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GEOCHEMICAL DATA: BAIE DES CHALEURS

by

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ABSTRACT

This report is a compilation of the geochemical data obtained for water and sediments from Baie des Chaleurs collected May 12-15, 1974.

RESUME

Ce rapport contient des données géochimiques pour l'eau et les sédiments de la Baie des Chaleurs obtenues du 12 au 15 mai 1974.

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INTRODUCTION

This report is a compilation of the geochemical data for water and sediment samples obtained from Baie des Chaleurs, May 12-15, 1974 (C.S.S. DAWSON Cruise 74-013). Part of the purpose for collecting the data was to study the geochemical interactions that occur between the solid and liquid phases and to examine the models for metal dispersion and accumulation in the marine environment as induced by nature and man.

METHODS

Water Sampling: Samples were pumped aboard from three levels at 24 locations except in cases where the water depth was less than 15 m. At these locations, only two levels were sampled. Twenty litres of sample were temporarily stored in 30.1 carboys from which subsamples were drawn off for shipboard analyses and for later analyses at land-based labs.

Attenuance: Light attenuance measurements were collected at each of the 24 locations using an in situ optical beam attenuance meter (Larsen, 1973). Attenuance profiles of the water column were obtained for six types of visible light (white, deep red, red, yellow, green and blue).

Sediment Sampling: Grab samples were obtained at each of the 24 locations using a Shipek and a Van Veen sampler. Subsamples were taken for subsequent geochemical and paleoecological analyses at the land labs.

Laboratory Methods (Water): Each of the 64 water samples was processed within an hour of its collection by a variety of techniques. Temperature was determined immediately on collection. A subsample was collected for salinity determination to be carried out in the salinity lab at B.I.O. Four litres of each sample was poisioned with 10^{-4} M sodium azide and returned to B.I.O. for analyses of 9 trace metals at natural pH and at pH 2.5 using chelation-solvent extraction and atomic absorption spectroscopy (Winters et al, 1973).

Alkalinity and pH determinations were obtained on all water samples using the method of Strickland and Parsons (1968). Total dissolved mercury was determined using the cold vapor atomic absorption method of Fitzgerald et al (1974). Both particulate and dissolved organic carbon (POC and DOC) collections were made at each station. POC was collected with 0.8 µm (pore diameter) silver filters. DOC subsamples were collected by retaining a 20 ml aliquot of the filtrate. These subsamples were returned to B.I.O. and analyzed for organic carbon using the method of Gordon and Sutcliffe (1973).

Major cations were determined in the water samples by direct aspiration atomic absorption. Copenhagen seawater was used as the standard. Its composition was initially determined by the method of standard additions.

The total concentration of suspended particulate matter (SPM) in the water samples was determined by filtration through 0.4 µm (pore diameter) Nuclepore filters that had been pre-weighed before the cruise. The filters were returned to land and analyzed gravimetrically and microscopically (Cranston and Buckley, 1972a).

Sewage bacteria (*E. coli*) were collected from 100 ml samples by filtration through 0.45 µm Millipore HA filters. Cultures were on M-Endo-MF broth medium for 24 hours at 33°C.

Laboratory Methods (Sediments): Approximately 100 g of wet sediment was sub-sampled from the surface layer of the Shipek grab sample. It was frozen in a sealed plastic bag and returned to B.I.O. for total organic carbon analyses using a Leco Carbon Analyzer and for total sulphur using a Leco Sulphur Analyzer. The latter were done by G.S.C. laboratories in Ottawa.

Metal analyses were done using three methods. Readily available metal was determined by using the acetic acid leach technique described by Cranston (1974). A second analyses was done using hydrogen peroxide as the leaching solution. The third technique used for metal analyses of the sediments was a total silicate method (Buckley and Cranston, 1971). Total mercury in sediments was determined by the cold vapor method (Cranston and Buckley, 1972b).

The water content was determined by drying a portion of the sediment at 60°C. The sediment size analyses was done by settling columns and centrifuging, with size ranges based on settling rate calculations.

EXPLANATION OF TABLES

Table 1 - The depth for water samples taken at the surface are listed as being at 1 metre. This is used to indicate that the sample is an average taken from 0 to 1 m.

Table 2 - The units for attenuance are absolute logrithmic values of the attenuation ratio, i.e. log (I/I_0). The letters 'w, dr, r, y, g and b" correspond to the color of the visible light that was used to obtain the attenuance values. They are white, deep red, red, yellow, green and blue respectively.

The abbreviations for suspended particulate matter, particulate organic carbon, and dissolved organic carbon are SPM, POC, and DOC respectively.

Table 3 - The notation "L pH" and "H pH" correspond to the pH conditions that were used during the analyses. "L pH" analyses were the low pH analyses that were done in an attempt to analyze the sample for total trace metal. "H pH" analyses were the natural or high pH analyses that were done in an attempt to analyze the sample at its natural pH condition. The difference between the two analyses is related to hydrolysis equilibria.

Table 4 - All total results are concentrations (%) in dry sediment, except in the case of water(%). This is the percent water present in the original wet sample.

Table 6 - This table contains results for five metals as determined by two leach methods. The "HAC" column represents the results of the weak acid or acetic acid lead. The "H2O2" column represents the results of the hydrogen peroxide leach. All results are in parts per million in dry sediment.

Table 7 - The results for the sediment size analysis are presented as percentages of a subsample that were found in each fraction.

