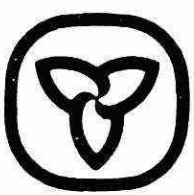
OPERATING SUMMARY

WATER SUPPLY SYSTEMS

1977



Ontario

Ministry of the
Environment

George R. McCague, Minister
Kenneth H. Sharpe, Deputy Minister

TD
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1977

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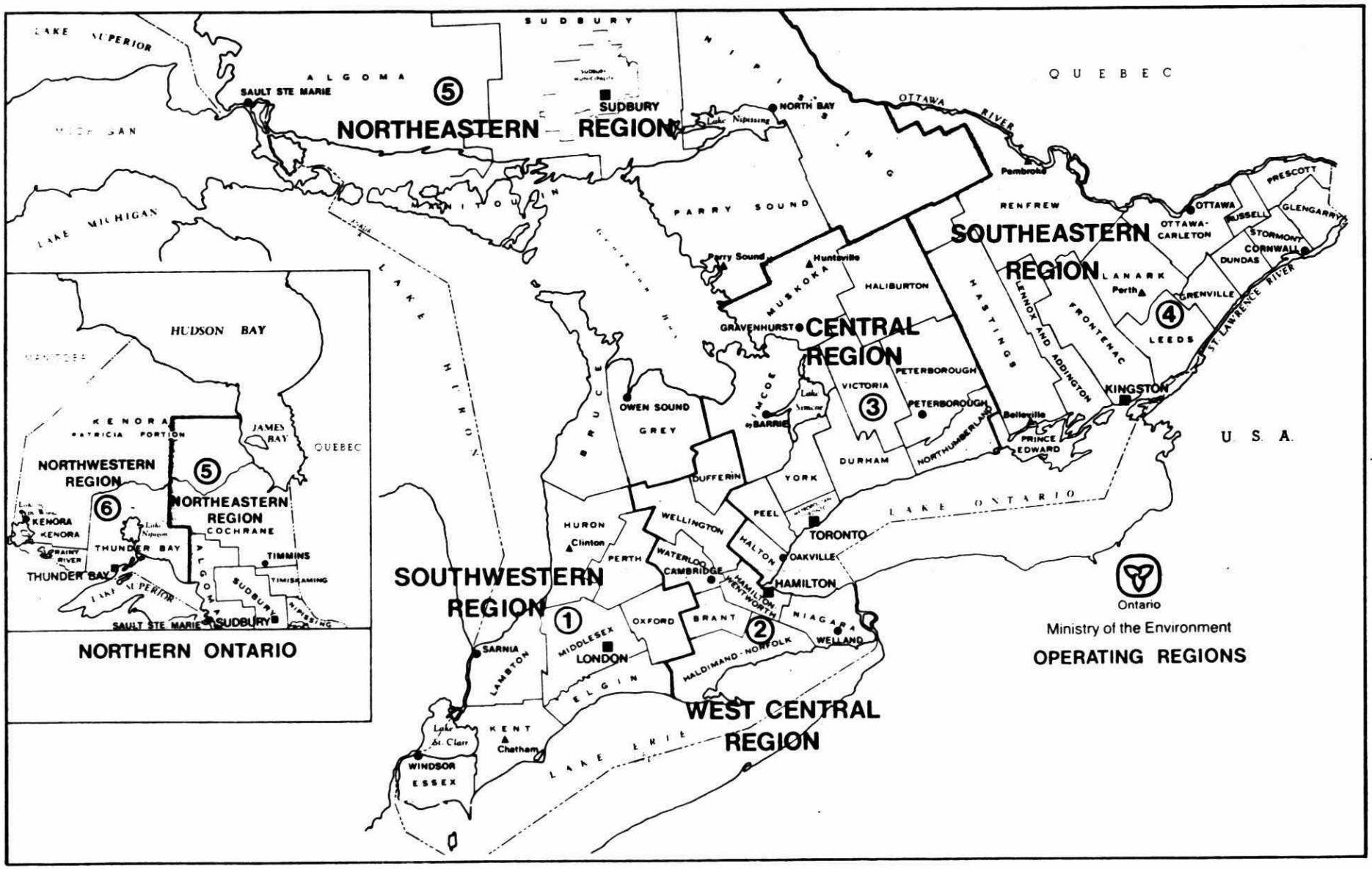
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Municipal & Private Section,
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WATER SUPPLY SYSTEMS

operated by the Ministry of the Environment

prepared by: Municipal and Private Section
Pollution Control Branch 416/965-1655


NORTHEASTERN REGION
5
SUDBURY
SAULT STE MARIE
NORTH BAY
ALGOMA
SUDBURY
NIPISSING
PARRY SOUND
MANITOULIN
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
QUEBEC
OTTAWA RIVER
Pembroke
RENFREW
SOUTHEASTERN REGION
OTTAWA
OTTAWA-CARLETON
PRESCOTT
RUSSELL
GLENGARRY
STORMONT
CORNWALL
DUNDAS
LANARK
Perth
GRENVILLE
LEEDS
4
FRONTENAC
LENNOX AND ADDINGTON
HASTINGS
KINGSTON
ST. LAWRENCE RIVER
Belleville
PRINCE EDWARD
Port Sydney
Huntsville
MUSKOKA
HALIBURTON
Parry Sound
GRAVENHURST
CENTRAL REGION
PETERBOROUGH
VICTORIA
3
PETERBOROUGH
Lake Simcoe
INCOLE
by BARRIE
OWEN SOUND
GREY
BRUCE
DUFFERIN
YORK
DURHAM
NORTHUMBERLAND
U.S.A.
PEEL
TORONTO
LAKE ONTARIO
HURON
Clinton
WELLINGTON
PERTH
WATERLOO
CAMBRIDGE
HALTON
OAKVILLE
HAMILTON
HAMILTON-WENTWORTH
SOUTHWESTERN REGION
1
OXFORD
BRANT
2
NIAGARA
WELLAND
HALDIMAND-NORFOLK
MIDDLESEX
LONDON
SARNIA
LAMBTON
ELGIN
KENT
Chatham
Lake St. Clair
WINDSOR
ESSEX
LAKE ERIE
WEST CENTRAL REGION
Ontario
Ministry of the Environment
OPERATING REGIONS
HUDSON BAY
MANITOBA
KENORA
PATRICIA PORTION
JAMES BAY
QUEBEC
NORTHWESTERN REGION
6
5
NORTHEASTERN REGION
COCHRANE
KENORA
Lake Nipigon
RAINY RIVER
THUNDER BAY
TIMMINS
TIMISKAMING
SUDBURY
NIPISSING
SAULT STE MARIE
NORTHERN ONTARIO

foreword

The Ministry of the Environment is concerned with the protection and enhancement of the natural environment. And to meet this objective, one of its goals is to ensure the sound management of wastes and water resources across the province. In this regard, the Ministry inspects and regulates all communal water and wastewater facilities, and monitors the performance of the treatment plants and their effluent qualities with routine and special sampling programs. The administration of these services and programs is carried out on a regional basis.

Normally, the responsibility for the provision of communal water and wastewater services lies with the individual municipalities. However, by special arrangement, more than 281 water and wastewater facilities in the Province of Ontario are administered and operated by the six Regional Utility Operations sections of the Ministry of the Environment. In order to maintain operational control and long term evaluation of these provincially-operated facilities, up-to-date statistics are maintained on process parameters and operating costs for each plant, and an annual "Operating Summary" of these statistics is traditionally produced.

In the near future the scope of this statistical data base will be slightly modified and the data collection will be extended to cover the municipally-operated treatment plants as well, so that all water and wastewater treatment facilities in the Province of Ontario will be included in the "Operating Summaries".

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introduction

This report summarizes data from 81 water supply projects, not all of which include treatment works. Such a case is the Watford, Wyoming and Plympton project, in which the Ministry operates a pipeline conveying water purchased from the Sarnia system.

During 1977 these projects supplied 43.8 billion gallons of water from surface sources at a cost of 7.5 million dollars and from ground sources, 2.6 billion gallons at a cost of 0.36 million dollars.

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OPERATING DATA

PLANT FLOWS

Table I summarizes flow data, including maximum rates where available. Design capacities listed for projects affording physical treatment (that is, microstraining, sedimentation and filtration) do not include reduction in potential output due to in-plant use of water for purposes such as backwashing of filters. Where no treatment, or chemical treatment only (usually chlorination) is provided, the maximum output is limited by pumping capacity.

A total of 46.4 billion gallons of water was produced: 43.8 billion gallons by surface water supplies and 2.6 billion gallons by ground water supplies.

TABLE I

PLANT FLOWS

SURFACE WATER SUPPLIES

PROJECT	DESIGN CAPACITY mgd	TOTAL OUTPUT million gal	AVERAGE DAY million gal	MAXIMUM DAY million gal	MAXIMUM RATE mgd
Region I - Southwestern					
Alvinston	0.166	11.4	0.031	0.110	-
Amherstburg	4.0	424.2	1.16	1.92	2.5
Belle River	4.0	407.1	1.11	2.03	-
Blenheim Twp.	1.0	180.7	0.49	0.66	1.3
Dresden	0.684	128.9	0.35	0.67	0.68
Elgin Area W.S.S.	10.0	1481.3	4.1	6.2	7.4
Goderich	1.5	356.4	0.97	1.86	3.1
Harrow	2.5	106.0	0.29	0.53	-
Kent County W.S.S.		1843.7	5.0	10.2	-
Lake Huron W.S.S.	37.0*	10172.0	27.8	40.2	-
Lambton Area W.S.S.		4825.0	13.2	30.4	46.0
Meaford	3.168	344.4	0.94	1.77	-
Mitchell's Bay	0.25	4.3	0.011	0.15	-
Southampton	0.72	186.9	0.51	1.06	-
Union W.S.S.	16.0	2117.0	5.79	11.23	14.5
Watford, Wyoming, Plympton	WSS 0.47	77.5	0.21	0.63	-
Region II - West Central					
Dunnville	20.5	3418.9	9.37	12.0	-
Region III - Central					
Bobcaygeon	0.20	15.0	0.041	0.13	-
Fenelon Falls	0.36	118.0	0.32	0.78	0.96
Hastings	0.54	33.2	0.09	0.19	-
Percy Twp.-Warkworth	0.10	22.2	0.061	0.16	-
South Peel - Lakeview	75.0	14132.0	39.0	64.0	70.0
Region IV - Southeastern					
Barry's Bay	0.55	20.7	0.057	0.17	-
Chalk River	0.43	29.9	0.082	0.40	-
Eganville	0.18	30.6	0.084	0.21	-
Ernestown Twp. (Odessa)	- **	25.1	0.11	0.47	-
Kingston	-	722.7	1.98	5.68	-
Renfrew	4.0	413.4	1.13	1.85	-
Rockland	0.8	162.1	0.44	0.72	-
Region V - Northeastern					
Assiginack Twp. (Manitowaning)	-	14.9	0.041	.086	-
Bruce Mines	0.108	16.3	0.045	.065	-
Cache Bay	0.22	15.2	0.042	0.11	-
Caldwell Twp. (Verner)	0.233	31.2	0.085	0.18	-
Chapleau	1.4	234.4	0.64	1.09	-
Espanola	1.5	207.1	0.57	1.36	-
Haileybury	1.5	182.4	0.50	0.95	-
Latchford	0.144	14.1	0.039	0.11	-
Michipicoten Twp. (Wawa)	2.44	167.9	0.46	2.34	-
Moosonee	0.15	Est. 49.6	0.14	0.22	-
Shackleton-Machin Twp. (Fauq)	0.083	15.1	0.041	0.11	-
Wanapitei W.S.S.	6.25	1268.0	3.47	4.5	5.04
Region VI - Northwestern					
Ear Falls	0.25	Est. 20.7	0.057	0.11	-
Emo Twp.	0.09	Est. 18.2	0.050	.065	-
Geraldton	1.7	Est 127.8	0.35	N/A	-
Ignace Twp.	1.2	Est. 64.9	0.18	0.28	-
Machin Twp. (Vermillion Bay)	0.3	Est. 12.0	0.033	.068	-
Madsen	-	N/A	-	-	-
Pickle Lake	0.72	25.4	0.069	1.14	-
Red Lake Twp.	0.4	Est 175.2	0.48	0.69	-

* Raw water. Plant output is 9500 M.G.
** From June.

GROUND WATER SUPPLIES

PROJECT	DESIGN CAPACITY mgd	TOTAL OUTPUT million gal	AVERAGE DAY million gal	MAXIMUM DAY million gal	MAXIMUM RATE mgd
Region I - Southwestern					
Hanover	2.0	*115.9	0.31	N/A	-
Markdale	0.864	711.3	1.95	N/A	-
Milverton	0.275	N/A	-	-	-
Mitchell	0.72	131.2	0.35	0.59	1.38
Thedford	0.072	20.7	0.056	0.10	-
Van Astra	0.013	55.4	0.15	0.29	-
Region II - West Central					
Brantford Twp.	0.288	43.8	0.12	0.31	-
Region III - Central					
Anson, Hindon & Minden	0.36	25.8	0.071	0.21	-
Bradford	1.3	52.6	0.14	0.40	-
Cookstown	0.05	191.4	0.52	0.84	-
Elmvale	0.51	53.9	0.15	0.41	-
Havelock	0.115	47.4	0.13	N/A	-
Stayner	0.45	102.5	0.28	0.56	-
Woodville Twp.	0.06	11.8	0.032	.088	-
Region IV - Southeastern					
Alfred	0.993	25.3	0.07	0.18	-
Bourget	-	N/A	-	-	-
Chesterville	0.244	25.4	0.07	0.16	-
Frankford	0.54	90.7	0.25	0.63	-
Leeds & Lansdowne	0.154	6.7	0.018	.51	-
L'Orignal	0.08	32.6	0.09	0.21	-
Merrickville	0.475	Est. 42.0	0.115	N/A	-
Plantagenet	0.12	N/A	-	-	-
Vankleek Hill	0.115	15.6	0.043	0.13	-
Wellington	0.16	N/A	-	-	-
Westport	0.054	15.5	0.043	0.12	-
Winchester	0.382	89.5	0.27	0.35	-
Region V - Northeastern					
Black R. Twp.-Matheson, Ramore	0.108	4.6	0.013	N/A	-
Blezard Valley Area W.S.S.	3.3	602.6	1.65	N/A	-
Blind River	0.785	23.5	0.074	0.14	-
Fauquier Twp. (Moonbeam)	0.07	18.6	0.051	.093	-
N. Himsworth Twp. (Callander)	0.108	15.7	0.043	N/A	-
Warren (Ratter-Dunnet)	0.144	16.6	0.053	0.12	-

* Part of the total consumption for the town.

WATER QUALITY

Bacteriological Quality

Tables II and III are summaries of bacteriological sampling carried out during 1977. The indicator organisms used were total coliforms. The results for raw water are tabulated to provide an approximation of geometric means taking the logarithm of coliforms less than 4 as being 0, from 4 to 32 as 1, from 33 to 320 as 2 and coliforms greater than 320 to 3. The geometric mean of n samples is antilog $\frac{(\log x_1 + \log x_2 + \ldots \log xn)}{n}$

Samples of treated water are taken leaving the plant and in the distribution system up to the point of delivery of the water, which in some cases is the ultimate consumer and in others the municipal distribution system.

Chemical Quality

The results of chemical analysis are shown as arithmetic mean values in Tables IV and V for surface waters and ground waters respectively. Where no treatment is provided, or where treatment does not alter the parameter, the figure shown is of all analyses both raw and treated water. In many cases these averages are based on very few samples, and in some cases, the values shown have come from samples taken in investigating consumer complaints. The data tabulated may, therefore, not be entirely representative of the normal finished product.

Physical Characteristics

Turbidity, color and temperature data for surface water supplies and turbidity and color for ground water supplies is contained in Tables VI and VII. Where no facilities exist for the removal of turbidity and colour (coagulation and filtration), that is, where raw water with, perhaps, chemical addition is pumped directly into the distribution system, averages of all samples are shown as treated water. Ground water temperatures are assumed to be constant and equal to ground temperatures, therefore they are not recorded. It would appear from the limited data on turbidity and color that ground waters (Table VII) frequently exceed the desireable criteria of 1.0 F.T.U. turbidity and 5 units apparent color.

TABLE II BACTERIOLOGICAL QUALITY

SURFACE WATER SUPPLIES

PROJECT	AVG CHLORINE RESIDUAL	NUMBER OF SAMPLES HAVING TOTAL COLIFORMS (per 100 ml) OF:								
		0	1-3	4-32	33-320	> 320	0	≥1	0	≥1
	mg/l	RAW WATER					LEAVING PLANT		IN DISTRIB^n SYSTEM	
Region I - Southwestern										
Alviston	0.6	-	1	-	-	-	10	1	27	9
Amherstburg	0.8	-	1	1	16	58	76	-	294	2
Belle River	0.7	-	-	-	-	5	5	-	10	5
Blenheim Twp.	0.6	1	40	3	1	-	46	1	89	1
Dresden	1.0	-	4	5	10	27	48	3	140	44
Elgin Area W.S.S.	0.9	4	72	21	4	1	202	3	224	16
Goderich	0.9	4	2	15	9	6	47	-	236	-
Harrow	0.8	8	14	22	26	9	77	-	236	1
Kent County W.S.S.	0.1	-	-	-	-	-	-	-	-	-
Lake Huron W.S.S.	1.0	205	19	13	2	-	404	1	727	3
Lambton Area W.S.S.	0.6	53	25	1	-	-	400	17	214	19
Meaford	0.4	-	24	12	11	3	105	-	238	-
Mitchell's Bay	0.9	3	5	2	4	2	-	-	33	11
Southampton	0.9	4	60	3	1	-	52	3	145	42
Union W.S.S.	0.5	1	13	2	2	3	21	-	76	17
Watford, Wyoming, Plympton WSS	-	-	-	-	-	-	-	-	-	-
Region II - West Central										
Dunnville	0.5	-	4	9	17	11	-	-	127	5
Region III - Central										
Bobcaygeon	0.6	-	8	18	13	1	40	-	155	1
Fenelon Falls	0.7	1	24	34	15	-	47	-	255	2
Hastings	2.9	-	-	-	-	-	-	-	176	11
Percy Twp. - Warkworth	0.8	-	1	2	13	7	21	1	37	10
South Peel - Lakeview	0.5	1	6	25	39	21	112	3	2811	122
Region IV - Southeastern										
Barry's Bay	0.5	29	1	-	-	-	31	-	109	4
Chalk River	0.5	2	1	12	6	5	39	1	131	2
Eganville	-	38	-	7	6	-	51	2	153	2
Ernestown Twp. (Odessa)	0.5	3	3	4	19	4	26	-	99	16
Kingston	0.3	17	14	3	1	-	59	-	132	3
Renfrew	0.5	5	16	17	5	1	45	1	72	6
Rockland	0.5	-	-	-	5	42	41	-	94	-
Region V - Northeastern										
Assiginack Twp. (Manitowaning)	0.5	19	1	2	1	-	5	-	51	-
Bruce Mines	0.8	11	2	9	5	-	24	-	28	-
Cache Bay	0.6	34	4	6	-	-	48	-	-	-
Caldwell Twp. (Verner)	0.6	3	2	6	40	-	51	-	50	-
Chapleau	0.4	3	1	10	4	-	32	-	1	-
Espanola	0.5	18	4	21	5	1	49	2	266	1
Haileybury	0.8	31	7	8	6	-	50	-	140	-
Latchford	0.7	36	6	6	1	-	50	-	99	1
Michipicoten Twp. (Wawa)	0.5	-	-	-	-	-	30	3	78	-
Moosonee	0.8	12	1	2	-	-	19	-	31	-
Shackleton-Machin Twp. (Fauq.)	0.5	9	7	16	2	-	33	-	33	1
Wanapitei W.S.S.	0.4	6	5	23	15	-	48	-	-	-
Region VI - Northwestern										
Ear Falls	0.7	11	29	13	1	2	16	1	135	11
Emo Twp.	0.6	1	1	1	9	39	30	1	236	9
Geraldton	1.0	5	8	13	4	-	49	5	29	22
Ignace Twp.	-	46	8	6	-	-	28	1	133	5
Machin Twp. (Vermillion Bay)	0.7	9	10	19	10	2	25	2	99	6
Madsen	-	-	3	17	8	-	2	20	4	39
Pickle Lake	-	-	2	-	-	-	-	-	4	45
Red Lake Twp.	0.8	-	18	29	3	1	36	3	110	8

TABLE III **BACTERIOLOGICAL QUALITY**

GROUND WATER SUPPLIES

PROJECT	AVG CHLORINE RESIDUAL mg/l	NUMBER OF SAMPLES HAVING TOTAL COLIFORMS (per 100 ml) OF:								
		0	1-3	4-32	33-320	>320	0	≥1	0	≥1
		RAW WATER					LEAVING PLANT		IN DISTRIBN SYSTEM	
Region I - Southwestern										
Hanover	-	-	7	3	-	-	5	9	215	136
Markdale	0.3	-	79	3	3	3	78	5	142	43
Mitchell	-	-	100	-	-	-	47	3	194	46
Thedford	-	-	-	-	-	-	-	-	-	-
Van Astra	0.2	-	12	1	-	-	62	23	56	35
Region II - West Central										
Brantford Twp.	0.2	-	-	-	-	-	-	2	-	-
Region III - Central										
Anson, Hindon & Minden	0.2	-	-	-	-	-	-	-	8	0
Bradford	1.0	4	-	-	-	-	-	-	8	-
Cookstown	-	7	-	-	-	-	-	-	19	-
Elmvale	-	1	-	-	-	-	-	-	2	1
Havelock	0.4	28	-	-	-	-	-	-	20	-
Stayner	-	16	-	-	-	-	-	-	31	-
Woodville Twp.	0.4	-	-	-	-	-	-	-	-	-
Region IV - Southeastern										
Alfred	0.5	19	-	10	5	1	65	-	80	-
Bourget	-	22	1	5	8	2	36	-	103	10
Chesterville	0.7	-	-	-	-	-	-	-	-	-
Frankford	0.5	8	5	-	-	-	12	1	39	1
Leeds & Lansdowne	0.4	10	2	-	-	-	12	-	26	-
L'Orignal	0.6	17	24	1	-	-	14	-	35	3
Merrickville	0.3	50	11	-	-	-	48	1	344	8
Plantagenet	-	31	-	-	1	-	19	-	99	3
Vankleek Hill	0.5	32	10	-	-	-	12	-	46	1
Wellington	-	10	4	-	-	-	14	-	84	-
Westport	0.5	5	5	-	-	-	8	2	20	-
Winchester	0.5	100	27	-	-	-	-	-	228	4
Region V - Northeastern										
Black River Twp.Matheson,Ramore	-	46	-	3	-	-	-	-	-	-
Blezard Valley Area W.S.S.	-	89	1	-	-	-	-	-	16	-
Blind River	-	-	-	-	-	-	-	-	-	-
Fauquier Twp. (Moonbeam)	0.3	14	-	-	-	-	11	-	31	-
N. Himsworth Twp.(Callander)	0.5	48	-	1	-	-	47	-	-	-
Warren (Ratter-Dunnet)	-	39	-	-	-	-	-	-	5	-

TABLE IV

CHEMICAL CHARACTERISTICS

SURFACE WATER SUPPLIES

NOTE Data shown as RAW/TREATED or as average of all samples (see text)

PROJECT	HARDNESS mg/l $CaCO_3$	ALKALINITY mg/l $CaCO_3$	IRON mg/l Fe	CHLORIDE mg/l Cl^-	pH pH units	FLUORIDE mg/l F^-	AMMONIA mg/l N	KJELDAHL NITROGEN mg/l N	NITRITE mg/l N	NITRATE mg/l N	TOTAL PHOSPHORUS mg/l P	PHENOL µg/l C_6H_5OH	SULFATE mg/l SO_4^{-2}	ALUMINUM mg/l Al	CALCIUM mg/l Ca	CONDUCTIVITY micromhos per cubic centimeter
Region I - Southwestern																
Alvinston	252/256	192/164	0.9/.01	17/18	8.0/7.4	.1/.1	-	-	-	-	-	-	-	-	-	-
Amherstburg	121/118	90/75	1.9/.03	18/22	7.5/7.0	.1/.8	16/16	30/27	.01/.01	.25/.33	4.9/2.0	-	-	-	-	-
Belle River	164/144	102/75	2.4/.1	12/12	7.7/7.0	-	-	-	.29/.001	.06/.86	-	-	-	-	-	-
Blenheim Twp.	134/125	98/88	.32/.02	19/21	7.7/7.1	.1/.7	.03/ -	.3/ -	.003/ -	.13/ -	.025/ -	-	-	-	-	292/ -
Dresden	309/270	184/135	3.9/.02	17/19	7.8/8.0	.1/.1	-	-	-	-	-	-	-	-	-	-
Elgin Area W.S.S.	137/134	102/92	.49/.02	21/22	7.9/7.4	.1/.9	.05/.005	.5/.16	.007/.002	.19/.16	.041/.006	-	-	.77/.16	-	301/ -
Goderich	115/121	92/80	.52/.07	10/12	8.0/7.4	.1/.9	.06/ -	.4/ -	.005/ -	.62/.43	.05/ -	-	-	-	-	258/ -
Harrow	125/121	90/76	1.4/.04	25/28	7.9/7.5	.1/.1	- /.1	- /.1	-	- /.3	-	-	-	-	-	295/302
Kent County W.S.S.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Huron W.S.S.	106/115	84/81	.10/.02	7.0/7.0	7.8/7.4	.1/.1	.04/.005	.5/.12	.003/.004	.39/.36	.024/.007	-	- /300	-	-	220/233
Lambton Area W.S.S.	102/104	81/79	.06/.01	5.9/7.0	8.2/7.7	.1/.9	.01/ -	.2/ -	.002/ -	.23/ -	.009/ -	-	-	-	-	203/ -
Meaford	94/93	75/74	.18/.05	4.8/5.5	7.9/7.9	.1/.1	-	-	-	.25/.25	-	-	-	-	-	-
Mitchell's Bay	132/127	97/74	.67/.11	13.2/15.2	7.9/7.6	.1/.1	.05/ -	- /.06	-	-	-	-	-	-	-	-
Southampton	134/135	102/106	.40/.13	6.8/7.5	7.9/7.9	.1/.1	.01/.01	-	-	.33/.34	-	-	-	-	-	-
Union W.S.S.	124/121	88/75	.23/.05	20.0/22.1	7.9/7.4	.1/.1	.02/ -	.3/ -	.005/.001	.26/.28	.03/ -	-	-	-	-	275/ -
Watford, Wyoming, Plympton WSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region II - West Central																
Dunnville	139	103	.34	24.0	8.2	.1	-	-	-	-	-	-	-	-	-	314
Region III - Central																
Bobcaygeon	100/100	81/75	.13/.06	9/11	8.0/7.6	-/.1	-	-	-	-	-	-	-	-	-	201/206
Fenelon Falls	61/61	49/46	.09/.09	5/7	7.9/7.4	-	-	-	-	-	-	-	-	-	-	129/131
Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percy Twp. - Warkworth	216/216	205/167	.21/.12	7/10	7.9/7.9	.1/ -	-	-	.01/.01	.1/.1	-	-	20/19	.1/.1	72/69	409/414
South Peel - Lakeview	130/142	99/94	.36/.06	33/33	7.8/7.8	.2/.8	.1/.1	.4/.3	.01/.01	.4/.4	-	1/1	-	.08/.17	-	343/351
Region IV - Southeastern																
Barry's Bay	20/20	11/11	.24/.21	7/7	6.4/6.8	-	-	-	-	.07/.09	-	-	-	-	-	64/63
Chalk River	20/21	15/16	.25/.34	4/7	7.0/7.0	.1/.1	.03/.07	-	-	.03/.04	-	-	-	-	-	53/56
Eganville	49/49	40/37	.15/.10	7/7	7.4/7.2	-	-	-	-	-	-	-	-	-	-	123/125
Ernestown Twp. (Odessa)	136/149	143/99	.32/.12	18/26	8.0/7.2	-	.05/.05	.52/.52	.02/.004	.03/.02	.24/.012	-	-	-	48/ -	331/335
Kingston	120/130	91/93	.14/.06	30/31	7.9/7.7	-	-	-	-	-	-	-	-	-	-	322/326
Renfrew	78/49	54/56	.15/.10	7/7	7.5/7.2	-	-	-	-	-	-	-	-	-	-	123/125
Rockland	39/46	27/23	.41/.11	6/9	7.3/7.3	-	.11/.08	.35/.23	.03/.02	.18/.20	-	-	- /30	-	10/14	91/139
Region V - Northeastern																
Assiginack Twp. (Manitowaning)	92/92	74/74	.05/.10	6/7	8.1/8.2	-	-	-	-	-	-	-	-	-	-	190/192
Bruce Mines	58/57	52/47	.40/.24	3/5	7.9/7.7	-	-	-	-	-	-	-	-	-	-	150/150
Cache Bay	22/24	14/15	.08/.09	1/2	7.1/6.7	-	-	-	-	-	-	-	-	-	-	51/58
Caldwell Twp. (Verner)	45/50	36/39	.6/.04	4/7	6.9/7.0	-	.1/.1	.5/.3	-	-	.04/.02	-	-	.19/.11	-	115/212
Chapleau	49/65	38/34	.19/.07	2/6	6.9/7.0	-	-	-	-	-	-	-	-	-	-	98/154
Espanola	35/34	22/18	.07/.12	7/8	7.7/7.2	.1/.8	-	-	-	-	-	-	-	-	-	93/91
Haileybury	29/42	17/19	.74/.07	4/5	6.9/8.0	-	-	-	-	-	-	-	-	.55/.35	-	70/106
Latchford	59/37	24/32	.10/.05	2/4	7.0/7.0	-	-	-	-	-	7.0/.02	-	-	.08/.15	-	76/150
Michipicoten Twp. (Wawa)	312/ -	246/ -	5.4/ -	32/ -	-	-	-	-	-	-	-	-	-	-	-	640/ -
Moosonee	126/180	109/140	.56/.20	100/147	7.4/7.3	.2/1.0	-	-	-	-	-	-	-	-	-	508/815
Shackleton-Machin Twp. (Fauq.)	74/76	58/86	.30/.08	2/6	7.5/7.7	-	-	-	-	-	-	-	-	-	-	132/249
Wanapitei W.S.S.	36/47	16/15	.18/.04	4/5	7.0/7.1	.1/1.0	.1/.1	.2/.1	.01/.01	.2/.2	.03/.02	1/1	26/31	.32/.03	-	92/127
Region VI - Northwestern																
Ear Falls	43/44	37/37	.31/.48	1/2	6.5/6.6	-	-	-	-	-	-	-	-	-	-	188/126
Emo Twp.	39/42	32/48	.77/.03	3/9	6.8/6.8	-	-	-	-	-	-	-	-	-	-	91/211
Geraldton	- /136	- /131	- /.18	-/4	- /7.4	-	-	-/.30	-	-	- /.008	-	-	-	-	- /262
Ignace Twp.	43/44	53/66	2.8/2.7	4/3	7.0/8.2	-	-	-	-	-	-	-	7/7	-	-	115/130
Machin Twp. (Vermillion Bay)	19/14	20/17	.17/.10	2/3	6.8/7.2	-	-	-	-	-	-	-	-	-	-	53/59
Madsen	210/41	208/31	.10/.12	2/3	7.1/7.0	-	-	-	-	-	-	-	-	-	-	421/105
Pickle Lake	185/173	166/171	.12/.08	2/3	7.4/7.6	-	-	-	-	-	-	-	-	-	-	344/339
Red Lake Twp.	28/28	26/23	.08/.10	1/3	6.9/6.8	-	-	-	-	-	-	-	-	-	-	60/64

TABLE V

CHEMICAL CHARACTERISTICS

GROUND WATER SUPPLIES

NOTE: Data shown as RAW/TREATED or as average of all samples (see text).

