70	-10.00	-0.50
	324			160.00	140,00	130.00	52.00	0.00	0.00	0.00
	325 327		59	352.00	140.00	130.00	-232.00	-0.20		-0.10
	328			264.00	158.00	130,00	416,00	0.30		0.10
	329			215.00	150.00	120.00	260.00	0.20	0.30	0.10
	330			931.00	100.00	120,00	751.00	1.10	17.10	15.90
	331			434.00	97.00	130.00	562.00	0.90		4.30
	601	1 9 1	139	162.00	150.00	120.00	231.00	0.10		0.00
	602			225.00	65.00	130.00	8.00	0.00		0.00
	603			662.00	150.00	120.00	-163.00	-0.10		-0.10 -0.10
	601			616.00	150.00	120.00	-217.00	-0.10 0.00		0.00
	600			300.00	150.00	120,00 120,00	53.00 380.00	0.30		0.20
	213			275.00 931.00	150.00 225.00	120.00	-130.00	0.00		0,00
	61			228.00	150.00	120.00	-240.00	-0.20		-0.10
	61 61			690.00	100.00	120.00	-240.00	-0.30		-1.40
	61			200.00	97.00	130.00	29.00	0.10		0.00
	61			250.00	44.00	130.00	-29.00	-0.20		-0.50
	61			569.00	97.00	130.00	-84.00	-0.10		-0.20
	70	1 186		500.00	250.00	120.00	-1,524.00	-0.40		-0.40
	70		603	50.00	55.00	130.00	-17.00	-0.10		0.00 0.50
	70			577.00	140,00	130.00	397.00	0.30 0.20		1.20
	70			850.00	65.00	130.00 130.00	68,00 874,00	0,20		0.20
	71			350.00 400.00	198,00 (98,00	130.00	846.00	0.30		0.30
	71 71			250.00	198.00	130.00	-821,00	-0.30		-0.20
	71			40.00	198.00	130.00	585.00	0.20		0.00
	71			200.00	198.00	130.00	554.00	0,20		0.10
	71			120.00	198.00	130.00	524.00	0.20		0.00
	71	9 10	9 511	400.00	198.00	130.00	510.00			0.10
	72	20 11	2 511	132.00	198.00	130.00	-534.00			0.00
	73			265.00	140.00	130.00	115.00			0.00 0.00
	73			500.00	140.00	130.00	74.00 -178.00			0.00
	74				140.00 97.00	130.00 130.00	29.00			0.00
	75			630,00 610.00	65.00	130.00	29.00			0.20
	79 70		0 542		97.00	130.00	-226,00			-1.90
	76		8 542		97.00	130.00	310.00			0.60
	77				140.00	130,00	-216.00		0 -0.30	0.00
		72 10			140.00	130.00	-190,00			-0.10
			1 100	120.00	140.00		-171.00			0.00
	78	81	5 . 6		250.00		1,262.00			0.10
			6 27		250,00		1,213.00			0.10 0.60
			181		250.00		1,256.00			0.00
		84 10					-1,205,00 -54,00			0.00
		91 15					48.00			0.00
			13 151 13 14				-126.00			-0.10
			14 153				~220.00		0 -0.30	-0.10
			54 501				181.00	0.1	0 0,20	0.00
			53 154				228.00	0.2	0.30	0.10

Net Work Analysis

Distribution Main

File Name

Nuvara103Year2005FSDry

Season Dry Network Type Proposed

Demand

Reserver

Year 2005 Hourly Max Water Level Fix Discharge Fix

Except for Follows No.205,206,215,209

Magnification of Demand

1.547

I

Reservoir	Data			
Node		HWL	LWL	Reservoir
		(MSL)	(MSL)	
203	1	1,927.0	1,927.0	Haddon Hill
208	. 1	1,930.0	1,930.0	Bonavista
600	1	1,946.0	1,946.0	Nseby
601	i	1,991.0	1,991.0	Piyatisappura
602	1	1,948.0	1,948.0	New Pedro Reserver
603	1	1,980.0	1,980.0	Unique View
604	1	1,925.0	1,925.0	Vijithapura
808	i	1 920 0	1 920 0	Low Area 2

