Phytoplankton Primary Production, Chlorophyll, and Suspended Carbon in the Experimental Lakes Area-1979 Data

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by

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Twelve lake basins in the Experimental Lakes Area were sampled during 1979 for phytoplankton production and related parameters. Incubator measurements of carbon uptake were made for nine basins. Chlorophyll and suspended carbon concentrations were measured in all twelve basins. A brief description of methodology is provided and the data are presented in tables and graphs.

Key words: primary production; photosynthesis; phytoplankton; experimental data; incubation; biomass; chlorophylls; suspended matter.

RESUME

DeClercq, D. R., and J. A. Shearer. 1980. Phytoplankton primary production, chlorophyll, and suspended carbon in the Experimental Lakes Area - 1979 data. Can. Data Rep. Fish. Aquat. Sci. 200: iv + 46 p.

En 1979, des échantillons de douze bassins de la Région des Lacs Experiméntaux ont été prises pour etablir les mesures de la photosynthèse et d'autre paramètres connexes. Des mesures de l'assimilation de carbone des neuf bassins, prises en incubateur, sont présentés. On donne, également, les mesures de chlorophylle et de carbone en suspension prises des douze bassins. On présente une brève étude des méthodes employées. Les donnés sont présentés sous forme de tableaux et de graphiques.

Mots-clés: production primaire; photosynthèse; phytoplancton; résultats expérimentales; incubation; biomasse; chlorophylle; matières en suspension.

INTRODUCTION

The measurement of photosynthetic carbon uptake by phytoplankton was carried out in nine Experimental Lakes Area (E.L.A.) basins during 1979. As in previous years (DeClercq and Shearer 1976, 1978, 1979; DeClercq et al. 1977; Shearer 1976; Shearer and Fee 1974), an incubator technique was employed. Chlorophyll *a* and suspended carbon concentrations were routinely measured in these plus three other basins.

This report updates the methodology and provides a tabulation of data collected during 1979. A major correction in the measurement of incubator irradiances is described, as are several modifications in the liquid scintillation procedures. Values of irradiance and carbon uptake are presented for those basins for which they were measured and plots of uptake versus irradiance are provided. Values for chlorophyll and suspended carbon are tabulated for all twelve basins.

FIELD PROCEDURES

Carbon uptake was monitored in Lakes 114, 223, 226NE, 226SW, 227, 239, 382 Bay and 383 (see J. Fish. Res. Board Can. 28(2)). Sampling procedures were unchanged from 1978. These productivity measurements were made at intervals of two to four weeks in each basin with epilimnion, metalimnion and hypolimnion samples, where applicable, being taken on consecutive days.

Lakes 226NE, 226SW and 227 were being fertilized (Schindler and Fee 1974) during 1979 while 114 and 223 were being acidified. Lakes 226 and 382 are separated into distinct sections by means of plastic "sea curtains."

For Lakes 261, 303 and 304, no attempts were made to measure carbon uptake on a routine basis. However, one liter integrated samples were taken biweekly and analysed for chlorophyll and suspended carbon concentrations. A similar procedure was used for many of the other basins on alternate sampling occasions.

LABORATORY PROCEDURES

Three major changes were introduced during 1979. Two of these involve the counting of carbon-14 (^{14}C) samples and standards. The third is in the measurement of incubator light levels. Other than these changes described below, the sample preparation, incubation and processing were the same as in previous years.

The ^{14}C activity of the added inorganic carbon was determined differently from the procedure described by Shearer and Fee (1974). The stock ^{14}C solution was in the form $Na_2{}^{14}CO_3$, prediluted to approximately 12 $\mu Ci\ mL^{-1}$ and sealed in 20 mL glass ampoules. A Cornwall syringe, used for making the additions to the 125 mL incubation bottles, was filled from these ampoules just prior to making the additions. The volume added to each incubation bottle was usually 0.50 mL (about 6 μCi).

The amount of ^{14}C available for uptake can best be estimated by measuring the activity of an aliquot of sample taken directly from the incubation bottle before the sample is acidified and bubbled. If this aliquot is identical in volume to the sample aliquot used for determination of post acidification and bubbling activity (i.e. carbon uptake), the two activities are then measured under similar counting conditions and differences in counting efficiencies are not a problem (Gächter and Marès 1979). Production rate calcualtions are also simplified.

For preparation of activity standards, we use an Eppendorf pipette to place 100 μL of a carbon dioxide trapping agent (CO_2 mMET - Amersham) into each polyethelene liquid scintillation vial. A 2.5 mL aliquot was transferred from the incubation bottle to a vial using an Oxford Macro-Set transfer pipetting system. Fifteen mL of fluor were added and the vial immediately capped. With this method, the activity of each incubation bottle could be determined if desired. A random sampling of any 5 incubation bottles usually had a coefficient of variation less than 2%. The average of 5 such bottles was normally used as a standard for a given set of samples, provided all the ^{14}C came from the same ampoule.

Early in 1979, we switched from a Picker Liquimat 220 to a Beckman LS8000 liquid scintillation counter for our routine counting. During the changeover period, extensive comparisons were made and the results are tabulated in the appendices. The Beckman instrument incorporates an automatic calibration feature which was operated before counting each sample set. The external standards channels method of quench monitoring has been replaced by Beckman's "H number" procedure.

Counting efficiencies were typically around 90%. Quenched and ^{14}C activity standards were counted for two minutes while the acidified and bubbled samples were counted to 10000 counts or for 60 minutes.

The most significant change involved the introduction of a spherical quantum sensor (Licor model LI 193S) to replace the cosine collector (model LI 192S) used previously for incubator irradiance measurements. This spherically collecting sensor measures scalar quantum irradiance (i.e. irradiance incident upon a point from all angles) and better approximates the response to light of an algal cell. The improved response of the new sensor indicates that our previous irradiance measurement procedures had seriously underestimated the available light in all incubator chambers.

Minor modifications to the incubator sample wheels were necessary to permit the spherical sensor to be placed in a position analagous to that of the incubation bottles. The available irradiance could then be measured directly. Comparisons to the measurements made with the former procedures indicate an average increase of 84±7% in chamber 1, 66±6% in chamber 2, 61±2% in chamber 3 and 60±3% in chamber 4 for the spherical measurements. These increases can be attributed both to the greater sensitivity of the spherical sensor to oblique and scattered rays of light and to our failure to correctly understand and apply the necessary immersion corrections when using the previous method.

DATA PROCESSING AND PRESENTATION

The new sensor was not employed routinely until part way through the field season. To ensure the continuity of the incubator irradiance data, the measurements made with the cosine collecting sensor have been multiplied by the factors 1.84, 1.66, 1.61 and 1.60 for the respective incubator chambers 1 through 4. These corrected values are used in the appendices.

These same correction factors should probably also be applied to the incubator irradiances published in the earlier reports of this series. Although the mean error for all chambers is 68% of the cosine values, the effects of this discrepancy are much reduced when the data are used to calculate integral primary production using Fee's (1977) model. Preliminary comparisons of annual integral production estimates using corrected versus uncorrected incubator irradiance data (unpublished) show differences of 18% (L223, 1979) and 14% (L227, 1979).

Appendix 1 of this report is a tabulated record of the physical, chemical and biological parameters measured or estimated in this study.

Appendix 2 contains plots of production versus irradiance for all the incubator experiments.

ACKNOWLEDGMENTS

We wish to acknowledge the contributions of J. Prokopowich, M. Stainton and their assistants who carried out the analyses of dissolved inorganic carbon, chlorophyll *a* and suspended carbon.

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APPENDIX 1

Data relevant to each sampling occasion are listed chronologically according to lake basin. If no incubation experiment was done, only the date, depth range and sampling time will appear along with the chlorophyll and suspended carbon concentrations.

Depths or depth ranges are in meters. Times are Central Daylight before 28 October and Central Standard thereafter. They indicate the times of sample collection.

Temperatures, in degress Celsius, are those at which the samples were incubated.

Dissolved inorganic carbon (DIC) values, in micromoles liter^{-1}, are pre-incubation concentrations.

The units for both suspended carbon and chlorophyll concentrations are micrograms liter^{-1}.

I1 through I4 are incubator irradiances in microeinsteins meter^{-2} sec^{-1}.

P1 through P4 are the rates of uptake of inorganic carbon at the four incubator irradiances, in units of milligrams carbon meter^{-3} hour^{-1}. The two values listed for each irradiance represent replicate bottles.

The coefficient of variation (C.V.) for these replicates is given in the next-to-last column.

Explanation of Notes (last column)

Note 1: $NaHCO_3$ was added to the sample prior to incubation.

Note 2: Missing value (indicated by -10.00). The sample was either lost or not processed.

Note 3: P values unusually erratic. Should probably be used with caution.

Note 4: Chlorophyll value should be used with caution.

Note 5: Samples processed on Picker L.S. counter.

Note 6: Production values calculated using 10 µL standards (old method) rather than the 2.5 mL standards method.

Note 7: L.S. samples counted in glass rather than polyethylene vials.

Note 8: L.S. samples counted in PCS fluor (Amersham) rather than our usual dioxane-based fluor.

Note 9: Suspended carbon value should be used with caution.

LAKE 114

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
17 MAY	0.0- 4.0	1010	8.0	122	870	2.1	11	.13 .11	44	.81 .93	173	3.05 2.89	890	3.21 3.51	8.14	5,6
30 MAY	0.0- 1.5	0820	18.5	55	1120	5.4	11	.23 .20	39	1.92 1.90	170	9.54 10.44	869	13.30 14.32	5.00	5,6
30 MAY	1.5- 4.0	0825			1410	6.2										
14 JUN	0.0- 4.0	1010			1780	7.2										
27 JUN	0.0- 4.0	0825	19.0	34	2950	5.1	13	.79 .98	51	7.93 7.60	205	29.26 27.96	1038	35.94 35.85	5.40	5,6
27 JUN	0.0- 4.0	0825	19.0	79	2950	5.1	13	.78 .89	51	5.48 5.24	205	22.11 23.68	1038	24.91 26.20	5.32	1,5,6
27 JUN	0.0- 4.0	0825	19.0	34	2950	5.1	13	1.13 .86	51	8.42 9.03	205	31.13 31.81	1038	39.87 38.64	6.91	6
27 JUN	0.0- 4.0	0825	19.0	79	2950	5.1	13	1.00 1.05	51	6.39 5.95	205	26.13 26.57	1038	27.55 28.81	3.13	1
11 JUL	0.0- 4.0	1020			2620	10.5										
23 JUL	0.0- 4.0	0730	23.0	40	2550	10.9	11	1.12 1.12	45	8.13 8.31	187	35.31 34.39	1014	49.23 47.96	1.43	6
23 JUL	0.0- 4.0	0730	23.0	40	2550	10.9	11	1.00 .99	45	7.25 7.41	187	31.46 30.65	1014	43.87 42.73	1.42	
23 JUL	0.0- 4.0	0730	23.0	130	2550	10.9	11	-10.00 -10.00	45	-10.00 -10.00	187	31.35 30.17	1014	43.83 42.55	2.40	1,2,6
23 JUL	0.0- 4.0	0730	23.0	130	2550	10.9	11	-10.00 -10.00	45	-10.00 -10.00	187	27.94 26.89	1014	39.05 37.91	2.41	1,2
25 JUL	0.0- 4.0	0805	23.0	37	2700	12.8	14	1.23 1.53	51	9.63 8.92	202	36.93 38.18	1001	52.43 46.28	7.94	6
25 JUL	0.0- 4.0	0805	23.0	37	2700	12.8	14	1.14 1.42	51	8.93 8.27	202	34.24 35.40	1001	48.62 42.92	7.96	
9 AUG	0.0- 4.0	0920	21.0	30	2520	9.7	13	1.37 1.29	49	7.74 7.90	205	28.86 30.24	1014	37.24 41.05	3.90	
9 AUG	0.0- 4.0	0920	21.0	132	2520	9.7	13	-10.00 -10.00	49	-10.00 -10.00	205	22.53 25.03	1014	31.82 30.42	5.31	1,2
22 AUG	0.0- 4.0	0900	20.5	61	2330	11.9	15	1.97 2.09	58	9.83 9.60	222	36.69 36.44	1035	45.15 46.18	1.93	
22 AUG	0.0- 4.0	0900	20.5	79	2330	11.9	15	-10.00 -10.00	58	-10.00 -10.00	222	35.07 33.79	1035	43.34 42.79	1.77	1,2
5 SEP	0.0- 4.0	0945	18.0	43	1930	7.7	16	2.90 .96	57	6.03 5.88	229	20.44 20.23	1101	22.21 24.75	20.30	
19 SEP	0.0- 4.0	0955	14.0	34	1350	4.0	15	.50 .51	51	2.42 2.46	179	7.51 7.74	903	9.00 9.02	1.20	
3 OCT	0.0- 4.0	1015	12.0	34	1290	3.9	14	.51 .56	50	2.38 2.59	193	7.53 7.50	868	9.38 8.89	4.28	
17 OCT	0.0- 4.0	0955	6.0	33	1320	3.0	13	.40 .40	45	1.74 1.83	175	4.01 4.03	814	3.85 4.22	2.66	
1 NOV	0.0- 4.0	0920	5.0	33	940	3.3	10	.27 .28	34	1.21 1.20	121	2.92 3.00	594	2.79 3.19	3.39	

LAKE 223

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
16 MAY	0.0-10.0	0815	6.0	99	940	6.9	13	.87 .75	48	3.24 3.18	167	5.49 5.69	876	5.24 5.51	4.28	5,6
29 MAY	0.0- 2.0	0845			1060	2.9										
29 MAY	2.0- 5.0	0850			1620	6.1										
29 MAY	5.0-10.0	0855			1180	14.6										
11 JUN	0.0- 3.8	0900	16.0	22	1010	2.6	12	.25 .21	45	1.23 1.21	191	4.33 4.60	956	5.18 5.19	4.39	5,6
12 JUN	3.8- 6.5	0930	11.5	16	930	6.0	10	.42 .37	39	1.13 1.10	146	1.86 1.94	722	2.05 2.01	3.58	5,6
13 JUN	6.5-10.0	0840	7.0	100	1260	21.0	6	1.14 1.40	25	6.44 6.25	102	12.79 12.72	547	12.13 11.73	4.84	5,6
13 JUN	6.5-10.0	0840	7.0	100	1260	21.0	6	1.40 1.69	25	7.83 7.60	102	15.79 15.77	547	15.18 14.34	4.90	6
26 JUN	0.0- 4.0	0955			670	1.6										
26 JUN	4.0- 7.5	1000			790	1.6										
26 JUN	7.5-11.0	1005			1670	27.9										
9 JUL	0.0- 4.0	0830	22.0	23	-10	2.1	12	.02 .03	44	.28 .30	190	1.59 1.72	974	3.04 2.80	8.94	2,6
9 JUL	0.0- 4.0	0830	22.0	23	-10	2.1	12	.02 .02	44	.26 .28	190	1.57 1.45	974	2.77 2.55	9.41	2
9 JUL	0.0- 4.0	0830	22.0	86	-10	2.1	12	.05 .04	44	.28 .30	190	1.64 1.58	974	2.55 2.25	7.20	1,2,6
9 JUL	0.0- 4.0	0830	22.0	86	-10	2.1	12	.04 .04	44	.26 .28	190	1.50 1.44	974	2.33 2.05	7.07	1,2
10 JUL	4.0- 9.0	0830	14.0	27	650	3.6	9	.48 .42	35	1.94 1.96	140	4.26 4.37	769	4.83 4.38	4.75	
11 JUL	9.0-10.5	0815	9.0	151	1890	40.5	5	2.93 2.79	23	16.62 16.90	100	34.81 31.01	534	33.24 33.30	3.24	
24 JUL	0.0- 4.5	0845			430	.8										
24 JUL	4.5- 9.0	0850			900	5.5										
24 JUL	9.0-10.5	0855			2320	38.3										
6 AUG	0.0- 5.5	0830	21.0	18	270	2.1	12	.04 .05	45	.36 .35	179	1.79 1.71	968	2.55 2.75	6.94	
7 AUG	5.5-10.5	0825	14.0	44	1210	13.4	6	.67 .72	22	3.71 3.48	91	8.36 9.03	453	10.73 11.15	4.51	
21 AUG	0.0- 6.5	0940			400	1.4										
21 AUG	6.5-10.5	0945			1700	10.1										

LAKE 223

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NCTL
3 SEP	0.0- 7.0	0900	18.0	21	280	1.2	15	.10	56	.65	217	2.27	1070	2.54		
								.12		.63		2.43		2.56	5.79	
4 SEP	7.0-11.0	0825	12.0	104	1630	33.2	7	1.81	26	9.62	101	25.85	477	29.76		
								1.82		10.13		26.50		27.23	3.04	
18 SEP	0.0- 8.5	0915			410	2.5										
18 SEP	8.5-10.5	0920			1720	31.7										
1 OCT	0.0-10.5	0900	13.5	50	490	5.9	14	.93	49	3.73	181	6.86	878	6.56		
								.86		3.70		6.53		6.68	2.85	
16 OCT	0.0-12.0	0910	8.0	37	830	4.7	13	.57	45	2.17	168	4.12	790	4.19		
								.55		2.21		4.41		3.71	4.21	
29 OCT	0.0-13.0	0910	7.0	30	790	6.1	9	.53	32	2.24	119	4.51	570	5.08		
								.50		2.16		4.79		5.20	3.09	

LAKE 226NE

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
17 MAY	0.0- 5.5	0915	8.0	270	770	7.8	11	.84	44	4.30	173	11.46	890	11.88		
								.83		4.30		10.56		11.69	1.92	5,6
31 MAY	0.0- 2.0	0910			480	5.4										
31 MAY	2.0- 7.5	0915			810	8.4										
11 JUN	0.0- 3.0	0815	16.0	135	630	6.2	12	.26	45	2.19	191	8.93	956	11.00		
								.28		2.35		10.24		11.71	6.32	5,6
12 JUN	3.0- 5.5	0815	11.5	170	970	8.3	10	.99	39	5.05	146	13.47	722	16.31		
								1.00		5.08		14.00		15.28	2.12	5,6
13 JUN	5.5- 7.5	0810	7.0	326	1180	16.2	6	.86	25	5.15	102	12.52	547	15.19		
								.92		4.39		12.56		13.65	5.88	5,6
13 JUN	5.5- 7.5	0810	7.0	326	1180	16.2	6	1.20	25	5.51	102	15.82	547	17.31		
								.98		6.52		15.39		18.95	8.58	6
28 JUN	0.0- 2.5	1020			1670	16.1										
28 JUN	2.5- 7.0	1025			1330	15.6										
9 JUL	0.0- 3.0	0945	22.0	139	1670	8.2	12	.76	44	7.03	190	26.64	974	33.29		
								1.04		7.28		28.28		35.30	8.13	6
9 JUL	0.0- 3.0	0945	22.0	139	1670	8.2	12	.69	44	6.41	190	24.27	974	30.34		
								.94		6.63		25.78		32.17	8.15	
10 JUL	3.0- 6.5	1000	14.0	191	1540	25.4	8	3.78	35	15.39	139	48.61	769	47.89		
								3.60		16.37		47.96		47.79	2.25	
26 JUL	0.0- 2.8	0955			1500	10.2										
26 JUL	2.8- 6.0	1000			1570	15.3										
6 AUG	0.0- 3.5	1040	21.0	69	2250	20.2	7	1.14	28	9.45	108	29.45	526	30.36		
								1.24		8.94		31.84		35.74	6.63	
7 AUG	3.5- 5.0	0920	14.0	178	2140	29.3	6	4.16	22	13.56	91	38.22	453	42.75		
								3.10		12.99		39.51		47.97	8.57	
22 AUG	0.0- 2.0	0800	20.5	70	2600	24.7	15	2.10	58	11.21	222	33.43	1035	51.60		
								1.68		15.93		49.26		45.22	19.21	
23 AUG	2.0- 5.0	0915			2420	33.3										
3 SEP	0.0- 3.5	1025	18.0	127	2410	33.8	15	2.55	56	16.27	217	34.37	1070	42.14		
								3.24		16.31		31.65		37.66	7.72	
4 SEP	3.5- 5.0	0920	12.0	302	1950	18.5	7	1.16	26	5.62	101	15.97	477	19.08		
								1.29		5.59		17.30		17.93	4.48	
19 SEP	0.0- 5.0	0905	14.0	34	1530	14.3	15	2.59	51	11.36	179	27.05	903	28.43		
								2.61		11.14		33.36		29.19	4.66	
19 SEP	5.0- 6.0	0840			1930	18.3										
1 OCT	0.0- 5.5	1030	13.5	208	1400	17.0	14	3.83	49	13.85	181	45.36	878	50.93		
								3.75		15.25		43.90		49.52	3.13	
16 OCT	0.0- 6.3	1025	8.0	218	1730	19.3	13	5.09	45	16.79	168	31.75	790	34.93		
								4.80		15.89		33.79		33.68	3.64	
29 OCT	0.0- 6.0	1040	7.0	248	1520	16.3	9	3.01	32	10.13	119	19.72	570	22.47		
								3.05		9.93		21.44		21.32	3.01	

