

# **Water Chemistry Data from Lake 223 of the Experimental Lakes Area, Northwestern Ontario, 1974 to 1982**

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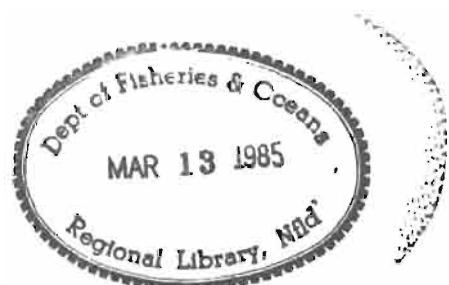
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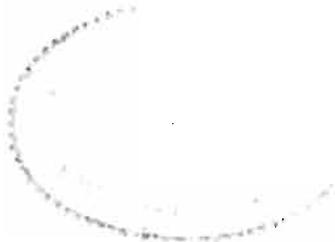
WATER CHEMISTRY DATA FROM LAKE 223 OF THE  
EXPERIMENTAL LAKES AREA, NORTHWESTERN ONTARIO,  
1974 TO 1982

by

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## ABSTRACT

Linsey, G.A., and J. Braund. 1984. Water chemistry data from Lake 223 of the Experimental Lakes Area, northwestern Ontario, 1974 to 1982. Can. Data Rep. Fish. Aquat. Sci. 487: iv + 121 p.

Water samples taken from Lake 223 of the Experimental Lakes Area were analyzed for up to 28 chemical and physical parameters during the period from 1974 to 1982. Depth profiles for each parameter were determined approximately monthly while epilimnion, inflow and outflow samples were analyzed weekly during the open water season. Beginning in 1976, profiles were obtained monthly under winter ice cover.

Key words: Water chemistry; chemical composition; lake acidification; limnology.

## RESUME

Linsey, G.A., and J. Braund. 1984. Water chemistry data from Lake 223 of the Experimental Lakes Area, northwestern Ontario, 1974 to 1982. Can. Data Rep. Fish. Aquat. Sci. 487: iv + 121 p.

De 1974 à 1982, on a analysé des échantillons d'eau prélevés au lac n° 223 de la Région des Lacs Expérimentaux en fonction de 28 paramètres chimiques et physiques. Durant la période où les lacs sont libres de glace, on a établi environ une fois par mois des profils de profondeur pour chacun des paramètres, alors qu'on a analysé des échantillons de l'épilimnion et de l'eau à l'entrée et à la sortie du lac toutes les semaines. C'est à partir de 1976 que l'on a dessiné des profils mensuels pour la période de gel.

Mots-clés: hydrochimie; composition chimique; acidification des lacs; limnologie.

## INTRODUCTION

Since its inception in 1968 (Johnson and Vallentyne 1971), the Experimental Lakes Area of northwestern Ontario has provided sites where a host of unique aquatic ecosystem experiments could be carried out. These have included whole lake fertilization and acidification projects, some of which have been ongoing for periods of many years. As well as experimental manipulation, the drainage basins in the area have been subjected to natural perturbations in the form of forest fires and a windstorm affording the opportunity to study their effects on the chemistry and hydrology of otherwise undisturbed watersheds (Schindler et al. 1980a).

The establishment of on site analytical laboratory facilities at the beginning of the project permitted chemical analysis for unstable substances such as nitrate, ammonia, phosphorus, ferrous iron, sulfide and dissolved inorganic carbon to be carried out within hours of sample collection and on a year-round basis. As a result, extensive water chemistry data have been compiled for a number of ELA lakes for periods of up to 15 years. Summaries of early portions of these data have been presented by Armstrong and Schindler (1971) and Prokopowich (1979). As well, data appear for a few chemical species for selected lakes in numerous individual publications (for example: Schindler 1971; Schindler et al. 1973, 1980a, b, and Hesslein 1980 to mention only a few).

The purpose of this series of reports is to document all of the water chemistry data routinely collected over the years for those ELA lakes which have undergone whole lake manipulation experiments or, as in the case of Lake 239, which have been subjected to only natural perturbations.

ELA Lake 223 is the site for an ongoing acidification experiment designed to monitor the chemical and biological responses of a lake to controlled amounts of sulfuric acid deposition to its surface water (Schindler et al. 1980b; Schindler and Turner 1982; Schindler et al., personal communication). Acid additions to the lake began in 1976 following two years of background monitoring. Details of amounts and methods of acid addition are provided by Cruikshank (1984).

This paper contains the chemistry data measured for Lake 223 from 1974 to 1982 inclusive (Appendices 1 to 9).

## METHODS

Details of the analytical methods employed up to the end of 1976 have been outlined in chronological order by Prokopowich (1979). The same format has been adopted to expand this account to include techniques in use to the end of 1982 (Tables 1 and 2).

Samples labelled "EPI" (epilimnion) are usually obtained at a depth of 1 m from the lake's surface. Occasionally, shallower samples

have been substituted but caution has been exercised to exclude any surface film or debris. Water obtained from inflows to or outflows from the lake are labelled IF and OF respectively. Dates are expressed as day numbers on the Julian calendar. The appendices have been arranged to contain the water chemistry data for individual calendar years.

Temperature profiles measured at much smaller depth intervals than those reported here and corresponding to the dates of chemistry sampling are presented by Cruikshank (1984).

## ACKNOWLEDGMENTS

Numerous individuals have contributed to the production of this report. In particular, M.A. Turner and K. Prohaska were instrumental in compiling and editing these data. J. Prokopowich supervised the ELA analytical laboratory from 1971 to 1980 and M. Stainton has provided analytical support at the Freshwater Institute. Thanks are extended to those who reviewed this manuscript and provided constructive suggestions.

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Table 1. Analytical methods employed from 1977 to 1982. The numbers are keyed to the brief method descriptions in Table 2 of this paper and in Prokopowich (1979).

Analysis	1977	1978	1979	1980	1981	1982
NH <sub>3</sub> -N	1	1	1	1	1,1a	1a
NO <sub>2</sub> -N	2	2	2	2	2,2a	2a
NO <sub>3</sub> -N	3	3	3	3	3,3a	3a
TDN	4c	4c	4c	4c	4c	4c
Susp N	5b	5b	5b	5b	5b	5b
TDP	7a	7a	7a	7a	7a	7a
Susp P	8	8	8	8	8	8
DIC	9d	9d	9d	9d,9e	9e	9e
DOC	10b	10b	10b	10b	10b	10b
Susp C	11	11	11	11	11	11
C1	13c	13c	13c	13c	13c	13c
SO <sub>4</sub>	14b	14b	14b	14b	14b	14b
H <sub>2</sub> S-S	15	15	15	15	15	15
SRSi	16	16	16	16	16	16
Na,K,Mg,Ca,Mn,Fe	17	17	17	17	17	17
Fe <sup>2+</sup> , Fe <sup>3+</sup>	19	19	19	19	19	19
pH	20	20	20	20,20a	20a	20a
Temperature	21	21	21	21	21	21
Conductivity @25°C	22	22	22	22	22	22
Oxygen	23	23	23	23	23	23
Chlorophyll-a	24b	24b	24b	24b, 24c	24c	24c
Colour	25	25	25	25	25	25
Alkalinity	26a	26a	26a	26a,26b	26b	26b

Table 2. A brief description of the analytical methods used from 1977 to 1982 which are not included in Prokopowich (1979).

Analysis	Method Number (from Table 1)	Description	Reference numbers
NH <sub>3</sub> -N	1a	<ul style="list-style-type: none"> <li>- automated colourimetric indophenol blue method with nitroprusside catalyst</li> <li>- filtered samples</li> <li>- started July, 1981</li> </ul>	16
NO <sub>2</sub> -N	2a	<ul style="list-style-type: none"> <li>- automated colourimetric azo dye method</li> <li>- filtered samples</li> <li>- started July, 1981</li> </ul>	15
NO <sub>3</sub> -N	3a	<ul style="list-style-type: none"> <li>- as in 2a but after reduction to nitrite with a copper-cadmium couple</li> </ul>	15
DIC	9e	<ul style="list-style-type: none"> <li>- acidification and on-stream gas stripping followed by infrared absorption analysis</li> <li>- started in July, 1980</li> </ul>	5, 14
pH	20a	<ul style="list-style-type: none"> <li>- sample and electrode in closed container to prevent atmospheric CO<sub>2</sub> exchange</li> <li>- unstirred</li> <li>- started July, 1980</li> </ul>	3
Chlorophyll-a	24c	<ul style="list-style-type: none"> <li>- static (20 hour) methanol extraction of samples on glass-fibre filters followed by fluorometry</li> <li>- uncorrected for phaeophytin</li> <li>- started in May, 1980</li> </ul>	M.P. Stainton (unpublished)
Alkalinity	26a	<ul style="list-style-type: none"> <li>- manual potentiometric acid titration using a Gran extrapolation to determine acid equivalence point</li> </ul>	4, 5
	26b	<ul style="list-style-type: none"> <li>- automated potentiometric acid titration using the first derivative to determine the equivalence point</li> <li>- Gran calculations performed on occasional samples</li> <li>- known amounts of bicarbonate added to low alkalinity samples prior to titration allowing an estimate of "negative" alkalinity</li> <li>- started May, 1980</li> </ul>	

## Appendix 1

1974 Water chemistry data

## LAKE 223 Temp (C) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	11.40	16.40	23.40	20.30	14.47	7.90	4.90
3	8.91	16.38	23.30	20.22	14.47	7.90	4.92
5	6.55	9.55	14.38	19.70	14.47	7.90	4.92
7	5.82	7.25	8.52	10.51	14.30	7.90	4.92
9	5.41	5.95	6.80	7.60	8.20	7.90	4.92
11	5.01	5.61	6.05	6.20	6.50	7.90	4.94
12	5.00						
13		5.40	5.62	5.70	6.00	7.89	4.98

## LAKE 223 Cond (uS/cm) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	21	22	21	21	23	23	24
3	21	22	21	22	23	23	23
5	19	22	21	22	26	23	23
7	21	23	23	21	27	23	23
9	21	23	22	23	27	23	23
11	21	24	23	23	26	25	22
12	23						
13		26	30	54	62	23	22

## LAKE 223 pH 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	6.70	6.62	6.78	6.69	6.90	6.67	6.84
3	6.30	6.64	6.85	6.78	6.97	6.76	6.84
5	6.22	6.48	6.86	6.75	6.87	6.72	6.84
7	6.20	6.37	6.72	6.70	6.91	6.78	6.91
9	6.19	6.24	6.33	6.31	6.48	6.78	6.93
11	6.16	6.05	6.03	5.91	6.14	6.78	6.93
12	6.10						
13		6.03	6.05	6.32	6.75	6.79	6.90

## LAKE 223 O2 (mg/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	10.60	9.26	8.00	8.70	9.10	9.00	10.70
3	10.51	9.00	8.01	8.70	9.31	8.95	10.60
5	10.19	11.70	11.50	8.70	9.30	9.10	10.52
7	9.23	10.69	12.01	12.30	9.30	9.02	10.51
9	8.35	8.09	8.82	10.76	7.10	8.80	10.75
11	7.89	4.68	3.30	.40	.01	9.22	10.60
12	5.01						
13		1.14	.49	.01	.01	9.02	11.09

## LAKE 223 NH3-N (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	5	18	21	5	33	6	23
3	8	18	18	3	12	14	19
5	8	36	17	2	8	15	22
7	11	24	24	3	7	17	16
9	16	26	20	3	6	9	12
11	37	51	49	12	53	12	18
12	142						
13		201	329	826	882	12	18

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## LAKE 223 NO3-N (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	50	1	1	2	1	8	9
3	48	1	2	1	1	4	8
5	56	1	2	1	1	3	8
7	59	1	1	1	1	4	7
9	63	34	2	1	1	3	5
11	68	56	37	12	5	3	6
12	61						
13		16	15	22	11	3	8

## LAKE 223 Susp N (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	52	73	77	83	66	69	64
3	43	67	84	55	73	55	86
5	76	113	91	80	69	76	64
7	61	107	147	90	76	73	72
9	45	111	182	280	145	66	68
11	74	95	133	138	384	73	57
12	87						
13		218	294	564	426	97	64

## LAKE 223 DIC (uM/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	146	119	118	120	137	188	149
3	154	122	108	117	138	167	158
5	171	164	115	123	125	190	167
7	196	215	139	129	143	147	159
9	224	257	234	191	286	169	149
11	237	377	376	486	550	168	169
12	342						
13		471	560	855	944	164	163

## LAKE 223 TDP (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	4	3	3	1	2	3	4
3	3	4	3	2	2	3	3
5	3	3	3	2	2	4	3
7	6	4	3	2	2	3	4
9	4	4	3	3	3	4	4
11	4	4	4	4	3	3	4
12	5						
13		6	6	9	7	3	4

## LAKE 223 DOC (uM/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	413	439	437		314	317	356
3	393	430	465	313	285	254	232
5	387	333	427	318	255	309	263
7	388	410	404	283	269	239	258
9	384	383	401	290	253	265	239
11		399	130	325	240	265	277
12	365						
13		384	468	439	515	237	232

## LAKE 223 Susp P (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	6	5	4	2	3	6	4
3	4	3	7	3	3	4	4
5	7	4	6	3	3	4	5
7	8	6	16	6	3	3	4
9	5	6	14	22	15	4	4
11	5	8	10	15	39	4	4
12	9						
13		27	41	83	56	5	4

## LAKE 223 Susp C (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	700	700	470	520	510	700	580
3	580	680	510	540	610	620	580
5	640	850	620	520	580	700	700
7	690	1050	1140	710	560	790	540
9	560	1100	1550	2540	1250	570	570
11	520	680	1260	1040	2160	700	550
12	1020						
13		1700	1840	3040	2280	930	590

## LAKE 223 CH4-C (uM/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	1	1	1	1	1	3	
3	1	1	1	1	1	4	
5	1	1	1	1	1	4	
7	1	1	1	1	1	3	
9	1	1	1	1	1	3	
11	1	1	1	1	9	3	
12	8						
13		1	45	203	292	3	

## LAKE 223 Na (mg/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	1.05	.91	1.00	.88	.90	1.01	.93
3	1.12	.90	.94	.88	.86	.97	.91
5	1.08	.89	.90	.95	.87	.96	.93
7	1.03	.92	.89	.98	.88	.98	.91
9	1.04	.95	.88	1.10	.89	1.00	.90
11	1.04	.91	.92	.95	.93	1.15	.92
12	1.10						
13		.94	.97	1.10	.94	1.12	.95

## LAKE 223 Cl (mg/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	.6	.6	.4	.8	.8	.6	
3	.8	.4	.4	.6	.8	.6	
5	.6	.4	.4	.6	.5	.6	
7	.6	.8	.4	.6	.6	.6	
9	.6	.6	.4	.8	.8	.6	
11	.6	.6	.4	.6	1.0	.6	
12	.6						
13		.6	.4	.8	1.0	.4	

## LAKE 223 K (mg/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	.39	.29	.36	.41	.34	.42	.29
3	.39	.28	.37	.41	.31	.42	.28
5	.35	.29	.35	.41	.34	.42	.28
7	.35	.31	.36	.40	.31	.42	.28
9	.34	.33	.36	.43	.34	.43	.27
11	.34	.31	.37	.42	.36	.39	.28
12	.38						
13		.34	.45	.55	.41	.41	.29

## LAKE 223 SO4 (mg/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	3.4	3.6	3.8	3.6	3.0	3.4	
3	3.6	3.4	4.2	3.4	3.2	3.4	
5	3.4	3.4	4.0	3.4	3.2	3.4	
7	3.6	3.8	4.0	3.4	3.2	3.4	
9	3.6	3.2	3.4	3.8	3.0	3.4	
11	3.4	3.0	3.4	2.8	3.0	3.4	
12	3.4						
13		3.0	2.0	1.2	3.0	3.4	

## LAKE 223 Ca (mg/L)

1974

DEPTH(m)

DAY #

	142	170	198	226	254	282	310
EPI	2.00	2.09	2.30	2.28	2.36	2.23	2.32
3	2.05	2.08	2.33	2.27	2.34	2.22	2.29
5	2.04	2.15	2.36	2.26	2.34	2.22	2.30
7	1.97	2.23	2.41	2.31	2.33	2.22	2.31
9	1.99	2.25	2.51	2.43	2.56	2.22	2.32
11	2.04	2.30	2.54	2.35	2.41	2.23	2.33
12	2.35						
13		2.32	3.03	4.10	4.83	2.23	2.32

## LAKE 223 Mg (mg/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	.54	.51	.64	.60	.58	.58	.58
3	.55	.51	.63	.59	.57	.57	.57
5	.55	.51	.62	.59	.57	.57	.57
7	.53	.53	.64	.58	.57	.57	.58
9	.53	.54	.66	.61	.60	.57	.58
11	.53	.54	.66	.63	.65	.57	.58
12	.58						
13	.55	.67	.66	.64	.58	.58	

## LAKE 223 Chl-a (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	1.9	1.8	1.8	1.6	1.7	2.2	2.4
3	2.3	1.7	1.5	1.4	1.9	3.1	3.0
5	4.2	3.6	2.2	1.6	1.4	3.1	2.5
7	6.4	7.4	5.0	4.9	2.7	2.8	2.1
9	4.0	8.2	13.8	47.0	20.5	3.2	2.5
11	3.6	5.8	4.9	14.0	53.4	1.9	2.0
12	2.8						
13		8.1	16.1	23.8	24.3	2.6	1.3

## LAKE 223 Fe (mg/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	.03	.01	.07	.03	.03	.02	.03
3	.03	.01	.06	.04	.03	.02	.03
5	.01	.01	.06	.04	.03	.03	.02
7	.02	.01	.07	.05	.03	.03	.03
9	.05	.01	.09	.06	.08	.02	.03
11	.10	.08	.15	.19	.64	.02	.03
12	.31						
13	.27	2.20	7.69	8.94	.05	.03	

## LAKE 223 TDN (ug/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	214	226	215	199	207	251	271
3	207	240	223	209	191	232	277
5	237	212	215	195	185	185	271
7	211	212	212	202	198	204	252
9	248	232	207	195	188	208	252
11	259	340	279	221	226	222	252
12	331						
13	450	654	1112	1095	227	227	252

## LAKE 223 SRSI (mg/L) 1974

DEPTH(m) DAY #

	142	170	198	226	254	282	310
EPI	1.400	1.310	1.370	1.260	1.120	1.190	1.220
3	1.430	1.310	1.360	1.260	1.120	1.190	1.230
5	1.400	1.280	1.310	1.260	1.120	1.200	1.230
7	1.440	1.350	1.190	.810	1.120	1.250	1.240
9	1.510	1.450	1.280	.631	.689	1.200	1.220
11	1.260	1.690	1.730	1.830	2.030	1.190	1.240
12	1.790						
13	1.900	2.180	2.770	2.880	1.210	1.230	

## Appendix 2

1975 Water chemistry data

## LAKE 223 Temp (C) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	22.78	21.90	18.96	12.65	9.94	
2	16.31					
5	10.35					
8	6.21					
10	5.20					
12	4.76					

## LAKE 223 NH3-N (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	4	2	4	19	9	
2	7					
5	6					
8	8					
10	9					
12	155					

## LAKE 223 Cond (uS/cm) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	19		21	23	22	
2	20					
5	20					
8	21					
10	22					
12	24					

## LAKE 223 NO3-N (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	3	1	1	8	1	
2	1					
5	4					
8	35					
10	60					
12	48					

## LAKE 223 pH 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	6.68		6.61	6.98	6.49	
2	7.01					
5	6.78					
8	6.51					
10	6.37					
12	6.23					

## LAKE 223 TDN (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI	215	155	177	245	218	
2	181					
5	172					
8	240					
10	253					
12	411					

## LAKE 223 Susp N (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	59					
5	93					
8	114					
10	119					
12	128					

## LAKE 223 DIC (uM/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	97					
5	138					
8	204					
10	281					
12	410					

## LAKE 223 TDP (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	4					
5	4					
8	6					
10	6					
12	6					

## LAKE 223 DOC (uM/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	451					
5	382					
8	393					
10	410					
12	396					

## LAKE 223 Susp P (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	4					
5	5					
8	7					
10	7					
12	16					

## LAKE 223 Susp C (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI						
2	590					
5	710					
8	930					
10	920					
12	1070					

## LAKE 223 Cl (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			.4	.6	.6	.6	.8
2	1.2						
5	.6						
8	.6						
10	.4						
12	.6						

## LAKE 223 SO4 (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			3.6	3.4	2.6	3.0	3.2
2	3.4						
5	3.2						
8	3.2						
10	3.2						
12	2.8						

## LAKE 223 Na (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			.93	.87	.70	.92	.83
2	.88						
5	.89						
8	.91						
10	.92						
12	.96						

## LAKE 223 K (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			.33	.31	.57	.35	.35
2	.22						
5	.22						
8	.24						
10	.25						
12	.27						

## LAKE 223 Ca (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			2.12	1.90	2.32	2.30	2.35
2	2.12						
5	2.25						
8	2.39						
10	2.40						
12	2.66						

## LAKE 223 Mg (mg/L) 1975

DEPTH(m)		DAY #					
		153	181	209	237	265	293
EPI			.58	.60	.50	.67	.65
2	.52						
5	.53						
8	.55						
10	.55						
12	.58						

LAKE 223 Fe (mg/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI		.01	.10	.11	.04	.04
2	.01					
5	.02					
8	.05					
10	.10					
12	.25					

LAKE 223 SRS1 (mg/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI		1.330	1.250	1.320	1.230	1.320
2	1.310					
5	1.350					
8	1.550					
10	1.710					
12	2.200					

LAKE 223 Chl-a (ug/L) 1975

DEPTH(m) DAY #

	153	181	209	237	265	293
EPI		1.1	1.0	1.6	2.1	2.5
2	2.3					
5	4.3					
8	9.3					
10	9.6					
12	6.4					

## Appendix 3

1976 Water chemistry data

## LAKE 223 Temp (C)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI			6.15		10.90		19.30	
4			6.11				15.57	
8			6.06				7.82	
12			5.36				6.64	
14							6.51	
OF			6.80	7.30	11.90	15.80	22.18	20.00
IF			6.50	6.10	11.50	15.80	23.15	
	166	173	180	187	194	201	208	215
EPI	19.93		19.56		22.20		21.37	
4			19.40				21.83	
8			9.31				11.42	
12			6.89				7.47	
14								
OF	16.92	19.90	20.98	24.00	21.24	22.80	21.02	19.80
IF	15.71	18.30	19.03	23.20	16.85			
	222	229	236	243	250	257	264	271
EPI	21.37		22.19		17.90		16.75	
4			22.04				16.77	
8			13.23				16.70	
12			7.89				8.09	
14			7.45				7.63	
OF	20.01	16.80	18.20	14.80	14.72	14.40	10.71	6.20
IF								
	278	285	292	349				
EPI	13.01		8.23					
4			8.28					
8			8.28					
12			8.26					
14			8.24					
OF	10.57	7.50	4.10					
IF								

## LAKE 223 Cond (uS/cm)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	27	27	22					22
4		24	22					22
8		24	22					22
12		27	23					23
14		126						24
OF	26	22	22	22	22	22	23	25
IF	18	19	19	21	21	21	23	
	166	173	180	187	194	201	208	215
EPI			22		22			25
4			22					24
8			21					23
12			24					26
14								
OF	26	23	22	23	22	24	25	26
IF	25	27	19	20	21	24	25	26
	222	229	236	243	250	257	264	271
EPI	26		25		25			25
4			25					25
8			22					25
12			26					37
14			59					75
OF			27	27	27	29	30	28
IF								30
	278	285	292	349				
EPI	25		27		27			
4			27		27			
8			27		27			
12			26		30			
14			26		37			
OF	32	32	32					
IF								

## LAKE 223 pH

1976

## DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	6.61	6.68	6.41			6.49		
4		6.60	6.51			6.50		
8		6.34	6.47			6.49		
12		6.22	6.32			6.29		
14		6.68				6.21		
OF		6.75	6.44	6.60	6.42	6.58	6.40	6.39
IF			6.46	6.48	6.35	6.51	6.37	
	166	173	180	187	194	201	208	215
EPI			6.45		6.79		6.51	
4			6.49				6.58	
8			6.63				6.73	
12			6.17				6.16	
14								
OF	6.30	6.50	6.56	6.38	6.69	6.32	6.54	6.23
IF	6.24	6.32	6.41	6.34	6.48			
	222	229	236	243	250	257	264	271
EPI	6.50		6.65		6.61		6.41	
4			6.61				6.43	
8			6.77				6.44	
12			6.20				6.31	
14			6.51				6.61	
OF		6.22	6.35	6.27	6.30	6.31	6.37	6.31
IF								
	278	285	292	349				
EPI	6.42		6.36	6.49				
4			6.38	6.39				
8			6.42	6.15				
12			6.49	6.03				
14			6.45	6.94				
OF	6.48	6.49	6.49					
IF								

## LAKE 223 O2

(mg/L)

1976

## DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	13.87	11.65	10.95				9.57	
4			9.75	10.25			10.78	
8			6.55	10.20			12.10	
12		1.61	.24	8.75			6.96	
14				.01			4.97	
OF								
IF								
	166	173	180	187	194	201	208	215
EPI							8.42	
4							8.40	
8							11.93	
12							.34	
14								
OF								
IF								
	222	229	236	243	250	257	264	271
EPI							9.15	
4							9.20	
8							9.01	
12							.01	
14							.01	
OF								
IF								
	278	285	292	349				
EPI					10.11	13.74		
4					10.13	11.60		
8					10.06	9.29		
12					10.33	2.54		
14					10.10	.01		
OF								
IF								

LAKE 223 NH<sub>3</sub>-N (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	43	44	6		4		6	
4		29	9				6	
8		10	6				3	
12		230	20				36	
14		2230					98	
OF		63	9	4	6	29	14	28
IF		9	4	6	11	31		
	166	173	180	187	194	201	208	215
EPI	10		5		11		4	
4			5				4	
8			5				3	
12			219				145	
14								
OF	33	41	6	8	17	19	16	5
IF	26	80	14	13	34			
	222	229	236	243	250	257	264	271
EPI	2		4		4		4	
4			5				5	
8			4				4	
12			69				237	
14			660				936	
OF	19	16	23	7	27	36	20	13
IF								
	278	285	292	349				
EPI	9		16	37				
4			16	37				
8			18	90				
12			16	362				
14			16	1360				
OF	58	50	24					
IF								

LAKE 223 NO<sub>3</sub>-N (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	8	35	38		3		4	
4		16	35				1	
8		78	41				1	
12		1	51				30	
14		8					30	
OF	59	42	17	5	5	6	2	5
IF		23	5	8	12	15		
	166	173	180	187	194	201	208	215
EPI	1		1		1		1	
4			1				1	
8			1				1	
12			9				7	
14								
OF	11	9	1	1	1	3	2	2
IF	45	41	4	6	8			
	222	229	236	243	250	257	264	271
EPI	3		1		1		1	
4			1				1	
8			4				1	
12			6				7	
14			25				20	
OF	6	5	7	4	9	31	10	12
IF								
	278	285	292	349				
EPI	2		3		5			
4			3		5			
8			4		18			
12			3		43			
14			2		28			
OF	54	24	17					
IF								

LAKE 223		TDN		(ug/L)		1976			
DEPTH(m)		DAY #							
		008	097	124	132	138	145	152	159
EPI	278	315	232		232		256		
4		259	286			226			
8		287	236			230			
12		483	274			304			
14		3420				410			
OF		424	274	226	200	276	314	230	
IF		236	132	252	254	400			
		166	173	180	187	194	201	208	215
EPI	180		192		226		230		
4			182			236			
8			258			300			
12			504			436			
14		230	546	212	214	218	228	342	240
OF		456	468	280	288	350			
IF									
		222	229	236	243	250	257	264	271
EPI	216		270		286		225		
4			250			240			
8			298			245			
12			388			580			
14			1350			1470			
OF	278	276	318	302	415	380	350	255	
IF									
		278	285	292	349				
EPI	220		234		268				
4			228		268				
8			242		306				
12			232		700				
14			232		2650				
OF	450	272	228						
IF									

LAKE 223		Susp N		(ug/L)		1976			
DEPTH(m)		DAY #							
		008	097	124	132	138	145	152	159
EPI	27	70	15			87		71	
4		67	32					59	
8		56	25					90	
12		441	25					92	
14		667						130	
OF	81	13	48	61	61	109			45
IF		13	25	57	57	94			
		166	173	180	187	194	201	208	215
EPI	57		65		28		65		
4			54					12	
8			105					111	
12			205					135	
14		64	59	47	40	35	24	2	65
OF	94	144	84	40	78				
IF									
		222	229	236	243	250	257	264	271
EPI	40		49		7		48		
4			44					64	
8			65					55	
12			472					447	
14			751					526	
OF	42		75	363			69	29	11
IF									
		278	285	292	349				
EPI	83		108		78				
4			113		52				
8			90		56				
12			107		222				
14			75		862				
OF	76	40	79						
IF									

## LAKE 223 TDP (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	3	4	3		3		2	
4		4	3				2	
8		4	3					2
12		4	3				3	
14		66					3	
OF		4	4	5	3	5	5	5
IF			3	5	4	6	8	
	166	173	180	187	194	201	208	215
EPI	2		2		2		2	
4			2				2	
8		4					3	
12		4					5	
14								
OF	4	11	7	2	2	3	3	2
IF		12	4	6	7			
	222	229	236	243	250	257	264	271
EPI	2		2		2		2	
4			2				3	
8			3				2	
12			5				5	
14			10				9	
OF	3	3	4	4	4	5	4	3
IF								
	278	285	292	349				
EPI	1		2		2			
4			2		1			
8			2		2			
12			2		3			
14			2		12			
OF	5	4	3					
IF								