606	l	1,920.0	1,920.0	Low Area 2	
Node Data					•
Node	(Fround Elev	Demand		
•		(MSL)	(cum/d)		
1	1	1,881.7	122.0	0	0
2	1	1,885.1	70.0	0	0
4	1	1,881.8	76.0	. 0	0
5	1	1,881.3	40.0	0	0
6	1	1,883.7	76.0	0	0
9	1	1,881.2	133.0	0	0
10	1	1,903.4	25.0	0	0
11	1	1,902.1	86.0	0	0
12	1	1,880.5	66.0	0	0
13	1	1,874.2	51.0	0	0
14	1	1,865.6	66.0	0	0
15	1	1,860.5	61.0	0	0
16	1	1,860.5	85.0	0	0
18	1	1,885.1	107.0	0	0
19	1	1,885.8	85.0	0	0
22	1	1,889.4	79.0	0	0
23	1	1,887.3	82.0	0	0
24	1	1,887.7	117.0	0	0
25	1	1,887.0	51.0	0	0
27	1	1,882.3	75.0	0	0
28	i	1,879.2	26.0	0	0
29	1	1,892.4	13.0	0	0
30	1	1,882.6	80.0	0	0
31	i	1,882.0	93.0	0	0
36	1	1,889.3	51.0	0	0
37	í	1,891.4	47.0	0	. 0
38	1	1,893.9	42.0	0	0
39	1	1,914.9	50.0	0	. 0
41	1	1,899.2	44.0	0	0
42	1	1,896.1	38.0	0	0
43	1	1,894.8	40.0		0
. 44	i	1,893.4	54.0		0
45	1	1,884.9	67.0		0
46	1	1,878.2	127.0		. 0
47	1	1,880.7	36.0	0	0
48	j	1,880.2	101.0		0
49	- 1	1,881.1	160.0	0	0
50	1	1,886.3	144.0		0
51	1	1,895.4	47.0		0
52	1	1,889.1	97.0	0	0
55	1	1,886.2	89.0		0
56	i	1,902.7	49.0		0
57	ĺ	1,884.1	93.0	0	0
58	1	1,890.9	119.0	0	0
60	1	1,889.9	100.0	0	0
61	1	1,885.4	50.0	0	0

