

The Boardman River water quality study was continued through May of 1973, however on a reduced basis.

The objective of this investigation was to evaluate the impact of the new secondary treatment process that was put in operation on August 1, 1972, by Traverse City. This activated sludge process has a design capacity of MGD and is also set up for phosphorous removal.

Weekly samples were collected from 4 stations in the Boardman and one at the mouth of Kidds Creek. These sampling locations were the same as those during the intensive survey of 1972. From these data three parameters were selected and compared to same from the analysis of the treatment plant effluent. These results are presented in Table _____. The following observations may be drawn from these data:

1. The activated sludge process went on line August 1, 1972 which resulted in a tremendous reduction in BOD. (90-96% removal)
2. This reduction of biochemical oxygen demand material from the effluent did not change significantly the BOD concentration of the Boardman River between the upstream and downstream station.
3. On November 15, 1972, phosphorous removal was initiated through the addition of 40-60 mg/l of Ferric chloride and .20-.5 mg/l of polymer. Some problems did arise in this operation and treatment for removal of phosphorous was discontinued from November 30, 1972 to January 3, 1973. From that date to April 19, 1973 phosphorous removal was in operation.
4. The downstream sampling stations on 8th Street does significantly reflect the operational efficiency of phosphorous removal of the treatment plant. Downstream concentrations of total phosphorous are in the same range as those from South Airport Road (upstream sampling station) when good reduction of phosphorous concentration are received during this process.
5. The addition of only .5 mg/l of polymer in April, 1973, which removed 25-35% of the total phosphorous, resulted in higher concentration in the downstream station.
6. It does appear that the activated sludge process and chemical removal of nutrients reduces the coliform concentration in the effluent and hence in the downstream station.

In conclusion, it may be stated that the new treatment facility, under good operational conditions, does a tremendous job in improving the water quality of the Boardman River downstream. However, other sources like storm sewers, direct run off, and Kidds Creek have to be controlled in order to achieve the aesthetic quality of the river water as that in the reach above Traverse City.

An aquatic invertebrate survey was co-ordinated with the water quality study of the Boardman River in 1972.

The objective of this study was an attempt to correlate the diversity index of the aquatic community to water quality parameters. Little or no success has been reported in the literature in the past. The major problems were attributed to systematics of the invertebrate groups and also the wide range of water quality parameters. Due to the recent workable development of a Water Quality Index (WQI), this above objective was proposed.

Eight stations were selected on the Boardman River at which two basket samplers were placed. Description and location of stations were similar to water quality stations with a couple exceptions.

Station 1 - 150 yards upstream of South Airport Road; samplers were suspended from a submerged log; substrate sand and gravel; velocity approximately 2 ft/sec.

Station 2 - Samplers suspended from Rail Road tressle; far side from treatment plant effluent; substrate sandy; velocity about 1.5 ft/sec.

Station 3 - Same as station 2 except baskets were suspended in area of water that is mixed with effluent from treatment plant; station is located 50 yards down stream from effluent of the Traverse City Waste-Water Treatment Plant.

Station 4 - Samplers suspended from a post, 35 yards downstream from 8th Street Bridge; substrate depositing, slow velocity.

Station 5 - Samplers suspended from old pilings of walk way, 200 yards downstream from Union Street Bridge; substrate sand and gravel; velocity 1.5 - 2.0 ft/sec.

Station 6 - Samplers were secured from a submerged log, 150 yards downstream from Front Street Bridge; substrate is sand and silt; velocity .6 - .8 ft/sec.

Station 7 - Sampling baskets suspended from Bartley's foot bridge. Samplers were lost.

Station 8 - Samplers were suspended from Murrays Boat Dock, near mouth of Boardman River; velocity about 1 ft/sec.

