Precipitation and Water Chemistry at Saqvaqjuac, N.W.T. (63°40′N, 90°40′W) 1977 Data

L. de March and D.G. Rudy

Western Region
Fisheries and Marine Service
Department of Fisheries and the Environment
Winnipeg, Manitoba R3T 2N6

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Fisheries and Marine Service

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PRECIPITATION AND WATER CHEMISTRY AT SAQVAQJUAC, N.W.T. (63°40'N, 90°40'W): 1977 DATA

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ABSTRACT

de March, L. and D. G. Rudy. 1978. Precipitation and water chemistry at Saqvaqjuac, N.W.T. (60°39'N, 90°39'W): 1977 data. Can. Fish. Mar. Serv. Data Rep. 104: iv + 8 p.

A number of chemical analyses were performed on samples from all major precipitation events and on samples taken periodically from four lakes and a few streams. This report presents the data obtained.

Key words: water analysis (chemical); precipitation (chemistry); lakes; Arctic.

RESUME

de March. L. and D. G. Rudy. 1978. Precipitation and water chemistry at Saqvaqjuac, N.W.T. (60°39'N, 90°39'W): 1977 data. Can. Fish. Mar. Serv. Data Rep. 104: iv + 8 p.

Le présent rapport fournit les données recueillies au cours d'un certain nombre d'analyses chimiques des échantillons de toutes les principales précipitations et des échantillons prélevés périodiquement dans quatre lacs et quelques cours d'eau.

Mots-clés: analyse (chimique) de l'eau; précipitation (analyse chimique); lacs; Arctique.

INTRODUCTION

This report is the first presentation of water and precipitation chemistry data from Saqvaqjuac. Saqvaqjuac is a Fisheries and Marine Service field camp at 60°39'N Latitude and 90°39'W Longitude (Fig. 1) which was set up in May 1977 to carry out research on the effects of industrial developments in northern Canada on freshwater systems.

MATERIALS AND METHODS

FIELD METHODS

Rainwater was collected by a 0.25 m^2 acrylic funnel which drained into a 20 litre Nalgene^R carboy. Lakewater samples were taken with an opaque P.V.C. Van Dorn bottle and put into plastic bottles for immediate transportation to the laboratory.

LABORATORY METHODS

All methods were according to Stainton et al. (1977).

Analyses for pH, conductivity (Cond), biocarbonate (HCO_3), total dissolved inorganic carbon (ΣCO_3), ammonia (NH_3), nitrite (NO_2), nitrate (NO_3), soluble reactive and total dissolved phosphorus (SRP and TDP respectively), silicon (Si), and chlorophyll (Chl) were carried out at Saqvaqjuac. Analyses for dissolved organic carbon (DOC), particulate carbon (PC), total dissolved nitrogen (TDN), chloride (Cl), sulphate (SO_4), sodium (Na), potassium (K), magnesium (Mg), calcium (Ca), manganese (Mn), and iron (Fe) were carried out at the Freshwater Institute in Winnipeg, Manitoba.

RESULTS

Results are reported as follows. Specific conductance as μSiemens at 25°C, bicarbonate as $mg \cdot L^{-1}$, total dissolved inorganic carbon as μmoles $C \cdot L^{-1}$ dissolved organic carbon as μmoles $C \cdot L^{-1}$, particulate carbon as $\mu g \cdot L^{-1}$ ammonia, nitrite, nitrate, total dissolved and particulate nitrogen as $\mu g\ N \cdot L^{-1}$, soluble reactive, total dissolved and particulate phosphorus as $\mu g\ PO_4\text{-}P \cdot L^{-1}$, $\mu g\ P \cdot L^{-1}$ and $\mu g\ P \cdot L^{-1}$ respectively, Silia as $\mu g\ Si \cdot L^{-1}$ chloride as $mg\ Cl \cdot L^{-1}$, sulphate as $mg\ SO_4\text{-}S \cdot L^{-1}$ sodium, potassium, magnesium, calcium, manganese and iron as $mg \cdot L^{-1}$ and chlorophyll as $\mu g \cdot L^{-1}$.

The results are presented in the following six tables.

ACKNOWLEDGMENTS

We wish to thank the analytical laboratory of the Freshwater Institute under the supervision of M. J. Capel for many analyses.

REFERENCES

Stainton, M. P., M. J. Capel, and F. A. J. Armstrong. 1977. The chemical analysis of freshwater. 2nd ed. Can. Fish. Mar. Serv. Misc. Spec. Publ. 25: vi + 180 p.

Table 1. Chemical components of precipitation at Saqvaqjuac.