63	62	i	1,890.2	76.0	0	0
66 1 1,910.0 40.0 0 0 0 6 6 6 1 1,910.0 40.0 0 0 0 0 6 6 7 1 1,921.5 38.0 0 0 0 6 6 8 1 1,918.6 42.0 0 0 0 0 0 0 0 0 0 1 1,879.5 50.0 0 0 0 0 0 0 0 1 1,879.5 87.0 0 0 0 0 0 0 1 1,894.5 87.0 0 0 0 0 0 0 1 1,894.5 87.0 0 0 0 0 0 0 0 1 1,894.5 87.0 0 0 0 0 0 0 0 0 1 1,894.5 87.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						
1						
68					0	0
70			1,918.6			
1	69					
100						
101						
102						
104			1,876.7	37.0		
105						
106						
107 1 1,880.1 32.0 0 0 108 1 1,884.1 30.0 0 0 109 1 1,884.6 20.0 0 0 112 1 1,900.7 0.0 0 0 113 1 1,878.5 29.0 0 0 114 1 1,897.3 57.0 0 0 117 1 1,907.5 59.0 0 0 118 1 1,889.1 64.0 0 0 119 1 1,889.1 64.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 199.0 0 0 0 122 1 1,950.0 89.0 0 0 0 123 1 1,927.3 65.0 0 0 0 124 1 1,879.6 68.0 0						
108			1,880.1		0	
112		1	1,884.1			
113						
113						
117 1 1,907.5 59.0 0 0 118 1 1,889.0 37.0 0 0 119 1 1,889.1 64.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 109.0 0 0 122 1 1,950.0 89.0 0 0 122 1 1,950.0 89.0 0 0 122 1 1,957.3 65.0 0 0 0 123 1 1,927.3 65.0 0 0 0 124 1 1,879.6 68.0 0 0 0 125 1 1,886.2 108.0 0 0 0 126 1 1,894.1 107.0 0 0 0 128 1 1,896.0 38.0 0 0 0 0 129			1.897.3			
118 1 1,889.0 37.0 0 0 119 1 1,889.1 64.0 0 0 120 1 1,871.2 113.0 0 0 121 1 1,862.6 109.0 0 0 122 1 1,950.0 89.0 0 0 123 1 1,927.3 65.0 0 0 124 1 1,879.6 68.0 0 0 0 125 1 1,886.2 108.0 0 0 0 0 126 1 1,894.1 107.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				59.0		
120	118					
121						
122 1 1,950.0 89.0 0 0 123 1 1,927.3 65.0 0 0 124 1 1,879.6 68.0 0 0 125 1 1,886.2 108.0 0 0 126 1 1,894.1 107.0 0 0 127 1 1,874.9 54.0 0 0 128 1 1,896.4 38.0 0 0 129 1 1,896.0 8.0 0 0 130 1 1,886.8 51.0 0 0 131 1 1,875.8 4.0 0 0 132 1 1,886.8 51.0 0 0 133 1 1,987.7 18.0 0 0 134 1 1,924.5 54.0 0 0 135 1 1,915.7 58.0 0 0 136 1 1,944.8 71.0 0 0 137 1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
123 1 1,927.3 65.0 0 0 124 1 1,879.6 68.0 0 0 125 1 1,886.2 108.0 0 0 126 1 1,894.1 107.0 0 0 127 1 1,874.9 54.0 0 0 128 1 1,896.0 38.0 0 0 129 1 1,896.0 8.0 0 0 130 1 1,896.4 7.0 0 0 131 1 1,875.8 4.0 0 0 132 1 1,886.8 51.0 0 0 132 1 1,886.8 51.0 0 0 133 1 1,898.7 18.0 0 0 134 1 ,924.5 54.0 0 0 135 1 ,915.7 58.0 0 0 136 1 ,944.8 71.0 0 0 137 1 ,90					0	
125						
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127			1,886.2			
128 1 1,896.4 38.0 0 0 129 1 1,896.0 8.0 0 0 130 1 1,886.4 7.0 0 0 131 1 1,875.8 4.0 0 0 132 1 1,886.8 51.0 0 0 133 1 1,898.7 18.0 0 0 134 1 1,924.5 54.0 0 0 135 1 1,915.7 58.0 0 0 136 1 1,944.8 71.0 0 0 137 1 1,905.0 118.0 0 0 139 1 1,905.8 165.0 0 0 140 1 1,899.4 31.0 0 0 141 1 1,890.2 99.0 0 0 142 1 1,883.9 103.0 0 0 143 1 1,888.7 110.0 0 0 144 1 <t< td=""><td></td><td></td><td>1.874.9</td><td></td><td></td><td></td></t<>			1.874.9			
129 1 1,896.0 8.0 0 0 130 1 1,886.4 7.0 0 0 131 1 1,875.8 4.0 0 0 132 1 1,886.8 51.0 0 0 133 1 1,988.7 18.0 0 0 134 1 1,924.5 54.0 0 0 135 1 1,915.7 58.0 0 0 136 1 1,944.8 71.0 0 0 137 1 1,905.0 118.0 0 0 139 1 1,905.0 118.0 0 0 139 1 1,905.0 118.0 0 0 140 1 1,899.4 31.0 0 0 141 1 1,899.2 99.0 0 0 142 1 1,883.9 103.0 0 0 143 1 1,885.7 110.0 0 0 144 1 <			1,896.4	38.0		
131	129		1,896.0			
132 1 1,886.8 51.0 0 0 133 1 1,898.7 18.0 0 0 134 1 1,924.5 54.0 0 0 135 1 1,915.7 58.0 0 0 136 1 1,944.8 71.0 0 0 137 1 1,905.0 118.0 0 0 139 1 1,905.8 165.0 0 0 140 1 1,899.4 31.0 0 0 141 1 1,890.2 99.0 0 0 0 142 1 1,883.9 103.0 0 0 0 143 1 1,888.7 110.0 0 0 0 144 1 1,907.4 39.0 0 0 0 144 1 1,909.3 6.0 0 0 0 145 1 1,909.3 6.0 0 0 0 146 1 1,878.9 98.0						
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145 1 1,909.3 6.0 0 0 146 1 1,876.5 54.0 0 0 147 1 1,878.9 98.0 0 0 148 1 1,889.6 63.0 0 0 149 1 1,901.1 28.0 0 0 150 1 1,899.4 118.0 0 0 150 1 1,899.4 118.0 0 0 151 1 1,874.4 76.0 0 0 0 151 1 1,865.9 66.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td></td> <td></td> <td>1,907.4</td> <td></td> <td>Ô</td> <td></td>			1,907.4		Ô	
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148 1 1,889.6 63.0 0 0 149 1 1,901.1 28.0 0 0 150 1 1,899.4 118.0 0 0 151 1 1,874.4 76.0 0 0 152 1 1,865.9 66.0 0 0 153 1 1,862.7 71.0 0 0 154 1 1,864.7 66.0 0 0 0 155 1 1,867.6 22.0 0 0 0 0 156 1 1,884.8 40.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						
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165 1 1,962.5 101.0 0 0 166 1 1,899.0 18.0 0 0 169 1 1,917.8 22.0 0 0 170 1 1,893.3 13.0 0 0 171 1 1,909.7 19.0 0 0 21 1 1,885.1 97.0 0 0				7.U 4.0		
166 1 1,899.0 18.0 0 0 169 1 1,917.8 22.0 0 0 170 1 1,893.3 13.0 0 0 171 1 1,909.7 19.0 0 0 21 1 1,885.1 97.0 0 0						
169 1 1,917.8 22.0 0 0 0 170 1 1,893.3 13.0 0 0 171 1 1,909.7 19.0 0 0 0 171 1 1,885.1 97.0 0 0			1,899.0		0	0
171 1 1,909.7 19.0 0 0 21 1 1,885.1 97.0 0	169	. 1	1,917.8			
21 1 1,885.1 97.0 0	170					
DO 0						0