LAKE 226SW

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
17 MAY	0.0- 6.0	0840	8.0	300	850	5.7	11	.59 4.15	44	3.43 2.96	173	7.05 7.31	890	7.59 7.31	30.42	5,6
31 MAY	0.0- 2.0	0935			390	4.7										
31 MAY	2.0- 7.0	0940			770	8.8										
11 JUN	0.0- 2.5	0830	16.0	142	740	3.4	12	.14 .16	45	1.33 1.38	191	5.41 5.62	956	6.60 6.66	4.82	5,6
12 JUN	2.5- 5.3	0825	11.5	158	940	7.9	10	.59 .58	39	3.10 3.14	146	7.27 7.62	722	8.04 8.44	2.25	5,6
13 JUN	5.3- 7.5	0800	7.0	332	1540	21.5	6	.49 .64	25	5.33 5.58	102	15.20 16.14	547	13.28 14.80	8.39	5,6
13 JUN	5.3- 7.5	0800	7.0	332	1540	21.5	6	.64 .80	25	6.70 6.10	102	18.42 19.00	547	17.89 15.38	8.75	6
28 JUN	0.0- 2.0	0915			610	3.5										
28 JUN	2.0- 6.0	0920			980	6.2										
28 JUN	6.0- 7.5	0925			1640	30.1										
9 JUL	0.0- 3.0	0925	22.0	155	720	.4	12	.10 .16	44	1.06 1.42	190	5.14 4.91	974	6.81 7.78	17.59	4,6
9 JUL	0.0- 3.0	0925	22.0	155	720	.4	12	.09 .15	44	.96 1.30	190	4.69 4.47	974	6.21 7.09	17.42	4
10 JUL	3.0- 7.0	0935	14.0	234	950	16.0	9	1.89 1.49	35	7.39 7.82	140	17.23 16.34	769	15.24 15.68	6.68	6
26 JUL	0.0- 3.3	0905			960	4.4										
26 JUL	3.3- 6.5	1000			940	3.7										
26 JUL	6.5- 8.0	0915			1790	3.1										
6 AUG	0.0- 3.5	1000	21.0	139	810	6.8	12	.19 .28	45	1.98 1.85	179	7.16 7.72	968	7.86 8.09	10.06	
7 AUG	3.5- 7.0	0910	14.0	172	< 1	6.5	6	.60 .24	22	1.61 1.65	91	5.94 5.83	453	16.33 8.79	26.55	9
8 AUG	7.0- 8.3	0800	7.5	365	1810	28.9	3	.93 1.15	12	4.82 4.66	49	13.50 11.47	240	15.92 15.29	7.94	
23 AUG	0.0- 3.0	0840			1040	6.1										
23 AUG	3.0- 8.0	0845			1000	11.5										
3 SEP	0.0- 4.0	1000	18.0	153	650	6.7	15	.60 .66	56	3.26 3.41	217	8.75 8.93	1070	9.40 9.86	3.64	
4 SEP	4.0- 8.3	0905	12.0	316	1070	14.8	7	3.49 .76	26	3.75 4.93	101	9.44 10.19	477	8.46 10.52	32.71	

LAKE 226SW

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
19 SEP	0.0- 5.5	0850			830	6.0										
19 SEP	5.5- 8.5	0855			1390	15.3										
1 OCT	0.0- 6.0	1000	13.5	175	710	6.1	14	.52	49	4.31	181	9.43	878	11.09		
								.53		4.01		11.02		11.66	5.31	
2 OCT	6.0- 7.5	0850	11.0	366	1060	10.5	7	2.33	25	4.46	95	10.01	447	10.15		
								2.12		4.02		9.03		10.02	5.51	
16 OCT	0.0- 7.0	1005	8.0	232	920	7.8	13	1.33	45	4.74	168	10.10	790	9.01		
								1.42		5.24		9.98		9.46	3.96	
29 OCT	0.0- 7.5	1040	7.0	238	910	8.2	9	1.00	32	3.98	119	9.63	570	10.15		
								1.00		4.22		9.22		9.19	3.59	

LAKE 227

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V. (%)	NOTE
16 MAY	0.0- 3.5	0945	6.0	216	2780	26.3	13	2.69 2.49	48	8.28 8.12	167	15.93 14.77	876	14.42 13.91	3.76	5,6
28 MAY	0.0- 1.0	0830	16.0	61	3660	31.5	13	2.76 2.70	45	20.67 21.10	179	57.36 58.26	935	57.30 50.71	3.19	5,6
29 MAY	1.0- 3.0	1000	12.0	152	3350	45.4	10	8.06 8.16	39	28.09 27.36	144	46.87 47.57	716	50.95 49.31	1.53	5,6
14 JUN	0.0- 1.0	0905			1180	34.3										
14 JUN	1.0- 3.5	0910			3580	45.2										
25 JUN	0.0- 1.3	0840	18.0	40	5280	34.6	11	2.88 3.03	46	22.76 24.56	187	80.99 84.70	1015	104.80 105.25	3.14	5,6
25 JUN	0.0- 1.3	0840	18.0	151	5280	34.6	11	2.61 3.70	46	22.02 20.41	187	75.83 74.64	1015	99.68 99.36	7.79	1,5,6
25 JUN	0.0- 1.3	0840	18.0	40	5280	34.6	11	2.96 2.79	46	22.95 24.16	187	80.94 83.57	1015	102.40 105.96	3.14	6
25 JUN	0.0- 1.3	0840	18.0	151	5280	34.6	11	3.94 2.72	46	22.57 21.28	187	76.72 78.18	1015	100.70 102.28	8.15	1,6
26 JUN	1.3- 3.0	0805	12.0	68	2740	52.0	9	11.75 12.26	35	37.15 37.90	135	67.20 63.38	654	64.86 70.73	3.67	5
26 JUN	1.3- 3.0	0805	12.0	68	2740	52.0	9	13.81 12.29	35	38.93 39.35	135	70.66 66.37	654	71.32 74.79	4.20	
12 JUL	0.0- 1.3	0905			4300	21.2										
12 JUL	1.3- 2.5	0910			4460	56.3										
23 JUL	0.0- 1.5	0855	23.0	21	3510	30.9	11	2.82 2.81	45	19.52 18.45	187	69.43 66.77	1014	88.55 83.84	2.70	6
23 JUL	0.0- 1.5	0855	23.0	21	3510	30.9	11	2.51 2.51	45	17.39 16.44	187	61.86 59.49	1014	78.90 74.71	2.70	
24 JUL	1.5- 2.8	0730	17.0	37	4310	65.6	8	15.70 15.70	31	57.84 54.84	135	104.00 95.96	700	109.85 111.22	2.59	6
24 JUL	1.5- 2.8	0730	17.0	37	4310	65.6	8	14.63 14.64	31	53.91 51.11	135	96.94 89.45	700	102.39 103.67	2.59	
9 AUG	0.0- 1.8	0830	21.0	55	5270	44.3	13	9.83 10.38	49	57.57 61.10	205	151.37 150.32	1014	190.41 191.27	2.20	
9 AUG	0.0- 1.8	0830	21.0	161	5270	44.3	13	-10.00 -10.00	49	-10.00 -10.00	205	152.64 157.97	1014	172.45 176.77	2.09	1,2
9 AUG	1.8- 3.0	0835			5170	67.7										
20 AUG	0.0- 1.0	0835	20.0	49	5440	55.5	13	11.45 11.28	50	68.16 70.82	225	223.23 207.37	1035	245.34 250.22	2.60	
21 AUG	1.0- 2.0	0755	19.0	49	5030	65.0	7	8.94 8.54	26	49.02 48.18	104	152.85 158.14	522	210.51 208.31	1.91	
5 SEP	0.0- 1.0	0840	18.0	90	4750	74.9	16	20.98 19.94	57	93.33 107.32	229	210.87 213.77	1101	222.76 212.24	4.46	
5 SEP	1.0- 2.0	0850			4030	66.9										

LAKE 227

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
17 SEP	0.0- 1.3	0855	15.0	148	3260	41.5	16	11.52 11.60	58	45.75 42.61	218	81.31 80.31	1061	70.55 63.90	3.27	
18 SEP	1.3- 2.3	0900	13.0	169	3350	39.1	5	2.41 2.39	17	12.73 13.45	66	43.11 45.57	299	61.70 58.68	2.98	
3 OCT	0.0- 3.5	0910	12.0	222	2300	22.5	14	8.81 9.87	50	28.89 27.38	193	48.01 48.70	868	46.96 48.92	3.93	
17 OCT	0.0- 3.0	0900	6.0	406	2850	20.2	13	7.48 8.39	45	20.36 19.38	175	25.20 25.63	814	22.31 23.18	3.87	
31 OCT	0.0- 4.0	1055	6.0	456	2430	20.9	10	5.67 5.51	32	16.57 16.17	127	27.45 26.96	575	24.68 22.97	2.52	

LAKE 239

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
16 MAY	0.0- 8.0	0835	6.0	364	520	3.4	13	.63	48	2.19	167	4.43	876	4.52		
								.63		2.30		4.24		4.67	2.37	5,6
21 MAY	0.0- 6.0	0855			530	5.1										
5 JUN	0.0- 3.0	0850	15.0	128	540	2.6	10	.29	41	1.26	173	3.84	947	4.71		
								.26		1.25		4.24		4.99	4.88	5,6
6 JUN	3.0- 6.0	0900	10.0	157	610	6.2	9	.77	36	2.85	142	7.05	722	7.00		
								.80		3.17		6.41		6.43	5.85	5,6
18 JUN	0.0- 3.0	0845			660	3.7										
18 JUN	3.0- 6.0	0850			840	8.6										
3 JUL	0.0- 2.5	0845	21.0	118	560	1.8	13	.07	50	.63	207	6.83	1013	3.77		
								1.75		.57		2.64		4.31	52.34	6
3 JUL	0.0- 2.5	0845	21.0	118	560	1.8	13	.07	50	.59	207	6.40	1013	3.53		
								1.64		.53		2.48		4.04	52.38	
4 JUL	2.5- 7.0	0840	13.0	172	790	6.2	10	1.57	38	5.10	150	10.63	751	10.10		
								1.65		5.56		11.44		10.28	4.09	
4 JUL	2.5- 7.0	0840	13.0	172	790	6.2	10	1.64	38	5.33	150	11.11	751	10.55		
								1.73		5.81		11.96		10.74	4.09	6
16 JUL	0.0- 3.0	0820			500	3.1										
16 JUL	3.0- 6.0	0825			780	8.7										
31 JUL	0.0- 4.0	1045	21.0	120	460	2.0	13	.25	51	1.54	192	4.30	995	5.18		
								.25		1.37		4.14		5.11	3.53	
1 AUG	4.0- 7.3	0945	14.0	160	670	9.7	6	.68	26	3.66	105	12.80	518	11.28		
								.69		3.52		11.91		11.59	2.59	
14 AUG	0.0- 5.0	0955			660	4.6										
14 AUG	5.0- 7.0	1000			980	16.3										
29 AUG	0.0- 5.0	1120	18.0	136	440	2.5	17	.58	61	2.31	238	4.90	1135	4.83		
								.55		2.28		4.87		5.72	4.33	
30 AUG	5.0- 7.5	0910	13.0	214	540	5.4	8	.75	28	2.85	111	6.23	514	6.39		
								.73		2.91		6.62		6.18	2.42	
10 SEP	0.0- 5.0	0845			590	3.1										
10 SEP	5.0- 7.3	0850			690	3.6										
25 SEP	0.0- 6.0	0855	14.0	135	510	2.9	13	.33	46	1.26	182	3.48	873	3.50		
								.36		1.16		3.62		3.54	4.24	
8 OCT	0.0- 7.0	0920	10.5	144	670	4.1	12	.49	44	1.82	178	4.03	835	4.09		
								.53		1.89		3.77		3.93	4.10	
31 OCT	0.0- 7.0	0905	6.0	182	500	3.4	10	.36	32	1.49	127	3.03	575	2.57		
								.31		1.50		3.03		2.63	3.06	

LAKE 261

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
22 MAY	0.0- 1.5	0955			950	3.6										
22 MAY	1.5- 5.0	1000			870	5.8										
4 JUN	0.0- 2.0	0920			670	1.4										
4 JUN	2.0- 5.0	0925			1020	9.5										
18 JUN	0.0- 1.5	0900			830	2.8										
18 JUN	1.5- 5.0	0905			970	6.2										
2 JUL	0.0- 1.5	0920			1020	2.0										
2 JUL	1.5- 4.5	0925			1390	9.2										
16 JUL	0.0- 2.5	0935			690	3.2										
16 JUL	2.5- 4.5	0940			1290	11.2										
30 JUL	0.0- 2.5	0925			840	1.7										
30 JUL	2.5- 5.0	0930			1620	8.9										
13 AUG	0.0- 3.0	0925	19.0	39	1060	5.0	13-10.00 -10.00		49-10.00 -10.00		200	-10.00 -10.00	959	9.85 9.75	.74	2
13 AUG	3.0- 5.5	0930			1880	5.1										
27 AUG	0.0- 3.5	0940			730	2.5										
27 AUG	3.5- 5.5	0945			1120	15.3										
10 SEP	0.0- 4.0	0915	16.0	48	810	3.2	15-10.00 -10.00		57-10.00 -10.00		208	-10.00 -10.00	986	7.15 6.42	7.64	2
10 SEP	4.0- 5.5	0920			1250	17.8										
24 SEP	0.0- 5.0	0945			880	3.5										
24 SEP	5.0- 6.3	0950			1960	39.5										
8 OCT	0.0- 6.5	0945			930	5.1										
30 OCT	0.0- 7.5	0945			660	4.5										

LAKE 303

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
23 MAY	0.0- 1.5	0945			890	4.3										
6 JUN	.5- .5	1135			1170	2.9										
20 JUN	.5- .5	1055			1130	3.9										
5 JUL	.5- .5	0930			1870	3.2										
18 JUL	.5- .5	0940			1690	3.5										
2 AUG	.5- .5	0925	21.0	168	1410	3.5	14	.93 .75	51	6.85 7.38	212	34.89 34.81	1044	47.73 49.66	5.77	
15 AUG	.5- .5	0945	18.0	49	2420	5.7	16-10.00 -10.00		58-10.00 -10.00		218	-10.00 -10.00	1054	14.60 13.40	6.06	2
28 AUG	.5- .5	0930			1770	6.3										
12 SEP	.5- .5	0925			1940	6.6										
26 SEP	.5- .5	0940			2290	6.4										
9 OCT	.5- .5	1005			2510	9.0										
30 OCT	.5- .5	1030			2100	6.2										

LAKE 304

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
23 MAY	0.0- 1.3	0840			1290	5.9										
23 MAY	1.3- 4.3	0845			1110	10.8										
6 JUN	0.0- 1.5	1030			890	9.1										
6 JUN	1.5- 4.5	1035			470	5.4										
20 JUN	0.0- 2.0	1010			520	2.6										
20 JUN	2.0- 5.0	1015			450	8.2										
5 JUL	0.0- 2.0	0850			770	2.9										
5 JUL	2.0- 5.0	0855			1750	13.2										
18 JUL	0.0- 2.0	0855			550	3.9										
18 JUL	2.0- 4.0	0900			830	6.5										
2 AUG	0.0- 2.0	0840	21.0	62	490	3.3	14	.22 .26	52	.94 .93	211	3.39 3.56	1043	4.45 4.84	5.07	
2 AUG	2.0- 4.0	0850			590	5.1										
15 AUG	0.0- 3.0	0900	18.0	165	870	3.9	16-10.00 -10.00		58-10.00 -10.00		219	-10.00 -10.00	1054	11.59 12.78	6.91	2
15 AUG	3.0- 4.5	0905			980	10.4										
28 AUG	0.0- 3.0	0850			640	6.8										
28 AUG	3.0- 5.0	0855			1690	46.2										
12 SEP	0.0- 4.0	0850			1020	16.2										
26 SEP	0.0- 3.5	0905			1560	17.8										
9 OCT	0.0- 3.5	0925			1580	13.8										
30 OCT	0.0- 4.0	0930			1620	15.2										

LAKE 382

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
21 MAY	0.0- 7.0	0945	9.0	122	670	5.5	14	.61 .62	47	2.61 2.96	181	7.00 6.75	878	5.76 6.70	5.87	5,6
4 JUN	0.0- 2.0	1015			850	3.4										
4 JUN	2.0- 5.0	1020			780	4.2										
4 JUN	5.0- 8.0	1025			850	4.9										
18 JUN	0.0- 3.0	1015	19.0	80	620	2.5	11	-.04 .08	45	.81 .76	194	5.36 3.96	995	5.85 5.22	11.27	5,6
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.29 .31	38	1.65 1.73	149	5.05 4.74	722	5.56 5.75	3.50	5,6
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.27 .26	38	1.55 1.52	149	4.37 4.37	722	5.01 9.22	11.05	5,6,7
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.31 .34	38	1.82 1.82	149	5.44 5.06	722	6.12 -10.00	3.73	2,5,6,8
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.30 -10.00	38	1.78 1.72	149	4.99 5.04	722	5.64 6.06	2.78	2,5,6,7,8
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.34 .36	38	1.88 2.01	149	5.52 5.89	722	6.80 6.48	4.10	6
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.32 .32	38	1.84 1.89	149	5.33 5.28	722	6.02 -10.00	1.35	2,6,7
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.34 .31	38	1.82 1.86	149	5.35 5.50	722	6.19 -10.00	3.57	2,6,8
19 JUN	3.0- 6.0	0805	14.0	105	570	6.8	10	.32 .30	38	1.87 1.88	149	5.37 5.27	722	6.05 6.50	3.13	6,7,8
20 JUN	6.0- 8.0	0825	8.0	188	570	4.7	6	.41 .53	24	1.69 1.67	101	4.37 4.34	555	3.57 3.82	6.10	5,6
20 JUN	6.0- 8.0	0825	8.0	188	570	4.7	6	.47 .61	24	1.99 1.91	101	5.17 4.97	555	4.20 4.45	7.00	6
2 JUL	0.0- 3.0	1035			590	2.3										
2 JUL	3.0- 8.0	1040			1060	3.5										
16 JUL	0.0- 3.5	1050	21.0	73	500	2.7	15	.38 .29	55	1.63 1.52	211	4.84 5.00	1047	4.59 4.69	7.05	6
16 JUL	0.0- 3.5	1050	21.0	73	500	2.7	15	.36 .27	55	1.53 1.43	211	4.54 4.69	1047	4.30 4.39	7.09	
17 JUL	3.5- 8.0	0830	13.0	166	740	8.2	10	.78 .69	38	4.32 4.41	143	10.03 11.22	728	10.88 10.95	4.70	6
17 JUL	3.5- 8.0	0830	13.0	166	740	8.2	10	.77 .68	38	4.24 4.33	143	9.83 11.01	728	10.68 10.74	4.72	
30 JUL	0.0- 4.0	1030			930	2.7										
30 JUL	4.0- 8.0	1035			1020	7.6										
13 AUG	0.0- 4.5	1040	19.0	85	690	5.3	13	.44 .42	49	2.41 2.25	200	7.30 9.35	959	7.92 8.28	7.04	
14 AUG	4.5- 8.0	0815	13.0	194	840	8.2	8	.37 .31	29	3.19 3.05	109	9.03 8.86	513	11.51 10.65	5.61	