Date	pH	Cond.	HCO_3	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Am't cm
June 19-20	5.07	-	-	-	-	-	-	-	3040	-	-	64.9	-	-	-	-	-	-	-	-	-	-	0.152
June 20-21	4.49	-	-	-	570	59.1	-	-	310	24	1.0	1.8	2	-	10.0	2.2	5.58	0.16	0.63	0.34	<0.01	<0.04	1.143
June 21	4.13	35	-	-	-	85.0	-	-	560	-	-	5.5	-	-	-	-	-	-	-	-	-	-	
June 26	4.25	20	-	-	250	51.0	-	-	260	14	1.8	2.2	1	-	0.6	<0.2	0.21	<0.02	<0.01	0.05	<0.01	<0.04	1.680
June 28-29	4.50	106	-	-	810	-	-	-	640	122	-	11.4	4	-	-	-	-	-	-	-	-	-	0.071
June 29	-	-	-	-	-	-	-	-	490	-	-	6.2	-	-	-	-	-	-	-	-	-	-	0.025
July 9-10	4.58	25	-	-	1110	133.3	-	-	740	129	-	12.4	7	3	3.4	1.4	1.43	0.30	0.04	0.20	0.01	0.07	0.104
July 11	4.63	15	0.5	-	530	34.0	1.2	64.9	170	44	1.4	2.6	1	1	2.0	0.4	0.62	<0.02	0.01	0.05	<0.01	0.04	0.533
July 12	4.66	16	0.6	-	760	26.5	0.4	60.0	330	31	1.6	2.7	1	3	1.4	<0.2	0.73	0.02	0.03	0.29	<0.01	<0.04	0.533
July 13	4.60	13	-	-	640	40.8	0.5	30.5	260	50	1.9	3.0	4	2	1.2	<0.2	0.55	0.08	<0.01	<0.05	<0.01	<0.04	0.146
July 14	4.80	8	-	-	130	36.3	0.2	15.3	110	5	1.7	1.4	<1	1	<0.2	<0.2	0.02	<0.02	<0.01	<0.05	<0.01	<0.04	1.354
July 16	6.25	5	-	-	160	16.0	0.2	7.1	170	17	1.7	1.7	1	6	<0.2	<0.2	0.01	<0.02	<0.01	<0.05	<0.01	<0.04	0.658
July 17	5.15	6	-	-	950	22.7	-	-	150	144	-	2.2	8	-	-	-	-	-	-	-	-	-	0.048
July 27	4.73	14	-	-	540	142.7	0.7	29.8	240	51	14.5	20.6	3	3	-	-	0.16	0.08	<0.01	<0.05	<0.01	<0.04	0.184
July 30	4.90	16	-	-	1270	173.0	0.7	84.9	1090	168	3.1	5.3	11	4	1.8	<0.2	0.75	0.29	<0.01	<0.05	<0.01	<0.04	0.330
July 31	4.93	6	-	-	260	21.6	0.6	10.8	130	40	0.6	3.2	2	17	-	-	0.20	<0.02	<0.01	<0.05	<0.01	<0.04	0.208
Aug. 1	5.08	7	-	-	40	-	-	-	-	6	-	7.1	-	-	-	-	-	-	-	-	-	-	0.032
Aug. 3	4.72	18	-	-	-	46.1	0.4	9.9	190	-	2.3	3.0	-	-	-	-	1.31	0.02	<0.01	0.05	<0.01	<0.04	0.128
Aug. 4	5.10	17	-	-	140	16.2	0.5	12.2	160	<4	-	-	1	2	3.4	<0.2	-	-	-	-	-	-	0.168
Aug. 5	4.81	10	-	-	450	-	-	-	280	91	-	2.2	0	-	1.6	<0.2	-	-	-	-	-	-	0.043
Aug. 6	4.81	15	-	-	-	48.3	-	7.8	350	-	-	13.9	0	-	1.8	<0.2	-	-	-	-	-	-	0.084
Aug. 7	4.45	14	-	-	430	50.9	0.5	48.3	350	48	3.7	3.2	0	3	1.0	<0.2	-	-	-	-	-	-	0.167
Aug. 12	4.71	42	-	-	910	-	-	-	45	450	-	-	4	-	11.2	1.4	-	-	-	-	-	-	0.041
Aug. 17-18	4.71	91	-	-	-	-	-	-	-	-	-	-	4	-	23.2	3.0	12.70	0.45	1.31	0.59	0.01	0.04	0.032
Aug. 18-19	4.85	28	-	-	640	-	-	66.7	-	94	-	8.9	2	4	5.6	0.4	3.03	0.33	0.20	0.14	0.01	<0.04	0.088
Aug. 20-21	4.95	15	-	-	-	-	-	-	-	-	-	-	-	-	3.4	<0.2	1.78	0.25	0.04	<0.05	0.01	<0.04	0.046
Aug. 21-22	4.72	17	-	-	-	-	-	-	-	-	-	-	-	-	3.9	0.4	1.61	0.27	0.13	0.55	0.01	0.04	0.033
Aug. 26-27	5.01	39	2.0	-	260	4.0	0.3	31.9	110	25	1.1	3.7	1	3	9.4	0.6	4.92	0.20	0.47	0.15	<0.01	<0.03	0.264
Aug. 30	4.21	72	-	-	750	-	-	-	-	97	-	-	-	-	13.2	3.8	7.70	<0.02	0.78	0.84	0.03	0.50	0.033
Sept. 1	4.49	18	-	140	270	36.0	-	45.2	230	17	0.0	0.4	1	3	3.6	0.2	1.83	0.12	0.13	0.50	<0.01	<0.03	0.600
Sept. 1-2	5.09	8	1.8	-	150	20.0	-	19.1	390	19	-	1.7	1	0	0.8	0.2	0.47	0.08	<0.01	<0.05	<0.01	<0.03	0.608
Sept. 4-5	5.61	39	-	-	-	-	-	-	-	-	-	-	-	-	8.0	1.0	4.01	1.78	0.27	0.40	<0.01	0.03	0.038
Sept. 9	6.84	29	-	250	-	-	-	-	790	-	-	7.4	-	-	7.0	0.6	3.44	0.76	0.25	0.25	<0.01	<0.03	0.072

Table 2. Chemical components of basin A of Lake 1 and of its outflow.