174	1	1,902.4	104.0	0	0
53	1	1,895.7	97.0	0	0
176	1	1,895.0	23.0	0	0
177	1	1,897.3	23.0	0	0
178	i	1,912.8	55.0	0	0
179	1	1,917.5	25.0	0	0
181	1	1,881.0	80.0	0	0
182	1	1,891.9	13.0	0	0
183	1	1,899.2	12.0	0	0
185	1	1,902.8	66.0	0	0
186	1	1,885.4	66.0	0	0
187	j	1,903.2	76.0	0	0
188	1	1,931.7	8.0	0	0
189	î	1,921.8	29.0	0	Ō
300	î	1,903.6	47.0	Ō	Ō
301	î	1,951.4	76.0	Ŏ	ŏ
59	i	1,900.0	122.0	ŏ	ŏ
500	i	1,892.8	25.0	ŏ	ŏ
501	i	1,886.6	76.0	ŏ	ŏ
502	i	1,885.6	80.0	ŏ	ŏ
503	1	1,884.2	76.0	Ŏ	ŏ
510	1	1,914.5	51.0	ŏ	ő
511	i	1,892.1	20.0	Ö	ŏ
520	i	1,913.6	63.0	Ö	ŏ
304	i	1,900.4	70.0	0	Ö
172	ì	1,886.0	51.0	Ŏ	ŏ
173	1	1,916.0	51.0	0	0
521	1	1,886.0	51.0	0	Ö
522	1	1,880.0	51.0	0	0
523	. 1		51.0	0	0
523 524	1	1,903.0	51.0	0	0
525	1	1,887.0 1,881.0	51.0	0	0
526	1	1,882.0	51.0	0	0
527 ·			30.0	0	0
528	1	1,931.0 1,943.0			
	1		30.0	0	0
33 35	1	1,867.0	51.0	0	0
		1,870.0	61.0	0	
40	1 1	1,920.0	40.0	0	0
54	1	1,886.0	51.0	0	. 0
91		1,899.4	0.0	0	0
92	1	1,895.4	0.0	0	0
93	1	1,882.0	0.0	0	0
540	1	1,930.0	416.0	0	0
541	1	1,989.0	557.0	0	0
542	1	1,889.1	0.0	0	0
610	1	1,900.0	0.0	0	0
611	į.	1,884.6	0.0	0	0
612	1	1,881.3	0.0	0	0
205	1	1,960.0	-64.0	0	0
206	1	1,955.0	-365.0	0	0
215	i	1,979.0	-247.0	0 .	0
209	1	1,960.0	-103.0	0	0

Booster	Pump	Data				
No.	Type	Node	A	Node B	Pipe No.	Pressure
						· (m)
i l	В		156	541	330	81.5
2	В		112	540	331	29.9