PROJECT	HARDNESS mg/l $CaCO_3$	ALKALINITY mg/l $CaCO_3$	IRON mg/l Fe	CHLORIDE mg/l Cl^-	pH pH units	FLUORIDE mg/l F^-	AMMONIA mg/l N	KJELDAHL NITROGEN mg/l N	NITRITE mg/l N	NITRATE mg/l N	TOTAL PHOSPHORUS mg/l P	PHENOL µg/l C_6H_5OH	SULFATE mg/l SO_4^{-2}	ALUMINUM mg/l Al	CALCIUM mg/l Ca	CONDUCTIVITY micromhos per cubic centimeter
Region I - Southwestern																
Hanover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Markdale	295/ -	269/ -	.05/ -	16/ -	7.6/ -	-	-	-	-	-	-	-	12/ -	-	-	-
Mitchell	270/253	201/199	1.6/.3	6/5	7.8/7.8	1.7/ -	-	-	-	-	-	-	-	-	-	-
Thedford	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Van Astra	- /323	- /262	- /.01	-/14	- /7.5	- /1.1	-	-	-	-	-	-	-	-	-	-
Region II - West Central																
Brantford Twp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region III - Central																
Anson, Hindon & Minden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bradford	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cookstown	25/ -	13/ -	.25/ -	15/ -	7.1/ -	-	-	-	-	-	-	-	-	-	-	102/ -
Elmvale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Havelock	314/ -	262/ -	.04/ -	45/ -	7.4/ -	-	-	-	-	2.5/ -	-	-	30/ -	-	-	659/ -
Stayner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodville Twp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region IV - Southeastern																
Alfred	256/260	321/305	.85/16	450/400	7.5/7.6	-	.43/.17	.47/.52	.28/.006	2.8/2.7	-	-	-	-	64/72	2055/1806
Bourget	57/56	119/124	.17/.17	22/28	7.5/7.4	-	.08/.10	.23/.29	.038/.020	.10/.14	-	-	-	-	17/17	341/355
Chesterville	334/ -	272/ -	.60/ -	79/ -	7.7/ -	.3/ -	.15/ -	-	.06/.003	-	-	-	-	-	-	865/ -
Frankford	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leeds & Lansdowne	451/472	317/306	.06/.08	77/81	7.6/7.4	-	-	-	-	.56/ -	-	-	-	-	-	958/990
L'Orignal	224/220	289/258	.25/.14	315/328	7.9/7.9	-	.25/.32	1.6/1.3	.09/.32	.38/.57	.014/ -	-	148/146	-	38/40	1616/1631
Merrickville	294/305	260/265	.92/.44	38/41	7.7/7.8	.3/.5	-	-	-	.31/.77	-	-	- /44	-	-	628/719
Plantagenet	420/277	401/404	2.4/.97	299/234	7.5/7.8	-/.7	.29/.19	.41/.35	.04/.07	.47/.51	-	-	-	-	122/89	1685/1524
Vankleek Hill	349/276	302/275	.94/.66	45/49	7.7/7.6	-	.4/1.4	.5/2.4	.01/.12	.7/.36	.13/ -	-	50/35	-	-	761/717
Wellington	290/ -	293/ -	1.6/ -	33/ -	7.7/ -	-	.01/ -	.37/ -	.29/1.6	-	-	-	-	-	-	505/ -
Westport	316/335	247/262	.05/.05	85/102	7.5/7.5	-	-	-	-	-	-	-	-	-	-	752/767
Winchester	382/358	305/302	.13/.10	151/140	7.6/7.4	.2/.3	.36/.40	-	.02/.06	.2/.02	-	-	-	-	-	1102/1056
Region V - Northeastern																
Black River Twp.-Matheson, Ra.	332/ -	325/ -	.08/ -	8/ -	7.8/ -	-	-	-	-	-	.02/ -	-	-	-	-	611/ -
Blezard Valley Area WSS Well A	130	78	0.06	18	8.2	-	0.1	0.2	0.01	0.9	-	-	-	-	-	284
" B	196	147	0.15	11	7.9	-	0.1	0.2	0.01	0.4	-	-	-	-	-	380
" C	148	86	0.04	22	7.8	-	0.1	0.1	0.01	0.8	-	-	-	-	-	338
" D	161	92	0.05	12	8.0	-	0.1	0.1	0.01	0.7	-	-	-	-	-	332
" E	83	44	0.05	20	7.9	-	0.1	0.1	0.01	1.5	-	-	-	-	-	310
" F	65	41	0.07	8	8.6	-	0.1	0.1	0.01	1.6	-	-	-	-	-	147
Blind River	155/ -	132/ -	.10/ -	12/ -	7.8/ -	-	-	-	-	-	-	3/ -	-	-	45/ -	340/ -
Fauquier Twp. (Moonbeam)	348/350	342/343	1.4/.8	16/12	7.5/7.7	-	-	-	-	-	-	-	-	-	-	671/652
N. Himsworth Twp. (Callander)	117/135	73/94	.28/.10	30/30	6.9/6.9	-	-	-	-	-	-	-	-	-	-	312/356
Warren (Ratter-Dunnet)	312/ -	246/ -	5.4/ -	32/ -	7.4/ -	-	-	-	-	-	-	-	-	-	-	640/ -

TABLE VI

PHYSICAL CHARACTERISTICS

SURFACE WATER SUPPLIES

PROJECT	TURBIDITY					APPARENT COLOUR					TEMPERATURE	
	RAW WATER		TREATED WATER			RAW WATER		TREATED WATER			AVERAGE	MAXIMUM
	AVERAGE FTU	MAXIMUM FTU	AVERAGE FTU	MAXIMUM FTU	% of samples >1.0 FTU	AVERAGE units	MAXIMUM units	AVERAGE units	MAXIMUM units	% of samples > 5 units	°C	°C
Region I - Southwestern												
Alvinston	32	250	0.12	0.25	0	5	5	5	5	0	12	28
Amherstburg	20	41	0.29	0.95	0	35	200	5	5	0	12	25
Belle River	87	105	0.2	4.1	0.5	15	30	5	5	0	11	24
Blenheim Twp.	8	92	0.3	2.7	2	7	50	5	5	0	9	22
Dresden	38	880	0.3	2.1	3	38	100	5	5	0	10	28
Elgin Area W.S.S.	35	460	0.1	0.2	0	13	40	5	5	0	10	21
Goderich	14	97	0.4	2.0	11	6	20	5	5	0	9	24
Harrow	26	105	0.1	1.0	1	15	50	5	5	0	14	25
Kent County W.S.S.	9	50	-	-	-	-	-	-	-	-	9	21
Lake Huron W.S.S.	7	85	0.3	1.3	2	7	25	5	5	0	11	22
Lambton Area W.S.S.	2	38	0.2	0.8	0	6	10	-	-	-	10	28
Meaford	2	16	0.6	7.6	11	5	10	5	5	0	8	20
Mitchell's Bay	15	110	0.8	2.0	29	9	30	5	5	0	13	24
Southampton	3	22	0.8	20	16	7	30	6	20	5	9	22
Union W.S.S.	12	120	0.3	3.0	11	6	15	5	5	0	11	24
Watford, Wyoming, Plympton WSS	-	-	-	-	-	-	-	-	-	-	-	-
Region II - West Central												
Dunnville	16	145	-	-	-	7	15	-	-	-	10	26
Region III - Central												
Bobcaygeon	2	3	0.4	0.8	0	20	30	8	15	50	-	-
Fenelon Falls	5	12	1.0	1.9	68	6	30	6	15	3	-	-
Hastings	-	-	-	-	-	-	-	-	-	-	-	-
Percy Twp. - Warkworth	2	3	1.1	1.5	33	24	60	14	30	17	-	-
South Peel - Lakeview	6	50	0.4	0.9	0	5	5	5	5	0	7	18
Region IV - Southeastern												
Barry's Bay	2	15	0.8	4	73	9	50	7	20	34	9	16
Chalk River	2	4	1.6	2.5	85	29	40	24	40	90	-	-
Eganville	1.1	1.6	0.8	1.3	27	11	20	7	10	36	8	27
Ernestown Twp. (Odessa)	1.8	5	0.4	0.7	0	28	50	5	5	0	14	23
Kingston	0.9	4	0.3	3.8	0	8	20	6	10	14	9	21
Renfrew	1.6	13	0.3	6.0	0	25	60	3	15	0	11	26
Rockland	5	30	0.14	0.5	0	38	70	5	5	0	10	23
Region V - Northeastern												
Assiginack Twp. (Manitowaning)	0.8	2.5	1.0	4.5	26	5	5	5	5	0	-	-
Bruce Mines	5	22	4	15	100	7	10	5	5	0	-	-
Cache Bay	1	1.5	1.1	1.1	100	18	20	15	15	100	-	-
Caldwell Twp. (Verner)	7	42	0.3	1.8	2	77	140	5	10	0	8	20
Chapleau	1	3	0.4	1.6	5	65	100	5	20	0	11	25
Espanola	0.9	3	1.0	2.0	41	11	15	9	20	59	-	-
Haileybury	11	45	1.1	4.0	47	59	80	5	10	0	8	18
Latchford	1	4	0.3	1.5	3	19	60	5	10	0	8	22
Michipicoten Twp. (Wawa)	-	-	-	-	-	-	-	-	-	-	-	-
Moosonee	2.6	3.1	3.4	4.5	100	114	270	10	50	46	5	17
Shackleton-Machin Twp. (Fauq.)	4	50	0.6	5.0	12	128	280	6	40	28	7	22
Wanapitei W.S.S.	3	25	0.2	1.0	0	21	50	5	5	0	10	25
Region VI - Northwestern												
Ear Falls	6	10	6	12	85	18	30	18	40	85	-	-
Emo Twp.	8	32	2	7	100	50	70	6	10	25	11	24
Geraldton	-	-	1.4	4	45	-	-	5	15	45	-	-
Ignace Twp.	3.8	22	1.3	11	42	43	70	16	70	91	-	-
Machin Twp. (Vermillion Bay)	1.9	20	1.4	2.0	100	5	5	5	5	0	-	-
Madsen	2.1	2.6	1.5	2.9	33	13	20	15	15	100	-	-
Pickle Lake	0.8	1.3	0.6	0.9	0	9	30	5	5	0	-	-
Red Lake Twp.	0.8	1.2	0.8	1.4	36	19	30	13	30	79	-	-

TABLE VII

PHYSICAL CHARACTERISTICS

GROUND WATER SUPPLIES

PROJECT	TURBIDITY					APPARENT COLOUR				
	RAW WATER		TREATED WATER			RAW WATER		TREATED WATER		
	AVERAGE FTU	MAXIMUM FTU	AVERAGE FTU	MAXIMUM FTU	% of samples >10 FTU	AVERAGE units	MAXIMUM units	AVERAGE units	MAXIMUM units	% of samples >5 units
Region I - Southwestern										
Hanover	-	-	-	-	-	-	-	-	-	-
Markdale	0.46	0.80	-	-	-	9	100	-	-	-
Mitchell	4.7	9.3	.15	.15	0	11	40	5	5	0
Thedford	-	-	-	-	-	-	-	-	-	-
Van Astra	-	-	.38	.65	0	-	-	5	5	0
Region II - West Central										
Brantford Twp.	-	-	-	-	-	-	-	-	-	-
Region III - Central										
Anson, Hindon & Minden	-	-	-	-	-	-	-	-	-	-
Bradford	-	-	-	-	-	-	-	-	-	-
Cookstown	-	-	-	-	-	-	-	-	-	-
Elmvale	-	-	-	-	-	-	-	-	-	-
Havelock	0.35	0.78	-	-	-	5	5	-	-	-
Stayner	-	-	-	-	-	-	-	-	-	-
Woodville Twp.	-	-	-	-	-	-	-	-	-	-
Region IV - Southeastern										
Alfred	1.4	4.5	1.2	2.6	82	15	20	11	15	100
Bourget	1.7	3.0	2.1	4.0	100	14	20	12	20	45
Chesterville	1.2	2.0	-	-	-	14	20	-	-	-
Frankford	-	-	-	-	-	-	-	-	-	-
Leeds & Lansdowne	.5	1.0	.4	.7	0	6	10	8	10	50
L'Orignal	1.6	9.0	.8	2.0	14	12	10	8	10	50
Merrickville	3.1	8.2	1.9	7.0	43	10	20	11	25	43
Plantagenet	13.6	30	6.9	25	100	44	70	41	70	100
Vankleek Hill	5.6	9.2	0.9	1.2	50	7	15	8	10	50
Wellington	-	-	-	-	-	-	-	-	-	-
Westport	0.4	0.5	0.6	0.7	0	7	10	5	5	0
Winchester	0.9	4.5	0.8	2.6	14	6	20	5	5	0
Region V - Northeastern										
Black R. Twp.-Matheson,Ramore	-	-	-	-	-	-	-	-	-	-
Blezard Valley Area WSS	-	-	-	-	-	-	-	-	-	-
Blind River	-	-	-	-	-	-	-	-	-	-
Fauquier Twp.(Moonbeam)	1.8	4.1	0.9	1.7	38	24	30	11	20	91
N.Himsworth Twp.(Callander)	-	-	0.9	0.9	0	-	-	10	10	100
Warren (Ratter-Dunnet)	-	-	-	-	-	-	-	-	-	-

PROCESS DATA

The results of raw water algae enumeration are summarized in Table VIII tabulating weighted average monthly values of total algae.

The quantities of chemicals used in the treatment processes including disinfection are presented in Table X for both surface water and ground water projects. Sodium silicate is used as a flocculant aid in the surface water projects as "activated silica". Its use in ground water projects is for sequestering iron.

The data available on filter operation is summarized in Table XI. Since many of these plants are not staffed 24 hours per day, the filters are washed at regular intervals rather than on the basis of head loss.

Since there is a move to require treatment of process wastes rather than discharging these streams to the raw water source, data has been collected on volumes and chemical characteristics of filter wash water and of sludge from clarifiers and settling basins.

TABLE VIII

TOTAL ALGAE - RAW WATER

NOTE: * Averages are weighted.

PROJECT	* AVERAGE A.S.U./ml	TOTAL ALGAE - in Areal Standard Units per milliliter											
		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
Region I - Southwestern													
Amherstburg	584	1213	814	4118	3200	-	-	-	-	-	-	-	-
Blenheim Twp.	1248	935	1625	859	3223	2978	609	2861	25380	2269	13288	1869	4017
Goderich	313	455	73	114	429	1555	545	3021	1697	2161	1356	1614	1078
Lake Huron W.S.S.	642	1421	147	1002	2830	7140	4287	1941	3394	1624	3492	3121	2354
Lambton W.S.S.	835	2927	1490	3680	3507	5580	2215	2013	1047	1476	1620	2425	1231
Union W.S.S.	3545	3341	4089	8863	10868	15542	14008	41919	27764	16294	17687	13299	14224
Region II - West Central													
Dunnville	1368	3060	2913	1463	923	-	640	832	3156	4478	4431	6877	4060
Region III - Central													
South Peel - Lakeview	212	307	244	142	1107	2319	799	2184	1011	408	996	483	907
Region V - Northeastern													
Wanapitei	81	60	84	216	304	970	944	232	355	216	365	272	117

TABLE IX

MICROSTRAINER PERFORMANCE

PROJECT	TOTAL			BLUE-GREEN			GREEN			FLAGELLATES			DIATOMS		
	ASU/ml		%	ASU/ml		%	ASU/ml		%	ASU/ml		%	ASU/ml		%
	applied	eff	red^{n}	applied	eff	red^{n}	applied	eff	red^{n}	applied	eff	red^{n}	applied	eff	red^{n}
Region I - Southwestern															
Union	3545	1021	71	217	109	50	316	108	66	303	144	52	2886	951	67

TABLE X

CHEMICALS USED

PROJECT	CHLORINE 10^3 lb.	SODIUM HYPOCHLORITE gallons	ALUM LIQUID 10^3 gal.	ALUM DRY 10^3 lb.	SODIUM SILICATE 10^3 lb.	SODIUM BICARBONATE 10^3 lb.	POLYMER lb.	LIME $Ca(OH)_2$ 10^3 lb.	SODA ASH 10^3 lb.	ACTIVATED CARBON 10^3 lb.	SODIUM CHLORITE 10^3 gal.	POT. PERMANG. lb.	D. E. 10^3 lb.	SODIUM CHLORIDE 10^3 lb.	FLUORIDE H_2SiF_6 gallons	FLUORIDE Na_2SiF_6 10^3 lb.
Region I - Southwestern																
Alvinston	-	778	0.8	-	1.0	0.19	-	-	-	-	-	-	-	-	-	-
Amherstburg	17.3	-	19.4	-	11.2		-	-	-	-	-	-	-	-	21.6	-
Belle River	9.7	-	23.4	-	4.5	5.0	-	-	-	-	-	-	-	-	-	-
Blenheim Twp.	3.2	-	-	37.0	7.0	1.8	-	-	-	-	-	-	-	-	2.0	-
Dresden	5.2	-	-	79.7	50.4	12.3	-	100	-	-	-	995	-	-	-	-
Elgin Area W.S.S.	31.1	-	-	205.4	-	-	-	-	-	-	-	-	-	-	-	20.8
Goderich	8.3	-	10.9	-	5.9	1.5	-	-	-	-	-	-	-	-	-	4.4
Harrow	5.0	-	3.4	-	5.0	12.3	-	-	-	-	-	-	-	-	-	-
Kent County W.S.S.	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Huron W.S.S.	163.2	-	145.4	-	-	-	1402 gal.	-	-	-	-	-	-	-	-	-
Lambton Area W.S.S.	71.2	-	-	248.0	-	-	-	-	-	-	-	-	-	-	190.2	-
Meaford	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitchell's Bay	0.2	-	0.2	-	0.04	0.02	22	-	-	-	-	-	-	-	-	-
Southampton	2.6	-	-	-	-	-	-	-	-	-	-	-	27.6	-	-	-
Union W.S.S.	53.4	-	77.6	-	62.3	14.6	-	-	-	2.8	-	-	-	-	-	-
Watford, Wyoming, Plympton WSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region II - West Central																
Dunnville	38.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region III - Central																
Bobcaygeon	0.7	-	-	-	-	-	-	-	-	0.084	-	-	8.8	-	-	-
Fenelon Falls	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hastings	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percy Twp. - Warkworth	-	500	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-
South Peel - Lakeview	157.9	-	104.7	-	-	-	-	-	-	-	60.8	9036	-	-	490	-
Region IV - Southeastern																
Barry's Bay	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalk River	0.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eganville	0.92	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	-
Ernestown Twp. (Odessa)	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kingston	10.6	-	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Renfrew	8.8	-	-	345.9	-	-	-	36.2	-	3.3	-	-	-	-	-	-
Rockland	5.1	-	13.2	-	-	-	980	17.3	6.4	-	-	-	-	-	-	-
Region V - Northeastern																
Assiginack Twp.(Manitowaning)	-	107	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bruce Mines	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cache Bay	-	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caldwell Twp. (Verner)	1.4	-	-	26.4	3.4	0.8	62	0.75	8.8	-	0.26	-	-	-	-	-
Chapleau	10.5	-	21.1	-	-	-	1067	31.4	21.3	-	-	-	-	-	-	-
Espanola	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.7
Haileybury	4.9	-	-	91.6	-	-	873	11.6	8.1	-	-	-	-	-	-	-
Latchford	0.5	-	-	10.3	-	-	79	-	7.9	-	-	-	-	-	-	-
Michipicoten Twp. (Wawa)	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moosonee		1632	-	51.6	3.9	0.9	384	-	21.6	-	-	-	-	-	336	-
Shackleton-Machin Twp.(Fauquier)	-	517	-	13.1	-	-	69	-	7.6	-	-	-	-	-	-	-
Wanapitei W.S.S.	38.4	-	35.6	-	-	-	2127	119.4	0.5	-	-	-	-	5.2	-	16.9
Region VI - Northwestern																
Ear Falls	-	1321	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Emo Twp.	1.2	-	2.2	-	-	-	86	-	10.3	-	-	-	-	-	-	-
Geraldton	-	2900	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ignace Twp.	-	669	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Machin Twp.(Vermillion Bay)	-	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Madsen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pickle Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Lake Twp.	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE X Cont'd

CHEMICALS USED

PROJECT	CHLORINE 10^3 lb	SODIUM HYPOCHLORITE gallons	ALUM LIQUID 10^3 gal	ALUM DRY 10^3 lb	SODIUM SILICATE 10^3 lb	SODIUM BICARBONATE 10^3 lb	POLYMER lb.	LIME $Ca(OH)_2$ 10^3 lb	SODA ASH 10^3 lb	ACTIVATED CARBON 10^3 lb	SODIUM CHLORITE 10^3 gal	POT. PERMANG. lb.	D. E. 10^3 lb.	SODIUM CHLORIDE 10^3 lb.	FLUORIDE H_2SiF_6 gallons	FLUORIDE Na_2SiF_6 10^3 lb.
GROUND WATER SUPPLIES																
Region I - Southwestern																
Hanover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Markdale	-	742	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitchell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thedford	-	1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Van Astra	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region II - West Central																
Brantford Twp.	-	167	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region III - Central																
Anson, Hindon & Minden	-	139	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bradford	-	624	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cookstown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Elmvale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Havelock	-	245	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stayner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woodville Twp.	-	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region IV - Southeastern																
Alfred	-	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bourget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chesterville	-	607	-	-	0.44	-	-	-	-	-	-	-	-	-	-	-
Frankford	-	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leeds & Lansdowne	-	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L'Orignal	-	365	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merrickville	-	391	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plantagenet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vankleek Hill	-	441	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wellington	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Westport	-	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Winchester	-	1044	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region V - Northeastern																
Black R.Twp.-Matheson, Ramore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blezard Valley Area WSS	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blind River	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fauquier Twp.(Moonbeam)	-	410	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N.Himsworth Twp.(Callander)	-	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warren (Ratter-Dunnet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE XI

FILTER OPERATION

PROJECT	TYPE OF FILTER	NUMBER and SIZE OF FILTERS n x sq. ft.	AVERAGE TURBIDITY FORMAZIN UNITS		FILTER RUN hours		FILTER WASH WATER USED % of output
			APPLIED	FILTERED	AVERAGE	MINIMUM	
SURFACE WATER PROJECTS							
Region I - Southwestern							
Alvinston	Gravity	2 x 168	32	0.12	7.6	1	2
Amherstburg	Gravity, Dual media	4 x 416	20	0.29	71	24	5
Belle River	Gravity, dual media	3 x 29	87	0.2	45	24	3
Blenheim	Gravity, dual media	3 x 79	8	0.3	15	10	4
Elgin Area W.S.S.	Gravity, dual media	2 x 1040	35	0.13	66	50	3
Goderich	Gravity, dual media	4 x 144	4	0.38	42	20	5
Harrow	- -	-	26	0.08	47	12	5
Lake Huron W.S.S.	Gravity, dual media	12 x 1100	7	0.3	35	6	5
Lambton	- -	-	2	0.2	44	12	7
Meaford	Gravity, anthracite	2 x 625	2	0.6	24	23	3
Mitchell's Bay	Gravity	2 x 148	15	0.8	2	0.5	5
Southampton	Pressure, D.E.	2 x 206	3	0.8	1.4	0.3	1
Union W.S.S.	Gravity, dual media	4 x 650	12	0.3	-	-	2
Region III - Central							
Bobcaygeon	Vacuum, D.E.	1 x 180	2	0.4	258	24	1
Fenelon Falls	Pressure, sand	2 x 50	5	1.0	358	24	1
South Peel (Lakeview)	Gravity, dual media	18 x 1000	6	0.4	52	18	2
Warkworth - Percy Twp.	Gravity, sand	1 x 35	-	-	-	-	16
Region IV - Southeastern							
Barry's Bay	Pressure	n = 2	2	0.8	-	-	-
Eganville	Pressure, sand	2 x 38	1.1	0.8	9	3	-
Kingston	- -	-	1	0.3	40	12	3
Renfrew	- -	-	2	0.3	0	0	4
Rockland	Gravity, dual media	2 x 113	5	0.14	15	-	-
Region V - Northeastern							
Caldwell Twp. (Verner)	- -	-	2	0.26	27	23	4
Haileybury	Gravity, dual media	3 x 140	11	1.1	40	N/A	2
Latchford	- -	-	1	0.3	15	8	4
Moosonee	Gravity, sand	2 x 28	2.6	3.4	24	24	1
Shackleton - Machin Twp.	Gravity	1 x 20	-	-	-	-	-
Wanapitei	Reactivators (2)	-	3.1	0.2	62	12	2
Region VI - Northwestern							
Emo Twp.	Gravity, Multi media	1 x 23	8	2.4	-	-	-
GROUND WATER PROJECTS (IRON REMOVAL PLANTS)							
Region I - Southwestern							
Mitchell	Pressure, anthracite	1 x 200	4.7	0.15	-	-	2
Region V - Northeastern							
Fauquier Twp. (Moonbeam)	Pressure, sand	2 x 13	1.8	0.9	-	-	2

TABLE XII

WASTE STREAMS-CHARACTERISTICS

PROJECT	FILTER WASH WATER					SLUDGE FROM CLARIFIER/SETTLING BASIN				
	TOTAL VOLUME 10^6 gallons	BOD mg/l	S.S. mg/l	TOTAL PHOSPHORUS mg/l P	KJELDAHL NITROGEN mg/l N	TOTAL VOLUME 10^6 gallons	BOD mg/l	S.S. mg/l	TOTAL PHOSPHORUS mg/l P	KJELDAHL NITROGEN mg/l N
Region I - Southwestern										
Amherstburg	20.8	2.6	267	0.4	-	-	4.5	7500	4.3	-
Dresden	-	-	-	-	-	-	-	4500	-	-
Region III - Central										
Bobcaygeon	0.16	14.0	4600	2.7	9.6	-	5	18	0.47	0.9
Warkworth Twp.(Percy)	-	2.0	20	0.074	5.2	-	-	-	-	-
Region IV - Southeastern										
Eganville	-	-	-	0.48	1.7	-	-	-	-	-
Rockland	-	35	470	0.065	1.2	-	36	7400	0.19	1.7
Region V - Northeastern										
Haileybury	4.33	2.7	650	-	-	-	4.3	1400	-	-
Latchford	0.53	4	730	0.02	-	-	6	2800	0.02	-
Wanapitei	26.41	-	-	-	-	1.093	-	11000	-	-

Table XIII

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T. SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
SURFACE WATER SUPPLIES																
Region I - Southwestern																
Alviston			1													1
Amherstburg	1				5		1									7
Belle River																
Blandford-Blenheim Twp.			1		2		1						1			5
Dresden														.25		.25
Elgin Area W.S.S.	1	1			5	1	2	1	1		2					14
Goderich			1		4											5
Harrow	1				3											4
Kent County W.S.S.															.6	.6
Lake Huron W.S.S.	1	1			7	1	1	1	1		2		3	.5	.25	18.75
Lambton Area W.S.S.	1	1			6	1	4	1			1					15
Meaford																
Mitchell's Bay															.25	.25
Southampton			.5		1											1.5
Union W.S.S.	1	1			6		2				2					12
Watford, Wyoming, Plympton W.S.S.															.25	.25
Region II - West Central																
Dunnville	1				5		2									8
Region III - Central																
Bobcaygeon			1											1		2
Fenelon Falls			.5		1											1.5
Hastings															.5	.5
Percy Twp. - Warkworth														1		1
South Peel - Lakeview	1		1	8	10	1	5	1	2		4	1				34
Victoria Harbour																
Region IV - Southeastern																
Barry's Bay			.4		.4											.8
Chalk River			.4		.35											.75
Eganville			.33		.33											.66
Ernestown Twp. (Odessa)			.5		.5											1
Fenfrew	1				3		1									5
Rockland			.5		1.0											1.5
Region V - Northeastern																
Assiginack Twp. (Manitowaning)													.25			.25
Bruce Mines	.1				.5											.6
Cache Bay																
Caldwell Twp. (Verner)	.05				.75								.375			1.175
Chapleau	1				2											3
Espanola	.5				.5								.12			1.12
Haileybury	.59				1.32		.62						.33			2.86
Latchford	.05				.5		.02						.25			.82
Michipicoten Twp. (Wawa)																
Moosonee	.25				.5								.10			.85
Shackleton-Machin Twp. (Fauq.)	.45												.17			.62
Wanapitei W.S.S.	.8				6		1		1				.5			9.3
Region VI - Northwestern																
Ear Falls			.5	1									.5			2.0
Emo Twp.			0													0
Geraldton			.5		.5											1
Ignace Twp.			.5		.5											1
Machin Twp. (Vermillion Bay)															.4	.4
Madsen													1.0			1
Pickle Lake					.5											.5
Red Lake Twp.			.5		.5											1
Nakina					1											1

PROJECT	SUPERINTENDENT	ASS'T. SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
GROUND WATER SUPPLIES																
Region I - Southwestern																
Hanover																
Markdale																
Milverton															.25	.25
Mitchell															.25	.25
Mitchell Bay																
Thedford															.25	.25
Van Astra			.5		.5											1
Region II - West Central																
Brantford Twp.																
Region III - Central																
Anson, Hindon & Minden															.5	.5
Bradford															.25	.25
Cookstown															.5	.5
Elmvale															.5	.5
Havelock															.5	.5
Stayner															.5	.5
Woodville Twp.															.5	.5
Region IV - Southeastern																
Alfred			.1		.2											.3
Bourget			.1													.1
Chesterville			.2		.2											.4
Frankford			.25		.5											.75
Kingston Twp.																
Leeds & Lansdowne			.25										.25			.50
L'Orignal			.3		.25											.55
Merrickville			.25		.25											.50
Plantagenet			.1		.1											.2
Vankleek Hill			.1		.25											.35
Wellington													.5			.5
Westport			.25										.1			.35
Winchester			.3		.3											.6
Region V - Northeastern																
Black River Twp.-Matheson, Ra.	.1															.1
Blezard Valley Area W.S.S.	.5		1		1											2.5
Blind River																
Fauquier Twp. (Moonbeam)	.15												.15			.30
North Himsworth Twp. (Callander)														.4		.4
Warren (Ratter-Dunnet)														.1		.1
Wicksteed Twp.	.25				.25								.10	.4		.60

OPERATING EXPENDITURES

The cost of operation of the water supply projects during 1977 are tabulated in Tables XIV and XV for surface water and ground water projects respectively. The cost of head office supervision, including travel, accounting, purchasing and inspection, is not charged against the projects.