BOARDMAN RIVER - QUANTITATIVE BENTHOS RESULTS-1972

ORGANISMS:	SAMPLING STATIONS															
	1 _A	1 _B	2 _A	2 _B	3 _A	3 _B	4 _A	4 _B	5 _A	5 _B	6 _A	6 _B	8 _A	8 _B		
Platyhelminthes																
<u>Dugesia microbursalis</u>	16	15	304	207	-	2	2	4	1	39	181	25	-	3		
Oligochaeta																
<u>Pseloscolex freyii</u>	-	-	2	-	-	-	1	-	-	7	6	140	1	2		
<u>Helobdella stagnalis</u>	-	-	2	2	-	-	1	1	1	3	4	1	1	-		
Isopoda																
<u>Asellus sp.</u>	54	15	7	2	1	11	62	85	34	225	138	244	36	20		
Amphipoda																
<u>Grangonyx</u>	-	2	10	3	1	3	-	-	2	36	5	17	3	2		
Ephemeroptera																
<u>Centroptilum sp.</u>	72	4	-	-	-	-	-	-	-	-	-	1	-	-		
<u>Ephermerella dificiense</u>	8	-	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Isonychia bicolor</u>	1	2	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Stenonema sp.</u>	38	12	-	-	-	-	-	-	1	-	2	4	-	-		
<u>Neocloeon sp.</u>	-	-	-	-	-	-	-	-	2	-	-	-	-	-		
Odonata																
<u>Ischnura sp.</u>	-	-	1	2	-	-	-	-	-	-	-	-	-	-		
Trichoptera																
<u>Chimarra obscura</u>	5	1	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Cheumatopsyche sp.1</u>	276	56	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Cheumatopsyche sp.2</u>	427	78	-	-	-	-	1	-	-	-	-	-	-	-		
<u>Hydropsyche sp.1</u>	50	10	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Hydropsyche sp.2</u>	19	7	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Hydropsyche sparna</u>	30	2	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Neuroclepsis crepuscularis</u>	10	4	-	-	-	-	-	-	-	-	2	-	-	-		
<u>Polycentropus cineris</u>	-	-	11	9	70	10	3	2	1	1	2	3	-	1		
<u>Rhyacophila sp.</u>	-	1	-	-	-	-	1	-	-	-	-	-	-	-		
Coleoptera																
<u>Bidessus sp.</u>	-	-	-	2	-	-	-	-	-	-	-	-	-	-		
<u>Hydaticus sp.</u>	-	-	-	1	-	-	-	-	-	-	-	-	-	-		
<u>Haliplus sp.</u>	-	-	-	2	-	-	-	-	-	-	-	-	19	11		
Diptera																
<u>Antocha sp.</u>	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
<u>Ablabesmyia sp.</u>	17	5	-	-	-	-	-	-	-	-	-	-	1	1		
<u>Procladius sp.</u>	-	-	3	-	-	2	11	4	3	2	-	1	-	-		
<u>Tanypus sp.</u>	-	-	-	-	2	-	-	-	1	1	-	-	-	-		
<u>Chironomus (Chironomus) sp.</u>	-	-	226	108	201	113	44	27	7	4	-	11	-	-		
<u>C. (Dicrotendipes) sp.</u>	-	-	-	-	-	-	-	-	-	1	-	1	-	-		
<u>C. (Einfeldia) sp.</u>	-	-	-	-	-	-	-	-	-	1	-	-	-	-		

BOARDMAN RIVER - QUANTATIVE BENTHOS RESULTS-1972 CON'T.

ORGANISMS:

SAMPLING STATIONS

	1 _A	1 _B	2 _A	2 _A	3 _A	3 _B	4 _A	4 _B	5 _A	5 _B	6 _A	6 _B	8 _A	8 _B
<u>C. (Cryptochironomus)</u>														
<u>sp.</u>	-	-	-	7	-	16	-	35	-	2	-	1	-	-
<u>C. (Endochironomus) sp.</u>	1	-	65	-	71	29	62	29	-	-	-	3	46	45
<u>Glyptotendipes sp.</u>	-	-	51	35.	-	-	36	34	2	1	-	3	-	-
<u>Microtendipes aberrans</u>	38	13	-	-	-	-	-	-	-	-	-	-	-	-
<u>Paralauterborniella sp.</u>	-	-	-	-	-	-	-	-	-	2	-	-	-	-
<u>Pseudochironomus sp.</u>	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<u>Paratendipes duplicatus</u>	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<u>Polypedilum sp.</u>	-	-	34	15	-	-	-	-	-	-	-	-	8	5
<u>Tanytarsus sp.</u>	15	6	-	-	-	-	-	-	-	1	-	-	-	-
<u>Cardiocladius sp.</u>	18	6	-	-	-	-	-	-	-	-	-	-	-	-
<u>Cricotopus sp.</u>	-	-	20	108	15	16	149	67	17	-	-	-	-	-
<u>Orthocladius sp.</u>	2	-	-	-	-	-	-	-	-	-	-	-	10	17
<u>Psectrocladius sp.</u>	-	-	-	-	34	-	-	-	1	-	-	-	-	-
<u>Mollusca</u>														
<u>Sphaerium sp.</u>	-	-	-	-	-	-	-	-	-	-	-	1	3	1
<u>Physa integra</u>	22	11	-	-	-	-	1	1	-	-	-	-	-	-
<u>Stagnicola sp.</u>	-	-	-	-	-	1	3	1	-	-	-	-	12	12
Total Number of Species	20	21	13	14	8	10	14	12	13	14	8	16	11	10
Total Number of Organisms	1179	254	990	503	395	203	377	289	73	326	340	457	140	119