Data No.		Node B	Diameter	Length	C Value
 			(四級) .	(m)	
1	139	510	225.0	800.0	120.0
2 5	139 51	304 140	44.0 150.0	374.0 228.0	130.0 120.0
6	162	163	44.0	143.0	130.0
7	51	162	150.0	20.0	120.0
9	134	135	65.0	178.0	130.0
12 13	134 66	164 135	44.0 150.0	84.0 265.0	130.0 120.0
14	50	66	100.0	530.0	120.0
15	50	67	100.0	583.0	120.0
16	67	188	100.0	165.0	120.0
20 21	21 21	54 23	150.0 100.0	59.0 88.0	120.0 120.0
22	23	24		55.0	120.0
23	20	24	100.0	90.0	120.0
24	20	21	150.0	66.0	120.0
26 27	25 52	52 53	100.0 100.0	110.0 176.0	120.0 120.0
28	53	60		100.0	120.0
29	18	60	100.0	134.0	120.0
30	18	19		54.0	120.0
31 32	19 19	52 55		151.0 133.0	120.0 120.0
33	54	172		100.0	120.0
34	9	18		315.0	120.0
35 36	- 9 1	48 48		47.0 265.0	120.0 120.0
37	48	49		201.0	120.0
38	. 22	49	150.0	672.0	120.0
39	22	51	150.0	596.0	120.0
40	49 148	148 171		536.0 372.0	120.0 120.0
42	69	148		325.0	120.0
43	46	69		90.0	120.0
44 45	69 1	149 49		551.0 264.0	120.0 120.0
46	1	46		401.0	120.0
47	46	47	100.0	268.0	120.0
48 49	47 63	64 64		268.0 444.0	120.0 120.0
50	46	63		268.0	120.0
51	63	158	300.0	47.0	120.0
52	158	166		358.0 77.0	120.0 120.0
53 54	157 157	158 170		264.0	130.0
55	156	157		300.0	120.0
56	2	156		100.0	120.0
61 62	2 2	203 4	_	704.0 442.0	120.0 120.0
63	4	5		65.0	120.0
64	4	61		972.0	130.0
65 66	5 6	6 27		221.0 150.0	120.0 120.0
67	27	37		216.0	120.0
68	36	37	150.0	400.0	120.0
69	36	38		563.0	120.0
70 72				30.0 1,106.0	120.0 120.0
74				320.0	130.0
76				92.0	120.0
 80 82				125.0 104.0	120.0 130.0
83				350.0	120.0
 84	101	102	44.0	120.0	130.0
86 87				120.0 312.0	130.0 130.0
88				257.0	120.0
89	42	4	3 100.0	257.0	120.0
90				268.0 391.0	120.0 120.0
91 92				391.0 391.0	120.0
93				90.0	120.0

99	29	112	65.0	251.0	130.0
100	109	511	100.0	400.0	120.0
101	108	109 183	100.0 44.0	120.0 228.0	120.0 130.0
102 103	108 107	108	100.0	200.0	120.0
104	107	182	44.0	253.0	130.0
105	28	107	100.0	40.0	120.0
106	28 113	113 114	150.0 65.0	66.0 265.0	120.0 130.0
107 108	114	117	65.0	500.0	130.0
109	117	118	44.0	318.0	130.0
111	118	119	75.0	248.0	120.0
113 114	28 103	106 106	150.0 150.0	250.0 400.0	120.0 120.0
116	103	105	44.0	300.0	130.0
118	30	526	100.0	210.0	120.0
119	62	132	150.0	1,500.0 175.0	120.0 130.0
120 125	155 132	500 133	140.0 44.0	363.0	130.0
127	31	64	225.0	167.0	120.0
129	70	144	100.0	284.0	120.0
130	144 45	145 47	44.0 150.0	121.0 162.0	130.0 120.0
132 133	9	45	100.0	761.0	120.0
134	9	57	100.0	25.0	120.0
135	57	58	100.0	120.0	120.0
136 138	58 56	60 59	100.0 97.0	262.0 352.0	120.0 130.0
140	58	143	100.0	168.0	120.0
141	142	143	50.0	264.0	120.0
142	57	142	100.0	202.0	120.0 120.0
143 146	141 12	142 150	100.0 150.0	99.0 360.0	120.0
147	12	151	150.0	163.0	120.0
148	13	151	150.0	35.0	120.0
149 151	151 154	186 155	140.0 100.0	450.0 132.0	130.0 120.0
160	153	154	100.0	165.0	120.0
161	14	153	150.0	236.0	120.0
162	13	14	150.0	475.0 35.0	120.0 120.0
163 164	13 146	146 147	150.0 150.0	137.0	120.0
167	11	137	150.0	663.0	120.0
168	14	152	100.0	66.0	120.0
170 175	33 56	152 68	100.0 100.0	150.0 165.0	120.0 120.0
176	68	136	44.0	726.0	130.0
177	136	137	44.0	512.0	130.0
178	137	187	140.0	277.0 400.0	130.0 120.0
182 183	71 15	124 124	225.0 225.0	441.0	120.0
184	15	16	150.0	177.0	120.0
185	16	121	100.0	286.0	120.0
186 187	120 16	121 125	75.0 100.0	1,210.0 850.0	120.0 120.0
191	122	209	225.0	120.0	120.0
193	125	126	100.0	396.0	120.0
194	126	128 127	65.0 65.0	668.0 1,047.0	130.0 130.0
195 196	126 128	129	65.0	90.0	130.0
197	129	130	44.0	60.0	130.0
198	130	131	37.0	88.0	130.0
199 200	62 41	520 42	100.0 100.0	569.0 237.0	120.0 120.0
201	30	113	150.0	250.0	120.0
203	5	36	150.0	105.0	120.0
179	187	300	150.0	500.0	120.0
250 209	136 160	301 300	65.0 150.0	215.0 152.0	130.0 120.0
213	62	524	97.0	334.0	130.0
214	30	503	100.0	334.0	120.0
215	112	511	75.0	132.0 100.0	120.0 130.0
216 217	500 154	501 501	140.0 65.0	104.0	130.0
218	186	501	140.0	221.0	130.0