LAKE 382

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
27 AUG	0.0- 5.0	1045			650	3.1										
27 AUG	5.0- 8.5	1050			860	7.3										
10 SEP	0.0- 6.0	1015	16.0	95	650	4.3	15	1.09 .66	57	3.00 3.02	208	6.62 6.97	986	6.58 7.03	11.00	
11 SEP	6.0- 8.0	0820	12.0	270	880	8.2	4	.32 .66	14	1.65 1.75	54	6.95 5.91	243	10.82 10.31	17.01	
24 SEP	0.0- 6.5	1055			770	4.1										
24 SEP	6.5- 7.5	1100			820	3.7										
8 OCT	0.0- 9.0	1050	10.5	111	670	3.6	12	.79 2.36	44	2.37 2.42	178	5.38 5.41	835	5.27 5.21	18.30	
31 OCT	0.0- 9.0	0920	6.0	110	590	2.9	10	.39 .41	32	1.49 1.33	127	2.98 3.11	575	2.93 2.97	3.74	

LAKE 382 Bay

DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
21 MAY	0.0- 3.0	1005	9.0	66	1050	4.6	14	.12 .11	47	.91 .86	181	2.92 3.10	878	3.31 3.06	4.06	5,6
4 JUN	0.0- 2.5	1045			910	2.7										
18 JUN	0.0- 2.0	1035	19.0	72	630	3.3	11	.13 .16	45	1.25 1.37	194	6.98 6.25	995	8.21 8.75	8.40	5,6
2 JUL	0.0- 1.5	1100			790	2.8										
2 JUL	1.5- 3.0	1105			1050	6.4										
16 JUL	0.0- 3.0	1110	21.0	78	650	2.8	15	.25 .32	55	1.79 1.94	211	7.12 6.74	1047	8.81 9.91	8.74	6
16 JUL	0.0- 3.0	1110	21.0	78	650	2.8	15	.25 .32	55	1.79 1.94	211	7.12 6.74	1047	8.81 9.91	8.74	
30 JUL	0.0- 3.0	1100			1210	1.0										
13 AUG	0.0- 3.0	1100	19.0	84	1150	5.5	13	.53 .56	49	3.85 3.75	200	14.62 14.61	959	16.39 21.14	5.99	
27 AUG	0.0- 3.0	1110			810	3.7										
10 SEP	0.0- 3.0	1035	16.0	87	910	3.9	15	.48 .46	57	2.64 2.70	208	7.92 7.76	986	8.14 8.18	1.50	
24 SEP	0.0- 3.0	1120			940	3.7										
8 OCT	0.0- 3.0	1110	10.5	75	1070	5.1	12	.44 .46	44	2.70 2.72	178	6.98 6.74	835	6.88 6.94	1.92	
31 OCT	0.0- 3.0	0930	6.0	99	950	3.8	10	.33 .91	32	1.44 3.54	127	3.74 3.47	575	3.68 3.52	33.51	

LAKE 383

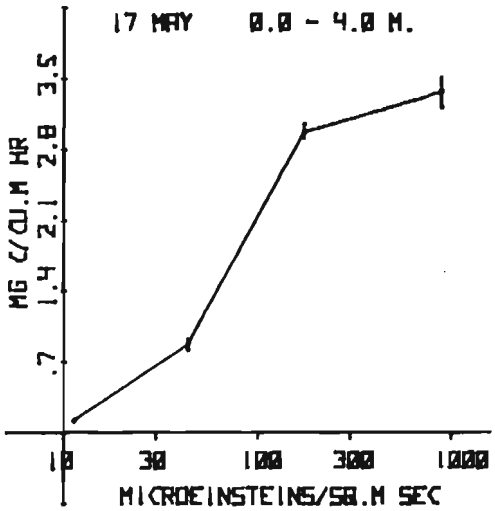
DATE	DEPTH	TIME	TEMP	DIC	SUSP-C	CHLOR	I4	P4	I3	P3	I2	P2	I1	P1	C.V.(%)	NOTE
23 MAY	0.0- 1.5	0910			990	4.0										
23 MAY	1.5- 5.0	0915			1120	9.8										
5 JUN	0.0- 2.0	0905	15.0	89	1010	2.2	10	.10 .14	41	1.01 1.11	173	4.30 4.73	947	5.49 5.44	9.08	5,6
6 JUN	2.0- 6.0	0835	10.0	136	750	7.4	9	.57 .50	36	2.74 2.62	142	6.75 7.40	722	6.80 7.19	5.71	5,6
21 JUN	0.0- 2.0	0855			620	2.6										
21 JUN	2.0- 6.0	0900			1010	7.9										
3 JUL	0.0- 2.0	0900	21.0	82	960	2.5	13	.10 91.99	50	1.25 7.68	207	5.21 144.06	1013	6.55 6.70	94.04	3,6
3 JUL	0.0- 2.0	0900	21.0	82	960	2.5	13	.09 86.19	50	1.17 7.19	207	4.88 134.98	1013	6.14 6.28	94.03	3
4 JUL	2.0- 6.0	0835	13.0	146	1390	11.0	10	1.40 1.35	38	7.90 7.15	150	18.26 20.57	751	21.58 19.07	6.69	6
4 JUL	2.0- 6.0	0835	13.0	146	1390	11.0	10	1.34 1.29	38	7.56 6.84	150	17.47 19.69	751	20.65 18.25	6.69	
19 JUL	0.0- 3.0	0955			840	2.0										
19 JUL	3.0- 5.3	1000			1660	8.6										
31 JUL	0.0- 3.0	0915	21.0	89	740	1.8	13	.17 .17	51	1.48 1.54	192	4.13 3.74	995	7.75 7.16	4.21	
1 AUG	3.0- 6.0	0840	14.0	128	200	6.7	6	.42 .49	26	2.50 2.23	105	7.19 7.11	518	9.09 8.74	5.58	
16 AUG	0.0- 4.0	0940			840	2.2										
16 AUG	4.0- 6.5	0945			1390	7.6										
29 AUG	0.0- 3.5	0940	18.0	99	650	2.3	17	.64 .58	61	2.80 2.61	238	6.04 6.72	1135	6.52 6.40	5.22	
30 AUG	3.5- 6.5	0810	13.0	230	890	5.8	8	1.30 .76	28	3.15 3.02	111	7.65 7.22	514	8.30 8.04	11.51	
13 SEP	0.0- 4.5	0915			690	1.8										
13 SEP	4.5- 6.5	0920			1100	8.0										
25 SEP	0.0- 5.0	0910	14.0	109	710	2.4	13	.53 .45	46	2.15 2.24	182	5.50 5.75	873	5.68 5.41	5.25	
10 OCT	0.0- 7.0	0925	9.5	139	960	4.3	13	.83 .76	45	2.67 2.73	162	5.12 4.82	767	4.77 4.58	3.59	
1 NOV	0.0- 7.5	0925	5.0	130	600	2.8	10	.30 .28	34	1.05 .96	121	1.80 1.95	594	1.88 1.87	4.06	

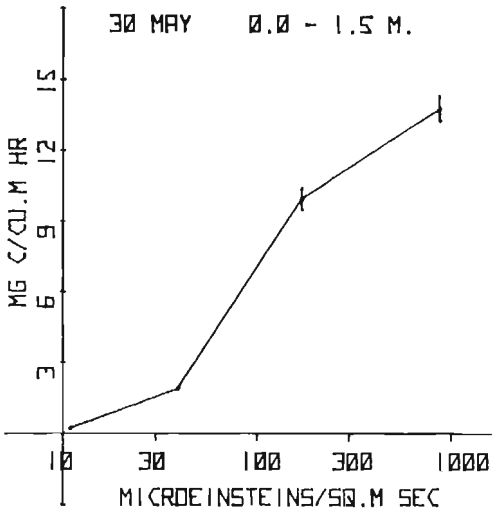
APPENDIX 2

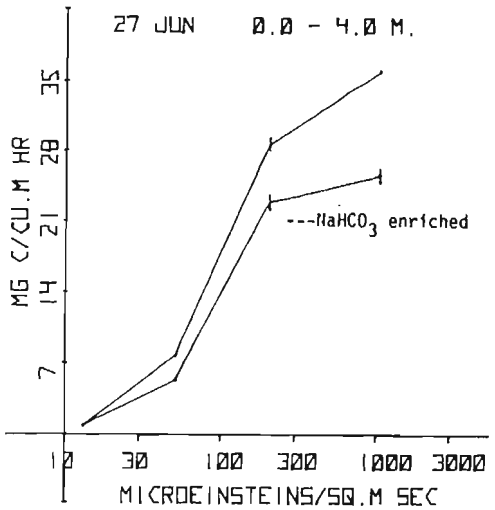
Plots of photosynthetic carbon uptake versus incubator irradiance are arranged chronologically according to lake basin. Irradiance is plotted on a logarithmic scale, production on a linear scale. The vertical bars join the values obtained for the two replicates at each irradiance.

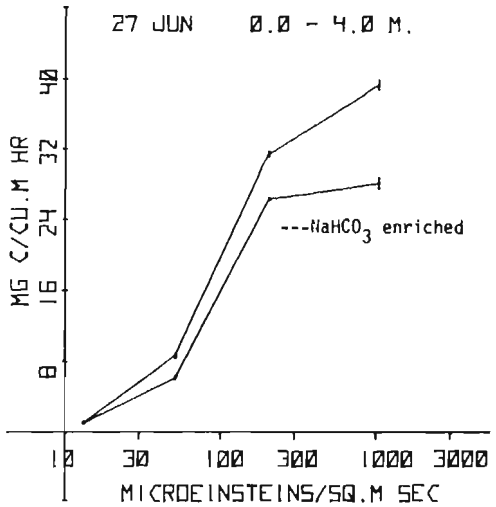
Where special conditions apply to the data, these conditions are noted on the graphs.

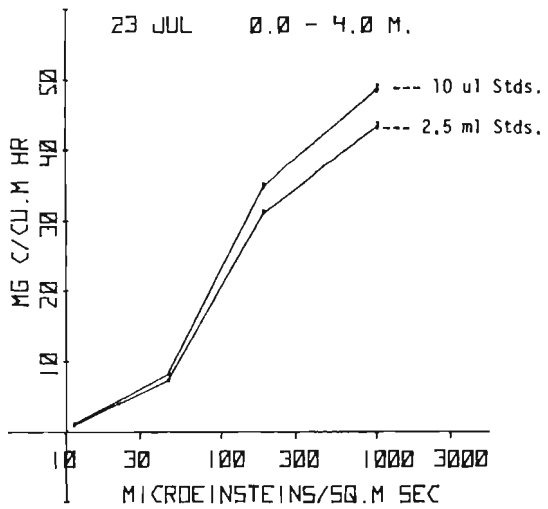
LAKE 114

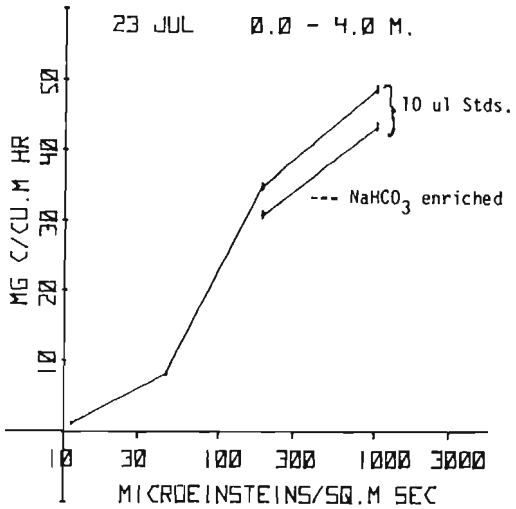

17 MAY 0.0 - 4.0 M.
MG C/CU.M HR
.7
1.4
2.1
2.8
3.5
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC


30 MAY 0.0 - 1.5 M.
MG C/CU.M HR
3
6
9
12
15
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

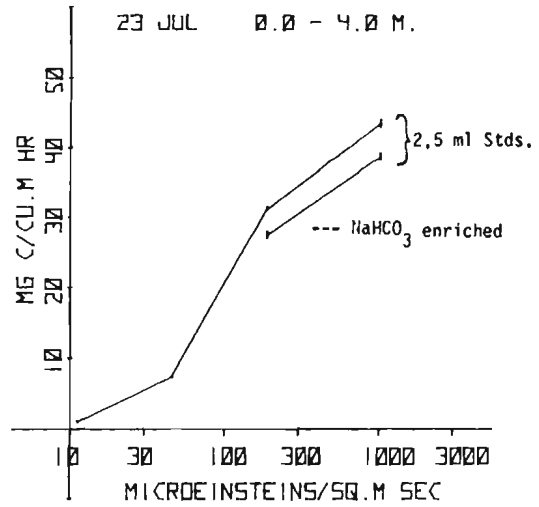

27 JUN 0.0 - 4.0 M.
MG C/CU.M HR
7
14
21
28
35
---NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

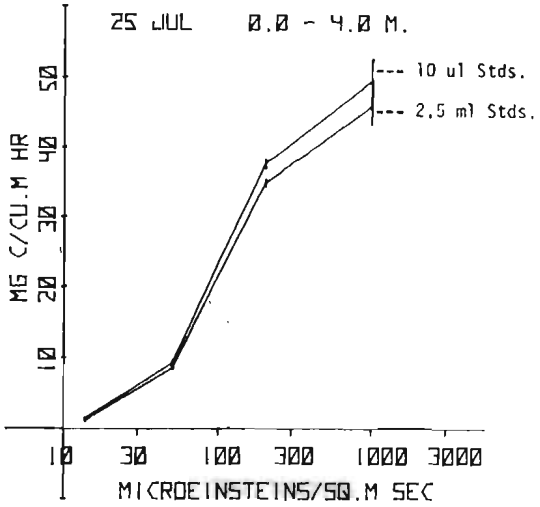

27 JUN 0.0 - 4.0 M.
MG C/CU.M HR
8
16
24
32
40
---NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

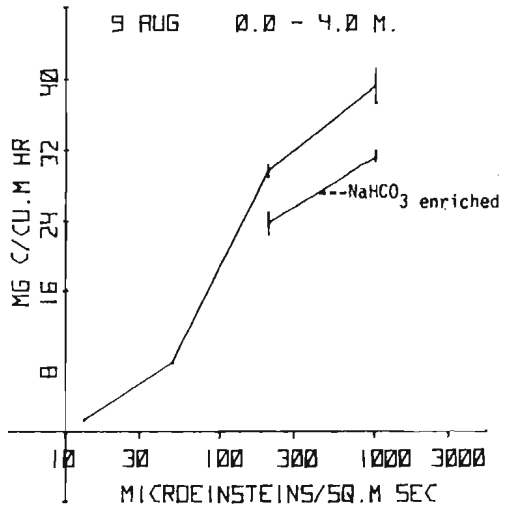

23 JUL 0.0 - 4.0 M.
MG C/CU.M HR
10
20
30
40
50
--- 10 ul Stds.
--- 2.5 ml Stds.
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

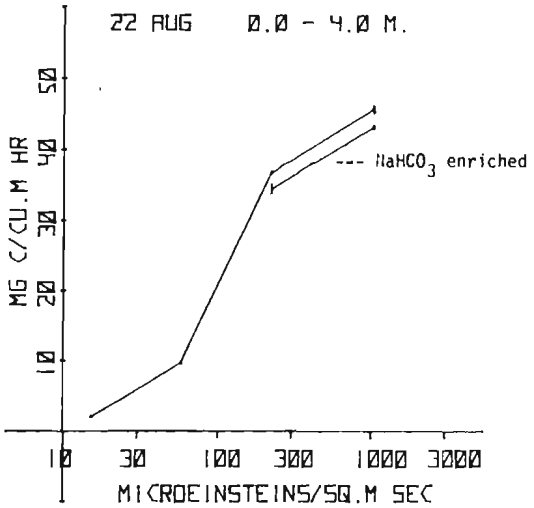

23 JUL 0.0 - 4.0 M.
MG C/CU.M HR
10
20
30
40
50
10 ul Stds.
--- NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

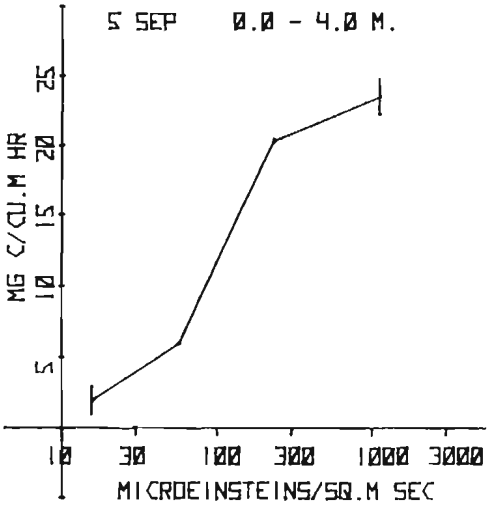
LAKE 114

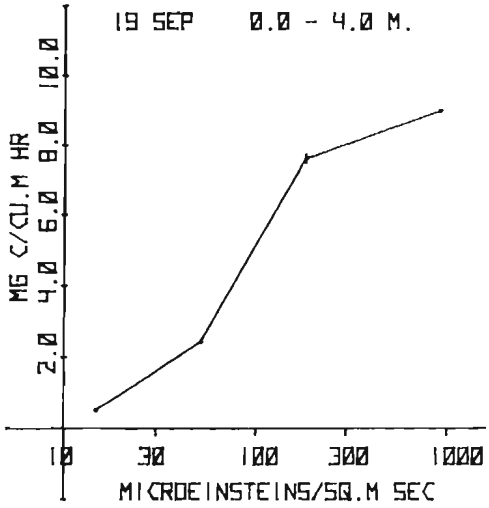

23 JUL 0.0 - 4.0 M.
MG C/CU.M HR
10
20
30
40
50
2,5 ml Stds.
--- NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC


25 JUL 0.0 - 4.0 M.
MG C/CU.M HR
10
20
30
40
50
--- 10 ul Stds.
--- 2.5 ml Stds.
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

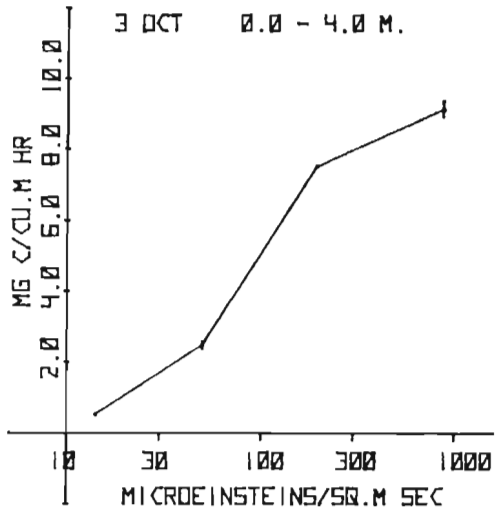

9 AUG 0.0 - 4.0 M.
MG C/CU.M HR
8
16
24
32
40
---NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

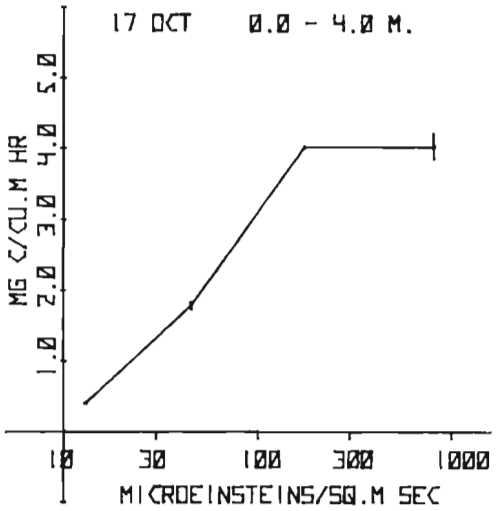

22 AUG 0.0 - 4.0 M.
MG C/CU.M HR
10
20
30
40
50
--- NaHCO3 enriched
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