An explanation of items included in each of the budget categories follows:

EXPLANATION

SALARIES & WAGES	
Regular & Probationary	includes overtime, call-in, standby, etc.
Unclassified	includes casual, part-time
EMPLOYEE BENEFITS	includes employers share Canada Pension Plan, Superannuation, Unemployment Insurance, Workman's Compensation, etc.
TRANSPORTATION & COMMUNICATION	includes travel, telephone, telemetering, accommodation, etc.
SERVICES	includes easements, insurance, sludge haulage, maintenance and repair, leases.
SUPPLIES & EQUIPMENT	includes new vehicles, chemicals, power, fuel, water, treatment chemicals, small tools, petty cash.
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	includes new sewer or water connections.
TRANSFER PAYMENTS	includes grants in lieu of taxes (provincial).
OTHER TRANSACTIONS	includes municipal taxes.

The operating costs given do not include any portions paid by the municipalities.

Note : Brackets indicate credit

TABLE XIV

SURFACE WATER SUPPLIES

OPERATING EXPENDITURES

PROJECT	UNIT COST ¢/1000 gallons	GRAND TOTAL	Regular Staff	Casual (Unclassified) Staff	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORTATION AND COMMUNICATIONS	Insurance	Repairs and Maintenance
Region I - Southwestern									
Alvinston	373	42318	17852	3466	21318	1965	557	1195	1619
Amherstburg	52	223372	109654	364	110018	13560	2675	4974	2062
Belle River	.3	1307	-	-	-	-	303	786	-
Blenheim Twp.	62	113221	56937	14087	71024	8573	985	2159	292
Dresden	39	50691	18852	-	18852	-	540	404	2529
Elgin Area W.S.S.	31	460428	165954	22900	188854	26122	5556	18328	10784
Goderich	39	139333	77918	13734	91652	10814	2877	1155	980
Harrow	83	87738	57262	-	57262	7764	3775	464	(11217)
Kenty County W.S.S.	4	70783	10835	-	10835	-	2549	3620	3978
Lake Huron W.S.S.	11	1140625	225305	21150	246455	29237	11811	27186	13793
Lambton Area W.S.S.	16	748534	215425	6938	222363	27457	6235	18117	9285
Meaford	10	34573	-	-	-	-	-	-	1
Mitchell's Bay	347	14955	6971	-	6971	-	1546	650	1884
Southampton	19	36294	18232	-	18232	-	460	523	61
Union W.S.S.	22	457097	177261	-	177261	22812	7842	3926	2361
Watford, Wyoming, Plympton WSS	78	60274	800	-	800	-	132	263	158
Region II - West Central									
Dunnville	8	289063	127232	-	127232	15721	2533	2508	4987
Region III - Central									
Bobcaygeon	248	37287	17698	3938	21636	1997	778	30	3131
Fenelon Falls	35	41469	22191	2238	24429	2733	830	914	1276
Hastings	32	10863	1356	717	2073	90	352	112	3467
Percy Twp. - Warkworth	54	12105	(1)	7840	7839	282	111	101	160
South Peel - Lakeview	14	1957429	535352	12110	547462	69132	13784	55395	22001
Region IV - Southeastern									
Barry's Bay	164	33913	16637	369	17006	-	2491	710	211
Chalk River	65	19369	10957	-	10957	-	686	161	-
Eganville	60	18334	11670	103	11773	-	343	152	1228
Ernestown Twp. (Odessa)	159	39880	18524	1184	19708	5345	3513	936	-
Kingston	17	122900	68404	-	68404	-	1119	-	1078
Renfrew	34	140333	78107	-	78107	8774	5782	1276	1393
Rockland	43	69831	27499	-	27499	5715	2017	1031	4783
Region V - Northeastern									
Assiginack Twp(Manitowaning)	60	8939	4200	-	4200	-	190	283	753
Bruce Mines	103	16928	10021	-	10021	744	562	1613	230
Cache Bay	0.8	1149	116	-	116	-	-	24	455
Caldwell Twp. (Verner)	165	51506	15635	8800	24435	1365	1204	1101	3310
Chapleau	47	109859	48378	-	48378	5464	3006	-	1181
Espanola	17	34403	17963	1650	19613	500	509	130	115
Haileybury	51	93351	30107	-	30107	4416	2159	2543	8872
Latchford	210	29561	10968	-	10968	714	768	963	8358
Michipicoten Twp. (Wawa)	.04	605	98	-	98	-	43	19	-
Moosonee	911	40623	17598	650	18248	1000	1655	1306	1103
Shackleton - Machin Twp.(Fauquier)	185	27999	8135	2894	11029	1189	1510	493	825
Wanapitei W.S.S.	23	294795	139996	4572	144568	16987	2673	2549	571
Region VI - Northwestern									
Ear Falls	153	31927	(1234)	-	(1234)	-	1020	353	2564
Emo Twp.	206	37615	10037	7111	17148	171	641	524	8283
Geraldton	50	64331	43423	8026	51449	3973	436	175	2547
Ignace Twp.	60	38635	-	-	-	-	2305	470	509
Machin Twp. (Vermillion Bay)	174	20927	(36)	2974	2938	43	698	278	11057
Madsen	-	21363	3893	6044	9937	-	405	-	404
Pickle Lake	68	17260	468	-	468	-	376	-	2830
Red Lake Twp.	31	54379	28381	8735	37116	3479	244	767	1940

TABLE XIV Cont'd

OPERATING EXPENDITURES

PROJECT	Other Services	TOTAL SERVICES	Machinery and Equipment	Chemicals	Utilities	Other Supplies and Equipment	TOTAL SUPPLIES AND EQUIPMENT	TOTAL AQUISITION/ CONSTRUCTION OF PHYSICAL ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TRANSACTIONS	INTER-MINISTRY EXP. REFUNDS
Region I - Southwestern											
Alviston	110	2924	5431	1797	4196	2562	13986	157	-	1411	-
Amherstburg	2801	9837	5362	15146	33035	7256	60799	-	-	26483	-
Belle River	-	786	-	-	218	-	218	-	-	-	-
Blenheim Twp.	(1203)	1248	626	6199	18270	5268	30363	-	-	1028	-
Dresden	10	2943	2825	13792	10949	296	27862	-	-	494	-
Elgin Area W.S.S.	(1194)	28019	12871	22825	117056	92021	181563	-	-	30415	-
Goderich	235	2370	1093	5852	17757	3265	27967	-	-	3653	-
Harrow	(518)	(11271)	3952	2239	13917	8560	28668	84	-	1456	-
Kent County W.S.S.	7602	15200	549	-	40784	798	42131	-	-	68	-
Lake Huron W.S.S.	679	41658	148290	82757	514993	37913	783953	-	-	27511	-
Lambton Area W.S.S.	4163	31565	48800	30768	254360	61893	395821	(105)	-	65198	-
Meaford	34535	34356	-	-	217	-	217	-	-	-	-
Mitchell's Bay	196	2730	-	325	3162	205	3692	-	-	16	-
Southampton	3027	3611	2472	958	8619	1942	13991	-	-	-	-
Union W.S.S.	8020	35807	10633	54366	90463	13618	169080	215	-	44080	-
Watford, Wyoming, Plympton W.S.S.	70	491	-	-	58457	394	58851	-	-	-	-
Region II - West Central											
Dunnville	794	8289	1819	7668	110129	10129	129745	193	-	5350	-
Region III - Central											
Bobcaygeon	700	3861	3552	1203	3201	740	8696	83	-	236	-
Fenelon Falls	528	2718	1955	1033	6891	848	10727	-	-	32	-
Hastings	320	3899	242	937	3270	-	4449	-	-	-	-
Percy Twp. - Warkworth	-	261	-	1175	2436	1	3612	-	-	-	-
South Peel - Lakeview	38691	116087	57342	-	896322	169418	1123082	8	-	88831	(957)
Region IV - Southeastern											
Barry's Bay	294	1215	1314	200	4059	6938	12511	-	-	690	-
Chalk River	530	691	332	358	3347	2998	7035	-	-	-	-
Eganville	217	1597	2153	1697	159	612	4621	-	-	-	-
Ernestown Twp. (Odessa)	2210	3146	(209)	3697	4115	565	8168	-	-	-	-
Kingston	1263	2341	1709	3847	42062	3418	51036	-	-	-	-
Renfrew	333	3002	3352	12918	23687	4704	44661	-	-	7	-
Rockland	622	6436	3478	9338	10635	4463	27914	250	-	-	-
Region V - Northeastern											
Assiginack Twp. (Manitowaning)	-	1036	458	498	2212	124	3292	-	-	71	150
Bruce Mines	174	2017	203	282	2527	291	3303	-	-	281	-
Cache Bay	-	479	-	554	-	-	554	-	-	-	-
Caldwell Twp. (Verner)	247	4658	212	7992	8381	1697	18282	-	-	1562	-
Chapleau	122	1303	4887	25318	18173	4345	52723	-	-	(1015)	-
Espanola	-	245	3219	1897	7280	1140	13536	-	-	-	-
Haileybury	540	11955	519	8882	22742	4525	36668	180	-	9566	(1700)
Latchford	158	9479	703	1114	3470	843	6130	140	-	1362	-
Michipicoten Twp. (Wawa)	-	19	439	-	-	6	445	-	-	-	-
Moosonee	200	2609	3828	4893	6185	2805	17711	-	-	-	7400
Shackleton-Machin Twp. (Fauquier)	1731	3049	56	4287	5049	1534	10926	-	-	296	-
Wanapitei W.S.S.	658	3778	6980	29568	75293	14948	126789	-	-	-	-
Region VI - Northwestern											
Ear Falls	94	3011	2587	9486	12287	3932	28292	-	-	838	-
Emo Twp.	89	8896	891	5768	6	3234	9899	-	-	860	-
Geraldton	-	2722	626	2064	2298	763	5751	-	-	-	-
Ignace Twp.	63	1042	7631	15813	8689	2156	34289	-	-	999	-
Machin Twp. (Vermillion Bay)	245	11580	614	765	2842	1327	5548	-	-	120	-
Madsen	-	404	38	1078	9406	95	10617	-	-	-	-
Pickle Lake	6191	9021	3425	-	909	3061	7395	-	-	-	-
Red Lake Twp.	70	2777	580	1037	7640	1506	10763	-	-	-	-

TABLE XV
GROUND WATER SUPPLIES

OPERATING EXPENDITURES

PROJECT	UNIT COST $/1000 gallons	GRAND TOTAL	Regular Staff	Casual (Unclassified) Staff	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORTATION AND COMMUNICATIONS	Insurance	Repairs and Maintenance
Region I - Southwestern									
Hanover	3	3967	-	-	-	-	-	36	40
Markdale	-	13325	-	-	-	-	194	293	-
Milverton	N/A	3519	223	-	223	-	63	84	-
Mitchell	18	2418	1673	-	1673	-	280	147	-
Thedford	21	4318	594	-	594	-	208	108	-
Van Astra	49	26865	14174	80	14254	-	1036	394	870
Region II - West Central									
Brantford	.8	355	-	-	-	-	165	190	-
Region III - Central									
Anson, Hindon & Minden	12	3040	-	-	-	-	-	38	(88)
Bradford	5	2888	-	-	-	-	-	39	-
Cookstown	.4	679	-	-	-	-	57	93	-
Elmvale	6	3027	-	-	-	-	-	30	2530
Havelock	5	2509	-	-	-	-	43	73	-
Stayner	.12	123	-	-	-	-	-	123	-
Woodville Twp.	47	5526	-	-	-	-	26	211	2475
Region IV - Southeastern									
Alfred	23	5796	950	-	950	-	28	96	146
Bourget	-	592	435	-	435	-	118	9	26
Chesterville	36	9097	7155	-	7155	-	7	134	-
Frankford	28	25589	12582	-	12582	-	740	711	397
Leeds & Lansdowne	219	14654	4957	3774	8731	231	463	396	305
L'Orignal	39	12623	4588	653	5241	39	106	331	1960
Merrickville	39	16420	6394	29	6423	-	219	233	3466
Plantagenet	-	1658	1503	-	1503	-	60	21	-
Vankleek Hill	-	26807	4378	1107	5485	164	1072	177	5883
Wellington	-	9824	188	6484	6672	244	23	97	-
Westport	69	10754	4622	980	5602	-	924	170	-
Winchester	27	24522	12421	-	12421	-	207	192	-
Region V - Northeastern									
Black River Twp.-Matheson, Ramore	69	3215	1106	-	1106	95	400	13	-
Blezard Valley Area W.S.S.	16	98079	45501	2144	47645	4083	2504	2914	1210
Blind River	25	5952	-	-	-	-	-	20	1000
Fauquier Twp. (Moonbeam)	40	7488	2576	-	2576	83	52	88	12
North Himsworth Twp. (Callander)	98	9772	543	2927	3464	106	442	313	-
Warren (Ratter-Dunnet)	40	6610	1882	2960	4842	248	64	42	158

TABLE XV Cont'd

OPERATING EXPENDITURES

PROJECT	Other Services	TOTAL SERVICES	Machinery and Equipment	Chemicals	Utilities	Other Supplies and Equipment	TOTAL SUPPLIES AND EQUIPMENT	TOTAL AQUISITION/ CONSTRUCTION OF PHYSICAL ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TRANSACTIONS	INTER-MINISTRY EXP. REFUNDS
Region I - Southwestern											
Hanover	-	76	-	-	3891	-	3891	-	-	-	-
Markdale	2116	2409	-	1194	9528	-	10722	-	-	-	-
Milverton	44	128	-	2184	108	813	3105	-	-	-	-
Mitchell	37	184	-	-	217	64	281	-	-	-	-
Thedford	36	144	24	314	2871	163	3372	-	-	-	-
Van Astra	1262	2526	98	-	5897	1729	7724	-	-	227	1098
Region I - West Central											
Brantford Twp.	-	190	-	-	-	-	-	-	-	-	-
Region III - Central											
Anson, Hindon & Minden	-	(50)	129	-	2961	-	3090	-	-	-	-
Bradford	-	39	-	-	-	-	-	-	-	2849	-
Cookstown	-	93	-	15	-	187	202	-	-	327	-
Elmvale	467	3027	-	-	-	-	-	-	-	-	-
Havelock	-	73	-	213	2163	17	2393	-	-	-	-
Stayner	-	123	-	-	-	-	-	-	-	-	-
Woodville Twp.	2078	4764	-	-	736	-	736	-	-	-	-
Region IV - Southeastern											
Alfred	13	255	760	-	3476	41	4277	-	-	286	-
Bourget	-	35	-	-	4	-	4	-	-	-	-
Chesterville	175	309	-	1481	140	5	1626	-	-	-	-
Frankford	2323	3431	920	213	6949	171	8253	39	-	544	-
Leeds & Lansdowne	124	825	2246	-	1545	597	4388	-	-	16	-
L'Orignal	647	2938	-	912	2759	509	4180	-	-	119	-
Merrickville	292	3991	673	445	3776	893	5787	-	-	-	-
Plantagenet	-	21	-	-	16	58	74	-	-	-	-
Vankleek Hill	371	6431	2004	757	5590	3045	11396	-	-	2259	-
Wellington	-	97	-	946	1600	242	2788	-	-	-	-
Westport	-	170	(1415)	212	1569	2694	3060	930	-	68	-
Winchester	255	447	859	1958	8468	40	11325	-	-	122	-
Region V - Northeastern											
Black River Twp.-Matheson, Ramore	5	18	-	-	1591	-	1591	-	-	5	-
Blezard Valley Area W.S.S.	2674	6798	800	611	27832	3072	32315	12	-	4722	-
Blind River	-	1020	-	-	4932	-	4932	-	-	-	-
Fauquier Twp. (Moonbeam)	64	164	-	231	4091	291	4613	-	-	-	-
North Himsworth Twp. (Callander)	-	312	1188	1434	2607	219	5448	-	-	-	-
Warren (Ratter-Dunnet)	-	200	98	6	1001	151	1256	-	-	-	-

APPENDIX - MONTHLY OPERATING DATA

SURFACE WATER - MONTHLY FLOWS

REGION I

SOUTHWESTERN

ALVINSTON

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	.682	.022	.059		3.8		.13	.19			0	0
FEB	.763	.027	.066		9.7		.13	.20			0	0
MAR	.980	.032	N/A		55.0	5	.15	.25	5	5	4.4	12
APR	.909	.030	N/A		43.0		.12	.24			11	17
MAY	1.216	.039	.067		16.0		.13	.17			19	24
JUNE	1.413	.047	.110		45.0		.12	.17			21	24
JULY	1.087	.035	.056		62.0		.14	.25			24	28
AUG	1.121	.036	.066		43.0		.11	.15			22	24
SEPT	.772	.025	.052		48.0		.09	.11			20	25
OCT	.624	.020	.033		19.0		.09	.18			11	14
NOV	1.003	.033	.108		27.0		.11	.20			8	13
DEC	.780	.025	.070		7.8		.16	.20			1	3
TOTAL	11.350											
AVG.		.031	MAXIMUM .110	MAXIMUM	31.6	5	.12	MAXIMUM .25	5	MAXIMUM 5	11.7	MAXIMUM 28

ALVINSTON

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE				AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil.gallons
JAN	11	11	139	20.4	3.5	.5			5.9	2.0	.040
FEB	15	13	111	14.5	2.8	.4					
MAR	130	86	153	15.6	38.5	3.9			5.0	2.0	.048
APR	80	57	83	9.1	21.0	2.3					.020
MAY	63	34	56	4.6	14.0	1.2			8.7	2.5	.020
JUNE	74	34	42	3.0	10.5	.7			11.0	3.0	.020
JULY	110	66	56	5.2	14.0	1.3			8.0	4.0	.020
AUG	93	54	42	3.7	10.5	.2			10.5	4.4	.016
SEPT	64	54	28	3.6	7.0	.9			9.8	4.1	.012
OCT	45	54	83	13.3	21.0	3.3			4.8	2	.016
NOV	99	64	97	9.6	25.0	2.4			6.8	1	.032
DEC	74	61	83	10.6	21.0	2.6			6.0	0	.032
TOTAL	858		973		188.8						.276
AVG.		49		8.5		1.6			7.6	1	

ALVINSTON

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF NaOCl Gallons	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	1	0	0	0	1	0	2	1	70	10.3		1.0
FEB	0	0	0	0	0	1	0	3	1	28	4.2		.8
MAR	0	0	0	0	0	2	0	6	2	76	9.3		.9
APR	0	0	0	0	0	1	0	6	2	56	7.4		.9
MAY	0	0	0	0	0	0	0	0	0				.6
JUNE	0	0	0	0	0	1	0	0	0	48	4.1		.8
JULY	0	0	0	0	0	1	0	3	1	64	7.0		.8
AUG	0	0	0	0	0	2	1	4	1	112	11.9		.8
SEPT	0	0	0	0	0	1	0	3	1	44	6.8		.7
OCT	0	0	0	0	0	0	0	0	0	112	21.4		.7
NOV	0	0	0	0	0	0	0	0	0	100	11.9		.5
DEC	0	0	0	0	0	0	0	0	0	68	10.5		.6
TOTAL	0	1	0	0	0	10	1	27	9	778			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									2.5 pounds per day	6.8		.6

ALVINSTON

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	3	252	314	164	3	256	312	172	80 - 100
ALKALINITY in mg/l as $CaCO_3$	3	192	245	124	3	164	239	63	30 - 100
IRON in mg/l Fe	3	.93	2.1	.4	3	.01	.02	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	3	17.1	17.5	16.5	3	18.3	19.5	17.5	Less than 250
pH in pH units	3	8.0	8.5	7.6	3	7.4	7.8	6.8	7.0 - 8.5
FLUORIDE in mg/l F^-	1	.1	.1	.1	1	.1	.1	.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in μg/l as C_6H_5OH									Less than 1

AMHERSTBURG

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	39.13	1.26	1.58	2.5	1.3		.21	.65	5	5	2	3
FEB	38.06	1.36	1.92	2.5	1.6	5	.33	.61	5	5	2	3
MAR	32.35	1.04	1.14	2.5	36.3	40	.68	5.20	5	5	4	5
APR	31.21	1.04	1.20	2.5	40.5	200	.62	4.40	5	5	10	14
MAY	36.46	1.18	1.42	2.5	21.8	20	.20	.34	5	5	15	19
JUNE	35.02	1.17	1.31	2.5	22.8	10	.13	.22	5	5	20	23
JULY	37.60	1.21	1.48	2.5	17.2		.10	.14	5	5	24	25
AUG	39.89	1.29	1.48	2.5	11.9	7	.18	.50	5	5	23	25
SEPT	38.29	1.28	1.52	2.5	15.0	15	.22	.65	5	5	21	25
OCT	32.76	1.06	1.24	2.5	21.5	20	.24	.55	5	5	14	18
NOV	31.39	1.04	1.23	2.5	18.2		.19	.32	5	5	10	12
DEC	32.03	1.03	1.14	2.5	28.9	30	.47	.95	5	5	3	5
TOTAL	424.19											
AVG.		1.16	MAXIMUM 1.92	MAXIMUM 2.5	19.7	35	.29	MAXIMUM 5.20	5	MAXIMUM 5	12	MAXIMUM 25

AMHERSTBURG

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION			ALGAE
	ALUM		SODIUM SILICATE		FLUOSILIC ACID		SODIUM BICARBONATE		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER	TOTAL RAW
	AMT. USED Gallons	DOSAGE mg/l	AMT. USED pounds	DOSAGE mg/l	AMT. USED Pounds	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil.gallons	ASU/ml
JAN	1463	23.0	0	0	2210	5.4			72	72	1.47	1213
FEB	915	15.6	0	0	2140	5.3			72	72	1.56	814
MAR	1787	35.8	3601	11.9	1838	5.2			72	72	2.00	4118
APR	2022	42.1	3114	10.0	1756	5.2			69	24	2.05	3200
MAY	1807	32.2	1932	5.2	2006	5.2			72	72	1.50	
JUNE	1820	32.9	0	0	616	1.6			72	72	1.44	
JULY	2070	35.8	0	0	1290	3.2			72	72	1.70	
AUG	1303	21.2	0	0	2177	5.1			72	72	2.22	
SEPT	1240	21.0	0	0	2152	4.3			72	72	2.05	
OCT	1740	34.6	0	0	1851	5.3			72	72	1.80	
NOV	1436	29.7	0	0	1777	5.3			72	72	1.45	
DEC	1771	36.0	2585	8.1	1833	5.3			72	72	1.59	
TOTAL	19374		11232		21646						20.83	
AVG.		29.7		8.2		5.1			71	Min. 24		

AMHERSTBURG

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	0	0	0	7	7	0	26	0	1270	2.7	.4	.8
FEB	0	0	0	2	4	6	0	21	0	1115	2.6	.4	.8
MAR	0	0	0	0	7	7	0	29	0	1865	4.9	.4	.8
APR	0	0	0	1	5	6	0	23	0	1640	4.6	.4	.8
MAY	0	0	0	1	6	7	0	29	0	1730	4.2	.4	.8
JUNE	0	0	0	1	5	6	0	25	0	2040	5.1	.4	.8
JULY	0	1	0	0	5	6	0	19	0	1770	4.3	.4	.8
AUG	0	0	0	1	6	8	0	26	0	1470	3.1	.4	.8
SEPT	0	0	1	2	3	6	0	20	1	1470	3.3	.4	.8
OCT	0	0	0	3	3	6	0	25	1	1295	3.2	.4	.8
NOV	0	0	0	1	5	6	0	25	0	845	2.1	.4	.8
DEC	0	0	0	3	2	5	0	22	0	835	2.1	.4	.8
TOTAL	0	1	1	16	58	76	0	294	2	17345			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									475 pounds per day	3.8	.4	.8

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	27	121	156	100	27	118	144	104	80 - 100
ALKALINITY in mg/l as $CaCO_3$	27	89.9	107.0	82.4	27	75.3	81.4	68.0	30 - 100
IRON in mg/l Fe	27	1.96	6.3	.09	27	0.025	0.05	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	27	18.3	35.0	12.0	27	22.5	32.0	13.2	Less than 250
pH in pH units	388	7.5	8.2	6.5	388	7.0	7.8	6.5	7.0 - 8.5
FLUORIDE in mg/l F^-	23	.1	1.3	.1	23	.8	1.3	0.1	Less than 1.2
AMMONIA in mg/l as N	1	16.2	16.2	16.2	1	15.5	15.5	15.5	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	3	29.7	38.3	20.5	2	27.1	28.5	25.8	Less than 1.
NITRITE in mg/l as N	1	.01	.01	.01	1	.01	.01	.01	
NITRATE in mg/l as N	2	.25	.51	0.1	6	.33	.79	0.1	Less than 10
TOTAL PHOSPHORUS in mg/l as P	4	4.94	7.00	.066	4	1.98	4.20	.033	
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in μg/l as C_6H_5OH									Less than 1

BELLE RIVER

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	29.8	.96	1.27				.1	.1			.6	1.7
FEB	27.8	.99	1.30				.1	.1			1.1	1.7
MAR	29.7	.96	1.16				.1	.1			5.0	8.9
APR	30.4	1.01	1.15				.1	.1			11.1	12.2
MAY	40.0	1.29	2.03				.1	.1			14.4	19.4
JUNE	38.8	1.29	1.81				.1	.1			18.3	20.6
JULY	41.3	1.33	1.65		7.6		.1	.1			19.4	21.1
AUG	37.6	1.21	1.44				.1	.1			21.7	24.4
SEPT	34.9	1.16	1.43		11.0	5	.1	.2	5	5	19.4	23.9
OCT	29.6	.96	1.08		105.0	30	.2	1.6	5	5	8.9	15.6
NOV	29.8	.99	1.32		26.0	10	.1	.1	5	5	6.7	12.2
DEC	37.4	1.21	1.33		51.0	15	1.3	4.1	5	5	.6	1.1
TOTAL	407.1											
AVG.		1.11	MAXIMUM 2.03	MAXIMUM	86.9	15	.2	MAXIMUM 4.1	5	MAXIMUM 5	10.6	MAXIMUM 24.4

BELLE RIVER

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE				AVERAGE	MINIMUM	BACKWASH
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	RUN hours	RUN hours	WATER mil.gallons
JAN	1483	32.3	419	1.4	465	1.7			48	34	.839
FEB	2114	49.6	378	1.4	420	1.5			45	34	.769
MAR	1575	75.2	415	3.0	457	3.4			46	32	.915
APR									46	24	.956
MAY	2432	43.5	419	1.2	465	1.3			44	24	1.021
JUNE	1682	31.4	398	1.2	443	1.3			42	24	.936
JULY	1790	29.8	412	1.1	458	1.2			50	32	.808
AUG	1486	26.6	419	1.2	465	1.3			47	34	.916
SEPT	2073	40.2	405	1.2	449	1.3			46	34	.934
OCT	2758	60.1	404	1.3	451	1.8			48	34	1.080
NOV	1763	38.0	398	1.3	443	1.4			46	35	.961
DEC	4295	80.1	419	1.2	465	1.3			40	34	1.054
TOTAL	23451		4486		4981						11.189
AVG.		37.4		1.1		1.2			45	Min. 24	

BELLE RIVER

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	0	0	0	0	0	0	0	0	468		1.6	.6
FEB	0	0	0	0	0	0	0	0	0	549		2.0	.6
MAR	0	0	0	0	0	0	0	0	0	714		2.4	.6
APR	0	0	0	0	0	0	0	0	0	745		2.5	.7
MAY	0	0	0	0	0	0	0	0	0	1031		2.6	.6
JUNE	0	0	0	0	0	0	0	0	0	1075		2.8	.7
JULY	0	0	0	0	0	0	0	0	0	1023		2.5	.7
AUG	0	0	0	0	0	0	0	0	0	925		2.5	.7
SEPT	0	0	0	0	1	1	0	2	1	898		2.5	.7
OCT	0	0	0	0	2	2	0	4	2	781		2.6	.8
NOV	0	0	0	0	1	1	0	2	1	727		2.4	.9
DEC	0	0	0	0	1	1	0	2	1	768		2.0	.8
TOTAL	0	0	0	0	5	5	0	10	5	9704			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									26 pounds per day		2.3	.7

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	4	164	244	108	8	144	214	122	80 - 100
ALKALINITY in mg/l as $CaCO_3$	4	102	112	88	8	75.1	113.0	55.6	30 - 100
IRON in mg/l Fe	4	2.38	5.9	.53	8	.10	.12	.02	Less than 0.3
CHLORIDE in mg/l Cl^-	4	11.6	14.0	8.5	7	12.5	16.0	10.0	Less than 250
pH in pH units	338	7.7	8.4	6.6	373	7.0	7.9	6.8	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N	4	.290	1.140	.001	8	.001	.003	.001	
NITRATE in mg/l as N	4	.059	.159	.013	8	.86	1.81	.03	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in µg/l as C_6H_5OH									Less than 1

BLENHEIM

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	16.37	.53	.65	.94	1.1		.3	.7			1.1	1.1
FEB	14.94	.53	.65	.87	1.2		.3	1.2			1.1	1.7
MAR	14.10	.46	.52	.79	4.3		.2	.4			1.7	3.3
APR	13.95	.47	.55	1.30	16.0		.3	.8			6.1	8.3
MAY	15.83	.51	.62	1.10	3.4		.2	.4			8.9	15.6
JUNE	16.00	.53	.66	.95	3.3	5	.2	.4			13.3	16.1
JULY	16.10	.52	.65	.94	2.7	5	.3	2.7	5	5	16.1	20.0
AUG	15.80	.51	.61	.94	2.2	5	.3	.6	5	5	17.2	20.0
SEPT	15.75	.53	.60	.92	3.1	5	.3	1.1	5	5	20.0	21.7
OCT	14.50	.47	.55	.88	16.9	2	.3	.7	5	5	14.4	18.3
NOV	14.60	.48	.55	1.04	17.3	8	.3	.6	5	5	10.6	13.3
DEC	12.80	.41	.52	1.00	29.6	25	.8	2.7	5	5	2.2	6.1
TOTAL	180.74											
AVG.		.49	MAXIMUM .66	MAXIMUM 1.30	8.4	7	.3	MAXIMUM 2.7	5	MAXIMUM 5	9.3	MAXIMUM 21.7