BOARDMAN RIVER - SOUTH AIRPORT ROAD - Station No. 1

DATE:	Flow CFS	D.O. ppm	B.O.D. ppm	Temp. °C	pH	T.C. #100ml	NO ₃ -N ppm	NO ₂ -N ppm	NH ₃ -N ppm	SiO ₂ ppm	Cl ppm	Dis. PO ₄ ppm	Tot. PO ₄ ppm
7/17/72		9.1	1.6	19	7.85	510	.08	.015	.051	5.96	4.05	.050	.032
7/24/72		8.6	1.6	21	8.05	310	.120	.004	.031	7.56	.13	.144	.032
7/26/72		8.85	1.35	18	8.05	120	.233	.005	.027	9.06	3.50	.226	.276
7/31/72		8.6	.7	19	8.1	200	.349	.004	.076	8.46	2.40	.209	.243
8/2/72		8.1	.4	19	8.1	445	.376	.004	.123	8.17	4.66	.052	.102
8/8/72		--	--	--	--	110	--	--	--	--	--	--	--
8/14/72		9.4	.8	18	8.2	200	0	.001	.13	--	--	.25	--
10/25/72		12.8	1.0	--	7.9	210	--	--	--	--	--	--	--
11/8/72		12.0	.8	7.0	8.1	20	.171	.004	.058	9.70	0.0	.025	.025
1/25/73		15.6	1.0	2.5	7.95	20	.377	.004	.052	8.45	0.59	.050	.032
1/26/73		13.6	1.5	2.2	7.90	1	.182	.004	.061	8.90	0.51	.052	.029
1/31/73		13.6	3.2	.5	8.0	50	.188	.004	.080	9.05	0.88	.036	.030
2/7/73		11.8	1.0	2.0	8.0	70	.189	.004	.036	8.89	0.0	.030	.039
2/14/73		14.	2.2	1.0	7.8	10	.399	.004	.049	9.47	.29	.042	.039
2/21/73		13.8	2.0	1.0	8.15	--	.422	.003	.048	11.13	3.90	.044	.046
2/28/73		13.2	1.6	2.0	8.1	<10	.486	.003	.072	8.78	4.16	.037	.051
3/6/73		12.4	1.6	4.0	8.1	--	.437	.004	.085	9.89	4.46	.037	.049
3/14/73		11.6	1.6	6.0	7.95	--	.350	.003	.047	8.15	4.68	.121	.070
3/21/73		12.0	2.0	3.5	7.85	--							
4/2/73		12.0	2.0	8.0	7.9	--	.336	.002	.043	10.06	3.94	.274	.047
4/18/73		11.5	1.8	9.0	7.95	10	.309	.002	.035	7.36	3.65	.063	.046
5/03/73		11.0	1.6	11.2	7.90	20	.281	.002	.044	7.19	3.71	.031	.041