Date and Depth	O_2	pH	Cond.	HCO_3	ΣCO_2	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Chl
June 18																									
1.0	13.6	6.90	-	20.4	346	-	400	0.00	-	-	200	37	-	1.45	3	-	6.6	2.4	4.01	0.68	1.15	4.79	0.33	<0.04	2.00
3.0	14.0	6.95	-	23.2	371	-	420	0.00	-	-	220	45	-	2.25	3	-	7.0	2.4	4.44	0.75	1.04	5.00	0.01	<0.04	2.04
5.0	14.2	7.23	-	27.2	383	-	340	0.00	-	-	160	38	-	1.29	3	-	7.2	2.2	4.53	0.77	1.20	5.21	0.01	<0.04	1.48
7.0	14.4	7.05	-	23.7	410	-	320	0.00	-	-	160	32	-	1.61	3	-	7.6	2.2	4.76	0.83	1.08	5.11	0.03	<0.04	1.80
10.0	15.1	7.03	-	24.8	420	-	280	0.00	-	-	150	29	-	1.61	3	-	8.0	2.2	4.99	0.85	1.14	5.42	0.01	<0.04	1.96
13.0	14.1	7.10	-	24.1	410	-	460	0.00	-	-	130	50	-	2.41	4	-	7.8	2.0	4.79	0.81	1.10	5.21	0.01	<0.04	3.28
July 5*																									
1.0	12.1	7.24	54	19.3	314	-	420	-	1.4	0.2	160	48	1.7	1.30	3	141	6.2	1.8	3.98	0.59	0.89	4.15	<0.01	<0.04	1.35
5.0	12.0	7.12	53	19.5	300	-	400	-	1.4	0.2	170	46	0.3	1.10	2	140	6.2	2.0	3.86	0.57	0.89	4.15	<0.01	0.04	1.36
9.0	12.1	7.15	53	19.5	299	-	390	-	1.3	0.2	170	50	1.1	1.50	3	139	6.2	2.0	3.86	0.55	0.85	4.29	<0.01	<0.04	1.41
13.5	12.0	7.10	52	19.5	328	-	400	-	1.3	0.3	150	43	1.7	0.80	3	138	6.2	1.8	3.85	0.57	0.94	4.29	<0.01	<0.04	1.52
July 22																									
1.0	-	7.07	49	17.6	355	-	280	0.00	0.1	0.0	220	35	0.3	1.30	3	149	6.4	1.8	3.87	0.57	0.71	4.57	<0.01	<0.04	1.08
4.0	-	7.01	47	16.6	345	-	320	0.00	0.2	0.1	380	43	0.3	1.90	3	149	6.4	1.8	3.85	0.59	0.70	4.57	<0.01	0.04	1.07
7.0	-	7.00	50	16.6	371	-	300	0.00	0.2	0.0	250	41	0.2	1.50	3	142	6.2	1.8	3.85	0.57	0.71	4.52	0.01	-	1.19
13.0	-	7.00	50	17.1	369	-	400	0.00	0.1	0.0	370	52	1.2	1.30	4	126	6.2	1.8	3.90	0.59	0.71	4.62	<0.01	0.04	3.11
Aug. 1																									
13.0	11.4	6.69	54	17.8	482	-	410	0.00	0.4	1.1	180	62	0.0	1.40	5	113	6.6	1.6	3.92	0.63	0.70	4.72	0.01	<0.04	3.88
Aug. 3																									
1.0	10.4	7.15	52	18.1	358	-	290	0.00	0.2	0.2	250	41	0.5	0.50	3	141	6.8	1.4	3.92	0.61	0.72	4.62	<0.01	<0.04	1.78
12.0	10.4	7.19	52	18.3	357	-	270	0.00	0.3	0.1	200	38	0.7	0.80	4	147	6.8	1.6	3.90	0.61	0.71	4.67	<0.01	<0.04	1.61
Aug. 18																									
1.0	10.4	7.29	53	18.4	347	-	340	0.00	-	0.0	170	53	-	1.46	3	164	6.6	1.6	3.98	0.55	0.94	4.94	0.01	<0.04	1.83
12.0	10.4	7.22	53	18.4	354	-	310	0.00	-	0.0	160	48	-	1.46	3	165	6.4	1.6	3.97	0.53	0.87	4.62	0.01	<0.04	1.56
Aug. 29																									
1.0	-	7.34	54	19.5	363	-	310	2.10	-	0.1	160	37	-	1.09	2	176	6.2	1.8	3.88	0.66	0.81	4.37	<0.01	<0.03	1.36
12.5	-	7.35	55	19.3	359	-	320	1.60	-	0.2	140	47	-	1.64	3	176	6.0	1.8	3.90	0.66	0.84	4.72	<0.01	<0.03	1.93
Sept. 10																									
1.0	-	7.10	58	19.3	363	175	300	0.87	-	0.77	210	37	-	1.39	3	175	6.2	1.8	3.94	0.70	0.86	4.52	<0.01	<0.03	-
13.0	-	7.37	57	19.3	364	165	260	1.50	-	0.24	170	33	-	1.39	3	178	6.4	2.2	3.91	0.68	0.85	4.57	<0.01	<0.03	1.10
Outflow																									
June 21	-	6.79	60	19.3	-	-	330	4.86	-	-	230	38	1.0	0.70	3	-	7.0	2.0	4.36	0.65	0.97	4.73	<0.01	<0.04	-
July 4	-	6.90	55	18.3	305	-	300	-	0.0	0.4	160	36	0.7	1.70	3	152	6.6	1.6	3.88	0.57	0.90	4.38	<0.01	<0.04	-
July 22	-	6.90	47	17.1	-	-	180	0.00	0.6	11.8	230	20	0.0	1.10	2	152	6.6	1.4	3.88	0.57	0.71	4.62	<0.01	<0.04	1.08
Aug. 3	-	6.92	52	18.6	205	-	260	1.30	0.4	11.9	200	35	0.4	0.0	3	142	6.6	1.4	3.90	0.61	0.69	4.67	<0.01	<0.04	1.37
Aug. 18	-	6.91	54	19.2	-	-	370	0.00	-	41.7	200	43	-	2.0	3	185	6.6	1.8	3.97	0.53	0.92	4.80	<0.01	<0.04	-