BLENHEIM

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION			ALGAE
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		FLUOSILICIC ACID		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER	TOTAL RAW
	AMT. USED 10^3 lbs.	DOSAGE mg/l	AMT. USED pounds	DOSAGE mg/l	AMT. USED Pounds	DOSAGE mg/l	AMT. USED pounds	DOSAGE mg/l	hours	hours	mil. gallons	ASU/ml
JAN	1.9	10.8	605	3.5	151	.87	194	1.1	15	12	.525	935
FEB	1.5	10.0	561	3.7	140	.92	169	1.1	15	11	.535	1625
MAR	2.0	13.7	557	3.8	140	.97	164	1.1	13	11	.585	859
APR	4.1	28.5	561	3.8	141	.97	114	.8	14	11	.510	3223
MAY	2.1	13.1	605	3.7	152	.94	153	.9	15	11	.500	2978
JUNE	2.4	15.0	613	3.8	154	.96	155	.9	16	10	.480	609
JULY	2.6	16.0	620	3.8	155	.94	166	1.0	15	12	.550	2861
AUG	2.4	15.0	618	3.8	155	.10	182	1.1	15	11	.550	25380
SEPT	2.7	16.0	615	3.0	154	.10	172	1.1	16	12	.540	2269
OCT	3.8	26.5	578	3.9	144	.90	168	1.1	14	12	.745	13288
NOV	4.6	30.8	568	3.7	142	.90	167	1.1	15	13	.520	1869
DEC	6.8	48.3	522	3.7	130	.90	147	1.0	13	11	.625	4017
TOTAL	37.0		7023		1758		1951				6.665	
AVG.		19.7		3.7		.9		.8	15	Min. 10		1248

BLENHEIM

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMRER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	4	0	0	0	4	0	8	0	284	1.6		.8
FEB	0	3	1	0	0	4	0	8	0	241	1.6		.7
MAR	0	4	0	0	0	4	0	8	0	237	1.6		.7
APR	0	3	0	0	0	3	0	8	0	249	1.7		.6
MAY	0	4	0	0	0	4	1	7	0	294	1.8		.6
JUNE	0	3	0	0	0	4	0	8	0	311	1.9		.6
JULY	0	4	0	0	0	4	0	8	0	304	1.8		.6
AUG	0	3	1	0	0	4	0	8	1	308	1.9		.6
SEPT	1	3	0	0	0	4	0	4	0	326	2.0		.8
OCT	0	4	1	0	0	5	0	10	0	240	1.5		.7
NOV	0	4	0	0	0	4	0	8	0	229	1.5		.7
DEC	0	1	0	1	0	2	0	4	0	207	1.4		.8
TOTAL	1	40	3	1	0	46	1	89	1	3230			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									8 pounds per day	1.7		.6

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	46	134	172	118	40	125	172	112	80 - 100
ALKALINITY in mg/l as $CaCO_3$	46	98	103	89	40	87.9	227	69	30 - 100
IRON in mg/l Fe	44	.32	2.04	.012	40	.02	.16	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	54	19.4	23.0	18.0	40	21.0	24.0	19.5	Less than 250
pH in pH units	412	7.7	8.3	6.8	405	7.1	8.0	6.8	7.0 - 8.5
FLUORIDE in mg/l F^-	38	.1	.2	.1	38	.7	1.4	.1	Less than 1.2
AMMONIA in mg/l as N	34	.027	.085	.005					Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	35	.287	.560	.155					Less than 1.
NITRITE in mg/l as N	34	.003	.012	.001					
NITRATE in mg/l as N	34	.13	.27	0.01					Less than 10
TOTAL PHOSPHORUS in mg/l as P	32	.025	.094	.004					
CONDUCTIVITY in µmhos/cm	12	292	300	272					
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	7.02	.23	.27	.65							-1.7	1.1
FEB	6.75	.24	.39	.58	6.3	20	.35	.35	5	5	-1.1	-1.7
MAR	7.99	.26	.41	.52	40.0	50	.70	1.00	5	5	1.7	7.8
APR	8.67	.29	.46	.55	66.0	40	.57	2.00	5	5	8.9	17.8
MAY	10.74	.35	.49	.32	30.0	40	.09	.33	5	5	17.2	23.3
JUNE	11.68	.39	.58	.58	34.0	35	.25	2.1	5	5	20.0	23.3
JULY	13.61	.44	.62	.55	33.0	40	.26	1.1	5	5	24.4	28.3
AUG	13.78	.44	.65	.54	34.0	30	.23	.40	5	5	22.2	24.4
SEPT	15.39	.51	.67	.56	50.0	35	.29	.62	5	5	18.9	24.4
OCT	12.37	.40	.53	.66	40.9	50	.24	1.23	5	5	9.4	14.4
NOV	10.88	.36	.49	.46	33.0	20	.33	.57	5	5	5.6	12.2
DEC	10.06	.32	.37	.68	48.0	60	.35	.75	5	5	-1.1	1.1
TOTAL	128.94											
AVG.		.35	MAXIMUM .67	MAXIMUM .68	37.7	38	.33	MAXIMUM 2.1	5	MAXIMUM 5	10.4	MAXIMUM 28.3

DRESDEN

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		LIME		POT PERMANG.			
	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l
JAN	2.8	38.5	2.6	35.7	617	8.7	8.0	112.8				
FEB	5.3	77.6	3.2	46.2	760	11.3	9.2	135.8				
MAR	11.2	140.0	5.4	67.5	1312	16.2	9.3	116.2	85	.1		
APR	7.2	83.7	3.8	44.1	925	10.6	10.5	127.0	75	1.08		
MAY	4.7	43.9	3.4	30.8	832	7.7	10.6	99.0	75	.07		
JUNE	5.0	42.7	3.7	30.7	958	8.1	9.8	83.7	100	.08		
JULY	4.6	33.8	4.5	32.3	1091	8.0	11.1	81.6	145	.1		
AUG	6.9	50.0	4.6	33.3	1144	7.9	3.1	22.4	120	.08		
SEPT	12.5	81.1	5.8	37.6	1406	9.0	12.0	77.9	130	.08		
OCT	9.3	73.0	5.6	45.3	1349	10.9	7.3	59.4	110	.08		
NOV	4.9	45.3	3.7	34.2	898	8.2	4.7	43.5	85	.07		
DEC	5.3	53.0	4.1	41.0	998	9.9	4.8	4.8	70	.07		
TOTAL	79.7		50.4		12290		100.4		995			
AVG.		61.8		39.0		9.5		77.8		.07		

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	1	0	1	1	3	0	9	3	328		.5	.9
FEB	0	0	0	0	3	3	0	9	3	403		.6	1.0
MAR	0	0	1	0	3	4	0	12	4	369		.5	1.1
APR	0	1	1	0	2	4	0	12	4	401		.5	1.0
MAY	0	0	2	2	1	5	0	15	5	455		.4	1.0
JUNE	0	0	1	2	1	4	0	12	2	501		.4	1.0
JULY	0	0	0	2	2	4	0	13	4	657		.5	1.0
AUG	0	0	0	3	2	5	0	15	5	594		.4	1.1
SEPT	0	0	0	0	4	4	0	12	4	592		.4	1.1
OCT	0	0	0	0	2	2	0	6	2	499		.4	1.1
NOV	0	2	0	0	3	7	2	18	5	238		.2	1.0
DEC	0	0	0	0	3	3	1	7	3	183		.2	1.0
TOTAL	0	4	5	10	27	48	3	140	44	5220			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									14 pounds per day		.4	1.0

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	79	309	364	128	79	270	348	176	80 - 100
ALKALINITY in mg/l as $CaCO_3$	20	184	228	98	20	135	211	89.2	30 - 100
IRON in mg/l Fe	20	3.99	38.8	.48	20	.02	.07	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	20	17.1	27.0	9.0	20	19.3	32.0	10.5	Less than 250
pH in pH units	294	7.8	8.9	7.1	294	8.0	8.8	7.5	7.0 - 8.5
FLUORIDE in mg/l F^-	18	.1	.4	.1	18	.1	.1	0.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in μg/l as C_6H_5OH									Less than 1

ELGIN AREA (LAKE ERIE)

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	94.6	3.1	4.3	5.6	5.0	5	.20	.31	5	5	2	2
FEB	98.7	3.5	5.0	5.2	4.0	5	.16	.21	5	5	3	3
MAR	116.0	3.7	4.9	5.2	24.0	5	.21	.31	5	5	3	5
APR	116.6	3.9	5.3	5.2	46.0	40	.12	.20	5	5	7	9
MAY	132.6	4.3	5.7	7.4	14.0	5	.13	.17	5	5	11	13
JUNE	138.4	4.6	6.2	7.2	14.0	6	.14	.23	5	5	13	15
JULY	123.9	4.0	5.3	6.6	25.0	30	.11	.22	5	5	17	19
AUG	136.0	4.4	5.4	6.8	12.0	5	.13	.17	5	5	17	20
SEPT	130.2	4.2	5.7	6.7	37.0	10	.10	.15	5	5	19	21
OCT	140.0	4.5	5.3	5.2	62.0	30	.09	.13	5	5	14	17
NOV	128.0	4.3	5.4	5.0	57.0	15	.08	.16	5	5	11	13
DEC	126.3	4.1	5.4	5.0	116.0		.12	.32			4	6
TOTAL	1481.3											
AVG.		4.1	MAXIMUM 6.2	MAXIMUM 7.4	34.7	13	.13	MAXIMUM .32	5	MAXIMUM 5	10	MAXIMUM 21

ELGIN AREA (LAKE ERIE)

TREATMENT DATA

MONTH	FLOWS				
	CITY OF ST. THOMAS million gallons	FORD MOTOR CO. million gallons	PORT BURWELL million gallons	YARMOUTH TWP. million gallons	MALAHIDE TWP. million gallons
JAN	81.5	12.5	.534	0	0
FEB	85.7	12.4	.549	0	0
MAR	92.6	22.4	.553	.032	.249
APR	91.6	23.3	.591	0	0
MAY	104.4	27.1	.885	0	.293
JUNE	108.7	27.8	1.121	.071	.714
JULY	102.5	19.9	1.082	0	.398
AUG	99.4	33.8	2.195	0	.354
SEPT	94.1	34.7	.643	.052	.691
OCT	99.4	39.9	.611	0	0
NOV	91.8	35.0	.531	0	0
DEC	97.0	27.5	.655	.064	.411
TOTAL	1148.7	316.3	9.950	.219	3.110
AVG.					

ELGIN AREA (LAKE ERIE)

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		SODIUM SILICOFLUORIDE									
	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l
JAN	7.2	6.0	0	0								
FEB	6.6	6.0	1.0	.9								
MAR	15.3	13.0	1.6	.9								
APR	22.5	19.0	1.8	.9								
MAY	15.6	11.0	2.1	.9								
JUNE	17.0	11.0	2.2	.9								
JULY	17.1	14.0	1.8	.9								
AUG	3.0	1.1	2.2	.9								
SEPT	20.1	13.0	2.2	.9								
OCT	24.4	17.0	2.2	.9								
NOV	24.9	18.0	2.1	.9								
DEC	31.6	25.0	1.6	.9								
TOTAL	205.4		20.8									
AVG.		13.3		.9								

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft^2.	MAX. RATE gpm/ft^2	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN			62	50	2.99			16	4	
FEB			67	50	2.46			13	5	
MAR			63	48	3.45			18	5	
APR			64	53	3.13			16	4	
MAY			65	56	4.06			20	4	
JUNE			63	43	4.40			23	5	
JULY			66	53	3.79			19	4	
AUG			69	50	4.16			21	5	
SEPT			64	43	4.63			22	4	
OCT			69	45	3.80			18	4	
NOV			69	55	3.62			17	4	
DEC			65	55	3.70			17	4	
TOTAL					44.19					
AVG.			66	43				18	4	

ELGIN AREA (LAKE ERIE)

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	8	0	0	0	16	0	16	0	1.9	1.2	.6	.8
FEB	0	7	2	0	0	17	0	16	0	1.9	1.2	.6	.8
MAR	0	5	3	1	0	18	0	20	1	2.4	1.4	.6	.8
APR	0	5	2	0	0	16	0	14	0	2.2	1.4	.5	.8
MAY	1	8	0	0	0	18	1	18	1	2.8	1.4	.6	.8
JUNE	0	9	0	0	0	18	1	20	0	2.8	1.5	.7	.9
JULY	1	7	0	0	0	16	0	12	0	2.7	1.6	.7	.9
AUG	0	9	0	0	0	19	0	16	0	3.0	1.5	.8	.8
SEPT	0	7	2	0	0	17	1	17	0	3.4	1.5	.8	.9
OCT	1	2	6	0	0	17	0	17	1	3.0	1.4	.7	.9
NOV	1	3	4	0	0	16	0	25	6	2.7	1.4	.6	.9
DEC	0	2	2	3	1	14	0	33	7	2.4	1.4	.6	.9
TOTAL	4	72	21	4	1	202	3	224	16	31.1			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									.1 pounds per day	1.4	.7	.9

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	11	137	152	124	13	134	160	122	80 – 100
ALKALINITY in mg/l as $CaCO_3$	11	101	105	98	13	92	97	87	30 – 100
IRON in mg/l Fe	11	.49	1.80	.08	13	.02	.04	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	61	21.0	23.5	18.0	13	22.3	24.5	21.0	Less than 250
pH in pH units	376	7.9	8.4	7.1	378	7.4	7.7	6.1	7.0 – 8.5
FLUORIDE in mg/l F^-	12	.1	.2	.1	378	.9	1.5	.1	Less than 1.2
AMMONIA in mg/l as N	57	.046	.115	.005	11	.005	.010	0.005	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	50	.484	.890	.105	12	.163	.275	.090	Less than 1.
NITRITE in mg/l as N	50	.007	.090	.001	11	.002	.036	0.001	
NITRATE in mg/l as N	50	.19	.47	.01	11	.16	.39	.03	Less than 10
TOTAL PHOSPHORUS in mg/l as P	50	.041	.146	.012	12	.006	.023	.001	
CONDUCTIVITY in μmhos/cm	18	301	317	288					
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al	12	.77	2.2	.05	64	.16	.30	0.05	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	27.37	.88	.95	1.5	3.1	5	.20	.20	5	5	1	1
FEB	32.34	1.16	1.35	2.3	2.3	5	.50	1.50	5	5	1	1
MAR	32.83	1.06	1.28	2.3	10.7	5	1.00	2.00	5	5	1.5	5
APR	24.31	.81	.91	1.7	30.0		.40	.90			6	9
MAY	38.35	1.28	1.86	2.9	14.9	5	.30	.60	5	5	11	18
JUNE	35.60	1.19	1.79	2.8	5.8	5	.20	.50	5	5	13	19
JULY	39.78	1.28	1.64	3.1	11.3	20	.23	.55	5	5	19	24
AUG	28.64	.92	1.14	2.3	10.0		.30	1.00			20	22
SEPT	25.52	.85	1.03	1.5	11.0	10	.29	.70	5	5	18	22
OCT	24.37	.79	.88	2.0	19.0	15	.42	1.00	5	5	12	15
NOV	23.81	.79	.89	1.4	20.4	5	.33	.60	5	5	8	12
DEC	23.46	.76	.86	1.4	32.7		.40	.60			2	4
TOTAL	356.38											
AVG.		.97	MAXIMUM 1.86	MAXIMUM 3.1	14.3	6	.38	MAXIMUM 2.00	5	MAXIMUM 5	9.3	MAXIMUM 24

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		SODIUM SILICOFLUORIDE					
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l
JAN	813	16.9	876	2.8	221	.7	377	1.2				
FEB	538	10.0	542	1.5	137	.4	388	1.1				
MAR	749	13.3	709	1.9	179	.5	416	1.1				
APR	893	19.4	834	2.8	210	.7	344	1.1				
MAY	1242	19.2	917	2.1	231	.5	509	1.2				
JUNE	1174	19.6	626	1.6	158	.4	415	1.1				
JULY	1211	18.3					465	1.1				
AUG	909	17.5					216	.6				
SEPT	781	17.1					338	1.1				
OCT	885	19.6					325	1.1				
NOV	849	19.5	542	1.9	137	.5	290	1.0				
DEC	865	20.0	876	3.1	221	.8	300	1.1				
TOTAL	10909		5921		1494		4383					
AVG.		17.5		1.4		.3		1.0				

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft^2	MAX. RATE gpm/ft^2	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN	1.2	1.8	44	42	1.550	2.1				455
FEB	1.5	2.8	47	44	1.400	2.1				73
MAR	1.4	2.8	46	41	1.500	5.6				114
APR	1.1	1.8	41	39	1.550	8.0				428
MAY	1.7	3.4	42	20	1.600	2.8				1554
JUNE	1.6	3.4	40	25	1.600	1.6				545
JULY	1.7	3.7	45	40	1.300	1.3				3022
AUG	1.3	2.8	43	23	1.600	1.7				1696
SEPT	1.2	1.8	41	22	1.550	2.1				1816
OCT	1.1	2.5	41	22	1.750	4.7				1356
NOV	1.1	1.7	42	36	1.500	4.0				1598
DEC	1.1	1.7	43	39	1.550	7.8				1078
TOTAL					18.450					13735
AVG.	1.3	Max. 3.7	42	Min. 20		3.6				313

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	1	2	0	0	4	0	24	0	538	1.7		1.0
FEB	0	0	2	1	1	4	0	20	0	968	2.8		.9
MAR	0	0	0	0	3	4	0	20	0	924	2.5		1.0
APR	0	0	0	2	0	4	0	15	0	638	2.1		.9
MAY	0	0	2	0	0	4	0	20	0	737	1.8		1.0
JUNE	4	0	0	0	0	4	0	20	0	685	1.8		1.0
JULY	0	0	1	0	0	4	0	22	0	808	1.9		1.0
AUG	0	0	2	1	1	5	0	25	0	664	2.0		1.0
SEPT	0	0	4	0	0	4	0	20	0	603	2.0		1.0
OCT	0	1	0	2	1	5	0	25	0	675	2.3		1.0
NOV	0	0	2	2	0	4	0	20	0	526	1.9		1.0
DEC	0	0	0	1	0	1	0	5	0	521	1.8		1.0
TOTAL	4	2	15	9	6	47	0	236	0	8287			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									22 pounds per day	2.0		.9

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	16	115	156	98	22	121	168	2	80 - 100
ALKALINITY in mg/l as $CaCO_3$	16	92	118	75	22	80	111	70	30 - 100
IRON in mg/l Fe	15	.52	1.98	.13	22	.07	.42	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	54	9.6	22.0	5.5	22	11.8	24.5	7.5	Less than 250
pH in pH units	16	8.0	8.4	7.3	22	7.4	7.6	7.1	7.0 - 8.5
FLUORIDE in mg/l F^-	9	.1	.1	.1	21	.9	1.2	.6	Less than 1.2
AMMONIA in mg/l as N	44	.063	.625	.005					Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	44	.412	1.360	.120					Less than 1.
NITRITE in mg/l as N	44	.005	.025	.001					
NITRATE in mg/l as N	44	.62	3.52	.01	20	.43	1.63	.10	Less than 10
TOTAL PHOSPHORUS in mg/l as P	44	.052	.208	.006					
CONDUCTIVITY in µmhos/cm	16	258	379	216					
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

HARROW - COLCHESTER

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	8.60	.28	.34		1.5	5	.10	.40	5	5		
FEB	9.21	.33	.37		1.4	5	.07	.20	5	5		
MAR	7.64	.25	.36		3.3	5	.10	.75	5	5	4.4	8.3
APR	7.39	.24	.32		24.0	15	.10	.25	5	5	8.9	11.7
MAY	9.97	.32	.53		10.0	5	.07	.20	5	5	14.4	19.4
JUNE	10.22	.34	.52		16.0	30	.07	.11			19.4	23.3
JULY	10.57	.34	.52		47.0	30	.05	.10			24	25
AUG	9.59	.31	.52		24.0	50	.07	.09			23	25
SEPT	8.85	.30	.42		27.0	10	.07	.25	5	5	22	24
OCT	8.11	.26	.35		18.0	15	.07	.25	5	5	15	19
NOV	7.81	.26	.33		105.0	20	.10	1.00	5	5	9	12
DEC	8.01	.26	.30		29.0	10	.11	.45	5	5	2	4
TOTAL	105.97											
AVG.		.29	MAXIMUM .53	MAXIMUM	25.5	15	.08	MAXIMUM 1.00	5	MAXIMUM 5	14.2	MAXIMUM 25

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE				AVERAGE	MINIMUM	BACKWASH
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	RUN hours	RUN hours	WATER mil.gallons
JAN	299	25.2	486	6.3	125	1.6			44	12	.454
FEB	241	17.6	389	4.3	100	1.1			49	41	.329
MAR	172	14.3	389	5.0	100	1.3			45	39	.380
APR	250	21.3	361	4.8	91	1.2			43	29	.392
MAY	299	18.5	459	4.4	117	1.1			46	34	.520
JUNE	325	20.5	487	4.7	125	1.2			50	34	.429
JULY	358	21.4	598	5.5	100	.9			50	43	.421
AUG	312	20.5	389	3.9	100	1.0			49	44	.438
SEPT	325	21.9	389	4.0	100	1.0			56	54	.458
OCT	273	21.1	389	4.6	100	1.1			50	29	.470
NOV	286	24.1	389	5.0	100	1.3			36	38	.463
DEC	273	22.7	292	3.7	75	.9			54	49	.445
TOTAL	3413		5018		1233						5.199
AVG.		20.6		4.6		1.1			47	Min. 12	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	4	4	1	0	0	7	0	24	0	218	2.8	2.5	1.0
FEB		3	4	0	0	7	0	20	0	230	2.6	2.5	1.0
MAR	1	0	5	0	0	6	0	20	1	255	3.3	3.4	.9
APR	1	0	1	4	0	6	0	20	0	307	4.0	4.2	.9
MAY	1	0	4	2	0	7	0	24	0	518	4.9	5.2	.8
JUNE	0	2	1	3	0	6	0	20	0	610	5.9	6.0	.9
JULY	1	1	0	2	2	6	0	20	0	711	6.5	6.8	.9
AUG	0	2	2	3	1	7	0	24	0	636	6.4	6.6	.8
SEPT	0	2	0	3	1	6	0	20	0	571	5.9	6.4	.8
OCT	0	2	2	2	1	7	0	24	0	430	5.1	5.3	.9
NOV	0	0	0	3	3	6	0	20	0	308	4.0	3.9	.8
DEC	0	0	2	4	1	6	0	20	0	217	2.7	2.7	.9
TOTAL	8	14	22	26	9	77	0	236	1	5011			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									13 pounds per day	4.6	4.7	.8

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	10	125	148	112	16	121	142	68	80 - 100
ALKALINITY in mg/l as $CaCO_3$	10	90	101	86	16	76	88	48	30 - 100
IRON in mg/l Fe	10	1.4	1.5	.02	16	.04	.05	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	10	25	42	18	16	28	39	18	Less than 250
pH in pH units	10	7.9	8.3	7.6	16	7.5	7.7	7.1	7.0 - 8.5
FLUORIDE in mg/l F^-	10	.1	.1	.1	8	0.1	.1	0.1	Less than 1.2
AMMONIA in mg/l as N					4	.1	.1	.1	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N					6	.1	.2	.1	Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N					5	.3	.8	.1	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	1	295	295	295	7	302	330	295	
PHENOLS in µg/l as C_6H_5OH					5	1	3	1	Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

KENT COUNTY

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL RAW WATER million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	127.3	4.1	5.2		1.2						.6	.6
FEB	130.7	4.7	7.8		1.0						1.1	1.7
MAR	137.4	4.4	5.4		4.3						1.7	2.2
APR	130.5	4.4	5.3		18.0						5.6	7.8
MAY	147.6	4.8	7.3		3.0						8.3	11.7
JUNE	157.2	5.2	6.8		3.5						12.8	14.4
JULY	164.2	5.3	6.6		2.8						15.6	15.6
AUG	208.5	6.7	10.2									
SEPT	214.2	7.1			3.7						18.9	21.1
OCT	149.5	4.8	5.8		13.3						15.0	18.3
NOV	143.9	4.8	5.5		20.0						10.0	12.8
DEC	132.7	4.3	5.4		23.0						2.8	5.6
TOTAL	1843.7											
AVG.		5.0	MAXIMUM 10.2	MAXIMUM	8.5			MAXIMUM		MAXIMUM	8.9	MAXIMUM 21.1

KENT COUNTY

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN										1028	.80		.1
FEB										1017	.77		.1
MAR										1065	.77		.1
APR										909	.70		.1
MAY										1100	.75		.1
JUNE										1005	.64		.1
JULY										971	.59		.1
AUG										1132	.54		.1
SEPT										1142	.53		.1
OCT										1258	.84		.1
NOV										1191	.82		.1
DEC										1171	.74		.1
TOTAL										12989			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									35 pounds per day	.70		.1

LAKE HURON

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL RAW WATER million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	TOTAL PLANT OUTPUT million gallons	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	775	25.0	25.4	736.4	1.6	5	.6	.8			4	4
FEB	711	25.3	25.5	683.0	.9		.3	.5			3	4
MAR	781	25.1	25.2	738.3	9.5		.4	1.1			4	5
APR	800	26.6	25.6	734.6	24.1		.3	.5			7	10
MAY	997	32.1	36.5	903.5	11.9	7	.5	1.0			11	13
JUNE	1018	33.9	40.2	944.5	2.3	5	.8	1.3			15	19
JULY	949	30.6	34.4	875.0	2.6		.4	1.2			20	21
AUG	938	28.0	33.6	870.4	3.4	15	.2	.5			21	22
SEPT	864	28.8	32.6	807.0	3.4		.1	.4			20	22
OCT	812	26.1	26.2	766.2	7.7		.1	.3			14	18
NOV	785	29.5	25.6	743.7	10.4	5	.1	.5	5	5	10.6	13
DEC	742	22.5	25.2	697.5	10.6		.2	.4			4	7
TOTAL	10172			9500.1								
AVG.		27.8	MAXIMUM 40.2	MAXIMUM	7.3	7	.3	MAXIMUM 1.3	5	MAXIMUM 5	11.1	MAXIMUM 22

LAKE HURON WTP

FLOWS

MONTH	CITY OF LONDON TOTAL mil gal	CITY OF LONDON AVERAGE DAY mil gal/day	CITY OF LONDON MAXIMUM DAY mil. gal/day	TOWNSHIP OF BOSANQUET TOTAL mil. gal.	VILLAGE OF GRAND BEND TOTAL mil. gal.	TOWN OF PARKHILL TOTAL mil gal	TOWNSHIP OF LONDON (ILDERTON) TOTAL mil. gal.	VILLAGE OF AILSA CRAIG * TOTAL mil. gal.	TOWNSHIPS OF STEPHEN AND McGILLIVRAY TOTAL mil. gal	CRAIGWOOD SCHOOL (EAST WILLIAMS) mil. gal.
JAN	728.5	23.5	25.2	.277	2.47	3.16	1.007	.811	0	.140
FEB	669.0	23.9	25.1	.243	2.85	3.05	1.021	.727	5.93	.105
MAR	726.9	23.4	25.1	.298	2.81	3.40	.930	.813	2.85	.120
APR	726.1	24.2	25.4	.582	2.95	3.21	.780	.840	0	.121
MAY	881.3	28.4	36.1	2.538	6.17	4.86	1.412	1.272	5.72	.157
JUNE	919.1	30.6	40.0	2.094	6.58	5.55	1.359	1.281	8.40	.139
JULY	859.1	27.7	34.2	2.748	6.67	4.07	1.094	1.116	0	.093
AUG	849.5	27.4	33.2	3.144	5.39	3.55	1.037	.936	6.73	.106
SEPT	784.1	26.1	32.3	2.943	4.26	2.67	.834	2.200	9.70	.263
OCT	756.0	24.4	25.2	1.086	3.24	2.93	.896	1.961	0	.270
NOV	729.8	24.3	25.2	.592	2.69	2.64	.902	.893	5.93	.314
DEC	685.8	22.1	25.0	.336	2.91	2.61	.846	.896	3.74	.302
TOTAL	9315.4			16.881	48.99	41.70	12.118	13.746	49.00	2.130
AVG.		25.5	40.0							

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		POLYMER CALGON CAT FLOC 'T'		POLYMER SEPARAN							
	AMT. USED 10^3 Gal.	DOSAGE mg/l	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l
JAN	0		154	.19								
FEB	0		141	.20								
MAR	11.7	15.8	108	.25								
APR	15.0	12.9			138	.10						
MAY	9.8	11.0	328	.78								
JUNE			513	.47								
JULY	15.4	15.4	158	.46								
AUG	28.7	18.8										
SEPT	24.0	16.7										
OCT	17.2	13.8										
NOV	12.2	10.1										
DEC	11.4	10.3										
TOTAL	145.4		1402									
AVG.		13.8		.37	138							

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft^2.	MAX. RATE gpm/ft^2	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN			60	60	28.72			143	3.0	1421
FEB			60	60	20.77			123	1.4	147
MAR			40	7	44.05			268	4.3	1002
APR			34	14	55.75			284	6.6	2830
MAY			32	6	66.80			365	7.4	7140
JUNE			24	10	54.80			337	7.9	4286
JULY			34	15	52.28			312	7.0	1941
AUG			23	16	48.66			339	8.0	3393
SEPT			27	19	41.52			301	8.0	1624
OCT			33	20	37.07			244	8.0	3492
NOV			33	24	34.50			208	8.0	3121
DEC			31	22	36.60			207	8.0	2354
TOTAL					521.52			3131		
AVG.			35	Min. 6					6.4	642

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	19	0	1	0	0	22	0	66	0	12.3	1.5		1.1
FEB	17	2	3	0	0	34	0	78	0	10.4	1.4		1.0
MAR	13	3	2	0	0	30	0	60	1	13.4	1.7		1.0
APR	18	1	2	0	0	34	0	51	0	12.3	1.6		1.1
MAY	18	0	0	0	0	36	0	61	0	16.4	1.6		1.0
JUNE	18	0	0	0	0	36	0	54	0	17.4	1.6		1.0
JULY	19	1	0	0	0	32	0	52	0	14.9	1.5		1.0
AUG	21	1	1	0	0	36	0	72	1	14.8	1.5		1.1
SEPT	13	2	3	0	0	36	0	65	0	14.5	1.5		1.1
OCT	18	2	2	0	0	34	1	56	1	13.6	1.6		1.1
NOV	17	3	1	1	0	36	0	56	0	12.4	1.6		1.0
DEC	14	4	1	1	0	28	0	56	0	10.8	1.5		1.0
TOTAL	205	19	13	2	0	404	1	727	3	163.2			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									.4 pounds per day	1.6		1.0