BOARDMAN RIVER - CASS STREET - Station No. 8

DATE:	Flow CFS	D.O. ppm	B.O.D. ppm	Temp. °C	pH	T.C. #100ml	NO ₃ -N ppm	NO ₂ -N ppm	NH ₃ -N ppm	SiO ₂ ppm	Cl ppm	Dis. PO ₄ ppm	Tot. PO ₄ ppm
7/17/72	362	8.5	3.2	22	8.0	8300	.325	.019	.119	8.39	5.66	.316	.203
7/24/72	271	8.45	2.35	25	8.15	2700	.215	.038	.019	8.01	2.70	.256	.098
7/26/72	239	8.40	2.40	21	8.1	3300	.090	.008	.450	--	--	.340	--
7/31/72	243	8.4	1.0	21.5	8.2	1000	.010	.003	.620	--	--	.290	--
8/2/72	312	8.2	2.2	21.5	8.05	15,400	.018	.006	.210	--	--	.280	--
8/8/72	--	--	--	--	--	8,800	--	--	--	--	--	--	--
8/14/72	269	9.6	1.45	20.5	8.1	2,700	0	.015	.520	--	--	.265	--
10/25/72	--	12.0	2.4		7.90	210	--	--	--	--	--	--	--
11/8/72	--	11.8	1.4	7	8.1	<20	.170	.010	.221	9.42	4.53	.276	.316
1/25/73	354	15.2	1.9	2.5	7.95	<10	.439	.013	.187	8.84	5.45	.083	.059
1/26/73	325	13.5	1.9	2.5	7.90	10	.382	.007	.197	9.10	6.75	--	.085
1/31/73	--	13.2	3.0	1.5	8.0	<10	.412	.006	.217	9.17	.406	.090	.137
2/7/73	--	11.4	1.0	2.0	8.0	160	.437	.006	.208	9.32	3.54	.081	.108
2/14/73	--	13.6	2.0	1.5	8.0	20	.418	.005	.266	9.69	5.01	.031	.038
2/21/73	--	13.4	2.6	1.5	8.05	--	.528	.004	.195	7.68	11.03	.088	.099
2/28/73	--	13.4	2.0	2.0	8.05	10	.544	.004	.234	7.80	7.12	.042	.084
3/6/73	--	12.2	2.4	3.0	8.01	--	.576	.003	.203	7.68	6.43	.055	.054
3/14/73	--	12.0	2.4	4.0	8.1	--	.533	.004	.264	7.34	7.35	.043	.113
3/21/73	--	11.6	2.2	5.5	7.9	--	--	--	--	--	--	--	--
4/2/73	534	12.2	2.4	7.0	8.	30	.467	.007	.450	7.44	9.82	.037	.083
4/18/73	--	11.5	2.6	8.5	8.1	25	.386	.005	.150	8.70	6.26	.123	.134
5/03/73	--	11.0	2.5	11.4	8.05	30	.328	.001	.165	8.46	6.18	.141	.187

BOARDMAN RIVER - 8th. STREET - Station No. 3

DATE:	Flow CFS	D.O. ppm	B.O.D. ppm	Temp. °C	pH	T.C. #100ml	NO ₃ -N ppm	NO ₂ -N ppm	NH ₃ -N ppm	SiO ₂ ppm	Cl ppm	Dis. PO ₄ ppm	Tot. PO ₄ ppm
7/17/72	361.5	9.25	1.65	22	8.1	250	.262	.011	.258	8.12	4.76	.241	.191
7/24/72	271.	9.05	2.15	25	8.15	1050	.521	.122	.035	8.11	4.30	.633	.399
7/26/72	239.	8.5	1.70	22	8.1	180	.002	.001	.030	7.73	4.91	.532	--
7/31/72	243	9.1	.3	21.5	8.3	50	.884	.004	.041	8.57	6.14	.485	.566
8/2/72	312.5	8.85	.55	21.5	8.05	1030	.496	.005	.087	.830	.655	.386	.551
8/8/72	269	10.6	1.80	19.5	8.25	8000	--	--	--	--	--	--	--
8/14/72	269	10.6	1.80	19.5	8.25	300	.10	.029	.60	--	--	.54	--
10/25/72	--	11.4	1.1	--	7.95	800	3.946	.026	.424	10.04	43.03	3.355	7.926
11/8/72	--	11.4	.6	7	8.0	<20	.168	.008	.387	9.66	3.90	.599	.680
1/25/73	--	15.0	1.3	2.5	8.1	<10	.388	.005	.212	8.86	2.93	.070	.063
1/26/73	--	12.8	2.2	2.5	8.0	<10	.168	.005	.226	8.39	1.74	.071	.078
1/31/73	--	13.0	3.2	.5	8.0	<10	.397	.005	.278	9.34	2.61	.142	.191
2/7/73	--	11.2	1.0	2.0	8.0	5	.411	.005	.321	9.17	2.92	.176	.189
2/14/73	--	13.6	1.8	2.0	7.9	<5	.396	.005	.385	9.27	4.61	.026	.062
2/21/73	--	13.4	3.8	1.5	8.05	--	.446	.003	.576	10.25	5.99	.164	.285
2/28/73	--	13.2	2.0	2.0	8.05	<5	.442	.003	.452	10.13	5.79	.069	.200
3/6/73	--	12.0	2.6	3.0	8.1	--	.497	.004	.321	10.47	5.97	.076	.064
3/14/73	--	11.0	2.6	5.0	7.95	--	.450	.003	.291	7.80	6.46	.030	.056
3/21/73	--	11.4	1.8	3.0	8.0	--	.487	.004	.351	9.53	7.48	.038	.054
4/2/73	--	12.2	1.8	8.0	7.95	--	.415	.001	.653	10.25	9.77	.031	.059
4/18/73	--	11.5	1.6	9.0	8.0	20	.375	.004	.279	8.72	5.70	.166	.309
5/03/73	--	11.5	2.0	11.0	7.85	40	.335	.006	.198	6.67	5.31	.233	.309