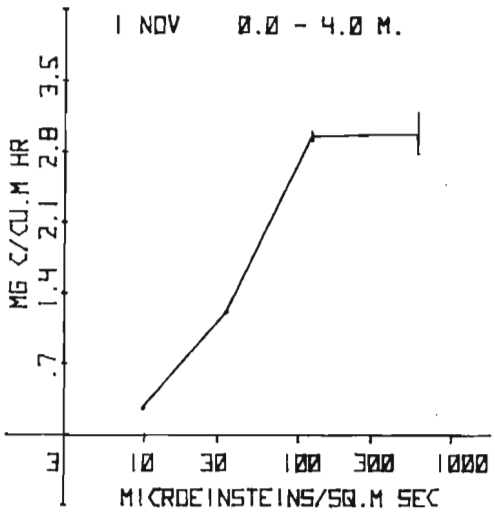

5 SEP 0.0 - 4.0 M.
MG C/CU.M HR
5
10
15
20
25
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC


19 SEP 0.0 - 4.0 M.
MG C/CU.M HR
2.0
4.0
6.0
8.0
10.0
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

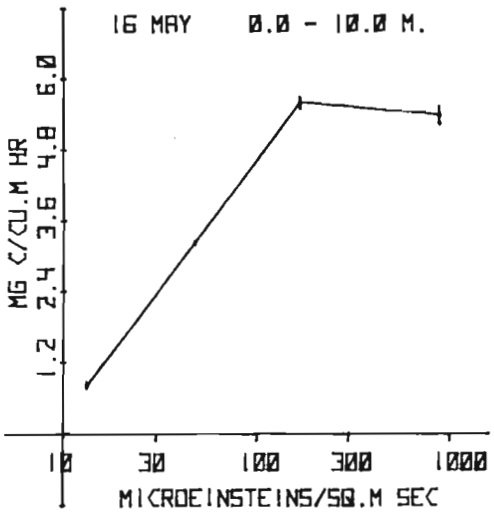
LAKE 114

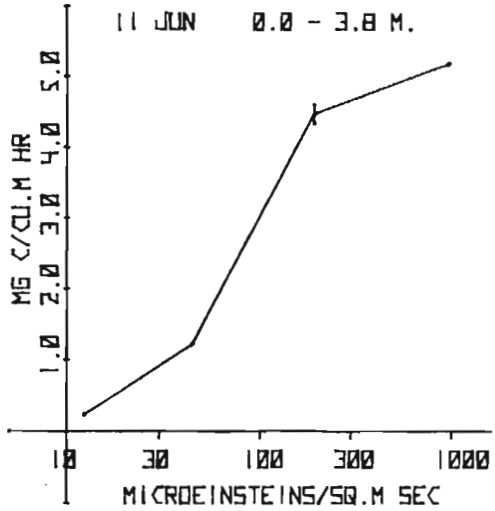

3 OCT 0.0 - 4.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

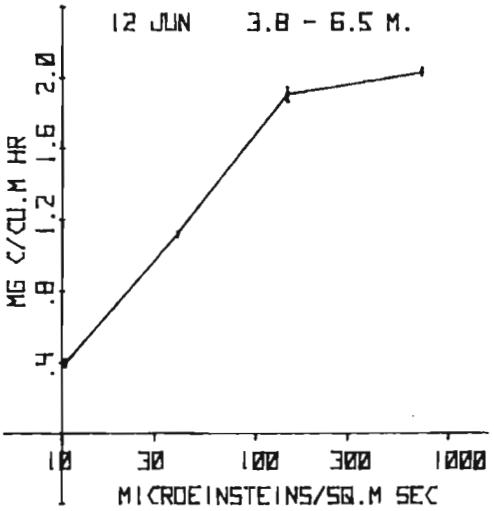

17 OCT 0.0 - 4.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

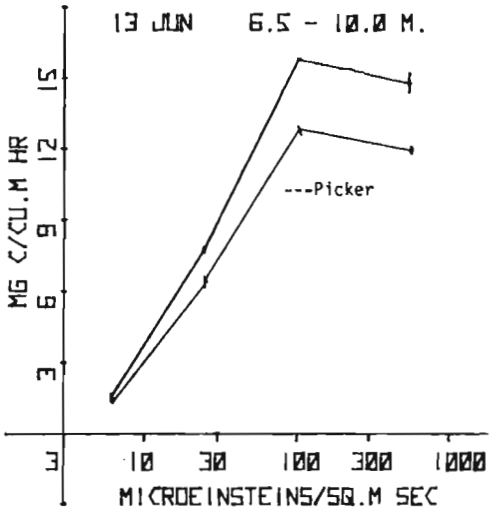

1 NOV 0.0 - 4.0 M.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

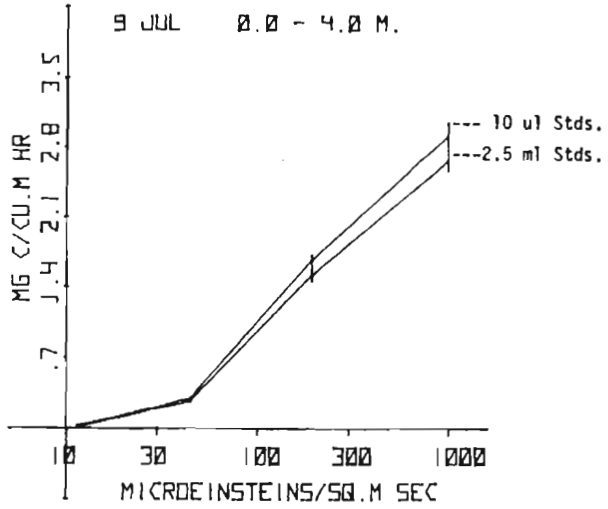
LAKE 223

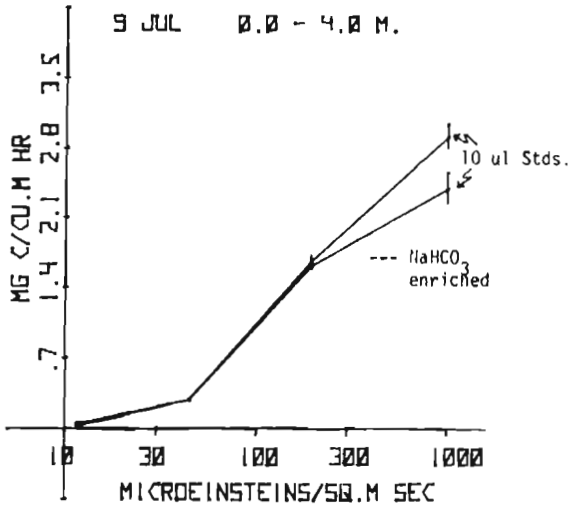

16 MAY 0.0 - 10.0 M.
MG C/CU.M HR
1.2 2.4 3.6 4.8 6.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


11 JUN 0.0 - 3.8 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

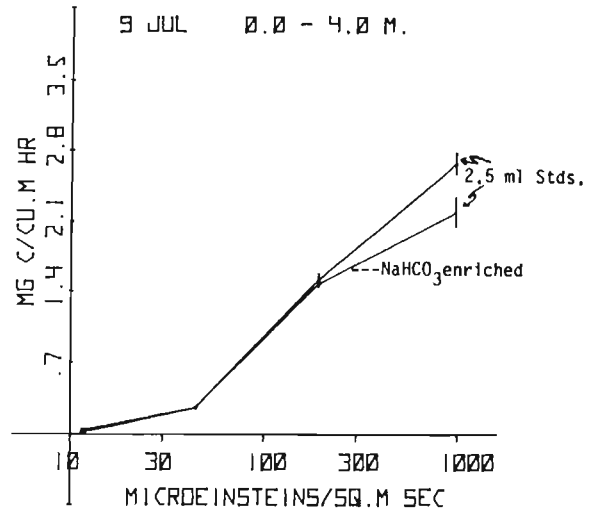

12 JUN 3.8 - 6.5 M.
MG C/CU.M HR
.4 .8 1.2 1.6 2.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

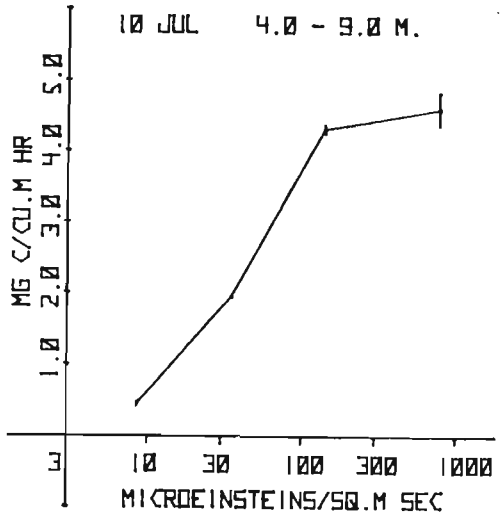

13 JUN 6.5 - 10.0 M.
---Picker
MG C/CU.M HR
3 6 9 12 15
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

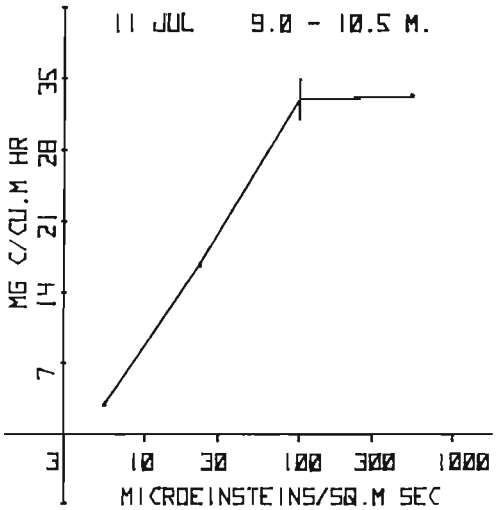

9 JUL 0.0 - 4.0 M.
--- 10 ul Stds.
---2.5 ml Stds.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

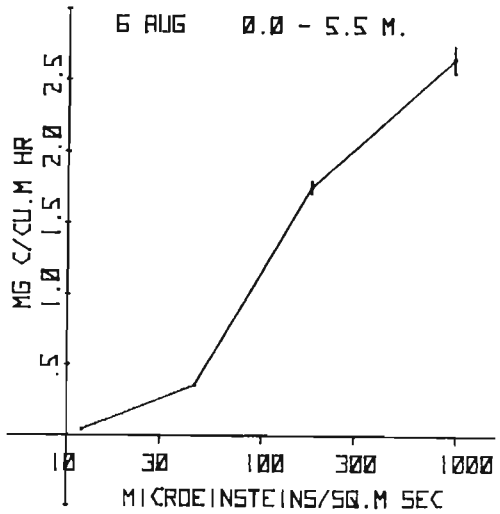

9 JUL 0.0 - 4.0 M.
10 ul Stds.
--- NaHCO3 enriched
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

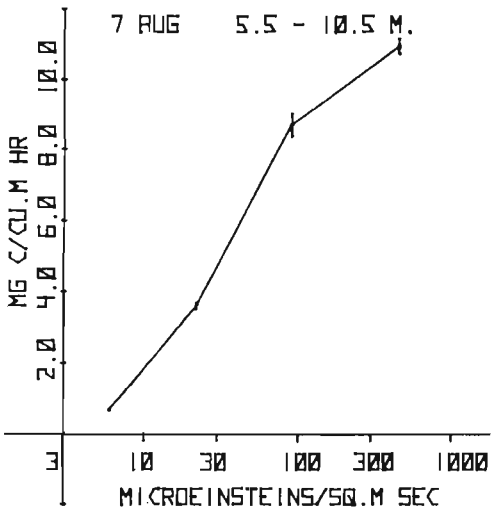
LAKE 223

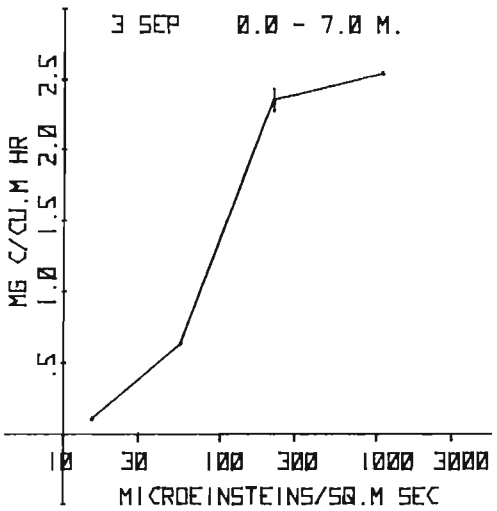

9 JUL 0.0 - 4.0 M.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
2,5 ml Stds.
---NaHCO3enriched
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