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	3	106	112	102	3	115	118	112	80 – 100
ALKALINITY in mg/l as $CaCO_3$	3	84	88	81	3	81	83	77	30 – 100
IRON in mg/l Fe	11	.10	.30	.04	368	.02	.06	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	48	7.0	18.5	5.0	3	7.0	8.0	6.0	Less than 250
pH in pH units	380	7.8	8.3	6.6	367	7.4	8.1	7.1	7.0 – 8.5
FLUORIDE in mg/l F^-	3	.1	.2	0.1	3	0.1	0.1	0.1	Less than 1.2
AMMONIA in mg/l as N	48	.040	.160	0.005	3	.005	.005	.005	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	49	.464	1.23	.060	3	.116	.120	.095	Less than 1.
NITRITE in mg/l as N	49	.003	.011	.001	3	0.004	0.007	0.001	
NITRATE in mg/l as N	49	.39	2.8	.01	2	.36	.48	.25	Less than 10
TOTAL PHOSPHORUS in mg/l as P	48	.024	.056	.007	2	.007	.012	.001	
CONDUCTIVITY in μmhos/cm	21	220	246	180	2	233	250	217	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}					1	300	300	300	

LAMBTON AREA

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	323.5	10.4	11.3	17.0	.6		.2	.3			2.2	2.2
FEB	299.3	10.6	14.5	22.8	.5		.2	.3			1.7	2.2
MAR	312.6	10.1	10.9	19.0	1.4		.2	.5			3.3	3.3
APR	318.9	10.6	12.9	23.5	2.0		.3	.6			5.0	7.8
MAY	559.7	18.1	26.9	45.0	2.6	2	.6	.4			11.1	14.4
JUNE	588.2	19.6	30.4	46.0	1.5	10	.4	.6			15.6	17.2
JULY	560.3	18.1	24.2	38.4	1.2		.3	.6			19	20
AUG	491.5	15.9	22.1		.7	5	.2	.4			22	22
SEPT	405.9	13.5	19.6		1.2		.2	.4			19	28
OCT	328.0	10.6	11.6	15.0	3.8		.2	.8			13	18
NOV	318.0	10.6	12.2	15.0	2.0		.2	.3			6	7
DEC	319.1	10.3	10.9	15.0	2.8		.2	.4			2	4
TOTAL	4825.0											
AVG.		13.2	MAXIMUM 30.4	MAXIMUM 46.0	1.7	6	.2	MAXIMUM .8		MAXIMUM	10	MAXIMUM 28

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION			ALGAE
	ALUM		HYDORFLUOSILICIC A.						AVERAGE RUN	MINIMUM RUN	BACKWASH WATER	TOTAL RAW
	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons	ASU/ml
JAN	32.4	8.5	10.9	2.9					45	35	21.4	2927
FEB	37.2	11.1	9.8	2.9					41	37	21.5	1490
MAR	27.1	8.2	10.5	3.2					45	27	21.9	3680
APR	12.6	3.8	11.6	3.5					48	39	28.8	3507
MAY	28.4	4.5	23.0	3.6					31	12	56.6	5580
JUNE	14.4	2.2	32.1	4.9					32	16	40.2	2215
JULY	.9	.2	19.8	3.2					40	31	29.1	2013
AUG	.6	.1	19.2	3.6					59	49	23.7	1047
SEPT	39.2	7.8	16.6	3.3					50	43	21.0	1476
OCT	35.3	8.3	12.6	3.0					43	31	27.4	1620
NOV	.5	1.5	12.1	3.5					44	25	27.5	2425
DEC	19.4	6.0	12.0	3.7					56	38	23.7	1231
TOTAL	248.0		190.2								342.8	
AVG.		4.6		3.5					44	Min. 12		835

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	4	3	0	0	0	33	2	20	1	4.2	1.1		.8
FEB	4	2	0	0	0	30	2	15	0	3.7	1.1		.7
MAR	6	2	0	0	0	33	2	14	0	4.0	1.3		.7
APR	4	1	0	0	0	31	1	8	0	4.5	1.4		.7
MAY	5	3	0	0	0	32	2	19	1	8.1	1.3		.7
JUNE	4	2	0	0	0	32	1	15	1	8.8	1.4		.6
JULY	5	1	0	0	0	35	0	32	7	9.0	1.5		.6
AUG	4	1	0	0	0	35	0	16	3	8.1	1.5		.6
SEPT	5	2	0	0	0	33	1	18	0	6.9	1.4		.7
OCT	3	3	0	0	0	36	3	19	2	5.5	1.3		.8
NOV	3	3	1	0	0	37	2	16	2	4.5	1.4		.7
DEC	6	2	0	0	0	33	1	22	2	3.9	1.2		.6
TOTAL	53	25	1	0	0	400	17	214	19	71.2			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									200 pounds per day	1.3		.6

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	14	102	120	96	7	104	120	98	80 - 100
ALKALINITY in mg/l as $CaCO_3$	14	81	86	76	7	79	83	76	30 - 100
IRON in mg/l Fe	13	.06	.16	0.01	7	.01	.06	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	31	5.9	7.0	5.0	7	7.0	7.5	6.5	Less than 250
pH in pH units	379	8.2	8.9	7.2	372	7.7	8.9	6.3	7.0 - 8.5
FLUORIDE in mg/l F^-	10	.1	.2	0.1	370	.85	8.6	.15	Less than 1.2
AMMONIA in mg/l as N	29	.011	.050	.005					Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	27	.171	.445	.095					Less than 1.
NITRITE in mg/l as N	29	.002	.004	.001					
NITRATE in mg/l as N	29	.23	.32	.024					Less than 10
TOTAL PHOSPHORUS in mg/l as P	27	.009	.026	.003					
CONDUCTIVITY in µmhos/cm	5	203	210	195					
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	BACKWASH WATER million gallons	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	28.9	.93	1.17	.90	1.3	5	.6	4.2	5	5	.6	1.1
FEB	28.9	1.03	1.32	.69	1.0	5	.5	.5	5	5	-.6	-.6
MAR	30.3	.98	1.16	.91	2.4	5	1.2	7.6	5	5	.6	1.7
APR	27.7	.92	1.07	.99	2.8	10	1.0	6.9	5	5	2.2	3.9
MAY	37.0	1.19	1.71	.93	1.2	5	.6	2.1	5	5	5.6	8.9
JUNE	37.0	1.23	1.77	1.01	1.0	5	.5	.5	5	5	10.6	15.6
JULY	26.6	.86	1.04	.78	1.0	5	.5	.5	5	5	18.9	20.0
AUG	26.6	.85	1.04	.78	1.0	5	.5	.8	5	5	17.8	20.0
SEPT	25.7	.86	1.02	.82	1.1	5	.5	2.0	5	5	16.7	20.0
OCT	25.6	.86	1.03	.80	1.6	5	.7	3.7	5	5	12.2	13.9
NOV	25.2	.84	1.04	.64	1.4	5	.6	2.0	5	5	6.7	11.7
DEC	24.9	.80	.96	.89	2.8	5	1.1	5.0	5	5	3.3	7.2
TOTAL	344.4			10.14								
AVG.		.94	MAXIMUM 1.77	MAXIMUM	1.5	5	.6	MAXIMUM 7.6	5	MAXIMUM 5	7.8	MAXIMUM 20.0

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AVERAGE RUN hours	MINIMUM RUN hours	BACKWASH WATER mil. gallons
JAN									24	23	.895
FEB									24	23	.693
MAR									24	23	.905
APR									24	23	.985
MAY									24	23	.925
JUNE									24	23	1.010
JULY									24	23	.780
AUG									24	23	.780
SEPT									24	23	.815
OCT									24	23	.800
NOV									24	23	.637
DEC									24	23	.885
TOTAL											10.110
AVG.									24	Min. 23	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	1	2	1	0	12	0	18	0	293		1.0	.5
FEB	0	2	2	0	0	11	0	16	0	281		1.0	.5
MAR	0	2	1	1	0	8	0	20	0	289		1.0	.4
APR	0	1	0	1	2	9	0	19	0	270		1.0	.4
MAY	0	5	0	0	0	10	0	25	0	368		1.0	.5
JUNE	0	4	0	0	0	8	0	20	0	341		.9	.4
JULY	0	3	1	0	0	8	0	18	0	315		1.1	.4
AUG	0	2	0	2	1	10	0	25	0	315		1.1	.3
SEPT	0	1	2	1	0	9	0	19	0	308		1.1	.3
OCT	0	1	2	2	0	13	0	21	0	327		1.2	.3
NOV	0	1	1	2	0	10	0	18	0	301		1.2	.2
DEC	0	1	1	1	0	6	0	15	0	271		1.1	.6
TOTAL	0	24	12	11	3	105	0	238	0	3679			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									10 pounds per day		1.1	.4

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	12	94	106	86	12	93	102	88	80 - 100
ALKALINITY in mg/l as $CaCO_3$	12	75	84	71	12	74	77	70	30 - 100
IRON in mg/l Fe	12	.18	.71	.02	12	.05	.18	.001	Less than 0.3
CHLORIDE in mg/l Cl^-	12	4.8	5.5	4.5	12	5.5	6.0	5.0	Less than 250
pH in pH units	12	7.9	8.3	7.4	12	7.9	8.1	7.6	7.0 - 8.5
FLUORIDE in mg/l F^-	11	0.1	.1	0.1	11	0.1	2.1	0.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N	10	.25	.31	.21	10	.25	.30	.20	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in µg/l as C_6H_5OH									Less than 1

MITCHELL'S BAY

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	.186	.006	.011		1.5	5	.5	.6	5	5	6.1	6.7
FEB	.227	.008	.153		1.9	5	.6	1.0	5	5	5.0	5.6
MAR	.174	.006	.007		40.0	30	1.1	1.6	5	5	5.6	5.6
APR	.234	.008	.012		31.0		.8	1.0	5	5	8.3	11.1
MAY	.477	.015	.030		13.0	8	.6	1.0	5	5	15.6	18.9
JUNE	.573	.019	.031		8.8	5	.5	.8	5	5	17.2	22.2
JULY	.774	.025	.037		12.0	10	.9	1.5	5	5	22.8	24.4
AUG	.643	.020	.026		10.0		1.1	1.3			23.3	23.9
SEPT	.386	.012	.026		9.0	10	.9	.9	5	5		
OCT	.269	.009	.017		6.9	20	1.1	2.0	5	5	14.4	16.1
NOV	.192	.006	.013		14.4	12	.7	1.2	5	5	12.8	14.4
DEC	.172	.006	.008		33.5		.8	1.0			7.8	11.7
TOTAL	4.307											
AVG.		.011	MAXIMUM .153	MAXIMUM	15.1	9	.8	MAXIMUM 2.0	5	MAXIMUM 5	12.6	MAXIMUM 24.4

MITCHELL'S BAY

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lbs.	DOSAGE mg/l	AMT. USED lbs.	DOSAGE mg/l	AMT. USED lbs.	DOSAGE mg/l	hours	hours	mil. gallons
JAN	13	43.8					1	.5	1.5	.5	.021
FEB									2.0	1.0	.024
MAR			10	.6	3.5	2.0	1.5	.08	1.6	.8	.036
APR	35	97.2			.8	.3			2.3	1.0	.021
MAY	35	47.6	4	.8	4.3	.9			3.0	1.3	.021
JUNE	25	28.3	17	2.9	4.4	.7	7	1.2	2.4	1.5	.012
JULY	17	14.2									.015
AUG	15	15.1					6	.9	2.7	1.8	.009
SEPT	10	16.8							2.2	1.2	.014
OCT	17	41.0							2.6	1.5	.011
NOV	10	33.8	4	2.0			4	2.0	2.2	.8	.008
DEC	14	52.9	4	2.3			2	1.1	1.6	1.2	.012
TOTAL	191		39		13.0		21.5				.204
AVG.		28.8		.9		.3		.4	2.1	Min. .5	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	2	2	0	0	0	0	0	4	2	7	.3		.9
FEB	1	1	0	0	0	0	0	2	0				.8
MAR	0	2	1	0	0	0	0	9	3	13	.6		1.0
APR	0	0	0	0	0	0	0	0	0	13	.6		1.2
MAY	0	0	1	0	0	0	0	0	0	21	.4		1.0
JUNE	0	0	0	1	0	0	0	3	1	21	.4		.8
JULY	0	0	0	1	0	0	0	3	1	49	.6		1.0
AUG	0	0	0	0	0	0	0	0	0	35	.5		.9
SEPT	0	0	0	0	1	0	0	3	1	28	.7		.9
OCT	0	0	0	0	1	0	0	3	1	20	.7		1.0
NOV	0	0	0	2	0	0	0	6	2	4	.2		.7
DEC	0	0	0	0	0	0	0	0	0	6	.3		.8
TOTAL	3	5	2	4	2	0	0	33	11	217			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									.5 pounds per day	.4		.9

MITCHELL'S BAY

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	12	132	176	106	11	127	162	106	80 - 100
ALKALINITY in mg/l as $CaCO_3$	10	97	107	85	9	74	103	70	30 - 100
IRON in mg/l Fe	12	.67	1.74	.06	11	.11	.59	.04	Less than 0.3
CHLORIDE in mg/l Cl^-	12	13.2	19.5	9.0	11	15.2	20	12	Less than 250
pH in pH units	12	7.9	8.4	7.3	11	7.6	8.0	7.3	7.0 - 8.5
FLUORIDE in mg/l F^-	10	0.1	.2	0.1	9	0.1	.1	0.1	Less than 1.2
AMMONIA in mg/l as N	2	.045	.095	0.005					Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N					2	.055	.015	.055	Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al	59	3	3	3					

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	12.33	.39	.43		.5	5	.5	1.8	5	5	1	1
FEB	12.13	.43	.49		1.3	5	.7	.7	5	5	1	1
MAR	12.61	.41	.57		1.0	5	1.1	9.2	5	5	1	1
APR	12.31	.41	.49		2.4	5	.5	2.0	5	5	2.4	5
MAY	20.00	.65	1.06		1.2	5	1.0	1.0	5	5	7.8	13
JUNE	20.57	.69	1.02		.2	5	.2	2.3	5	5	12	17
JULY	23.64	.76	1.06		.5	5	.5	3.4	5	5	19.5	22
AUG	17.07	.55	.65		2.9	5	.9	8.0	5	5	19	20
SEPT	15.33	.51	.72		6.3	10	.5	.9	5	5	18	20
OCT	14.81	.48	.56		3.0	20	19.4	20.0	15	20	11	15
NOV	12.90	.43	.57		6.7	5	.7	5.6	5	5	8	12
DEC	13.20	.43	.51		9.3	10	.6	3.4	5	5	2.2	5
TOTAL	186.90											
AVG.		.51	MAXIMUM 1.06	MAXIMUM	3.4	6.6	.76	MAXIMUM 20.0	5	MAXIMUM 20	9.0	MAXIMUM 22

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	DIATOMACEOUS EARTH								AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED pounds	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	400								1.5	1.5	.020
FEB											
MAR	7450								1.3	.3	.380
APR	700								1.8	.8	.060
MAY	2500								1.8	.8	.200
JUNE											
JULY											
AUG	400								1.5	1	.050
SEPT	6850										.190
OCT	6100								7.5		.140
NOV	1100								1.5	2	.004
DEC	2150								1	1	.120
TOTAL	27650										1.064
AVG.									1.4	Min. .3	

SOUTHAMPTON

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	4	0	0	0	4	0	9	4	149	1.2		.9
FEB	0	3	0	0	0	3	0	9	2	132	1.0		.8
MAR	0	5	0	0	0	6	2	15	3	184	1.5		.9
APR	0	4	0	0	0	4	0	10	2	157	1.3		1.0
MAY	0	4	0	0	0	4	0	10	2	230	1.1		.9
JUNE	0	5	0	0	0	4	0	11	2	247	1.2		.9
JULY	3	4	1	0	0	5	0	10	3	275	1.6		.9
AUG	0	5	0	0	0	5	0	16	4	239	1.4		.9
SEPT	1	7	0	0	0	4	0	12	5	269	1.7		.9
OCT	0	7	2	1	0	4	0	14	5	270	1.8		1.0
NOV	0	9	0	0	0	9	1	17	5	221	1.7		1.0
DEC	0	3	0	0	0	3	0	12	3	195	1.4		.8
TOTAL	4	60	3	1	0	52	3	145	42	2568			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									7.0 pounds per day	1.4		.9

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	13	134	208	92	12	135	238	96	80 - 100
ALKALINITY in mg/l as $CaCO_3$	13	102	165	74	13	106	185	73	30 - 100
IRON in mg/l Fe	13	.40	1.44	.07	13	.13	.68	.02	Less than 0.3
CHLORIDE in mg/l Cl^-	13	6.8	10.0	5.5	13	7.5	9.5	6.5	Less than 250
pH in pH units	13	7.9	8.3	7.5	13	7.9	8.2	7.4	7.0 - 8.5
FLUORIDE in mg/l F^-	13	0.1	.1	0.1	13	.1	.1	.1	Less than 1.2
AMMONIA in mg/l as N	9	.012	.035	0.005	13	.011	.035	.005	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N	13	.33	.58	.22	13	.34	.73	.22	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
SOLUBLE PHOSPHORUS in mg/l as P									
PHENOLS in μg/l as C_6H_5OH									Less than 1

UNION

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	133.6	4.31	5.65	7.77	1.0	5	.30	.6	5	5	1	1
FEB	146.8	5.24	6.26	9.21	1.6	5	.50	1.5	5	5	1	1
MAR	150.0	4.84	5.83	9.94	7.0	5	.60	1.1	5	5	2	3
APR	151.0	5.03	6.57	9.28	28.3	5	.50	.9	5	5	6	9
MAY	192.3	6.20	10.90	14.18	5.4	5	.30	.9	5	5	14	20
JUNE	227.6	7.59	10.70	14.47	8.2	5	.04	1.0	5	5	20	20
JULY	241.9	7.80	10.48	14.40	8.4	5	.19	.9	5	5	23	24
AUG	221.6	7.15	11.23	14.40	6.8		.20	.8	5	5	23	24
SEPT	191.1	6.37	8.15	11.52	11.5	10	.20	.8	5	5	20	22
OCT	167.3	5.39	6.73	10.22	22.0	5	.27	.8	5	5	12	19
NOV	162.3	5.41	6.65	9.07	23.2	8	.51	1.9	5	5	7	10
DEC	131.5	4.24	5.79	8.06	25.4	5	.30	3.0	5	5	.7	5
TOTAL	2117.0											
AVG.		5.79	MAXIMUM 11.23	MAXIMUM 14.47	12.4	6	.32	MAXIMUM 3.0	5	MAXIMUM 5	11	MAXIMUM 24

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		ACTIVATED CARBON		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 Gal	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	hours	hours	mil. gallons
JAN	3.6	17.4	3.7	2.8	840	.6	0	0			4.1
FEB	2.9	13.2	3.5	2.5	798	.6	0	0			3.5
MAR	4.7	25.1	4.8	3.4	1092	.8	0	0			3.7
APR	6.4	29.7	6.1	4.4	1386	1.0	0	0			2.9
MAY	9.0	29.0	7.2	3.5	1764	.9	330	.16			5.9
JUNE	7.5	22.9	7.6	3.6	1848	.9	300	.14			3.0
JULY	9.0	27.4	7.1	3.3	1782	.8	605	.28			4.6
AUG	8.4	26.7	5.4	2.6	1218	.6	605	.30			3.4
SEPT	7.1	26.1	4.3	2.4	966	.5	715	.40			3.6
OCT	6.3	25.0	4.5	3.1	1008	.7	275	.10			3.1
NOV	6.6	28.4	4.4	2.9	1008	.6					2.7
DEC	6.1	18.8	3.7	1.7	840	.3					2.9
TOTAL	77.6		62.3		14550		2830				43.4
AVG.		25.2		3.1		.7		.1			

UNION

TREATMENT DATA

MONTH	ALGAE									
	TOTAL		BLUE-GREENS		GREENS		FLAGELLATES		DIATOMS	
	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml
JAN	3341	181	180	36	90		335		2736	145
FEB	4089	89	128		165	15	1744	21	2052	53
MAR	8863	880			33	11	3906	520	4890	312
APR	10868	967	150		148	31	584	255	9986	681
MAY	15542	1277	118	99	275	17	48		15101	1161
JUNE	14008	2232	550	276	2952	195			10506	1761
JULY	41919	2905	368	160	1906	397	1173	36	37472	2312
AUG	27764	3644	2492	396	4229	569	231	31	20202	2648
SEPT	16294	2368	1713	395	2445	273			8276	5560
OCT	17687	4910	1237	331	2093	252	85		14272	3508
NOV	13299		639		572		71		12017	
DEC	14224	4027	510	230	867	71	295		12552	3726
TOTAL										
AVG.	3545	1021	217	109	316	108	303	144	2886	951

UNION

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	1	0	0	0	1	0	13	0	1.7	1.2	1.2	.5
FEB	0	1	0	0	0	1	0	2	1	2.1	1.4	1.4	.5
MAR	0	2	0	0	0	2	0	4	2	2.3	1.6	1.5	.5
APR	0	1	0	0	0	1	0	2	1	2.7	1.9	1.7	.5
MAY	0	1	0	0	0	1	0	2	1	4.9	2.4	2.5	.5
JUNE	0	1	0	0	0	1	0	2	0	6.2	2.9	2.7	.5
JULY	0	2	0	0	0	2	0	4	2	9.2	4.2	3.7	.5
AUG	1	1	1	0	1	4	0	20	3	7.9	3.8	3.5	.5
SEPT	0	1	1	0	0	2	0	4	2	6.7	3.7	3.5	.5
OCT	0	1	0	2	0	3	0	17	2	4.2	2.9	2.5	.5
NOV	0	1	0	0	0	1	0	2	1	3.0	2.0	1.8	.5
DEC	0	0	0	0	2	2	0	4	2	2.4	1.8	1.8	.5
TOTAL	1	13	2	2	3	21	0	76	17	53.3			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									146 pounds per day	2.6	2.5	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	26	124	164	108	25	121	138	110	80 - 100
ALKALINITY in mg/l as $CaCO_3$	29	88	97	78	25	75	89	69	30 - 100
IRON in mg/l Fe	12	.23	.64	.02	25	.05	.19	0.01	Less than 0.3
CHLORIDE in mg/l Cl^-	37	20.0	25.5	16.5	25	22.1	28.0	18.5	Less than 250
pH in pH units	27	7.9	8.4	7.1	25	7.4	7.7	7.2	7.0 - 8.5
FLUORIDE in mg/l F^-	19	0.1	.1	0.1	21	0.1	.1	0.1	Less than 1.2
AMMONIA in mg/l as N	39	.022	.055	0.005					Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	36	.312	.620	.145					Less than 1.
NITRITE in mg/l as N	39	.005	.015	0.001	25	0.001	.002	0.001	
NITRATE in mg/l as N	39	.26	.55	.01	25	.28	.80	.08	Less than 10
TOTAL PHOSPHORUS in mg/l as P	37	.030	.090	.012					
CONDUCTIVITY in μmhos/cm	13	275	289	258					
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

FLOWS

PROJECT WATFORD, WYOMING & PLYMPTON

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	5.80	.17	.104	
FEB	6.13	.22	.262	
MAR	5.91	.19	.133	
APR	5.67	.19	.214	
MAY	7.64	.25	.630	
JUN	8.38	.28	.220	
JUL	6.68	.22	.247	
AUG	6.77	.22	.181	
SEP	6.32	.21	.163	
OCT	6.60	.21	.228	
NOV	5.65	.20	.266	
DEC	5.69	.18	.151	
TOTAL	77.54	/////	/////	/////
AVG.	/////	.21	/////	/////
MAX.	/////	/////	.630	

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	/////	/////		

REGION 2

WEST CENTRAL

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	288.3	9.30	9.5				4.8	11.0	5	5	0	0
FEB	268.3	9.58	11.1				1.9	2.8	5	5	0	0
MAR	285.3	9.20	10.5				34.5	145.0			2	3
APR	267.6	8.92	10.7				19.6	52.0	10	15	5	9
MAY	320.5	10.34	11.8				4.6	10.1	8	10	9	14
JUNE	172.5	5.57	10.1				6.2	23.1			14	17
JULY	251.6	8.12	11.9				9.1	30.8			20	23
AUG	344.5	11.11	12.0				6.1	19.3	10	10	23	24
SEPT	313.0	10.43	10.9				11.9	13.0	5	5	22	26
OCT	317.6	10.24	10.9				19.1	21.0	4	6	14	18
NOV	279.1	9.30	11.13				18.1	34.4			10	14
DEC	310.6	10.02	10.48				56.9	86.0	10	10	3	5
TOTAL	3418.9											
AVG.	284.9	9.37	MAXIMUM 12.0	MAXIMUM			16.1	MAXIMUM 145.0	7	MAXIMUM 15	10	MAXIMUM 26

DUNNVILLE

TREATMENT DATA

MONTH	ALGAE									
	TOTAL		BLUE-GREENS		GREENS		FLAGELLATES		DIATOMS	
	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml	RAW ASU/ml	TREATED ASU/ml
JAN.	1530		38		104		54		1362	
FEB	971		20		24		659		268	
MAR	732		44		115		414		74	
APR	923		45		7		52		819	
MAY										
JUNE	640		32		35		52		640	
JULY	832		63		204		5		560	
AUG	1578		397		410		265		605	
SEPT	2239		243		788		509		911	
OCT	2216		264		251		164		1537	
NOV	1719		160		299		77		1218	
DEC	1015		104		211				709	
TOTAL										
AVG.	1309		128		223		225		791	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMRER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN		3						9	0	2.9		1.0	.5
FEB		1	1	1	1			12	0	2.4		.9	.5
MAR				1	3			10	2	3.3		1.1	.5
APR			1	2				9	0	2.8		1.0	.5
MAY			1	2	2			13	2	3.4		1.1	.5
JUNE			1	1				6	0	2.2		1.3	.5
JULY				2	1			9	0	3.0		1.2	.5
AUG			1	2	1			12	0	3.9		1.1	.5
SEPT			3		1			12	0	3.8		1.2	.5
OCT			1	1	1			9	0	3.8		1.2	.5
NOV				2	1			17	1	3.0		1.1	.5
DEC				3				9	0	4.1		1.3	.5
TOTAL		4	9	17	11			127	5	38.6			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									106 pounds per day		1.1	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER * OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER * OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	21	139	164	129	21	139	164	129	80 - 100
ALKALINITY in mg/l as $CaCO_3$	18	103	120	98	18	103	120	98	30 - 100
IRON in mg/l Fe	21	.34	2.10	.04	21	.34	2.10	.04	Less than 0.3
CHLORIDE in mg/l Cl^-	21	24	28	20	21	24	28	20	Less than 250
pH in pH units	21	8.2	8.4	7.8	21	8.2	8.4	7.8	7.0 - 8.5
FLUORIDE in mg/l F^-	19	.1	.8	.1	19	.1	.8	.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	21	314	375	295	21	314	375	295	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

* Both raw and treated represented by same samples.