*NO_2 and NO_3 on July 8.

Table 3. Chemical components of Basin B of Lake 1.

Date and Depth	O_2	pH	Cond.	HCO_3	ΣCO_2	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Chl
June 21																									
1.0	10.9	6.33	18	4.8	101	-	320	0.80	-	-	240	39	0.0	0.70	2	-	1.6	<0.2	0.97	0.08	0.23	1.09	<0.01	<0.04	1.72
3.0	14.1	6.70	52	17.0	311	-	360	4.90	-	-	150	47	1.9	0.30	2	-	6.0	2.0	3.76	0.53	0.87	4.18	<0.01	<0.04	1.65
5.0	14.4	6.89	68	35.4	430	-	290	0.80	-	-	170	31	0.0	0.50	2	-	8.0	2.8	5.22	0.79	1.21	5.97	<0.01	<0.04	1.47
7.0	15.7	6.90	71	25.5	480	-	330	1.60	-	-	370	43	0.3	0.70	2	-	8.8	3.0	5.38	0.83	1.31	6.42	<0.01	<0.04	1.59
9.5	14.7	6.73	75	25.8	485	-	360	0.00	-	-	640	41	0.8	0.70	3	-	8.8	3.0	5.42	0.83	1.29	6.52	<0.01	<0.04	2.75
July 4[1]																									
0.0	12.5	7.02	52	18.4	305	-	300	-	-	-	200	63	1.2	1.00	3	157	6.4	1.6	3.94	0.57	0.86	4.18	<0.01	<0.04	1.25
1.0	12.6	7.00	52	18.4	293	-	330	-	1.0	0.3	290	45	0.9	1.00	3	157	6.4	1.4	3.94	0.57	0.90	4.38	<0.01	<0.04	1.32
3.0[2]	12.4	6.93	54	18.4	303	-	240	-	1.1	0.5	170	36	0.0	2.50	3	157	6.4	1.4	3.84	0.55	0.91	4.43	<0.01	<0.04	1.31
5.0	12.4	6.93	52	18.4	295	-	310	-	-	-	160	44	1.6	1.40	3	157	6.6	1.6	3.86	0.53	0.90	4.38	<0.01	<0.04	1.25
7.0	12.4	6.93	55	18.4	302	-	310	-	-	-	150	40	0.2	1.20	2	158	6.4	1.6	3.86	0.57	0.91	4.43	<0.01	<0.04	1.50
9.0	12.4	6.90	53	18.4	296	-	380	-	0.0	0.3	170	44	0.9	1.50	3	157	6.4	1.6	3.84	0.55	0.90	4.53	<0.01	<0.04	1.35
July 18																									
1.0	-	7.31	47	17.6	328	-	280	4.20	0.5	0.0	160	34	0.2	0.60	2	141	6.2	1.8	3.96	0.61	0.69	4.57	<0.01	<0.04	0.95
4.0	-	7.38	47	18.3	336	-	300	3.50	0.4	0.0	160	45	1.8	0.80	3	142	6.4	1.8	3.90	0.59	0.71	4.62	<0.01	<0.04	1.09
7.0	-	7.30	45	18.1	339	-	370	0.70	0.3	0.2	150	47	2.3	1.30	2	142	6.2	1.8	3.94	0.61	0.67	4.42	0.01	<0.04	1.25
8.5	-	7.20	46	18.1	353	-	440	0.70	0.3	0.0	150	59	0.7	0.90	4	127	6.2	1.8	3.88	0.59	0.69	4.67	<0.01	0.04	2.34
Aug. 1																									
1.0	10.2	6.90	53	18.3	408	-	340	0.00	1.8	0.7	190	48	0.0	1.40	3	157	6.6	1.6	3.93	0.59	0.71	4.81	<0.01	<0.04	1.52
4.0	10.3	6.93	52	18.6	407	-	370	0.00	1.1	0.8	300	47	0.0	2.20	3	154	6.6	1.4	3.89	0.61	0.73	4.67	<0.01	0.04	1.48
9.0	10.3	6.79	52	17.6	422	-	250	0.00	0.6	0.2	160	36	0.0	1.40	3	152	6.6	1.4	3.95	0.61	0.70	4.72	<0.01	<0.04	1.79
Aug. 17																									
1.0	10.4	7.21	53	14.8	286	-	350	3.6	0.1	0.0	240	49	-	1.47	3	174	6.6	1.8	3.96	0.53	0.91	4.90	<0.01	<0.04	1.34
9.0	10.5	7.20	53	14.6	283	-	330	1.4	0.1	0.1	270	46	-	2.48	3	179	6.4	1.8	3.94	0.53	0.85	4.62	0.01	<0.04	1.27
Aug. 29																									
1.0	-	7.32	56	19.6	366	-	300	1.6	-	0.0	140	33	-	1.27	2	181	6.2	1.8	3.91	0.68	0.84	4.77	<0.01	<0.03	1.36
9.0	-	7.42	55	19.5	356	-	330	0.5	-	0.1	140	44	-	1.45	3	184	6.2	1.8	3.90	0.66	0.84	4.87	<0.01	<0.03	1.63
Sept. 10																									
1.0	-	7.47	60	19.5	399	200	340	2.45	-	0.0	160	47	-	1.00	3	182	6.4	1.8	3.95	0.68	0.87	4.57	<0.01	<0.03	-
8.0	-	7.53	60	19.6	364	175	300	2.29	-	0.1	180	35	-	1.40	3	183	7.0	2.6	3.95	0.70	0.86	4.67	<0.01	<0.03	-