10 JUL 4.0 - 9.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

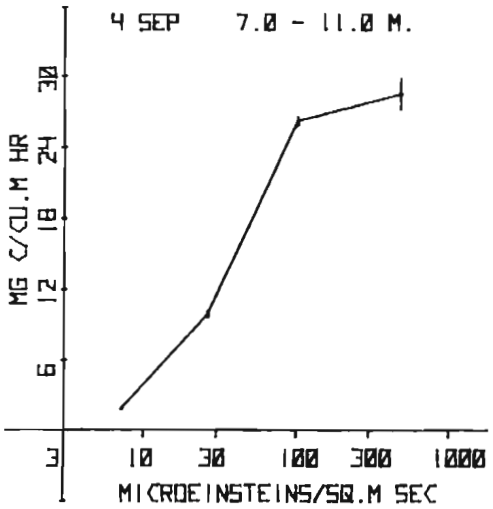

11 JUL 9.0 - 10.5 M.
MG C/CU.M HR
7 14 21 28 35
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

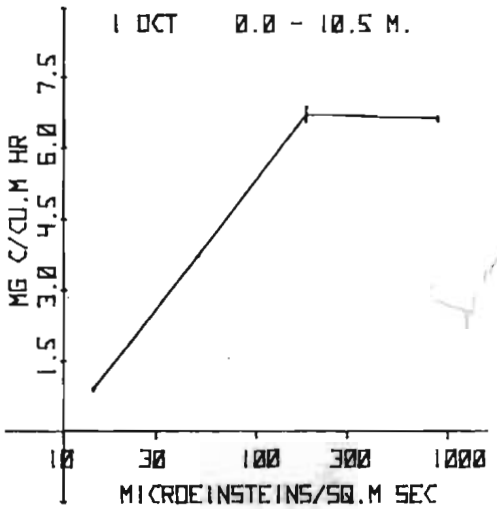

6 AUG 0.0 - 5.5 M.
MG C/CU.M HR
.5 1.0 1.5 2.0 2.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

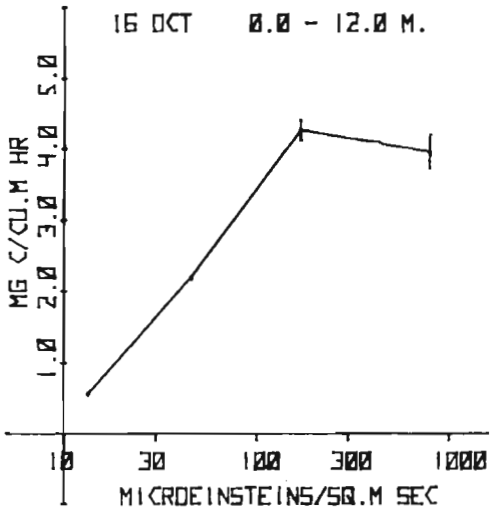

7 AUG 5.5 - 10.5 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

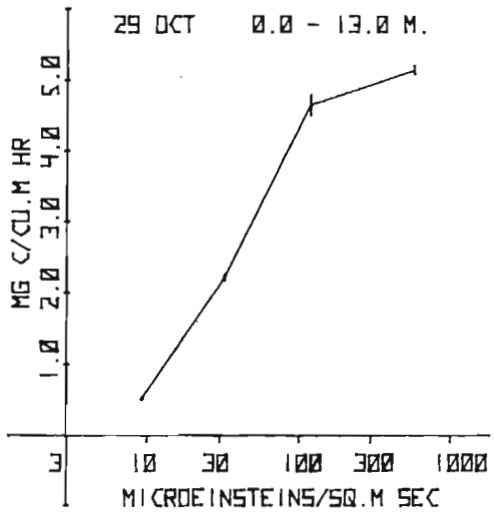

3 SEP 0.0 - 7.0 M.
MG C/CU.M HR
.5 1.0 1.5 2.0 2.5
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

LAKE 223

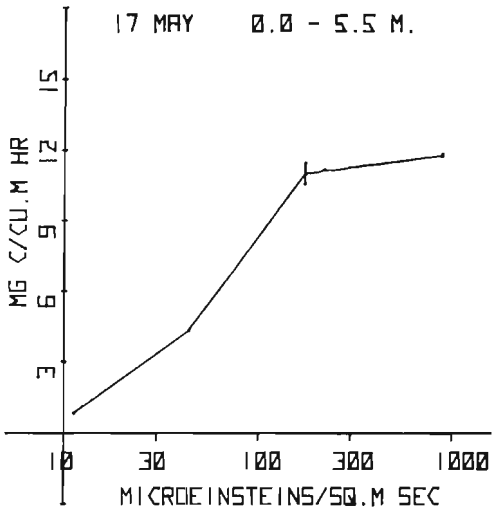

4 SEP 7.0 - 11.0 M.
MG C/CU.M HR
6
12
18
24
30
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

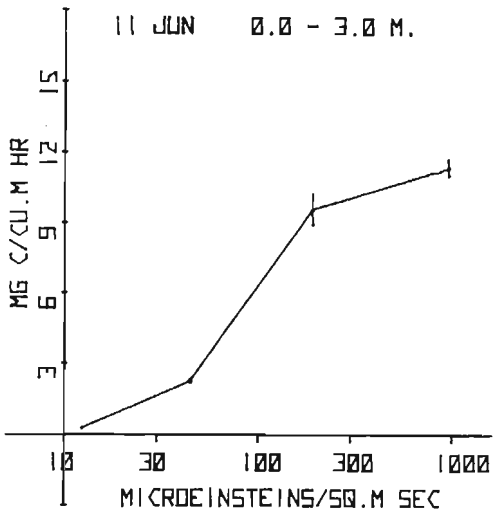

1 OCT 0.0 - 10.5 M.
MG C/CU.M HR
1.5
3.0
4.5
6.0
7.5
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

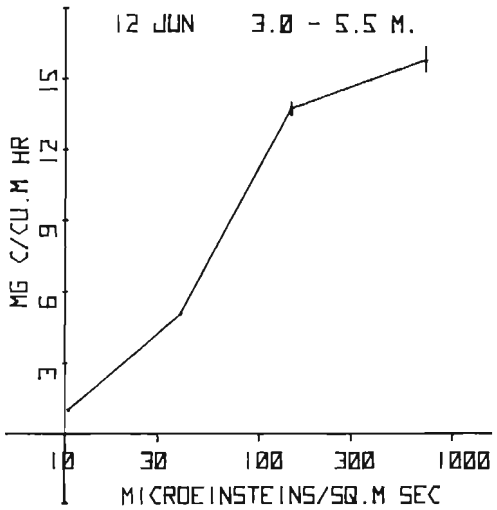

16 OCT 0.0 - 12.0 M.
MG C/CU.M HR
1.0
2.0
3.0
4.0
5.0
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

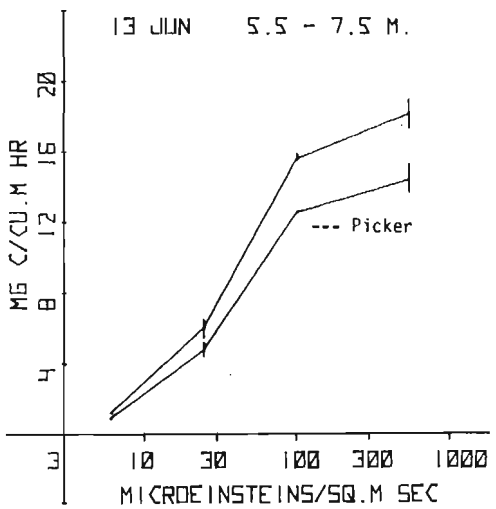

29 OCT 0.0 - 13.0 M.
MG C/CU.M HR
1.0
2.0
3.0
4.0
5.0
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

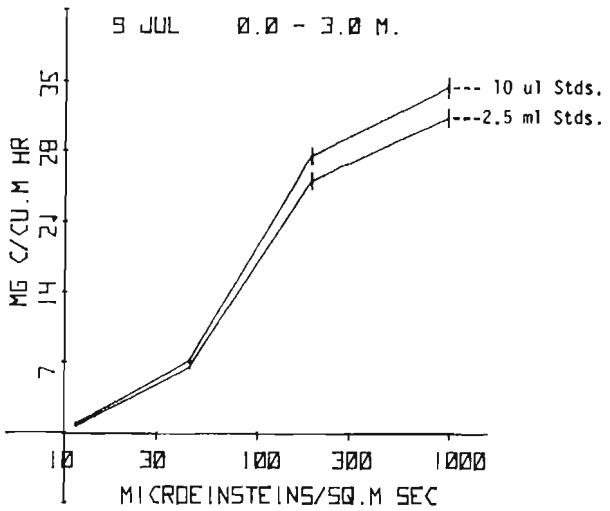
LAKE 226NE

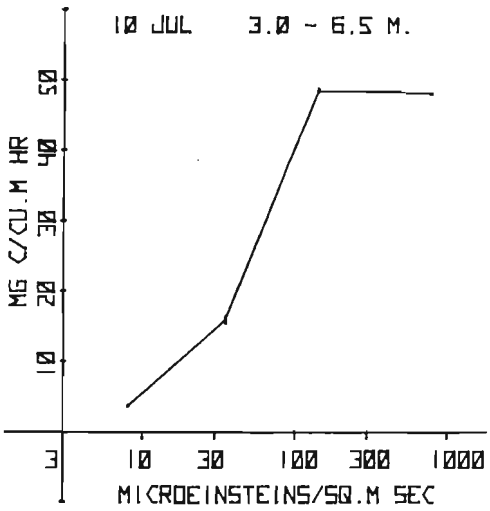

17 MAY 0.0 - 5.5 M.
MG C/CU.M HR
3
6
9
12
15
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC


11 JUN 0.0 - 3.0 M.
MG C/CU.M HR
3
6
9
12
15
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

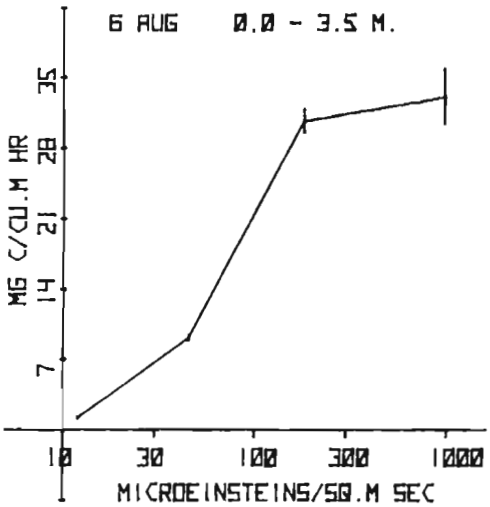

12 JUN 3.0 - 5.5 M.
MG C/CU.M HR
3
6
9
12
15
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

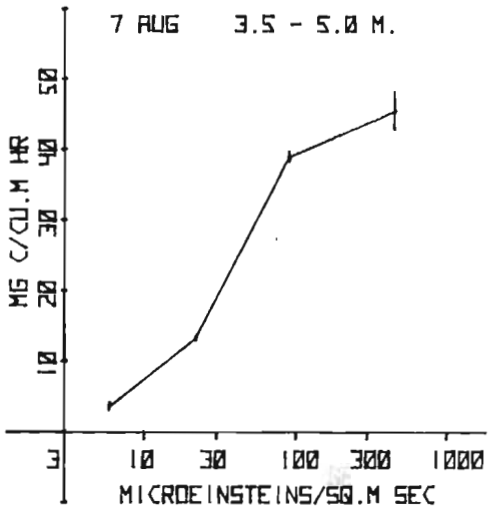

13 JUN 5.5 - 7.5 M.
--- Picker
MG C/CU.M HR
4
8
12
16
20
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

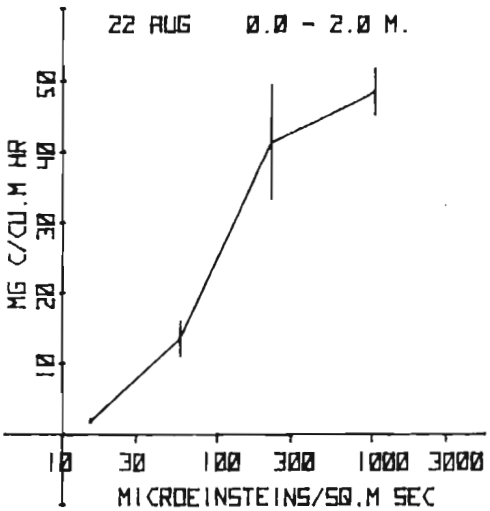

9 JUL 0.0 - 3.0 M.
--- 10 ul Stds.
---2.5 ml Stds.
MG C/CU.M HR
7
14
21
28
35
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