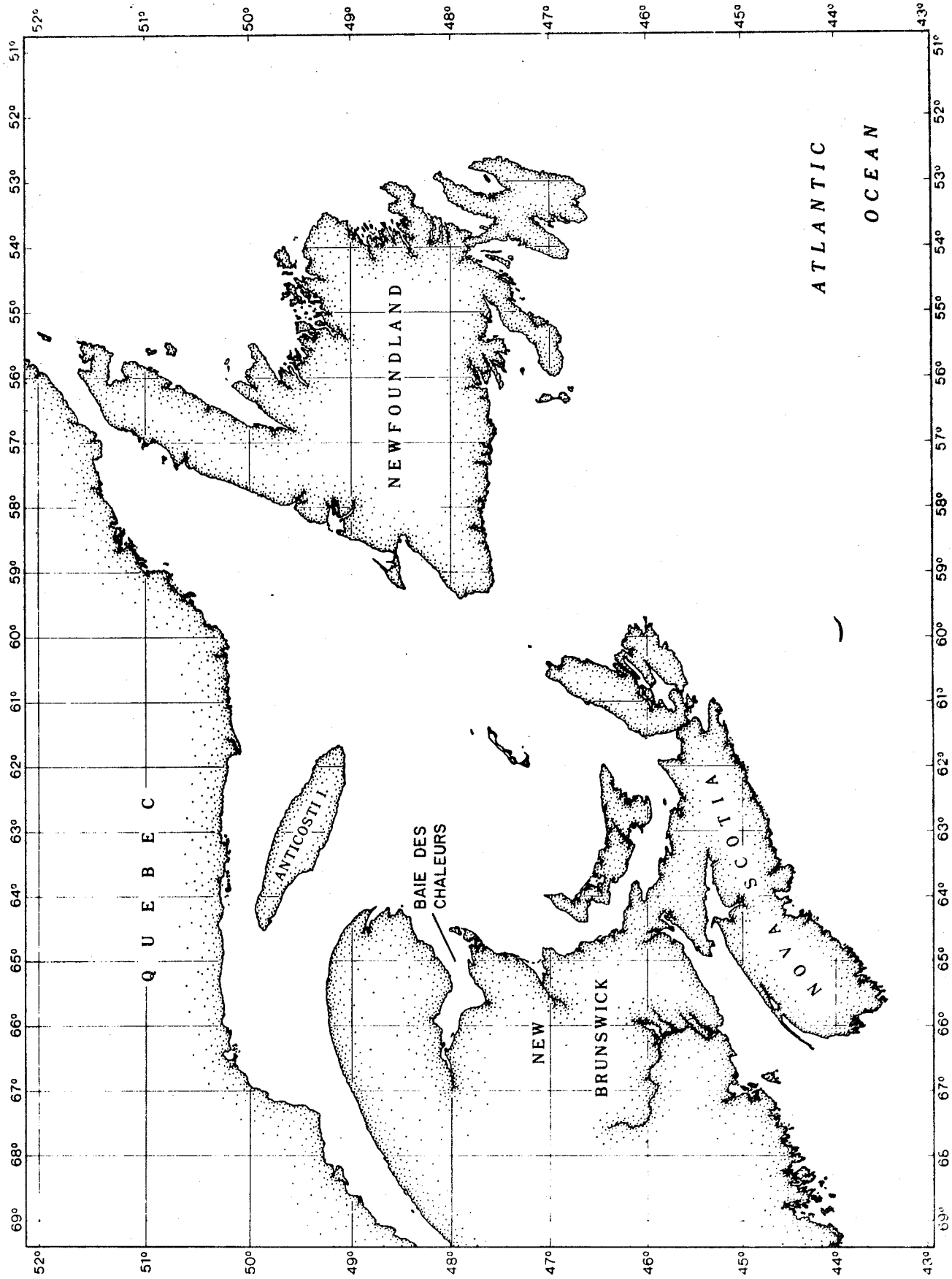

Figure 1 - Location of Study Area

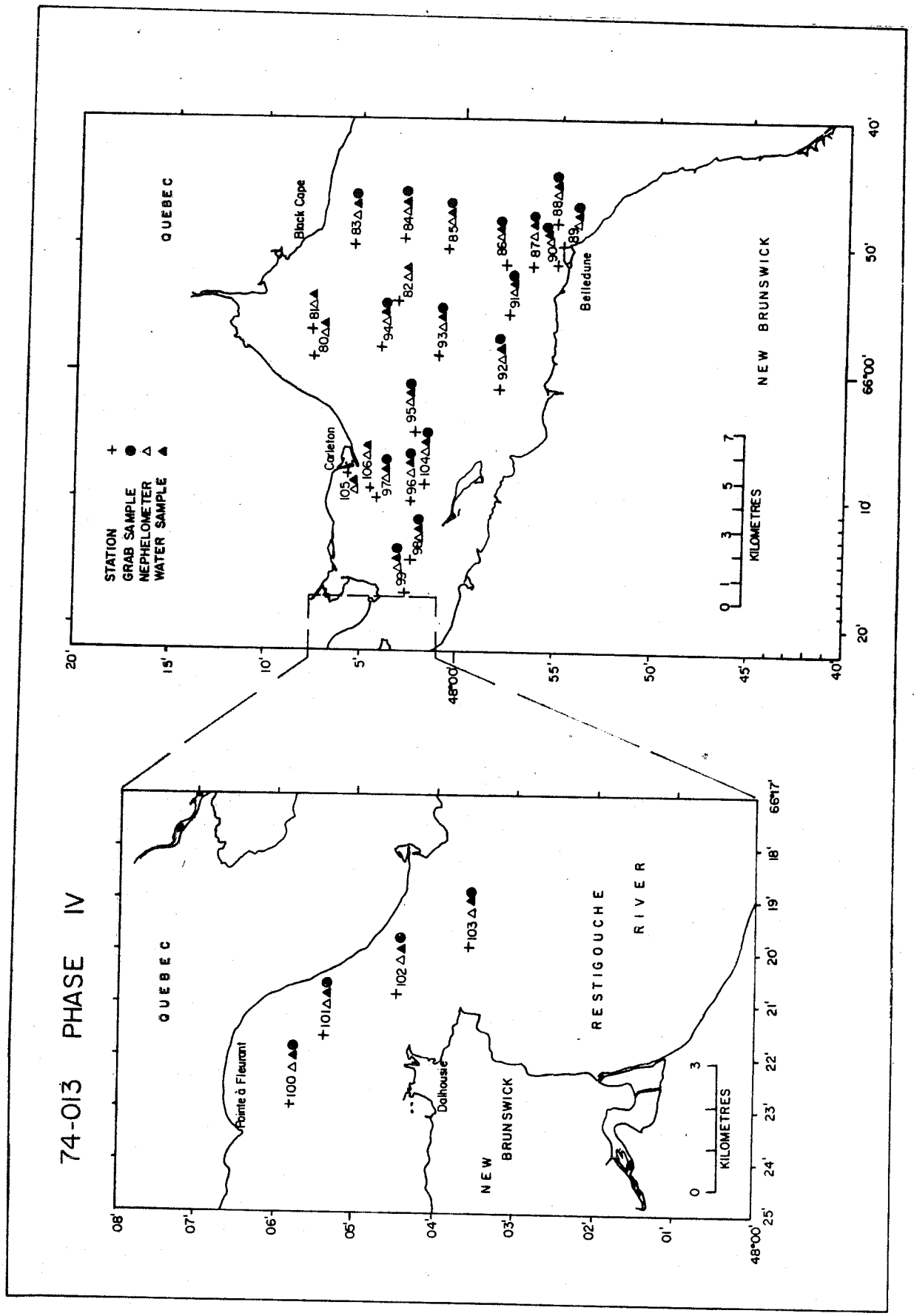

Figure 2 - Location of Stations in Study Area

TABLE R-1 - Analytical Precision and Detection Limits for Analyses of Water Samples

Measurement	Units	Precision (%)	Detection Limit
Temperature	°C	1	0.1
pH		2	0.1
Salinity	ppt	0.1	0.001
Alkalinity	meq/ℓ	5	0.05
Na	mg/ℓ	2	0.005
Mg	"	2	0.001
Ca	"	2	0.002
K	"	2	0.005
Si	"	15	0.5
Li	"	5	0.005
Sr	"	5	0.01
Attenuance	absolute	2	0.2
SPM	mg/ℓ	10	0.2
POC	"	10	0.2
DOC	"	10	0.2
Bacteria	colonies/100 ml	20	
Hg	(µg/ℓ)	10	0.01
Mn	"	7[1];6[2]	0.06
Fe	"	9;21	0.06
Zn	"	14;17	0.06
Cu	"	17;12	0.05
Cd	"	17;20	0.001

[1] Low pH analyses

[2] High pH analyses

TABLE R-2 - Analytical Precision and Detection Limits for Analyses of Sediment Samples

Measurement	Units	Precision (%)	Detection Limit
(leach analyses)			
Fe	ppm	5	10
Mn	"	5	5
Ca	"	10	5
Cu	"	15	0.1
Zn	"	10	0.5
(total analyses)			
Water, Si, Al	%	5	0.1
Fe	"	5	0.01
Ca, Org. Carbon, S	"	10	0.01
Na, Mg, K	"	10	0.1
Size analyses	"	15	1
Zn	ppm	10	20
Cr	"	15	10
Hg	"	10	0.01
Sr	"	10	10
Li	"	10	10
Mn	"	10	10
Co	"	20	20
Ni	"	20	20
Cu	"	15	10

TABLE L-1 - Location of Sample Stations

Station Number	Latitude	Longitude
80	48° 07.7'	65° 56.9'
81	48 08.1	65 57.6
82	48 07.5	65 55.0
83	48 06.0	65 49.9
84	48 02.9	65 49.7
85	48 00.9	65 50.1
86	47 57.8	65 51.2
87	47 56.4	65 51.4
88	47 54.9	65 48.2
89	47 54.9	65 49.8
90	47 55.2	65 51.4
91	47 57.5	65 55.2
92	47 58.2	66 01.4
93	48 01.1	65 58.8
94	48 04.4	65 58.8
95	48 02.6	66 04.5
96	48 02.6	66 10.2
97	48 04.4	66 09.9
98	48 02.4	66 14.4
99	48 02.6	66 17.2
100	48 05.8	66 22.9
101	48 05.4	66 21.6
102	48 04.5	66 20.8
103	48 03.6	66 19.9