[1] NO_2 and NO_3 on July 8.

[2] NO_2 and NO_3 at 4 meters.

Table 4. Chemical components of Lake 3 and its outflow.

Date and Depth	O_2	pH	Cond.	HCO_3	ΣCO_2	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Chl a
June 21																									
1.2	11.1	6.83	46	18.6	330	-	420	0.0	-	-	350	41	1.8	1.2	3	-	5.8	2.8	4.03	0.77	1.15	5.08	<0.01	0.04	1.21
3.0	13.7	6.90	63	22.7	390	-	420	0.8	-	-	480	44	0.3	0.7	3	-	7.2	3.2	4.98	0.93	1.23	5.43	<0.01	<0.04	1.22
5.0	14.4	6.99	103	36.1	640	-	290	0.0	-	-	410	46	0.2	0.7	4	-	10.2	4.8	7.01	1.35	2.01	7.77	<0.01	<0.04	1.37
7.0	15.6	6.86	118	42.0	860	-	330	1.6	-	-	400	36	0.2	1.7	2	-	12.2	6.6	8.91	1.78	2.53	11.10	<0.01	<0.04	2.36
9.5	6.6	6.73	143	52.7	1320	-	350	0.0	-	-	470	46	0.6	1.7	4	-	15.2	7.6	11.10	2.02	3.17	13.00	<0.01	<0.04	3.06
July 4[1]																									
0.0	11.6	7.05	68	23.7	380	-	380	-	0.0	0.00	200	57	0.0	1.4	3	204	9.0	1.6	5.16	0.95	1.28	5.38	<0.01	<0.04	1.71
1.0	11.6	7.05	68	24.0	370	-	400	-	1.0	0.50	210	73	0.3	1.4	3	211	7.4	2.8	4.90	0.91	1.25	5.38	<0.01	<0.04	1.61
2.0	11.5	7.05	68	23.7	400	-	340	-	0.6	1.20	200	56	0.5	1.4	4	204	7.4	2.8	5.03	0.97	1.28	5.67	<0.01	<0.04	1.84
5.0	11.5	6.97	67	23.8	360	-	125	-	-	-	200	27	0.2	1.4	3	207	7.4	2.6	4.98	0.93	1.22	5.23	<0.01	<0.04	1.70
1.0	11.5	7.00	66	24.0	370	-	340	-	0.9	0.56	200	49	0.2	1.5	4	206	7.6	2.4	5.01	0.93	1.18	5.08	<0.01	<0.04	1.92
9.0	11.5	7.05	67	23.7	370	-	290	-	1.2	0.23	240	44	0.2	1.2	4	206	8.0	2.4	5.01	0.93	1.23	5.33	<0.01	<0.04	2.06
July 18																									
1.0	-	7.41	59	28.6	520	-	350	6.3	0.4	0.00	270	46	2.3	1.4	3	182	7.2	2.8	4.94	0.92	1.08	5.75	<0.01	<0.04	1.40
4.0	-	7.50	56	23.9	430	-	390	1.4	0.4	0.50	220	55	1.1	2.6	5	179	7.2	2.8	5.01	0.94	1.10	5.85	<0.01	0.04	2.15
7.0	-	7.51	55	24.4	440	-	330	6.3	0.4	0.40	210	44	0.5	1.1	-	182	7.2	2.8	4.91	0.92	1.09	5.80	<0.01	0.04	1.90
9.0	-	7.19	60	24.2	470	-	520	0.7	0.3	1.20	280	79	2.5	1.9	3	173	7.4	3.0	5.10	0.98	1.12	6.04	0.01	<0.04	4.35
Aug. 1																									
1.0	10.2	7.42	61	25.1	460	-	410	0.0	0.6	0.40	240	49	0.0	2.5	5	200	7.4	2.8	5.06	0.98	1.04	5.60	<0.01	<0.04	1.68
4.0	10.1	7.06	66	24.4	500	-	320	0.0	1.4	0.90	250	46	0.0	1.8	6	203	7.4	2.6	5.06	0.98	1.13	5.80	<0.01	<0.04	1.81
9.0	10.2	7.10	67	27.3	490	-	360	0.0	0.9	1.20	270	47	0.0	2.2	3	205	7.6	2.6	5.12	1.00	1.15	5.99	<0.01	<0.04	1.88
Aug. 17																									
1.0	10.4	7.21	66	23.8	459	-	440	4.3	0.2	0.00	220	54	-	1.5	3	246	7.6	3.0	5.15	0.88	1.43	6.54	<0.01	<0.04	1.95
8.0	10.4	7.31	70	21.0	393	-	460	3.6	0.1	0.00	230	58	-	1.5	3	240	7.6	3.0	5.13	0.88	1.41	6.50	<0.01	<0.04	1.72
Aug. 29																									
1.0	-	7.41	73	25.6	468	-	320	1.0	-	-	200	39	-	0.9	3	269	7.6	3.0	5.09	1.02	1.29	6.40	<0.01	<0.03	1.92
9.0	-	7.46	73	25.6	464	-	420	3.6	-	-	200	55	-	1.5	3	277	7.4	3.2	5.09	1.04	1.28	6.16	<0.01	<0.03	2.22
Sept. 10																									
1.0	-	7.30	60	26.2	475	240	340	3.4	-	0.17	270	38	-	2.6	3	291	7.4	3.0	5.15	1.08	1.29	5.86	<0.01	<0.03	-
8.0	-	7.28	60	26.9	481	235	310	2.6	-	0.00	220	37	-	1.4	3	291	7.2	3.0	5.14	1.08	1.21	5.61	<0.01	<0.03	-
Outflow																									
June 22	-	6.56	35	17.6	-	-	280	0.0	-	-	580	39	1.4	1.5	3	-	6.2	2.0	3.98	0.71	0.99	4.28	<0.01	<0.04	-
July 4	-	7.05	67	23.9	376	-	270	-	1.2	0.2	270	47	1.0	1.7	4	194	7.6	2.4	4.89	0.91	1.30	5.58	<0.01	<0.04	-
July 18	-	7.44	59	22.9	-	-	290	0.0	0.7	1.7	240	47	1.8	1.1	3	217	7.2	3.0	4.93	0.94	1.05	5.85	0.01	0.04	2.13
Aug. 1	-	7.01	67	27.3	-	-	350	0.0	2.9	0.4	260	42	0.0	1.8	4	252	7.4	2.8	5.04	0.98	1.15	5.94	<0.01	<0.04	-
Aug. 17	-	7.40	71	21.2	-	-	470	4.3	0.2	0.1	280	57	-	2.5	3	262	7.8	3.0	5.16	0.88	1.31	6.04	0.01	0.04	1.92