## LAKE 223 Susp P (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	3	2	5		4		4	
4		3	5				4	
8		5	4				9	
12		50	4				9	
14		79					11	
OF		2	5	4	3	3	9	4
IF		3	2	3	3	3	8	
	166	173	180	187	194	201	208	215
EPI	3		2		2		2	
4			1				2	
8		4					4	
12		18					12	
14								
OF	4	7	5	3	2	2	2	2
IF		5	4	4	7	2	2	
	222	229	236	243	250	257	264	271
EPI	2		3		3		3	
4			2				3	
8		4					3	
12		33					37	
14		115					56	
OF	2	2	3	3	3	8	3	2
IF								
	278	285	292	349				
EPI	3		4		3			
4			4		3			
8			6		4			
12			5		11			
14			4		114			
OF	6	3	4					
IF								

20

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Lake 223 DIC (uM/L) 1975

C (uM/L)

(uM/L)

1975

DEPTH( m )

DAY #

008 097 124 132 138 145 152 159

EPI	136	142	168		108			
4		145	166		105			
8		216	166		136			
12		394	216		218			
14		1560			257			
OF		144	159	124	112	128	137	174
IF			133	128	129	145	190	

166 173 180 187 194 201 208 215

EPI		94		60		56	
4		92				55	
8		123				111	
12		400				347	
14							
OF	162	132	82	77	68	71	70
EF	189	267	132	154	197		79

222   229   236   243   250   257   264   271

EPI	54	38	54	46
4		42		47
8		124		46
12		438		588
14		730		908
OF	133	134	192	223
IF			212	183
				231

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279 285 292 349

EPI	59	64	35
4		59	53
8		61	118
12		60	288
14		59	871
OF	214	261	216
IF			

LAKE 223      DOC      (µM/L)      1975

DOC

GJM 1

1975

DEPTH( $\pi$ )

DAY 6

008 097 124 132 138 145 152 159

EPI	410	385	428		326		320
4		343	460				304
8		314	420				298
12		290	442				272
14		1320					274
DF		380	396	282	300	280	328
TF		254	184	244	222	222	336

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166 173 180 187 194 201 208 215

EPI	292	330	330	340
4		334		322
8		332		320
12		598		300
14				
OF	340	418	312	308
TF	566	533	314	330
			320	306
			316	344

222 223 226 243 253 257 264 271

EPI	328	422	455	385
4		404		385
8		444		415
12		414		610
14		754		890
OP	336	440	462	395
IT		400	395	500
				385
				295

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278 285 292 310

EPI	365	370	395
4		370	385
8		375	400
12		370	420
14		385	1010
OF	395	375	280
xc			

## LAKE 223 Susp C (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
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EPI	580	560	910		670		620	
4		650	720				450	
8		630	680				680	
12		2910	740				760	
14		3500					970	
OF		550	430	570	550	490	1120	560
IF		550	440	440	560	650		

	166	173	180	187	194	201	208	215
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EPI	590		640		630		500	
4			560				400	
8			790				1000	
12			1430				1120	
14								
OF	440	670	550	640	490	530	370	560
IF	650	730	510	560	1000			

	222	229	236	243	250	257	264	271
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	620		720		640		810	
4			670				850	
8			920				780	
12			3170				3250	
14			4800				3420	
OF	430	500	500	550	450	930	520	300
IF								

	278	285	292	349
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EPI	670		790	570
4			740	630
8			870	670
12			780	
14			740	4580
OF	740	270	570	
IF				

## LAKE 223 Cl (mg/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	.4	.8	.6		.6		1.0	
4		1.0	.6				1.0	
8		1.0	.6				.6	
12		.8	.6				.8	
14		.6					.6	
OF		.6	.6	.6	.8	.8	1.4	.6
IF		.6	.8	.8	.8	.8	.6	

	166	173	180	187	194	201	208	215
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	.6		.4		.8		.6	
4			.6				.6	
8			.5				.6	
12			.6				.8	
14								
OF	.6	.8	.4	.4	.8	.6	.8	.8
IF	1.0	.6	.4	.5	.8	.6	.8	

	222	229	236	243	250	257	264	271
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	.8		.8		.6		.8	
4			.8				.8	
8			1.0				.8	
12			2.0				.6	
14			1.2				.6	
OF	.8	.6	1.0	.4	.4	.6	.6	.6
IF								

	278	285	292	349
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EPI	.4		.4	.6
4			.6	.6
8			.6	.8
12			.8	.8
14			.8	.6
OF	.4	.6	.8	
IF				

22

LAKE 223 SO<sub>4</sub> (mg/L) 1976

		DEPTH(m)							
		DAY #							
		008	097	124	132	138	145	152	159
EPI	4.0	3.8	3.0		3.0		3.6		
4	3.4	3.0				3.2			
8	3.4	3.0				3.0			
12	2.8					3.0			
14	.8					3.0			
OF	4.0	3.2	3.0	3.0	3.4	3.8	4.0		
IF		2.6	2.6	2.4	2.8	3.0			
		166	173	180	187	194	201	208	215
EPI	3.8		4.4		5.0		5.4		
4		4.4				5.4			
8		3.0				2.8			
12		2.8				2.4			
14									
OF	3.6	4.0	4.6	5.0	5.0	5.2	5.2	5.4	
IF	3.2	3.2	3.2	2.6	2.6				
		222	229	236	243	250	257	264	271
EPI	5.4		6.0		6.0		6.5		
4		6.0				6.8			
8		2.8				6.6			
12		2.0				2.0			
14		.6				1.8			
OF	5.2	5.4	5.4	6.0	5.2	5.6	5.8	5.6	
IF									
		278	285	292	349				
EPI	6.4		6.8	8.8					
4		7.0	7.8						
8		7.0	7.8						
12		6.8	6.8						
14		6.8	.8						
OF	5.6	5.4	5.4						
IF									

## LAKE 223 Na (mg/L) 1976

		DEPTH(m)							
		DAY #							
		008	097	124	132	138	145	152	159
EPI	1.06	1.11	.84			.88		.92	
4		.96	.86					.87	
8			.96	.84				.87	
12				.95	.88			.85	
14					.96			.90	
OF		1.01	.81		.85	.87	.90	.88	.92
IF		.69	.78		.73	.79	.91		
		166	173	180	187	194	201	208	215
EPI	.89		.84			.85		.91	
4		.87						.89	
8			.84					.87	
12				.86				.86	
14									
OF	.92	1.01	.83		.86	.85	.91	.94	.89
IF	.79	.95	.71		.72	.80			
		222	229	236	243	250	257	264	271
EPI	.92		.34			.94		1.11	
4		.94						1.14	
8			.96					1.14	
12				1.03				1.15	
14					.99			1.19	
OF	.94	.94	2.04		.99	1.05	1.25	1.26	1.08
IF									
		278	285	292	349				
EPI	.87		.97	1.04					
4			.97	.94					
8				1.00	.96				
12					.98	.96			
14						.97	.96		
OF	1.19	1.24	1.30						
IF									

LAKE 223		K	(mg/L)		1976					
DEPTH(m)			DAY #							
			008	097	124	132	138	145	152	159
EPI	.38	.34	.38		.30		.32			
4		.27	.40				.30			
8		.27	.36				.30			
12		.28	.38				.30			
14		.41					.30			
OF		.45	.40	.37	.28	.32	.36	.31		
IF			.39	.41	.30	.32	.44			
			166	173	180	187	194	201	208	215
EPI	.32		.39		.39		.34			
4		.33					.28			
8		.35					.31			
12		.37					.35			
14										
OF	.32	.66	.33	.31	.39	.31	.35	.27		
IF	.30	.33	.31	.26	.31					
			222	229	236	243	250	257	264	271
EPI	.34		.34		.31		.32			
4		.31					.32			
8		.34					.32			
12		.39					.38			
14		.44					.42			
OF	.34	.39	.34	.34	.42	.57	.36	.35		
IF										
			278	285	292	349				
EPI	.33		.27	.34						
4			.30	.32						
8			.32	.32						
12			.32	.32						
14			.32	.38						
OF	.61	.46	.41							
IF										

LAKE 223		Ca	(mg/L)		1976					
DEPTH(m)			DAY #							
			008	097	124	132	138	145	152	159
EPI	3.13	2.36	2.83				2.01			2.16
4		2.21	2.90							2.28
8		2.26	2.90							2.22
12		2.26	3.09							2.39
14		5.07								2.28
OF		2.36	2.83	1.95	1.96	2.12	2.22			2.55
IF			2.25	1.79	1.64	1.91	2.22			
			166	173	180	187	194	201	208	215
EPI	2.24						2.60			2.95
4		2.09								2.57
8		2.36								2.48
12		2.43								2.81
14										
OF	2.52	2.23	2.09	2.19	2.46	2.53	2.76	2.35		
IF	2.38	2.64	1.89	2.12	2.73					
			222	229	236	243	250	257	264	271
EPI	2.31						2.34			2.47
4		2.23								2.47
8			2.18							2.31
12		2.40								3.13
14		3.43								4.40
OF	2.32	2.65	2.45	2.70	2.72	2.91	2.91	2.99		
IF										
			278	285	292	349				
EPI	2.21						2.68	3.22		
4							2.68	2.50		
8							2.64	2.66		
12							2.78	2.71		
14							2.64	4.14		
OF	3.16	3.36					3.55			
IF										

## LAKE 223 Mg (mg/L) 1976

		DEPTH(m)							
		DAY #							
		008	097	124	132	138	145	152	159
EPI		.71	.68	.52		.58		.59	
4			.63	.52				.60	
8				.63	.50			.55	
12					.64	.52		.59	
14						.75		.57	
OF							.66	.49	.57
IF								.40	.40
								.50	.55
								.57	.57
									.54
		166	173	180	187	194	201	208	215
EPI		.52		.55		.56		.62	
4				.53				.58	
8					.58			.57	
12						.58		.61	
14									
OF								.53	.57
IF								.60	.66
								.47	.45
								.55	.55
									.59
									.57
		222	229	236	243	250	257	264	271
EPI		.55		.60		.62		.52	
4				.57				.54	
8					.56			.60	
12						.62		.59	
14							.61	.52	
OF								.55	.63
IF								.66	.65
								.66	.66
								.63	.63
								.62	.62
									.64
		278	285	292	349				
EPI		.50		.56	.69				
4				.55	.56				
8					.56	.59			
12						.53	.52		
14							.56	.59	
OF								.68	.67
IF									.67

## LAKE 223 Mn (mg/L) 1976

		DEPTH(m)							
		DAY #							
		008	097	124	132	138	145	152	159
EPI								.01	
4								.01	
8								.01	
12								.01	
14									.04
OF								.01	
IF								.01	.03
		166	173	180	187	194	201	208	215
EPI		.01						.01	
4								.01	
8								.01	
12								.11	
14									.23
OF								.03	.03
IF								.01	.01
		.03	.03	.01		.01	.01	.01	.01
						.03			
		222	229	236	243	250	257	264	271
EPI		.01						.01	
4								.01	
8								.01	
12								.42	
14								.68	
OF								.03	.01
IF								.04	.01
		.03	.01	.04		.03	.03	.04	.03
		278	285	292	349				
EPI		.01						.01	
4								.03	
8								.03	
12								.03	.21
14								.03	1.08
OF								.03	
IF									

LAKE 223		Fe	(mg/L)		1976					
DEPTH(m)			DAY #							
			008	097	124	132	138	145	152	159
EPI	.04	.03	.04				.04			
4		.03	.04				.04			
8		.03	.04				.04			
12		.29	.07				.04			
14		33.40					.04			
OF		.03	.01	.11	.04	.07	.07	.07		
IF			.04	.11	.04	.18	.41			
			166	173	180	187	194	201	208	215
EPI	.04		.04				.04			
4		.04					.04			
8		.04					.04			
12		.07					.12			
14										
OF	.07	.04	.04	.04	.04	.04	.04	.04		
IF	.26	.60	.07	.10	.27					
			222	229	236	243	250	257	264	271
EPI	.04		.04				.09			
4		.04					.04			
8		.04					.04			
12		.52					4.33			
14		9.04					13.40			
OF	.04	.04	.15	.07	.19	.16	.16	.16		
IF										
			278	285	292	349				
EPI	.04		.04				.03			
4		.04					.03			
8		.04					.03			
12		.04					.22			
14		.13					16.80			
OF	.17	.17	.13							
IF										

LAKE 223		Susp Fe	(ug/L)		1976						
DEPTH(m)			DAY #								
			008	097	124	132	138	145	152	159	
EPI							112			21	
4							115			28	
8							112			62	
12							199			108	
14										151	
OF										34	
IF							94	73	71	30	23
							28	28	30	41	240
			166	173	180	187	194	201	208	215	
EPI	.66						14			10	
4							22			7	
8							43			32	
12							412			394	
14											
OF	11						26			89	
IF	16						55	97	268	23	
			222	229	236	243	250	257	264	271	
EPI	2						7	<	2	41	
4							2			56	
8							20			29	
12							1258			2183	
14							434			251	
OF	11						46	149	58	343	95
IF											190
			278	285	292	349					
EPI	88						106				
4							474				
8							384				
12							190				
14							175				
OF	88						35				
IF											

## LAKE 223 SRS1 (mg/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	1.560	1.390	1.450		1.470		1.300	
4		1.400	1.460				1.310	
8			1.590	1.460			1.340	
12				2.460	1.540		1.500	
14						5.310	1.570	
OF						1.310	1.450	1.470
IF						.390	3.880	.349
							.411	.672
	166	173	180	187	194	201	208	215
EPI	1.310		1.260		1.260		1.270	
4			1.260				1.270	
8				1.270			1.170	
12					1.820		1.910	
14						1.240	1.240	1.290
OF	1.430	1.270	1.250	1.250	1.240	1.240	1.290	1.270
IF	1.040	1.470	.491	.359	.617			
	222	229	236	243	250	257	264	271
EPI	1.290		1.200		1.180		1.180	
4			1.200				1.170	
8				1.140			1.180	
12					2.110		2.410	
14						2.690	2.900	
OF	1.310	1.270	1.280	1.310	1.350	1.420	1.310	1.650
IF								
	278	285	292	349				
EPI	1.240		1.300	1.360				
4			1.300	1.260				
8				1.300	1.390			
12					1.300	2.080		
14						1.300	3.460	
OF	1.320	1.930	1.780					
IF								

## LAKE 223 Chl-a (ug/L)

1976

DEPTH(m)

DAY #

	008	097	124	132	138	145	152	159
EPI	1.8	.7	3.1			3.0		.9
4			.8	3.5				1.7
8				.9	3.5			4.5
12					37.4			6.0
14						3.4		
OF							8.4	
IF								
	166	173	180	187	194	201	208	215
EPI	1.6		1.0			.9		1.1
4			1.1					1.2
8				3.0				3.4
12					4.8			7.5
14								
OF								
IF								
	222	229	236	243	250	257	264	271
EPI	1.4		1.4					2.5
4			1.5					2.8
8				3.6				2.9
12					38.4			37.1
14						46.0		37.3
OF								
IF								
	278	285	292	349				
EPI	3.3				5.9	5.0		
4					5.8	3.2		
8						5.8	2.3	
12						6.3	3.7	
14							5.9	14.7
OF								
IF								

## LAKE 223 Colour (abs425nm) 1976

DEPTH(m)

DAY #

	003	097	124	132	138	145	152	159
EPI		.001					.020	
4		.001					.021	
8		.028					.029	
12		.043					.023	
14							.027	
OF		.051	.025	.031	.027	.027	.039	.044
IF		.025	.023	.040	.060	.125		
	166	173	180	187	194	201	208	215
EPI		.029					.027	
4		.026					.023	
8							.033	
12		.036					.043	
14								
OF	.050	.038	.033	.028	.022	.032	.033	.027
IF	.194	.215	.091	.079	.111			
	222	229	236	243	250	257	264	271
EPI		.018					.014	
4		.021					.022	
8		.035					.018	
12		.075					.170	
14		.470					.835	
OF	.035	.034	.034	.040	.046	.065	.042	.037
IF								
	278	285	292	349				
EPI		.018	.022					
4		.026	.020					
8		.022	.020					
12		.018	.040					
14		.018	.943					
OF	.066	.046	.045					
IF								

Appendix 4

1977 Water chemistry data

## LAKE 223 Temp (C) 1977

DEPTH(m)									DAY #								
	027	061	089	122	129	136	143	150		027	061	089	122	129	136	143	150
EPI									6.99				17.79				20.79
4									6.87								14.08
8									6.10								7.69
12									5.27								6.04
14									5.09								5.93
OF									4.64	6.71	17.04	17.95	21.01				
IF												14.98	14.78				
	157	164	171	178	185	192	199	206									
EPI									17.89				20.95				22.41
4										18.48				22.41			
8										9.68				11.38			
12										7.18				7.46			
14																	
OF	18.00	16.71	17.72	20.51	21.11	19.38	22.57	21.85									
IF	12.49	15.05	18.78	19.06	18.25	22.40	18.04										
	213	220	227	234	241	248	255	262									
EPI									19.68				17.57				15.14
4										17.70				15.17			
8										15.82				14.98			
12										7.69				8.33			
14										7.34				7.48			
OF	17.90	17.50	16.80	15.00	15.00	13.50	13.50	13.50									
IF	15.90	15.10	14.90	13.00	14.00	12.50	12.00	13.00									
	269	276	283	290	297	348											
EPI									12.51				8.91				
4										8.91				8.91			
8										8.91				8.91			
12										8.91				8.91			
14										8.91				8.91			
OF	12.69	9.57	8.33	7.80	5.66												
IF		7.02	5.42	5.32	2.70												

## LAKE 223 Cond (uS/cm) 1977

DEPTH(m)									DAY #								
	027	061	089	122	129	136	143	150		027	061	089	122	129	136	143	150
EPI	30	30	31	27					6.99	17.79	20.79	28					27
4	27	28	28	27					6.87	17.79	20.79	28					27
8	28	29	29	27					6.10	17.79	20.79	28					27
12	34	45	44	28					5.27	17.79	20.79	28					29
14	54	176	178						5.09	17.79	20.79	28					30
OF																	28
IF																	28
	157	164	171	178	185	192	199	206									
EPI									17.89				20.95				22.41
4										18.48				22.41			
8										9.68				11.38			
12										7.18				7.46			
14																	
OF	27									27				29			28
IF		33									24			21			21
	213	220	227	234	241	248	255	262									
EPI									19.68				17.57				15.14
4										17.70				15.17			
8										15.82				14.98			
12										7.69				8.33			
14										7.34				7.48			
OF	28	28	29	29	28	29	29	28					28				28
IF	22	22	24	24	22	24	25	25					25				21
	269	276	283	290	297	348											
EPI									12.51				8.91				
4										8.91				8.91			
8										8.91				8.91			
12										8.91				8.91			
14										8.91				8.91			
OF	28	29	29	32	32	39	39						37				65
IF	22	21	24	29	29	37	37										

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## LAKE 223 pH

1977

DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI	6.40	6.30	6.61	6.68		6.37		6.04
4	6.16	6.02	6.15	6.45				6.58
8	5.91	5.80	5.86	6.31				6.41
12	6.11	6.41	6.39	6.19				5.95
14	6.80	6.81	6.81	6.11				5.90
OF				6.21		6.26	6.15	6.08
IF							6.11	6.40
	157	164	171	178	185	192	199	205
EPI				5.80		6.50		6.22
4				5.90				6.11
8				6.18				6.40
12				5.89				6.00
14								
OF	5.69		6.11	5.99	6.19	6.27	6.20	6.10
IF		6.08	6.11	6.29	6.43	6.21		6.22
	213	220	227	234	241	248	255	262
EPI		6.38		6.20		6.21		5.99
4				6.20				5.92
8				6.51				5.98
12				5.94				6.50
14				6.47				6.50
OF	6.47	6.31	6.12	6.17	6.10	6.03	6.06	5.95
IF	6.31	6.36	6.31	6.30	6.44	6.33	6.18	6.27
	269	276	283	290	297	348		
EPI		6.19		6.14		6.09		
4				6.14		6.09		
8				6.20		6.00		
12				6.19		5.71		
14				6.17		6.71		
OF	6.00	6.04	6.11	6.10	6.18			
IF	6.40	6.41	6.49	6.26	6.33			

## LAKE 223 Alkal (uEq/L)

1977

DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI								
4								
8								
12								
14								
OF								
IF								
	157	164	171	178	185	192	199	205
EPI				19		10		
4								
8								
12								
14								
OF								
IF								
	213	220	227	234	241	248	255	262
EPI					18			9
4								
8								
12								
14								
OF								
IF								
	269	276	283	290	297	348		
EPI				17		25		
4								
8								
12								
14								
OF								
IF								

## LAKE 223 02 (mg/L) 1977

DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI	13.10	13.23	13.28	10.40		8.45		
4	10.39	9.42	9.10	10.60		11.32		
8	7.22	6.71	5.45	10.50		11.30		
12	.50	< .01	< .01	9.00		2.40		
14	< .01	< .01	< .01	8.50		< .01		
OF								
IF								

	157	164	171	178	185	192	199	206
EPI				8.40		8.19		
4				9.42		8.21		
8				12.04		12.18		
12				1.00		.15		
14								
OF								
IF								

	213	220	227	234	241	248	255	262
EPI				8.87		9.26		
4				8.90		9.30		
8				11.97		8.90		
12				.52		< .01		
14				< .01		< .01		
OF								
IF								

	269	276	283	290	297	348	
EPI				9.82		11.81	
4				9.95		11.10	
8				9.90		10.15	
12				9.90		3.60	
14				9.90		< .01	
OF							
IF							

## LAKE 223 NH3-N (ug/L) 1977

DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI	25	46	47	23				7
4	41	61	33	16				3
8	49	32	18	23				4
12	440	585	536	64				24
14	3370	3860	3930	63				160
OF				24	60	18	7	7
IF							42	78

	157	164	171	178	185	192	199	206
EPI				5		10		4
4						11		4
8						7		6
12						38		2
14								
OF	5	7	5	11	21	9	11	7
IF	49	13	15	16	10	10	10	11

	213	220	227	234	241	248	255	262
EPI				7		5		4
4						6		4
8						4		3
12						10		418
14						800		1320
OF	9	8	19	7	6	7	5	5
IF	13	10	16	16	16	9	7	5

	269	276	283	290	297	348	
EPI				3		8	
4						7	60
8						8	76
12						9	332
14						8	1030
OF	7	5	7	19	18	42	
IF	10	4	7	28			

## LAKE 223 NO3-N (ug/L)

1977

## DEPTH(m)

## DAY #

	027	061	089	122	129	136	143	150
EPI	4	4	25	25				4
4	12	34	53	25			1	
8	81	122	156	29			< 1	
12	8	16	16	33			1	
14	15	22	21	36			1	
OF				33	21	7	3	4
IF						99	52	
	157	164	171	178	185	192	199	206
EPI		1		1	< 1		1	
4			1				1	
8			1				1	
12			1			< 1		
14								
OF	2	3	< 1	1	2	3	1	1
IF		49	28	8	8	9	11	13
	213	220	227	234	241	248	255	262
EPI		2		2	< 1		2	
4			1				2	
8			1				28	
12			1					
14				16			31	
OF	3	3	3	1	3	5	3	5
IF	12	12	18	17	10	12	7	7
	269	276	283	290	297	348		
EPI		2		1		11		
4			1		11			
8			1		12			
12			1		20			
14			1		19			
OF	5	3	10	7	9			
IF	10	8	18	32	52			

## LAKE 223 TDN (ug/L)

1977

## DEPTH(m)

## DAY #

	027	061	089	122	129	136	143	150
EPI	223	265	300	265				280
4	240	290	235	290				245
8	277	315	325	290				240
12	304	740	750	330				310
14	4510	4300	4640	315				490
OF				265	232	205	225	255
IF						680	490	
	157	164	171	178	185	192	199	206
EPI		165		190		175		185
4			1	195		175		
8			1	175		170		
12			1	230				190
14								
OF	190	170	180	200	205	185	180	195
IF		345	435	300	285	230	220	250
	213	220	227	234	241	248	255	262
EPI		220		165		195		170
4			1	150		170		
8			1	155		160		
12			1	195			650	
14				1160				1680
OF	165	175	210	175	170	205	175	190
IF	235	235	290	210	295	260	245	190
	269	276	283	290	297	348		
EPI		150		205		260		
4			1	178		255		
8			1	172		295		
12			1	178		560		
14				188		1580		
OF	215	190	245	230	280	185		
IF	245	155	140	280				

## LAKE 223 Susp N (ug/L) 1977

		DEPTH(m)							
		DAY #							
		027	061	089	122	129	136	143	150
EPI		63	42	35	87				116
4		52	29	44	110				90
8		56	59	43	99				152
12		273	415	282	147				212
14		1060	1532	797	133				522
OF					54	48	96	121	87
IF							130	34	
		157	164	171	178	185	192	199	206
EPI			71		56		52		57
4					56				86
8					75				117
12					258				529
14									
OF		71	51	57	23	83	47	69	69
IF		37	48	56	77	32	52	35	
		213	220	227	234	241	248	255	262
EPI			78		67		78		71
4					81				62
8					122				69
12					731				453
14					780				568
OF		71	65	39	71	62	69	60	60
IF		50	52	39	51	46	62	48	62
		269	276	283	290	297	348		
EPI			67		113		91		
4					74		64		
8					112		99		
12					75		132		
14					40		1026		
OF		37	69	73	97	< 1	88		
IF		60	58	50	< 1	< 1			

## LAKE 223 TDP (ug/L) 1977

		DEPTH(m)							
		DAY #							
		027	061	089	122	129	136	143	150
EPI		2	2	3	2				6
4		2	1	2	4				6
8		3	2	2	2				6
12		5	5	5	3				7
14		131	118	170	3				9
OF					2	5	5	5	5
IF						11		11	
		157	164	171	178	185	192	199	206
EPI			4		5		5		2
4					5				2
8					5				2
12					10				5
14									
OF		4	5	4	5	6	5	3	2
IF		10	9	9	8	8	5	5	6
		213	220	227	234	241	248	255	262
EPI			3		2		2		2
4					2				2
8					2				3
12					5				8
14					12				12
OF		3	2	2	2	2	2	2	3
IF		7	6	5	6	7	5	4	4
		269	276	283	290	297	348		
EPI			2		2		3		
4					2		3		
8					2		2		
12					2		4		
14					2		14		
OF		2	3	2	2	2	2		
IF		4	3	3	4	3			

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## LAKE 223 Susp P (ug/L)

1977

## DEPTH(m)

## DAY #

	027	061	089	122	129	136	143	150
EPI	2	2	2	6				3
4	2	2	3	7				2
8	3	3	4	7				7
12	42	44	37	14				18
14	153	128	106	15				58
OF				4	2	8	5	3
IF						17	3	
	157	164	171	178	185	192	199	205
EPI		2		2		2		2
4				2				2
8			5			5		
12				29				45
14								
OF	3	2	3	2	1	2	2	2
IF	3	3	3	4	2	2	2	2
	213	220	227	234	241	248	255	262
EPI		3		3		3		3
4				2				3
8			5			4		
12				58		43		
14				84		72		
OF	2	2	2	3	2	4	2	2
IF	2	2	2	1	2	3	3	2
	269	276	283	290	297	349		
EPI		4		5		4		
4				4		3		
8			5		5			
12				4		12		
14				4		172		
OF	3	3	3	3	3			
IF	2	2	1	2	1			

## LAKE 223 DIC (uM/L)

1977

## DEPTH(m)

## DAY #

	027	061	089	122	129	136	143	150
EPI	65	70	61	71				28
4	107	117	125	70				23
8	154	178	202	84				52
12	400	495	505	157				263
14	2025	2180	2080	182				313
OF				131			90	35
IF							335	404
	157	164	171	178	185	192	199	205
EPI						25	25	27
4						28		28
8						53		58
12						381		455
14								
OF	34			29	31	33	29	45
IF		210		227	184	151	213	214
	213	220	227	234	241	248	255	262
EPI			17		29		22	34
4					26			33
8					76			52
12					520			815
14					850			1200
OF	43	42	57		48		86	64
IF	186	189	289		346	269	285	203
	269	276	283	290	297	349		
EPI			35		58		48	
4					57		50	
8					50		67	
12					53		212	
14					53		585	
OF	76	67	81		94	99		
IF	170	158	205		413	444		

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## LAKE 223    DOC    (µM/L)

1977

DEPTH(m)                    DAY #

	027	061	089	122	129	136	143	150
EPI	425	395	330	325			380	
4	350	370	285	315			375	
8	370	385	295	305			375	
12	410	555	475	320			405	
14	1270	2100	1620	325			420	
OF				290	295	330	345	365
IF						930	720	
	157	164	171	178	185	192	199	206
EPI		430		495		400		465
4				520			455	
8				495			440	
12				510			510	
14								
OF	320	415	445	495	430	415	435	425
IF	710	1080	740	520	400	460	520	
	213	220	227	234	241	248	255	262
EPI		350		315		330		350
4				320			345	
8				325			350	
12				460			600	
14				940			840	
OF	400	335	320	330	345	330	340	335
IF	540	360	410	450	670	520	465	390
	269	276	283	290	297	348		
EPI		300		315		350		
4				305		290		
8				300		320		
12				300		325		
14				300		705		
OF	325	295	330	285	285			
IF	520	265	270	300	235			

## LAKE 223    Susp C    (µg/L)

1977

DEPTH(m)                    DAY #

	027	061	089	122	129	136	143	150
EPI	470	480	350	910				630
4	440	440	530	910				700
8	480	510	620	810				990
12	1690	2070	1880	1180				1530
14	6160	6210	4950	1130				3200
OF				480	350	1070	1037	690
IF						1270	1270	460
	157	164	171	178	185	192	199	206
EPI		500		460		410		530
4				780				730
8				640				1020
12				1830				3280
14								
OF	540	340	1050	220	1290	380	440	450
IF	220	320	850	160	350	320	320	340
	213	220	227	234	241	248	255	262
EPI		530		490		900		830
4				2670				540
8				1450				1590
12				4850				2730
14				4430				3780
OF	460	360	420	660	660	590	610	400
IF	340	360	310	400	460	430	6040	
	269	276	283	290	297	348		
EPI		630		1160		640		
4				1020		600		
8				874		640		
12				817		1210		
14				810		5600		
OF	620	610	630	570	720			
IF	620	350	270	290	220			