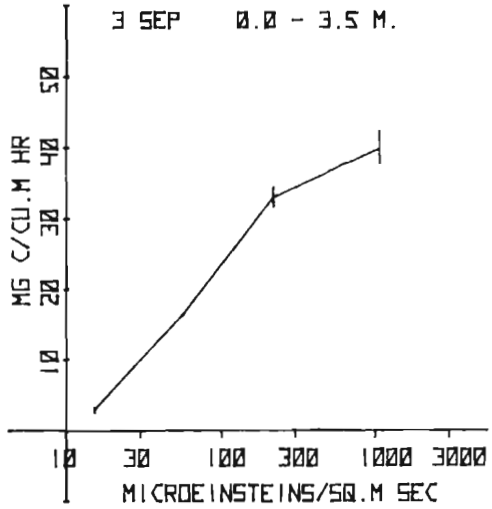

10 JUL 3.0 - 6.5 M.
MG C/CU.M HR
10
20
30
40
50
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

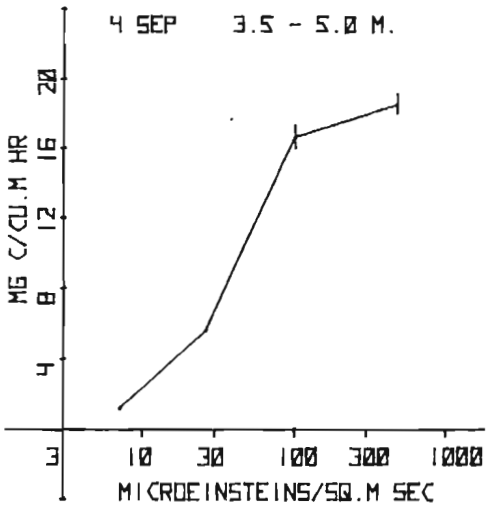
LAKE 226NE

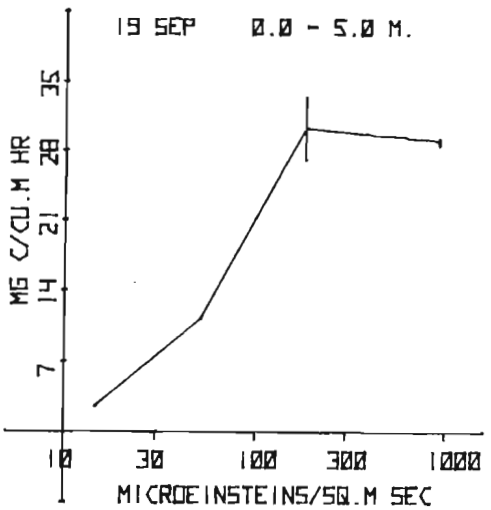

6 AUG 0.0 - 3.5 M.
MG C/CU.M HR
7
14
21
28
35
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC


7 AUG 3.5 - 5.0 M.
MG C/CU.M HR
10
20
30
40
50
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

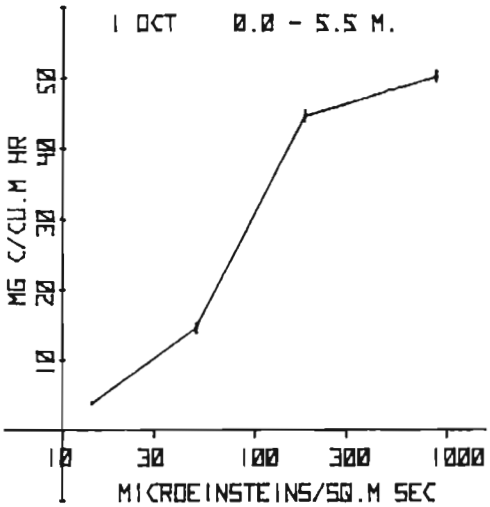

22 AUG 0.0 - 2.0 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

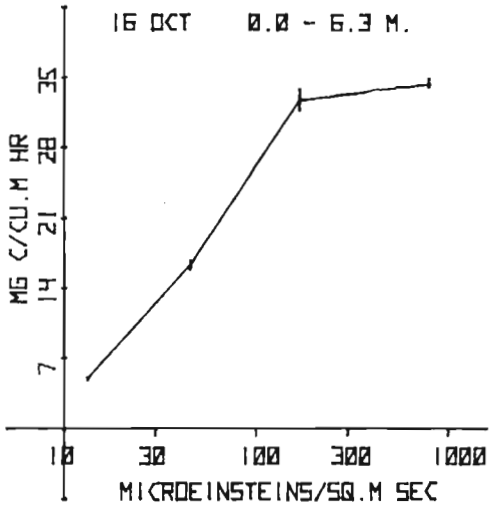

3 SEP 0.0 - 3.5 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

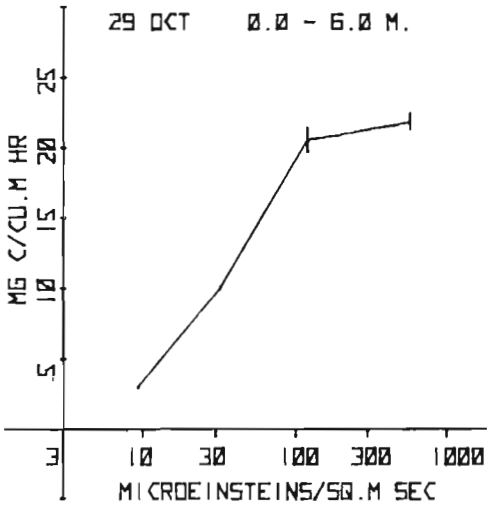

4 SEP 3.5 - 5.0 M.
MG C/CU.M HR
4
8
12
16
20
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC


19 SEP 0.0 - 5.0 M.
MG C/CU.M HR
7
14
21
28
35
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

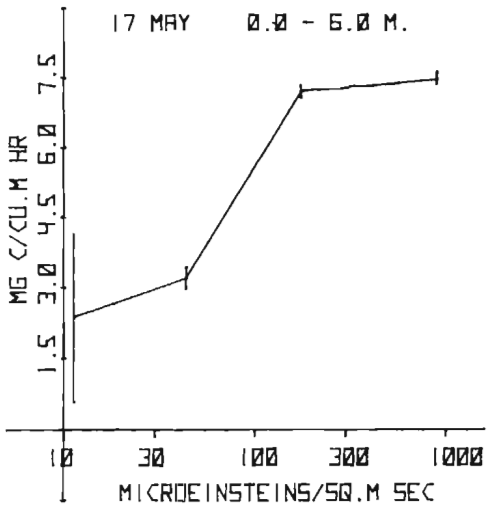
LAKE 226NE

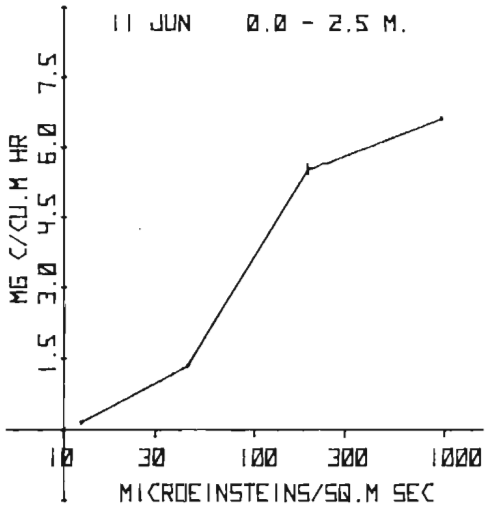

1 OCT 0.0 - 5.5 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

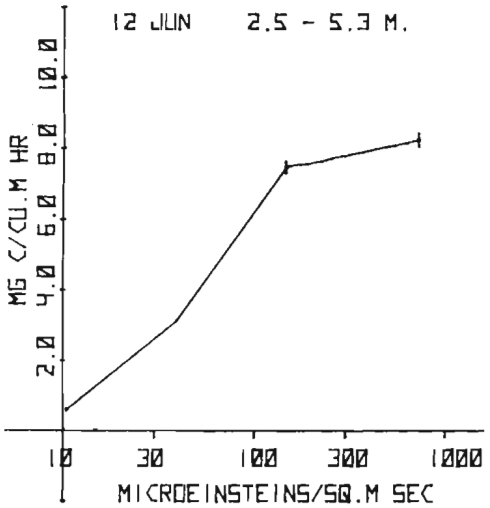

16 OCT 0.0 - 6.3 M.
MG C/CU.M HR
7
14
21
28
35
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

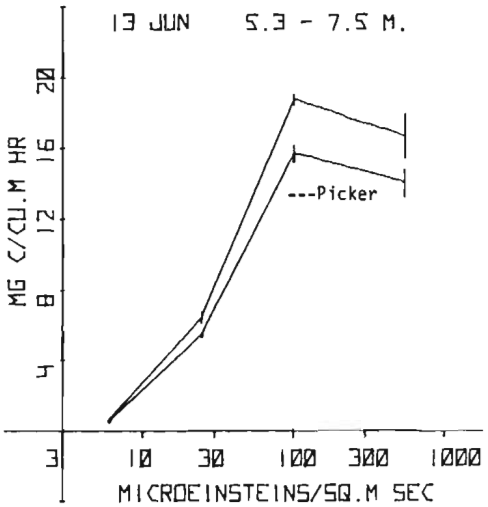

29 OCT 0.0 - 6.0 M.
MG C/CU.M HR
5
10
15
20
25
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

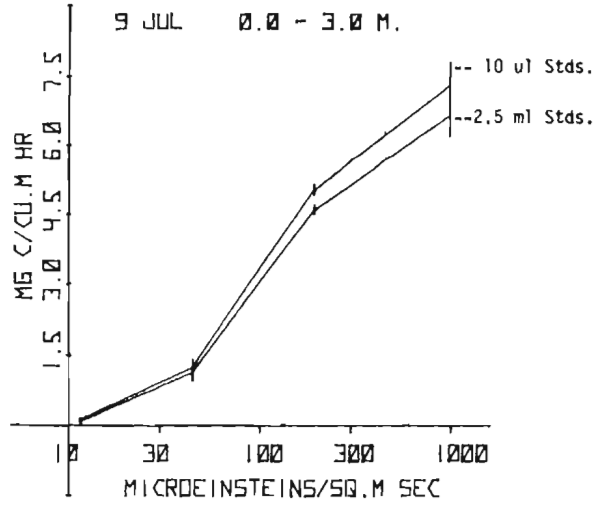
LAKE 226SW

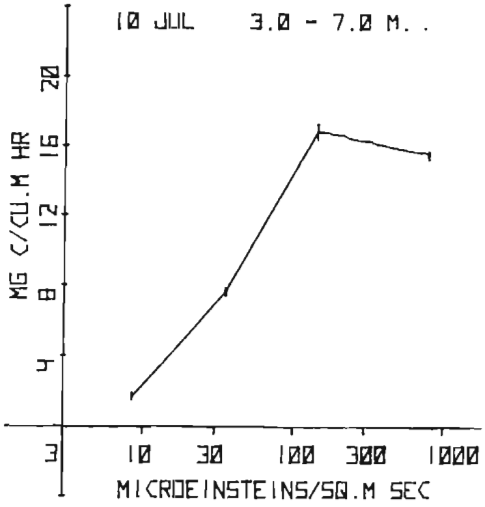

17 MAY 0.0 - 6.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


11 JUN 0.0 - 2.5 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

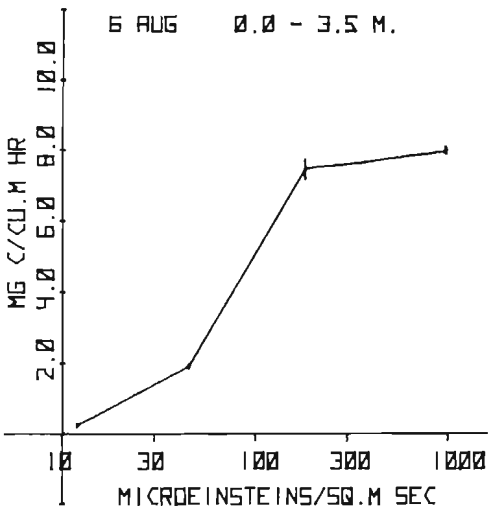

12 JUN 2.5 - 5.3 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

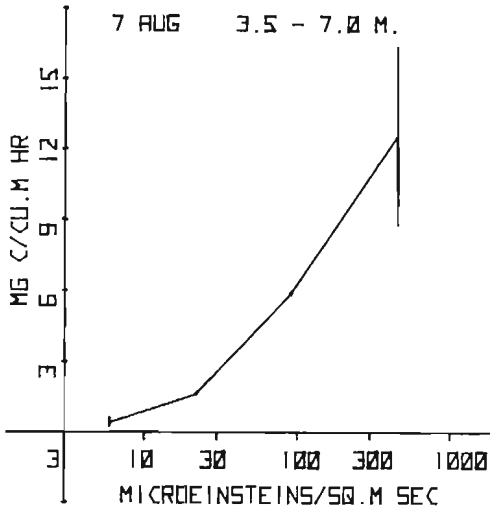

13 JUN 5.3 - 7.5 M.
---Picker
MG C/CU.M HR
4 8 12 16 20
3
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

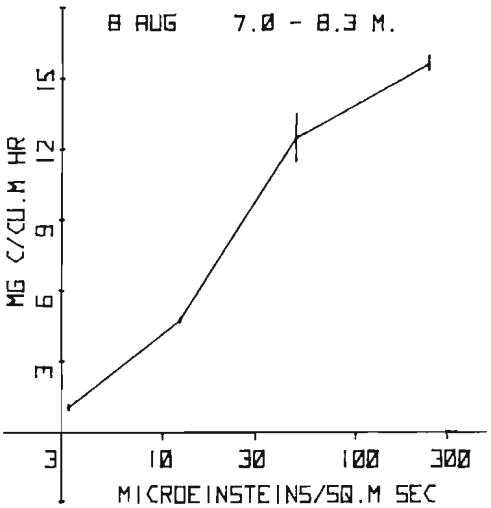

9 JUL 0.0 - 3.0 M.
-- 10 ul Stds.
--2.5 ml Stds.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

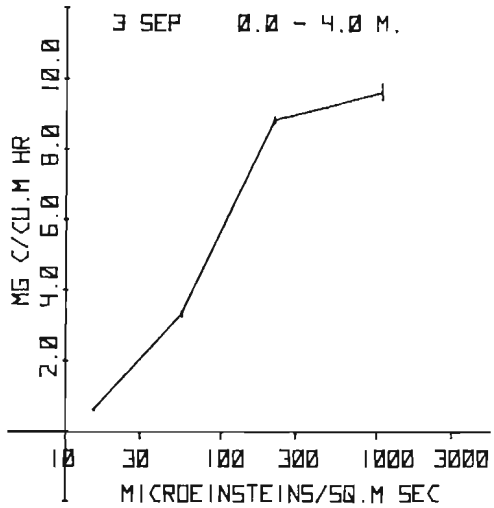

10 JUL 3.0 - 7.0 M. .
MG C/CU.M HR
4 8 12 16 20
3
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

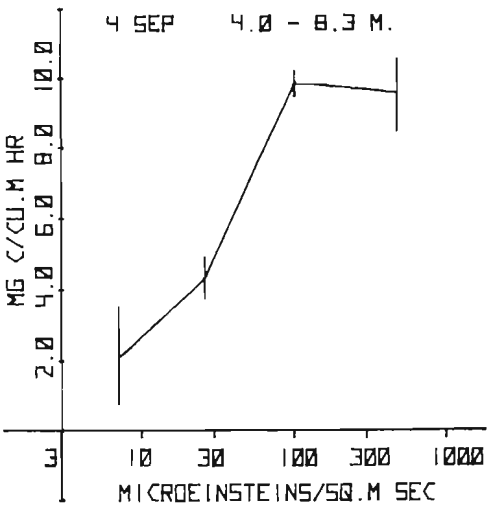
LAKE 226SW

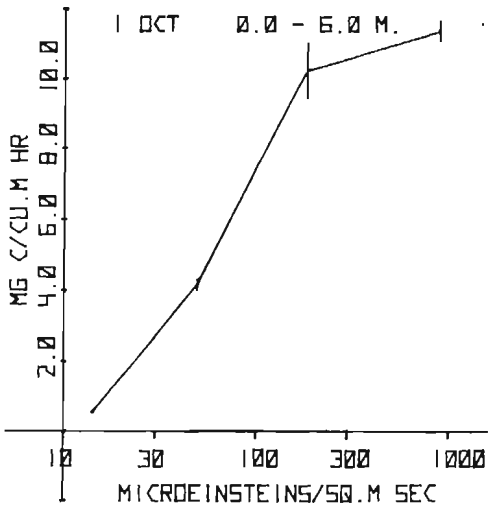

6 AUG 0.0 - 3.5 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


7 AUG 3.5 - 7.0 M.
MG C/CU.M HR
3 6 9 12 15
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

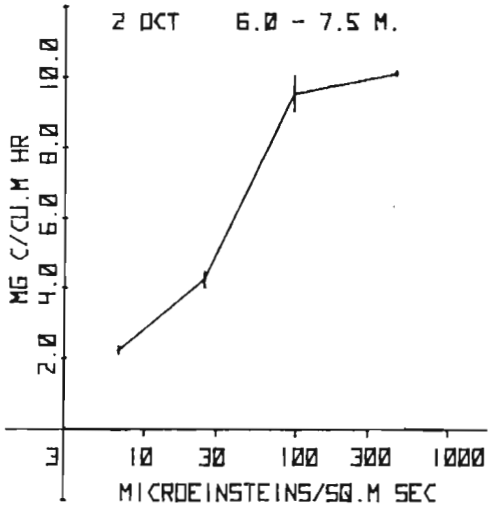

8 AUG 7.0 - 8.3 M.
MG C/CU.M HR
3 6 9 12 15
3 10 30 100 300
MICROEINSTEINS/SQ.M SEC

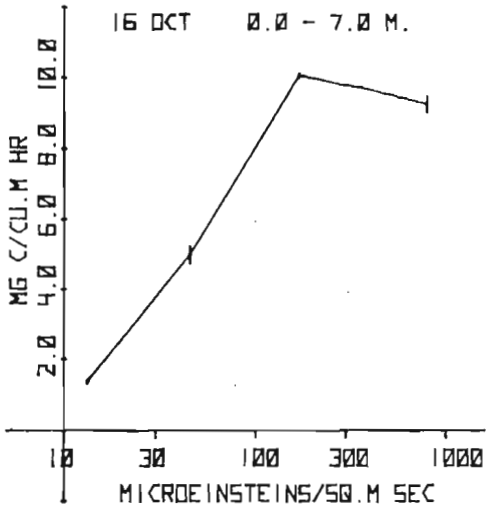

3 SEP 0.0 - 4.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

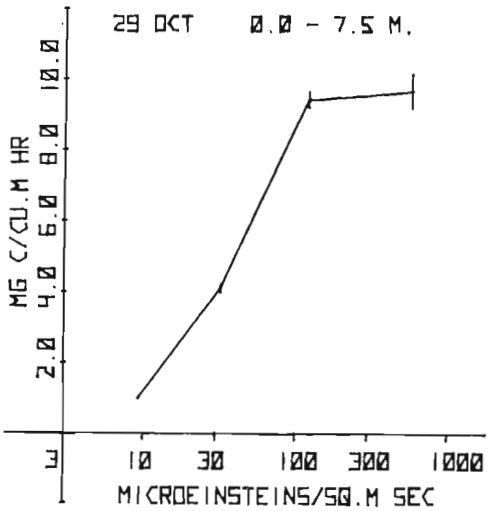

4 SEP 4.0 - 8.3 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


1 OCT 0.0 - 6.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

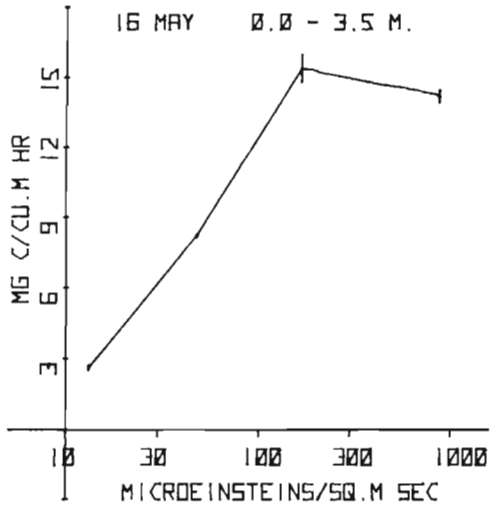
LAKE 226SW

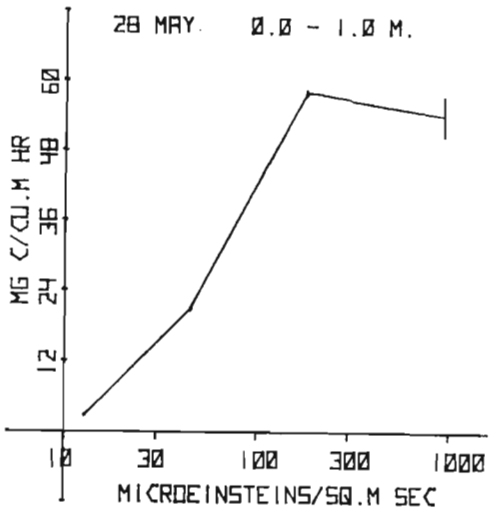

2 OCT 6.0 - 7.5 M.
MG C/CU.M HR
2.0
4.0
6.0
8.0
10.0
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

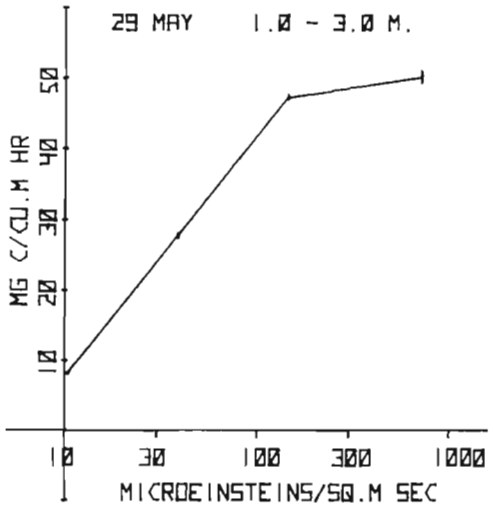

16 OCT 0.0 - 7.0 M.
MG C/CU.M HR
2.0
4.0
6.0
8.0
10.0
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

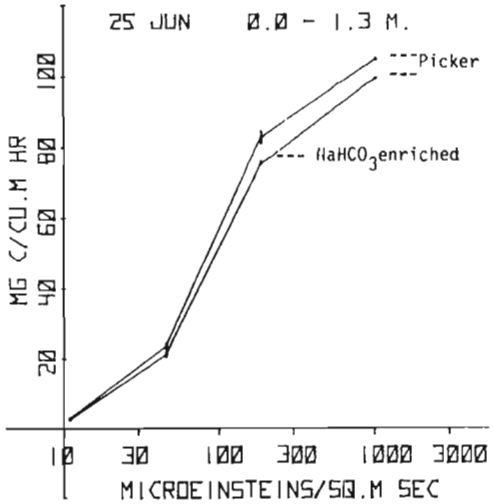

29 OCT 0.0 - 7.5 M.
MG C/CU.M HR
2.0
4.0
6.0
8.0
10.0
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

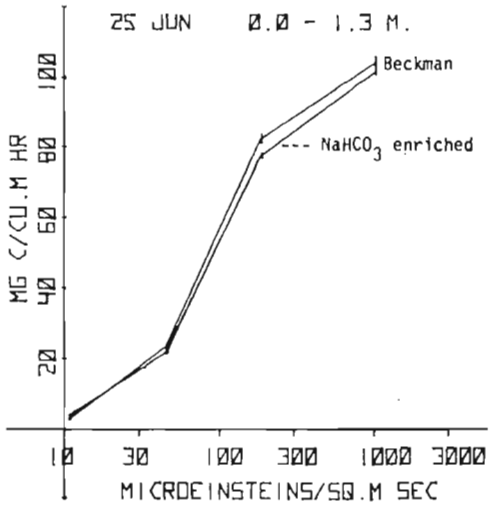
LAKE 227

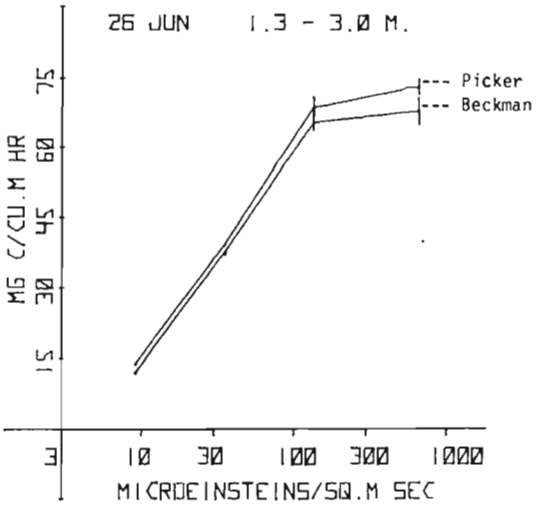

16 MAY 0.0 - 3.5 M.
MG C/CU.M HR
3
6
9
12
15
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC


28 MAY 0.0 - 1.0 M.
MG C/CU.M HR
12
24
36
48
60
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

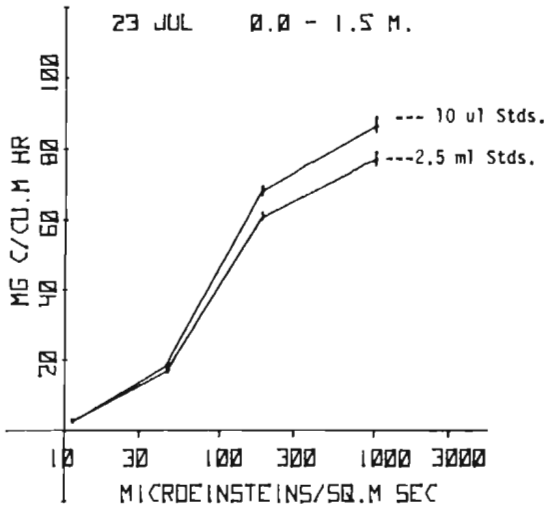

29 MAY 1.0 - 3.0 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

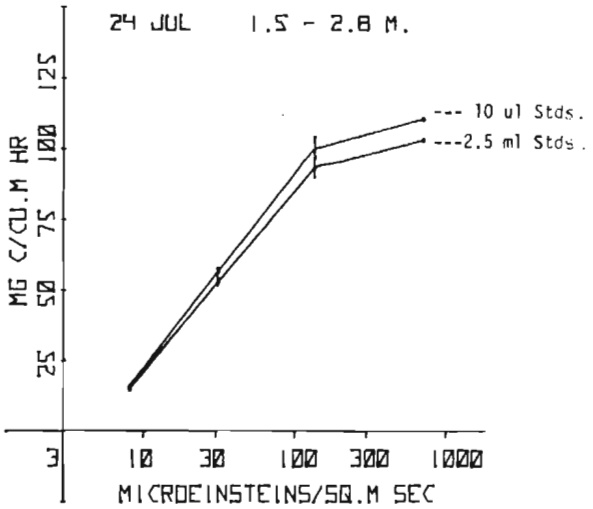

25 JUN 0.0 - 1.3 M.
Picker
NaHCO3enriched
MG C/CU.M HR
20
40
60
80
100
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

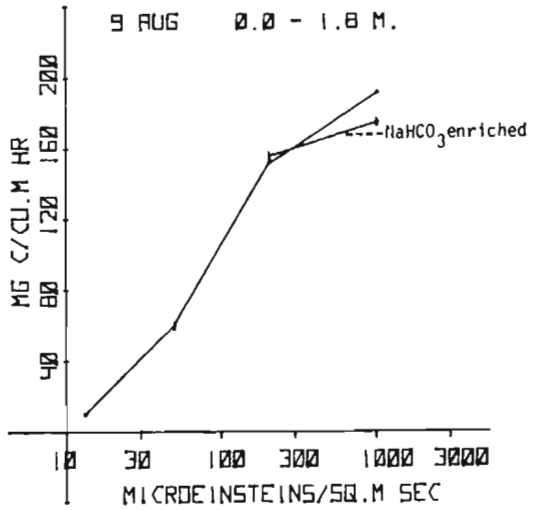

25 JUN 0.0 - 1.3 M.
Beckman
NaHCO3 enriched
MG C/CU.M HR
20
40
60
80
100
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

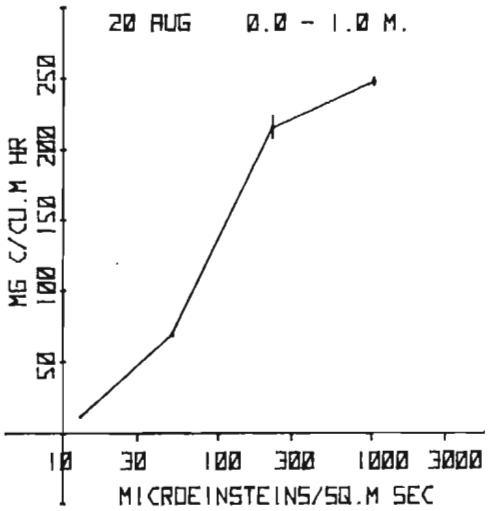

26 JUN 1.3 - 3.0 M.
Picker
Beckman
MG C/CU.M HR
15
30
45
60
75
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

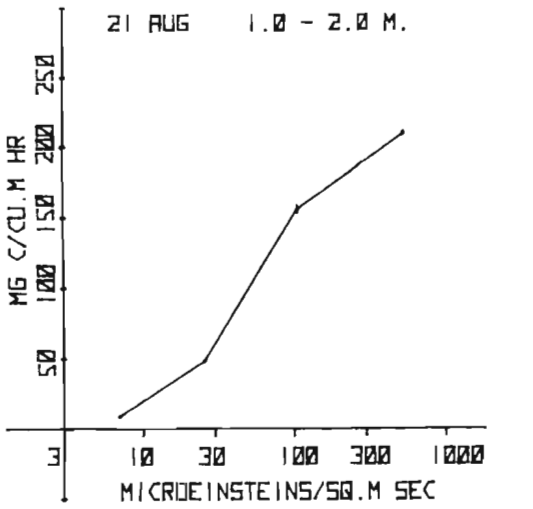
LAKE 227

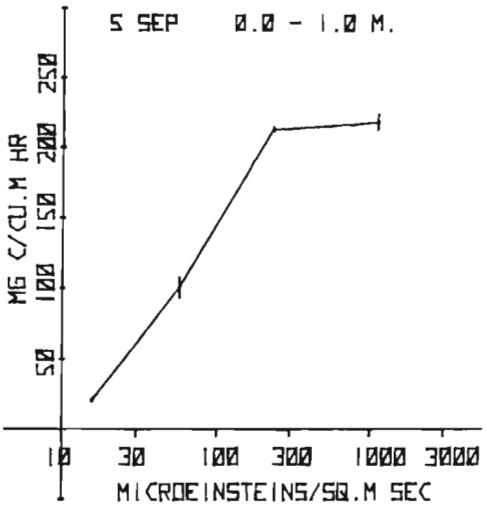

23 JUL 0.0 - 1.5 M.
--- 10 ul Stds.
---2.5 ml Stds.
MG C/CU.M HR
20 40 60 80 100
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC


24 JUL 1.5 - 2.8 M.
--- 10 ul Stds.
---2.5 ml Stds.
MG C/CU.M HR
25 50 75 100 125
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

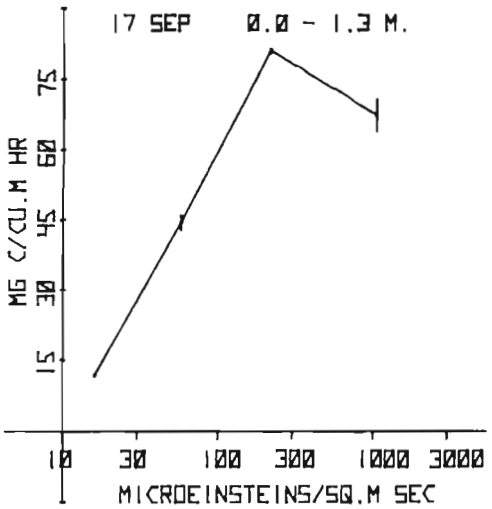

9 AUG 0.0 - 1.8 M.
---NaHCO3enriched
MG C/CU.M HR
40 80 120 160 200
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