[1] NO_2 and NO_3 on July 8.
NO_2 and NO_3 at 4m.

Table 5. Chemical components of Lake 120 and its outflow.

Date and Depth	O_2	pH	Cond.	HCO_3	ΣCO_2	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Chl a
June 22																									
1.0	11.2	6.63	44	12.5	239	-	200	-	-	-	480	28	0.8	1.1	2	-	7.2	1.4	4.35	0.46	0.79	2.69	<0.01	<0.04	1.16
3.0	14.0	6.59	55	14.8	281	-	280	-	-	-	380	37	0.6	1.8	4	-	8.6	1.8	5.13	0.55	0.93	3.18	<0.01	<0.04	1.23
5.0	17.0	6.60	88	24.5	533	-	380	-	-	-	400	48	0.8	0.8	3	-	14.0	3.4	8.75	0.97	1.61	5.53	<0.01	<0.04	2.38
7.0	9.7	6.56	100	52.0	665	-	480	-	-	-	360	60	0.6	1.7	6	-	16.2	3.6	10.30	1.11	2.01	5.92	<0.01	<0.04	3.52
July 5[1]																									
1.0	12.1	7.24	55	15.9	233	-	360	-	0.7	0.3	220	51	0.4	2.2	4	54	8.6	1.8	5.18	0.55	0.96	3.12	<0.01	<0.04	0.91
4.0	12.0	7.12	56	15.6	234	-	360	-	0.8	0.4	160	47	1.1	1.3	4	54	8.6	1.8	5.17	0.55	0.94	2.98	<0.01	0.04	0.96
7.5	12.1	7.15	57	15.3	245	-	390	-	0.8	0.2	150	52	0.6	1.5	8	49	8.6	1.8	5.14	0.53	0.94	2.93	<0.01	0.04	1.36
July 22																									
1.0	-	7.01	51	14.1	294	-	270	6.00	0.2	0.0	220	38	0.9	4.3	5	65	8.6	1.6	5.21	0.59	0.78	3.39	<0.01	0.04	0.93
4.0	-	7.11	49	13.7	272	-	220	-	0.2	0.0	270	37	0.2	2.4	4	65	8.6	1.4	5.21	0.57	0.77	3.34	0.01	<0.04	1.05
7.0	-	7.10	45	14.6	294	-	320	-	0.2	0.0	230	51	0.2	2.2	8	56	8.8	1.4	5.27	0.61	0.79	3.34	<0.01	<0.04	1.95
Aug. 3																									
1.0	10.4	7.02	54	15.1	317	-	250	-	0.3	0.2	310	41	0.4	1.2	4	78	-	1.2	5.31	0.61	0.77	3.14	<0.01	<0.04	0.92
7.5	10.4	7.05	54	15.1	313	-	280	-	0.3	0.2	190	47	0.7	1.6	8	79	-	1.4	5.36	0.61	0.81	3.34	<0.01	<0.04	1.05
Aug. 18																									
1.0	10.2	7.18	55	15.9	309	-	320	-	-	0.0	210	60	-	2.5	6	87	9.0	1.4	5.36	0.53	0.97	3.52	0.01	<0.04	1.07
7.5	10.3	7.18	55	15.6	304	-	360	-	-	0.0	180	62	-	2.7	8	87	9.0	1.4	5.36	0.53	0.97	3.48	0.01	<0.04	1.13
Aug. 29																									
1.0	-	7.39	58	16.2	298	-	280	1.90	-	0.1	190	38	-	1.8	3	86	8.6	1.6	5.23	0.66	0.94	3.38	<0.01	0.03	1.52
7.5	-	7.39	58	16.3	299	-	280	3.50	-	0.2	170	43	-	1.6	6	89	8.8	1.4	5.28	0.66	0.95	3.48	<0.01	0.03	1.53
Sept. 10																									
1.0	-	7.33	56	16.4	311	185	250	0.20	-	0.0	170	32	-	2.2	5	82	9.0	1.6	5.33	0.70	0.96	3.62	<0.01	<0.03	1.70
7.0	-	7.32	56	16.5	315	235	280	1.70	-	0.0	200	40	-	1.8	4	82	9.0	1.6	5.33	0.68	0.95	3.52	<0.01	0.03	-
Outflow																									