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LAKE 223 C1 (mg/L) 1977								
DEPTH(m)								
DAY #								
	027	061	089	122	129	136	143	150
EPI	.6	1.0	1.0	1.4		1.2		.4
4	.6	1.0	.6	1.2				.6
8	.2	1.0	1.0	1.2				.6
12	.6	.8	1.2	1.2				.6
14	.8	.6	.8	1.2				.6
OF					1.2	.8	1.4	.4
IF								.6
	157	164	171	179	185	192	199	205
EPI		1.0		.6		.6		.9
4			.6					.6
8			.6					.8
12				1.2				.8
14								
OF		.6	1.0	1.4	.8	.6	.6	.6
IF			1.0	1.4	.8	.6	.6	.8
	213	220	227	234	241	248	255	262
EPI			.6		.6			.8
4			.6					.6
8			.6					.8
12				.8				.8
14				.6				.8
OF		.6	.6	.4	.6	.6	.8	1.0
IF		.8	.6	.6	.6	.9	1.0	1.2
	269	276	283	290	297	348		
EPI			1.8		.6			.8
4				.6				.8
8			.6		.6			
12				.6				.6
14				.6				.8
OF		1.4	1.6	1.0	.6	.6		
IF		1.8	1.4	.8	.8	.6		

LAKE 223 SO4 (mg/L) 1977								
DEPTH(m)								
DAY #								
	027	061	089	122	129	136	143	150
EPI	8.0	8.4	9.0	6.4		6.4		8.5
4	7.2	7.2	7.6	6.4				7.4
8	7.4	7.8	7.4	6.4				7.2
12	6.0	5.6	5.2	6.4				6.6
14	.4	.4	.2	6.2				6.0
OF					6.6	7.4	6.6	8.4
IF								13.0
	157	164	171	179	185	192	199	205
EPI			7.2		8.2		8.0	8.0
4					8.0			8.0
8					6.8			6.6
12					5.6			4.4
14								
OF		8.0	7.4	7.4	8.6	8.0	7.8	8.0
IF		4.8		7.2	4.2	2.8	2.6	2.4
	213	220	227	234	241	248	255	262
EPI			8.0		8.2		8.0	8.2
4					8.4			8.2
8					6.6			7.8
12					3.6			.8
14					.4			.2
OF		7.8	8.0	8.2	8.2	8.4	8.0	8.0
IF		2.6	2.4	2.6	2.4	3.0	2.6	2.6
	269	276	283	290	297	348		
EPI			8.2		7.8		8.2	
4					7.8			8.0
8					8.0			8.2
12					8.0			8.8
14					8.0			5.0
OF		8.2	8.0	8.6	8.0	8.2		
IF		3.0	2.8	3.2	3.2	3.6		

## LAKE 223 H2S-S (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
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EPI		< .01	< .01			< .01		
4		< .01	< .01			< .01		
8		< .01	< .01			< .01		
12		< .01	< .01			< .01		
14			< .01			< .01		
OF						< .01		
IF						< .01		

	157	164	171	178	185	192	199	206
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI			< .01					
4			< .01			< .01		
8			< .01			< .01		
12			< .01			< .01		
14								
OF								
IF				< .01				

	213	220	227	234	241	248	255	262
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI						< .01		
4				< .01			< .01	
8				< .01			< .01	
12				< .01			.38	
14				< .01			.21	
OF				< .01			< .01	
IF								

	269	276	283	290	297	349		
--	-----	-----	-----	-----	-----	-----	--	--

EPI				< .01		< .01		
4				< .01		< .01		
8				< .01		< .01		
12				< .01		< .01		
14				< .01		< .01		
OF				< .01				
IF				< .01				

## LAKE 223 Na (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	1.03	1.03	1.04	.94				.91
4	.92	.92	.90	.94				.93
8	.92	.95	.96	.92				.89
12	.92	.97	.94	.90				.89
14	.97	1.00	1.03	.95				.93
OF				.90	.97	.92	.91	
IF						1.53	1.77	

	157	164	171	178	185	192	199	206
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI				.96		.93		.93
4					1.00			.91
8					.97			.91
12					.99			.98
14								
OF	.86	.96	.92	.99	.91	.93	.95	.91
IF		1.77	.96	.89	.73	.77	.75	.80

	213	220	227	234	241	248	255	262
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI			1.02			.95		.95
4						.96		.95
8						.95		.95
12						.95		1.01
14						.93		1.01
OF	.92	1.01	.90	.90	.91	.94	.90	1.12
IF	.78	.87	.85	1.00	.90	.94	.78	.83

	269	276	283	290	297	348		
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EPI			1.66			.93		.97
4						.93		.95
8						.92		.93
12						.92		.93
14						.92		.98
OF	1.34	1.51	1.04	.95	1.00			
IF	1.43	1.32	1.01	1.24	1.49			

## LAKE 223 K (mg/L)

1977

## DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI	.36	.34	.41	.36			.27	
4	.32	.30	.35	.36			.27	
8	.32	.30	.35	.34			.27	
12	.32	.34	.35	.36			.29	
14	.52	.53	.61	.39			.33	
OF				.32	.31	.35	.30	.29
IF						.61	.40	
	157	164	171	178	185	192	199	206
EPI				.33		.24		.31
4				.31			.33	
8				.31			.33	
12				.35			.41	
14								
OF	.25	.31	.29	.31	.24	.26	.33	.33
IF	.35	.23	.21	.16	.19	.26	.26	
	213	220	227	234	241	248	255	262
EPI				.33		.29		.32
4						.34		.32
8							.32	
12							.32	
14							.44	
OF	.29	.29	.29	.29	.27	.36	.34	.36
IF	.23	.23	.25	.24	.29	.36	.32	.30
	269	276	283	290	297	348		
EPI				.29		.29		.36
4						.29		.34
8						.29		.34
12						.29		.34
14						.29		.36
OF	.34	.31	.37	.33	.45			
IF	.38	.25	.24	.33	.33			

## LAKE 223 Ca (mg/L)

1977

## DEPTH(m) DAY #

	027	061	089	122	129	136	143	150
EPI	3.06	2.86	3.09	2.78				2.52
4	2.54	2.63	2.79	2.67				2.46
8	2.49	2.74	2.99	2.72				2.52
12	2.85	3.19	3.45	2.72				2.52
14	6.07	5.99	6.39	2.78				2.63
OF						2.89	2.65	2.79
IF							2.46	2.46
							5.63	5.41
	157	164	171	178	185	192	199	206
EPI						2.11		2.24
4						2.11		2.51
8						2.26		2.56
12						2.42		2.75
14								
OF	2.04	2.54	2.32	2.21	2.24	2.29	2.41	2.51
IF	5.23	3.42	2.37	1.99	1.90	2.12	2.27	
	213	220	227	234	241	248	255	262
EPI				2.51		2.79		2.38
4						2.88		2.43
8						2.75		2.53
12						2.79		3.92
14						4.35		4.47
OF	2.61	2.41	2.75	2.79	2.88	2.63	2.39	2.53
IF	2.41	2.31	2.88	3.39	2.97	2.79	2.18	1.99
	269	276	283	290	297	348		
EPI				2.63		2.68		2.60
4						2.68		2.46
8						2.77		2.64
12						2.77		2.42
14						2.77		2.83
OF	2.38	2.68	2.87	2.91	2.87			
IF	2.18	2.29	2.53	3.82	9.41			

## LAKE 223 Mg (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	.73	.69	.67	.60				.54
4	.62	.65	.59	.58				.52
8	.61	.65	.66	.59				.52
12	.61	.67	.67	.60				.51
14	.75	.76	.75	.59				.52
OF				.61	.64	.56	.51	.50
IF							1.10	.92

	157	164	171	178	185	192	199	206
EPI					.56	.53		.55
4					.56			.54
8					.57			.57
12					.58			.61
14								
OF	.54	.60	.58	.57	.51	.53	.54	.57
IF	.98	.81	.55	.44	.44	.47	.50	

	213	220	227	234	241	248	255	262
EPI					.57	.56		.45
4					.59			.45
8					.53			.44
12					.56			.54
14					.62			.55
OF	.56	.36	.57	.55	.53	.58	.43	.46
IF	.54	.35	.59	.66	.58	.63	.40	.36

	269	276	283	290	297	348
EPI					.57	
4					.56	.54
8					.54	.50
12					.57	.55
14					.57	.46
OF	.48	.55	.59	.58	.59	.44
IF	.44	.51	.51	.70	.77	

## LAKE 223 Mn (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	.01	< .01	.01	.05				.03
4	.01	< .01	.01	.04				.03
8	.04	.06	.07	.04				.01
12	.34	.35	.38	.12				.15
14	1.32	1.40	1.35	.07				.27
OF				.01	< .01	.01	.03	.03
IF							.03	.06

	157	164	171	178	185	192	199	206
EPI						< .01		.02
4						.01		.05
8						< .01		.02
12						.28		.39
14								
OF	.03	.03	.01	.01	.03	.04	.02	.05
IF	.03	.04	< .01	.01	.01	.01	.01	.04

	213	220	227	234	241	248	255	262
EPI						.04	.03	.04
4						.05		.01
8						.03		.03
12						.55		.65
14						.65		.73
OF	.06	.01	.04	.05	.04	.01	.03	.01
IF	.05	< .01	.03	.05	.01	.01	.01	< .01

	269	276	283	290	297	348
EPI					.04	.07
4					.06	.03
8					.05	.05
12					.06	.15
14					.06	.50
OF	.01	.01	.03	.03	.02	
IF	< .01	< .01	.01	.01	.02	

## LAKE 223 Fe (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	< .03	< .04	< .04	.11			< .04	
4	.03	< .04	.04	.07			.04	
8	.03	.08	< .04	.07			< .04	
12	1.48	4.23	5.07	.15			.08	
14	40.00	43.30	43.10	.15			.24	
OF				.07	< .04	< .04	< .04	< .04
IF							.32	1.28
	157	164	171	178	185	192	199	206
EPI				< .04		.11		< .04
4				< .04			.04	
8				< .04			< .04	
12				.04			.04	
14								
OF	< .04	.04	< .04	< .04	< .04	< .04	< .04	< .04
IF	.84	.24	.15	.12	.11	.15	.15	
	213	220	227	234	241	248	255	262
EPI		.08		.08	< .03		< .03	
4				.04			< .03	
8				.04			< .03	
12				1.11			8.49	
14				10.90			14.50	
OF	.04	.11	.04	.04	< .04	< .03	.07	< .03
IF	.19	.19	.25	.33	.21	.10	.13	.13
	269	276	283	290	297	348		
EPI		.04		.04		.08		
4				.04		.08		
8				.11		.12		
12				.04		.27		
14				.07		11.70		
OF	< .03	.07	.04	.07	.04			
IF	.03	.11	.18	.43	.51			

## LAKE 223 Ferrous-Fe (mg/L)

1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	< .01	< .01	< .01	< .01				< .01
4	< .01	< .01	< .01	< .01	< .01			< .01
8	< .01	< .01	< .01	< .01	< .01			< .01
12	1.32	3.85	5.49	< .01				.01
14	43.00	47.40	52.90	.01				.25
OF							< .01	
IF								< .01
	157	164	171	178	185	192	199	206
EPI						< .01		< .01
4						< .01		< .01
8						< .01		< .01
12						.01		.01
14								
OF						< .01		.02
IF						.09		.07
	213	220	227	234	241	248	255	262
EPI						< .01		< .01
4						< .01		< .01
8						< .01		< .01
12						< .01		8.70
14						11.00		13.25
OF							< .01	.01
IF								.04
	269	276	283	290	297	348		
EPI						< .01	< .01	
4						< .01	< .01	
8						< .01	< .01	
12						< .01	.02	
14						< .01	10.30	
OF								
IF								.27

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## LAKE 223 Ferric-Fe (mg/L) 1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	< .01	< .01	< .01	< .01				.01
4	< .01	< .01	< .01	.01				< .01
8	.01	.01	< .01	.01				.01
12	.12	.19	.16	.04				.15
14	1.00	.30	.40	.05				.35
OF				.01				.01
IF								

	157	164	171	178	185	192	199	205
EPI				.02			< .01	
4				< .01			.01	
8				< .01			.01	
12				.10			.02	
14								
OF				.01			< .01	
IF				.04			< .01	

	213	220	227	234	241	248	255	262
EPI				< .01			< .01	
4				< .01			< .01	
8				< .01			< .01	
12				< .01			< .01	
14				.15			.55	
OF				< .01			.01	
IF							.04	

	269	276	283	290	297	348
EPI				.01		.01
4				.01		< .01
8				.02		.01
12				.01		.06
14				.02		.10
OF				.02		
IF				.06		

## LAKE 223 Susp Fe (ug/L) 1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI				12				
4				27				38
8				79				101
12				1848				647
14				2173				1856
OF							30	30
IF							920	474

	157	164	171	178	185	192	199	205
EPI				18			25	
4							31	33
8							38	35
12							750	46
14								1799
OF			< 1	50			29	25
IF				317			30	46

	213	220	227	234	241	248	255	262
EPI				32			32	
4							11	40
8							24	37
12							2010	63
14							340	220
OF				35			13	374
IF				40			33	37
				24			51	51
				107			32	20
							51	51

	269	276	283	290	297	348
EPI				71		
4						251
8						200
12						221
14						213
OF						198
IF				32		87
				44		84
				23		125
						84

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LAKE 223 SRS1 (mg/L) 1977									
DEPTH(m)		DAY #							
		027	061	089	122	129	136	143	150
EPI		1.400	1.310	1.440	1.410				1.150
4		1.230	1.240	1.370	1.380				1.140
8		1.440	1.460	1.620	1.410				1.210
12		2.360	2.420	2.600	1.550				1.590
14		5.570	5.440	5.700	1.520				1.670
OF					1.390	1.410	1.260	1.230	1.150
IF							2.920		4.740
		157	164	171	178	185	192	199	206
EPI					1.310		1.350		1.340
4					1.290				1.340
8					1.130				1.140
12					1.700				1.830
14									
OF		1.240	1.210	1.240	1.310	1.350	1.320	1.340	1.390
IF		4.670	2.250	.782	.466	.391	.391	.466	
		213	220	227	234	241	248	255	262
EPI					1.300		1.180		1.240
4					1.300				1.210
8					1.110				1.250
12					2.010				2.330
14					2.560				2.950
OF		1.330	1.310	1.280	1.300	1.230	1.210	1.200	1.250
IF		.620	.536	.928	1.550	1.200	1.090	.562	.538
		269	276	283	290	297	348		
EPI					1.270		1.370		1.550
4					1.370		1.520		
8					1.370		1.570		
12					1.370		2.300		
14					1.360		3.550		
OF		1.340	1.240	1.320	1.370	1.410			
IF		.732	.547	1.130	2.510	3.700			

LAKE 223 Chl-a (ug/L) 1977									
DEPTH(m)		DAY #							
		027	061	089	122	129	136	143	150
EPI		5.1	4.3	.3	4.1				.5
4		1.4	.9	1.6	5.0				1.5
8		1.0	.7	1.6	6.8				6.2
12		7.7	19.0	13.8	8.2				7.5
14		21.4	12.3	8.5	7.3				18.5
OF									
IF									
		157	164	171	178	185	192	199	206
EPI							1.0	1.1	1.2
4							1.2		1.4
8							5.6		3.9
12							24.7		60.8
14									
OF									
IF									
		213	220	227	234	241	248	255	262
EPI							1.7	3.1	3.8
4							1.7		4.1
8							5.8		5.6
12							92.5		39.4
14							64.3		65.4
OF									
IF									
		269	276	283	290	297	348		
EPI							5.8	3.6	
4							6.2	3.4	
8							6.3	2.4	
12							6.2	4.2	
14							6.4	22.2	
OF									
IF									

## LAKE 223 Colour (abs425nm) 1977

DEPTH(m)

DAY #

	027	061	089	122	129	136	143	150
EPI	.017	.018	.015	.020				.021
4	.014	.018	.016	.025				.026
8	.019	.016	.019	.017				.020
12	.043	.094	.186	.022				.029
14	2.950	3.050	2.830	.024				.045
OF				.017	.028	.028	.022	.021
IF						.170	.170	.194
	157	164	171	178	185	192	199	206
EPI					.031			.025
4					.045			.023
8					.026			.027
12					.034			.040
14								
OF	.030	.053	.034	.033	.034	.032	.059	.040
IF	.212	.357	.197	.144	.112	.130	.130	.148
	213	220	227	234	241	248	255	262
EPI				.031		.023		.023
4					.029			.032
8					.031			.030
12					.150			.600
14					1.390			1.137
OF	.032	.041	.041	.026	.033	.024	.028	.034
IF	.162	.141	.122	.160	.216	.163	.139	.108
	269	276	283	290	297	348		
EPI				.019		.027		.015
4					.026			.017
8					.028			.019
12					.024			.028
14					.024			.508
OF	.028	.026	.024	.027	.025			
IF	.172	.077	.090	.108	.106			

## Appendix 5

1978 Water chemistry data

## LAKE 223 Temp (C)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI				6.45		14.54		14.50
4				5.93				12.76
8				4.77				6.27
10								
11								
12				4.73				5.11
13				4.83				
14								5.03
OF				6.90		14.30	20.00	14.50
IF				6.10		12.90	18.00	12.85
	163	170	177	184	191	198	205	212
EPI	16.80			21.51		21.38		19.58
4				18.35				19.53
8				7.75				8.62
10								
11								
12				5.73				5.78
13								
14				5.52				
OF	14.50	16.50	19.00	21.00	19.00	21.20	20.30	18.71
IF	13.00	16.50	17.70	19.50	17.00	21.00	19.50	16.80
	219	226	233	240	247	254	261	268
EPI	20.69			18.32		18.77		13.82
4				18.32				13.84
8				10.95				13.82
10				7.19				8.64
11				6.65				7.11
12				6.24				6.81
13				6.00				6.31
14				5.90				6.25
OF	21.00	21.80	18.00	17.40	19.10	17.50	14.20	12.40
IF	20.50	21.70	18.00	15.60	19.00	17.20	13.50	11.00
	275	282	289	296	339			
EPI	11.52			8.68				
4				8.77				
8				8.77				
10				8.77				
11				8.77				
12				8.77				
13				8.77				
14				6.46				
OF	12.00	10.00	7.20	5.80				
IF	11.00	8.80	5.00	5.00				

## LAKE 223 Cond (uS/cm)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	31	31	31	27			26	26
4	29	29	29	28			26	26
8	29	30	31	30				29
10								
11								
12	33	34	40	32				32
13							69	
14	103	124	109					
OF								34
IF							27	27
	163	170	177	184	191	198	205	212
EPI	27			28		27		27
4				27				27
8				29				28
10								
11								
12				33				40
13								
14				45				
OF	26	27	27	27	28	27	27	28
IF	19	20	19	20	19	20	19	19
	219	226	233	240	247	254	261	268
EPI	26			27		28		29
4				27				28
8				28				28
10				31				31
11				31				33
12				58				64
13				60				89
14				80				102
OF	27	27	28	28	28	28	28	29
IF	19	20	20	20	20	21	20	20
	275	282	289	296	339			
EPI	29			29				
4				29				
8				29				
10				29				
11				29				
12				29				
13				29				
14				156				
OF	29	29	29	30				
IF	21	21	22	24				

## LAKE 223 pH

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	6.11	6.03	6.10	5.89		6.29		6.20
4	6.03	5.99	5.84	5.81				6.14
8	5.88	5.83	5.51	5.73				5.97
10								
11								
12	5.73	5.89	6.12	5.80				5.89
13				6.57				
14	6.89	6.84	6.73					6.00
OF					5.97	5.99	6.12	6.20
IF					6.37	6.30	6.31	6.32
								6.24
	163	170	177	184	191	198	205	212
EPI		6.11		5.91		6.01		6.01
4				6.27				6.02
8				6.21				6.32
10								
11								
12				6.09				6.30
13								
14				6.38				
OF	6.19	6.01	6.10	6.09	5.82	5.98	5.85	5.91
IF	6.38	6.22	6.32	6.39	6.29	6.31	6.30	6.31
	219	226	233	240	247	254	261	268
EPI		5.67		5.92		5.95		5.86
4				5.88				5.86
8				6.19				5.86
10								6.09
11				5.91				
12								6.03
13				5.92				
14								6.52
OF	6.01	5.79	5.72	5.82	5.81	5.89	5.92	6.06
IF	6.40	6.20	6.29	6.30	6.29	6.40	6.37	6.33
	275	282	289	296	339			
EPI		5.91		5.87		5.70		
4				5.84		5.73		
8						5.85		5.68
10						5.83		5.61
11								5.74
12						5.74		5.59
13						5.73		5.69
14						5.73		5.74
OF	5.91	5.93	6.04	5.79		6.59		6.93
IF	6.29	6.38	6.40	6.37				

## LAKE 223 Alkal (uEq/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI				24	21		22	22
4					15			
8					13			
10								
11								
12						26		
13								
14							359	
OF								
IF								
	163	170	177	184	191	198	205	212
EPI		19		6		7		10
4				12				7
8				45				52
10								
11								
12					108			175
13						437		
14								
OF								
IF					85	94	98	91
	219	226	233	240	247	254	261	268
EPI		6		6		7		7
4				15				9
8				52				7
10				68				116
11				122				156
12				507				606
13				530				916
14				773				1047
OF								
IF	93	93	97	100	103	105	94	93
	275	282	289	296	339			
EPI		11		12		9		
4				12		10		
8						10		11
10						13		12
11						13		30
12						13		38
13						15		49
14						1646		935
OF								
IF	79	95	101	106				

LAKE 223 O2 (mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	12.20	11.76	11.20	9.32				9.32
4	10.30	9.99	9.11	9.70				10.10
8	8.68	7.65	5.34	7.90				8.94
10								
11								
12	2.21	.40	.26	2.12				.54
13				< .01				
14	< .01	< .01	< .01					.39
OF								
IF								

	163	170	177	184	191	193	205	212
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI				8.27			< 9	
4				9.70			8.55	
8				9.48			10.48	
10								
11								
12				< .01			< .01	
13								
14				< .01				
OF								
IF								

	219	226	233	240	247	254	261	268
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI				8.50			9.20	
4				8.62			9.41	
8				10.23			9.10	
10				.30			.47	
11				.18			.10	
12				< .01			< .01	
13				< .01			< .01	
14				< .01			< .01	
OF								
IF								

	275	282	289	296	339
--	-----	-----	-----	-----	-----

EPI				9.80	11.81
4				9.70	11.20
8				9.82	10.73
10				9.72	9.19
11				9.73	5.92
12				10.02	2.80
13				9.50	.81
14				< .01	< .01
OF					
IF					

LAKE 223 NH3-N (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	56	60	71	21			18	15
4	57	63	65	17				12
8	79	79	19	13				7
10								
11								
12	300	300	418	33				137
13								
14	1590	2090	2290	1475				211
OF								16
IF							10	29

	163	170	177	184	191	198	205	212
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI				6			5	5
4							6	
8							4	
10								
11								
12						265		210
13								
14						475		
OF	11	12	9	8	13	8	8	7
IF	11	8	7	6	10	8	6	4

	219	226	233	240	247	254	261	268
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI				4			11	8
4							5	10
8							10	
10							5	
11							5	
12						< 1		7
13							405	452
14							460	985
OF	8	14	5	7	10	14	4	1290
IF	6	5	6	4	6	5	3	9

	275	282	289	296	339
--	-----	-----	-----	-----	-----

EPI				16			35	
4							9	49
8							10	65
10							13	112
11							11	230
12							10	425
13							13	475
14							2700	465
OF	9	10	5	12				
IF	4	8	3	7				

## LAKE 223 NO3-N (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	12	14	15	77		29		10
4	11	21	58	82			9	
8	25	56	161	118			33	
10								
11								
12	45	34	10	151			43	
13				17				
14	14	21	16					
OF				74	62	25	15	12
IF				33	13	7	28	17
	163	170	177	184	191	198	205	212

EPI	< 1		< 1		1		1	
4			< 1				1	
8			< 1				< 1	
10								
11								
12				2			8	
13								
14								
OF	4	2	2	< 1	9	< 1	1	2
IF	13	11	16	8	5	9	8	5

EPI	219	226	233	240	247	254	261	268
4	< 1		< 1		< 1		< 1	
8			< 1				< 1	
10			< 1				< 1	
11			< 1				< 1	
12			11				18	
13				13			19	
14				16			21	
OF	< 1	3	< 1	5	2	3	1	< 1
IF	6	10	5	< 1	6	7	6	4

EPI	275	282	289	295	339			
4	< 1		< 1	6				
8			< 1	4				
10			< 1	7				
11			< 1	17				
12			< 1	21				
13			< 1	25				
14			< 1	14				
OF	< 1	2	< 1	10				
IF	5	5	23	22				

## LAKE 223 TDN (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	295	320	310	272		330		198
4	275	275	315	280				220
8	305	340	345	304				215
10								
11								
12	530	550	630	360				385
13				2150				
14	1940	3000	2740					
OF								
IF								

	163	170	177	184	191	198	205	212
EPI		215		180		225		166
4			196					210
8			176					180
10								
11								
12				520				510
13								
14					750			
OF	205	205	196	200	200	215	215	190
IF	205	240	215	250	210	235	260	214

	219	226	233	240	247	254	261	268
EPI		166		215		160		190
4			175					175
8			210					190
10			190					175
11			220					225
12			750					750
13			920					1560
14			1450					1950
OF	230	176	210	200	185	190	178	170
IF	230	212	225	225	195	200	170	175

	275	282	289	296	339
EPI		225		230	205
4			230	210	
8			210	230	
10			240	270	
11			225	410	
12			215	650	
13			215	720	
14			3050	730	
OF	170	180	230	240	
IF	180	188	245	210	

## LAKE 223 Susp N (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	57	24	61	63		69		76
4	17	41	76	55			99	
8	48	28	76	72				152
10								
11								
12	48	61	251	143				280
13				355				
14	606	484	798					325
OF					58	61	45	49
IF					49	63	1	36

	163	170	177	184	191	198	205	212
EPI		30		38		68		31
4				38			123	
8				220			189	
10								
11								
12				330				559
13								
14				460				
OF	33	140	41	94	37	47	56	27
IF	23	44	65	31	13	45	31	73

	219	226	233	240	247	254	261	268
EPI		48		99		25		70
4				73			62	
8				184			64	
10				227			128	
11				576			498	
12				641			607	
13				644			759	
14				838			928	
OF	99	68	30	109	25	13	75	73
IF	29	77	26	109	5	12	40	42

	275	282	289	296	339
EPI		46		59	68
4				68	103
8				77	70
10				79	75
11				51	66
12				62	128
13					176
14				763	191
OF	57	37	37	43	
IF	35	26	18	29	

## LAKE 223 TDP (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	4	3	3	2			7	2
4	2	3	3	2				2
8	3	3	3	3				2
10								
11								
12	4	5	7	3				4
13					23			
14	20	51	57					5
OF						3	3	3
IF						4	7	3

	163	170	177	184	191	198	205	212
EPI		3		2		2		1
4				3			2	
8				3			3	
10								
11								
12					6			5
13						8		
14						3	2	2
OF	3	3	3	5	5	5	4	4
IF	4	5	6	5	5	5	2	3

	219	226	233	240	247	254	261	268
EPI		2		2		2		2
4				2			2	
8				3			2	
10				3			3	
11				5			4	
12				9			7	
13				10			10	
14				14			13	
OF	2	3	2	2	2	2	2	2
IF	4	6	4	5	3	4	2	3

	275	282	289	296	339
EPI		1		2	2
4				2	2
8				2	2
10				2	2
11				2	3
12				2	4
13				2	5
14				17	5
OF	2	2	2	2	
IF	3	2	3	3	

## LAKE 223 Susp P (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	5	3	2	5		8		6
4	3	3	3	5				3
8	3	3	4	5				5
10								
11								
12	9	17	46	12				
13				61				
14	203	150	110					20
OF				4				28
IF				3	5	3	4	4
				3	7	1	4	2

	163	170	177	184	191	198	205	212
EPI		3		3		2		3
4				3				2
8				8				8
10								
11								
12				37				49
13								
14				49				
OF	3	2	4	5	2	2	2	2
IF	1	2	3	2	2	2	3	3

	219	226	233	240	247	254	261	268
EPI		2		2		3		3
4				2				3
8				7				2
10				11				
11								
12				35				39
13								61
14								96
OF	2	2	2	3	3	3	3	126
IF	3	4	2	3	3	3	3	4

	275	282	289	296	339
EPI		3		4	3
4				4	3
8				3	4
10				4	4
11				4	8
12				3	17
13				5	32
14				166	33
OF	2	2	3	3	
IF	3	2	2	5	

## LAKE 223 DIC (uM/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	49	65	72	107			39	32
4	53	74	98	125				49
8	87	117	176	156				134
10								
11								
12	234	362	408	335				382
13				865				
14	1080	1415	1360					460
OF				83	75	46	53	37
IF				121	141	184	249	164

	163	170	177	184	191	198	205	212
EPI		31		21		22		18
4				24				24
8				145				114
10								
11								
12				500				655
13								
14				590				
OF	39	42	47	40	47	37	40	46
IF	168	206	222	237	220	230	232	222

	219	226	233	240	247	254	261	268
EPI		29		20		22		39
4				23				40
8				133				48
10				415				480
11				455				585
12				795				900
13				805				1230
14				1060				1380
OF	49	71	52	56	48	71	58	56
IF	226	270	216	222	205	232	193	202

	275	282	289	296	339
EPI		48		51	31
4				57	43
8				60	58
10				57	108
11				62	155
12				60	298
13				63	326
14				2050	1050
OF	68	67	67	72	
IF	197	216	212	272	