TABLE 1 - MAJOR CHEMICAL AND PHYSICAL PARAMETERS IN WATER

STATION NUMBER	DEPTH (M)	TEMP (DEG C)	PH	SALINITY (PPT)	ALKAL (MEQ/L)	NA MG/L	MG (MG/L)	CA (MG/L)	K (MG/L)	SI (MG/L)	LI (MG/L)	SR MG/L
80	1	4.5E 00	8.3E 00	2.666E 01	2.32E 00	8.07E 03	8.96E 02	3.35E 02	3.06E 02	2.00E 00	1.50E-01	7.00E 00
80	8	3.8E 00	8.3E 00	2.864E 01	2.66E 00	8.20E 03	9.58E 02	3.55E 02	3.06E 02	1.70E 00	1.50E-01	7.40E 00
81	1	4.1E 00	8.3E 00	2.571E 01	2.34E 00	7.63E 03	8.37E 02	3.08E 02	2.67E 02	1.70E 00	1.30E-01	6.90E 00
81	9	3.0E 00	8.1E 00	2.861E 01	2.70E 00	9.59E 03	8.96E 02	3.35E 02	3.06E 02	1.50E 00	1.50E-01	7.30E 00
82	1	4.3E 00	8.2E 00	2.628E 01	2.68E 00	8.12E 03	8.90E 02	3.17E 02	2.96E 02	2.00E 00	1.40E-01	6.90E 00
82	11	3.1E 00	8.2E 00	2.906E 01	2.70E 00	9.15E 03	8.90E 02	3.39E 02	3.21E 02	2.00E 00	1.50E-01	7.40E 00
83	1	3.5E 00	8.2E 00	2.771E 01	2.33E 00	9.28E 03	9.46E 02	3.15E 02	3.06E 02	2.00E 00	1.50E-01	7.40E 00
83	10	3.0E 00	8.1E 00	2.917E 01	2.66E 00	9.30E 03	1.06E 03	3.26E 02	3.09E 02	2.20E 00	1.50E-01	7.20E 00
83	20	2.0E 00	8.0E 00	2.976E 01	2.67E 00	9.23E 03	1.06E 03	3.41E 02	3.06E 02	2.20E 00	1.60E-01	7.20E 00
84	1	3.5E 00	8.2E 00	2.864E 01	2.34E 00	8.32E 03	9.63E 02	3.28E 02	2.26E 02	2.20E 00	1.50E-01	7.60E 00
84	8	2.5E 00	8.2E 00	2.875E 01	2.34E 00	8.86E 03	1.00E 03	3.26E 02	3.21E 02	2.40E 00	1.50E-01	7.30E 00
84	24	2.0E 00	8.0E 00	3.023E 01	2.85E 00	9.93E 03	9.93E 02	3.33E 02	3.10E 02	2.60E 00	1.60E-01	7.40E 00
85	1	3.5E 00	8.3E 00	2.874E 01	2.22E 00	9.21E 03	9.46E 02	3.08E 02	3.07E 02	2.00E 00	1.50E-01	7.40E 00
85	15	2.0E 00	8.2E 00	3.000E 01	2.74E 00	1.00E 04	1.01E 03	3.44E 02	3.30E 02	2.00E 00	1.60E-01	7.40E 00
85	25	1.0E 00	8.1E 00	3.075E 01	2.25E 00	1.02E 04	1.04E 03	3.44E 02	3.06E 02	2.60E 00	1.70E-01	7.40E 00
86	1	3.0E 00	8.2E 00	2.815E 01	2.69E 00	9.08E 03	9.46E 02	3.26E 02	3.06E 02	2.00E 00	1.50E-01	7.40E 00
86	9	2.0E 00	8.2E 00	2.963E 01	2.71E 00	9.46E 03	1.01E 03	3.41E 02	3.33E 02	2.60E 00	1.70E-01	7.30E 00
86	20	1.0E 00	8.0E 00	3.061E 01	2.72E 00	9.35E 03	1.01E 03	3.44E 02	3.33E 02	1.60E 00	1.70E-01	7.50E 00
87	1	3.0E 00	8.2E 00	2.763E 01	2.34E 00	8.99E 03	9.46E 02	3.12E 02	2.91E 02	2.00E 00	1.50E-01	7.10E 00
87	6	2.0E 00	8.2E 00	2.933E 01	2.69E 00	8.58E 03	1.01E 03	3.33E 02	3.13E 02	2.00E 00	1.50E-01	7.30E 00
87	20	1.0E 00	8.1E 00	3.052E 01	2.70E 00	9.03E 03	9.46E 02	3.41E 02	3.28E 02	2.00E 00	1.60E-01	7.20E 00
88	1	2.5E 00	8.2E 00	2.543E 01	2.31E 00	8.37E 03	8.43E 02	2.92E 02	2.74E 02	2.20E 00	1.40E-01	5.90E 00
88	13	1.0E 00	8.0E 00	3.050E 01	2.70E 00	8.51E 03	1.01E 03	3.50E 02	3.21E 02	2.70E 00	1.60E-01	7.30E 00
89	1	3.5E 00	8.2E 00	2.238E 01	2.62E 00	7.43E 03	8.37E 02	2.55E 02	2.48E 02	2.00E 00	1.20E-01	5.20E 00

TABLE 1 - MAJOR CHEMICAL AND PHYSICAL PARAMETERS IN WATER

STATION NUMBER	DEPTH (M)	TEMP (DEG C)	PH	SALINITY (PPT)	ALKAL (MEQ/L)	NA MG/L	MG (MG/L)	CA (MG/L)	K (MG/L)	SI (MG/L)	LI (MG/L)	SR MG/L
89	10	1.5E 00	8.1E 00	3.045E 01	2.74E 00	8.55E 03	1.06E 03	3.44E 02	3.21E 02	2.10E 00	1.60E-01	7.00E 00
90	1	3.6E 00	8.2E 00	2.291E 01	2.29E 00	7.82E 03	7.84E 02	2.54E 02	2.48E 02	2.00E 00	1.30E-01	5.20E 00
90	12	1.6E 00	8.2E 00	2.975E 01	2.71E 00	8.25E 03	9.28E 02	3.26E 02	3.22E 02	2.00E 00	1.60E-01	6.80E 00
91	1	3.9E 00	8.3E 00	3.032E 01	2.68E 00	7.89E 03	8.96E 02	3.01E 02	2.91E 02	1.80E 00	1.40E-01	6.20E 00
91	7	1.9E 00	8.2E 00	2.937E 01	2.22E 00	8.23E 03	8.11E 02	3.26E 02	3.13E 02	1.50E 00	1.50E-01	6.80E 00
91	20	1.8E 00	8.2E 00	3.023E 01	2.76E 00	8.25E 03	1.02E 03	3.44E 02	3.43E 02	2.00E 00	1.50E-01	7.20E 00
92	1	3.9E 00	8.3E 00	2.069E 01	2.26E 00	6.80E 03	7.05E 02	2.39E 02	2.16E 02	1.70E 00	1.10E-01	5.20E 00
92	7	2.4E 00	8.3E 00	2.836E 01	2.68E 00	8.59E 03	8.90E 02	3.26E 02	2.80E 02	2.00E 00	1.60E-01	7.00E 00
92	13	1.8E 00	8.2E 00	2.948E 01	2.70E 00	8.68E 03	8.96E 02	3.33E 02	2.97E 02	2.00E 00	1.50E-01	7.20E 00
93	1	4.0E 00	8.2E 00	2.719E 01	2.70E 00	8.51E 03	9.01E 02	3.13E 02	2.68E 02	1.30E 00	1.50E-01	6.50E 00
93	16	1.9E 00	8.1E 00	3.021E 01	2.71E 00	9.66E 03	1.02E 03	3.48E 02	3.21E 02	1.70E 00	1.60E-01	7.20E 00
93	23	6.0E-01	8.0E 00	3.075E 01	2.71E 00	9.28E 03	1.06E 03	3.48E 02	3.36E 02	2.00E 00	1.70E-01	7.10E 00
94	1	4.0E 00	8.2E 00	2.540E 01	2.32E 00	7.18E 03	8.69E 02	2.95E 02	2.65E 02	2.00E 00	1.40E-01	5.70E 00
94	12	2.0E 00	8.1E 00	2.980E 01	2.70E 00	8.79E 03	1.02E 03	3.35E 02	3.07E 02	2.10E 00	1.60E-01	6.50E 00
94	20	1.0E 00	8.1E 00	3.001E 01	2.70E 00	8.94E 03	1.04E 03	3.44E 02	3.06E 02	2.20E 00	1.70E-01	6.80E 00
95	1	3.8E 00	8.3E 00	2.557E 01	2.32E 00	7.82E 03	8.69E 02	2.92E 02	2.55E 02	2.20E 00	1.40E-01	5.70E 00
95	16	2.5E 00	8.1E 00	3.002E 01	2.71E 00	8.39E 03	1.01E 03	3.28E 02	3.15E 02	2.10E 00	1.60E-01	6.80E 00
95	22	1.0E 00	8.0E 00	3.066E 01	2.72E 00	8.79E 03	1.02E 03	3.48E 02	3.15E 02	2.10E 00	1.70E-01	7.20E 00
96	1	2.5E 00	8.1E 00	1.796E 01	2.24E 00	5.82E 03	6.11E 02	2.18E 02	1.69E 02	1.80E 00	9.00E-02	4.10E 00
96	14	1.5E 00	8.1E 00	2.984E 01	2.70E 00	8.07E 03	1.05E 03	3.44E 02	3.07E 02	1.90E 00	1.60E-01	6.80E 00
96	22	5.0E-01	8.1E 00	3.065E 01	2.71E 00	8.52E 03	1.04E 03	3.48E 02	3.19E 02	1.90E 00	1.60E-01	6.80E 00
97	1	3.0E 00	8.3E 00	2.097E 01	2.28E 00	6.82E 03	7.05E 02	2.36E 02	2.07E 02	2.00E 00	1.20E-01	4.50E 00
97	9	3.0E 00	8.2E 00	2.859E 01	2.69E 00	9.72E 03	1.01E 03	3.26E 02	2.80E 02	1.90E 00	1.60E-01	6.40E 00
97	14	2.0E 00	8.2E 00	2.966E 01	2.71E 00	9.19E 03	1.05E 03	3.35E 02	3.15E 02	1.90E 00	1.70E-01	6.50E 00