June 22	-	6.73	48	12.9	-	-	230	-	-	-	290	33	0.3	1.1	2	-	7.8	1.4	4.62	0.48	0.87	3.08	<0.01	<0.04	-
July 5	-	7.04	55	15.6	234	-	310	-	1.3	0.2	270	37	0.6	1.5	3	55	8.6	1.8	5.28	0.57	0.93	2.98	<0.01	<0.04	-
July 22	-	7.01	49	13.2	-	-	210	0.70	0.3	0.3	190	29	0.2	2.0	2	64	8.8	1.4	5.19	0.57	0.77	3.34	<0.01	<0.04	1.16
Aug. 3	-	7.00	52	15.1	-	-	240	2.30	0.3	0.2	330	33	0.5	1.0	3	78	5.8	1.2	5.30	0.61	0.81	3.44	<0.01	<0.04	1.11
Aug. 18	-	7.28	55	15.2	-	-	300	4.51	-	0.0	180	54	-	2.7	3	81	9.0	1.4	5.33	0.51	0.91	3.34	0.01	<0.04	-

[1] NO_2 and NO_3 on July 8.

Table 6. Chemistry of miscellaneous waters in the Saqvaqjuac area.

	pH	Cond.	HCO_3	ΣCO_2	DOC	PC	NH_3	NO_2	NO_3	TDN	PN	SRP	TDP	PP	Si	Cl	SO_4	Na	K	Mg	Ca	Mn	Fe	Chl
Outflow of Lake 118																								
July 11[1]	6.86	37	11.7	-	-	190	2.3	0.2	3.9	170	23	0.2	0.60	2	220	4.2	1.8	2.53	0.51	0.69	2.63	<0.01	0.04	-
July 11[2]	6.95	39	12.7	-	-	150	0.1	0.3	6.0	140	18	0.1	0.30	1	215	4.2	1.8	2.61	0.53	0.69	2.73	<0.01	0.04	-
Inflows																								
Lake 1																								
June 22	6.60	53	14.4	255	-	590	0.0	-	-	210	99	0.9	2.60	6	-	3.2	0.8	2.06	0.46	0.53	3.73	<0.01	<0.04	-
July 12	7.13	115	65.7	-	-	310	2.5	0.4	3.8	190	32	1.6	1.80	1	2075	6.8	4.8	4.80	0.99	1.47	17.70	<0.01	<0.04	-
Lake 3																								
June 22	6.76	54	16.6	268	-	230	0.0	-	-	360	29	0.8	1.37	3	-	6.0	3.0	3.56	0.73	0.87	4.98	<0.01	<0.04	-
July 12	6.75	67	27.1	-	-	480	3.2	0.5	0.9	260	41	1.0	1.60	2	1326	6.6	3.6	4.48	0.81	1.27	6.78	<0.01	<0.04	-
Lake 118																								
July 11	6.69	38		-	-	210	8.4	9.1	0.3	180	21	0.8	0.90	1	228	3.8	1.8	2.35	0.48	0.63	2.24	<0.01	0.07	-
Lake 120																								
June 22	6.09	22	3.9	-	-	130	0.0	-	-	230	18	0.5	1.10	3	-	2.4	0.4	1.31	0.16	0.28	0.89	<0.01	<0.04	-
Others																								
Lake 83																								
Om-July 3	7.20	342	11.8	500	-	1780	-	-	-	220	342	0.5	3.60	23	455	91.0	9.2	47.80	2.22	6.75	9.68	<0.01	0.04	11.6
Saq. R.																								
Aug. 27	7.02	34	12.9	-	-	210	-	0.2	3.7	160	28	0.4	1.40	2	267	3.6	1.4	2.07	0.48	0.51	3.28	<0.01	<0.03	-
Stream at "Meadow Weir"																								
Aug. 27	7.62	339	147.8	-	-	50	3.2	0.2	0.0	220	7	0.5	2.00	1	3035	18.2	37.5	10.90	2.24	4.70	50.90	<0.01	0.03	-
Sept. 1	7.68	351	160.1	-	415	200	2.2	-	0.0	250	24	-	0.60	6	2870	19.2	36.0	10.10	2.42	4.85	53.70	<0.01	0.03	-