## LAKE 223    DOC    (uM/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	390	345	325	290		355		340
4	350	315	300	300			360	
8	325	345	295	290			330	
10								
11								
12	300	390	425	265			305	
13				730				
14	1120	1400	1430				355	
OF				300	300	345	290	340
IF				290	285	285	425	305
	163	170	177	184	191	198	205	212
EPI		375		380		350		320
4				340			340	
8				350			330	
10								
11								
12				340			420	
13								
14				490				
OF	200	370	320	335	325	345	365	330
IF	195	360	325	350	340	325	365	300
	219	226	233	240	247	254	261	268
EPI		320		335		280		325
4				335			345	
8				325			325	
10				330			320	
11				330			365	
12				590			640	
13							840	
14				790			950	
OF	335	330	250	330	320	285	315	330
IF	325	350	275	360	325	285	370	310
	275	282	289	296	339			
EPI		295		395	345			
4				355	315			
8				360	325			
10				355	320			
11				340	305			
12				345	325			
13				345	300			
14				1350	310			
OF	300	280	330	335				
IF	315	240	305	305				

## LAKE 223    Susp C    (ug/L)

1978

DEPTH(m)    DAY #

	011	046	074	128	135	142	149	156
EPI	810	320	320	590		710		590
4	380	430	380	560			560	
8	530	490	410	690				950
10								
11								
12	760	990	1530	1120				1740
13				2290				
14	6750	5170	4160					
OF					530	680	580	2250
IF					400	550	220	510
						490	1570	380
	163	170	177	184	191	198	205	212
EPI		550		590		530		464
4				690			610	
8				1310				1300
10								
11								
12				2370				3300
13								
14				2400				
OF	480	1140	490	650	560	420	480	360
IF	340	560	370	350	380	370	410	350
	219	226	233	240	247	254	261	268
EPI		420		630		490		670
4				440			590	
8				1070			550	
10				1110			970	
11				3090			3680	
12				3620			3990	
13				3560			4890	
14				4960			6260	
OF	440	370	480	460	470	400	610	620
IF	390	400	370	410	350	340	650	390
	275	282	289	296	339			
EPI		510		610		570		
4				630		680		
8				720		510		
10				610		570		
11				570		680		
12				640		1290		
13						1770		
14						5014	1830	
OF	450	460	410	530				
IF	390	370	270	660				

52

## LAKE 223 Cl (mg/L)

1978

## DEPTH(m) DAY #

	011	046	074	128	135	142	149	156
EPI	.8	.8	1.2	.6		1.0		.4
4	.8	.6	.6	.6			.2	
8	1.0	.6	.2	.8			.2	
10								
11								
12	1.0	1.0	.6	1.0				.2
13					.8			
14	.8	.8	.6					.2
OF				.8	.6	.6	.2	
IF				.8	.8	.4	.4	.2

	163	170	177	184	191	198	205	212
EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	219	226	233	240	247	254	261	268
EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	275	282	289	296	339
EPI					
4					
8					
10					
11					
12					
13					
14					
OF					
IF					

## LAKE 223 SO4 (mg/L)

1978

## DEPTH(m) DAY #

	011	046	074	128	135	142	149	156
EPI	9.4	9.0	8.8	7.8		7.6		8.2
4	8.2	8.4	8.2	8.0				7.8
8	8.2	8.4	9.0	9.0				8.0
10								
11								
12	8.6	8.0	7.8	8.4				7.4
13					2.0			
14	.8	.8	.6					7.0
OF								8.0
IF								3.4

	163	170	177	184	191	198	205	212
EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	219	226	233	240	247	254	261	268
EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	275	282	289	296	339
EPI					
4					
8					
10					
11					
12					
13					
14					
OF					
IF					

	275	282	289	296	339
EPI					
4					
8					
10					
11					
12					
13					
14					
OF					
IF					

## LAKE 223 H2S-S (mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	< .01		.01	< .01			< .01	
4	< .01	< .01	.01	< .01			< .01	
8	< .01	< .01	.01				< .01	
10								
11								
12	< .01	< .01	.02	< .01			< .01	
13								
14								
OF								
IF								
	163	170	177	184	191	198	205	212

EPI				< .01				
4				< .01				
8				< .01				
10								
11								
12				< .01				
13								
14								
OF								
IF								
	163	170	177	184	191	198	205	212

EPI				219	226	233	240	247	254	261	268
4				< .01							
8				< .01							
10				< .01							
11				< .01							
12				.22							
13				.28							
14				.39							
OF											
IF											

EPI				275	282	289	296	339
4				< .01				
8				< .01	< .01			
10				< .01	< .01			
11				< .01				
12				< .01	< .01			
13				< .01	< .01			
14				.02	.04			
OF								
IF								

## LAKE 223 Na (mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	1.07	1.15	1.06	1.11			1.14	.86
4	.93	.97	.97	1.21				.87
8	1.01	.95	.97	1.31				.89
10								
11								
12	1.01	1.16	1.00	1.39				.96
13					1.41			
14	1.05	1.23	1.08					.95
OF								
IF								.86
	163	170	177	184	191	198	205	212

EPI				.86				
4								.96
8								.96
10								
11								
12								1.10
13								
14								
OF	.79	.85	.83	.87	.94	.87	.83	.96
IF	.67	.63	.67	.69	.75	.69	.69	.77

EPI				.95				
4								.94
8								.94
10								.99
11								1.08
12								1.01
13								1.04
14								1.04
OF	.86	.89	.98	1.07	.98	.96	.94	.95
IF	.67	.78	.80	.86	.79	.81	.75	.77

EPI				219	226	233	240	247	254	261	268
4				< .01							
8				< .01							
10				< .01							
11				< .01							
12				.22							
13				.28							
14				.39							
OF											
IF											

EPI				275	282	289	296	339
4				< .01				
8				< .01				
10				< .01				
11				< .01				
12				< .01				
13				< .01				
14				.02	.04			
OF								
IF								

## LAKE 223 K (mg/L) 1978

DEPTH(m)		DAY #							
		011	046	074	128	135	142	149	156
EPI	.42	.38	.33	.34		.42		.32	
4	.35	.34	.31	.34			.32		
8	.37	.34	.31	.36				.36	
10									
11									
12	.37	.36	.33	.36				.40	
13					.50				
14	.42	.46	.47					.34	
OF					.34	.34	.36	.30	.28
IF					.36	.36	.38	.38	.26
		163	170	177	184	191	198	205	212
EPI					.32	.28	.30	.26	
4						.26		.28	
8						.30		.30	
10									
11									
12						.38			
13								.37	
14						.40			
OF	.30	.30	.21	.26	.26	.26	.28	.26	
IF	.27	.25	.13	.19	.26	.22	.24	.24	
		219	226	233	240	247	254	261	268
EPI					.26	.33	.27	.25	
4						.31		.23	
8						.35		.25	
10						.39		.31	
11						.41		.38	
12						.46		.42	
13						.46		.46	
14						.50		.48	
OF	.26	.28	.26	.33	.27	.27	.29	.25	
IF	.24	.32	.28	.35	.29	.31	.29	.27	
		275	282	289	296	339			
EPI					.25	.31	.32		
4						.33	.32		
8						.31	.32		
10						.33	.32		
11						.33	.32		
12						.33	.32		
13						.33	.32		
14						.61	.32		
OF	.23	.23	.23	.35	.37				
IF	.29	.25	.44						

## LAKE 223 Ca (mg/L) 1978

DEPTH(m)		DAY #							
		011	046	074	128	135	142	149	156
EPI	2.56	2.88	3.01	2.45			2.28		2.53
4	2.33	2.57	2.60	2.34			2.43		
8	2.42	2.67	2.74	2.66					2.73
10									
11									
12	2.47	3.04	3.14	3.03					2.98
13							4.31		
14	3.89	4.61	4.76						3.13
OF							2.56	2.28	2.48
IF							1.70	1.63	1.91
		163	170	177	184	191	198	205	212
EPI					2.57		2.35	2.29	2.11
4							2.35		2.20
8							2.63		2.58
10									
11									
12							3.01		3.04
13									
14							3.17		
OF	2.35	2.41	2.35		2.35		2.35	2.34	2.29
IF	1.86	2.08	1.97		2.08		1.91	2.01	1.87
		219	226	233	240	247	254	261	268
EPI					2.20		2.54	2.70	2.65
4							2.65		2.54
8							2.92		2.54
10							3.31		3.14
11							3.20		2.98
12							4.13		4.08
13							3.91		4.46
14							4.24		4.69
OF	2.15	2.20	2.15		2.59		2.70	2.70	2.48
IF	1.83	1.97	1.92		2.26		2.31	2.43	2.15
		275	282	289	296	339			
EPI					2.49		2.49	3.00	
4							2.49	2.70	
8							2.55	2.75	
10							2.43	2.70	
11							2.49	2.70	
12							2.49	2.70	
13							2.49	2.60	
14							4.93	2.65	
OF	2.65	2.55	2.43		2.55				
IF	2.15	1.97	2.02		2.26				

G5

## LAKE 223 Mg

(mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	.70	.64	.54	.53		.50		.53
4	.63	.57	.50	.53				.53
8	.64	.58	.50	.54				.56
10								
11								
12	.62	.66	.56	.58				.60
13				.72				
14	.64	.68	.60					.63
OF					.53	.51	.50	.54
IF					.40	.42	.46	.44
	163	170	177	184	191	198	205	212
EPI		.56		.44		.54		.52
4				.45				.52
8				.51				.55
10								
11								
12				.54				.65
13								
14				.58				
OF	.53	.50	.44	.45	.47	.55	.55	.54
IF	.44	.45	.40	.42	.40	.49	.46	.45
	219	226	233	240	247	254	261	268
EPI		.54		.55		.55		.56
4				.55				.56
8				.56				.55
10				.64				.64
11				.66				.70
12				.72				.70
13				.70				.71
14				.66				.73
OF	.52	.53	.51	.56	.55	.53	.59	.50
IF	.47	.49	.48	.51	.51	.51	.50	.45
	275	282	289	296	339			
EPI		.56		.55	1.03			
4				.58	.63			
8				.55	.63			
10				.55	.61			
11				.57	.58			
12				.57	.57			
13				.57	.55			
14				.80	.56			
OF	.59	.59	.59	.57				
IF	.50	.50	.51	.54				

## LAKE 223 Mn

(mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	.04	.05	.05	.07		.07		
4	.04	.03	.04	.07				
8	.04	.05	.08	.10				
10								
11								
12	.17	.26	.32	.21				
13				.54				
14	.69	.78	.80					
OF					.07	.03	.07	.07
IF					.03	< .01	.03	.03
	163	170	177	184	191	198	205	212
EPI		.03		.05		.02		.02
4				.03				.02
8				.08				< .02
10								
11								
12						.26		.42
13								
14						.31		
OF	.03	.03	.03	.05	< .02	< .02	.02	.02
IF	< .02	< .02	< .02	.02	< .02	< .02	.02	< .02
	219	226	233	240	247	254	261	268
EPI		.03		.02		.03		.03
4				.02				.03
8					< .02			.03
10					.31			.46
11					.49			.72
12					.55			.71
13					.56			.79
14					.66			.89
OF	.02	.05	.03	.02	.03	.03	.02	.03
IF	< .02	.02	.02	< .02	.02	< .02	< .02	.02
	275	282	289	296	339			
EPI		.03		.05		.06		
4				.08		.06		
8				.08		.06		
10				.08		.08		
11					.06	.10		
12					.06	.18		
13					.08	.27		
14					1.16	.27		
OF	.03	.03	.05	.05				
IF	< .02	< .02	.02	.02				

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LAKE 223		Fe	(mg/L)		1978					
DEPTH(m)			DAY #							
			011	046	074	128	135	142	149	156
EPI		< .04	.04	.06	.31		< .04		< .04	
4		< .04	< .04	.03	< .04				< .04	
8		< .04	.04	.09	< .04				.08	
10										
11										
12		.11	.44	2.11	.08				.08	
13						13.90				
14		19.20	25.70	26.50					1.17	
OF					< .04	.08	< .04	.08	.04	
IF					.08	.12	.12	.16	.08	
			163	170	177	184	191	198	205	212
EPI		< .04				.04		< .04		< .04
4						< .04				< .04
8						< .04				< .04
10										
11										
12						.97			2.05	
13										
14						4.86				
OF		.04	.04	.08	.08	< .04	.08	< .04	< .04	
IF		.08	.08	.04	.23	.04	.08	< .04	.08	
			219	226	233	240	247	254	261	268
EPI		< .04				< .04		< .04		< .04
4						< .04				< .04
8						< .04				< .04
10						< .04				.04
11						.04				.08
12						8.20			9.55	
13						8.75			15.00	
14						13.10			17.60	
OF		< .04	< .04	< .04	< .04	.04	.04	.04	< .04	
IF		.04	.11	.08	.08	.08	.08	.04	.13	
			275	282	289	296	339			
EPI		.08				.08	< .04			
4						.08	< .04			
8						.08	< .04			
10						.08	.04			
11						.08	.04			
12						.08	.16			
13						.13	.24			
14						28.70	.20			
OF		< .04	< .04	.04	.08					
IF		.13	.04	.17	.34					

LAKE 223		Ferrous-Fe	(mg/L)		1978					
DEPTH(m)			DAY #							
			011	046	074	128	135	142	149	156
EPI		< .01	< .01	< .01	.01				< .01	
4		< .01	< .01	.01	.01				< .01	
8		< .01	< .01	.01	.01				< .01	
10						< .01	.01			
11										
12		< .01	.08	2.57	.02				.04	
13							14.60			
14		19.60	26.80	28.10					1.40	
OF									.01	
IF									.02	
			163	170	177	184	191	198	205	212
EPI							< .01		.01	
4							< .01		< .01	
8							.01		.01	
10										
11										
12							.83		3.40	
13										
14							4.71			
OF							.02		.02	
IF							.05		.06	
			219	226	233	240	247	254	261	268
EPI							< .01		.01	
4							< .01		< .01	
8							< .01		< .01	
10							.01		.01	
11							.06		.08	
12							8.90		9.97	
13							8.81		16.40	
14							13.80		19.50	
OF							.01		.01	
IF							.05		.04	
			275	282	289	296	339			
EPI							.02	.01		
4							.02	.01		
8							.02	.01		
10							.03	.01		
11							.03	.03		
12							.03	.06		
13							.18	.08		
14							34.10	19.00		
OF							.03			
IF							.15			

## LAKE 223 Ferric-Fe (mg/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	.03	< .01	< .01	< .01				.01
4	.03	< .01	.01	< .01				< .01
8	.02	< .01	.02	.01				< .01
10								
11								
12	.05	.11	.08	.05				.10
13								< .01
14	< .01	< .01	< .01					.23
OF				< .01				< .01
IF				< .01				< .01

	163	170	177	184	191	198	205	212
EPI				.01				< .01
4				.01				< .01
8				.01				.01
10								
11								
12				.33				.15
13								
14				< .01				
OF				< .01				< .01
IF				.02				< .01

	219	226	233	240	247	254	261	268
EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	275	282	289	296	339
EPI					
4					
8					
10					
11					
12					
13					
14					
OF					
IF					

## LAKE 223 Susp Fe (ug/L)

1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	20	< 1	19	48			57	15
4	37	40	21	77				19
8	63	31	76	92				68
10								
11								
12	474	1042	505	516				727
13				477				
14	113	1297	766					
OF				42	55	45	20	101
IF				18	27	19	33	18

	163	170	177	184	191	198	205	212
EPI			13	8		24		26
4				12				12
8				56				56
10								
11								
12				165				165
13								
14				395				
OF	17	15	6	20	12	19	36	26
IF	12	49	12	37	19	37	31	50

	219	226	233	240	247	254	261	268
EPI			18		24		18	31
4				32				31
8				36				35
10				140				684
11				885				472
12				220				365
13				669				105
14								48
OF	33	26	29	32	14	31	33	190
IF	56	68	38	50	37	43	30	38

	275	282	289	296	339
EPI			63	205	
4					
8					
10					
11				194	
12				189	
13				258	
14				100	
OF	29	40	62	93	
IF	26	26	25	145	

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## LAKE 223 SRSI (mg/L)

1978

DEPTH(m) DAY #

	011	046	074	128	135	142	149	156
EPI	1.530	1.520	1.540	1.520		1.510		1.510
4	1.420	1.430	1.480	1.550				1.530
8	1.540	1.580	1.730	1.750				1.670
10								
11								
12	2.190	2.320	2.510	2.100				2.110
13				3.860				
14	4.270	5.110	5.090					2.270
OF				1.490	1.440	1.480	1.380	1.490
IF				.350	.263	.230	.534	.363

	163	170	177	184	191	198	205	212
EPI		1.480		1.400		1.380		1.320
4				1.430				1.320
8				1.490				1.190
10								
11								
12				2.140				2.150
13								
14				2.380				
OF	1.490	1.480	1.430	1.420	1.440	1.360	1.410	1.320
IF	.274	.245	.305	.337	.322	.362	.370	.374

	219	226	233	240	247	254	261	268
EPI		1.310		1.210		1.200		1.270
4				1.200				1.260
8				1.070				1.270
10				1.620				1.900
11				1.910				2.180
12				2.430				2.450
13				2.440				2.980
14				2.890				3.240
OF	1.320	1.310	1.350	1.290	1.260	1.210	1.270	1.310
IF	.331	.421	.390	.462	.360	.379	.433	.383

	275	282	289	296	339
EPI		1.300		1.340	1.500
4				1.330	1.500
8				1.310	1.520
10				1.310	1.650
11				1.310	1.950
12				1.330	2.420
13				1.320	2.640
14				3.700	2.670
OF	1.300	1.260	1.360	1.340	
IF	.429	.457	.716	.895	

## LAKE 223 Chl-a (ug/L)

1978

DEPTH(m) DAY #

	011	046	074	128	135	142	149	156
EPI		3.8	1.2	1.3	2.4		2.6	1.0
4		1.7	1.0	1.0	3.4			1.3
8		1.6	1.0	.9	5.5			7.9
10								
11								
12		2.8	4.0	10.4	12.7			12.0
13						11.0		
14		27.1	19.0	13.6				13.3
OF								
IF								

	163	170	177	184	191	198	205	212
EPI		1.4			1.9		1.2	1.0
4					2.8			1.2
8					11.3			9.1
10								
11								
12						19.2		35.9
13							18.7	
14								
OF								
IF								

	219	226	233	240	247	254	261	268
EPI			1.5			1.6		2.3
4						1.9		2.5
8						6.9		2.5
10						16.1		8.1
11						41.3		35.6
12						46.8		48.8
13						46.9		58.7
14						51.7		69.3
OF								
IF								

	275	282	289	296	339
EPI			3.3		8.5
4				4.1	3.1
8				4.1	1.8
10				4.1	2.1
11				4.4	2.8
12				4.2	4.6
13				4.6	6.1
14				46.8	6.3
OF					
IF					

## LAKE 223 Colour (abs425nm) 1978

DEPTH(m)

DAY #

	011	046	074	128	135	142	149	156
EPI	.018	.020	.019	.031		.032		.033
4	.017	.022	.022	.037				.069
8	.027	.022	.018	.030				.045
10								
11								
12	.042	.070	.088	.029				.037
13				1.380				
14	1.600	2.000	2.570					
OF				.041	.035	.035	.030	.039
IF				.060	.049	.070	.189	.081
	153	170	177	184	191	198	205	212
EPI		.033		.026		.027		.029
4				.033				.033
8				.028				.033
10								
11								
12				.139				.268
13								
14				.458				
OF	.039	.035	.035	.034	.039	.029	.029	.033
IF	.083	.094	.106	.102	.089	.092	.084	.085
	219	226	233	240	247	254	261	268
EPI		.032		.023		.025		.018
4				.029				.019
8				.026				.018
10				.030				.027
11				.039				.047
12				.735				.903
13				.844				1.520
14				1.422				1.787
OF	.025	.029	.024	.033	.029	.025	.022	.023
IF	.070	.095	.080	.091	.068	.071	.081	.058
	275	282	289	296	339			
EPI		.013		.013		.014		
4				.018		.014		
8				.017		.014		
10				.019		.019		
11				.019		.028		
12				.018		.040		
13				.019		.045		
14				2.530		.048		
OF	.024	.014	.022	.024				
IF	.072	.049	.061	.065				

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Appendix 6

1979 Water chemistry data

LAKE 223		Temp		(C)		1979		LAKE 223		Cond		(uS/cm)		1979					
DEPTH(m)		DAY #						DEPTH(m)		DAY #									
		009	044	087	141	148	155	162	159			009	044	087	141	148	155	162	169
EPI					7.39		13.50		18.32	EPI									
4					7.20				16.58	4		31	33	32	28		31		30
8					6.21				7.14	8		30	31	32	28				29
10					5.50				6.08	10		33	33	33	28				28
11					5.35				5.84	11		33	32	32	29				29
12					5.28				5.64	12		33	32	42	30				29
13					5.21				5.60	13		48	63	78	29				32
14					5.13				5.47	14		163	190	217	67				61
OF					12.00	15.50	13.00	14.00	17.50	OF						27	30	30	29
IF					12.50	12.50	13.50	12.50	17.00	IF						17	22	25	21
		176	183	190	197	204	211	218	225			176	183	190	197	204	211	218	225
EPI		20.50			21.19		22.50		19.48	EPI									
4					21.18				19.50	4		29			29				31
8					8.74				11.23	8									31
10					6.70				8.21	10									28
11					6.32				6.39	11									29
12					5.96				6.19	12									34
13					5.85				6.01	13									64
14					5.77				5.89	14									72
OF	17.00	19.50	21.00	20.50	22.00	21.00	18.50	17.00		OF	29	29	29	31	29	29	29	32	
IF	16.50	18.50	19.80	16.00	21.50	21.00	18.00	16.00		IF	20	19	20	19	19	21	21	21	
		232	239	246	253	260	267	274	281			232	239	246	253	260	267	274	281
EPI		18.20			16.57		14.40		11.25	EPI									
4					16.57				11.29	4		30			30				30
8					16.45				11.30	8									30
10					9.42				11.30	10									30
11					7.84				11.29	11									30
12					6.85				8.95	12									51
13					6.41				6.87	13									71
14					6.23				6.67	14									97
OF	17.50	16.50	14.00	11.50	19.00	12.00	9.00	6.50		OF	31	30	31	31	31	33	33	32	
IF	19.50	14.50	12.50	9.80	14.00	9.30	7.50	5.20		IF	25	24	27	44	47	47	52	46	
		288	295	297	302	350						288	295	297	302	350			
EPI		8.20	7.52							EPI									
4			7.58							4		31	32		31				
8			7.58							8			32		31				
10			7.58							10			32		31				
11			7.57							11			32		33				
12			7.57							12			32		33				
13			7.57							13			32		33				
14			7.57							14			32		124				
OF	4.20	5.00	2.90	4.30						OF	35	35	37	36					
IF	4.20	4.20	2.80	3.50						IF	46	45	49	46					

## LAKE 223 pH

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	5.84	5.73	5.64	5.94		5.60		5.59
4		5.68	5.52	5.91			5.68	
8	5.61	5.36	5.23	5.73			5.91	
10	5.42	5.27	5.24	5.71			5.61	
11	5.48	5.32	5.61	5.72			5.52	
12	5.55	5.58	6.17	5.72			5.61	
13	6.42	6.79	6.87	5.71			5.81	
14	6.99	6.90	6.92	6.30			6.41	
OF				5.91	5.72	5.60	5.61	5.62
IF				6.32	6.11	6.17	6.11	6.39

	176	183	190	197	204	211	218	225
EPI		5.70		5.49		5.81		5.67
4			5.58				5.60	
8			5.89				6.11	
10			5.79				6.09	
11			5.62				5.92	
12			5.90				6.00	
13			6.12				6.59	
14			6.29				6.61	
OF	5.70	5.59	5.51	5.60	5.62	5.65	5.69	5.62
IF	6.12	6.19	6.11	6.20	6.20	6.22	6.28	6.32

	232	239	246	253	260	267	274	281
EPI		5.61		5.56		5.59		5.69
4			5.56				5.63	
8			5.65				5.66	
10			6.19				5.67	
11			5.91				5.69	
12			6.40				6.42	
13			6.58				6.47	
14			6.56				6.50	
OF	5.66	5.57	5.87	5.89	6.00	6.00	6.02	6.19
IF	6.33	6.41	6.38	6.61	5.49	6.51	6.50	6.51

	288	295	297	302	350
EPI		5.45	5.53		5.95
4			5.52		5.80
8			5.49		5.86
10			5.51		5.64
11			5.52		5.66
12			5.56		5.62
13			5.54		5.66
14			5.55		6.94
OF	6.10	6.11	6.11	6.19	
IF	6.50	6.49	6.51	6.53	

## LAKE 223 Alkal (uEq/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI		10	9	12	20		2	3
4		10	12	10	20			5
8		9	7	-1	19			27
10		11	3	6	16			26
11		18	2	42	23			31
12		28	35	206	27			58
13		288	671	834	29			112
14		1892	2394	2581	534			555
OF					18			
IF							93	97
							94	88

	176	183	190	197	204	211	218	225
EPI			3		2		2	4
4				2			2	
8				25			27	
10				47			50	
11				88			75	
12				155			238	
13				358			598	
14				442			702	
OF	6		5		5		9	
IF	89	91	99	90	105	105	108	109

	232	239	246	253	260	267	274	281
EPI			3		3		5	2
4				2			4	
8				5			5	
10				63			5	
11				101			6	
12				432			470	
13					704		686	
14						704	905	
OF	11	147	130	167	322	351	368	354
IF							52	

	288	295	297	302	350
EPI			3		3
4			5		5
8			5		5
10			3		9
11			3		14
12			4		27
13			5		43
14			11		1449
OF	58	345	324	350	360
IF					

LAKE 223 02 (mg/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	159
EPI	11.90		12.23	10.90			9.00	
4	10.73	10.23	9.60	10.53			10.42	
8	8.88	6.79	5.00	9.13			10.04	
10	3.00	1.60	.83	8.58			6.75	
11	2.09	1.30	.21	8.40			3.44	
12	1.60	.47	< .01	7.80			.30	
13	< .01	< .01	< .01	7.42			< .01	
14	< .01	< .01	< .01	.22			< .01	
OF								
IF								

	176	183	190	197	204	211	218	225
EPI				7.96			8.17	
4				7.35			8.10	
8				10.57			11.58	
10				6.92			9.00	
11				.70			1.79	
12				< .01			< .01	
13				< .01			< .01	
14				< .01			< .01	
OF								
IF								

	232	239	246	253	260	267	274	281
EPI				1.80			9.20	
4				8.60			9.20	
8				8.87			9.00	
10				8.67			9.13	
11				9.01			8.70	
12				< .01			8.98	
13				< .01			< .01	
14				< .01			< .01	
OF				< .01			< .01	
IF								

	288	295	297	302	350
EPI				10.17	12.71
4				10.12	10.60
8				10.11	10.55
10				10.18	7.52
11				9.94	3.59
12				10.16	1.81
13				10.12	.73
14				10.12	< .01
OF					
IF					

LAKE 223 NH3-N (ug/L)

1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
EPI	57	60	65	16		15		16
4	66	67	65	15				16
8	100	74	59	24				17
10	193	118	93	81				18
11	242	140	250	56				33
12	308	338	510	82				150
13	770	1160	1560	108				370
14	3260	4630	5770	2010				950
OF				22		13	22	34
IF				19		6	25	9

	176	183	190	197	204	211	218	225
EPI				13		4	13	17
4						13		10
8						5		15
10						3		18
11						20		24
12						278		242
13						565		910
14						735		1230
OF	25	27	18	15	30	16	17	19
IF	21	27	34	6	11	15	23	19

	232	239	246	253	260	267	274	281
EPI				10		12	9	22
4						12		8
8						12		15
10						13		18
11						11		15
12						445		510
13						945		1300
14						1200		2480
OF	24	18	19	15	19	20	20	30
IF	31	16	22	26	19	16	42	41

	288	295	297	302	350
EPI				19	16
4					29
8					43
10					43
11					43
12					275
13					370
14					450
OF	30	26	25	54	2420
IF	36	26	46	45	

## LAKE 223 NO3-N (ug/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	2	8	11	47	< 1	< 1	< 1	
4	1	12	33	48				
8	13	105	180	58				
10	145	228	222	59				
11	146	212	2	59				
12	133	5	7	56				
13	9	15	14	55				
14	25	18	23	56				
OF				46	1	2	2	3
IF				18	12	35	20	9

176 183 190 197 204 211 218 225

EPI	< 1		2		2	< 1		
4			2			< 1		
8			2			< 1		
10			2			1		
11			2			1		
12			3			5		
13			11			11		
14			13			11		
OF	8	3	2	3	4	5	21	2
IF	15	10	9	8	7	13	7	11

232 239 246 253 260 267 274 281

EPI	< 1		< 1		< 1		3	
4			< 1				1	
8			< 1				3	
10			< 1				6	
11			< 1				3	
12			8				11	
13			9				14	
14			10				19	
OF	6	1	4	2	3	6	12	21
IF	28	20	24	31	24	35	84	59

288 295 297 302 350

EPI	3	3		9				
4		3		10				
8		4		10				
10		3		19				
11		3		49				
12		3		63				
13		3		38				
14		3		20				
OF	21	26	22	30				
IF	55	92	73	71				

## LAKE 223 TDN (ug/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	270	300	245	210			260	210
4	245	255	260	220			220	
8	305	340	380	220			205	
10	495	510	465	240			200	
11	560	520	440	265			250	
12	610	580	810	295			390	
13	1080	1740	2160	295			630	
14	4900	6330	7150	2350			1410	
OF				235			220	230
IF				120			195	215

176 183 190 197 204 211 218 225

EPI	205		205		195		170	
4			196				195	
8			186				195	
10			192				215	
11			200				230	
12			530				510	
13			920				1270	
14			1100				1570	
OF	275	220	245	205	225	215	215	190
IF	200	235	280	220	220	250	250	220