REGION 3

CENTRAL

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	0.78	.025	.033		.9	15	.25	.25	10	10		
FEB	1.01	.036	.054									
MAR	1.25	.040	.054									
APR	0.87	.029	.045		3.4	30	.80	.80	15	15		
MAY	1.90	.061	.130									
JUNE	2.00	.067	.111		2.5	20	.33	.33	10	10		
JULY	2.73	.088	.128		1.5	20	.22	.22	5	5		
AUG	1.44	.046	.069		2.7	20	.45	.45	5	5		
SEPT	1.10	.037	.062									
OCT	.72	.023	.035		1.7	15	.33	.33	5	5		
NOV	.61	.020	.043									
DEC	.62	.020	.028									
TOTAL	15.03											
AVG.	1.25	.041	MAXIMUM .130	MAXIMUM	2.1	20	.40	MAXIMUM .80	8	MAXIMUM 15		MAXIMUM

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	DIATOMACEOUS EARTH		ACTIVATED CARBON						AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	317	39							456	408	.008
FEB	344	34							744	288	.008
MAR	417	32							198	72	.008
APR	600	67	54	6.8					120	72	.018
MAY	750	39	30	2.3					174	120	.012
JUNE	600	30							150	24	.012
JULY	1800	67							192	96	.015
AUG	1597	114							83	48	.036
SEPT	1150	104							90	72	.024
OCT	670	94							224	120	.009
NOV	310	52							380	336	.008
DEC	267	44							288	288	.003
TOTAL	8827		84								.161
AVG.		58		4.6					258	24	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN		1	3			4	0	16	0	26		3.2	.6
FEB			2			2	0	8	0	34		3.4	.5
MAR		1	1	1		3	0	12	0	53		4.1	.5
APR		1	1			2	0	4	0	45		4.9	.6
MAY		1	3			4	0	16	0	88		4.6	.6
JUNE			2	1		3	0	12	0	92		4.6	.5
JULY			2	2		4	0	16	0	121		4.5	.6
AUG				4		4	0	15	1	98		6.8	.6
SEPT			1	2	1	4	0	16	0	65		5.8	.6
OCT		1	1	2		4	0	16	0	42		6.0	.6
NOV		2	1	1		4	0	16	0	34		5.5	.5
DEC		1	1			2	0	8	0	31		5.2	.5
TOTAL		8	18	13	1	40	0	155	1	729			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									2 pounds per day		4.8	.6

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	6	100	127	75	6	100	125	76	80 - 100
ALKALINITY in mg/l as $CaCO_3$	6	81	106	58	6	75	95	57	30 - 100
IRON in mg/l Fe	6	.13	.20	.05	6	.06	.12	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	6	9	12	7	6	11	14	5	Less than 250
pH in pH units	6	8.0	8.4	7.6	6	7.6	7.8	7.3	7.0 - 8.5
FLUORIDE in mg/l F^-					1	.1	.1	.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	6	201	250	140	6	206	248	143	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	6.77	.22	.26	.25	5.0		0.9	1.5				
FEB	9.10	.33	.40	.85	5.5		0.9	1.0				
MAR	9.40	.30	.37	.85	6.5	15	1.2	1.9	8	10		
APR	9.36	.31	.31	.85	6.3		1.2	1.8	5	5		
MAY	12.15	.39	.56	.83	5.0		1.1	1.4	5	15		
JUNE	12.07	.40	.65	.85	4.7	5	1.1	1.5				
JULY	12.41	.40	.78	.96	4.8	5	1.1	1.4	5	5		
AUG	10.48	.34	.78	.96	4.0	5	1.0	1.2				
SEPT	7.18	.24	.30	.53	5.4	5	1.0	1.0				
OCT	8.26	.27	.34	.53	5.6	5	1.2	1.4				
NOV	9.44	.32	.40	.53	6.9	5	0.7	1.4				
DEC	11.42	.37	.41	.53	3.3	5	0.7	0.8				
TOTAL	118.04											
AVG.	9.84	.32	MAXIMUM .78	MAXIMUM .96	5.3	6	1.0	MAXIMUM 1.9	6	MAXIMUM 15		MAXIMUM

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft^2.	MAX. RATE gpm/ft^2	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN	1.01		259	192	.045					
FEB	1.51		340	312	.030					
MAR	1.40		177	24	.060					
APR	1.14		384	288	.030					
MAY	1.82		504	504	.015					
JUNE	1.86		516	432	.030					
JULY	1.91									
AUG	1.58		336	24	.045					
SEPT	1.11		440	312	.025					
OCT	1.23		312	216	.045					
NOV	1.46		436	336	.030					
DEC	1.71		232	144	.045					
TOTAL					.400					
AVG.	1.48		358	24						

FENELON FALLS

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN		4				4	0	22	1	141	2.1		.6
FEB		1	1			2	0	12	0	147	1.6		.6
MAR		2	3			5	0	29	0	202	2.1		.6
APR		2	3			4	0	17	0	227	2.4		.6
MAY		4	6			5	0	31	1	332	2.7		.7
JUNE	1		2	4		1	0	11	0	323	2.7		.7
JULY		1		5		3	0	21	0	353	2.8		.7
AUG		2	4	2		4	0	21	0	251	2.4		.7
SEPT		2	2	2		4	0	20	0	133	1.8		.6
OCT		4	3	1		6	0	26	0	175	2.1		.7
NOV		1	9			5	0	35	0	195	2.1		.6
DEC		1	2	1		4	0	12	0	247	2.1		.6
TOTAL	1	24	34	15		47	0	255	2	2724			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									7.4 pounds per day	2.2		.7

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	4	61	66	58	4	62	66	59	80 - 100
ALKALINITY in mg/l as $CaCO_3$	4	49	53	44	4	46	51	41	30 - 100
IRON in mg/l Fe	4	.09	.15	.05	4	.09	.12	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	4	5	8	2	4	7	9	4	Less than 250
pH in pH units	4	7.9	8.5	7.4	4	7.4	7.6	7.2	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	4	129	138	121	4	131	141	122	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

FLOWS

PROJECT HASTINGS

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.82	.027	.040	
FEB	1.11	.039	.050	
MAR	1.42	.046	.091	
APR	1.28	.043	.069	
MAY	2.02	.065	.137	
JUN	3.16	.106	.143	
JUL	4.23	.136	.194	
AUG	3.96	.128	.157	
SEP	3.73	.124	.151	
OCT	3.92	.126	N/A	
NOV	3.63	.121	.129	
DEC	3.87	.125	.139	
TOTAL	33.15	/////	/////	/////
AVG.	/////	.090	/////	/////
MAX.	/////	/////	.194	

PROJECT PERCY - WARKWORTH

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.69	.055	.092	
FEB	1.57	.056	.100	
MAR	1.69	.055	.081	
APR	1.72	.057	.092	
MAY	1.82	.060	.108	
JUN	2.41	.080	.134	
JUL	2.87	.092	.155	
AUG	1.71	.055	.055	
SEP	1.81	.060	.109	
OCT	1.71	.055	.101	
NOV	1.62	.054	.085	
DEC	1.58	.051	.070	
TOTAL	22.23	/////	/////	/////
AVG.	/////	.061	/////	/////
MAX.	/////	/////	.155	

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	1112	36	42	52	4.5	5	.30	.54			4	6
FEB	1048	37	51	53	5.0	5	.34	.23			2	7
MAR	1103	36	41	46	16.0	5	.37	.88			2	4
APR	1045	35	43	46	6.0	5	.34	.63			4	5
MAY	1404	45	59	69	1.2	5	.44	.67			6	8
JUNE	1366	46	64	70	1.2	5	.48	.80			8	12
JULY	1354	44	60	66	1.7	5	.44	.72			8	12
AUG	1193	38	44	49	1.6	5	.48	.73			11	16
SEPT	1166	39	48	55	4.9	5	.46	.78			15	18
OCT	1147	37	41	44	6.1	5	.30	7.40			8	14
NOV	1102	37	41	43	6.9	5	.32	.65			7	10
DEC	1092	35	42	48	10.5	5	.23	.42			3	9
TOTAL	14132											
AVG.	1178	39	MAXIMUM 64	MAXIMUM 70	5.5	5	.38	MAXIMUM .88		MAXIMUM	7	MAXIMUM 18

SOUTH PEEL - LAKEVIEW

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		PRE-SODIUM CHLORITE		POST-SODIUM CHLORITE		HYDROFLUOSILICIC ACID		POTASSIUM PERMANG.			
	AMT. USED 10^3 GAL.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l
JAN	6.8	4.3	0.4	.4	2.0	.3	35	3.4	678	0.1		
FEB	7.2	4.9	2.4	.4			37	3.9	1196	0.1		
MAR	27.1	17.3	4.0	.4			40	4.0	162	0.1		
APR	10.4	6.8	7.0	.7			41	4.1	185	0.1		
MAY	4.2	2.0	9.0	.7			49	3.7				
JUNE	4.2	2.1	13.0	1.0			52	4.0				
JULY	4.3	2.2	8.8	.7			50	3.9				
AUG	3.0	1.7	6.4	.9	0.6	.10	21	2.2	611	0.1		
SEPT	6.8	3.9			2.2	.19	39	3.4	1471	0.1		
OCT	7.6	4.5			1.7	.15	44	4.1	1438	0.1		
NOV	11.6	7.3			1.8	.16	42	4.0	1687	0.2		
DEC	11.6	7.3			1.5	.14	40	3.9	1608	0.2		
TOTAL	104.7		51.0		9.8		490		9036			
AVG.		5.4		.7		.17		3.7		0.1		

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft^2	MAX. RATE gpm/ft^2	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN			46	41	17.7					307
FEB			58	31	15.5					244
MAR			52	31	20.7					142
APR			53	33	18.7					1107
MAY			61	32	20.0					2319
JUNE			47	29	25.2					799
JULY			60	39	20.2					2184
AUG			65	38	20.2					1011
SEPT			35	18	37.7					408
OCT			48	40	26.5					996
NOV			46	32	24.8					483
DEC			58	40	22.6					907
TOTAL					269.8					10907
AVG.			52	Min. 18	22.5					

CHLORINATION and DISINFECTION

MONTH	RAW WATER: NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	0	1 - 3	4 - 32	33 - 320	> 320	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE PRE - mg/l	DOSAGE POST - mg/l	RESIDUAL IN PLANT EFFLUENT mg/l
JAN	1		3	3		7	0	129	5	8.3	.6	.2	.3
FEB			2	2	2	4	0	187	6	5.3	.4	.1	.4
MAR				4	5	8	1	216	1	7.6	.5	.2	.5
APR		1	2	4	1	8	0	229	0	8.9	.6	.3	.5
MAY			6		1	7	0	132	4	12.2	.6	.3	.5
JUNE		2	4	1		6	1	202	7	12.6	.6	.3	.5
JULY		1	3	1	2	7	0	225	13	12.8	.6	.4	.5
AUG		1	1	5		6	0	185	20	16.0	1.1	.3	.5
SEPT		1	2	3	2	7	1	234	27	22.2	1.8	.1	.5
OCT			1	6	3	19	0	364	31	18.4	1.6	.1	.6
NOV			1	4	3	17	0	355	8	18.3	1.6	.1	.7
DEC				6	2	16	0	353	0	15.3	1.3	.1	.6
TOTAL	1	6	25	39	21	112	3	2811	122	157.9			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									430 pounds per day	1.3	.2	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	450	130	160	116	84	142	157	131	80 - 100
ALKALINITY in mg/l as $CaCO_3$	85	99	111	75	84	94	106	79	30 - 100
IRON in mg/l Fe	85	.36	2.60	.05	84	.06	1.20	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	85	33	44	21	83	33	41	29	Less than 250
pH in pH units	450	7.8	8.5	6.9	450	7.8	8.8	7.2	7.0 - 8.5
FLUORIDE in mg/l F^-	79	.2	1.2	.1	82	.8	1.1	.1	Less than 1.2
AMMONIA in mg/l as N	84	.1	1.0	.1	81	.1	.1	.1	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	84	.4	1.0	.2	82	.3	.7	.1	Less than 1.
NITRITE in mg/l as N	84	.01	.10	.004	81	.01	.01	.01	
NITRATE in mg/l as N	84	.4	.6	.1	81	.4	.6	.1	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	81	343	405	317	79	351	415	320	
PHENOLS in μg/l as C_6H_5OH	84	1	8	1	81	1	5	1	Less than 1
ALUMINUM in mg/l as Al	3	.08	.11	.05	37	.17	.30	.05	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

REGION 4

SOUTHEASTERN

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App.units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	1.59	.079	.096		.5	7.0	.2	1.4	7.4	10.0	2	3
FEB	1.19	.063	.090		2.0	10.0	.4	2.3	7.5	10.0	3	3
MAR	1.25	.060	.120		3.2	20.0	.6	3.4	20.0	20.0	3	3
APR	1.30	.068	.120		1.4	10.0	1.4	4.0	4.5	5.0	5	7
MAY	2.25	.087	.132		.7	7.0	.4	.8	6.2	10.0	10	12
JUNE	2.18	.084	.156		.7	5.0	.7	1.0	5.0	5.0	12	14
JULY	2.78	.098	.168		.7	10.0	.5	1.2	8.0	10.0	13	15
AUG	1.77	.068	.096		3.0	8.3	1.4	2.1	3.5	5.0	15	16
SEPT	1.46	.056	.084		4.6	10.0	2.2	4.0	8.0	15.0	14	15
OCT	1.61	.065	.084		1.4	12.5	.5	1.6	5.0	5.0	11	14
NOV	1.59	.063	.090		1.0	6.2	.4	1.8	5.0	5.0	9	11
DEC	1.73	.066	.096		.7	5.7	.5	1.5	5.0	5.0	5	5
TOTAL	20.70											
AVG.	1.73	.057	MAXIMUM .168	MAXIMUM	1.7	9.3	.8	MAXIMUM 4.0	7.1	MAXIMUM 20.0	9	MAXIMUM 16

BARRY'S BAY

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	2					2	0	8	0	26		1.6	.5
FEB	2					2	0	8	0	21		1.8	.5
MAR	3					3	0	12	0	19		1.6	.5
APR	2					2	0	8	0	23		1.8	.5
MAY	2					2	0	8	0	43		1.9	.5
JUNE	2	1				2	0	7	1	47		2.2	.5
JULY	2					2	0	8	2	57		2.0	.5
AUG	3					3	0	12	0	37		2.1	.5
SEPT	2					2	0	8	0	32		2.2	.5
OCT	2					2	0	8	0	38		2.5	.5
NOV	3					3	0	10	0	22		1.4	.5
DEC	4					4	0	12	1	25		1.4	.5
TOTAL	29	1				31	0	109	4	390			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									1.1 pounds per day		1.9	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	30	20	26	13	31	20	25	13	80 - 100
ALKALINITY in mg/l as $CaCO_3$	25	11	14	8	24	11	14	8	30 - 100
IRON in mg/l Fe	25	.24	.65	.1	23	.21	.53	.08	Less than 0.3
CHLORIDE in mg/l Cl^-	24	7	12	4	24	7	11	5	Less than 250
pH in pH units	243	6.4	6.6	6.2	244	6.8	6.8	6.0	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N	19	.07	.20	.03	18	.09	.13	.02	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	26	64	87	56	23	63	105	54	
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

FLOWS

PROJECT CHALK RIVER

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.43	.046	.063	
FEB	1.24	.044	.054	
MAR	1.92	.062	.086	
APR	2.23	.074	.092	
MAY	5.24	.169	.396	
JUN	4.33	.144	.262	
JUL	3.02	.098	.360	
AUG	2.80	.090	.150	
SEP	1.59	.053	.066	
OCT	1.65	.053	.064	
NOV	2.20	.071	.101	
DEC	N/A	N/A	N/A	
TOTAL	-	/////	/////	/////
AVG.	/////	.082	/////	/////
MAX.	//////	/////	.396	

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	//////	/////		

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	2.42	.078	.126		.45	10	.55	.55	10	10	-3	-3
FEB	1.95	.070	.084		.80	10	.80	.80	10	10	-3	-3
MAR	2.04	.066	.123		1.00	5	.65	.65	5	5	-2	-3
APR	1.99	.066	.077		1.20	20	1.00	1.00	5	5	5	10
MAY	3.14	.101	.178		.70	15	.65	.65	10	10	14	22
JUNE	3.47	.116	.205		1.10	15	1.30	1.30	5	5	18	23
JULY	4.42	.143	.234		.90	15	.47	.47	10	10	22	27
AUG	2.23	.073	.163								19	22
SEPT	2.16	.072	.100		1.40	5	.60	.60	5	5	15	22
OCT	2.14	.069	.146		.90	10	.72	.72	5	5	7	11
NOV	2.35	.078	.180		1.50	10	.80	.80	5	5	3	9
DEC	2.30	.074	.118		1.60	10	1.20	1.20	5	5	-2	-2
TOTAL	30.61											
AVG.	2.55	.084	MAXIMUM .205	MAXIMUM	1.10	11	.79	MAXIMUM 1.30	7	MAXIMUM 10	8	MAXIMUM 27

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM								AVERAGE RUN hours	MINIMUM RUN hours	BACKWASH WATER mil.gallons
	AMT. USED LB.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l			
JAN	215	8.9							9.1	7.5	
FEB	174	8.9							8.2	7.5	
MAR	190	9.3							8.1	7.5	
APR	186	9.4							8.1	7.5	
MAY	306	9.7							11.9	7.5	
JUNE	303	8.7							13.3	7.5	
JULY	452	10.2							16.5	7.5	
AUG	234	10.5							8.6	4.0	
SEPT	223	10.3							8.9	4.0	
OCT	209	9.7							8.5	3.0	
NOV	210	8.9							9.0	3.0	
DEC	228	6.6							8.7	4.0	
TOTAL	2930										
AVG.		9.6							9.2	3.0	

CHLORINATION and DISINFECTION

MONTH	RAW WATER: NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	0	1 - 3	4 - 32	33 - 320	> 320	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE PRE - mg/l	DOSAGE POST - mg/l	RESIDUAL IN PLANT EFFLUENT mg/l
JAN	4					4	0	12	0	54		2.2	.5
FEB	4		1			5	0	15	0	46		2.4	.5
MAR	3		1			4	0	12	0	53		2.6	.5
APR	2		1	1		4	0	12	0	51		2.6	.5
MAY	3			1		5	1	15	0	94		3.0	.5
JUNE	2		2			4	0	12	0	97		2.8	.5
JULY	1			3		4	1	12	0	163		3.7	.5
AUG	3		2	1		5	0	15	1	79		3.5	.5
SEPT	4					4	0	12	1	79		3.7	.5
OCT	4					4	0	12	0	72		3.4	.5
NOV	4					4	0	12	0	65		2.8	.4
DEC	4					4	0	12	0	65		1.9	.5
TOTAL	38		7	6		51	2	153	2	918			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									2.5 pounds per day		3.0	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	12	49	62	38	12	49	60	38	80 – 100
ALKALINITY in mg/l as $CaCO_3$	12	40	50	32	12	37	46	24	30 – 100
IRON in mg/l Fe	12	.15	.40	.05	12	.10	.10	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	12	7.0	10.0	3.1	12	7.0	10	5	Less than 250
pH in pH units	12	7.4	7.8	7.0	12	7.2	7.6	6.8	7.0 – 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	12	123	147	106	12	125	150	106	
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

ERNESTOWN (ODESSA)

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN												
FEB												
MAR												
APR												
MAY	N/A											
JUNE	7.14	.24	.47		2.2	30	.4	.4	5	5	20	20
JULY	4.46	.14	.18		2.0	34	.7	1.3	5	5	20	23
AUG	2.11	.07	.14		1.5	29	.2	.7	5	5		
SEPT	1.61	.05	.11		1.5	37	.5	.7	5	5	15	17
OCT	2.41	.08	.18		1.2	28	.4	.9	5	5	10	10
NOV	3.48	.11	.19		2.5	27	.3	.4	5	5	10	10
DEC	3.89	.13	.19		2.3	15	.4	.7	5	5	10	10
TOTAL	25.10											
AVG.		.11	MAXIMUM .47	MAXIMUM	1.8	28	.4	MAXIMUM .7	5	MAXIMUM 5	14	MAXIMUM 23

Flows started June

ERNESTOWN (ODESSA)

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN								4	0				
FEB	1		1			1	0	17	0				
MAR				2				6	0				
APR	1			2				9	0				
MAY				2	1	1	0	11	0	364			.6
JUNE				5		5	0	9	2	598		8.4	.6
JULY			2	2		4	0	8	0	421		9.4	.6
AUG	1		1	2		4	0	8	0	363		17.2	.5
SEPT		1		2		3	0	10	0	335		20.8	.4
OCT				2	1	4	0	15	14	362		15.0	.5
NOV		1			2	3	0	18	0	223		6.4	.6
DEC		1				1	0	18	0	236		6.0	.6
TOTAL	3	3	4	19	4	26	0	99	16	2902			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									11 pounds per day		10.1	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	82	136	228	118	11	149	172	134	80 - 100
ALKALINITY in mg/l as $CaCO_3$	19	143	224	99	34	99	146	84	30 - 100
IRON in mg/l Fe	19	.32	1.90	.05	11	.12	.35	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	19	18	27	13	11	26	31	21	Less than 250
pH in pH units	190	8.0	8.4	7.2	190	7.2	7.9	6.8	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N	11	.05	.10	.01	4	.05	.06	.03	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	6	.52	.73	.40	3	.52	.55	.48	Less than 1.
NITRITE in mg/l as N	7	.017	.080	.002	2	.004	.006	.002	
NITRATE in mg/l as N	11	.03	.12	.01	4	.02	.02	.02	Less than 10
TOTAL PHOSPHORUS in mg/l as P	3	.24	.34	.16	1	.012	.012	.012	
CONDUCTIVITY in μmhos/cm	19	331	472	290	11	335	370	306	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca	1	48	48	48					
SULFATE in mg/l as SO_4^{--}									

KINGSTON

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	44.48	1.71	2.10		2.3		.4	.5			0	0
FEB	47.88	1.71	1.98		1.1		.3	.8			2	2
MAR	51.87	1.67	2.03		.6		.2	.4			2	2
APR	53.77	1.79	2.21		1.2	20.0	.3	3.8	8	10	2	2
MAY	71.42	2.30	4.08		.8	5.0	.2	.3	5	5	7	9
JUNE	85.47	2.85	5.68		.7	5.0	.2	.4	5	5	9	10
JULY	107.41	3.47	4.77		.6		.2	.4			15	16
AUG	60.29	1.94	3.20		.5		.3	.8			19	21
SEPT	55.90	1.86	2.20		.8	5.0	.3	.6	5	5	19	21
OCT	46.75	1.51	2.43		1.1	5.0	.2	.9	5	5	13	17
NOV	48.84	1.63	1.89		.5	.6	.2	.4	5	5	11	13
DEC	48.60	1.57	1.78		1.0	4.0	.8	.9			5	7
TOTAL	722.68											
AVG.	60.22	1.98	MAXIMUM 5.68	MAXIMUM	.9	8.0	.3	MAXIMUM 3.8	6	MAXIMUM 10	9	MAXIMUM 21

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM								AVERAGE	MINIMUM	BACKWASH
	AMT. USED 10^3 GAL.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	RUN hours	RUN hours	WATER mil.gallons
JAN											
FEB											
MAR	1.9	22.5							48	40	2.0
APR	1.7	19.8							47	44	1.9
MAY	1.0	9.6							41	12	2.2
JUNE	1.2	8.8							48	48	2.1
JULY	1.2	7.0							45	24	1.5
AUG	1.1	10.3							46	24	2.0
SEPT	1.2	12.6							47	24	2.4
OCT	.6	5.6							34	24	2.2
NOV	.8	10.4							23	17	1.9
DEC	.8	9.4							17	17	2.4
TOTAL	11.5										22.8
AVG.		11.6							40	12	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN										501	1.0	1.1	.3
FEB										440	.9	.9	.2
MAR	2					3	0	8	0	755	1.4	1.5	.4
APR	2	1				6	0	13	0	920	1.7	1.7	.3
MAY	3	1				6	0	13	0	1435	1.9	2.0	.4
JUNE	2					2	0	8	0	1155	1.3	1.4	.3
JULY	2	2				6	0	16	0	1895	1.8	1.8	.4
AUG	2	2	1	1		11	0	20	0	1137	1.6	1.9	.3
SEPT	1	2	1			8	0	19	0	735	1.2	1.3	.5
OCT	3	1				6	0	11	0	575	.9	1.2	.3
NOV		4				7	0	16	3	519	1.0	1.1	.4
DEC		1	1			4	0	8	0	489	.9	1.0	.3
TOTAL	17	14	3	1		59	0	132	3	10556			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									29 pounds per day	1.3	1.5	.3

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	28	120	134	101	9	130	134	122	80 – 100
ALKALINITY in mg/l as $CaCO_3$	26	91	100	82	9	93	102	84	30 – 100
IRON in mg/l Fe	7	.14	.40	.05	8	.06	.10	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	7	30	31	28	9	31	35	29	Less than 250
pH in pH units	25	7.9	8.4	7.7	35	7.7	8.3	7.5	7.0 – 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	7	322	330	310	9	326	340	315	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	33.54	1.08	1.27		.8	20	.2	.5	2	5	1	1
FEB	30.76	1.10	1.25		.5	20	.3	.3	2	10	1	1
MAR	30.63	1.00	1.06		4.1	30	.3	.9	5	15	1	3
APR	28.92	.96	1.05		2.3	29	.3	.7	3	5	9	15
MAY	37.08	1.20	1.54		1.9	30	.3	.4	3	5	14	25
JUNE	38.76	1.29	1.85		2.6	25	.2	.6	3	5	21	22
JULY	39.39	1.27	1.64		1.7	25	.2	.8	3	5	24	26
AUG	34.51	1.11	1.33		1.4	27	.3	.3	3	5	22	26
SEPT	32.99	1.10	1.30		1.2	25	.3	.3	3	5	18	20
OCT	33.77	1.09	1.26		1.2	24	.4	6.0	3	5	10	14
NOV	34.67	1.16	1.30		.6	20	.3	.6	3	5	6	9
DEC	38.35	1.24	1.38		.6	20	.3	4.0	3	5	2	2
TOTAL	413.37											
AVG.	34.45	1.13	MAXIMUM 1.85	MAXIMUM	1.6	25	.3	MAXIMUM 6.0	3	MAXIMUM 15	11	MAXIMUM 26

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		LIME		ACTIVATED CARBON				AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	31.7	80.9	2.8	7.0	250	.6					1.09
FEB	30.2	87.1	3.0	8.5	250	.7					1.00
MAR	29.8	85.6	3.4	9.8	300	.9					1.50
APR	25.5	67.0	3.1	9.2	150	.4					1.32
MAY	28.2	66.3	2.3	5.4	500	1.3					1.38
JUNE	29.1	65.3	3.3	7.5	400	.9					1.56
JULY	28.9	64.0	3.3	7.2	300	.7					1.83
AUG	26.2	66.0	2.9	7.3	250	.6					1.31
SEPT	25.9	68.8	3.0	8.0	200	.5					1.30
OCT	27.7	70.7	2.9	7.3	200	.5					1.43
NOV	30.1	77.0	3.0	7.7	250	.6					1.02
DEC	32.6	77.2	3.2	7.6	250	.6					1.04
TOTAL	345.9		36.2		3300						15.78
AVG.		83.7		8.7		.8					

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN		3				3	0	6	0	787	2.0	2.3	.5
FEB	1	2				5	0	10	0	703	2.0	2.3	.5
MAR		1	2	1		3	1	8	0	688	2.0	2.2	.5
APR		1	1	1		2	0	6	0	657	2.0	2.3	.5
MAY	2		1	1		4	0	8	0	748	1.8	2.6	.5
JUNE			4			4	0	8	0	811	1.8	2.1	.5
JULY		1	2	1		4	0	8	0	752	1.7	1.9	.5
AUG		2	1		1	4	0	1	3	734	1.9	2.1	.3
SEPT	2	2				4	0	2	2	722	1.9	2.2	.5
OCT		1	2	1		4	0	8	0	711	1.8	2.1	.5
NOV		1	3			4	0	7	1	698	1.8	2.0	.5
DEC		2	1			3	0	6	0	767	1.0	1.0	.5
TOTAL	5	16	17	5	1	45	1	72	6	8778			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									24 pounds per day	1.8	2.1	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	12	78	108	58	12	49	60	38	80 - 100
ALKALINITY in mg/l as $CaCO_3$	378	54	85	40	378	56	98	38	30 - 100
IRON in mg/l Fe	12	.15	.40	.05	12	.10	.30	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	12	7.0	11.0	3.1	12	7	10	5	Less than 250
pH in pH units	378	7.5	8.1	5.8	378	7.2	7.8	6.8	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	12	123	147	106	12	125	145	106	
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	15.34	.46	.46		1.4	30	.14	.20	5	5	1.5	2.0
FEB	13.10	.47	.48		2.2	30	.17	.40	5	5	1.0	1.0
MAR	13.52	.43	.48		13.6	43	.17	.20	5	5	1.7	2.0
APR	11.36	.39	.62		11.6	51	.15	.20	5	5	6.1	9.0
MAY	16.20	.52	.64		11.6	51	.11	.16	5	5	13.0	18.0
JUNE	16.96	.58	.72		3.6	39	.11	.12	5	5	17.7	20.0
JULY	16.80	.54	.67		3.0	32	.10	.10	5	5	22.0	23.0
AUG	19.67	.58	.66		2.0	36	.11	.20	5	15	20.6	22.0
SEPT	11.23	.37	.45		.24	33	.21	.50	5	5	17.5	21.0
OCT	10.41	.36	.65		4.0	40	.12	.15	5	5	11.1	13.0
NOV	10.72	.35	.41		3.1	38	.12	.18	5	5	6.7	10.0
DEC	6.76	.22	.30		4.0	36	.17	.30	5	5	2.6	4.0
TOTAL	162.07											
AVG.	13.51	.44	MAXIMUM .72	MAXIMUM	5.3	38	.14	MAXIMUM .50	5	MAXIMUM 15	10.1	MAXIMUM 23.0

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		LIME		SODA ASH		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED Gal.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	hours	hours	mil. gallons
JAN	1034	45.8	1.5	9.8			85	0.6	13		
FEB	908	41.8	3.0	21.6			85	0.6	8		
MAR	1181	52.4	3.2	22.2			85	0.6	10		
APR	979	50.5	2.3	18.3			85	0.7	12		
MAY	1258	46.0	3.1	17.4			115	0.6	11		
JUNE	1386	48.4	2.8	14.8			120	0.6	10		
JULY	1385	40.4	1.4	7.9			90	0.5	14		
AUG	1687	52.3			0.80	3.8	110	0.5	13		
SEPT	855	45.1			0.45	3.6	40	0.3	20		
OCT	995	53.5			0.40	3.3	50	0.4	21		
NOV	956	49.0			2.90	22.9	70	0.6	14		
DEC	605	54.0			1.90	26.1	45	0.6	33		
TOTAL	13229		17.3		6.45		980				
AVG.		48.1		16.7		11.2		0.6	15		

CHLORINATION and DISINFECTION

MONTH	RAW WATER: NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	0	1 - 3	4 - 32	33 - 320	> 320	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE PRE - mg/l	DOSAGE POST - mg/l	RESIDUAL IN PLANT EFFLUENT mg/l
JAN				1	3	4	0	8	0	383	1.8	.73	.5
FEB					4	4	0	8	0	381	2.1	.58	.6
MAR				1	3	4	0	9		289	1.6	.34	.5
APR					4	4	0	8	0	256	1.7	.33	.6
MAY					5	5	0	10	0	332	1.5	.32	.6
JUNE					4	4	0	7	0	565	2.5	.51	.5
JULY					3	3	0	6	0	513	2.1	.74	.5
AUG				1	5	6	0	12	0	582	2.2	.58	.5
SEPT				1	2	3	0	6	0	426	2.8	.70	.5
OCT				1	2	3	0	6	0	478	3.2	.72	.5
NOV					3	2	0	6	0	561	3.5	.89	.5
DEC					4	4	0	8	0	328	3.7	.78	.6
TOTAL				5	42	41	0	94	0	5094			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									14 pounds per day	2.6	.60	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	276	39	57	23	276	46	78	29	80 - 100
ALKALINITY in mg/l as $CaCO_3$	11	27	44	18	12	23	46	5	30 - 100
IRON in mg/l Fe	12	.41	1.50	.05	12	.11	.25	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	12	6.5	13.0	3.3	12	9.3	15.0	6.9	Less than 250
pH in pH units	276	7.3	8.6	6.5	276	7.3	9.0	6.5	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N	9	.11	.20	.05	9	.08	.20	.01	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	10	.35	.66	.22	10	.23	.40	.05	Less than 1.
NITRITE in mg/l as N	8	.031	.120	.006	8	.022	.140	.002	
NITRATE in mg/l as N	8	.18	.42	.01	9	.20	.30	.06	Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	12	91	135	70	12	139	190	110	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca	11	10	15	8	11	14	22	11	
SULFATE in mg/l as SO_4^{--}					2	29.5	29.5	29.5	

REGION 5

NORTHEASTERN

FLOWS

PROJECT MANITOWANING (ASSIGINACK)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.22	.039	.062	
FEB	1.50	.054	.065	
MAR	1.47	.047	.086	
APR	0.94	.031	.038	
MAY	1.16	.038	.060	
JUN	1.52	.051	.074	
JUL	1.37	.044	.068	
AUG	1.08	.035	.047	
SEP	.92	.030	.036	
OCT	.91	.029	.035	
NOV	1.22	.040	.051	
DEC	1.58	.050	.069	
TOTAL	14.89	/////	/////	/////
AVG.	/////	.041	/////	/////
MAX.	//////	/////	.086	

FLOWS

PROJECT BRUCE MINES

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.409	.045	.055	
FEB	1.342	.048	.056	
MAR	1.348	.044	.054	
APR	1.524	.051	N/A	
MAY	1.504	.049	.064	
JUN	1.394	.046	.065	
JUL	1.363	.041	.062	
AUG	1.550	.050	.049	
SEP	1.291	.043	.051	
OCT	1.139	.037	.041	
NOV	1.058	.035	.047	
DEC	1.368	.044	.053	
TOTAL	16.290	/////	/////	/////
AVG.	/////	.045	/////	/////
MAX.	/////	/////	.065	

PROJECT CACHE BAY

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.706	.055	.063	
FEB	1.603	.067	.063	
MAR	1.443	.046	.064	
APR	1.562	.052	.066	
MAY	2.243	.072	.111	
JUN	1.336	.044	.070	
JUL	1.406	.045	.079	
AUG	0.805	.026	.036	
SEP	0.913	.029	.034	
OCT	0.538	.026	.034	
NOV	0.692	.026	.031	
DEC	0.982	.032	.038	
TOTAL	15.229	/////	/////	/////
AVG.	/////	.042	/////	/////
MAX.	/////	/////	.111	