TABLE 1 - MAJOR CHEMICAL AND PHYSICAL PARAMETERS IN WATER

STATION NUMBER	DEPTH (M)	TEMP (DEG C)	PH	SALINITY (PPT)	ALKAL (MEQ/L)	NA MG/L	MG (MG/L)	CA (MG/L)	K (MG/L)	SI (MG/L)	LI (MG/L)	SR MG/L
98	1	4.0E 00	8.0E 00	1.223E 01	2.17E 00	4.38E 03	4.05E 02	1.49E 02	1.31E 02	2.00E 00	7.00E-02	2.80E 00
98	9	3.0E 00	8.2E 00	2.849E 01	2.68E 00	9.19E 03	9.46E 02	3.26E 02	2.91E 02	1.80E 00	1.50E-01	6.20E 00
98	16	2.5E 00	8.1E 00	3.017E 01	2.71E 00	9.66E 03	1.06E 03	3.59E 02	3.21E 02	1.70E 00	1.60E-01	7.00E 00
99	1	4.5E 00	7.9E 00	4.411E 00	2.11E 00	2.15E 03	1.76E 02	7.00E 01	3.80E 01	2.70E 00	2.00E-02	1.20E 00
99	9	2.0E 00	8.1E 00	2.956E 01	2.69E 00	9.34E 03	8.48E 02	3.28E 02	2.91E 02	2.00E 00	1.40E-01	7.60E 00
100	1	4.5E 00	7.9E 00	5.931E 00	2.10E 00	2.62E 03	2.40E 02	8.70E 01	6.40E 01	2.00E 00	3.00E-02	1.70E 00
100	5	2.0E 00	8.0E 00	2.768E 01	2.33E 00	8.70E 03	9.75E 02	3.19E 02	2.68E 02	1.90E 00	1.50E-01	6.80E 00
100	14	1.0E 00	8.1E 00	2.962E 01	2.69E 00	9.35E 03	1.05E 03	3.31E 02	2.93E 02	2.00E 00	1.60E-01	7.00E 00
101	1	4.5E 00	7.9E 00	5.961E 00	2.11E 00	2.17E 03	2.12E 02	8.70E 01	5.40E 01	2.20E 00	3.00E-02	1.70E 00
101	8	2.0E 00	8.0E 00	2.843E 01	2.35E 00	8.59E 03	1.01E 03	3.26E 02	2.78E 02	1.90E 00	1.60E-01	6.80E 00
101	20	1.0E 00	8.1E 00	2.955E 01	2.69E 00	9.12E 03	1.06E 03	3.26E 02	2.91E 02	2.00E 00	1.60E-01	6.80E 00
102	1	4.5E 00	7.9E 00	7.125E 00	2.11E 00	2.63E 03	2.91E 02	9.00E 01	7.80E 01	2.10E 00	3.00E-02	1.70E 00
102	15	1.5E 00	8.1E 00	2.980E 01	2.67E 00	9.03E 03	1.05E 03	3.26E 02	2.99E 02	1.50E 00	1.70E-01	7.30E 00
103	1	4.6E 00	7.9E 00	7.831E 00	2.10E 00	2.93E 03	2.87E 02	9.10E 01	9.20E 01	2.00E 00	4.00E-02	2.10E 00
103	15	1.4E 00	8.0E 00	2.965E 01	2.66E 00	8.98E 03	9.75E 02	3.30E 02	2.91E 02	1.60E 00	1.60E-01	6.90E 00
103	23	1.4E 00	8.0E 00	2.980E 01	2.67E 00	8.76E 03	1.01E 03	3.30E 02	2.91E 02	1.90E 00	1.60E-01	6.60E 00