BOARDMAN RIVER - FRONT STREET - Station No. 6

DATE:	Flow CFS	D.O. ppm	B.O.D. ppm	Temp. °C	pH	T.C. #/100ml	NO ₃ -N ppm	NO ₂ -N ppm	NH ₃ -N ppm	SiO ₂ ppm	Cl ppm	Dis. PO ₄ ppm	Tot. PO ₄ ppm
7/17/72		8.75	1.65	22	8.0	400	.266	.017	.182	8.39	4.08	.094	.310
7/24/72		8.4	2.0	25	8.15	330	.004	.001	.037	7.88	4.70	.319	.340
7/26/72		--	--	--	--	650	--	--	--	--	--	--	--
7/31/72		--	--	--	--	220	--	--	--	--	--	--	--
8/2/72		--	--	--	--	4300	--	--	--	--	--	--	--
8/8/72		--	--	--	--	3500	--	--	--	--	--	--	--
8/14/72		--	--	--	--	900	--	--	--	--	--	--	--
10/25/72		11.6	.8	--	7.95	70	--	--	--	--	--	--	--
11/8/72		11.6	.6	7	8.1	<20	.162	.009	.272	9.10	2.85	.337	.417
1/25/73		15.3	1.0	2.5	8.0	<10	.403	.006	.178	8.84	2.55	.059	.069
1/26/73		13.2	3.2	2.5	7.9	2	.396	.006	.193	8.94	2.81	.060	.086
1/31/73		13.4	2.8	1.5	8.0	60	.408	.006	.220	9.12	3.17	.122	.159
2/7/73		11.4	1.0	2.0	8.0	30	.412	.006	.224	10.18	2.15	.088	.120
2/14/73		13.6	1.9	1.5	8.0	<10	.412	.005	.291	9.57	3.23	.029	.039
2/21/73		13.6	2.8	1.5	8.05	--	.480	.003	.223	8.59	4.71	.086	.127
2/28/73		13.4	3.0	2.0	8.10	<5	.495	.004	.289	7.81	5.26	.068	.088
3/6/73		12.4	2.6	5.0	8.1	--	.510	.003	.211	9.61	5.54	.029	.046
3/14/73		11.4	2.6	5.0	7.9	--	.499	.004	.279	7.33	6.40	.043	.060
3/21/73		11.6	1.8	4.0	8.05	--	.464	.005	.216	7.23	6.82	.029	.423
4/2/73		12.4	2.4	7.0	8.0	--	.448	.008	.482	8.06	8.84	.035	.050
4/18/73		11.5	2.0	8.0	8.1	20	.374	.005	.161	8.82	5.22	.664	.173
5/03/73		11.0	2.1	11.0	8.0	<20	.316	.004	.329	7.13	5.80	.312	.262