CALDWELL TWP. - VERNER

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	2.36	.076	.095		6.9	80	.39	.7	5	5	0	0
FEB	2.02	.072	.085		7.2	80	.16	.8	5	5	1	1
MAR	2.20	.072	.086		9.9	76	.30	1.0	5	5	1	1
APR	2.10	.070	.091		9.8	77	.21	1.5	5	5	6	13
MAY	3.57	.115	.175		4.8	63	.24	.9	5	5	13	13
JUNE	3.35	.112	.168		3.5	60	.15	.4	5	5	14	15
JULY	3.36	.108	.156		5.0	57	.14	.3	5	10	17	20
AUG	2.97	.096	.144		8.5	101	.26	1.2	5	5	18	20
SEPT	2.35	.078	.110		15.0	102	.43	1.8	5	5	14	17
OCT	2.34	.075	.084		5.3	81	.19	.5	5	5	8	12
NOV	2.11	.070	.082		6.5	85	.28	.8	5	5	4	8
DEC	2.43	.078	.123		5.2	70	.31	.6	5	5	0	1
TOTAL	31.16											
AVG.		.085	MAXIMUM .175	MAXIMUM	7.3	77	.26	MAXIMUM 1.8	5	MAXIMUM 10	8	MAXIMUM 20

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		SODIUM SILICATE		SODIUM BICARBONATE		SODA ASH		SODIUM CHLORITE		POLYMER	
	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED Gal.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l
JAN	1.8	54					660	19.4			11.3	0.3
FEB	1.9	62					634	21.1			10.6	0.4
MAR	1.9	69	4.2		14.2		616	22.0			10.4	0.4
APR	1.7	58	17.7	9.5	60.2	2.3	431	14.4				
MAY	2.4	67	19.8	6.5	67.9	1.6	565	15.7				
JUNE	2.2	57	29.5	10.5	101.0	2.6	578	14.8				
JULY	2.9	78	57.0	20.8	195.0	5.1	723	19.0	55	1.4		
AUG	3.3	96	57.0	22.6	194.0	5.5	841	24.0				
SEPT	2.3	97	47.0	27.2	159.0	6.6	1240	51.7	77	3.2		
OCT	2.1	79	14.0	21.5	47.0	5.2	1373	50.8	75	2.8	8.3	0.4
NOV	1.9	78	0		0		486	20.3	49	2.0	10.3	0.4
DEC	2.0	72	0		0		645	23.0	4	1.7	11.0	0.4
TOTAL	26.4		246.2		838.3		8792		260		61.9	
AVG.		72		16.9		4.1		21.9		2.2		0.4

CALDWELL TWP. - VERNER

TREATMENT DATA

MONTH	CHEMICALS USED							FILTER OPERATION			
	LIME							AVG. APPLIED TURBIDITY FTU	AVERAGE RUN hours	MINIMUM RUN hours	BACKWASH WATER mil gallons
	AMT. USED LB.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l					
JAN								2.8	24	20	.083
FEB								2.1	24	18	.070
MAR								2.2	25	16	.073
APR								1.9	23	17	.068
MAY								1.8	34	17	.130
JUNE								1.5	31	13	.117
JULY								1.2	34	20	.112
AUG								2.1	30	13	.184
SEPT								1.5	24	19	.088
OCT	13							1.9	24	16	.101
NOV	492	23.4						2.8	23	19	.109
DEC	124	5.1						2.2	25	23	.096
TOTAL	750										1.231
AVG.								2.0	27	23	.103

CALDWELL TWP. - VERNER

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	1		1	2		4	0	4	0	57		2.3	.6
FEB		1		3		4	0	4	0	45		2.3	.6
MAR	1			4		5	0	5	0	43		2.0	.5
APR			1	3		4	0	4	0	68		3.2	.5
MAY	1	1		3		5	0	5	0	108		3.0	.6
JUNE			2	2		4	0	4	0	146		4.4	.6
JULY				4		4	0	3	0	201		5.9	.6
AUG				3		3	0	3	0	156		5.2	.5
SEPT				5		5	0	5	0	200		8.3	.5
OCT			1	4		5	0	5	0	168		7.3	.7
NOV			1	3		4	0	4	0	122		5.8	.7
DEC				4		4	0	4	0	100		4.2	.5
TOTAL	3	2	6	40		51	0	50	0	1414			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									3.9 pounds per day		4.5	.6

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	296	45	98	26	295	50	99	28	80 - 100
ALKALINITY in mg/l as $CaCO_3$	14	36	86	17	318	39	67	18	30 - 100
IRON in mg/l Fe	227	.6	1.7	.3	18	.04	.05	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	9	4	9	2	8	7	14	4	Less than 250
pH in pH units	383	6.9	7.8	6.3	378	7.0	8.6	6.1	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N	1	.1	.1	.1	1	.1	.1	.1	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	1	.5	.5	.5	1	.3	.3	.3	Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P	16	.04	.08	.02	16	.02	.06	.02	
CONDUCTIVITY in μmhos/cm	17	115	201	76	18	212	275	150	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al	8	.19	1.7	.5	8	.11	.19	.06	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	6.6	.94	.997								6	6
FEB	24.6	.87	.971								5	6
MAR	26.6	.86	.941		1.1	30	.4	.5	5	5	5	6
APR	24.8	.79	.814		1.3	100	1.0	1.6	20	20	4	7
MAY	21.9	.71	.868		1.0	80	.3	.9	5	5	15	22
JUNE	20.1	.67	1.089		1.0	60	.2	.6	5	5	19	21
JULY	20.3	.66	.965		1.0	43	.1	.4	5	5	22	25
AUG	18.9	.61	1.066		1.3	43	.2	1.2	5	5	19	21
SEPT	16.8	.56	.621		1.4	59	.6	1.6	5	5	16	19
OCT	16.5	.53	.570		1.1	88	.5	.9	5	5	9	13
NOV	17.9	.51	.635		1.6	85	.6	1.4	5	5	6	9
DEC	19.4	.63	.844		0.7	61	.7	1.4	5	5	3	4
TOTAL	234.4											
AVG.	19.5	.64	MAXIMUM 1.089	MAXIMUM	1.1	65	.4	MAXIMUM 1.6	5	MAXIMUM 20	11	MAXIMUM 25

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		LIME		SODA ASH		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 Gal.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED 10^3 lb.	DOSAGE mg/l	AMT. USED lb.	DOSAGE mg/l	hours	hours	mil. gallons
JAN	.5	50			3.1	47	52	.7			
FEB	1.3	34					0				
MAR	1.4	33	1.7	6.4			141	.5			
APR	1.8	51	1.9	8.0	2.4	10	116	.5			
MAY	2.6	77	1.3	6.0	6.4	29	135	.6			
JUNE	2.1	59	2.4	11.8			138	.6			
JULY	1.8	54	2.4	12.0			134	.6			
AUG	1.8	55	2.3	12.0			88	.4			
SEPT	1.9	61	4.5	26.9	0.3	2	75	.4	20	14	
OCT	2.0	70	5.6	33.9	2.6	33	71	.4	19	15	
NOV	2.0	72	4.9	32.3	3.7	24	64	.4			
DEC	1.9	61	4.4	23.0	2.8	14	53	.3			
TOTAL	21.1		31.4		21.3		1067				
AVG.	1.8	56	3.1	17.2		23	97	.5	20	Min. 14	

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN										192	1.7	1.2	.4
FEB										496	1.2	.8	.4
MAR										581	1.3	.9	.4
APR										762	2.0	1.3	.3
MAY										933	2.5	1.7	.3
JUNE										1209	3.2	2.4	.4
JULY										1262	3.4	2.5	.4
AUG										1154	3.3	2.4	.4
SEPT			2	2		8	0			1133	3.4	2.7	.4
OCT	2		2	2		12	0			1192	3.7	2.9	.5
NOV			4			4	0			1031	4.0	2.0	.4
DEC	1	1	2			8	0	1	0	766	2.5	1.3	.5
TOTAL	3	1	10	4		32	0	1	0	10531			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									29 pounds per day	2.7	1.8	.4

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	262	49	120	28	264	65	124	30	80 - 100
ALKALINITY in mg/l as $CaCO_3$	355	38	60	18	356	34	66	12	30 - 100
IRON in mg/l Fe	307	.19	.32	.10	308	.07	.20	.02	Less than 0.3
CHLORIDE in mg/l Cl^-	11	2	4	1	12	6	10	3	Less than 250
pH in pH units	355	6.9	7.6	6.2	355	7.0	9.3	5.6	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	11	98	129	60	12	154	185	100	
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

ESPANOLA

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	17.4	.56	.65		.71	15	.75	.77	10	15		
FEB	16.2	.58	.65		.50	10	.64	.80	5	5		
MAR	16.6	.54	.61		.92	8	.57	.67	5	5		
APR	14.9	.50	.63		3.00	10	2.00	2.00	10	10		
MAY	26.8	.87	1.36		.92	13	1.04	1.20	8	10		
JUNE	26.3	.88	1.32		.61	5	1.05	1.10	8	15		
JULY	23.7	.77	1.11		.72	10	.97	.97	10	10		
AUG	16.5	.53	.96		1.02	13	1.10	1.20	8	10		
SEPT	12.1	.40	.50		1.34	10	1.00	1.00	8	10		
OCT	12.3	.40	.57		1.0	10	1.20	1.30	10	15		
NOV	11.3	.38	.42		0.69	13	1.30	1.30	13	20		
DEC	13.0	.42	.50		0.93	15	1.40	1.40	10	10		
TOTAL	207.1	.57										
AVG.	17.3		MAXIMUM 1.36	MAXIMUM	0.92	11	1.02	MAXIMUM 2.00	9	MAXIMUM 20		MAXIMUM

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	SODIUM SILICOFLUORIDE								AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED lb.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	315	1.1									
FEB	290	1.1									
MAR	273	1.0									
APR	268	1.1									
MAY	430	1.1									
JUNE	405	1.1									
JULY	402	1.1									
AUG	286	1.1									
SEPT	260	1.1									
OCT	265	1.1									
NOV	238	1.2									
DEC	279	1.1									
TOTAL	3711										
AVG.	309	1.1									

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	3	1				4	0	22	0	315		1.8	.5
FEB	4					4	0	22	0	285		1.8	.5
MAR	3	1				3	1	22	0	277		1.7	.5
APR	2	2				3	1	22	0	265		1.8	.5
MAY	3		1	1		5	0	25	0	438		1.6	.6
JUNE			4			4	0	22	0	393		1.5	.5
JULY			3			4	0	22	0	384		1.6	.5
AUG			5			5	0	25	0	286		1.7	.5
SEPT	1		1	2		4	0	22	0	242		2.0	.5
OCT			3	1		4	0	25	1	269		2.2	.5
NOV	2		2			4	0	22	0	239		2.1	.5
DEC			1	1	1	3	0	15	0	274		2.1	.5
TOTAL	18	4	21	5	1	49	2	266	1	3668			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									10 pounds per day		1.8	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	21	35	60	29	22	34	50	30	80 - 100
ALKALINITY in mg/l as $CaCO_3$	21	22	35	16	22	18	22	15	30 - 100
IRON in mg/l Fe	21	.07	.15	.02	22	.12	.40	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	21	7	13	2	22	8	10	6	Less than 250
pH in pH units	21	7.7	8.6	7.1	22	7.2	7.9	6.7	7.0 - 8.5
FLUORIDE in mg/l F^-	20	.1	.4	.1	21	.8	1.0	.1	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	21	93	160	73	22	91	96	85	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

HAILEYBURY

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	15.8	.51	.57		9.6	60	1.6	1.7	5	5	1	1
FEB	15.1	.54	.67		6.0	60	1.5	3.1	5	5	1	1
MAR	15.8	.51	.67		5.0	60	1.7	2.3	5	5	1	1
APR	13.7	.46	.66		14.0	65	1.4	2.1	5	5	1	2
MAY	18.6	.60	.90		22.0	68	0.8	4.0	5	5	6	9
JUNE	15.1	.50	.95		11.0	63	1.0	2.0	5	5	11	14
JULY	16.9	.54	.93		10.0	59	.7	1.0	5	5	16	17
AUG	13.6	.44	.61		10.7	58	.5	1.0	5	5	17	18
SEPT	13.3	.44	.50		11.0	60	.8	2.4	5	10	16	18
OCT	13.5	.44	.51		10.0	53	.8	1.7	5	5	9	10
NOV	14.2	.47	.58		11.0	50	.9	1.5	5	5	8	9
DEC	16.8	.54	.59		11.0	45	1.0	2.0	5	5	3	6
TOTAL	182.4											
AVG.		.50	MAXIMUM .95	MAXIMUM	11.0	59	1.1	MAXIMUM 4.0	5	MAXIMUM 10	8	MAXIMUM 18

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		LIME		SODA ASH		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	hours	hours	mil.gallons
JAN	7.7	47	894	5.4	995	6.0	*115	0.7	39		.360
FEB	7.7	46	904	5.4	980	5.9	107	0.6	43		.315
MAR	8.4	46	1118	6.1	1087	6.0	123	0.7	44		.390
APR	7.0	47	908	6.1	896	6.0	103	0.7	47		.285
MAY	9.2	47	1194	6.1	1216	6.2	137	0.7	57		.375
JUNE	8.0	46	1086	6.2	523	6.0	77	0.4	40		.420
JULY	8.5	47	1072	6.0	0		**37	0.2	44		.405
AUG	6.8	47	875	6.1	0		28	0.2	41		.285
SEPT	6.4	46	819	5.9	0		26	0.2	37		.300
OCT	6.6	46	869	6.2	353	6.2	29	0.2	30		.375
NOV	7.0	46	896	5.9	909	6.0	29	0.2	31		.420
DEC	8.3	47	950	5.3	1118	6.2	62	0.3	30		.405
TOTAL	91.6		11588		8077		873				4.335
AVG.		47		5.9		6.2		0.4	40		

* Poly - A-22
** Poly - 8170

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	2			2		4	0	12	0	377		2.4	.9
FEB	3		1			4	0	11	0	347		2.3	.9
MAR	3	1	1			5	0	15	0	414		2.6	.8
APR	1	1		1		3	0	9	0	312		2.3	.9
MAY	2	1	2	1		5	0	12	0	441		2.4	.8
JUNE	2		1	1		4	0	10	0	452		3.0	.8
JULY	3			1		4	0	11	0	475		2.8	.6
AUG	2	2	1			4	0	15	0	398		2.9	.6
SEPT	3		1			4	0	12	0	432		3.1	.6
OCT	4					4	0	12	0	428		3.1	.8
NOV	5					5	0	9	0	445		3.1	.9
DEC	1	2	1			4	0	12	0	362		2.1	.8
TOTAL	31	7	8	6		50	0	140	0	4883			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									13 pounds per day		2.6	.8

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	22	29	38	17	22	42	57	27	80 - 100
ALKALINITY in mg/l as $CaCO_3$	38	17	23	8	22	19	26	13	30 - 100
IRON in mg/l Fe	22	.74	2.10	.05	22	.07	.15	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	22	4	6	2	22	5	10	2	Less than 250
pH in pH units	387	6.9	8.0	6.1	387	8.0	9.4	6.5	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	22	70	90	43	22	106	134	90	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al	13	.55	1.60	.09	21	.35	1.3	.05	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	1.46	.047	.056		.6	20	.25	.85	5	5	1	1
FEB	1.67	.060	.066		.6	16	.18	.33	5	5	1	1
MAR	1.46	.047	.064		.9	15	.21	.66	5	5	1	1
APR	0.94	.031	.041		1.8	18	.39	1.50	5	5	2	4
MAY	1.05	.034	.062		1.4	23	.56	1.40	5	5	9	15
JUNE	0.89	.030	.050		1.3	21	.22	1.00	5	5	16	17
JULY	1.20	.039	.055		1.0	20	.28	.70	5	5	19	22
AUG	0.88	.028	.041		1.1	20	.25	.36	5	5	18	22
SEPT	0.73	.024	.029		1.1	20	.23	.34	5	5	16	18
OCT	0.77	.025	.035		.9	20	.22	.31	5	5	11	14
NOV	0.82	.027	.039		1.0	20	.20	.53	5	10	5	8
DEC	2.27	.073	.108		.8	16	.22	.41	5	5	1	1
TOTAL	14.14											
AVG.		.039	MAXIMUM .108	MAXIMUM	1.0	19	.27	MAXIMUM 1.50	5	MAXIMUM 10	8	MAXIMUM 22

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		PRE - SODA ASH		POST- SODA ASH		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	hours	hours	mil.gallons
JAN	1.00	52	449	22	341	24	7.8	0.4	18	13	.054
FEB	1.20	52	516	22	392	33	8.9	0.4	23	21	.054
MAR	1.10	50	472	22	349	23	8.3	0.4	19	15	.066
APR	0.72	52	312	22	239	25	5.5	0.4	14	8	.054
MAY	0.80	50	343	21	263	26	6.2	0.4	14	9	.044
JUNE	0.66	50	281	22	216	24	5.0	0.4	12	7	.024
JULY	0.85	50	366	31	281	23	6.4	0.4	14	10	.030
AUG	0.68	52	290	22	223	25	5.1	0.4	13	8	.024
SEPT	0.53	48	229	21	176	25	4.1	0.4	10	8	.012
OCT	0.58	53	253	23	192	24	4.5	0.4	11	8	.022
NOV	0.60	50	257	32	198	17	4.6	0.4	11	8	.018
DEC	1.62	51	695	22	532	23	12.5	0.4	22	15	.126
TOTAL	10.34		4463		3402		78.9				.528
AVG.	.86	51	372	22	284	24	6.6	0.4	15	8	.044

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	4					4	0	4	0	37		2.6	.7
FEB	4					4	0	9	0	44		2.6	.6
MAR	2	2				5	0	9	0	42		2.8	.7
APR	3		2			5	0	10	0	39		4.1	.6
MAY	3		1			4	0	7	0	50		5.0	.5
JUNE	2	2	1			5	0	8	0	48		5.3	.6
JULY	1		1	1		3	0	7	0	57		4.8	.6
AUG	4		1			5	0	9	1	44		4.8	.7
SEPT	2	1				3	0	8	0	37		5.3	.7
OCT	4					4	0	9	0	36		4.5	.8
NOV	4					4	0	7	0	46		5.8	.7
DEC	3	1				4	0	7	0	60		2.6	.8
TOTAL	36	6	6	1		50	0	99	1	540			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									1.5 pounds per day		3.8	.7

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	24	59	233	29	24	37	49	32	80 - 100
ALKALINITY in mg/l as $CaCO_3$	24	24	31	18	39	32	57	3	30 - 100
IRON in mg/l Fe	24	.10	.35	.05	24	.05	.20	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	24	2	9	1	24	4	8	1	Less than 250
pH in pH units	389	7.0	8.3	6.6	24	7.0	8.1	4.8	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P	389	7.0	8.3	6.6	24	.02	.04	.02	
CONDUCTIVITY in μmhos/cm	24	76	100	66	24	150	233	104	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al	9	.08	.15	.05	21	.15	.52	.05	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PROJECT MICHIPICOTEN WAWA

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	18.09	.584	.873	
FEB	15.42	.551	2.343	
MAR	27.62	.891	.993	
APR	21.14	.705	1.117	
MAY	15.69	.506	.783	
JUN	11.26	.375	.757	
JUL est.	11.00	.340	.648	
AUG est.	8.40	.271	.510	
SEP est.	7.50	.250	.293	
OCT	8.96	.289	.430	
NOV	10.06	.335	--	
DEC	12.77	.411	.665	
TOTAL	167.91	/////	/////	/////
AVG.	/////	.460	/////	/////
MAX.	/////	/////	2.343	

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	4.97	.160	.170		1.7	47	3.5	3.5	11	50	0	0
FEB	4.58	.164	.170			26			10	10	0	0
MAR	5.67	.183	.219			22	4.5	4.5	25	25	0	0
APR	4.91	.164	.223			28			8	10	0	0
MAY	3.99	.129	.186		3.1	104	3.6	4.3	5	15	2	3
JUNE	3.86	.124	.153		2.5	134	1.9	1.9	5	10	16	17
JULY	3.31	.107	.127			174			5	5	14	14
AUG	3.27	.105	.139			198			5	20	14	14
SEPT	2.95	.098	.124			194			5	5	9	12
OCT	N/A											
NOV	3.58	.119	.189			163			7	10	1	2
DEC	4.46	.144	.189			161			24	50	0	0
TOTAL												
AVG.		.136	MAXIMUM .223	MAXIMUM	2.6	114	3.4	MAXIMUM 4.5	10	MAXIMUM 50	5	MAXIMUM 17

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODA ASH		FLUOSILICIC ACID		POLYMER		AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED GAL.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	hours	hours	mil.gallons
JAN	6.2	129	1.6	32.3	36	2.5	24	0.5	24	24	.050
FEB	4.2	95	1.4	31.8	37	2.8	0		24	24	.048
MAR	3.5	65	1.6	28.7	40	2.4	25	0.4	24	24	.050
APR	2.1	42	2.1	41.8	35	2.5	21	0.4	24	24	.048
MAY	3.9	98	2.4	60.0	39	3.4	31	0.8	24	24	.049
JUNE	3.5	92	1.6	40.8	34	3.1	31	0.8	24	24	.050
JULY	3.4	103	2.0	60.6	24	2.4	34	1.0	24	24	.050
AUG	3.8	109	1.6	44.3	19	1.9	37	1.1	24	24	.050
SEPT	4.1	136	1.6	55.0	16	1.9	31	1.0	24	24	.048
OCT											.050
NOV	5.9	164	2.4	66.7	12	1.2	60	1.7	24	24	.048
DEC	6.5	144	1.6	34.4	20	1.6	62	1.4	24	24	.050
TOTAL											.591
AVG.	4.3	107	1.8	45.1	28	2.3	32	0.8	24	24	.049

Jan. & Feb. 3934 lb. Silicate
946 lb. Bicarb. of Soda

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF NaOCl Gallons	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	1					1	0	4	0	155		3.7	.7
FEB								2	0	120		3.2	.7
MAR	3					3	0	4	0	145		3.0	.8
APR						1	0	5	0	150		3.7	.8
MAY										155		4.6	.9
JUNE										140		4.3	.9
JULY										155		5.6	.9
AUG						1	0	2	0	140		5.1	.8
SEPT		1	1			2	0	2	0	140		5.6	.7
OCT	3		1			3	0	6	0	136			.7
NOV	3					6	0	2	0	104		3.4	.7
DEC	2					2	0	4	0	94		2.5	.8
TOTAL	12	1	2			19	0	31	0	1632			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									4 gals. per day		4.1	.8

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	4	126	333	31	5	180	360	36	80 - 100
ALKALINITY in mg/l as $CaCO_3$	4	109	284	30	5	140	296	14	30 - 100
IRON in mg/l Fe	4	.56	.60	.50	5	.20	.40	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	4	100	321	9	5	147	337	12	Less than 250
pH in pH units	338	7.4	7.8	6.8	309	7.3	7.6	6.1	7.0 - 8.5
FLUORIDE in mg/l F^-	4	.2	.4	.1	301	1.0	2.0	0.2	Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in µmhos/cm	4	508	1500	83	5	815	1600	235	
PHENOLS in µg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

SHACKLETON MACHIN

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	1.50	.048	.062		1.5	30	.4	.8	4	5	0	0
FEB	1.31	.046	.056		1.8	16	.3	.5	3	10	0	0
MAR	1.95	.063	.083		1.5	48	.4	.6	4	5	0	0
APR	2.16	.072	.112		8.8	117	1.3	5.0	10	30	2	4
MAY	1.26	.041	.061		6.1	132	.7	3.0	4	15	10	18
JUNE	1.13	.040	.068		5.4	146	.6	.9	5	10	15	19
JULY	1.04	.034	.059		7.0	177	.8	1.3	7	15	18	22
AUG	.94	.030	.049		4.6	167	.3	1.5	6	15	17	19
SEPT	.83	.028	.058		6.5	228	1.4	5.0	14	40	13	17
OCT	.96	.031	.039		4.3	202	.6	1.8	7	15	8	12
NOV	.94	.030	.044		4.4	174	.7	1.4	6	10	3	6
DEC	1.09	.035	.044		2.6	103	.5	.9	4	8	0	0
TOTAL	15.11											
AVG.	1.26	.041	MAXIMUM .112	MAXIMUM	4.5	128	.6	MAXIMUM 5.0	6	MAXIMUM 40	7	MAXIMUM 22

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODA ASH		POLYMER				AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	800	53	580	39	4.5	0.3					
FEB	600	43	510	36	3.5	0.3					
MAR	1200	60	750	38	7.0	0.4					
APR	1900	86	1010	46	10.5	0.5					
MAY	1000	71	610	44	6.0	0.4					
JUNE	1200	92	590	45	6.5	0.5					
JULY	1200	92	620	48	6.5	0.5					
AUG	850	77	490	45	3.5	0.3					
SEPT	1300	118	560	51	7.0	0.6					
OCT	800	100	590	74	7.0	0.9					
NOV	1000	91	565	51	4.0	0.4					
DEC	1200	92	710	55	3.0	0.2					
TOTAL	13050		7585		69.0						
AVG.		81		48		0.4					

SHACKLETON MACHIN

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF NaOCl Gallons	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	1	2				4	0	1	0	28		2.3	.4
FEB	1	1	2			5	0	3	0	29		2.7	.4
MAR		2	2	1		7	0	2	0	39		2.4	.4
APR	1							3		45		2.4	.5
MAY	1		2			3	0	2	0	40		2.6	.5
JUNE			2	1				5	0	35		3.8	.4
JULY			1					2	0	70		6.4	.4
AUG	1		3			4	0	2	0	55		6.0	.3
SEPT		1	1			2	0	2	0	65		9.8	.6
OCT		1	1			2	0	4	0	58		7.0	.4
NOV			2			2	0	5	1	23		3.0	.5
DEC	4					4	0	2	0	30		3.3	.6
TOTAL	9	7	16	2		33	0	33	1	517			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									1.4 pounds per day		4.1	.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	51	74	100	48	48	76	100	49	80 – 100
ALKALINITY in mg/l as $CaCO_3$	158	58	84	28	144	86	118	52	30 – 100
IRON in mg/l Fe	22	.30	.65	.12	22	.08	.12	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	22	2	4	1	22	6	12	2	Less than 250
pH in pH units	386	7.5	8.1	7.0	386	7.7	9.0	6.4	7.0 – 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	27	132	160	92	22	249	335	122	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	118	3.81	4.50	5.04	2.4	17	.24	.32	5	5	1	2
FEB	107	3.83	4.10	5.04	1.3	15	.26	.40	5	5	2	2
MAR	118	3.81	3.97	4.75	3.5	17	.29	.94	5	5	3	4
APR	111	3.69	3.87	4.75	4.2	22	.24	.73	5	5	6	11
MAY	119	3.84	4.15	5.04	3.0	18	.18	.28	5	5	12	21
JUNE	112	3.76	4.11	4.90	7.1	29	.20	1.00	5	5	17	20
JULY	114	3.68	3.99	5.04	4.6	22	.15	.22	5	5	22	25
AUG	113	3.66	3.78	4.75	3.7	25	.19	.30	5	5	21	22
SEPT	110	3.68	3.83	5.04	3.5	29	.24	.30	5	5	18	21
OCT	115	3.72	3.87	5.04	1.8	24	.23	.36	5	5	12	15
NOV	64	2.15	3.57	4.18	1.4	21	.29	.49	5	5	8	11
DEC	67	2.17	2.38	2.74	.8	10	.24	.34	5	5	3	4
TOTAL	1268											
AVG.	106	3.47	MAXIMUM 4.50	MAXIMUM 5.04	3.1	21	.23	MAXIMUM 1.00	5	MAXIMUM 5	10	MAXIMUM 25

TREATMENT DATA

MONTH	CHEMICALS USED											
	ALUM		LIME		SODA ASH		SODIUM SILICOFLUORIDE		SODIUM CHLORITE		POLYELECTROLYTE	
	AMT. USED 10^3 GAL.	DOSAGE mg/l	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED 10^3 LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l
JAN	2.5	13.0	8.5	6.8			1.5	1.2	465	0.4	300	0.2
FEB	2.1	12.4	7.6	6.8			1.4	1.3	420	0.4	322	0.3
MAR	3.0	15.6	9.9	8.1	288		1.5	1.2	465	0.4	233	0.2
APR	3.7	20.6	13.1	11.2	210		1.5	1.3	450	0.4	129	0.1
MAY	3.3	16.9	11.5	9.2	0		1.7	1.4	465	0.4	84	0.07
JUNE	3.4	18.8	11.3	9.5	0		1.6	1.3	450	0.4	54	0.04
JULY	3.8	15.2	14.1	11.7	0		1.6	1.3	465	0.4	93	0.08
AUG	3.7	20.0	13.3	11.0	0		1.6	1.4	465	0.4	182	0.15
SEPT	3.5	19.3	11.6	9.9	0		1.4	1.2	450	0.4	298	0.25
OCT	3.4	17.5	9.8	7.8	0		1.4	1.1	465	0.4	156	0.12
NOV	1.6	15.2	4.3	6.2	0		0.9	1.3	375	0.5	99	0.14
DEC	1.6	14.7	4.4	6.0	0		0.8	1.1	310	0.4	177	0.24
TOTAL	35.6		119.4		498		16.9		5245		2127	
AVG.	3.0	17.2	10.0	8.9	249		1.4	1.3	437	0.4	177	0.16

TREATMENT DATA

MONTH	FILTER OPERATION									ALGAE
	AVG. RATE gpm/ft²	MAX. RATE gpm/ft²	AVG. RUN hours	MIN. RUN hours	BACKWASH WATER mill. gallons	AVG. APPLIED TURBIDITY FTU	FILTERABILITY INDEX units	NUMBER OF BACKWASHES	AVG. HEAD LOSS AT BACKWASH feet	TOTAL RAW ASU/ml
JAN	1.8		45	24	2.74	.7				60
FEB	1.8		40	24	2.82	.8				84
MAR	1.8		41	24	2.91	1.0				216
APR	1.8		63	24	1.91	.8				304
MAY	1.8		99	72	1.24	.6				970
JUNE	1.8		90	48	1.33	.6				944
JULY	1.8		93	24	1.33	.6				232
AUG	1.8		51	24	2.41	.6				355
SEPT	1.8		32	12	3.74	.6				216
OCT	1.8		47	12	2.66	.7				365
NOV	1.0		64	24	1.74	.8				272
DEC	1.1		78	48	1.58	.5				117
TOTAL					26.41					
AVG.	1.8		62	12	2.20	.7				* 81

* Weighted Avg.