TABLE 2 - OPTICAL ATTENUANCE, PARTICULATES, ORGANICS, BACTERIA IN WATER — BAIE DES CHALEURS 1974 — PAGE 1

STATION NUMBER	DEPTH (M)	ATTENUANCE						SPM (MG/L)	POC (MG/L)	DOC (MG/L)	BACTERIA (CL/100ML)
		B	DB	R	Y	G	R				
80	1	2.0E 00	1.9E 00	1.8E 00	2.1E 00	1.9E 00	1.8E 00	2.9E 00	5.0E-01	9.4E 00	1.0E 00
80	8	2.2E 00	2.3E 00	2.0E 00	2.5E 00	1.7E 00	1.6E 00	2.4E 00	4.2E-01	1.2E 01	1.0E 00
81	1	1.9E 00	1.9E 00	1.9E 00	2.1E 00	1.8E 00	1.7E 00	3.4E 00	4.0E-01	4.6E 00	1.0E-01
81	4	2.0E 00	2.2E 00	1.6E 00	1.8E 00	1.5E 00	1.5E 00	2.0E 00	3.4E-01	8.2E 00	1.0E-01
82	1	1.8E 00	1.7E 00	1.8E 00	2.0E 00	1.5E 00	1.5E 00	3.7E 00	5.4E-01	5.4E 00	1.0E-01
82	11	2.4E 00	2.5E 00	2.5E 00	2.4E 00	2.0E 00	2.0E 00	3.6E 00	5.5E-01	6.9E 00	1.0E 00
83	1	1.5E 00	1.5E 00	1.6E 00	2.0E 00	1.6E 00	1.5E 00	2.7E 00	3.4E-01	1.0E 01	3.0E 00
83	10	2.6E 00	2.6E 00	2.6E 00	2.6E 00	3.0E 00	2.7E 00	3.4E 00	7.0E-01	9.5E 00	1.0E-01
83	20	1.7E 00	1.8E 00	1.8E 00	1.8E 00	2.0E 00	1.7E 00	2.9E 00	4.3E-01	8.6E 00	1.0E-01
84	1	1.7E 00	1.6E 00	1.6E 00	1.7E 00	1.4E 00	1.2E 00	2.1E 00	2.8E-01	7.1E 00	1.0E-01
84	8	1.8E 00	1.6E 00	1.7E 00	1.9E 00	1.8E 00	1.5E 00	2.2E 00	5.9E-01	7.2E 00	1.0E-01
84	24	1.6E 00	1.6E 00	1.6E 00	1.7E 00	1.5E 00	1.4E 00	2.6E 00	3.4E-01	9.5E 00	1.0E-01
85	1	1.3E 00	1.3E 00	1.3E 00	1.4E 00	1.1E 00	1.1E 00	2.2E 00	2.5E-01	1.5E 01	1.0E-01
85	15	2.0E 00	2.1E 00	2.1E 00	2.0E 00	1.8E 00	1.7E 00	3.6E 00	2.8E-01	6.5E 00	1.0E-01
85	25	1.5E 00	1.5E 00	1.5E 00	1.8E 00	1.5E 00	1.3E 00	3.3E 00	2.9E-01	7.6E 00	1.0E-01
86	1	1.7E 00	1.7E 00	1.7E 00	2.0E 00	1.7E 00	1.7E 00	2.7E 00	3.4E-01	9.5E 00	2.0E 00
86	9	2.0E 00	2.0E 00	2.0E 00	2.6E 00	2.2E 00	2.1E 00	3.1E 00	4.6E-01	8.7E 00	1.0E-01
86	20	1.2E 00	1.3E 00	1.3E 00	1.5E 00	1.2E 00	1.1E 00	2.0E 00	1.6E-01	7.7E 00	1.0E-01
87	1	2.7E 00	2.8E 00	2.8E 00	2.8E 00	2.8E 00	2.8E 00	5.7E 00	4.6E-01	1.3E 01	1.0E-01
87	6	1.9E 00	1.9E 00	2.5E 00	1.7E 00	1.7E 00	1.7E 00	2.4E 00	3.7E-01	1.2E 01	2.0E 00
87	20	1.2E 00	1.2E 00	1.2E 00	1.4E 00	1.0E 00	1.0E 00	1.7E 00	1.8E-01	6.9E 00	1.0E-01
88	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	5.8E 00	4.5E-01	1.3E 01	1.0E 00
88	13	1.3E 00	1.3E 00	1.3E 00	1.4E 00	1.1E 00	1.0E 00	2.5E 00	2.3E-01	1.0E 01	1.0E-01
89	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	5.8E 00	3.5E-01	1.1E 01	1.0E-01

TABLE 2 - OPTICAL ATTENUANCE, PARTICULATES, ORGANICS, BACTERIA IN WATER — BAIE DES CHALEURS 1974 — PAGE 9

STATION NUMBER	DEPTH (M)	ATTENUANCE P	PR	B	Y	G	R	SPM (MG/L)	POC (MG/L)	DOC (MG/L)	BACTERIA (CL/100ML)
89	10	1.6E 00	1.6E 00	1.7E 00	1.8E 00	1.7E 00	1.6E 00	4.8E 00	3.1E-01	2.0E 01	1.0E-01
90	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	4.4E 00	5.4E-01	7.4E 00	1.0E-01
90	12	2.1E 00	2.1E 00	2.1E 00	2.2E 00	2.1E 00	2.1E 00	2.9E 00	3.8E-01	7.7E 00	1.0E-01
91	1	1.5E 00	1.5E 00	1.5E 00	1.7E 00	1.6E 00	1.6E 00	2.2E 00	2.5E-01	7.9E 00	1.0E-01
91	7	2.1E 00	2.1E 00	2.1E 00	2.3E 00	2.2E 00	2.1E 00	3.6E 00	4.5E-01	1.0E 01	1.0E-01
91	20	1.6E 00	1.6E 00	1.6E 00	1.7E 00	1.5E 00	1.5E 00	2.0E 00	3.5E-01	1.6E 01	1.0E-01
92	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	4.9E 00	5.5E-01	8.9E 00	1.0E-01
92	7	2.0E 00	2.0E 00	2.0E 00	2.0E 00	2.0E 00	2.0E 00	2.5E 00	5.2E-01	4.6E 00	1.0E-01
92	13	1.9E 00	1.9E 00	1.9E 00	2.1E 00	2.1E 00	2.1E 00	3.5E 00	6.2E-01	2.1E 01	1.0E-01
93	1	1.5E 00	1.5E 00	1.5E 00	1.8E 00	1.6E 00	1.5E 00	1.8E 00	2.8E-01	7.1E 00	1.0E-01
93	16	2.4E 00	2.4E 00	2.4E 00	2.9E 00	2.8E 00	2.5E 00	3.6E 00	5.3E-01	5.3E 00	1.0E-01
93	23	1.5E 00	1.6E 00	1.6E 00	2.1E 00	1.7E 00	1.5E 00	1.8E 00	2.5E-01	1.3E 01	1.0E-01
94	1	1.6E 00	1.6E 00	1.8E 00	1.8E 00	1.7E 00	1.7E 00	3.0E 00	6.7E-01	5.9E 00	4.0E 00
94	12	1.9E 00	1.9E 00	1.9E 00	2.4E 00	2.3E 00	2.2E 00	2.9E 00	7.9E-01	6.5E 00	1.0E-01
94	20	1.8E 00	1.8E 00	1.8E 00	1.8E 00	1.7E 00	1.6E 00	2.5E 00	2.5E-01	6.4E 00	1.0E-01
95	1	2.8E 00	2.7E 00	2.8E 00	2.8E 00	2.6E 00	2.7E 00	3.5E 00	2.8E-01	1.2E 01	1.0E-01
95	16	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.9E 00	6.0E-01	6.3E 00	1.0E-01
95	22	1.5E 00	1.5E 00	1.6E 00	2.0E 00	1.5E 00	1.5E 00	3.6E 00	3.9E-01	3.6E 00	1.0E-01
96	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	5.9E 00	5.8E-01	6.1E 00	1.3E 01
96	14	2.6E 00	2.5E 00	2.6E 00	2.7E 00	2.7E 00	2.6E 00	4.2E 00	5.0E-01	1.0E 01	1.0E-01
96	22	1.6E 00	1.6E 00	1.6E 00	1.8E 00	1.6E 00	1.5E 00	1.9E 00	2.4E-01	9.8E 00	1.0E-01
97	1	3.0E 00	2.9E 00	3.0E 00	3.0E 00	2.4E 00	2.4E 00	5.7E 00	3.6E-01	7.1E 00	1.0E-01
97	9	2.3E 00	2.2E 00	2.3E 00	2.4E 00	2.3E 00	2.3E 00	3.1E 00	4.4E-01	8.0E 00	1.0E-01
97	18	2.1E 00	2.1E 00	2.1E 00	2.0E 00	1.7E 00	1.7E 00	3.3E 00	3.9E-01	1.4E 01	4.0E 00