KIDDS CREEK

DATE:	Flow CFS	D.O. ppm	B.O.D. ppm	Temp. °C	pH	T.C. #/100ml	NO ₃ -N ppm	NO ₂ -N ppm	NH- ₃ N ppm	SiO ₂ ppm	Cl ppm	Dis. PO ₄ ppm	Tot. PO ₄ ppm
7/17/72	20.8	9.1	3.6	15.5	7.85	2400	.352	.008	.066	10.53	80.5	.031	.067
7/24/72	14.3	9.05	1.85	17.	8.1	9400	.285	.001	.047	12.24	19.56	.214	.116
7/26/72	14.3	9.6	1.6	15.	8.05	4600	.181	.002	.027	10.87	9.63	.109	.069
7/31/72	16.3	9.1	.8	17.	8.1	3100	.689	.011	.060	9.06	20.37	.047	.094
8/2/72	42.6	8.1	2.9	16.4	8.2	104,000	.662	.012	.057	9.35	23.34	.122	.200
8/8/72	48.0	--	--	--	--	17,000	--	--	--	--	--	--	--
8/14/72	20.7	9.45	1.0	16.	8.1	4,900	.14	.008	.36	--	--	.065	--
10/25/72	19.0	11.2	1.4	--	8.0	12,000	--	--	--	--	--	--	--
11/8/72	--	11.8	1.4	8.	8.1	140	.450	.007	.094	11.07	18.72	.089	.174
1/25/73	16.0	14.7	1.4	3.0	8.1	600	.526	.005	.088	11.02	19.23	.072	.106
1/26/73	17.2	12.6	3.2	3.0	8.0	100	.171	.004	.063	9.99	15.03	.036	.085
1/31/73	20.0	13.6	3.2	.5	8.1	340	.548	.005	.087	11.81	21.75	.070	.128
2/7/73	--	11.	1.2	2.5	8.0	200	.553	.005	.073	11.10	20.59	.040	.114
2/14/73	--	12.8	2.0	3.0	7.85	300	.542	.005	.067	9.75	19.99	.053	.115
2/21/73	--	12.8	2.4	1.0	8.10	--	.694	.003	.054	7.91	42.94	.097	.094
2/28/73	--	12.8	2.6	3.5	8.10	750	.677	.003	.048	6.42	23.71	.033	.090
3/6/73	--	11.6	2.0	5.0	8.10	--	.764	.005	.064	8.23	22.69	.037	.061
3/14/73	--	10.8	3.8	6.5	7.90	--	.567	.005	.069	7.42	17.47	.376	.256
3/21/73	--	12.2	2.6	3.0	8.15	--	.668	.003	.050	8.01	21.48	.029	.093
4/2/73	--	11.6	3.4	7.0	8.0	--	.676	.004	.078	6.62	21.66	.064	.499
4/18/73	--	11.4	3.0	7.5	8.1	400	.532	.005	.054	11.2	23.24	.038	.077
5/03/73	--	11.0	3.2	9.5	8.05	600	.466	.005	.063	9.52	21.01	.050	.101

TABLE V-6

Date	Boardman R. at S. Airport Rd.			Traverse-City Waste-Water Treat. Effl.			Boardman R. at 8th Street		
	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform no./100ml	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform MPN	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform No./100ml
7/12/72	1.6	.032	510	155	6.0	* 4300 * 15000	1.65	.191	250
7/24/72	1.6	.032	310	160	7.5	1,400,000 1,400,000	2.15	.399	1050
7/26/72	1.35	.276	120	232	5.5	46,000 930	1.70	---	180
7/31/72	<1.0	.243	200	170	6.0	91 430	<1.0	.566	50
8/2/72	<1.0		445	9.0	4.0	1,400,000 430	<1.0	.551	1030
8/8/72			110	47	6.0	1,400,000	1.8		8000
8/14/72	<1.0	.250	200	21	5.5	750 91	1.8	.540	300
10/25/72	1.0		210	20	6.0	430 30	1.1		800
11/8/72	<1.0	.025	20	27	6.0	2300 7300	<1.0	.680	<20
1/25/73	1.0	.032	20	--	--	930 150	1.3	.063	<10
1/26/73	1.5	.029	1	--	--	30 91	2.2	.078	<10
1/31/73	3.2	.030	50	15	1.8	30 36	3.2	.191	<10
2/7/73	1.0	.039	70	13	1.8	36 30	1.0	.191	5
2/14/73	2.2	.039	10	19	0.8	36 30	1.8	.062	<5
2/21/73	2.0	.046	--	15	2.0	30 30	3.8	.285	--

*Coliform (MPN's) analyzed daily at 11:00 AM and 1:00 PM

Table V-6 Con't.

Date	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform no./100ml	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform MPN	B.O.D. mg/l	Tot PO ₄ -P mg/l	Coliform* No./100ml
2/28/73	1.6	.051	<10	21	2.0	30 30	2.0	.200	<5
3/6/73	1.6	.049	--	23	.20	360 30	2.6	.064	--
3/14/73	1.6	.070	--	25	.50	30 250	2.6	.056	--
3/21/73	2.0	--	--	6.	.30	91 30	1.8	.054	--
4/2/73	2.0	.047	--	5.	.80	36 30	1.8	.059	--
4/18/73	1.5	.041	10	28	4.50	36 30	2.3	.309	20
5/3/73	2.0	.049	20	27	5.0	430 360	2.2	.309	40