[1] at lake
[2] at sea

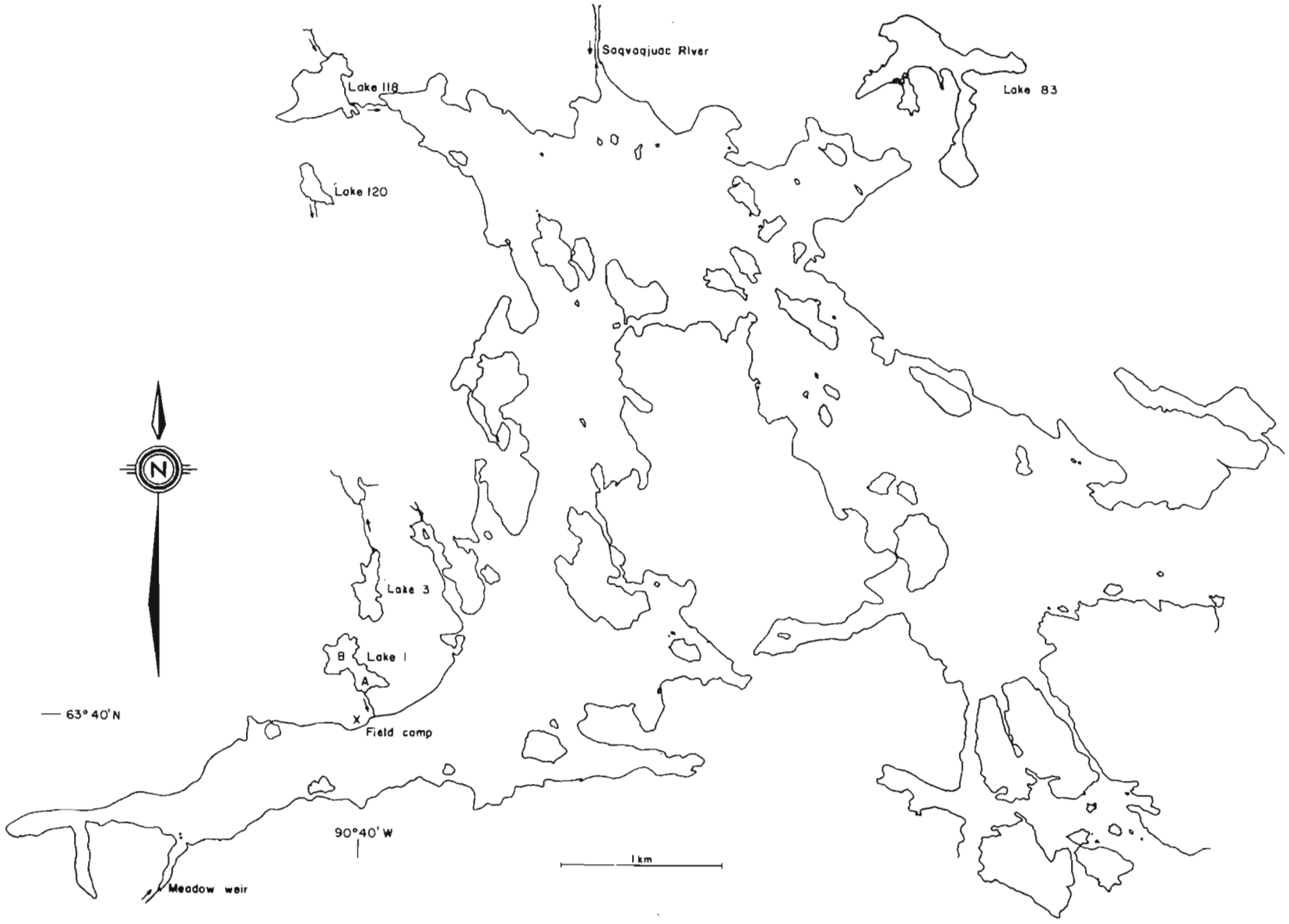

Fig. 1. A map of the Saqvaqjuac area showing only the lakes and streams sampled and reported on in this report.