TABLE 2 - OPTICAL ATTENUANCE, PARTICULATES, ORGANICS, BACTERIA IN WATER

STATION NUMBER	DEPTH (M)	ATTENUANCE W	DR	R	Y	G	B	SPM (MG/L)	POC (MG/L)	DOC (MG/L)	BACTERIA (CL/100ML)
98	1	3.0E 00	2.7E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.1E 01	5.2E-01	5.7E 00	5.0E 00
98	9	2.5E 00	2.4E 00	2.6E 00	2.8E 00	2.6E 00	2.6E 00	4.4E 00	2.9E-01	1.4E 01	1.0E-01
98	16	1.9E 00	1.9E 00	2.0E 00	2.1E 00	1.9E 00	1.9E 00	4.1E 00	7.3E-01	8.4E 00	1.0E-01
99	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.5E 01	5.6E-01	5.5E 00	1.6E 01
99	9	2.2E 00	2.1E 00	2.2E 00	2.4E 00	2.2E 00	2.2E 00	5.2E 00	5.1E-01	1.0E 01	1.0E-01
100	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.2E 01	4.2E-01	3.7E 00	6.1E 01
100	8	2.6E 00	2.6E 00	2.6E 00	2.6E 00	2.4E 00	2.5E 00	4.7E 00	3.5E-01	1.4E 01	1.0E-01
100	14	2.9E 00	2.9E 00	3.0E 00	3.0E 00	3.0E 00	2.9E 00	8.9E 00	4.5E-01	1.2E 01	1.0E-01
101	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.4E 01	4.9E-01	3.5E 00	4.9E 01
101	8	2.5E 00	2.4E 00	2.5E 00	2.8E 00	2.6E 00	2.6E 00	5.6E 00	2.2E-01	1.1E 01	1.0E 00
101	20	3.0E 00	3.0E 00	3.0E 00	3.0E 00	2.9E 00	2.8E 00	6.6E 00	4.2E-01	8.1E 00	3.0E 00
102	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.3E 01	4.6E-01	5.8E 00	2.6E 01
102	15	2.5E 00	2.5E 00	2.5E 00	2.6E 00	2.4E 00	2.4E 00	5.8E 00	1.1E 00	2.0E 01	1.0E 01
103	1	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	3.0E 00	1.1E 01	5.0E-01	5.9E 00	1.0E-01
103	15	2.2E 00	2.2E 00	2.2E 00	2.4E 00	2.2E 00	2.1E 00	4.8E 00	3.9E-01	2.3E 01	2.0E 00
103	23	2.5E 00	2.5E 00	2.5E 00	2.8E 00	2.6E 00	2.6E 00	5.6E 00	4.9E-01	1.7E 01	1.0E 00

TABLE 3 - TRACE METAL ANALYSES OF WATER (RESULTS IN PPB)

STATION NUMBER	HG (L PH)	MN (L PH)	MN (H PH)	FE (L PH)	FE (H PH)	ZN (L PH)	ZN (H PH)	CU (L PH)	CU (H PH)	CD (L PH)	CD (H PH)
80	3.0E-01	6.3E 00	2.5E 00	1.1E 01	4.7E-01	1.3E 00	1.6E 00	2.0E-01	3.3E-01	1.9E-02	1.9E-02
80	3.0E-01	4.5E 00	1.8E 00	6.3E 00	4.2E-01	8.4E-01	1.0E 00	3.2E-01	2.7E-01	3.3E-02	3.0E-02
81	3.1E-01	5.3E 00	1.7E 00	1.3E 01	3.3E-01	1.4E 00	1.1E 00	5.1E-01	2.8E-01	4.5E-02	1.8E-02
81	2.9E-01	4.1E 00	1.8E 00	4.5E 00	1.9E-01	1.5E 00	1.0E 00	3.4E-01	2.0E-01	2.1E-02	1.3E-02
82	1.0E-01	5.6E 00	1.7E 00	1.2E 01	1.8E-01	3.2E 00	1.0E 00	2.0E-01	2.9E-01	4.2E-02	1.0E-02
82	1.4E-01	3.7E 00	1.6E 00	6.7E 00	5.8E-01	2.0E 00	1.4E 00	3.5E-01	3.5E-01	2.4E-02	1.9E-02
83	5.0E-02	4.8E 00	1.5E 00	6.7E 00	6.0E-02	3.0E 00	1.1E 00	3.1E-01	1.8E-01	3.2E-02	1.7E-02
8	9.0E-02	4.6E 00	1.3E 00	1.1E 01	2.5E-01	3.4E 00	8.8E-01	2.4E-01	1.6E-01	2.8E-02	2.0E-02
83	3.1E-01	3.5E 00	1.6E 00	5.3E 00	1.4E-01	3.5E 00	9.3E-01	3.1E-01	1.6E-01	1.8E-02	1.9E-02
84	9.0E-02	4.6E 00	2.3E 00	5.2E 00	3.3E-01	1.1E 00	1.7E 00	1.0E-01	1.6E-01	3.3E-02	4.1E-02
84	6.0E-02	4.3E 00	1.8E 00	5.9E 00	3.9E-01	1.9E 00	1.5E 00	1.8E-01	1.6E-01	3.4E-02	2.0E-02
84	6.0E-02	1.2E 00	1.6E 00	4.9E 00	6.4E-01	1.8E 00	1.2E 00	3.1E-01	1.6E-01	2.9E-02	2.1E-02
85	5.0E-02	4.1E 00	1.5E 00	5.8E 00	1.9E-01	1.1E 00	1.6E 00	2.3E-01	1.6E-01	2.7E-02	1.2E-02
85	5.0E-02	5.0E 00	1.4E 00	8.0E 00	8.6E-01	1.2E 00	1.4E 00	2.7E-01	1.6E-01	4.2E-02	1.6E-02
85	5.0E-02	4.7E 00	1.9E 00	8.6E 00	4.7E-01	2.0E 00	1.3E 00	3.4E-01	2.0E-01	3.4E-02	1.8E-02
86	5.0E-02	6.0E 00	3.0E 00	1.2E 01	5.3E-01	3.7E 00	2.6E 00	2.0E-01	3.1E-01	2.6E-02	5.0E-02
86	5.0E-02	4.7E 00	4.1E 00	9.9E 00	5.6E-01	2.8E 00	1.5E 00	3.0E-01	1.9E-01	4.7E-02	2.8E-02
86	5.0E-02	2.4E 00	5.3E 00	5.7E 00	4.8E-01	2.4E 00	1.3E 00	2.4E-01	2.1E-01	5.4E-02	3.1E-02
87	3.0E-02	5.3E-01	5.0E 00	1.7E 01	1.3E 00	2.0E 00	1.3E 00	2.6E-01	3.2E-01	4.6E-02	2.8E-02
87	2.0E-02	5.3E 00	4.2E 00	6.5E 00	7.9E-01	1.4E 00	2.3E 00	1.6E-01	2.7E-01	2.8E-02	2.4E-02
87	2.0E-02	6.3E 00	4.3E 00	5.5E 00	5.4E-01	1.3E 00	1.4E 00	1.6E-01	3.0E-01	3.7E-02	2.7E-02
88	5.0E-02	1.7E 01	7.3E 00	1.9E 01	1.2E 00	1.5E 00	2.9E 00	2.3E-01	2.5E-01	4.6E-02	2.5E-02
88	5.0E-02	2.5E 00	4.7E 00	5.8E 00	6.3E-01	1.8E 00	1.6E 00	1.6E-01	2.1E-01	3.2E-02	2.2E-02
89	7.1E-02	1.7E 01	.3E 01	2.2E 01	1.7E 00	1.3E 00	1.9E 00	1.6E-01	3.8E-01	3.4E-02	2.7E-02

TABLE 3 - TRACE METAL ANALYSES OF WATER (RESULTS IN PPB)