232 239 246 253 260 267 274 281

EPI	180		210		195		220	
4			190				220	
8			190				215	
10			230				225	
11			280				225	
12			710				870	
13			1360				1940	
14			1650				3130	
OF	215	184	185	175	152	200	188	245
IF	290	245	265	235	194	210	365	255

288 295 297 302 350

EPI	170	190		240				
4		220		250				
8		225		255				
10		205		355				
11		210		550				
12		225		680				
13		215		770				
14		215		3340				
OF	210	205	180	215				
IF	235	290	260	255				

## LAKE 223 Susp N (ug/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	18	26	11	128		107		
4	33	31	27	139			157	
8	37	42	41	103			164	
10	57	66	44	122			181	
11	68	66	166	122			162	
12	101	185	449	128			301	
13	312	891	1042	155			507	
14	1294	1203	975	471			1504	
OF				150	101	44	52	134
IF				30	27	27	14	60

	176	183	190	197	204	211	218	225
EPI		71		25		54		51
4			36				61	
8			92				118	
10			258				236	
11			301				594	
12			414				728	
13			492				762	
14			652				830	
OF	77	44	49	25	15	43	33	39
IF	27	63	41	27	33	46	56	77

	232	239	246	253	260	267	274	281
EPI		25		38		58		88
4			40				109	
8			35				96	
10			171				121	
11			431				101	
12			600				477	
13			580				778	
14			630				1244	
OF	15	25	20	20	25	30	35	74
IF	57	25	33	46	15	33	33	50

	288	295	297	302	350
EPI		74	74		123
4			70		97
8			74		42
10			73		37
11			18		51
12			54		98
13			69		149
14			62	>	1100
OF	23	39	9	78	
IF	24	50	50	217	

## LAKE 223 TDP (ug/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	2	2	2	2			1	
4	2	2	2	2			3	
8	3	2	3	2			3	
10	4	3	4	3			3	
11	3	6	3	2			3	
12	3	4	5	3			4	
13	9	9	21	3			4	
14	26	75	350	47			10	
OF				2	3	2	3	3
IF				2	4	5	5	3

	176	183	190	197	204	211	218	225
EPI		2		2		2		2
4			2			2		2
8			2			2		3
10			4			6		5
12			6			10		8
13			10			12		15
14			12			13		15
OF	3	3	3	3	3	3	2	3
IF	3	4	4	4	5	5	4	6

	232	239	246	253	260	267	274	281
EPI		2		2		2		2
4			2			2		2
8			2			2		2
10			5			8		3
11			8			10		9
12			10			12		11
13			12			13		16
14			13			13		16
OF	2	2	2	3	3	3	3	3
IF	6	5	6	5	5	5	4	4

	288	295	297	302	350
EPI		2	2		3
4			2		3
8			2		3
10			2		3
11			2		3
12			2		4
13			2		4
14			2		23
OF	3	3	2	2	
IF	4	5	4	4	

## LAKE 223 Susp P (ug/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	5	2	2	5		4		4
4	3	2	3	5				4
8	4	3	4	5				9
10	8	9	8	5				13
11	14	12	37	5				13
12	17	44	73	6				34
13	109	164	137	8				53
14	381	233	176	94				170
OF				3	3	3	2	9
IF				2	2	2	3	2

176 183 190 197 204 211 218 225

EPI	3		1		2		2	
4			1				2	
8			6				9	
10			17				16	
11			28				47	
12			44				30	
13			73				94	
14			82				108	
OF	6	5	2	1	2	2	2	
IF	3	5	2	2	3	3	3	8

232 239 246 253 260 267 274 281

EPI	2		1		2		4	
4			1				4	
8			2				5	
10			13				4	
11			39				5	
12			74				45	
13			88				80	
14			96				160	
OF	3	2	1	1	2	2	2	
IF	4	3	5	3	7	5	7	4

288 295 297 302 350

EPI	6	5		7				
4			5	4				
8			5	4				
10			5	5				
11			5	8				
12			5	11				
13			5	22				
14			6	362				
OF	2	3	2	4				
IF	3	3	3	20				

## LAKE 223 DIC (uM/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	44	51	57	53		21		26
4		70	76	55				23
8	76	152	192	93				102
10	254	295	305	110				222
11	284	315	360	124				278
12	310	380	465	141				388
13	535	765	950	150				434
14	1810	2390	2740	940				590
OF				47	39	33	36	43
IF				122	212	244	210	188

176 183 190 197 204 211 218 225

EPI	22		26		22		19	
4			35				21	
8			41				33	
10			192				152	
11			376				385	
12			500				535	
13			650				805	
14			700				900	
OF	42	55	49	51	73	58	60	40
IF	191	208	214	165	214	212	200	200

232 239 246 253 260 267 274 281

EPI	19		20		29		29	
4			21				30	
8			30				20	
10			150				23	
11			438				28	
12			730				810	
13			950				1030	
14			1030				1400	
OF	87	63	90	99	66	152	163	114
IF	268	264	338	530	600	635	645	640

288 295 297 302 350

EPI	43		41		12			
4			41				56	
8			39				62	
10			32				138	
11			35				244	
12			30				300	
13			33				350	
14			30				1470	
OF	162	178	152	195				
IF	600	625	650	615				

LAKE 223		DOC		(uM/L)		1979		LAKE 223		Susp C		(ug/L)		1979									
DEPTH(m)		DAY #										DEPTH(m)		DAY #									
		009	044	087	141	148	155	162	169			009	044	087	141	148	155	162	169				
EPI		360	360	320	385		375		330	EPI		440	410	290	970		1000						
4		300	360	295	355				315	4	380	340	480	980				1060					
8		325	360	290	355				320	8	450	510	430	800				1510					
10		320	280	275	360				290	10	620	720	740	780				1570					
11		285	295	265	360				295	11	780	690	1450	860				1160					
12		345	335	395	345				285	12	940	1660	2780	960				2150					
13		485	740	800	355				355	13	3670	4480	5320	930				3320					
14		1710	2130	2130	780				610	14	8950	7240	6410	3720				7370					
OF					345	370	355	335	310	OF				960	880	540	540	1660					
IF					285	315	490	330	260	IF				-280	250	300	310	410					
		176	183	190	197	204	211	218	225			176	183	190	197	204	211	218	225				
EPI		380			350		365		335	EPI		540		290		280		340					
4					335				340	4			290				420						
8					345				380	8			1000				1000						
10					390				470	10			2050				2120						
11					325				440	11			1890				1170						
12					420				530	12			2650				4260						
13					560				830	13			3390				4880						
14					640				930	14													
OF		350	390	385	320	330	340	345	330	OF		790	520	350	190	260	270	200	270				
IF		270	355	365	310	340	370	365	365	IF		370	390	210	250	260	300	360	570				
		232	239	246	253	260	267	274	281			232	239	246	253	260	267	274	281				
EPI		265			285		335		390	EPI		270		370		360		760					
4					285				360	4			370				710						
8					275				390	8			390				660						
10					395				395	10			1660				740						
11					425				410	11			3690				800						
12					650				650	12			4070				2910						
13					760				840	13			4640				4480						
14					830				1030	14			4700				7580						
OF		295	265	275	230	230	265	320	285	OF		410	170	190	260	220	290	360	600				
IF		340	320	385	315	390	385	710	405	IF		380	270	390	620	370	370	400	730				
		288	295	297	302	350						288	295	297	302	350							
EPI		310			340		385			EPI		720		710		1610							
4					335		375			4			700		850								
8					350		355			8			760		520								
10					325		360			10			850		550								
11					350		345			11			740		770								
12					325		350			12			650		1070								
13					345		340			13			680		1540								
14					340		1390			14			660		3810								
OF		250	235	260	220					OF		320	320	210	660								
IF		350	350	345	325					IF		390	380	380	2350								

## LAKE 223 Cl (mg/L)

1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
EPI	.8	.2	.8					
4	.4	.4	.6					
8	.4	.4	.6					
10	.4	.4	.8					
11	.4	.4	1.0					
12	.4	.4	.8					
13	.4	.6	.8					
14	.6	.6	.8					
OF				.6		.6		
IF				.6		.8		

	176	183	190	197	204	211	218	225
EPI	< .1		< .1		.4		< .1	
4		< .1				< .1		
8		< .1				< .1		
10		< .1				< .1		
11		< .1				.1		
12		.2				.3		
13		.3				.4		
14		.3				.5		
OF	< .1	< .1	< .1	< .1	.4	.3	< .1	
IF	.4	.5	.4	.2	.6	.5	.3	

	232	239	246	253	260	267	274	281
EPI	< .1		< .1		< .1		< .1	
4		< .1				< .1		
8		< .1				< .1		
10		< .1				< .1		
11		.1				< .1		
12		.4				.6		
13		.7				.9		
14		.7				.9		
OF	< .1	< .1	< .1	< .1	.5	< .1	< .1	.6
IF	.4	.3	.3	.4	.7	.6	.8	.9

	288	295	297	302	350
EPI	< .1	.5	1.2		
4		.5	1.6		
8		.6	1.8		
10		.5	1.2		
11		.5	1.4		
12		.5	1.6		
13		.5	.6		
14		.6	.8		
OF	< .1	< .1	< .1		
IF	.7	.6	.9	.7	

## LAKE 223 SO4 (mg/L)

1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
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EPI	10.0	10.0	10.2	9.4		10.4		11.0
4	9.4	8.8	9.2	9.4				10.8
8	9.6	9.0	9.2	9.4				9.8
10	9.4	8.6	8.8	9.4				10.0
11	9.2	8.6	8.6	9.4				9.8
12	9.0	8.2	7.9	9.4				9.8
13	6.8	3.2	.8	9.4				10.0
14	1.2	.8	.8	7.0				7.9
OF					9.6	8.8	10.4	8.8
IF						3.8	2.8	5.0

	176	183	190	197	204	211	218	225
EPI		11.2		11.0		10.8		10.8
4			11.2					10.9
8				9.6				9.1
10					8.9			8.4
11						8.2		7.3
12						7.3		6.3
13						6.3		3.3
14						5.5		2.7
OF	11.0	10.9	12.3	10.8	11.2	10.7	10.4	10.8
IF	5.1	3.7	3.3	3.3	3.3	3.1	3.1	3.1

	232	239	246	253	260	267	274	281
EPI		10.9		10.8		11.0		10.3
4			10.9					10.3
8				10.8				10.4
10					7.5			10.4
11					6.2			10.7
12					3.7			2.3
13					1.1			1.0
14					1.2			.9
OF	11.7	10.8	10.5	10.7	10.7	10.3	9.7	10.2
IF	3.1	3.3	2.9	3.4	3.4	3.1	3.0	2.8

	288	295	297	302	350
EPI		11.0	11.1		10.8
4			11.0		10.6
8				11.0	10.6
10				11.3	10.8
11				11.1	10.4
12				11.1	10.8
13				11.3	10.5
14				11.2	1.7
OF	10.2	10.6	10.8	10.6	
IF	3.1	4.2	3.3	3.1	

LAKE 223 H<sub>2</sub>S-S (mg/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI								
4								
8	< .01							
10	< .01	< .01	< .01					
11	< .01		< .01					
12	< .01	.03	< .01	< .01				
13	< .01	.05	.11	< .01				
14	.02	.03	< .01	< .01				
OF								
IF								
	176	183	190	197	204	211	218	225

	232	239	246	253	260	267	274	281
EPI								
4								
8								
10								
11		< .01						
12			< .01					
13				< .01				
14					< .01			
OF								
IF								

	288	295	297	302	350
EPI					
4					
8					
10					
11					
12					
13					
14					
OF					
IF					

## LAKE 223 Na (mg/L)

1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI								
4	1.00	1.19	1.17	1.06				
8	.93	1.05	1.00	1.12				
10	.95	1.10	1.11	1.09				
11	.95	1.09	1.08	1.05				
12	.97	1.17	1.03	1.03				
13	.97	1.12	1.06	1.06				
14	1.06	1.23	1.17	1.23				
OF								
IF								
	1.08							
	.87							

	176	183	190	197	204	211	218	225
EPI								
4	.91							
8								
10								
11								
12								
13								
14								
OF	.91	.90	1.01	1.04	.95	.99	1.07	1.13
IF	.72	.70	.94	.83	.75	.89	.84	.94

	232	239	246	253	260	267	274	281
EPI								
4	.99							
8								
10								
11								
12								
13								
14								
OF	1.15	.95	1.26	1.31	1.46	1.03	1.02	1.11
IF	1.13	.88	1.25	1.90	2.30	1.89	1.75	2.01

	288	295	297	302	350
EPI					
4	1.08	1.00			
8		1.02			
10		.97			
11		.94			
12		.97			
13					
14					
OF	1.14	1.14	1.39	1.08	
IF	1.85	1.87	2.08	1.96	

LAKE 223		K	(mg/L)		1979				
DEPTH(m)			DAY #						
		009	044	087	141	148	155	162	169
EPI		.32	.41	.31	.30		.32		.33
4		.28	.35	.27	.32			.31	
8		.30	.37	.27	.32			.33	
10		.30	.37	.29	.32			.33	
11		.30	.37	.31	.32			.33	
12		.32	.39	.33	.32			.37	
13		.34	.43	.45	.32			.37	
14		.57	.72	.69	.48			.45	
OF					.32	.24	.28	.33	.31
IF					.32	.26	.36	.37	.27
		176	183	190	197	204	211	218	225
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		.46	.43	.25	.28	.30	.35	.33	.36
IF		.37	.43	.26	.24	.30	.29	.27	.29
		232	239	246	253	260	267	274	281
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		.36	.33	.33	.39	.42	.36	.42	.38
IF		.31	.29	.27	.38	.54	.46	.128	.54
		288	295	297	302	350			
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		.32	.38	.36	.38				
IF		.54	.57	.49	.51				

LAKE 223		Ca	(mg/L)		1979				
DEPTH(m)			DAY #						
		009	044	087	141	148	155	162	169
EPI		2.59	2.95	2.51	2.49			2.33	2.54
4		2.54	2.55	2.70	2.39			2.43	
8		2.45	2.65	2.70	2.55			2.38	
10		2.54	2.75	2.70	2.55			2.32	
11		2.59	2.60	2.37	2.55			2.43	
12		2.73	2.50	2.80	2.55			2.59	
13		2.73	3.15	3.43	2.55			2.70	
14		4.79	5.45	5.89	3.66			2.97	
OF								2.49	2.43
IF								1.70	1.78
		176	183	190	197	204	211	218	225
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		2.68	2.64	2.68	2.64	2.73	2.75	2.76	2.71
IF		1.97	2.06	2.06	1.97	2.24	2.14	2.28	2.28
		232	239	246	253	260	267	274	281
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		2.71	2.80	2.89	2.99	3.03	3.17	3.22	3.31
IF		2.84	2.54	3.02	5.41	5.55	5.60	5.97	5.60
		288	295	297	302	350			
EPI									
4									
8									
10									
11									
12									
13									
14									
OF		3.31	3.50	3.41	3.41				
IF		5.18	5.23	5.27	5.65				

LAKE 223 Mg (mg/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	.60	.62	.59	.57		.57		.58
4	.58	.57	.57	.54			.56	
8	.56	.59	.58	.57			.53	
10	.57	.59	.58	.57			.52	
11	.57	.59	.58	.57			.55	
12	.60	.62	.57	.57			.58	
13	.58	.59	.55	.57			.58	
14	.67	.76	.73	.67			.58	
OF				.54	.56	.56	.57	
IF				.45	.49	.62	.50	.45

	176	183	190	197	204	211	218	225
EPI				.54		.57		.58
4				.55			.61	
8				.54			.59	
10				.53			.62	
11				.59			.62	
12				.59			.65	
13				.57			.64	
14				.60			.67	
OF	.56	.56	.57	.56	.58	.62	.62	.61
IF	.45	.47	.48	.43	.51	.52	.53	.53

	232	239	246	253	260	267	274	281
EPI				.61		.55		.53
4				.56			.55	
8				.58			.58	
10				.58			.55	
11				.61			.57	
12				.63			.60	
13				.62			.61	
14				.66			.72	
OF	.58	.62	.63	.62	.63	.63	.65	.66
IF	.62	.60	.66	.93	.95	.92	1.12	.97

	288	295	297	302	350
EPI				.52	.59
4				.60	.60
8				.59	.61
10				.58	.59
11				.59	.58
12				.59	.57
13				.61	.58
14				.62	.75
OF	.66	.68	.70	.69	
IF	.93	.96	.94	.98	

LAKE 223 Mn (mg/L) 1979

DEPTH(m)

DAY #

	009	044	087	141	148	155	162	169
EPI	.06	.06	.08	.06		.08		.06
4	.06	.04	.08	.08				.06
8	.06	.08	.14	.08				.08
10	.16	.17	.20	.08				.10
11	.20	.19	.26	.08				.13
12	.22	.26	.34	.09				.20
13	.40	.57	.66	.10				.28
14	1.13	1.19	1.24	.45				.42
OF				.05	.04	.09	.06	.08
IF				< .02	< .01	.03	< .01	.01

	176	183	190	197	204	211	218	225
EPI				.05		.05		.06
4				.05				.06
8				.01				.02
10				.14				.05
11				.20				.33
12				.30				.53
13				.34				.56
14				.37				.63
OF	.05	.05	.05	.05	.04	.04	.05	.05
IF	< .01	< .01	< .01	< .01	< .01	< .02	.02	.02

	232	239	246	253	260	267	274	281
EPI				.04		.07		.07
4				.07				.09
8				.07				.07
10				.09				.07
11				.52				.07
12				.64				.65
13				.57				.74
14				.71				.82
OF	.05	.03	.07	.06	.06	.07	.09	.04
IF	.03	< .01	.04	.06	.06	.06	.14	.03

	288	295	297	302	350
EPI				.11	.11
4				.11	.12
8				.11	.11
10				.11	.14
11				.11	.15
12				.11	.18
13				.11	.20
14				.10	.63
OF	.07	.11	.10	.10	
IF	.03	.06	.06	.06	

Lake 223 Fe (mg/L) 1979

1979

### DEPTH(m)

DAY 4

	009	044	087	141	148	155	162	169
EPI	.08	< .04	< .04	.04		.07		< .03
4	< .04	< .04	.07	.04			< .03	
8	< .04	< .04	< .04	.04				.03
10	.08	.12	.07	.07				.03
11	.12	.16	.22	.14				.07
12	.20	.56	3.43	.18				.10
13	5.29	11.80	16.50	.25				2.06
14	36.30	47.60	60.50	13.70				8.58
OF				.04	.04	.07	< .03	.03
IF				< .04	.04	.19	< .03	.07
	176	183	190	197	204	211	218	225
EPI		.25		.03		.03		.16
4				< .03				.16
8				< .03				.21
10				.03				.24
11				.09				.35
12				1.83				2.60
13				5.24				9.64
14				6.19				11.10
OF	< .03	.06	< .03	.16	.03	.05	.11	.27
IF	.03	.03	.06	.09	.07	.11	.16	.38
	232	239	246	253	260	267	274	281
EPI		.29		.03		.03		.08
4				.03				.11
8				.03				.08
10				.05				.08
11				.24				.11
12				6.00				6.27
13				9.91				10.40
14				11.00				14.30
OF	.16	.35	.27	.08	.08	.05	.14	.11
IF	.32	.80	.51	.75	.67	.57	1.25	.82
	288	295	297	302	350			
EPI		.03	.06		.03			
4			.06		.03			
8			.06		.03			
10			.03		.10			
11			.03		.16			
12			.03		.20			
13			.03		.29			
14			.03		34.80			
OF	.11	.10	.13	.16				
IF	.60	.61	.77	.48				

LAKE 223 Ferrous-Fe (mg/L) 1979

1979

DEPTH(m)

DAY 4

	009	044	087	141	148	155	162	169
CPI		.02	< .01	.05				.03
4		.01	< .01	.05				.03
8	.01	.01	< .01	.05				.04
0	.04	.04	.01	.07				.05
11	.07	.04	.03	.06				.07
12	.06	.08	4.00	.09				.15
13	4.08	12.90	15.90	.12				1.71
14	39.00	52.90	61.00	8.10				10.60
OF				.09				.05
IF				.05				.07
	176	183	190	197	204	211	218	225
CPI				.02				.01
4				.02				< .01
8				.03				.01
0				.04				.02
1				.07				.04
2				2.39				4.00
3				6.68				10.15
4				8.40				12.20
OF								
IF								
	232	239	246	253	260	267	274	281
PI								.02
4								.02
8								.01
0				.04				.02
1				.06				.02
2				3.07				6.90
3				8.61				10.95
4				10.66				16.07
OF								.03
IF								.46
	288	295	297	302	350			
PI			< .01		< .01			
4			< .01		< .01			
8			< .01		< .01			
0			< .01		.01			
1			< .01		.02			
2			< .01		.03			
3			.01		.07			
4			< .01		32.40			
OF				.03				
IF				.46				

## LAKE 223 SRS1 (mg/L)

1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
EPI	1.600	1.660	1.580	1.600		1.570		1.510
4	1.510	1.530	1.490	1.610				1.540
8	1.620	1.730	1.810	1.640				1.650
10	2.150	2.150	2.180	1.670				1.810
11	2.290	2.200	2.420	1.720				1.910
12	2.370	2.450	2.650	1.760				2.090
13	2.970	3.280	3.670	1.940				2.230
14	3.970	6.630	7.320	3.590				2.520
OF				1.610	1.540	1.540	1.580	1.510
IF				.278	.263	.835	.360	.248

	176	183	190	197	204	211	218	225
EPI		1.500		1.420		1.220		1.180
4				1.420				1.190
8				1.590				1.460
10				1.900				1.930
11				2.050				2.180
12				2.210				2.390
13				2.380				2.750
14				2.460				2.930
OF	1.480	1.470	1.390	1.400	1.290	1.180	1.140	1.150
IF	.249	.255	.287	.303	.338	.383	.487	.523

	232	239	246	253	260	267	274	281
EPI		1.070		1.030		1.010		1.210
4				1.030				1.180
8				1.060				1.180
10				1.920				1.190
11				2.180				1.180
12				2.560				2.650
13				2.820				3.140
14				3.010				3.730
OF	1.140	1.070	1.060	.924	.897	.922	1.120	1.270
IF	1.120	1.020	1.619	5.070	5.220	5.350	4.980	5.600

	288	295	297	302	350
EPI		1.220	1.220		1.330
4			1.210		1.330
8			1.210		1.330
10			1.220		1.600
11			1.220		2.020
12			1.220		2.320
13			1.220		2.410
14			1.220		5.550
OF	1.470	1.520	1.490	1.590	
IF	5.460	5.080	5.600	5.650	

## LAKE 223 Chl-a (ug/L)

1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
EPI		2.8	5.2	1.8	6.9		2.7	2.0
4		1.2	1.3	3.5	7.7			2.7
8		1.0	.8	1.1	8.8			23.0
10		1.9	1.6	1.3	8.3			23.3
11		2.5	2.6	9.1	8.9			19.4
12		3.4	13.5	19.0	9.6			24.9
13		19.2	26.3	15.3	9.0			19.5
14		32.9	29.1	14.3	8.3			42.0
OF								
IF								

	176	183	190	197	204	211	218	225
EPI			1.7		.5		1.2	1.3
4					.9			1.4
8					9.3			4.8
10						38.5		25.4
11						51.7		157.0
12						40.2		84.8
13						37.2		64.6
14						34.4		63.8
OF								
IF								

	232	239	246	253	260	267	274	281
EPI				1.0		1.2		5.3
4					1.1			5.6
8					1.7			5.6
10						17.7		6.0
11						74.8		10.0
12						67.0		37.8
13						70.5		58.5
14						71.1		61.9
OF								
IF								

	288	295	297	302	350
EPI			5.0	4.9	47.5
4				5.1	8.2
8				5.2	6.4
10				5.7	3.2
11				5.9	3.1
12				4.9	4.5
13				5.2	4.0
14				5.2	9.5
OF					
IF					

## LAKE 223 Colour (abs425nm) 1979

DEPTH(m) DAY #

	009	044	087	141	148	155	162	169
EPI	.016	.016	.016	.031		.023		.019
4	.016	.019	.017	.031				.029
8	.017	.027	.017	.033				.024
10	.027	.027	.028	.047				.025
11	.027	.029	.048	.043				.033
12	.034	.056	.106	.049				.029
13	.237	.718	1.075	1.140				.145
14	3.430	4.300	4.675	.044				.812
OF				.045	.025	.027	.027	.029
IF				.045	.066	.151	.095	.073
	176	183	190	197	204	211	218	225
EPI		.025		.010		.013		.013
4				.013				.015
8				.017				.023
10				.026				.030
11				.029				.045
12				.157				.224
13				.470				.877
14				.644				.940
OF	.028	.028	.023	.019	.020	.020	.016	.023
IF	.061	.066	.064	.064	.066	.065	.071	.087
	232	239	246	253	260	267	274	281
EPI		.014		.020		.014		.021
4				.016				.022
8				.018				.023
10				.049				.023
11				.068				.022
12				.431				.383
13				.946				.908
14				1.067				1.161
OF	.015	.019	.027	.028	.028	.029	.035	.031
IF	.104	.103	.124	.164	.168	.133	.282	.156
	283	295	297	302	350			
EPI		.019	.021		.026			
4			.020		.023			
8			.015		.021			
10			.021		.026			
11			.021		.030			
12			.017		.036			
13			.016		.047			
14			.017		2.212			
OF	.028	.034	.026	.030				
IF	.129	.119	.118	.099				

1980 Water chemistry data

LAKE 223		Temp	(C)	1980					
DEPTH(m)		DAY #							
		023	057	073	126	133	140	156	161
EPI					14.32		18.19		
4					8.26		18.02		
8					6.24		8.17		
10					5.48		6.71		
11					5.41		6.38		
12					5.30		6.09		
13					5.29		5.94		
14					5.22		5.67		
OF					14.50	13.00	13.10	16.50	15.40
IF					13.00	12.20	12.60	12.80	10.00
		168	182	189	196	203	210	217	224
EPI		17.20	18.56		22.00		21.90		21.40
4			18.52				21.91		
8			11.37				15.29		
10			8.63				10.67		
11			7.81				9.04		
12			7.09				8.06		
13			6.62				7.50		
14			6.47				7.20		
OF		14.90	17.50	17.90	20.10	19.00	18.40	17.00	17.80
IF		10.00	12.80	14.50	18.50	14.60	15.00	13.40	14.00
		231	238	245	252	259	266	273	280
EPI			21.38		19.65		13.70		11.35
4			20.95				13.70		
8			19.97				13.70		
10			12.46				13.70		
11			10.12				13.60		
12			8.47				10.50		
13			7.87				8.00		
14			7.62				7.80		
OF		16.90	20.00	15.30	18.50	11.00	11.00	11.30	6.50
IF		12.10	14.70	11.70	14.50	8.20	9.00	9.00	4.40
		287	294	301	344				
EPI			8.43						
4			8.43						
8			8.43						
10			8.43						
11			8.43						
12			8.43						
13			8.42						
14			8.42						
OF	4.00	3.60	1.10						
IF	3.80	8.41	.60						

LAKE 223		Cond	(uS/cm)	1980					
DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161
EPI		37	32	34	30			32	33
4		34	32	32	31			33	
8		32	32	32	31			30	
10		34	33	33	31			30	
11		34	33	33	31			30	
12		35	34	35	32			33	
13		56	78	86	33			49	
14		170	198	206	192			165	
OF					30			32	33
IF					21			23	46
		168	182	189	196	203	210	217	224
EPI		33	33		32			33	31
4			33					33	
8			30					30	
10			29					29	
11			30					30	
12			39					39	
13			53					56	
14			57					71	
OF	39	48	33	55	32	32	30	32	
IF	48	33	54	33	46	52	40	54	
		231	238	245	252	259	266	273	280
EPI			33		32			33	35
4			33					33	
8			32					33	
10			29					33	
11			34					34	
12			60					73	
13			80					101	
14			89					144	
OF	33	34	32	34	32	35	33	34	
IF	47	57	53	57	52	54	51	53	
		287	294	301	344				
EPI			32					34	
4			32					33	
8			32					36	
10			31					33	
11			32					34	
12			32					34	
13			32					35	
14			32					31	
OF	36	35	35	35	32	31	33	34	
IF	53	45	45	45	43	45	51	53	

LAKE 223		pH		1980					
DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161
EPI		5.62	5.57	5.56	5.86		5.81	5.41	
4		5.57	5.47	5.43	5.69		5.39		
8		5.52	5.47	5.35	5.53		5.99		
10		5.35	5.32	5.29	5.67		5.79		
11		5.43	5.45	5.61	5.57		5.53		
12		5.60	5.80	5.93	5.83		5.85		
13		6.43	6.79	6.82	5.82		6.31		
14		6.92	6.98	6.92	6.79		6.85		
OF					5.95	5.75	5.53	5.69	5.59
IF					6.32	6.29	6.29	6.63	6.59
		168	182	189	196	203	210	217	224
EPI		5.81	5.49		6.00		5.41		5.80
4			5.39				5.35		
8			6.21				6.27		
10			5.85				6.18		
11			6.21				5.99		
12			6.50				6.21		
13			6.68				6.51		
14			5.98				6.60		
OF		6.79	6.58	5.90	6.55	5.87	5.99	5.78	5.81
IF		6.59	5.98	7.23	5.42	6.50	6.60	6.41	6.63
		231	238	245	252	259	266	273	280
EPI			5.90		6.00		5.50		5.60
4			5.81				5.60		
8			5.76				5.70		
10			6.00				5.80		
11			5.99				5.80		
12			6.43				6.50		
13			6.56				6.60		
14			6.51				6.70		
OF		5.89	6.01	6.01	6.21	6.01	6.90	6.13	6.50
IF		6.44	6.51	6.71	6.51	6.52	6.70	6.58	6.70
		287	294	301	344				
EPI			5.11				5.49		
4			5.23				5.34		
8			5.25				5.33		
10			5.27				5.33		
11			5.27				5.32		
12			5.30				5.53		
13			5.37				5.67		
14			5.29				6.44		
OF		6.30	6.14	6.15					
IF		6.20	6.20	6.31					