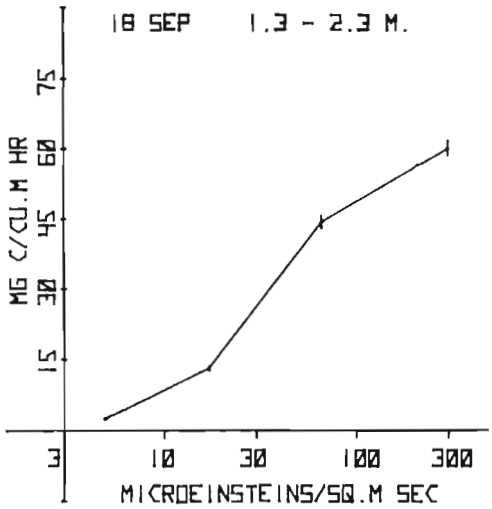

20 AUG 0.0 - 1.0 M.
MG C/CU.M HR
50 100 150 200 250
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

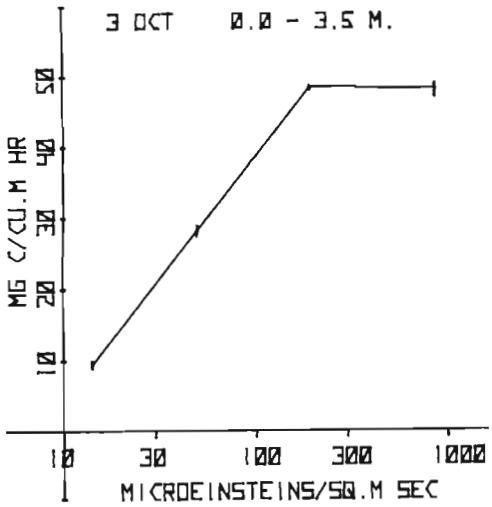

21 AUG 1.0 - 2.0 M.
MG C/CU.M HR
50 100 150 200 250
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

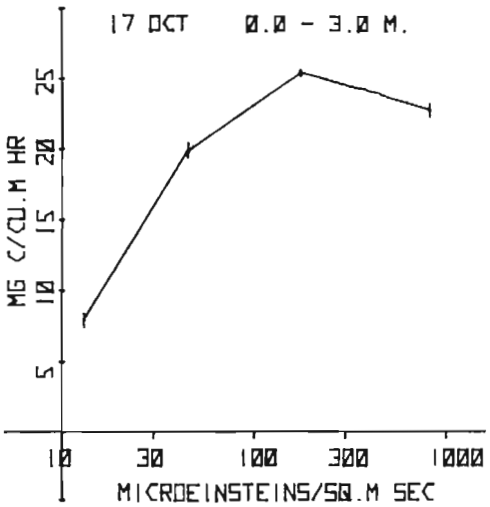

5 SEP 0.0 - 1.0 M.
MG C/CU.M HR
50 100 150 200 250
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

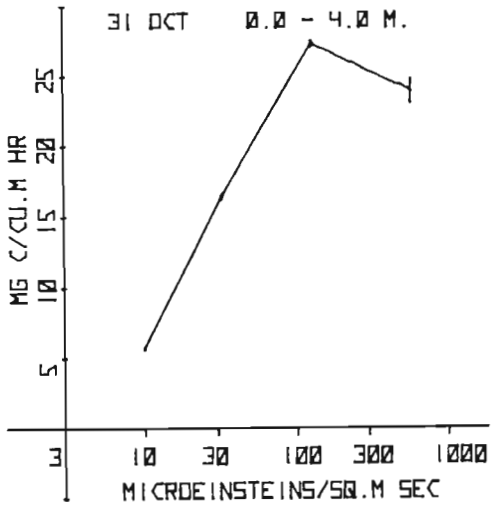
LAKE 227


17 SEP 0.0 - 1.3 M.
MG C/CU.M HR
15
30
45
60
75
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

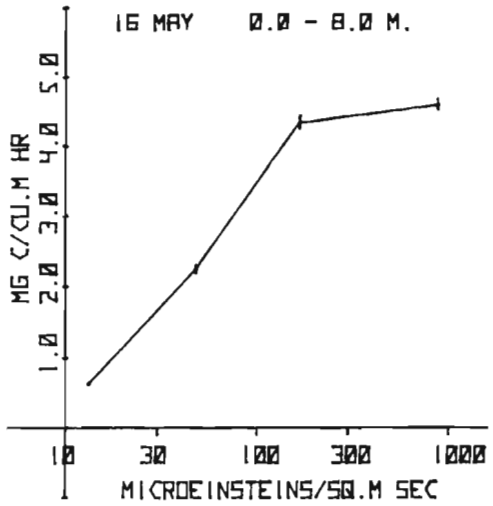

18 SEP 1.3 - 2.3 M.
MG C/CU.M HR
15
30
45
60
75
3
10
30
100
300
MICROEINSTEINS/SQ.M SEC

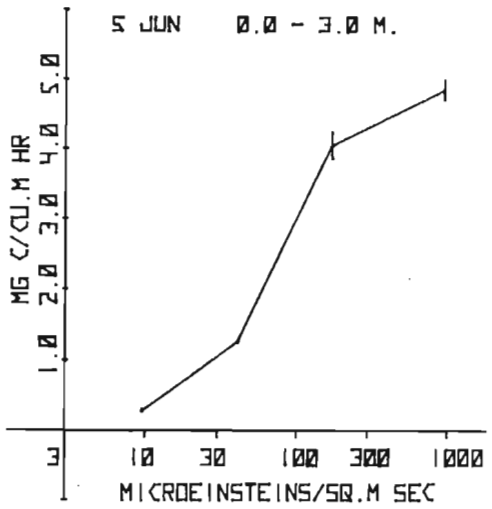

3 OCT 0.0 - 3.5 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

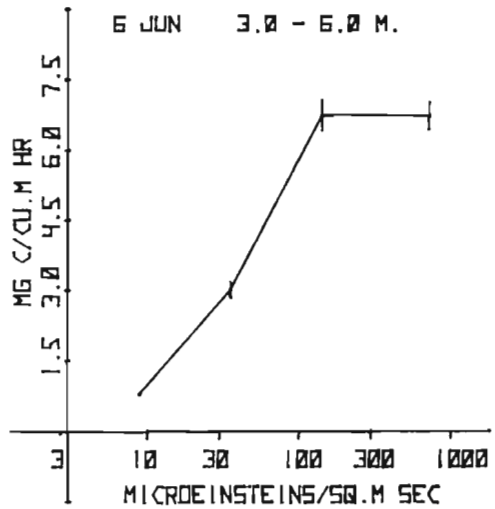

17 OCT 0.0 - 3.0 M.
MG C/CU.M HR
5
10
15
20
25
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

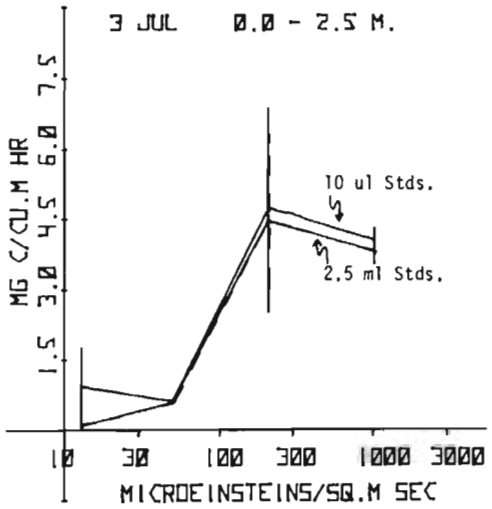

31 OCT 0.0 - 4.0 M.
MG C/CU.M HR
5
10
15
20
25
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

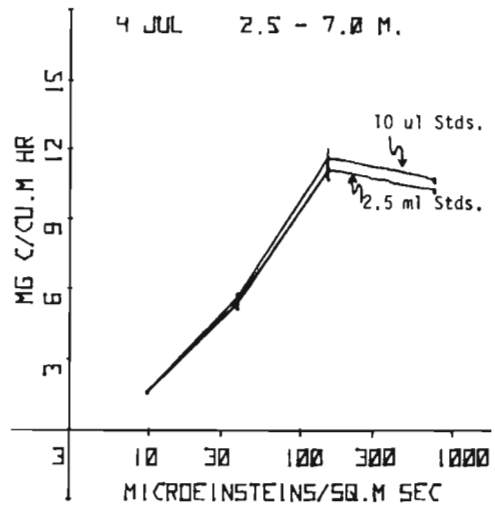
LAKE 239

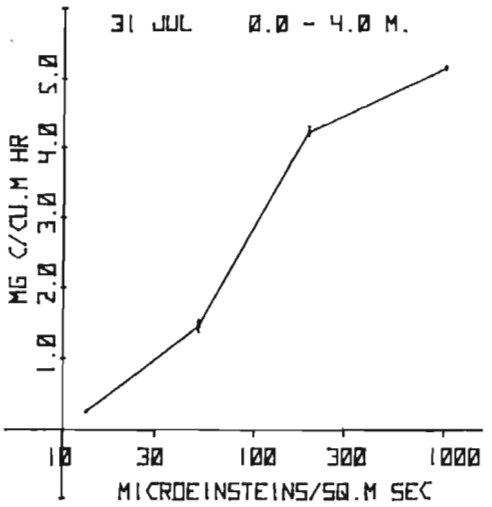

16 MAY 0.0 - 8.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


5 JUN 0.0 - 3.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

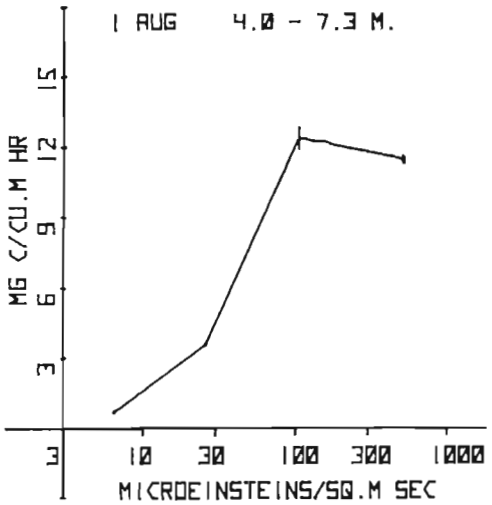

6 JUN 3.0 - 6.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

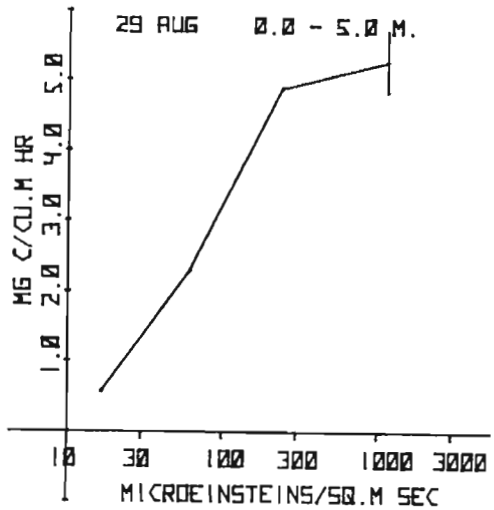

3 JUL 0.0 - 2.5 M.
10 ul Stds.
2.5 ml Stds.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

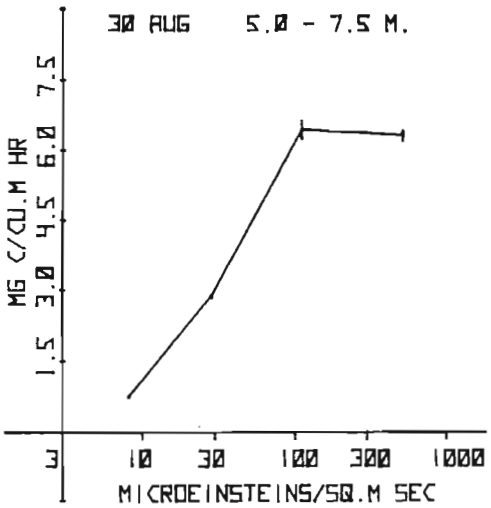

4 JUL 2.5 - 7.0 M.
10 ul Stds.
2.5 ml Stds.
MG C/CU.M HR
3 6 9 12 15
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

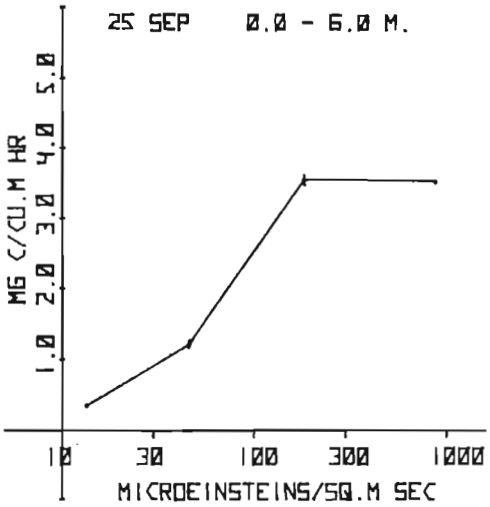

31 JUL 0.0 - 4.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

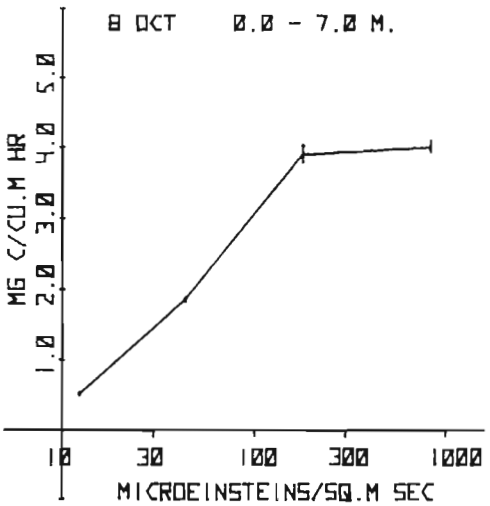
LAKE 239

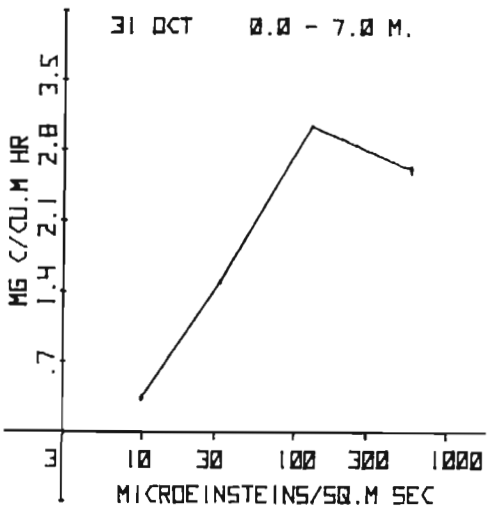

1 AUG 4.0 - 7.3 M.
MG C/CU.M HR
3 6 9 12 15
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


29 AUG 0.0 - 5.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

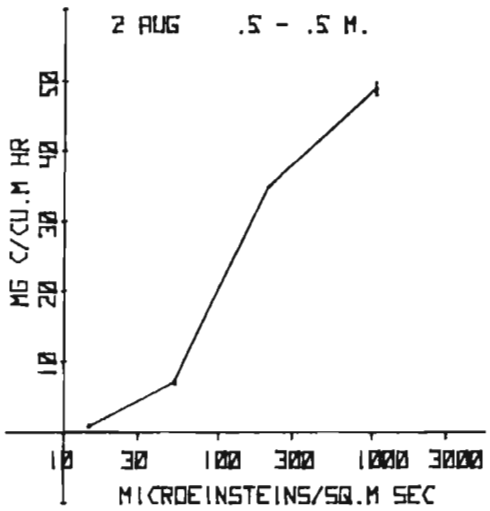

30 AUG 5.0 - 7.5 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


25 SEP 0.0 - 6.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

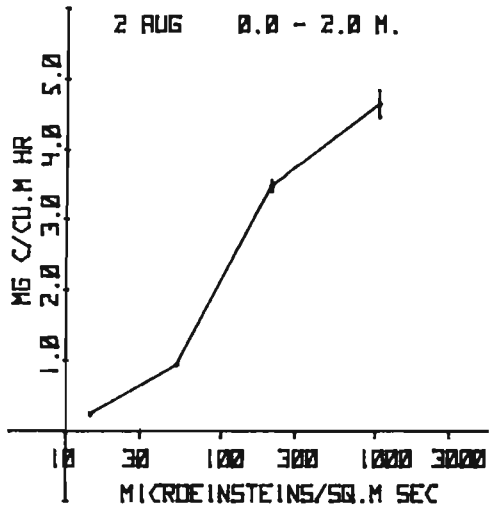

8 OCT 0.0 - 7.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


31 OCT 0.0 - 7.0 M.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

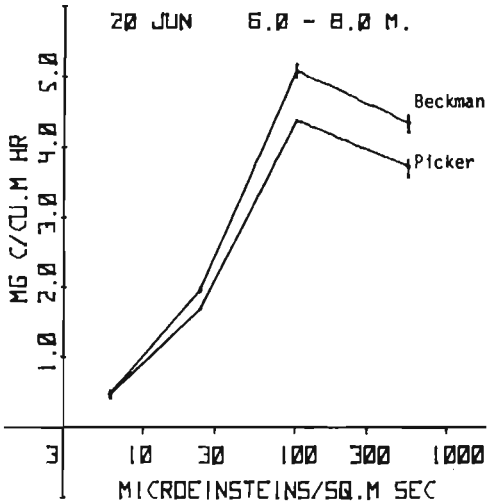
LAKE 303

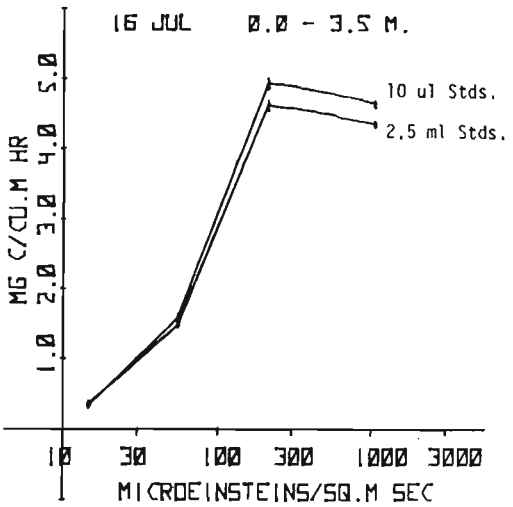

2 AUG .5 - .5 M.
MG C/CU.M HR
10
20
30
40
50
10
30
100
300
1000
3000
MICROEINSTEINS/SQ.M SEC

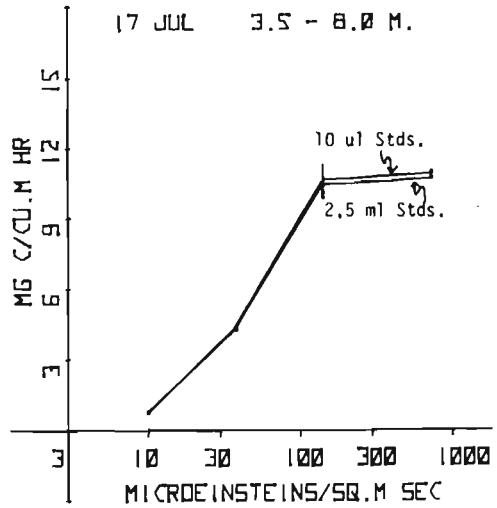
LAKE 304

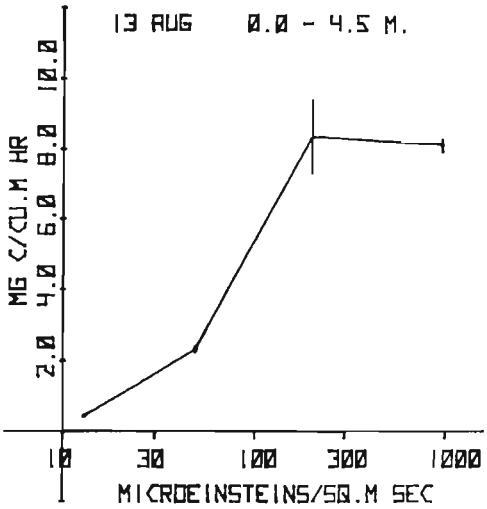

2 AUG 0.0 - 2.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

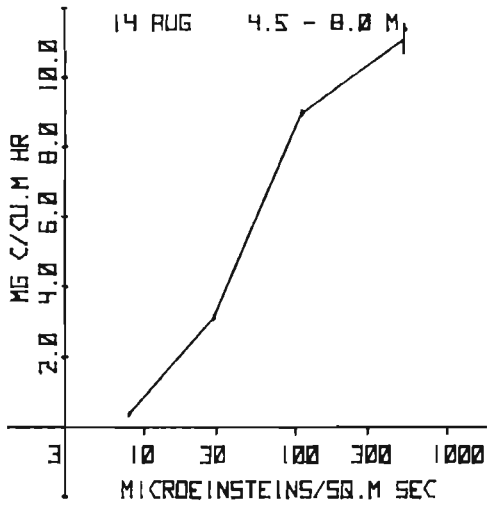
LAKE 382

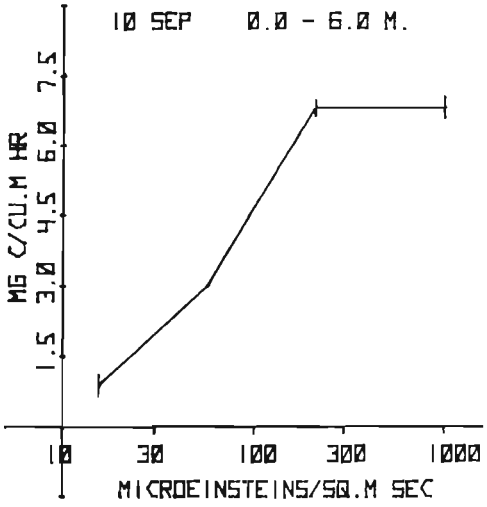

20 JUN 6.0 - 8.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
Beckman
Picker
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


16 JUL 0.0 - 3.5 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 ul Stds.
2.5 ml Stds.
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