110	118	503	75.0	167.0	120.0
300	215	301	100.0	554.0	120.0
208 17	215 205	300 527	100.0 100.0	250.0 250.0	120.0 120.0
172	15	153	150.0	577.0	120.0
302	10	70	150.0	480.0	120.0
304	24	25	100.0	55.0 50.0	120.0 120.0
305 306	55 20	172 172	100.0 100.0	50.0	120.0
307	23	25	100.0	75.0	120.0
308	40	178	150.0	150.0	120.0
77	39	40	100.0 100.0	180.0 60.0	120.0 120.0
78 79	40 100	189 101	44.0	450.0	130.0
309	41	42	150.0	150.0	120.0
310	119	521	65.0	350.0	130.0
311	521 33	522 35	65.0 100.0	350.0 150.0	130.0 120.0
313 301	33 11	. 523	150.0	120.0	120.0
314	59	523	100.0	180.0	120.0
315	502	524	75.0	150.0	120.0
317	524 525	600 526	$\begin{array}{c} 97.0 \\ 75.0 \end{array}$	450.0 210.0	130.0 120.0
319 321	527	528	65.0	480.0	130.0
322	134	528	65.0	200.0	130.0
11	165	601	65.0	75.0	130.0
324	188 122	527 123	65.0 140.0	50.0 160.0	130.0 130.0
325 327	56	59	140.0	352.0	130.0
328	1	49	158.0	264.0	130.0
329	206	527	150.0	215.0	120.0
330 331	156 112	541 540	100.0 97.0	931.0 434.0	120.0 130.0
601	91	139	150.0	162.0	120.0
602	91	161	65.0	225.0	130.0
603	70	93	150.0	662.0 616.0	120.0 120.0
605 606	93 93	132 185	150.0 150.0	300.0	120.0
607	56	602	200.0	1,000.0	120.0
212	22	54	150.0	275.0	120.0
610 611	122 91	160 92	225.0 150.0	931.0 228.0	120.0 120.0
612	92	135	100.0	690.0	120.0
613	604	610	97.0	200.0	130.0
614	105	612	44.0	250.0	130.0 130.0
616 701	174 15	542 606	97.0 250.0	569.0 500.0	120.0
702	169	603	55.0	50.0	130.0
705	16	125	65.0	850.0	130.0
713	102	103	198.0 198.0	350.0 400.0	130.0 130.0
714 715	103 28	106 106	198.0	250.0	130.0
716	28	107	198.0	40.0	130.0
717	107	108	198.0	200.0	130.0
718 -719	108 109	109 511	198.0 198.0	120.0 400.0	130.0 130.0
731	113	114	140.0	265.0	130.0
732	114	117	140.0	500.0	130.0
741	179	208 611	140.0 97.0	104.0 630.0	130.0 130.0
751 752	610 611	612	65.0	610.0	130.0
761	50	542	97.0	1,044.0	130.0
762	68	542	97.0	165.0	130.0
771 772	101 100	102 101	140.0 140.0	120.0 450.0	130.0 130.0
773	41	100	140.0	120.0	130.0
781	. 5	6	250.0	221.0	120.0
782	6	27	250.0	150.0	120.0 120.0
783 784	27 102	181 181	250.0 250.0	1,106.0 92.0	120.0
795	154	501	140.0	104.0	130.0
796	153	154	140.0	165.0	130.0