LAKE 223		Alkal		(uEq/L)			1980		
DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161
EPI		4	3	6	13			1	
4			3	4	6	11			-7
8			7	7	5	13			31
10			5	12	10	17			38
11			16	21	45	20			16
12			42	75	170	37			74
13			372	804		49			80
14			2113	2341	2556	2653			12
OF							96	7	11
IF							87	79	230
		168	182	189	196	203	210	217	224
EPI							11	4	3
4							7		3
8							22		20
10							45		39
11							31		80
12							45		53
13							34		278
14							84		596
OF							11		19
IF							349	346	430
		231	238	245	252	259	266	273	280
EPI									-4
4									
8							2		
10							88		
11							108		
12							66		
13							28		
14							41		
OF							24		64
IF							353	479	474
		287	294	301	344				
EPI							-2	-9	
4							-1		
8							-1	-4	
10							-8	-13	
11							3	-21	
12							4	-28	
13							-2	-30	
14							-10	16	
OF							52	58	33
IF							454	307	339

LAKE 223 02 (mg/L) 1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	11.99	10.90	10.74	9.09		9.82		
4	10.40	9.19	8.52	8.80		9.21		
8	10.29	7.82	6.73	7.56		12.80		
10	3.09	1.72	1.36	6.25		7.38		
11	2.44	1.45	.32	6.13		4.27		
12	1.71	.31	.06	4.20		< .01		
13	< .01	< .01	< .01	3.00		< .01		
14	< .01	< .01	< .01	< .01		< .01		
OF								
IF								

168 182 189 196 203 210 217 224

EPI	9.73				8.35			
4	10.43				8.30			
8	13.08				12.00			
10	11.58				9.92			
11	1.25				3.40			
12	< .01				.20			
13	< .01				.05			
14	< .01				< .01			
OF								
IF								

231 238 245 252 259 266 273 280

EPI	9.30				9.15			
4	8.70				9.48			
8	8.85				9.20			
10	6.25				9.00			
11	< .01				8.28			
12	< .01							
13	< .01							
14	< .01							
OF								
IF								

287 294 301 344

EPI	10.60		11.49					
4	10.49		11.73					
8	10.55		11.93					
10	10.53		9.36					
11	10.61		5.93					
12	10.50		3.07					
13	10.60		.21					
14	10.62							
OF								
IF								

LAKE 223 NH3-N (ug/L) 1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	60	62	70	34		14	15	
4	49	76	84	85		28		
8	72	95	86	95		16		
10	128	101	61	99		28		
11	168	113	178	105		17		
12	300	310	456	206		165		
13	860	1450	1660	298		560		
14	3920	4940	5370	5990		4220		
OF					48	21	26	41
IF					17	25	22	24

168 182 189 196 203 210 217 224

EPI	19	24		14		10	30	
4	24					5		
8	19					12		
10	19					11		
11	61					11		
12	318					197		
13	693					660		
14	1190					1060		
OF	30	49	36	49	25	22	40	57
IF	27	71	54	60	45	34	57	52

231 238 245 252 259 266 273 280

EPI	9		22		13		20	
4	9				9			
8	13				17			
10	24				16			
11	28				45			
12	533				849			
13	1310				2055			
14	1622				3447			
OF	33	49	17	21	31	11	12	23
IF	33	46	19	25	47	31	24	29

287 294 301 344

EPI	21		35					
4	24		24					
8	17		27					
10	16		104					
11	24		185					
12	22		390					
13	27		525					
14	23		1700					
OF	23	20	17					
IF	34	59	46					

## LAKE 223 NO3-N (ug/L)

1980

DEPTH(m)

DAY #

	023	057	078	125	133	140	156	161
EPI	13	15	18	58		1	4	
4	14	21	29	59		5		
8	17	52	73	60		4		
10	164	242	274	62		4		
11	190	222	146	62		4		
12	145	71	5	53		4		
13	85	13	13	48		5		
14	38	14	18	21		11	8	
OF				58	30	5	11	
IF				19	21	23	22	24

	168	182	189	196	203	210	217	224
EPI	2	2		3		1		1
4	2					1		
8	2					1		
10	3				<	1		
11	4					1		
12	6					1		
13	9							
14	21							
OF	8	15	9	33	5	6	17	3
IF	22	50	18	44	120	45	271	18

	231	238	245	252	259	266	273	280
EPI	5		1		< 1		< 1	
4	5			< 1				
8	4				1			
10	4				1			
11	4				1			
12	5				9			
13	6				24			
14	4				30			
OF	4	5	2	6	6	10	4	9
IF	72	16	26	21	26	40	46	47

	287	294	301	344
EPI		1		7
4	< 1		4	
8	< 1		2	
10	< 1		4	
11	< 1		6	
12	< 1		9	
13	< 1		2	
14	6		13	
OF	14	16	15	
IF	56	34	111	

## LAKE 223 TDN (ug/L)

1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	270	275	300	270		192	215	
4	270	285	305	280			225	
8	260	335	320	290			200	
10	480	510	475	325			260	
11	520	500	475	340			255	
12	530	530	710	460			415	
13	1280	1980	2200	600			890	
14	4800	5970	6700	7370			5590	
OF				294	230	225	250	252
IF				250	220	240	230	235

	168	182	189	196	203	210	217	224
EPI	211	187		212		210		220
4	194					220		
8	206					230		
10	221					270		
11	292					350		
12	634					490		
13	936					1320		
14	1683					1870		
OF	313	265	225	290	240	270	340	235
IF	214	318	257	355	590	370	845	270

	231	238	245	252	259	266	273	280
EPI		190		195		190		214
4	205					180		
8	220					185		
10	245					190		
11	285					225		
12	800					1135		
13	1560					2465		
14	2040					3920		
OF	265	210	225	305	190	185	190	166
IF	390	260	255	225	215	265	245	231

	287	294	301	344
EPI		210		245
4	195		233	
8	245		224	
10	215		331	
11	225		440	
12	195		645	
13	215		901	
14	240		1613	
OF	310	190	215	
IF	290	415	410	

80

## LAKE 223 Susp N (ug/L) 1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	36	40	51	49		20	55	
4	31	2	84	83			136	
8	61	44	74	97			127	
10	97	50	47	95			208	
11	63	81	107	81			247	
12	97	103	176	89			247	
13	593	842	730	152			303	
14	1243	1336	1110	919			819	
OF				52	45	1	114	45
IF				41	11	< 1	37	1
	168	182	189	196	203	210	217	224
EPI	18	41		21	< 1		14	
4	39					14		
8	74				40			
10	307				235			
11	539				487			
12	421				380			
13	854				645			
14	753				599			
OF	24	44	32	20	29	63	112	< 72
IF	26	38	39	73	84	84	37	< 1
	231	238	245	252	259	266	273	280
EPI	17		14			17		42
4	63					64		
8	12				33			
10	199				25			
11	455				120			
12	948				439			
13	763				720			
14	933				1279			
OF	98	9	< 1	39	17	< 1	8	< 1
IF	75	75	< 1	50	19	39	36	3
	287	294	301	344				
EPI	63		56					
4	24		23					
8	75		6					
10	69		11					
11	72		11					
12	33		17					
13	54		922					
14	30		237					
OF	< 1							
IF	< 1							

## LAKE 223 TDP (ug/L) 1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	3	3	3	2		2	3	
4	3	3	2	2		2	3	
8	3	2	2	2		2	3	
10	4	4	2	2		2	7	
11	3	3	2	3		3	6	
12	4	4	4	4		4	8	
13	9	17	12	5		5	8	
14	83	440	640	128			52	
OF				3	2	3	3	3
IF				4	3	4	5	6
	168	182	189	196	203	210	217	224
EPI	2	2		2		3		3
4		2				3		
8		2				3		
10		4				5		
11		6				10		
12		10				8		
13		10				15		
14		14				20		
OF	4	4		3	5	3	6	4
IF	5	6		6	9	8	9	14
	231	238	245	252	259	266	273	280
EPI	2		2			1		2
4	1					2		
8	2					2		
10	5					2		
11	5					2		
12	12					9		
13	18					13		
14	17					20		
OF	5	3		3	4	2	3	2
IF	9	5		5	4	4	5	4
	287	294	301	344				
EPI	3					4		
4	3					3		
8	3					3		
10	3					4		
11	3					4		
12	2					4		
13	3					6		
14	3					20		
OF	3	3		2				
IF	4	5		4				

LAKE 223		Susp P		(ug/L)		1980		LAKE 223		DIC		(uM/L)		1980					
DEPTH(m)		DAY #								DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161			023	057	078	126	133	140	156	161
EPI		3	4	3	5		3	2		EPI	58	66	81	56		19	19		
4		4	3	4	5			9		4	68	93	117	108			26		
8		3	3	3	6			6		8	80	130	166	140			42		
10		5	6	4	6			10		10	272	298	302	183			176		
11		8	6	10	5			18		11	315	315	376	190			270		
12		9	12	26	6			26		12	352	400	468	248			400		
13		73	84	72	11			40		13	730	1000	1110	320			545		
14		189	190	188	194			122		14	2150	2470	2725	2820			1970		
OF					4	4	3	3	4	OF				49	35	45	65	55	
IF					3	1	1	2	3	IF				200	157	182	405	467	
168		182	189	196	203	210	217	224		168		182	189	196	203	210	217	224	
EPI		3	3		2			2		EPI	11	19		107			22	41	
4		3				2				4	18						22		
8		5				5				8	22						13		
10		19				20				10	87						202		
11		49				25				11	324						520		
12		41				58				12	449						752		
13		58				99				13	593						1009		
14		102				120				14	808						919		
OF		3	3	4	6	2	3	11	6	OF	68	69	67	21	89	145	126	84	
IF		3	3	4	13	5	6	12	4	IF	499	516	592	555	201	749	363	471	
231		238	245	252	259	266	273	280		231		238	245	252	259	266	273	280	
EPI		2		2		4		5		EPI	8		16				39	28	
4		3				5				4	3						38		
8		3				4				8	22						39		
10		16				4				10	237						44		
11		52				5				11	462						87		
12		106				74				12	805						956		
13		115				147				13	1008						1334		
14		132				206				14	1221						1682		
OF		6	3	3	3	2	3	2	1	OF	170	123	188	158	162	145	167	164	
IF		4	6	4	5	4	6	5	3	IF	589	524	745	732	776	637	658	707	
287		294	301	344						287		294	301	344					
EPI		5		17						EPI	21		34						
4		5		11						4	22		34						
8		5		4						8	21		37						
10		6		5						10	23		101						
11		5		7						11	22		195						
12		6		11						12	20		294						
13		8		160						13	20		405						
14		12		55						14	20		1099						
OF		2	1	2						OF	148	142	134						
IF		5	2	2						IF	689	524	615						

## LAKE 223 DOC (uM/L) 1980

DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161
EPI		380	335	580	330	275	273		
4		340	300	580	325		250		
8		390	290	600	340		282		
10		360	375	560	330		378		
11		350	330	530	315		339		
12		380	305	640	340		334		
13		590	920	1210	350		414		
14		2300	3450	3200	2070		1685		
OF					310	275	285	251	279
IF					400	330	310	326	382

168 182 189 196 203 210 217 224

EPI	237	256		244		280		195	
4		261				275			
8		276				285			
10		341				340			
11		305				360			
12		386				370			
13		511				600			
14		701				700			
OF	237	266	245	252	260	275	490	170	
IF	298	411	394	372	650	390	850	205	

231 238 245 252 259 265 273 290

EPI		300		550		320		390	
4		290				340			
8		285				320			
10		350				320			
11		350				310			
12		605				560			
13		865				640			
14		900				620			
OF	285	270	480	320	380	250	240	270	
IF	505	425	520	460	480	450	430	510	

287 294 301 344

EPI		680		400					
4		570		370					
8		550		390					
10		530		340					
11		600		340					
12		570		330					
13		570		1020					
14		640		310					
OF	440	2640	490						
IF	660	2920	600						

## LAKE 223 Susp C (ug/L) 1980

DEPTH(m)		DAY #							
		023	057	078	126	133	140	156	161
EPI		610	280	310	600		820	390	
4		500	330	570	940			740	
8		390	550	520	1010			1100	
10		760	810	460	910			1590	
11		810	580	900	920			1760	
12		510	1040	1410	1070			1500	
13		3460	4660	4200	1500			1890	
14		6910	8260	7080	5500			5230	
OF					830		600	580	300
IF					470		400	390	270

168 182 189 196 203 210 217 224

EPI	430	430		510		330		490	
4		390				360			
8		800				680			
10		2780				2260			
11		3760				3690			
12		2650				3160			
13		2740				4550			
14		3760				3400			
OF	410	490	280	780	390	500	810	500	
IF	560	300	460	1190	530	340	570	320	

231 238 245 252 259 266 273 280

EPI		490		460		550		610	
4		560				530			
8		550				450			
10		1400				520			
11		3100				580			
12		5240				2890			
13		4480				3890			
14		5070				6740			
OF	630	340	240	260	230	280	210	250	
IF	300	520	270	370	260	350	400	410	

287 294 301 344

EPI		690		840					
4		550		560					
8		580		520					
10		560		450					
11		720		500					
12		550		650					
13		750		4980					
14		690		1990					
OF	270	160	320						
IF	490	240	190						

## LAKE 223 C1 (mg/L) 1980

DEPTH(m) DAY #

	023	057	078	126	133	140	156	161
EPI	< .2	.1	.6	.6		.5	.5	
4	< .2	.1	.6	.6		.1		
8	< .2	.1	.8	.6		.3		
10	< .2	.6	.8	.6		.6		
11	< .2	.1	.8	.6		.3		
12	< .2	.2	1.0	.6		< .1		
13	.2	.7	.7	.6		.1		
14	.8	.8	.8	.9		.5		
OF				.6	.6	.4	< .1	.4
IF				.4	.2	.7	.2	.7

	168	182	189	196	203	210	217	224
EPI	.5	.1		.1		.3		.3
4	.3					.3		
8	.3					.3		
10	.4					.3		
11	.4					.5		
12	.5					.5		
13	.6					.6		
14	.7					.6		
OF	.5	.6	.4	.2	.3	.5	.3	.4
IF	.6	.7	.6	.6	.5	.6	.4	.6

	231	238	245	252	259	266	273	280
EPI	.4		.3		.2		.3	
4	.4					.1		
8	.5					.3		
10	.7					.3		
11	.8					.4		
12	1.0					.5		
13	.8					.5		
14	.8					.6		
OF	.5	.6	.4	.3	.3	.5	.4	.4
IF	.6	.7	.6	< .1	.5	.6	.5	.6

	287	294	301	344
EPI	.2		1.0	
4	.3		1.1	
8	.5		.8	
10	.4		.7	
11	.5		.6	
12	.7		.7	
13	1.0		1.1	
14	.9		.8	
OF	.6	.8	.6	
IF	.6	.9	.9	

## LAKE 223 SO4 (mg/L) 1980

DEPTH(m) DAY #

	023	057	078	126	133	140	156	161
EPI	11.8	2.0	10.6	9.0		10.5	10.5	
4	11.7	1.9	9.8	9.0			10.5	
8	11.7	1.8	9.8	9.0			9.0	
10	11.4	1.3	9.0	8.8			8.7	
11	11.0	1.2	8.5	8.8			8.5	
12	10.8	1.4	7.2	8.6			8.0	
13	7.9	2.6	1.2	8.4			6.5	
14	1.1	1.3	1.0	1.3			1.4	
OF				9.0	9.4	10.6	10.4	10.6
IF				3.9	4.1	3.7	4.1	4.7

	168	182	189	196	203	210	217	224
EPI	10.7	10.5		11.0		10.8		10.7
4		10.6				10.8		
8		9.1				9.1		
10		8.2				7.4		
11		7.4				6.2		
12		6.7				5.7		
13		5.2				3.6		
14		3.1				1.7		
OF	10.7	10.4	10.4	9.1	10.5	9.8	9.0	10.1
IF	4.7	4.2	3.6	3.1	4.6	3.0	4.1	2.9

	231	238	245	252	259	266	273	280
EPI		10.6		11.0		10.9		11.0
4		10.7				10.8		
8		10.5				10.6		
10		6.5				10.5		
11		5.2				10.3		
12		2.6				1.2		
13		.8				1.1		
14		.9				1.3		
OF	9.7	10.1	10.0	9.6	10.0	9.2	10.2	9.8
IF	4.4	2.7	2.9	2.5	2.9	3.3	3.2	2.8

	287	294	301	344
EPI		11.1		11.7
4		11.2		13.2
8		11.2		11.8
10		11.2		11.8
11		11.4		11.8
12		11.3		11.0
13		11.5		2.9
14		11.0		10.2
OF	10.2	11.2	11.1	
IF	2.9	5.3	4.9	

LAKE 223 H2S-S (mg/L) 1980

DEPTH(m) DAY #

	023	057	078	126	133	140	156	161
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EPI								
4								
8	< .01							
10	< .01							
11	< .01	< .01	< .01			< .01		
12	< .01	< .01	< .01	< .01		< .01		
13	< .01		.03	< .01		.07		
14	.02	.01	.03	.03		.07		
OF								
IF								

	168	182	189	196	203	210	217	224
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8	< .01							
10	< .01							
11	< .01							
12	< .01							
13	.24			.01				
14	.07			.10				
OF								
IF								

	231	238	245	252	259	266	273	280
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12	.18				.10			
13	.13				.10			
14	.17				.11			
OF								
IF								

	287	294	301	344
--	-----	-----	-----	-----

EPI								
4								
8								
10		< .01						
11		< .01						
12		< .01						
13		< .01						
14		.06						
OF								
IF								

LAKE 223 Na (mg/L) 1980

DEPTH(m) DAY #

	023	057	078	126	133	140	156	161
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	1.27	1.46	1.13	1.11		1.49	1.11	
4	1.18	1.37	.98	1.64			1.14	
8	1.22	1.36	.98	1.52				1.07
10	1.24	1.12	1.01	1.03			1.11	
11	1.27	1.12	1.06	1.52				1.12
12	1.29	1.12	1.15	1.06			1.12	
13	1.25	1.48	1.22	1.05			1.16	
14	1.41	1.57	1.22	1.80			1.16	
OF				1.60	1.00	1.71	1.14	1.06
IF					1.53	1.72	.88	1.49

	168	182	189	196	203	210	217	224
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI	1.46	1.00		.97		1.06		1.05
4	.97					1.00		
8	1.18						.97	
10	.97						.93	
11	.96						.99	
12	1.00						1.06	
13	1.03						1.01	
14	1.03						1.01	
OF	1.41	1.03	.90	.93	.93	.99	.97	1.05
IF	2.04	1.82	1.78	1.87	1.63	1.93	1.53	1.98

	231	238	245	252	259	266	273	280
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EPI	1.12		1.05			.98		.97
4	1.14						.97	
8	1.09						.97	
10	1.08						1.00	
11	1.16						.98	
12	1.21						1.01	
13	1.18						1.06	
14	1.15						1.07	
OF	1.09	1.14	1.05	1.16	1.15	1.11	1.09	1.17
IF	1.77	2.08	2.03	2.08	2.14	1.84	1.95	1.96

	287	294	301	344
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EPI	.98		1.03					
4	.93		1.00					
8	1.00							
10	.97			.94				
11	.98			.94				
12	1.00			.94				
13	1.01			1.11				
14	1.00			.97				
OF	1.09	1.11	1.07					
IF	1.95	1.74	1.85					

## LAKE 223 Colour (abs425nm) 1980

DEPTH(m)

DAY #

	023	057	078	126	133	140	156	161
EPI	.023	.023	.016	.019		.018		
4	.024	.014	.014	.016		.018		
8	.013	.015	.015	.019		.022		
10	.035	.032	.028	.033		.071		
11	.039	.039	.045	.032		.070		
12	.056	.087	.174	.062		.191		
13	.426	1.290	1.590	1.080		.280		
14	4.140	5.125	5.450	5.810		4.084		
OF				.037		.025		
IF				.114		.156		
	168	182	189	196	203	210	217	224
EPI		.018			.030			
4		.010			.028			
8		.020			.046			
10		.030			.032			
11		.035			.098			
12		.395			.292			
13		.651			.938			
14		1.200			1.262			
OF		.032			.054			
IF		.186			.255			
	231	238	245	252	259	266	273	290
EPI		.017			.021			
4		.017			.017			
8		.018			.019			
10		.050			.029			
11		.067			.028			
12		.892			.806			
13		1.568			1.162			
14		1.695			1.719			
OF		.037			.050			
IF		.196			.228			
	287	294	301	344				
EPI		.027			.021			
4		.025			.019			
8		.025			.016			
10		.024			.020			
11		.025			.026			
12		.022			.044			
13		.027			.052			
14		.021			1.780			
OF		.036						
IF		.131						

1981 Water chemistry data

## LAKE 223 Temp (C)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI				9.52	12.39		14.90	
4				8.89		14.80		
8				5.94		8.60		
10				5.69		7.50		
11				5.61		7.10		
12				5.59		6.60		
13				5.59		6.50		
14				5.56		6.40		
OF				9.80				
IF				8.20				

	159	166	173	180	187	194	201	208
EPI				18.37		21.17		
4				18.21		21.13		
8				12.12		14.19		
10				9.50		10.45		
11				8.73		9.61		
12				8.43		8.54		
13				7.70		7.93		
14				7.64		7.73		
OF				18.00		21.00		
IF				14.60		15.50		

	215	222	229	236	243	250	257	264
EPI				19.64		16.27		
4				19.63		16.27		
8				17.62		16.27		
10				11.59		13.55		
11				10.21		10.87		
12				8.47		9.41		
13				7.92		8.69		
14				7.83		8.55		
OF				16.00		8.00		
IF								

	271	278	285	292	299	349	
EPI				8.15			
4				8.15			
8				8.15			
10				8.15			
11				8.15			
12				8.15			
13				8.15			
14				8.15			
OF				6.30			
IF				5.10			

## LAKE 223 Cond (uS/cm)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	35	37	36	31		35		36
4	36	35	35	30				35
8	36	36	34	31				31
10	36	35		30				33
11	36	36	34	30				32
12	38	40	47	29				33
13	66	71	75	30				33
14	123	137	158	30				33
OF				29	32	35	34	34
IF				45	46	45	53	49

	159	166	173	180	187	194	201	208
EPI				34		35		39
4				35				39
8				34				35
10				30				33
11				31				34
12				31				40
13				32				47
14				36				49
OF	35	32	37	34	36	42	27	37
IF	33	31	49	37	31	29	24	29

	215	222	229	236	243	250	257	264
EPI				40		45		41
4				40				39
8				35				39
10				35				35
11				38				46
12				52				55
13				68				76
14				72				83
OF	43	37	24	40	38	38	41	40
IF	33	28	45	40				

	271	278	285	292	299	349
EPI				39		40
4				39		39
8				39		39
10				46		40
11				39		39
12				39		38
13				38		41
14				38		62
OF	38	38	39	38	38	
IF	46	42	45	38	38	

## LAKE 223 pH

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	5.45	5.23	-5.43	5.90		5.01		5.15
4	5.34	5.22	5.34	6.00				5.12
8	5.32	5.29	5.41	5.88				6.01
10	5.45	5.45		5.70				5.78
11	5.52	5.52	5.62	5.60				5.80
12	5.72	5.87	6.29	5.60				5.51
13	6.42	6.23	6.53	5.59				5.49
14	6.52	6.42	6.52	5.55				5.50
OF				5.88	5.52	5.03	5.11	5.33
IF				6.50	6.51	6.85	6.61	6.82
	159	166	173	180	187	194	201	208
EPI		5.25			5.01		5.17	5.11
4					5.01			5.15
8					5.95			5.91
10					6.01			6.20
11					5.72			5.81
12					5.69			6.27
13					5.73			6.38
14					5.86			6.41
OF	5.25	5.26	5.20	5.14	5.17	5.21	5.26	5.25
IF	6.25	5.89	6.52	5.92	5.81	5.98	6.09	6.21
	215	222	229	236	243	250	257	264
EPI		5.11			5.08		5.19	4.98
4					5.12			5.15
8					5.83			5.18
10					5.83			5.65
11					5.91			6.15
12					6.29			6.20
13					6.50			6.30
14					6.04			6.45
OF	5.03	5.31	5.67	5.69	5.43	5.47	5.20	5.18
IF	6.11	6.19	6.33			5.86		
	271	278	285	292	299	349		
EPI		5.09			5.20		5.32	
4					5.20		5.19	
8					5.22		5.23	
10					5.14		5.35	
11					5.20		5.55	
12					5.33		5.62	
13					5.43		5.87	
14					5.35		6.35	
OF	5.83	5.58	5.50	5.36	5.50			
IF	6.30	6.01	6.13	6.23	6.22			

## LAKE 223 Alkal

(uEq/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI			9	1	9		-10	5
4			2		9			2
8			5	4	9			8
10			29	17	17			23
11			36	30	14			23
12			32	128	12			37
13			73		11			32
14			19	726	16			40
OF					8	10	-8	1
IF					419	397	377	414
	159	166	173	180	187	194	201	208
EPI			-8		-41		-9	2
4					-44			-6
8			8		-27			16
10					-24			54
11			11		-4			85
12			12		68			178
13			13		69			295
14			14		78			317
OF	-52	-7	-7		-42	-4	-6	-5
IF	128	98	360		121	101	131	145
	215	222	229	236	243	250	257	264
EPI			-5		-10		16	10
4					-8			11
8			8		19			13
10					75			80
11			11		174			175
12			12		354			247
13			13		571			387
14			14		628			407
OF	-1	-2			-4		13	29
IF	160	157	299				88	
	271	278	285	292	299	349		
EPI			-3		-1		-1	
4					1		-1	
8			8		1		-1	
10					1		-1	
11			11		10		6	
12			12		7		20	
13			13		9		60	
14			14		10		321	
OF	9	8	5	6	2			
IF	249	139	153	137	154			

LAKE 223 O2 (mg/L) 1981

DEPTH(m) DAY #

	013	041	076	125	131	138	145	152
EPI	10.22	10.21	9.28	11.41			8.62	
4	10.13	10.72	13.08	12.06			8.59	
8	9.65	8.66	10.26	11.87			11.43	
10	9.18	1.89	5.42	10.96			10.13	
11	1.50	1.08	2.03	10.38			6.31	
12	.96	.41		10.29			3.93	
13				10.03			3.86	
14				8.66			2.44	
OF								
IF								

159 166 173 180 187 194 201 208

EPI		8.24		7.49				
4		8.33		7.47				
8		11.12		9.47				
10		10.31		9.54				
11		5.85		1.46				
12		1.61		1.17				
13		< .01		.60				
14		< .01		.37				
OF								
IF								

215 222 229 236 243 250 257 264

EPI		8.20		8.46				
4		8.24		8.47				
8		9.76		8.38				
10		2.73		.71				
11		< .01		.03				
12		< .01		.03				
13		< .01		< .01				
14		< .01		< .01				
OF								
IF								

271 278 285 292 299 349

EPI		10.07		11.53				
4		9.99		11.07				
8		9.88		9.86				
10		9.91		7.94				
11		9.73		6.97				
12		9.83		5.70				
13		9.99		1.79				
14		9.66						
OF								
IF								

LAKE 223 NH3-N (ug/L) 1981

DEPTH(m) DAY #

	013	041	076	125	131	138	145	152
EPI	66	62	42	29			20	14
4	58	63	42	18				9
8	58	80	60	18				17
10	192	256	170	21				18
11	345	312	287	13				19
12	349	436	586	20				116
13	945	1245	1122	28				125
14	2976	3226	5337	64				187
OF				25	12	16	15	18
IF				55	37	24	20	40

159 166 173 180 187 194 201 208

EPI		14		11		9		2
4				8				2
8				10				6
10				7				2
11				13				22
12				189				242
13				160				372
14				418				894
OF		20	12	10	5	24	16	25
IF		25	14	50	20	22	18	20

215 222 229 236 243 250 257 264

EPI	< 1		< 1		43		< 1	
4			< 1				< 1	
8			< 1				< 1	
10				27			< 1	
11				402				292
12				424				519
13				1089				1298
14				1317				1720
OF	1	< 1	< 1	15	1	10	7	< 1
IF	4	< 1	< 1		< 1			

271 278 285 292 299 349

EPI	< 1		< 1		17			
4			< 1			20		
8			< 1			60		
10			< 1			101		
11			< 1			144		
12			< 1			233		
13			< 1			415		
14			< 1			580		
OF	< 1	< 1	< 1	13	< 1	< 1	< 1	
IF	1	< 1						

## LAKE 223 NO3-N (ug/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	16	3	6	6	< 1	< 1	< 1	
4	9	4	7	3				
8	7	7	11	< 1				
10	14	47	46	1				
11	26	43	51	5				
12	18	9	18	96				
13	15	68	25	7				
14	14	112	73	8				
OF				2	< 1			
IF				90	62	45	31	

	159	166	173	180	187	194	201	208
EPI		9		6	< 1			4
4			3					3
8			< 1					4
10			1					2
11			1					3
12			1					2
13			37					14
14			3					8
OF	3	13	3	2	2	3	2	5
IF	117	145	36	19	14	13	13	22

	215	222	229	236	243	250	257	264
EPI	< 1			1	< 1		< 1	
4				1				< 1
8			< 1					
10			< 1					
11			6					< 1
12			10					63
13			< 1					23
14			11					< 1
OF	1	< 1	< 1	1	< 1	< 1	< 1	< 1
IF	12	6	14					
					136			

	271	278	285	292	299	349
EPI	< 1		< 1		< 1	
4		< 1		< 1		
8		< 1		< 1		
10		< 1		< 1		
11		< 1		< 1		
12		346		2		
13		8		< 1		
14		11		10		
OF	< 1	< 1	< 1	< 1		
IF	28	14	3	21	21	

## LAKE 223 TDN (ug/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	291	256	236	234			172	160
4	231	253	239	210				166
8	242	304	261	199				153
10	346	505		220				178
11	511	588	1014	219				224
12	500	755	1971	302				340
13	1333	2176	3145	240				325
14	3875	5300	3478	297				472
OF				118			186	177
IF				293	301		237	245