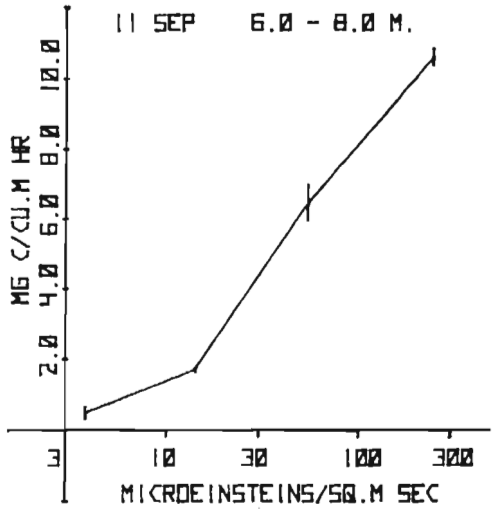

17 JUL 3.5 - 8.0 M.
MG C/CU.M HR
3 6 9 12 15
10 ul Stds.
2.5 ml Stds.
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

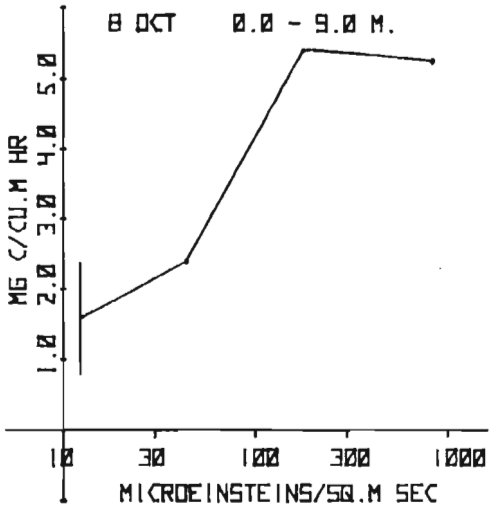

13 AUG 0.0 - 4.5 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

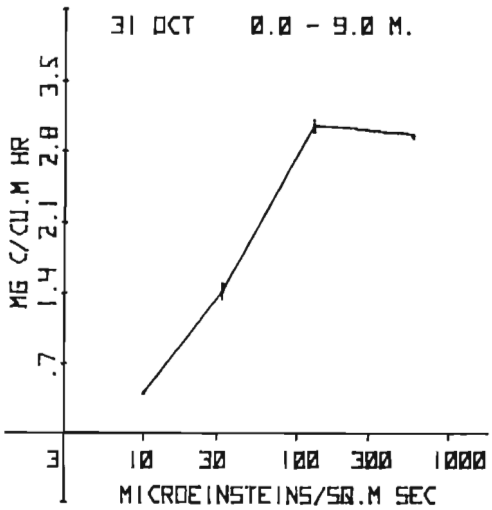

14 AUG 4.5 - 8.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


10 SEP 0.0 - 6.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

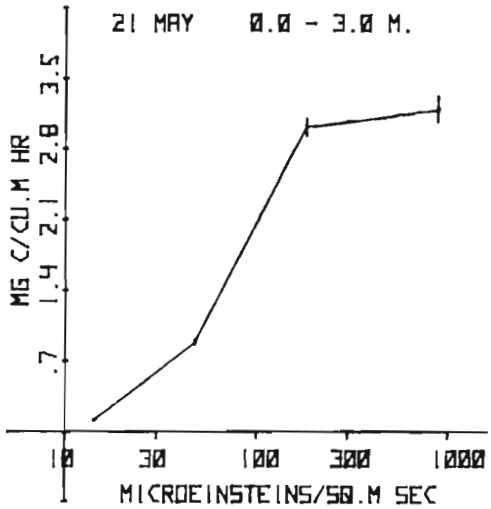
LAKE 382

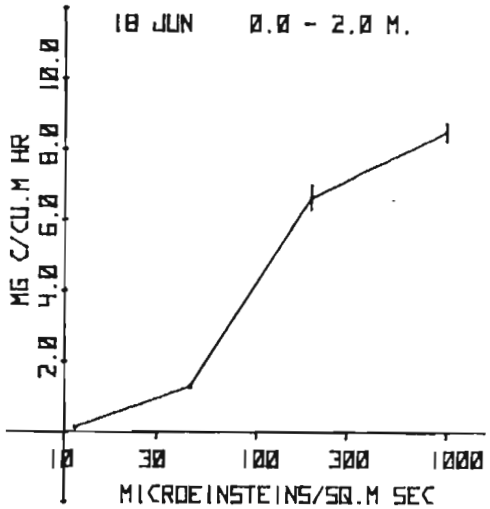

11 SEP 6.0 - 8.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300
MICROEINSTEINS/SQ.M SEC

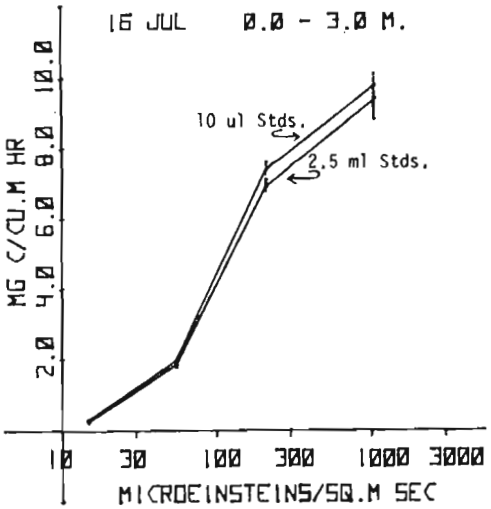

8 OCT 0.0 - 9.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

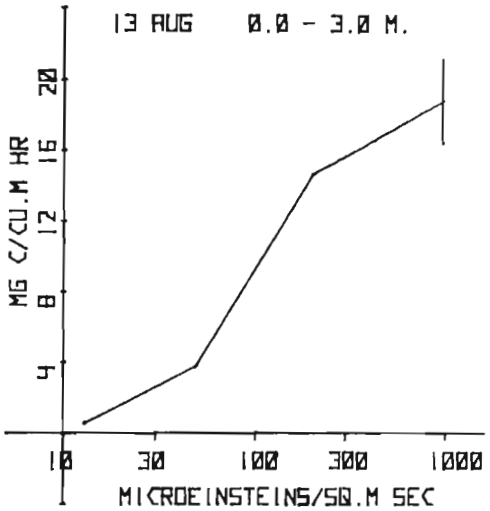

31 OCT 0.0 - 9.0 M.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

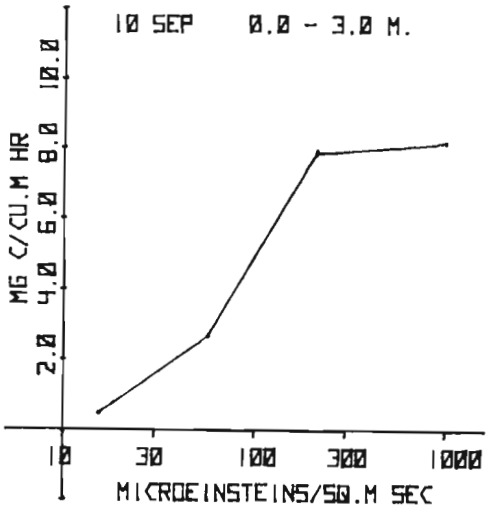
LAKE 382 Bay

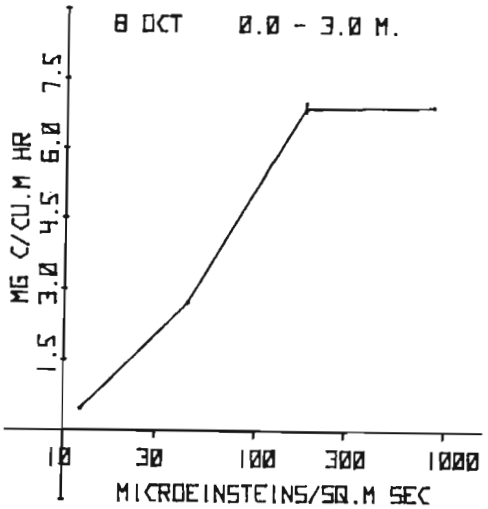

21 MAY 0.0 - 3.0 M.
MG C/CU.M HR
.7 1.4 2.1 2.8 3.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


18 JUN 0.0 - 2.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

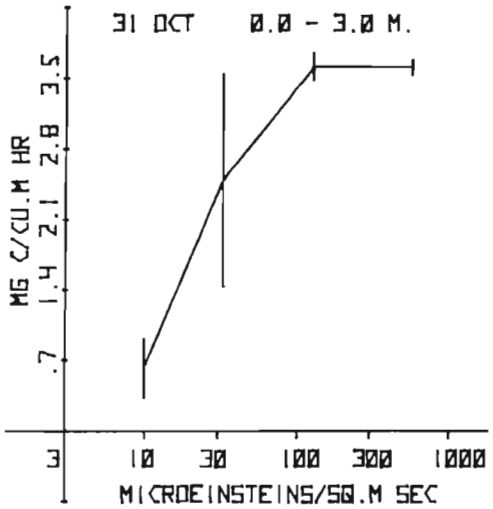

16 JUL 0.0 - 3.0 M.
10 ul Stds.
2.5 ml Stds.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC


13 AUG 0.0 - 3.0 M.
MG C/CU.M HR
4 8 12 16 20
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

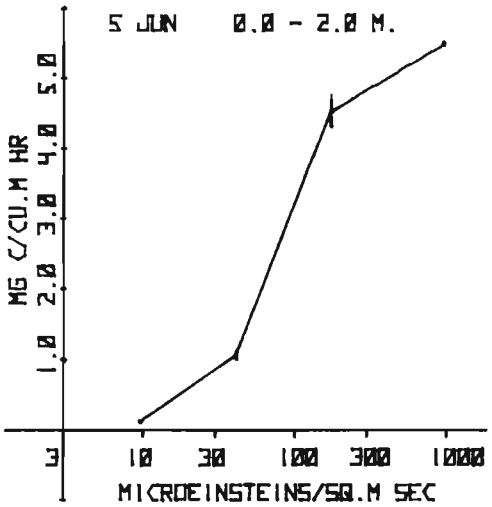

10 SEP 0.0 - 3.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

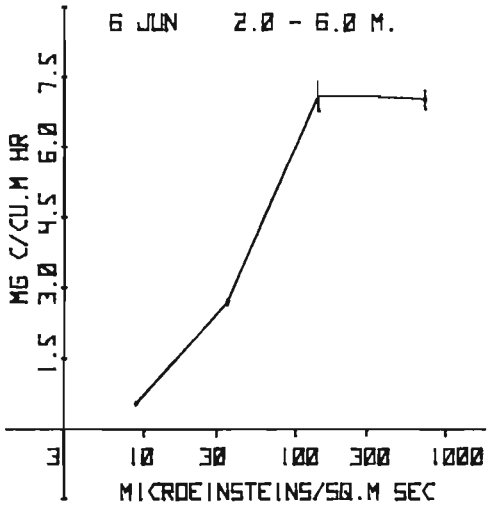

8 OCT 0.0 - 3.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

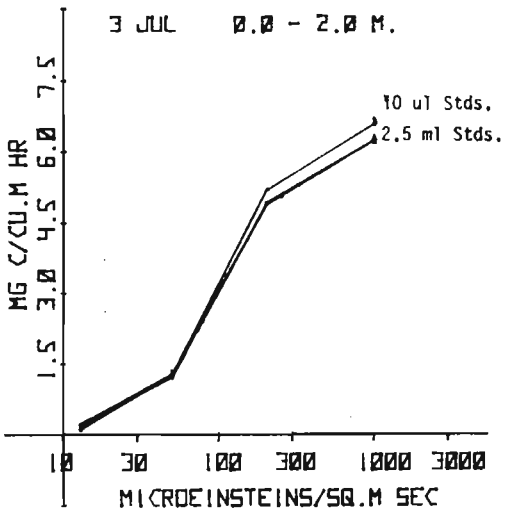
LAKE 382 Bay

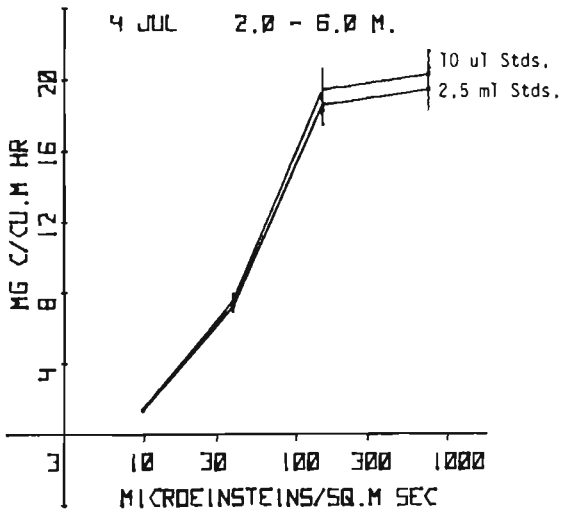

31 OCT 0.0 - 3.0 M.
MG C/CU.M HR
.7
1.4
2.1
2.8
3.5
3
10
30
100
300
1000
MICROEINSTEINS/SQ.M SEC

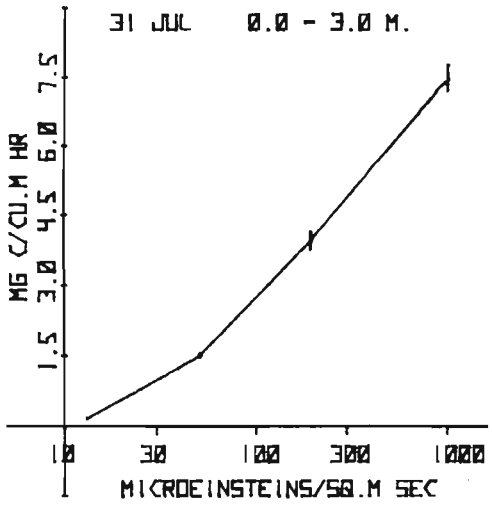
LAKE 383

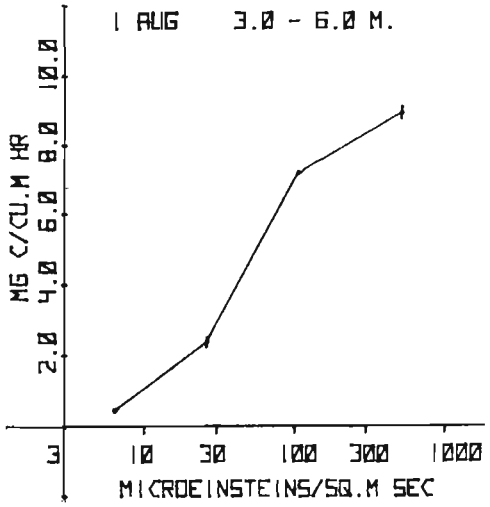

5 JUN 0.0 - 2.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


6 JUN 2.0 - 6.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

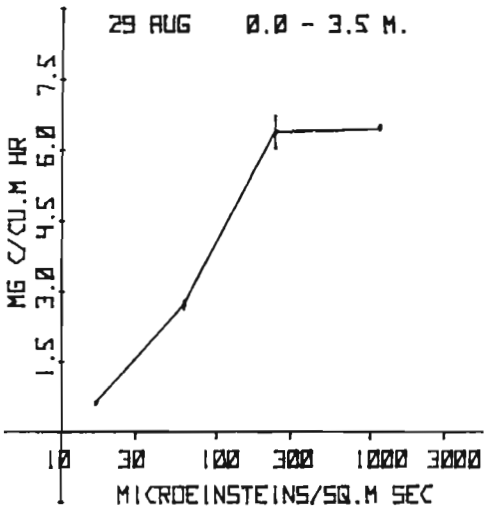

3 JUL 0.0 - 2.0 M.
10 ul Stds.
2.5 ml Stds.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC

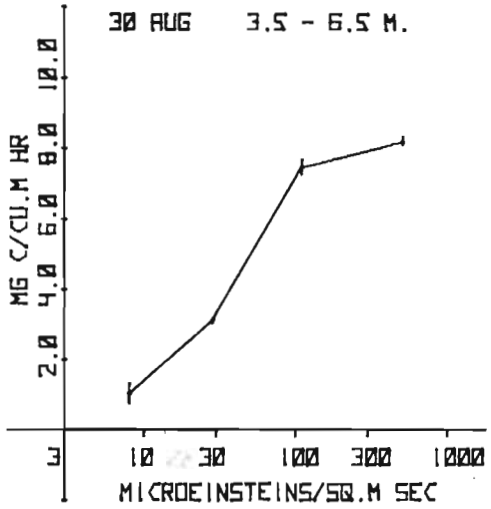

4 JUL 2.0 - 6.0 M.
10 ul Stds.
2.5 ml Stds.
MG C/CU.M HR
4 8 12 16 20
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

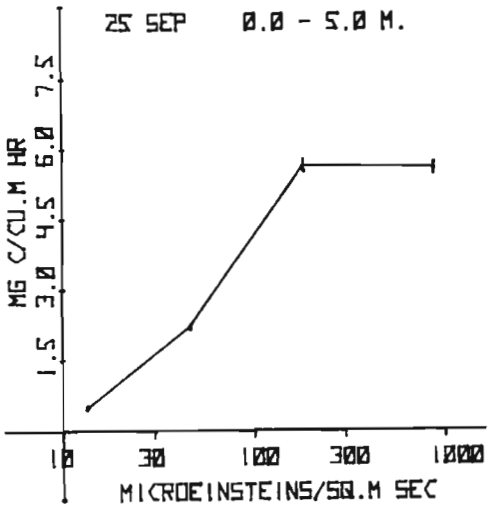

31 JUL 0.0 - 3.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

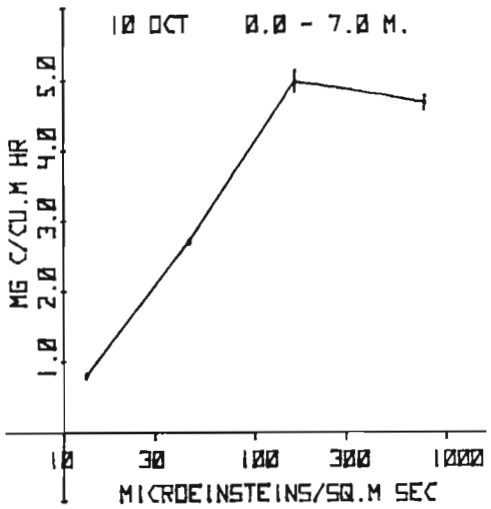

1 AUG 3.0 - 6.0 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC

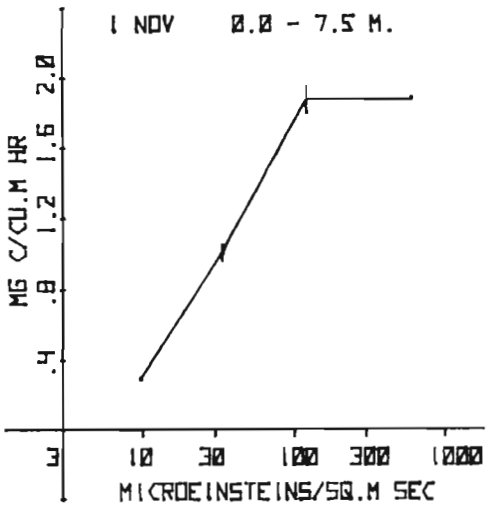
LAKE 383


29 AUG 0.0 - 3.5 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000 3000
MICROEINSTEINS/SQ.M SEC


30 AUG 3.5 - 6.5 M.
MG C/CU.M HR
2.0 4.0 6.0 8.0 10.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


25 SEP 0.0 - 5.0 M.
MG C/CU.M HR
1.5 3.0 4.5 6.0 7.5
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


10 OCT 0.0 - 7.0 M.
MG C/CU.M HR
1.0 2.0 3.0 4.0 5.0
10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC


1 NOV 0.0 - 7.5 M.
MG C/CU.M HR
.4 .8 1.2 1.6 2.0
3 10 30 100 300 1000
MICROEINSTEINS/SQ.M SEC