STATION NUMBER	HG (L PH)	MN (L PH)	MN (H PH)	FE (L PH)	FE (H PH)	ZN (L PH)	ZN (H PH)	CU (L PH)	CU (H PH)	CD (L PH)	CD (H PH)
89	7.0E-02	8.5E-01	4.8E 00	7.7E 00	7.1E-01	2.3E 00	1.3E 00	3.0E-01	2.1E-01	4.6E-02	3.0E-02
90	2.0E-01	1.1E 01	1.0E 01	2.7E 01	1.0E 00	2.6E 00	7.7E-01	2.4E-01	2.1E-01	5.9E-02	3.5E-02
90	1.1E-01	2.5E 00	5.4E 00	1.1E 01	5.4E-01	2.3E 00	1.2E 00	1.6E-01	1.7E-01	5.0E-02	3.1E-02
91	1.1E-01	4.4E 00	5.3E 00	1.0E 01	4.1E-01	2.3E 00	1.6E 00	1.6E-01	1.7E-01	4.3E-02	2.5E-02
91	1.1E-01	6.4E 00	4.8E 00	1.0E 01	6.8E-01	1.8E 00	1.4E 00	1.6E-01	1.7E-01	6.6E-02	2.9E-02
91	1.1E-01	1.3E 00	2.8E 00	5.3E 00	4.8E-01	1.3E 00	7.2E-01	1.0E-01	1.7E-01	3.5E-02	1.0E-02
92	1.3E-01	8.8E 00	5.7E 00	2.1E 01	9.2E-01	2.2E 00	1.8E 00	4.0E-01	2.4E-01	1.9E-02	2.3E-02
92	1.2E-01	4.3E 00	4.1E 00	6.0E 00	7.4E-01	3.0E 00	2.1E 00	3.9E-01	2.2E-01	3.2E-02	2.3E-02
92	8.0E-02	4.9E 00	3.9E 00	5.8E 00	6.2E-01	2.2E 00	2.8E 00	3.4E-01	2.2E-01	2.0E-02	1.8E-02
93	1.6E-01	4.6E 00	2.1E 00	5.0E 00	7.4E-01	1.7E 00	3.8E 00	3.6E-01	2.2E-01	1.8E-02	2.8E-02
93	1.1E-01	4.1E 00	2.3E 00	9.0E 00	7.4E-01	7.0E 00	2.3E 00	3.1E-01	2.2E-01	3.7E-02	2.3E-02
93	6.0E-02	5.7E 00	5.7E 00	9.6E 00	6.6E-01	3.1E 00	2.1E 00	6.2E-01	1.3E-01	4.1E-02	2.0E-02
94	1.6E-01	3.1E 00	2.1E 00	4.6E 00	3.7E-01	2.2E 00	1.1E 00	3.1E-01	2.0E-01	3.0E-02	1.2E-02
94	1.9E-01	3.5E 00	2.8E 00	7.0E 00	6.6E-01	1.8E 00	1.5E 00	2.8E-01	2.2E-01	2.7E-02	9.0E-03
94	1.4E-01	3.0E 00	2.3E 00	3.7E 00	6.4E-01	2.4E 00	1.1E 00	5.0E-02	5.0E-02	3.6E-02	1.4E-02
95	6.0E-02	5.2E 00	2.5E 00	4.0E-01	9.9E 00	5.4E-01	1.1E 00	1.7E-01	1.6E-01	2.0E-02	2.5E-02
95	3.0E-02	2.8E 00	5.3E-01	7.9E-01	8.0E 00	5.4E-01	1.6E 00	1.7E-01	1.4E-01	1.3E-02	4.1E-02
95	3.0E-02	5.7E 00	6.9E 00	6.6E-01	7.2E 00	7.1E-01	2.3E 00	2.2E-01	3.7E-01	2.1E-02	4.4E-02
96	8.0E-02	9.2E 00	1.0E 01	1.3E 00	1.9E 01	1.3E 00	1.9E 00	2.4E-01	1.9E-01	1.7E-02	1.6E-02
96	8.0E-02	2.6E 00	4.3E 00	1.4E 00	9.0E 00	2.3E 00	2.0E 00	2.2E-01	3.4E-01	1.8E-02	2.5E-02
96	2.0E-01	6.3E 00	7.9E 00	3.7E-01	5.3E 00	1.4E 00	1.8E 00	1.8E-01	6.0E-02	2.6E-02	3.2E-02
97	9.0E-02	7.6E 00	8.2E 00	1.1E 00	1.4E 01	4.2E-01	1.3E 00	2.2E-01	2.2E-01	8.0E-03	2.5E-02
97	8.0E-02	3.2E 00	5.2E 00	7.4E-01	8.4E 00	4.2E-01	2.4E 00	2.0E-01	2.5E-01	2.6E-02	5.0E-02
97	7.0E-02	3.2E 00	4.0E 00	4.4E-01	4.8E 00	9.2E-01	1.4E 00	2.2E-01	2.5E-01	3.2E-02	3.9E-02

TABLE 3 - TRACE METAL ANALYSES OF WATER (RESULTS IN PPB)

STATION NUMBER	HG (L PH)	MN (L PH)	MN (H PH)	FE (L PH)	FE (H PH)	ZN (L PH)	ZN (H PH)	CU (L PH)	CU (H PH)	CD (L PH)	CD (H PH)
98	9.0E-02	9.3E 00	1.0E 01	1.7E 00	1.9E 01	1.6E 00	2.2E 00	2.7E-01	2.3E-01	7.0E-03	1.5E-02
98	5.0E-02	3.9E 00	2.7E 00	4.9E-01	3.0E 00	1.8E 00	2.5E 00	2.3E-01	1.1E-01	1.2E-02	1.4E-02
98	6.0E-02	3.9E 00	5.8E 00	5.9E-01	9.7E 00	2.0E 00	1.8E 00	2.5E-01	5.0E-02	1.2E-02	9.0E-03
99	1.2E-01	1.5E 01	1.0E 01	7.5E 00	1.7E 01	8.8E-01	1.5E 00	3.2E-01	1.8E-01	6.0E-03	7.0E-03
99	1.2E-01	3.1E 00	3.4E 00	6.5E-01	4.4E 00	1.9E 00	1.8E 00	2.1E-01	5.0E-02	1.4E-02	1.5E-02
100	5.0E-02	9.3E 00	1.0E 01	4.2E 00	1.2E 01	7.1E-01	1.5E 00	2.3E-01	1.8E-01	6.0E-03	5.0E-03
100	5.0E-02	4.6E 00	5.7E 00	6.2E-01	1.6E 01	1.6E 00	2.0E 00	1.8E-01	5.0E-02	1.3E-02	2.2E-02
100	1.0E-01	4.4E 00	5.9E 00	1.1E 00	2.8E 01	1.6E 00	2.1E 00	2.3E-01	1.6E-01	1.0E-02	1.9E-02
101	2.0E-02	9.7E 00	9.2E 00	3.5E 00	1.1E 01	6.6E-01	1.2E 00	2.3E-01	5.0E-02	1.1E-02	1.1E-02
101	6.0E-02	4.1E 00	6.1E 00	4.9E-01	1.2E 01	1.7E 00	2.1E 00	1.8E-01	2.0E-01	1.9E-02	1.6E-02
101	2.0E-02	5.0E 00	5.2E 00	4.9E-01	1.3E 01	1.6E 00	1.7E 00	1.8E-01	5.0E-02	2.1E-02	1.5E-02
102	1.0E-01	8.6E 00	6.8E 00	3.2E 00	1.0E 01	8.4E-01	1.9E 00	2.3E-01	1.8E-01	6.0E-03	9.0E-03
102	9.0E-02	4.3E 00	5.3E 00	8.6E-01	1.6E 01	1.8E 00	1.8E 00	2.3E-01	1.8E-01	2.9E-02	1.5E-02
103	3.0E-02	9.8E 00	9.3E 00	3.5E 00	1.1E 01	8.4E-01	1.4E 00	2.3E-01	1.8E-01	7.0E-03	7.0E-03
103	9.0E-02	4.0E 00	6.1E 00	4.7E-01	1.4E 01	1.7E 00	2.2E 00	1.8E-01	5.0E-02	2.3E-02	9.0E-03
103	4.0E-02	6.5E 00	4.0E 00	1.0E 00	8.3E 00	2.0E 00	2.2E 00	1.8E-01	1.6E-01	2.6E-02	1.1E-02