	159	166	173	180	187	194	201	208
EPI		182		212		265		196
4			194					186
8			199					231
10			220					237
11			239					268
12			505					573
13			500					924
14			874					1044
OF	197	215	206	186	299	237	219	220
IF	634	929	317	716	763	548	490	445

	215	222	229	236	243	250	257	264
EPI		178		175		166		181
4			217					179
8			190					176
10			284					204
11			799					624
12			1869					1083
13			2173					2283
14			2168					2484
OF	245	191	177	221	181	159	202	304
IF	514	410	274					

	271	278	285	292	299	349
EPI		287		154		190
4			154			195
8			141			250
10			197			313
11			152			442
12			690			475
13			166			759
14			177			1095
OF	173	274	110	134	197	
IF	304	463	243	280	319	

## LAKE 223 Susp N (ug/L) 1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	51	18	35	43	< 1	< 1		
4	17	12	26	34			54	
8	39	9	39	74			77	
10	8	6	52	86			209	
11	14	46	16	103			358	
12	37	113	177	80			430	
13	350	508	477	66			220	
14	750	1169	1256	134			249	
OF			43	150	87	20	31	
IF			14	< 1	49	6	< 1	

	159	166	173	180	187	194	201	208
EPI		54		17		35		79
4				20				31
8				46				55
10				154				322
11				237				354
12				220				398
13				320				414
14				358				576
OF	5	3	31	38	40	38	13	47
IF	26	80	20	< 1	< 1	32	10	10

	215	222	229	236	243	250	257	264
EPI		34		33		51		17
4				52				29
8				55				32
10				301				119
11				318				299
12				247				165
13				296				212
14				364				345
OF	31	36	49	241	30	36	38	23
IF	21	27	22			86		

	271	278	285	292	299	349
EPI		37		92		56
4				104		30
8				46		91
10				102		69
11				96		63
12				249		133
13				73		216
14				134	>	1055
OF	20	24	52	58	50	16
IF	15	13	25	29		

## LAKE 223 TDP (ug/L) 1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI	2	2	3	7			3	3
4	2	2	2	3			3	3
8	3	7	2	3			3	3
10	3	6	1	3			3	3
11	4	8	2	4			5	5
12	3	8	3	5			6	6
13	9	13	16	4			6	6
14	114	168		5			6	6
OF				2	2	2	2	3
IF				5	3	7	4	4

	159	166	173	180	187	194	201	208
EPI		2		3		2		3
4				3				2
8				4				4
10				6				6
11				9				8
12				11				11
13				12				15
14				15				19
OF	3	3	2	3	4	2	4	4
IF	11	14	5	10	8	8	12	11

	215	222	229	236	243	250	257	264
EPI		2		3		5		3
4				2				2
8				3				2
10				6				6
11				9				9
12				13				10
13				16				13
14				16				16
OF	2	2	2	2	2	3	6	3
IF	10	9	7			3		

	271	278	285	292	299	349
EPI		2		2		3
4				2		3
8				2		3
10				3		4
11				3		4
12				2		5
13				3		5
14				2		11
OF	6	2	3	2	3	11
IF	8	7	7	5	5	

## LAKE 223 Susp P (ug/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	133	145	152
EPI	3	3	3	5		2		2
4	3	3	3	5			3	
8	3	2	3	7			10	
10	3	4	3	9			13	
11	5	5	5	8			33	
12	10	30	25	9			31	
13	55	69	53	9			36	
14	236	157	149	17			47	
OF				5	7	9	3	3
IF				2	3	10	3	4

	159	166	173	180	137	194	201	203
EPI		2		4		2		4
4			4				4	
8			5			5		
10			17			27		
11			25			39		
12			43			37		
13			46			55		
14			56			90		
OF	4	3	3	3	3	2	< 1	2
IF	5	7	6	3	2	3	< 1	3

	215	222	229	236	243	250	257	264
EPI		2		3		3		2
4			3			2		
8			5			2		
10			39			9		
11			45			32		
12			44			34		
13			57			31		
14			74			42		
OF	2	2	3	3	3	4	3	2
IF	2	2	4	3	3	11		

	271	278	285	292	299	349
EPI		5		4		2
4			6		2	
8			4		3	
10			4		4	
11			4		5	
12			9		7	
13			3		16	
14			5		73	
OF	2	3	2	2	< 1	3
IF	3	3	3	< 1	< 1	

## LAKE 223 DIC (uM/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	133	145	152
EPI	75	73	108	53		36		63
4	77	95	107	49			62	
8	90	122	135	64			33	
10	223	324		90			93	
11	333	375	346	95			187	
12	371	478	351	104			256	
13	783	894	912	129			257	
14	1879	1992	2512	156			298	
OF				55	42	41	59	70
IF				247	499	469	557	482

	159	166	173	180	187	194	201	203
EPI		26		50		33		35
4			50				35	
8		60		60			74	
10		100		100			135	
11		235		235			443	
12		388		388			475	
13		437		437			369	
14		499		499			390	
OF	71	39	35	56	46	46	58	48
IF	365	312	554	324	344	399	390	234

	215	222	229	236	243	250	257	264
EPI		20		17		21		31
4			17				31	
8		92		92			32	
10		358		358			370	
11		551		551			677	
12		675		675			812	
13		963		963			1379	
14		1024		1024				
OF	58	56	57	56	60	56	33	71
IF	400	348	587			301		

	271	278	285	292	299	349
EPI		54		34		10
4			34			39
8		33		33		81
10		35		35		105
11		37		37		142
12		33		33		247
13		33		33		550
14		31		31		
OF	56	72	73	43	41	
IF	525	393	304	305	354	

LAKE 223		DOC	(uM/l.)		1981					LAKE 223		Susp C	(ug/L)		1981				
DEPTH(m)			DAY #							DEPTH(m)			DAY #						
013	041	076	125	131	133	145	152			013	041	076	125	131	133	145	152		
EPI	690	360	360	760	450		340	EPI	430	420	280	510		400		270			
4	390	330	310	450			330	4	390	380	330	540				230			
8	350	320	430	530			590	8	330	360	410	920				910			
10	330	310	540	330			340	10	340	300	400	1500				1290			
11	250	300	290	320			380	11	430	540	450	820				2460			
12	290	400	290	260			330	12	560	1020	820	590				2170			
13	570	270	390	290			470	13	1930	2090	2290	720				1790			
14	1550	1450	2350	310			430	14	4500	6000	5250	1070				2000			
OF				350	430	350	310	OF				990	830	160	390	590			
IF				520	390	410	400	IF				350	300	930	290	590			
	159	166	173	180	187	194	201		159	166	173	180	187	194	201	203			
EPI		290		230		350		EPI		330		410		380		520			
4				530			320	4				500				360			
8				350			290	8				1810				450			
10				380			350	10				1970				2140			
11				400			270	11				1920				2150			
12				320			350	12				1860				1450			
13				270			390	13				2170				1950			
14				510			470	14				220				2710			
OF	360	360	250	310	370	400	360	OF	250	520	320	530	330	370		280			
IF	890	1300	430	1730	1250	860	900	IF	440	550	360	230	390	440	210	230			
	215	222	229	236	243	250	257		215	222	229	236	243	250	257	264			
EPI		290		390		230		EPI		430		560		720		310			
4				530			390	4				730				520			
8				540			350	8				760				490			
10				280			350	10				2350				920			
11				290			290	11				2260				1920			
12				340			460	12				1700				1300			
13				450			700	13				1750				1370			
14				470			700	14				2170				1940			
OF	340	300	450	320	410	290	340	OF	330	380	570	1000	540	500	430	330			
IF	800	610	450			1130		IF	180	210			530						
	271	278	285	292	299		349		271	278	285	292	299		349				
EPI		310		770		990		EPI		400		890		390					
4				1430		760		4				970		320					
8				1490		1040		8				1100		570					
10				1050		730		10				930		770					
11				1590		1240		11				940		780					
12				1320		1090		12				2490		1390					
13				1240		710		13				550		2390					
14				590		820		14				950		> 3840					
OF	330	280	930	1040	610			OF	260	290	370	430	670						
IF	650	370	380	1930	540			IF	300	210	280	210	200						

## LAKE 223 Cl (mg/L)

1981

	DEPTH(m)								DAY #
	013	041	076	125	131	138	145	152	
EPI	< .1	< .1	.2	1.0		< .1		.4	
4	< .1	.3	.2	.4				.4	
8	< .1	.3	.1	.6			< .1		
10	< .1	.3	.3	.6				.1	
11	< .1	.4	.2	.7				.1	
12	< .1	.3	.3	.7				.1	
13	.2	.6	.5	.8			< .1		
14	.6	.6	.5	.7			< .1		
OF				.6	.3	.5	< .1	.6	
IF				.8	.5	.5	.4	.5	
	159	166	173	180	197	194	201	208	
EPI		.6		.4		.4		.8	
4				.4				1.0	
8			< .1					.5	
10				.1				.4	
11				.2				.4	
12				.2				.5	
13				.2				.4	
14				.2				.4	
OF	.6	< .8	.6	.6	.8	.4	.1	1.2	
IF	.2	< .1	.3	< .1	< .1	.1	.2	.2	
	215	222	229	235	243	250	257	264	
EPI		.4		.6		.2		.5	
4				.4				.4	
8				.1				.6	
10				.1				.3	
11				.1				.4	
12				.3				.4	
13				.3				.4	
14				.3				.8	
OF	.8	.8	.8	.2	.6	.5	< .1	.3	
IF	.2	.1	.3			.3			
	271	278	285	292	299	349			
EPI		.2		.2		.4			
4				.3		.5			
8				.2		.4			
10				.4		.4			
11				.2		.4			
12				.4		.6			
13				.4		.3			
14				.9		.3			
OF	.1	.4	< .1	.5	.6				
IF	.5	.4	.4	.5	.4				

## LAKE 223 SO4 (mg/L)

1981

	DEPTH(m)								DAY #
	013	041	076	125	131	138	145	152	
EPI	12.3	12.9	11.4	9.9			12.2		12.2
4	12.3	12.0	11.5	10.8			12.0		12.0
8	12.4	12.0	11.2	10.8			11.1		11.1
10	11.8	10.9	10.1	10.7			11.0		11.0
11	11.1	10.3	9.7	10.4			10.9		10.9
12	10.6	8.8	6.9	9.1			10.8		10.8
13	5.7	2.7	1.4	10.3			10.7		10.7
14	.8	.9	.4	10.2					10.5
OF				10.7	11.2	12.0	12.5	11.3	
IF				3.3	3.1	3.3	3.4	3.2	
	159	166	173	180	187	194	201	203	
EPI		11.6			11.8		11.8		10.8
4					11.9				11.2
8						10.9			9.5
10						9.9			8.1
11						9.1			6.9
12						8.5			4.7
13						8.4			2.1
14						7.6			.1
OF	11.8	11.6	12.0	11.6	12.2	11.8	11.8	11.6	
IF	7.5	8.7	4.9	9.4	7.9	4.7	4.2	2.4	
	215	222	229	235	243	250	257	264	
EPI		11.6			12.0		12.2		12.4
4					12.2				12.2
8						10.3			12.0
10						8.5			3.4
11						6.9			6.0
12						6.0			4.9
13						2.5			1.8
14						2.3			1.0
OF	11.4	11.6	11.6	11.8	12.2	11.3	12.2	12.0	
IF	4.2	3.8	4.4			8.3			
	271	278	285	292	299	349			
EPI		11.9			12.4		11.8		
4					12.2		11.6		
8						12.5			11.6
10						12.1			11.3
11						12.4			11.4
12						10.1			10.8
13						12.1			9.8
14						11.8			10.0
OF	12.0	11.6	12.6	12.1	11.8				
IF	6.3	8.8	8.9	7.7	7.0				

## LAKE 223 H2S-S (mg/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
EPI								
4								
8	< .01	< .01	< .01			< .01		
10	< .01	< .01	< .01			< .01		
11	< .01	< .01	< .01			< .01		
12	.02	.03	< .01			< .01		
13	.09	.01	< .01			< .01		
14	.02	.03	.01	< .01		< .01		
OF								
IF								

	159	166	173	180	187	194	201	208
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EPI								
4								
8		< .01				< .01		
10		< .01				< .01		
11		< .01				< .01		
12		< .01				.01		
13		< .01				.01		
14		< .01				.01		
OF								
IF								

	215	222	229	235	243	250	257	264
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EPI								
4								
8		< .01				.01		
10		.01				.02		
11		.04				.02		
12		.05				.04		
13		.15				.17		
14		.27				.21		
OF								
IF								

	271	278	285	292	299	349
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EPI								
4								
8		< .01			< .01			
10		< .01			< .01			
11		.02			< .01			
12		.02			< .01			
13		< .01			< .01			
14		< .01			.03			
OF								
IF								

## LAKE 223 Na (mg/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	133	145	152
EPI								
4	.97	1.03	1.16	1.17		.98		1.10
8	.97	.94	1.14	1.15				1.03
10	.95	.99	1.16	1.15				1.01
11	.93	.96	1.12	1.12				1.05
12	.89	.96	1.12	1.10				1.05
13	.91	.97	1.14	1.16				1.09
14	1.08	1.03	1.24	1.19				.93
OF						1.19	.95	.93
IF						2.19	1.91	2.00
							1.98	1.96

	159	166	173	180	187	194	201	208
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EPI								
4								
8						.91	1.01	1.01
10						.91		
11						.91		
12						.94		
13						.97		
14						1.00		
OF	1.02	.94	.83	.94	.90	.99	.95	1.02
IF	1.52	1.05	1.70	1.17	.93	.91	.85	.94

	215	222	229	235	243	250	257	264
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EPI								
4								
8						1.13	1.11	1.32
10						1.27		
11						1.03		
12						1.10		
13						1.16		
14						1.15		
OF	.96	.94	1.16	1.15	1.33	1.15	1.08	1.31
IF	.84	.84	1.61			1.19		

	271	278	285	292	299	349
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EPI								
4								
8						1.07	1.12	
10						1.05	1.12	
11						1.11	1.12	
12						1.05	1.14	
13						1.07	1.12	
14						1.07	1.14	
OF	1.29	1.14	1.17	1.01	1.03			
IF	1.83	1.43	1.55	1.30	1.41			

## LAKE 223 K (mg/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	139	145	152
EPI	.34	.36	.27	.24		.27		.36
4	.34	.34	.27	.24				.34
8	.32	.36	.27	.23				.31
10	.32	.34	.27	.23				.31
11	.30	.34	.29	.23				.34
12	.32	.36	.31	.19				.34
13	.33	.42	.37	.26				.33
14	.52	.54	.59	.26				.39
OF				.24	.26	.29	.33	.31
IF				.40	.38	.55	.33	.29

	159	166	173	180	187	194	201	203
EPI		.26		.35		.32		.33
4				.35				.33
8				.37				.38
10				.39				.42
11				.42				.45
12				.43				.49
13				.49				.69
14				.49				.59
OF	.35	.27	.26	.37	.33	.32	.29	.38
IF	.30	.16	.25	.17	.10	.05	.03	.13

	215	222	229	236	243	250	257	264
EPI		.27		.43		.43		.29
4				.51				.29
8				.43				.27
10				.51				.31
11				.49				.42
12				.66				.51
13				.60				.60
14				.62				.51
OF	.20	.24	.39	.43	.45	.43	.24	.27
IF	< .02	.09	.19			.43		

	271	278	285	292	299	349
EPI		.27		.39		.37
4				.39		.37
8				.43		.37
10				.39		.39
11				.41		.37
12				.46		.41
13				.39		.41
14				.39		.55
OF	.27	.27	.39	.41	.41	
IF	.29	.24	.33	.31	.33	

## LAKE 223 Ca (mg/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	139	145	152
EPI	2.68	3.04	2.79	2.97			2.96	2.87
4	2.83	2.85	2.79	2.80				2.96
8	2.68	2.79	2.79	2.74				2.69
10	2.68	2.79	2.73	2.80				2.92
11	2.57	2.79	2.66	2.74				2.87
12	2.73	2.97	3.04	2.52				2.64
13	3.09	3.22	3.41	2.69				2.78
14	3.96	4.34	4.83	2.69				2.64
OF				2.74	2.92	2.78	2.96	2.83
IF				5.26	5.79	5.67	6.38	6.15

	159	166	173	180	187	194	201	208
EPI		2.83			2.73		2.71	2.39
4				2.83				2.52
8				2.83				2.44
10				2.78				2.57
11				2.89				2.61
12				2.83				2.91
13				2.89				3.35
14				2.89				3.52
OF	2.73	2.89	2.83	2.83	2.71	2.76	2.85	2.57
IF	4.37	4.06	5.67	4.54	3.78	2.99	3.09	2.87

	215	222	229	236	243	250	257	264
EPI		2.30			2.69		2.64	2.77
4				2.69				2.94
8				2.60				2.86
10				2.51				2.81
11				2.87				3.25
12				2.87				3.47
13				3.14				3.78
14				3.46				3.60
OF	2.61	2.48	2.73	3.01	2.64	2.64	2.72	2.94
IF	2.91	2.70	4.56					

	271	278	285	292	299	349
EPI		2.86			2.97	2.89
4				2.83		2.88
8				2.92		2.96
10				2.92		2.88
11				2.88		2.83
12				3.37		2.83
13				3.06		2.92
14				3.29		2.88
OF	2.99	3.03	3.06	2.92	2.97	
IF	4.79	4.48	4.18	3.78	3.69	

LAKE 223		Mg	(mg/L)	1981					
DEPTH(m)			DAY #						
		013	041	076	125	131	138	145	152
EPI	.62	.71	.69	.60		.67		.67	
4	.63	.67	.69	.60				.68	
8	.61	.67	.68	.59				.62	
10	.61	.64	.68	.60				.66	
11	.60	.65	.67	.59				.66	
12	.64	.69	.71	.56				.60	
13	.67	.71	.76	.59				.65	
14	.73	.82	.96	.58				.61	
OF				.60	.64	.62	.64	.64	
IF				.92	1.05	.94	1.10	1.07	
		159	166	173	180	187	194	201	208
EPI	.62			.61		.60		.58	
4				.62				.59	
8				.61				.57	
10				.59				.58	
11				.62				.59	
12				.61				.61	
13				.67				.82	
14				.66				.83	
OF	.60	.61	.53	.62	.58	.59	.62	.59	
IF	.91	.93	.89	1.00	.82	.64	.67	.65	
		215	222	229	236	243	250	257	264
EPI	.51			.62		.63		.69	
4				.63				.66	
8				.61				.70	
10				.60				.69	
11				.66				.72	
12				.69				.78	
13				.67				.72	
14				.70				.81	
OF	.58	.56	.65	.65	.64	.61	.66	.68	
IF	.65	.59	.95			.83			
		271	278	285	292	299	349		
EPI	.68			.66		.71			
4				.64		.70			
8				.65		.70			
10				.66		.71			
11				.64		.69			
12				.63		.69			
13				.62		.69			
14				.66		.75			
OF	.69	.69	.67	.64	.69				
IF	1.01	.96	1.00	.83	.87				

LAKE 223		Mn	(mg/L)	1981					
DEPTH(m)			DAY #						
		013	041	076	125	131	138	145	152
EPI	.17	.17	.14	.14			.11		.14
4	.17	.17	.14	.14					.16
8	.17	.17	.14	.13					.13
10	.18	.20	.16	.10					.14
11	.18	.20	.18	.13					.13
12	.20	.25	.23	.06					.17
13	.33	.28	.27	.13					.17
14	.44	.42	.54	.16					.17
OF				.14	.10	.13	.14		
IF				.03	.02	.01	.01		
		159	166	173	180	187	194	201	208
EPI		.18		.20		.19		.22	
4				.20				.20	
8				.14				.16	
10				.14				.09	
11				.18				.18	
12				.20				.45	
13				.12				.16	
14				.24				.27	
OF	.19	.18	.18	.20	.20	.19	.20	.20	
IF	.04	.02	.02	.02	.02	.02	.02	< .02	
		215	222	229	236	243	250	257	264
EPI		.22		.25		.18		.24	
4				.25				.24	
8				.25				.22	
10				.12				.22	
11				.30				.40	
12				.34				.29	
13				.43				.35	
14				.41				.39	
OF	.19	.21	.21	.24	.22	.18	.20	.20	
IF	< .01	.03	.01				< .01		
		271	278	285	292	299	349		
EPI		.24		.25		.13			
4				.25		.13			
8				.27		.13			
10				.24		.13			
11				.25		.13			
12				.12		.13			
13				.19		.15			
14				.21		.13			
OF	.19	.20	.20	.23	.19				
IF	.07	.04	.04	.05	.05	.01			

LAKE 223		Fe	(mg/L)		1981				
DEPTH(m)			DAY #						
		013	041	076	125	131	138	145	152
EPI		.17	< .03	.04	.03		.03		.05
4		.10	< .03	.04	.03				.05
8		.10	< .03	.04	.05				.05
10		.14	.07	.12	.05				.11
11		.17	.14	.16	.08				.19
12		.28	1.88	12.00	.05				.27
13		10.30	12.00	12.40	.11				.24
14		32.10	32.40	41.00	.19				.19
OF					.03	.05	.03	.05	.08
IF					.51	.32	.35	.37	.37
		159	166	173	180	187	194	201	208
EPI		< .02			.14		.06		.03
4					.05				.03
8					.05				.08
10					.16				.13
11					.37				.44
12					.73				2.19
13					.49				1.25
14					1.31				3.43
OF		.12	.07	.12	.07	< .02	.06	.06	.03
IF		.35	.28	.75	.47	.37	.43	.49	.42
		215	222	229	236	243	250	257	264
EPI		< .03			.11		.07		.21
4					.11				.18
8					.25				.21
10					.32				.45
11					.42				2.57
12					3.29				3.63
13					6.50				7.25
14					6.43				9.67
OF		.08	.03	.07	.21	.04	.11	.12	.21
IF		.52	.38	.64			.28		
		271	278	285	292	299	349		
EPI		.24			.07		.12		
4					.07		.08		
8					.07		.12		
10					.07		.15		
11					.10		.23		
12					.07		.38		
13					.07		.42		
14					.10		2.46		
OF		.21	.21	.14	.10	.07			
IF		.60	.45	.35	.28	.24			

LAKE 223		Ferrous-Fe	(mg/L)		1981				
DEPTH(m)			DAY #						
		013	041	076	125	131	138	145	152
EPI		.01	.01	.08	< .01				< .01
4		.01	.01		< .01				< .01
8		.01	< .01	.02	< .01				< .01
10		.01	.01	.02	< .01				< .01
11		.01	.01	.03	< .01				< .01
12		.02	1.09	2.67	< .01				.01
13		9.28	8.70	5.98	< .01				.02
14		7.76	10.00	6.91	< .01				.02
OF									< .01
IF									.08
		159	166	173	180	187	194	201	208
EPI							< .01		< .01
4							< .01		< .01
8							< .01		< .01
10							< .01		< .01
11							.02		.01
12							.02		1.67
13							.21		1.67
14							1.33		1.67
OF							< .01		.01
IF							.11		.10
		215	222	229	236	243	250	257	264
EPI							< .01		< .01
4							< .01		< .01
8							< .01		< .01
10							.01		< .01
11							1.19		2.15
12							1.94		2.28
13							2.41		2.28
14							2.60		2.78
OF							.01		< .01
IF									
		271	278	285	292	299	349		
EPI							< .01		< .01
4							< .01		< .01
8							< .01		< .01
10							< .01		< .01
11							< .01		< .01
12							< .01		.01
13							< .01		.01
14							< .01		6.94
OF							.03		
IF							.16		

## LAKE 223 Ferric-Fe (mg/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
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EPI	.04	.03	.68					
4	.04	.03						
8	.04	.04	.02					
10	.06	.10	.06					
11	.12	.47	.09					
12	.29	1.07	.16					
13	1.26	1.16	.40					
14	2.13	10.62	.04					
OF								
IF								

	159	166	173	180	187	194	201	208
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	215	222	229	236	243	250	257	264
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	271	278	285	292	299	349		
--	-----	-----	-----	-----	-----	-----	--	--

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

## LAKE 223 Susp Fe (ug/L)

1981

DEPTH(m)

DAY #

	013	041	076	125	131	138	145	152
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	159	166	173	180	187	194	201	208
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	215	222	229	236	243	250	257	264
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

	271	278	285	292	299	349		
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EPI								
4								
8								
10								
11								
12								
13								
14								
OF								
IF								

## LAKE 223 SRSi (mg/l.) 1991

DEPTH(m) DAY #

	013	041	076	125	131	138	145	152
EPI	.992	1.210	.912	.343	.731		.637	
4	.973	1.120	.912	.837			.632	
8	1.000	1.170	.971	.852			.692	
10	1.490	1.790	1.370	.747			.827	
11	1.390	1.390	1.560	.956			1.130	
12	1.840	2.140	2.180	.614			1.400	
13	2.640	3.080	2.920	1.050			1.470	
14	4.990	5.350	6.970	1.170			1.490	
OF				.822	.776	.717	.644	.531
IF				4.550	4.920	4.270	4.860	4.780

	159	166	173	180	187	194	201	208
EPI		.525		.444		.573		.525
4			.458			.521		
8			.423			.315		
10			.538			.573		
11				1.100		2.250		
12					.470	1.610		
13					1.100	1.800		
14					1.640	2.130		
OF	.562	.538	.493	.452	.517	.593	.574	.526
IF	3.120	2.180	4.950	1.170	2.750	1.750	1.710	1.900

	215	222	229	236	243	250	257	264
EPI		.455		.427		.420		.461
4			.425			.463		
8			.353			.465		
10			.397			.915		
11				1.400		1.650		
12					1.590	1.690		
13					2.060	2.620		
14					2.250	2.860		
OF	.495	.479	.454	.442	.455	.553	.424	.467
IF	1.710	1.630	4.150			2.020		

	271	278	285	292	299	349	
EPI		.561		.451		.211	
4			.455			.206	
8			.446			.314	
10			.447			.485	
11				.454		.623	
12					.739	.758	
13					.496	1.260	
14					.507	1.190	
OF	.603	.614	.535	.484	.436		
IF	4.200	3.240	3.760	3.270	3.530		

## LAKE 223 Chl-a (ug/L) 1981

DEPTH(m) DAY #

	013	041	076	125	131	138	145	152
EPI	2.7	5.1	3.5	3.3		1.1		.8
4	2.2	3.0	3.5	3.4				.5
8	1.9	1.6	4.1	8.4				4.2
10	1.9	1.3	4.6	7.6				7.9
11	1.9	1.2	3.8	13.6				31.8
12	1.9	2.1	3.9	4.3				18.0
13	3.5	2.8	2.9	6.0				16.8
14	11.5	13.6	5.4	6.1				18.0
OF								
IF								

	159	166	173	180	187	194	201	208
EPI			1.1			1.9		.9
4						1.9		1.5
8						3.4		3.0
10						56.9		25.8
11						51.1		58.4
12						14.5		7.4
13						14.5		6.1
14						6.8		13.4
OF								
IF								

	215	222	229	236	243	250	257	264
EPI			2.2			1.7		3.4
4						3.1		2.7
8						2.7		3.0
10						26.4		7.0
11						40.9		41.6
12						28.5		17.5
13						8.1		11.7
14						15.1		14.2
OF								
IF								

	271	278	285	292	299	349
EPI			3.9		6.3	2.1
4					6.5	1.8
8					7.3	6.7
10					9.2	6.3
11					4.4	6.8
12					8.0	17.4
13					3.5	14.7
14					6.8	70.1
OF						
IF						

LAKE 223 Colour (abs425nm) 1981

DEPTH(m) DAY #

	013	041	076	125	131	138	145	152
EPI	.018	.014	.014	.020				
4	.016	.013	.009	.018				
8	.011	.017	.010	.020				
10	.015	.021	.029	.022				
11	.021	.032	.034	.024				
12	.027	.189	.165	.022				
13	.776	.852	.874	.029				
14	3.138	3.176	2.360	.037				
OF				.027				
IF				.149				

	159	166	173	180	187	194	201	208
EPI				.009				
4				.006				
8				.010				
10				.028				
11				.058				
12				.109				
13				.086				
14				.195				
OF				.017				
IF				.486				

	215	222	229	236	243	250	257	264
EPI				.014			.025	
4				.009			.023	
8				.021			.024	
10				.047			.078	
11				.060			.378	
12				.318			.530	
13				.575			.909	
14				.611			1.206	
OF				.014			.029	
IF								

	271	278	285	292	299	349	
EPI		.026		.085		.035	
4				.095		.031	
8				.087		.030	
10				.081		.036	
11				.083		.049	
12				.082		.078	
13				.076		.080	
14				.087		.163	
OF		.028		.069			
IF				.276		.217	

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Appendix 9

1982 Water chemistry data

LAKE 223 Temp (C) 1982								
DEPTH(m) DAY #								
	013	041	069	124	130	137	144	151
EPI								
4					8.62			
8					8.14			
10					6.57			
11					5.62			
12					5.55			
13					5.35			
14					5.27			
OF					5.19			
IF								
	158	165	172	179	186	193	200	207
EPI								
4					18.81			
8					18.57			
10					9.94			
11					7.62			
12					7.24			
13					6.67			
14					6.46			
OF					6.30			
IF								
	214	221	228	235	242	249	256	263
EPI	21.47				17.08			
4	21.52				17.32			
8	11.67				15.46			
10	8.55				9.25			
11	7.75				8.11			
12	7.21				7.61			
13	6.93				7.39			
14	6.81				7.30			
OF								
IF								
	270	277	284	291	298	349		
EPI	13.32				6.75			
4	13.32				6.75			
8	13.15				6.73			
10	11.67				6.75			
11	8.12				6.73			
12	7.65				6.73			
13	7.52				6.74			
14	7.41				6.74			
OF								
IF								