CHLORINATION and DISINFECTION

MONTH	RAW WATER: NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	0	1 - 3	4 - 32	33 - 320	> 320	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED 10^3 pounds	DOSAGE PRE - mg/l	DOSAGE POST - mg/l	RESIDUAL IN PLANT EFFLUENT mg/l
JAN		1	3			4	0			3.0	1.8	.6	.4
FEB	3	1	1			5	0			2.6	1.9	.5	.4
MAR			3	1		4	0			2.3	1.4	.5	.4
APR	1		3			4	0			2.4	1.5	.6	.4
MAY	1	1	2			4	0			3.8	2.6	.5	.4
JUNE			2	2		4	0			4.2	3.0	.6	.4
JULY				3		3	0			4.4	2.7	1.0	.4
AUG			1	4		4	0			4.4	3.1	.6	.4
SEPT				4		4	0			4.1	2.9	.6	.4
OCT			3	1		4	0			3.6	2.4	.5	.4
NOV			4			4	0			1.7	1.9	.6	.4
DEC	1	2	1			4	0			1.8	2.1	.5	.4
TOTAL	6	5	23	15		48	0			38.3			
AVG.										105 pounds per day	2.3	.6	.4

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	374	36	47	29	373	47	60	38	80 - 100
ALKALINITY in mg/l as $CaCO_3$	374	16	22	9	373	15	21	11	30 - 100
IRON in mg/l Fe	373	.18	1.20	.01	373	.04	.25	.01	Less than 0.3
CHLORIDE in mg/l Cl^-	8	4	18	1	8	5	7	1	Less than 250
pH in pH units	374	7.0	7.9	6.5	373	7.1	8.3	6.7	7.0 - 8.5
FLUORIDE in mg/l F^-	7	.1	.1	.1	373	1.0	1.2	.5	Less than 1.2
AMMONIA in mg/l as N	3	.1	.1	.1	3	.1	.1	.1	Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	3	.2	.2	.1	3	.1	.2	.1	Less than 1.
NITRITE in mg/l as N	3	.01	.01	.01	3	.01	.01	.01	
NITRATE in mg/l as N	3	.2	.3	.1	2	.2	.3	.1	Less than 10
TOTAL PHOSPHORUS in mg/l as P	5	.03	.04	.02	6	.02	.02	.02	
CONDUCTIVITY in μmhos/cm	8	92	103	84	8	127	140	115	
PHENOLS in μg/l as C_6H_5OH	6	1	3	1	7	1	1	1	Less than 1
ALUMINUM in mg/l as Al	8	.32	1.4	.2	376	.03	.18	0.01	
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}	4	26	31	22	4	31	34	27	

REGION 6

NORTHWESTERN

FLOWS

PROJECT EAR FALLS

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	N/A			
FEB	N/A			
MAR	1.089	.038	.109	
APR	.907	.029	.053	
MAY	1.450	.046	N/A	
JUN	4.804	.160	.086	
JUL	.665	.021	N/A	
AUG	.358	.011	.062	
SEP	.159	.005	.021	
OCT	est. 3.500	.112	.069	
NOV	est. 2.750	.091	.090	
DEC	N/A			
TOTAL	--	/////	/////	/////
AVG.	/////	.057	/////	/////
MAX.	/////	/////	.109	

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	/////	/////		

PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
							TURBIDITY		COLOUR		TEMPERATURE	
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °C	MAXIMUM °C
JAN	1.624	.052	.061		3.2	30	3.9	5.1	5	5	.6	.6
FEB	1.453	.052	.065				4.3	4.9			.6	.6
MAR	1.465	.047	.053		2.7	20	4.4	5.8	5	5	1.1	1.1
APR	1.543	.051	.060		4.3	30	3.7	7.0	10	10	5.6	8.9
MAY	1.450	.046	.055				2.3	5.5	5	5	15.6	21.1
JUNE	1.213	.040	.048				2.0	5.5			22.2	23.3
JULY	1.829	.059	.055		8.7	70	1.1	3.1	10	10	22.8	24.4
AUG	1.722	.055					.3	1.0			18.9	23.3
SEPT	1.447	.048	.061		32.0	70	1.2	3.4	5	5	15.6	18.9
OCT	1.518	.048	.053		5.3	70	1.3	3.5			12.8	15.0
NOV	1.459	.048	.055		8.3	70	1.2	3.5	5	5	5.6	10.0
DEC	N/A	N/A	N/A		1.7	40	3.8	3.8	5	5		
TOTAL												
AVG.		.050	MAXIMUM .065	MAXIMUM	8.2	50	2.4	MAXIMUM 7.0	6	MAXIMUM 10	11.0	MAXIMUM 24.4

TREATMENT DATA

MONTH	CHEMICALS USED								FILTER OPERATION		
	ALUM		SODA ASH		POLYMER				AVERAGE RUN	MINIMUM RUN	BACKWASH WATER
	AMT. USED GAL.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED LB.	DOSAGE mg/l	AMT. USED	DOSAGE mg/l	hours	hours	mil. gallons
JAN	120	38.1	800	39.0	8.0	.3					
FEB	130	49.5	700	41.0	6.0	.3					
MAR	121	44.5	800	45.3	6.0	.3					
APR	143	51.0	800	43.8	8.0	.4					
MAY	155	53.8	800	42.7	9.0	.4					
JUNE	246	82.5	1100	56.8	11.0	.5					
JULY	324	92.6	1300	57.1	12.0	.5					
AUG	261	68.7	1050	36.1	11.0	.3					
SEPT	311	109.5	1150	62.3	2.4	.1					
OCT	180	54.2	1000	46.3	5.0	.2					
NOV	175	61.3	750	40.4	8.0	.4					
DEC											
TOTAL	2166		10250		86.4						
AVG.		84.1		61.2		.5					

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	0	0	0	5	0	0	25	1	92	4.4		.6
FEB	0	0	0	0	4	0	0	20	1	82	4.8		.7
MAR	0	0	0	0	2	0	0	10	0	88	4.9		.7
APR	1	0	0	1	3	0	0	20	0	86	4.7		.7
MAY	0	1	0	1	3	3	0	22	0	114	6.0		.5
JUNE	0	0	0	3	1	3	0	16	0	151	7.7		.5
JULY	0	0	1	2	1	3	0	17	0	144	6.3		.4
AUG	0	0	0	2	3	4	0	21	0	111	3.8		.7
SEPT	0	0	0	0	4	4	0	16	0	145	7.8		.6
OCT	0	0	0	0	5	5	0	21	1	91	4.2		.8
NOV	0	0	0	0	4	4	0	24	0	84	4.5		.8
DEC	0	0	0	0	4	4	1	24	6				
TOTAL	1	1	1	9	39	30	1	236	9	1188			
AVG.	(NOTE - Average shown is the GEOMETRIC MEAN)									3 pounds per day	7.1		.6

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $CaCO_3$	8	39	68	24	8	42	76	26	80 - 100
ALKALINITY in mg/l as $CaCO_3$	8	32	48	20	8	48	71	41	30 - 100
IRON in mg/l Fe	8	.77	3.10	.05	8	.03	.10	.05	Less than 0.3
CHLORIDE in mg/l Cl^-	8	3	6	1	8	9	13	4	Less than 250
pH in pH units	8	6.8	7.0	6.4	231	6.8	7.5	5.2	7.0 - 8.5
FLUORIDE in mg/l F^-									Less than 1.2
AMMONIA in mg/l as N									Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N									Less than 1.
NITRITE in mg/l as N									
NITRATE in mg/l as N									Less than 10
TOTAL PHOSPHORUS in mg/l as P									
CONDUCTIVITY in μmhos/cm	8	91	128	59	8	211	334	150	
PHENOLS in μg/l as C_6H_5OH									Less than 1
ALUMINUM in mg/l as Al									
CALCIUM in mg/l as Ca									
SULFATE in mg/l as SO_4^{--}									

FLOWS

PROJECT GERALDTON

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	N/A			
FEB	N/A			
MAR	14.45	.46	N/A	
APR	11.20	.37	N/A	
MAY	11.50	.37	N/A	
JUN	10.17	.34	N/A	
JUL	9.78	.31	N/A	
AUG	9.02	.29	N/A	
SEP	8.97	.30	N/A	
OCT	10.38	.34	N/A	
NOV	10.88	.36	N/A	
DEC	N/A			
TOTAL	--	/////	/////	/////
AVG.	/////	.35	/////	/////
MAX.	//////	/////	N/A	

PROJECT IGNACE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	5.34	.172	.219	
FEB	4.89	.174	.202	
MAR	5.07	.164	.218	
APR	7.08	.236	.479	
MAY	N/A			
JUN	5.20	.173	.281	
JUL	5.78	.186	.258	
AUG	4.84	.156	.200	
SEP	4.97	.165	.207	
OCT	5.37	.173	.219	
NOV	5.47	.182	.270	
DEC	N/A			
TOTAL	--	/////	/////	/////
AVG.	/////	.178	/////	/////
MAX.	//////	/////	.281	

FLOWS

PROJECT MACHIN TWP. (VERMILION BAY)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	N/A			
FEB	N/A			
MAR	N/A			
APR	N/A			
MAY	N/A			
JUN	1.128	.037	N/A	
JUL	1.194	.038	.068	
AUG	.991	.031	.043	
SEP	.945	.031	.041	
OCT	.966	.031	.044	
NOV	.955	.031	.040	
DEC	N/A			
TOTAL	--	/////	/////	/////
AVG.	/////	.033	/////	/////
MAX.	/////	/////	.068	

PROJECT MADSEN

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL	N/A	/////	/////	/////
AVG.	/////	N/A	/////	/////
MAX.	/////	/////		

FLOWS

PROJECT PICKLE LAKE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.97	.063	N/A	
FEB	2.39	.085	.140	
MAR	2.96	.095	.149	
APR	2.85	.095	.206	
MAY	2.47	.079	N/A	
JUN	2.31	.077	.126	
JUL	2.11	.068	.950	
AUG	1.73	.055	.812	
SEP	1.69	.056	1.141	
OCT	1.48	.048	N/A	
NOV	1.47	.049	.816	
DEC	1.97	.063	.976	
TOTAL	25.40	/////	/////	/////
AVG.	/////	.069	/////	/////
MAX.	/////	/////	1.141	

PROJECT RED LAKE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D
JAN	15.33	.49	.52	
FEB	15.77	.56	.67	
MAR	20.49	.66	.69	
APR	17.65	.58	.68	
MAY	12.46	.40	N/A	
JUN	10.87	.36	.49	
JUL	12.12	.39	.46	
AUG	12.61	.41	.48	
SEP	N/A	N/A	N/A	
OCT	12.94	.42	.52	
NOV	N/A	N/A	N/A	
DEC	N/A	N/A	N/A	
TOTAL	--	/////	/////	/////
AVG.	/////	.48	/////	/////
MAX.	/////	/////	.69	

GROUND WATER -

MONTHLY FLOWS

REGION I

SOUTHWESTERN

FLOWS

PROJECT HANOVER

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	8.75	.28	N/A	
FEB	10.04	.36	N/A	
MAR	7.56	.24	N/A	
APR	8.48	.28*	N/A	
MAY	11.94	.39	N/A	
JUN	11.02	.37	N/A	
JUL	10.59	.34	N/A	
AUG	11.20	.36	N/A	
SEP	9.58	.32	N/A	
OCT	9.30	.30	N/A	
NOV	9.07	.30	N/A	
DEC	8.40	.27	N/A	
TOTAL	*115.93	/////	/////	/////
AVG.	/////	.31	/////	/////
MAX.	//////	/////	N/A	

*Part of the total consumption for the town.

PROJECT MARKDALE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	53.771	1.735		
FEB	57.648	2.059		
MAR	68.792	2.219		
APR	56.499	1.883		
MAY	56.179	1.812		
JUN	61.167	2.039		
JUL	51.839	1.672		
AUG	57.678	1.860		
SEP	59.206	1.973		
OCT	64.238	2.072		
NOV	62.427	2.080		
DEC	61.831	1.994		
TOTAL	711.275	/////	/////	/////
AVG.	/////	1.948	/////	/////
MAX.	//////	/////		

FLOWS

PROJECT MILVERTON

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	N/A			
FEB	N/A			
MAR	N/A			
APR	N/A			
MAY	N/A			
JUN	N/A			
JUL	N/A			
AUG	N/A			
SEP	N/A			
OCT	N/A			
NOV	N/A			
DEC	N/A			
TOTAL	N/A	/////	/////	/////
AVG.	/////		/////	/////
MAX.	/////	/////		

PROJECT MITCHELL

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	10.57	.34	.42	.78
FEB	9.82	.35	.43	.75
MAR	12.71	.41	.50	.78
APR	10.90	.36	.42	.72
MAY	12.91	.42	.59	1.26
JUN	12.48	.42	.56	1.38
JUL	12.94	.42	.55	1.29
AUG	13.27	.43	.55	1.15
SEP	9.33	.31	.35	1.24
OCT	9.55	.31	.45	.69
NOV	8.21	.27	.36	1.32
DEC	8.45	.27	.46	1.09
TOTAL	131.15	/////	/////	/////
AVG.	/////	.35	/////	/////
MAX.	/////	/////	.59	1.38

FLOWS

PROJECT THEDFORD

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.59	.051	.064	
FEB	1.46	.052	.073	
MAR	1.77	.057	.075	
APR	1.55	.052	.077	
MAY	2.07	.066	.092	
JUN	1.95	.065	.098	
JUL	1.85	.060	.087	
AUG	1.92	.062	.089	
SEP	1.63	.054	.073	
OCT	1.66	.054	.081	
NOV	1.58	.052	.101	
DEC	1.67	.053	1.000	
TOTAL	20.70	/////	/////	/////
AVG.	/////	.056	/////	/////
MAX.	/////	/////	1.000	

PROJECT VAN ASTRA

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	4.47	.14	.19	
FEB	4.31	.15	.22	
MAR	4.88	.16	.20	
APR	5.05	.17	.29	
MAY	5.31	.17	.21	
JUN	5.40	.18	.26	
JUL	5.57	.18	.26	
AUG	4.34	.14	--	
SEP	3.65	.12	.17	
OCT	4.06	.13	.16	
NOV	4.08	.14	.16	
DEC	4.27	.14	.20	
TOTAL	55.39	/////	/////	/////
AVG.	/////	.15	/////	/////
MAX.	/////	/////	.29	

REGION 2

WEST CENTRAL

FLOWS

PROJECT BRANTFORD

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	3.99	.13	.19	
FEB	3.55	.13	.16	
MAR	3.39	.11	.14	
APR	3.27	.11	.14	
MAY	5.03	.16	.31	
JUN	4.49	.15	.21	
JUL	4.36	.14	.22	
AUG	3.73	.12	.18	
SEP	3.74	.13	.20	
OCT	2.87	.09	.13	
NOV	2.98	.10	.13	
DEC	N/A			
TOTAL	Est. 43.80	/////	/////	/////
AVG.	/////	.12	/////	/////
MAX.	/////	/////	.31	

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	/////	/////		

REGION 3

CENTRAL

FLOWS

PROJECT ANSON-HINDON-MINDEN

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.824	.059	.067	
FEB	1.712	.061	.094	
MAR	1.956	.063	.074	
APR	1.648	.055	.075	
MAY	2.438	.079	.135	
JUN	2.566	.086	.209	
JUL	2.600	.084	.130	
AUG	2.149	.069	.098	
SEP	1.990	.066	.085	
OCT	2.702	.087	.110	
NOV	2.231	.074	.183	
DEC	2.007	.064	.074	
TOTAL	25.823	/////	/////	/////
AVG.	/////	.071	/////	/////
MAX.	/////	/////	.209	

PROJECT BRADFORD (DOANE WELL)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	2.29	.074	.137	
FEB	2.06	.074	.135	
MAR	3.51	.113	.273	
APR	3.47	.116	.257	
MAY	7.22	.233	.400	
JUN	2.75	.092	--	
JUL	5.53	.178	.388	
AUG	5.02	.162	.277	
SEP	5.38	.179	.310	
OCT	5.42	.175	.246	
NOV	6.18	.206	.390	
DEC	3.76	.121	.258	
TOTAL	52.59	/////	/////	/////
AVG.	/////	.14	/////	/////
MAX.	/////	/////	.400	

FLOWS

PROJECT COOKSTOWN

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	15.32	.49	.64	
FEB	12.87	.46	.56	
MAR	14.80	.48	N/A	
APR	14.89	.50	.60	
MAY	18.97	.63	.72	
JUN	17.24	.58	.63	
JUL	20.85	.67	.77	
AUG	20.53	.66	.84	
SEP	17.04	.57	.71	
OCT	14.65	.47	.62	
NOV	11.24	.38	.54	
DEC	12.98	.42	.57	
TOTAL	191.38	/////	/////	/////
AVG.	/////	.52	/////	/////
MAX.	/////	/////	.84	

PROJECT ELMVALE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	3.457	.112	.180	
FEB	3.139	.112	.161	
MAR	3.587	.116	.177	
APR	3.473	.116	.162	
MAY	5.222	.169	.291	
JUN	6.354	.212	.374	
JUL	6.367	.205	.409	
AUG	6.667	.215	.239	
SEP	3.975	.133	.201	
OCT	3.871	.125	.203	
NOV	3.895	.130	.216	
DEC	3.936	.127	.190	
TOTAL	53.943	/////	/////	/////
AVG.	/////	.148	/////	/////
MAX.	/////	/////	.409	

FLOWS

PROJECT HAVELOCK

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D	PEAK RATE M.G.D.
JAN	3.621	.117		
FEB	3.605	.129		
MAR	4.615	.149		
APR	4.197	.140		
MAY	4.452	.144		
JUN	4.179	.139		
JUL	4.485	.145		
AUG	3.556	.115		
SEP	3.377	.109		
OCT	3.759	.121		
NOV	3.840	.128		
DEC	3.761	.121		
TOTAL	47.447	/////	/////	/////
AVG.	/////	.130	/////	/////
MAX.	/////	/////		

PROJECT STAYNER

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	5.818	.188	.312	
FEB	5.510	.197	.268	
MAR	6.375	.206	.545	
APR	7.237	.241	.307	
MAY	10.816	.349	.567	
JUN	12.960	.432	N/A	
JUL	11.178	.361	.528	
AUG	9.983	.327	N/A	
SEP	9.435	.314	.493	
OCT	9.172	.296	.411	
NOV	7.540	.251	N/A	
DEC	6.442	.208	.317	
TOTAL	102.466	/////	/////	/////
AVG.	/////	.281	/////	/////
MAX.	/////	/////	.567	

FLOWS

PROJECT WOODVILLE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.746	.024	.043	
FEB	.793	.028	.039	
MAR	.951	.031	.057	
APR	.791	.026	.061	
MAY	1.103	.036	.088	
JUN	1.124	.037	.084	
JUL	1.220	.039	.087	
AUG	0.914	.029	.066	
SEP	0.942	.031	.080	
OCT	1.030	.033	.078	
NOV	1.039	.035	--	
DEC	1.130	.036	.077	
TOTAL	11.783	/////	/////	/////
AVG.	/////	.032	/////	/////
MAX.	/////	/////	.088	

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	/////	/////		

REGION 4

SOUTHEASTERN

FLOWS

PROJECT ALFRED

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	3.32	.107	.170	
FEB	1.61	.057	.164	
MAR	1.90	.061	.123	
APR	2.12	.071	.161	
MAY	2.44	.079	.182	
JUN	1.94	.065	.117	
JUL	2.15	.069	.124	
AUG	1.83	.059	.100	
SEP	2.06	.069	.086	
OCT	2.33	.072	.182	
NOV	1.71	.057	.138	
DEC	1.80	.058	.159	
TOTAL	25.26	/////	/////	/////
AVG.	/////	.070	/////	/////
MAX.	/////	/////	.182	

PROJECT BOURGET

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL	N/A	/////	/////	/////
AVG.	/////	N/A	/////	/////
MAX.	/////	/////		

FLOWS

PROJECT CHESTERVILLE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	2.16	.070	.162	
FEB	1.64	.059	.160	
MAR	1.91	.062	.106	
APR	2.04	.068	.086	
MAY	2.38	.077	.155	
JUN	2.15	.072	.123	
JUL	2.37	.076	.104	
AUG	2.16	.070	.086	
SEP	2.14	.072	.095	
OCT	2.45	.079	.145	
NOV	2.20	.073	.103	
DEC	1.84	.059	.107	
TOTAL	25.44	/////	/////	/////
AVG.	/////	.070	/////	/////
MAX.	//////	/////	.162	

PROJECT FRANKFORD

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	8.27	.27	.37	
FEB	8.14	.29	.63	
MAR	13.33	.43	.56	
APR	8.16	.27	.56	
MAY	7.90	.25	.42	
JUN	8.24	.27	.46	
JUL	9.19	.30	.48	
AUG	5.87	.19	.46	
SEP	5.14	.17	.22	
OCT	4.92	.16	.27	
NOV	5.80	.19	.37	
DEC	5.74	.19	.29	
TOTAL	90.70	/////	/////	/////
AVG.	/////	.25	/////	/////
MAX.	//////	/////	.63	

FLOWS

PROJECT LEEDS AND LANSDOWNE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.401	.013	.025	
FEB	.421	.015	.033	
MAR	.432	.014	.035	
APR	.438	.015	.029	
MAY	*.375	.012	.031	
JUN	.664	.022	.051	
JUL	.492	.016	.030	
AUG	.547	.018	.039	
SEP	.626	.021	.032	
OCT	.725	.023	.046	
NOV	.782	.026	.034	
DEC	.804	.026	.039	
TOTAL	Est. 6.70	/////	/////	/////
AVG.	/////	.018	/////	/////
MAX.	//////	/////	.051	

PROJECT L'ORIGNAL

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	2.13	.069	.100	
FEB	2.02	.072	.090	
MAR	2.35	.076	.081	
APR	2.38	.079	.214	
MAY	3.70	.119	.171	
JUN	2.92	.097	.121	
JUL	3.32	.107	.151	
AUG	3.05	.098	.146	
SEP	2.73	.091	N/A	
OCT	2.89	.093	N/A	
NOV	2.65	.088	N/A	
DEC	2.54	.082	N/A	
TOTAL	32.68	/////	/////	/////
AVG.	/////	.090	/////	/////
MAX.	/////	/////	.214	

FLOWS

PROJECT MERRICKVILLE

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN		.115		
FEB		.115		
MAR		.115		
APR		.115		
MAY		.115		
JUN		.115		
JUL		.115		
AUG		.115		
SEP		.115		
OCT		.115		
NOV		.115		
DEC		.115		
TOTAL	42.0	/////	/////	/////
AVG.	/////	.115	/////	/////
MAX.	//////	/////		

Estimated Flows

PROJECT PLANTAGENET

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL	N/A	/////	/////	/////
AVG.	/////	N/A	/////	/////
MAX.	//////	/////		

FLOWS

PROJECT VANKLEEK HILL

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	3.33	.107	.133	
FEB	2.22	.079	.115	
MAR	1.69	.055	.063	
APR	.55	.018	N/A	
MAY	.51	.016	N/A	
JUN	.94	.031	N/A	
JUL	1.41	.046	.147	
AUG	.92	.030	N/A	
SEP	1.43	.048	N/A	
OCT	1.05	.034	N/A	
NOV	.81	.027	N/A	
DEC	.72	.023	N/A	
TOTAL	15.58	/////	/////	/////
AVG.	/////	.043	/////	/////
MAX.	//////	/////	.133	

PROJECT WELLINGTON

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	N/A			
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL	N/A	/////	/////	/////
AVG.	/////	N/A	/////	/////
MAX.	//////	/////		

FLOWS

PROJECT WESTPORT

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.95	.031	.040	
FEB	.93	.033	.061	
MAR	1.07	.034	.058	
APR	1.13	.038	.080	
MAY	1.34	.043	.059	
JUN	1.69	.056	.110	
JUL	2.57	.083	.123	
AUG	1.52	.049	.090	
SEP	1.14	.038	.053	
OCT	1.13	.036	.052	
NOV	.99	.033	.045	
DEC	1.07	.035	.040	
TOTAL	15.53	/////	/////	/////
AVG.	/////	.043	/////	/////
MAX.	//////	/////	.123	

PROJECT WINCHESTER

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	6.01	.19	.22	
FEB	5.59	.20	.25	
MAR	5.96	.19	.20	
APR	6.10	.20	.23	
MAY	7.69	.25	.30	
JUN	8.75	.29	.27	
JUL	8.57	.29	.34	
AUG	9.35	.30	.32	
SEP	8.88	.29	.31	
OCT	8.47	.27	N/A	
NOV	7.13	.24	.35	
DEC	6.46	.21	.25	
TOTAL	89.56	/////	/////	/////
AVG.	/////	.27	/////	/////
MAX.	/////	/////	.35	

REGION 5

NORTHEASTERN

FLOWS

PROJECT BLACK RIVER MATHESON
RAMORE WELL #2

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.348	.011		
FEB	.334	.012		
MAR	.387	.012		
APR	.367	.012		
MAY	.473	.015		
JUN	.402	.014		
JUL	.393	.012		
AUG	.386	.012		
SEP	.396	.013		
OCT	.356	.012		
NOV	.323	.011		
DEC	.480	.013		
TOTAL	4.645	/////	/////	/////
AVG.	/////	.013	/////	/////
MAX.	//////	/////		

PROJECT _____

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN				
FEB				
MAR				
APR				
MAY				
JUN				
JUL				
AUG				
SEP				
OCT				
NOV				
DEC				
TOTAL		/////	/////	/////
AVG.	/////		/////	/////
MAX.	//////	//////		

BLEZARD VALLEY

TREATMENT DATA

MONTH	COMBINED		WELL "A"		WELL "B"		WELL "C"	
	TOTAL FLOW million gallons	AVERAGE DAY mil. gal.	TOTAL FLOW million gallons	CHLORINE USED pounds	TOTAL FLOW million gallons	CHLORINE USED pounds	TOTAL FLOW million gallons	CHLORINE USED pounds
JAN	40.8	1.32	4.76	27	5.96	25	6.09	23
FEB	38.0	1.36	4.47	21	5.25	20	5.84	29
MAR	41.6	1.34	5.02	29	5.00	25	6.40	48
APR	45.4	1.51	5.26	24	6.75	34	6.90	24
MAY	68.1	2.20	7.74	45	9.96	29	10.30	1
JUNE	66.9	2.23	7.91	47	8.75	37	10.16	
JULY	61.4	1.98	5.86	32	8.35	40	9.56	
AUG	52.9	1.71	4.87	25	6.39	14	6.56	
SEPT	49.8	1.66	5.82	33	7.15	21	7.23	
OCT	46.8	1.51	5.31	28	6.71	11	7.14	
NOV	45.8	1.53	4.92	29	6.61	20	7.00	3
DEC	45.1	1.46	4.93	28	6.55	18	6.78	2
TOTAL	602.6		66.88	368	83.43	294	89.96	130
AVG.	50.2	1.65	0.18	31	0.23	25	0.25	11

TREATMENT DATA

MONTH	WELL "D"		WELL "E"		WELL "F"		BACTERIOLOGICAL SAMPLING			
							RAW		DISTR SYSTEM	
	TOTAL FLOW million gallons	CHLORINE USED pounds	TOTAL FLOW million gallons	CHLORINE USED pounds	TOTAL FLOW million gallons	CHLORINE USED pounds	No. OF SAMPLES TAKEN	No. WITH COLI PRESENT	No. OF SAMPLES TAKEN	No. WITH COLI PRESENT
JAN	6.01	23	8.94	34	9.05	40	6	0	1	0
FEB	5.64	22	8.24	29	8.56	26	6	0	1	0
MAR	6.28	29	9.24	31	9.64	40	6	0	1	0
APR	6.81	25	9.57	24	10.11	45	6	0	1	0
MAY	10.46	37	14.38	39	15.29	36	12	0	2	0
JUNE	11.19	31	14.57	57	14.27	43	6	0	2	0
JULY	10.70	20	13.30	39	13.63	35	12	0	2	0
AUG	7.82	15	9.67	27	9.80	19	12	0	2	0
SEPT	8.68	38	10.22	27	10.71	19	7	0	1	0
OCT	7.94	18	9.50	25	10.18	27	11	0	2	0
NOV	7.87	12	9.53	25	9.89	26				
DEC	7.83	10	9.36	24	9.67	30	5	1	1	0
TOTAL	97.23	280	12.65	381	13.08	386	89	1	16	0
AVG.	0.26	23	0.34	32	0.36	32				

FLOWS

PROJECT BLIND RIVER

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	NUMBER OF DAYS OPERATED
JAN	1.338	.043	.049	31
FEB	1.923	.071	.143	27
MAR	2.599	.084	.117	31
APR	3.312	.110	.131	30
MAY	3.029	.098	.116	31
JUN	2.256	.075	.102	30
JUL	2.082	.077	.095	31
AUG	2.037	.081	.135	25
SEP	1.623	.068	.126	24
OCT	1.041	.061	.120	17
NOV	0.630	.057	.089	11
DEC	1.670	.054	.074	31
TOTAL	23.541	/////	/////	/////
AVG.	/////	.074	/////	/////
MAX.	//////	/////	.143	

PROJECT FAUQUIER (MOONBEAM)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.45	.047	.053	
FEB	1.32	.047	.056	
MAR	1.49	.048	.054	
APR	1.54	.051	.066	
MAY	1.70	.055	.093	
JUN	1.64	.055	.068	
JUL	1.52	.049	.060	
AUG	1.54	.050	.060	
SEP	1.52	.050	.063	
OCT	1.57	.050	.084	
NOV	1.68	.056	.084	
DEC	1.65	.053	.062	
TOTAL	18.62	/////	/////	/////
AVG.	/////	.051	/////	/////
MAX.	//////	//////	.093	

FLOWS

PROJECT N. HIMSWORTH (CALLANDER)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	.805	.026		
FEB	.992	.035		
MAR	1.282	.041		
APR	1.499	.050		
MAY	1.423	.046		
JUN	1.766	.059		
JUL	1.629	.053		
AUG	1.566	.050		
SEP	1.119	.037		
OCT	1.253	.040		
NOV	1.104	.037		
DEC	1.299	.042		
TOTAL	15.737	/////	/////	/////
AVG.	/////	.043	/////	/////
MAX.	/////	/////		

PROJECT RATTER & DUNNET (WARREN)

MONTH	TOTAL FLOW Mil. Gal.	AVG DAY M.G.D.	MAX DAY M.G.D.	PEAK RATE M.G.D.
JAN	1.21	.039	.049	
FEB	1.17	.042	.049	
MAR	1.35	.044	.052	
APR	1.28	.043	.057	
MAY	1.91	.062	.105	
JUN	1.93	.064	.120	
JUL	1.19	.038	.122	
AUG	1.23	.040	.052	
SEP	1.22	.041	.048	
OCT	1.08	.035	.051	
NOV	1.65	.055	.056	
DEC	1.35	.053	.122	
TOTAL	16.57	/////	/////	/////
AVG.	/////	.053	/////	/////
MAX.	/////	/////	.122	

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