LAKE 223 Cond (uS/cm) 1982								
DEPTH(m) DAY #								
	013	041	069	124	130	137	144	151
EPI								
4		43	44	40	40			44
8	40	40	40				41	
10	39		39			38		
11			40	40		39		
12	38	40	41			39		
13	39	41	49			40		
14	57		47			41		
OF	98	115	128			42		
IF						41	40	41
	158	165	172	179	186	193	200	207
EPI	38	42	21	39	38	42	37	39
4	38				38			
8	37				37			
10	38				39			
11	39				39			
12	40				40			
13	40				43			
14	41				57			
OF	39							
IF	22	26	39	22	22	23	21	21
	214	221	228	235	242	249	256	263
EPI	38	39	41	40	39	40	40	43
4	37				40			
8	35				36			
10	35				41			
11	44				54			
12	54				57			
13	57				59			
14	58				63			
OF								
IF	21	21	24	22	22	23	27	26
	270	277	284	291	298	349		
EPI	39	38	38	39	47	41		
4	39				40	40		
8	38				40	39		
10	37				39	39		
11	58				39	39		
12	62				39	40		
13	63				45	42		
14	64				39	90		
OF								
IF	28	26	23	21	22			

## LAKE 223 pH

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI		5.44	5.75	5.41	5.14		5.00	
4	5.83	5.14	5.14		5.05			
8	5.37		5.33		5.33			
10		5.34	5.50		5.38			
11	5.63	5.53	5.65		5.40			
12	5.80	5.52	6.14		5.39			
13	6.31		6.53		5.40			
14	6.61	6.42	6.49		5.43			
OF				5.13	5.14	4.87	4.95	
IF				6.10	6.23	6.19	6.20	

	158	165	172	179	186	193	200	207
EPI	5.06	5.05	5.10	5.13	5.17	5.18	5.17	5.08
4	5.02				5.14			
8	5.36				5.59			
10	5.43				5.59			
11	5.52				5.62			
12	5.56				5.73			
13	5.60				5.90			
14	5.70				6.22			
OF	5.01							
IF	6.50	5.95	6.19	6.19	6.11	6.12	6.09	6.09

	214	221	228	235	242	249	256	263
EPI	5.02	5.08	5.01	5.01	5.00	5.21	5.10	5.11
4	5.11				4.99			
8	5.87				5.58			
10	5.66				5.80			
11	5.98				6.18			
12	6.28				6.27			
13	6.31				6.30			
14	6.32				6.30			
OF								
IF	6.21	6.10	6.06	6.09	6.15	6.29	6.20	6.20

	270	277	284	291	298	349
EPI	5.11	5.22	5.10	5.12	5.13	5.06
4	5.10				5.09	5.03
8	5.20				5.11	5.03
10	5.60				5.11	5.10
11	6.30				5.11	5.21
12	6.40				5.12	5.34
13	6.37				5.17	5.50
14	6.34				5.21	6.02
OF						
IF	6.19	6.18	6.08	6.16	6.17	

## LAKE 223 Alkal

(uEq/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	-1	-1	-1	9	-2		-38	
4	-1	-1	-1		-4			
8	-1	8	10		7			
10	6	20	27		11			
11	25	30	44		11			
12	55	64	89		16			
13	174	198	261		23			
14	103	273	573		25			
OF				-4	-6	-1	-8	
IF				75	79	93	102	

	158	165	172	179	186	193	200	207
EPI	13	-4	-3	-1	-5	-7	-14	-13
4	-5				-8			
8	14				15			
10	45				5			
11	44				15			
12	79				106			
13	77				183			
14	80				207			
OF	-5							
IF	95	93	93	104	85	87	87	93

	214	221	228	235	242	249	256	263
EPI	-8	-10	-12	-11	-9	-10	-11	-9
4	-8				-10			
8	20				14			
10	59				112			
11	185				361			
12	349				445			
13	413				497			
14	402				542			
OF								
IF	94	87	104	101	98	104	143	121

	270	277	284	291	298	349
EPI	-10	-5	-8	-4	-6	-5
4	-8				-7	-6
8	-4				-6	-2
10	44				-6	1
11	358				-5	24
12	496				-2	47
13	531				-1	392
14	512				-3	870
OF						
IF	123	95	76	77	82	

LAKE 223 02 (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	12.08		16.45		10.42			
4	10.83	11.95	9.74		12.43			
8	8.89	7.17	5.97		8.28			
10	7.55	4.42	2.44		6.85			
11	5.19	1.41	.82		6.22			
12	.83	.98	.12		6.04			
13	.38	.24	< .01		4.63			
14	< .01	< .01	< .01		3.42			
OF								
IF								

	158	165	172	179	186	193	200	207
EPI	9.90				8.71			
4	9.94				8.70			
8	7.87				10.02			
10	4.60				2.59			
11	2.54				.46			
12	1.17				.06			
13	.36				< .01			
14	.14				< .01			
OF								
IF								

	214	221	228	235	242	249	256	263
EPI	8.11				8.97			
4	8.12				8.96			
8	11.09				10.05			
10	3.02				< .01			
11	< .01				< .01			
12	< .01				< .01			
13	< .01				< .01			
14	< .01				.80			
OF								
IF								

	270	277	284	291	298	349
EPI	9.16				10.17	12.31
4	9.02				10.23	12.29
8	8.79				10.11	10.10
10	3.93				10.09	8.35
11	< .01				10.08	6.65
12	< .01				9.90	3.19
13	< .01				9.90	.38
14	< .01				10.06	< .01
OF						
IF						

LAKE 223 NH3-N (ug/L)

1982

DEPTH(m) DAY #

	013	041	069	124	130	137	144	151
EPI	54	16	37	78	54		< 1	
4	11	36	46		69			
8	82	132	174		76			
10	159	212	293		122			
11	328	350	372		135			
12	324	297	520		130			
13	755	726	1213		91			
14	2230	3015	4653		256			
OF					59	21	< 1	
IF					< 1	< 1	< 1	< 1

	158	165	172	179	186	193	200	207
EPI	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2
4	< 1				< 1			
8	< 1				< 1			
10		32				99		
11		131				215		
12		210				406		
13		217				533		
14		334				737		
OF	< 1							
IF	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

	214	221	228	235	242	249	256	263
EPI	4	2	2	1	11	11	16	14
4	2				12			
8	1				4			
10	21				41			
11	356				562			
12	842				850			
13	1237				1083			
14	1342				1579			
OF	4	< 1	2	3	20	21	27	21
IF								

	270	277	284	291	298	349
EPI	29	14	36	53	41	35
4	12				54	56
8	18				59	113
10	50				72	164
11	710				50	189
12	1110					335
13	1392				53	777
14	1561				45	1399
OF	19	18	14	25	25	
IF						

## LAKE 223 NO3-N (ug/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	< 1	< 1	4	15	18		13	
4	< 1	< 1	4		27			
8	< 1	3	8		19			
10	< 1	2	4		15			
11	< 1	< 1	1		15			
12	77	50	< 1		21			
13	4	23	< 1		54			
14	< 1	< 1	< 1		12			
OF				18	13	10	< 1	
IF				22	12	2	10	

	158	165	172	179	186	193	200	207
EPI	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
4	< 1				< 1			
8	< 1				< 1			
10	6				< 1			
11	8				< 1			
12	6				< 1			
13	4				< 1			
14	< 1				23			
OF								
IF	5	< 1	< 1	< 1	< 1	< 1	2	< 1
							1	

	214	221	228	235	242	249	256	263
EPI	< 1	< 1	< 1	< 1	2	1	1	< 1
4	4				< 1			
8	< 1				< 1			
10	7				3			
11	1				1			
12	< 1				2			
13	8				2			
14	1				3			
OF								
IF	7	1	< 1	< 1	4	5	7	5

	270	277	284	291	298	349
EPI	3	< 1	2	< 1	1	2
4	1				2	2
8	2				2	3
10	1				4	4
11	3				3	150
12	5					
13	4				7	
14	10				3	
OF						
IF	4	19	14	7	11	

## LAKE 223 TDN (ug/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	283	349	339	320	295		317	
4	234	270	367		291			
8	301	369	502		303			
10	381	486	638		343			
11	484	640	746		349			
12	636	624	947		377			
13	1117	1258	1962		358			
14	2553	3743	5543		510			
OF				303	262	307	251	
IF				240	218	312	266	

	158	165	172	179	186	193	200	207
EPI	174	279	217	235	151	172		199
4	156				194			
8	167				161			
10	313				290			
11	421				417			
12	491				554			
13	484				668			
14	623				894			
OF	187							
IF	284	282	243	259	242	180	206	214

	214	221	228	235	242	249	256	263
EPI	208	171	258	170	145	192	223	188
4	217				161			
8	260				174			
10	386				281			
11	753				892			
12	1332				1151			
13	1622				1516			
14	1736				1962			
OF								
IF	355	218	258	239	223	212	255	197

	270	277	284	291	298	349
EPI	189	212	231	273	284	224
4	204				267	271
8	217				288	297
10	254				277	350
11	997				270	485
12	1470					566
13	1760				281	1942
14	1911				258	2055
OF						
IF	262	307	300	220	219	

LAKE 223 DOC (uM/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	690	450	720	820	1320		370	
4	970	820	350		1130			
8	930	370	700		450			
10	460	620	410		390			
11	290	330	1250		580			
12	600	530	850		990			
13	380	560	510		240			
14	750	720	580		400			
OF					440		290	630
IF					360		630	850

	158	165	172	179	186	193	200	207
EPI	460	460	290	500	1120	520	450	460
4	550				370			
8	370				360			
10	600				790			
11	340				890			
12	490				610			
13	890				300			
14	530				440			
OF	400							
IF	860	550	690	530	980	430	480	510

	214	221	228	235	242	249	256	263
EPI	390	290	440	330	420	310	350	280
4	1160				910			
8	600				490			
10	490				750			
11	850				460			
12	800				430			
13	1100				1060			
14	590				480			
OF	840	480	400	350	550	370	710	410
IF								

	270	277	284	291	298	349
EPI	280	380	340	400	320	580
4	300				330	440
8	310				360	370
10	310				370	380
11	330				390	290
12	530				310	350
13	300				370	320
14	380				360	560
OF	650	970	620	500	300	
IF						

LAKE 223 Susp C (ug/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	390	230	290	470	470		320	
4	420	270	210		500			
8	550	300	300		450			
10	780	430	370		470			
11	950	880	650		470			
12	2160	950	770		660			
13	> 2100	1370	2210		600			
14	> 2100	2810	2560		3180			
OF					320		380	340
IF					360		300	260

	158	165	172	179	186	193	200	207
EPI	660	490	470	310	460	350	570	490
4	630				470			
8	1050				800			
10	920				1430			
11	1090				4370			
12	1010				2100			
13	1240				2120			
14	1190				2420			
OF	460							
IF	320	320	530	280	410	250	280	310

	214	221	228	235	242	249	256	263
EPI	600	480	500	580	640	570	560	660
4	480				730			
8	760				630			
10	2200				1480			
11	1170				1650			
12	1490				1630			
13	1680				1990			
14	2140				3240			
OF	280	340	530	330	340	390	350	310
IF								

	270	277	284	291	298	349
EPI	660	590	560	520	970	480
4	660				820	430
8	850				780	380
10	750				820	390
11	1510				710	700
12	1180				820	730
13	1970				780	4420
14	1640				1000	940
OF	340	200	300	230	290	
IF						

## LAKE 223 Cl (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	.8	1.2	4.0	.2	.4		.1	
4	.6	.8	.2		.4			
8	.6	.8	.2		.4			
10	.3	.6	<.1		.5			
11	.6	.3	.1		.5			
12	.5	.3	.1		.4			
13	.5	.5	.4		.5			
14	.4	.5			.6			
OF					.5			
IF					.4		<.1	.1
							.2	
							.3	
							.4	
	158	165	172	179	186	193	200	207
EPI	.1	.2	.1	<.1	.3	.1	1.8	.1
4	.1				1.4			
8	.2				<.1			
10	.2				.3			
11	.2				.3			
12	.2				.3			
13	.2				.3			
14	.2				<.1			
OF	.2				.4			
IF	.4	.4	.3	.2	.4	.3	.2	.3
	214	221	228	235	242	249	256	263
EPI	.4	.6	1.4	.6	.4	.8	.8	1.0
4	.8				.4			
8	.6				.2			
10	.1				.3			
11	.5				.3			
12	.4				.3			
13	.5				.3			
14	.5				.3			
OF					.3			
IF	2.4	.3	.3	.3	.2	.3	1.1	.3
	270	277	284	291	298	349		
EPI	<.1	<.1	.1	<.1	.4	.2		
4	.1				.4	.6		
8	.1				.4	.4		
10	.9				.6	.4		
11	1.7				.4	.4		
12	.5				.6	.3		
13	.5				.4	.6		
14	.5				.8	1.1		
OF								
IF	.4	.4	.4	.5	.4			

## LAKE 223 SO4 (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	13.0	13.8	16.0	11.4	11.4			11.9
4	12.2	12.4	12.6					
8	12.4	11.8	12.2					
10	11.7	11.8	12.0					
11	10.8	10.7	11.2					
12	10.5	10.7	9.4					
13	8.3	7.0	4.4					
14		1.1	.8					
OF								
IF								
							11.3	12.0
							3.7	12.1
							3.4	3.8
							3.4	3.4
	158	165	172	179	186	193	200	207
EPI	12.0	12.2	12.1	12.8	11.8	11.9	11.4	11.8
4	12.1				10.8			
8	11.7				12.1			
10	11.6				10.3			
11	11.8				10.0			
12	11.2				9.2			
13	11.0				9.4			
14	10.8				7.3			
OF	12.3							
IF	3.7	3.4	3.3	3.7	3.6	3.0	3.4	3.1
	214	221	228	235	242	249	256	263
EPI	12.2	11.2	12.0	11.6	11.6	11.8	12.0	11.2
4	12.0				12.0			
8	11.2				11.0			
10	10.7				8.8			
11	8.5				4.8			
12	6.1				3.2			
13	4.8				2.3			
14	4.9				1.9			
OF								
IF	3.0	3.3	3.2	3.2	3.2	3.2	3.0	3.5
	270	277	284	291	298	349		
EPI	12.1	12.0	12.1	12.1	11.8	12.4		
4	12.0				11.8	13.2		
8	12.0				11.6	12.2		
10	10.5				12.0	12.2		
11	3.7				11.8	13.0		
12	1.3				14.1	11.0		
13	1.1				11.8	11.7		
14	1.3				12.0	7.2		
OF								
IF	3.9	4.5	4.3	3.6	3.4			

LAKE 223 H<sub>2</sub>S-S (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
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EPI

4

8

10

11

12

13

14

OF

IF

	.01	.01	.01		.02			
8	< .01	< .01	< .01		.03			
10	< .01	< .01	< .01		.02			
11								
12								
13								
14								

	158	165	172	179	186	193	200	207
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI

4

8

10

11

12

13

14

OF

IF

	< .01			< .01				
8	< .01			< .01				
10	< .01				.01			
11								
12					< .01			
13						.13		
14						.34		

	214	221	228	235	242	249	256	263
--	-----	-----	-----	-----	-----	-----	-----	-----

EPI

4

8

10

11

12

13

14

OF

IF

	< .01			< .01				
8	< .01				.02			
10	< .01							
11								
12								
13								
14								

	270	277	284	291	298	349
--	-----	-----	-----	-----	-----	-----

EPI

4

8

10

11

12

13

14

OF

IF

				< .01				
8	< .01			< .01	< .01			
10	< .01			< .01	< .01			
11								
12								
13								
14								

## LAKE 223 Na (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
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EPI

4

8

10

11

12

13

14

OF

IF

	1.15	1.24	1.22	1.06	1.03			
8	1.09	1.17	1.17					
10	1.06	1.18	1.18					
11	1.07	1.17	1.28					
12	1.06	1.13	1.20					
13	1.07	1.11	1.19					
14	1.07	1.13	1.23					

	1.02	1.02	1.05	.99				
--	------	------	------	-----	--	--	--	--

	.79	.83	.86	.85				
--	-----	-----	-----	-----	--	--	--	--

	158	165	172	179	186	193	200	207
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EPI

4

8

10

11

12

13

14

OF

IF

	1.13	1.02	1.19	1.07	1.01	.96	1.09	1.13
8	1.15							
10	1.12							
11	1.15							
12	1.35							
13	1.23							
14	1.15							

	.90	.74	.75	.77	.75	.71	.92	.78
--	-----	-----	-----	-----	-----	-----	-----	-----

	214	221	228	235	242	249	256	263
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EPI

4

8

10

11

12

13

14

OF

IF

	1.15	1.15	1.06	.93	1.03	1.01	1.05	1.00
8	1.12							
10	1.24							
11	1.16							
12	1.20							
13	1.16							
14	1.20							

	.90	.81	.86	.71	.79	.82	.94	.90
--	-----	-----	-----	-----	-----	-----	-----	-----

	270	277	284	291	298	349
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EPI

4

8

10

11

12

13

14

OF

IF

	.45	1.13	1.10	1.20	1.10	.98		
8	.40							
10	.46							
11	.38							
12	.39							
13	.40							

	.27	1.01	.92	.97	.89			
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## LAKE 223 K (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	.41	.32	.34	.46	.42			
4	.41	.32	.32		.42			
8	.39	.34	.32		.42			
10	.43	.32	.34		.41			
11	.39	.34	.34		.42			
12	.43	.32	.40		.44			
13	.47	.46	.48		.52			
14	.57	.55	.65		.46			
OF					.41	.41	.32	.34
IF					.41	.46	.36	.32
	158	165	172	179	186	193	200	207
EPI	.34	.32	.32	.34	.32	.32	.38	.34
4	.34				.34			
8	.34				.36			
10	.41				.44			
11	.40				.44			
12	.41				.50			
13	.45				.48			
14	.43				.60			
OF	.34							
IF	.30	.24	.23	.23	.28	.28	.30	.28
	214	221	228	235	242	249	256	263
EPI	.32	.32	.31	.33	.34	.38	.36	.34
4	.36				.36			
8	.36				.36			
10	.40				.51			
11	.42				.57			
12	.44				.53			
13	.49				.57			
14	.48				.59			
OF								
IF	.30	.28	.31	.35	.36	.36	.60	.43
	270	277	284	291	298	349		
EPI	.32	.33	.29	.29	.31	.28		
4	.32				.29	.33		
8	.32				.29	.30		
10	.42				.29	.39		
11	.51				.29	.30		
12	.55				.35	.33		
13	.59				.27	.49		
14	.59				.31	.41		
OF								
IF	.51	.54	.50	.33	.33			

## LAKE 223 Ca (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	2.96	3.06	3.06	2.95	2.91			
4	2.79	2.94	2.86		2.83			
8	2.71	2.90	2.86		2.99			
10	2.75	2.90	2.90		2.99			
11	2.71	2.90	2.86		2.72			
12	2.79	2.98	2.98		3.03			
13	3.00	3.26	3.18		3.19			
14	3.59	4.07	4.15		2.75			
OF						2.83	2.95	2.93
IF						1.73	1.77	2.11
	158	165	172	179	186	193	200	207
EPI	2.93	2.84	2.98	2.89	2.81	2.77	2.85	2.89
4	2.89					2.81		
8	3.02					2.89		
10	2.79					3.06		
11	3.21					3.10		
12	2.84					3.01		
13	2.84					3.22		
14	2.84					3.62		
OF	2.98							
IF	2.25	2.06	1.97	2.11	1.97	1.85	2.05	2.03
	214	221	228	235	242	249	256	253
EPI	2.76	2.85	2.88	2.71	2.65	2.65	2.79	2.83
4	5.06				2.65			
8	3.21				2.79			
10	3.26				3.16			
11	3.48				3.25			
12	3.44				3.16			
13	3.53				3.21			
14	3.26				3.25			
OF								
IF	1.99	1.90	2.12	2.08	1.81	1.91	2.37	2.23
	270	277	284	291	298	349		
EPI	2.79	2.82	2.82	2.78	2.96	3.12		
4	2.74				2.96	3.17		
8	2.83				2.92	3.01		
10	3.16				2.96	2.90		
11	3.35				2.78	3.44		
12	3.25				3.56	3.01		
13	3.35				2.92	4.48		
14	3.30				3.06	4.70		
OF								
IF	2.32	2.41	2.22	1.81	1.90			

LAKE 223		Mg	(mg/L)		1982					
DEPTH(m)			DAY #							
			013	041	069	124	130	137	144	151
EPI	.75	.78	.78	.61	.62					
4	.71	.72	.70	.62						
8	.70	.72	.72	.62						
10	.71	.72	.73	.70						
11	.72	.72	.71	.59						
12	.72	.76	.72	.66						
13	.70	.78	.76	.76						
14	.81	.89	.88	.67						
OF				.62	.72	.67	.61			
IF				.44	.53	.54	.52			
			158	165	172	179	186	193	200	207
EPI	.64	.64	.65	.67	.57	.60	.62	.64		
4	.61				.59					
8	.67				.58					
10	.65				.63					
11	.69				.63					
12	.62				.63					
13	.65				.66					
14	.66				.78					
OF	.63									
IF	.53	.50	.49	.51	.45	.45	.48	.52		
			214	221	228	235	242	249	256	263
EPI	.68	.65	.66	.62	.58	.58	.59	.62		
4	1.37				.59					
8	.68				.61					
10	.67				.64					
11	.78				.66					
12	.78				.65					
13	.76				.64					
14	.72				.68					
OF										
IF	.51	.48	.53	.54	.47	.49	.60	.55		
			270	277	284	291	298	349		
EPI	.60	.64	.64	.64	.68	.67				
4	.60				.66	.62				
8	.59				.72	.66				
10	.64				.67	.61				
11	.69				.65	.62				
12	.66				.72	.65				
13	.66				.65	.73				
14	.66				.65	.79				
OF										
IF	.57	.60	.55	.48	.50					

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LAKE 223 Fe (mg/L) 1982

DEPTH(m)		DAY #							
		013	041	069	124	130	137	144	151
EPI	.04	.09	.05	.11	.11				
4	.04	.07	.02		.11				
8	.04	.09	.07		.11				
10	.08	.14	.09		.15				
11	.15	.25	.16		.15				
12	.27	.25	3.00		.15				
13	3.19	4.39	9.48		.15				
14	13.08	17.10	19.20		.75				
OF					.15	.11	.06	.03	
IF					.11	.11	.06	.06	
		158	165	172	179	186	193	200	207
EPI	.32	.03	.03	.03	.04	.04	.04	.04	.03
4	.32				.04				
8	.03				.04				
10	<.03				.08				
11	.03				.08				
12	.06				.77				
13	.13				2.15				
14	.80				3.42				
OF	.03								
IF	.10	.03	.03	.06	.12	.12	.12	.09	
		214	221	228	235	242	249	256	263
EPI	.06	.09	.07	<.03	.04	.08	.11	.11	
4	.05				.04				
8	.12				.08				
10	.33				1.63				
11	2.34				4.47				
12	4.63				5.30				
13	4.98				5.53				
14	4.21				5.76				
OF									
IF	.12	.15	.13	.17	.15	.19	.34	.30	
		270	277	284	291	298	349		
EPI	.11	.18	.21	.27	.21	.20			
4	.11				.21	.20			
8	.11				.21	.25			
10	.45				.21	.25			
11	5.38				.21	.20			
12	5.91				.18	.65			
13	5.39				.18	.40			
14	5.68				.18	5.50			
OF									
IF	.27	.24	.15	.09	.09				

LAKE 223 Ferrous-Fe (mg/L) 1982

DEPTH(m)		DAY #							
		013	041	069	124	130	137	144	151
EPI	<.01				.01			.02	
4	<.01				.03			.04	
8	<.01				.01			.08	
10	<.01				.04	<.01		.09	
11	<.01				.05	.01		.07	
12	.01				.09	2.72		.02	
13	4.22				7.22	7.21		.04	
14	8.95				9.03	7.15		.24	
OF									
IF									
		158	165	172	179	186	193	200	207
EPI	<.01							.13	
4	<.01							<.01	
8	<.01							<.01	
10	<.01							.06	
11	.01							<.01	
12	.01							1.10	
13	.01							2.68	
14	.09							12.51	
OF	.01								
IF	.06							<.01	
		214	221	228	235	242	249	256	263
EPI	<.01							<.01	
4	<.01							<.01	
8	<.01							<.01	
10	<.01							1.63	
11	2.81							5.10	
12	5.19							5.26	
13	5.74							5.29	
14	5.62							5.66	
OF									
IF	<.01							.11	
		270	277	284	291	298	349		
EPI	<.01							<.01	
4	<.01							<.01	
8	<.01							<.01	
10	<.01							6.12	
11	6.12							<.01	
12	5.97							<.01	
13	6.98							<.01	
14	6.85							.61	
OF								<.01	
IF								9.02	

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## LAKE 223 Susp Fe (ug/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	116	88	77		73			
4	118	95	93		80			
8	162	162	224		117			
10	234	335	521		215			
11	506	1008	907		261			
12	1305	961	170		233			
13	735	134	255		309			
14	685	129	407		893			
OF					61			
IF					27			
	158	165	172	179	186	193	200	207
EPI	52				30			
4	85				41			
8	135				55			
10	264				236			
11	438				740			
12	649				1479			
13	880				713			
14	972				294			
OF	40							
IF	32				22			
	214	221	228	235	242	249	256	263
EPI	58				98			
4	56				91			
8	88				166			
10	304				733			
11	305				145			
12	137				124			
13	168				415			
14	251				188			
OF	38				45			
	270	277	284	291	298	349		
EPI	163				207	189		
4	180				196	134		
8	248				178	233		
10	816				232	301		
11	129				256	298		
12	107				199	894		
13	1047				236	6470		
14	200				268	455		
OF	81				20			

## LAKE 223 SRSi (mg/L)

1982

DEPTH(m)

DAY #

	013	041	069	124	130	137	144	151
EPI	.211	.228	.220	.494	.476		.427	
4	.208	.217	.262				.483	
8	.404	.485	.591				.503	
10	.586	.696	.834				.597	
11	.801	1.070	1.080				.615	
12	1.090	1.080	1.310				.627	
13	1.560	1.750	2.040				.569	
14	2.980	4.030	5.270				.798	
OF							.472	.408
IF							.314	.380
	158	165	172	179	186	193	200	207
EPI	.393	.369	.343	.315	.340	.378	.356	.327
4	.395				.349			
8	.522				.215			
10	.665				.312			
11	.758				.289			
12	.842				.678			
13	.898				.745			
14	.994				1.200			
OF	.374							
IF	.365	.299	.213	.214	.537	.275	.287	.290
	214	221	228	235	242	249	256	263
EPI	.284	.225	.190	.141	.095	.061	.047	.045
4	.286				.096			
8	.047				.034			
10	.017				.141			
11	.364				.647			
12	.785				.886			
13	.972				1.130			
14	1.090				1.400			
OF								
IF	.305	.284	.312	.327	.374	.423	.684	.858
	270	277	284	291	298	349		
EPI	.057	.088	.147	.212	.208	.158		
4	.059				.209	.152		
8	.079				.210	.323		
10	.197				.215	.415		
11	.781				.216	.395		
12	1.120				.738	.569		
13	1.290				.228	.997		
14	1.460				.244	1.550		
OF								
IF	1.040	.995	.777	.427	.400			

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## LAKE 223 Chl-a (ug/L) 1982

	013	041	069	124	130	137	144	151
EPI	1.8	1.0	.9	1.2	1.7		.7	
4	1.1	.6	.5		2.3			
8	.9	.9	.7		2.7			
10	1.8	2.0	.9		1.9			
11	4.1	2.3	1.4		2.4			
12	19.7	4.3	2.0		1.9			
13	25.1	3.2	2.4		3.2			
14	19.3	3.9	4.5		82.5			
OF								
IF								

158	165	172	179	186	193	200	207
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EPI	1.1	.8	.9	.1	2.8	1.7	2.0	1.7
4	1.3				2.5			
8	5.4				5.5			
10	6.5				18.7			
11	6.9				60.3			
12	8.9				10.4			
13	6.5				10.9			
14	7.3				99.0			
OF								
IF								

214	221	228	235	242	249	256	263
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EPI	3.4	4.9	2.2	10.4	11.4	6.2	11.2	6.9
4	3.0				8.1			
8	19.5				7.2			
10	69.1				11.9			
11	13.0				11.8			
12	11.5				12.2			
13	8.7				12.5			
14	14.3				11.7			
OF								
IF								

270	277	284	291	298	349
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EPI	5.4	8.8	9.3	8.8	6.9	13.7		
4	5.4				6.6	11.5		
8	7.6				6.8	6.0		
10	5.1				7.5	7.8		
11	14.9				7.5	7.2		
12	7.7				6.8	7.1		
13	11.9				7.7	41.4		
14	10.5				8.3	28.5		
OF								
IF								

## LAKE 223 Colour (abs425nm) 1982

	013	041	069	124	130	137	144	151
EPI	.047	.051	.036		.023			
4	.044	.040	.038		.027			
8	.054	.061	.065		.026			
10	.078	.107	.146		.024			
11	.140	.242	.231		.026			
12	.338	.276	.111		.023			
13	.377	.307	.512		.027			
14	.711	.984	.714		.074			
OF								
IF								

158	165	172	179	186	193	200	207
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EPI	.018				.017			
4	.019				.014			
8	.022				.016			
10	.021				.022			
11	.021				.034			
12	.024				.111			
13	.033				.256			
14	.061				.168			
OF	.020							
IF	.147							

214	221	228	235	242	249	256	263
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EPI	.015				.024			
4	.015				.021			
8	.034				.030			
10	.075				.184			
11	.100				.329			
12	.273				.590			
13	.310				.494			
14	.272				.490			
OF	.093				.078			
IF								

270	277	284	291	298	349
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EPI	.038				.048	.030		
4	.030				.051	.032		
8	.041				.052	.031		
10	.091				.046	.034		
11	.381				.051	.029		
12	.616				.045	.091		
13	.545				.047	.061		
14	.511				.050	.249		
OF								
IF								.068