TABLE 4 - MAJOR ANALYSES OF SEDIMENTS

STATION NUMBER	DEPTH (M)	WATER (%)	ORG C (%)	SI (%)	AL (%)	FE (%)	NA (%)	MG (%)	CA (%)	K (%)
80	10	6.30E 01	1.81E 00	2.50E 01	5.70E 00	3.30E 00	2.80E 00	2.20E 00	3.10E-01	1.90E 00
81	11	6.10E 01	1.32E 00	2.82E 01	5.90E 00	3.20E 00	2.90E 00	2.00E 00	1.70E-01	2.00E 00
82	15	4.50E 01	1.26E 00	3.03E 01	5.70E 00	3.20E 00	2.30E 00	2.10E 00	1.30E-01	2.00E 00
83	27	5.20E 01	1.18E 00	3.00E 01	5.40E 00	3.40E 00	2.60E 00	2.10E 00	1.90E-01	2.30E 00
84	27	6.30E 01	1.47E 00	3.03E 01	5.90E 00	3.50E 00	3.00E 00	1.80E 00	1.10E-01	2.10E 00
85	30	6.90E 01	1.96E 00	2.50E 01	6.00E 00	3.90E 00	3.50E 00	2.00E 00	1.50E-01	2.40E 00
86	31	6.50E 01	1.72E 00	2.65E 01	5.90E 00	3.70E 00	3.40E 00	2.50E 00	8.00E-02	2.40E 00
87	25	4.90E 01	1.21E 00	2.90E 01	5.10E 00	3.50E 00	2.10E 00	1.70E 00	1.70E-01	2.30E 00
88	17	2.60E 01	3.90E-01	3.17E 01	4.50E 00	2.90E 00	1.50E 00	1.60E 00	1.70E-01	2.30E 00
89	17	3.20E 01	8.30E-01	2.89E 01	4.40E 00	3.00E 00	1.90E 00	1.80E 00	6.80E-01	1.80E 00
90	18	3.60E 01	7.20E-01	3.06E 01	4.60E 00	3.00E 00	1.90E 00	1.40E 00	3.00E-01	2.00E 00
91	27	5.90E 01	1.38E 00	2.71E 01	5.90E 00	3.30E 00	2.20E 00	1.30E 00	1.40E-01	2.00E 00
92	17	3.90E 01	7.90E-01	3.03E 01	4.30E 00	2.70E 00	1.50E 00	1.30E 00	1.00E-01	1.70E 00
93	26	6.80E 01	2.02E 00	2.36E 01	5.90E 00	3.50E 00	3.60E 00	2.50E 00	3.30E-01	2.40E 00
94	25	6.40E 01	1.90E 00	2.47E 01	5.90E 00	3.50E 00	3.50E 00	2.40E 00	3.50E-01	2.30E 00
95	25	6.50E 01	1.88E 00	2.33E 01	6.60E 00	3.80E 00	3.30E 00	2.20E 00	2.50E-01	2.40E 00
96	26	6.20E 01	1.92E 00	2.45E 01	5.90E 00	3.60E 00	3.20E 00	1.90E 00	2.20E-01	2.10E 00
97	20	5.40E 01	1.15E 00	2.79E 01	5.40E 00	3.40E 00	2.90E 00	2.10E 00	3.90E-01	2.10E 00
98	26	6.50E 01	2.39E 00	2.86E 01	6.70E 00	3.90E 00	3.50E 00	1.90E 00	1.70E-01	2.10E 00
99	12	5.80E 01	2.23E 00	2.76E 01	6.30E 00	3.60E 00	3.20E 00	2.20E 00	2.30E-01	2.20E 00
100	18	5.80E 01	1.71E 00	2.50E 01	6.40E 00	3.80E 00	3.10E 00	2.00E 00	3.70E-01	2.20E 00
101	24	7.60E 01	2.97E 00	2.21E 01	5.60E 00	3.50E 00	4.20E 00	2.60E 00	5.50E-01	2.20E 00
102	22	2.60E 01	1.07E 00	2.75E 01	5.70E 00	3.70E 00	2.30E 00	2.10E 00	4.60E-01	2.20E 00
103	25	4.20E 01	1.19E 00	2.73E 01	5.60E 00	3.90E 00	2.40E 00	2.10E 00	1.89E 00	2.30E 00

TABLE 5 - MINOR ANALYSES OF SEDIMENTS

STATION NUMBER	DEPTH (M)	SR (PPM)	LI (PPM)	MN (PPM)	CO (PPM)	NI (PPM)	CU (PPM)	ZN (PPM)	CR (PPM)	HG (PPM)	S (%)
80	10	1.74E 02	2.50E 01	1.20E 02	1.00E 01	5.20E 01	4.80E 01	7.30E 01	8.80E 01	5.70E-01	2.70E-01
81	11	1.57E 02	3.00E 01	1.15E 02	1.00E 01	6.80E 01	5.80E 01	8.70E 01	5.00E 01	4.80E-01	1.60E-01
82	15	1.46E 02	2.30E 01	1.15E 02	2.50E 01	7.60E 01	4.00E 01	8.30E 01	5.00E 01	4.70E-01	1.90E-01
83	27	1.31E 02	3.80E 01	1.28E 02	1.50E 01	4.50E 01	4.00E 01	8.00E 01	7.50E 01	5.70E-01	1.20E-01
84	27	1.34E 02	5.00E 01	1.28E 02	1.50E 01	5.20E 01	4.00E 01	8.30E 01	7.50E 01	5.40E-01	9.00E-02
85	30	1.46E 02	4.50E 01	1.65E 02	2.50E 01	4.50E 01	3.20E 01	8.70E 01	6.00E 01	5.80E-01	1.90E-01
86	31	1.45E 02	3.00E 01	1.55E 02	2.00E 01	8.40E 01	4.80E 01	8.30E 01	5.00E 01	5.00E-01	1.70E-01
87	25	1.34E 02	2.00E 01	1.67E 02	3.30E 01	3.50E 01	3.20E 01	8.50E 01	5.00E 01	4.60E-01	9.00E-02
88	17	1.23E 02	1.50E 01	2.22E 02	2.00E 01	3.20E 01	3.20E 01	7.50E 01	5.00E 01	4.20E-01	1.10E-01
89	17	1.23E 02	1.50E 01	2.44E 02	1.00E 01	7.20E 01	4.80E 01	2.30E 02	5.00E 01	6.20E-01	1.80E-01
90	18	1.00E 02	1.50E 01	2.16E 02	1.00E 01	6.00E 01	2.40E 01	8.30E 01	5.00E 01	4.30E-01	8.00E-02
91	27	1.23E 02	1.50E 01	1.25E 02	2.50E 01	4.10E 01	4.00E 01	8.00E 01	6.30E 01	5.20E-01	1.30E-01
92	17	1.06E 02	1.50E 01	1.40E 02	2.00E 01	5.20E 01	2.00E 01	7.30E 01	7.50E 01	2.90E-01	8.00E-02
93	26	1.56E 02	2.00E 01	1.40E 02	2.50E 01	5.20E 01	2.80E 01	6.20E 01	1.16E 02	2.80E-01	1.50E-01
94	25	1.68E 02	3.30E 01	1.65E 02	3.50E 01	5.60E 01	3.60E 01	7.30E 01	5.00E 01	2.70E-01	2.00E-01
95	25	1.68E 02	3.30E 01	1.65E 02	3.50E 01	6.00E 01	3.90E 01	1.57E 02	5.00E 01	4.90E-01	1.70E-01
96	26	1.68E 02	2.80E 01	1.53E 02	4.00E 01	9.70E 01	2.40E 01	8.00E 01	5.00E 01	4.50E-01	1.60E-01
97	20	1.62E 02	5.20E 01	1.60E 02	2.00E 01	5.20E 01	5.40E 01	7.70E 01	5.00E 01	5.70E-01	5.00E-02
98	26	1.39E 02	3.50E 01	1.65E 02	2.50E 01	9.20E 01	3.90E 01	1.00E 02	7.50E 01	4.40E-01	1.90E-01
99	12	1.34E 02	5.00E 01	1.15E 02	2.50E 01	6.00E 01	2.20E 01	1.52E 02	1.00E 02	5.80E-01	1.70E-01
100	18	1.68E 02	5.00E 01	1.15E 02	2.50E 01	6.00E 01	1.60E 01	1.00E 02	5.00E 01	5.80E-01	2.80E-01
101	24	1.73E 02	5.00E 01	1.65E 02	2.50E 01	6.00E 01	1.60E 01	1.26E 02	7.50E 01	7.10E-01	3.20E-01
102	22	1.12E 02	5.00E 01	1.45E 02	1.00E 01	6.80E 01	1.60E 01	9.90E 01	1.00E 02	3.80E-01	1.60E-01
103	25	1.57E 02	3.00E 01	2.05E 02	1.00E 01	7.60E 01	1.60E 01	9.70E 01	5.00E 01	4.00E-01	1.00E-01

TABLE 6 - LEACH ANALYSES OF SEDIMENTS (RESULTS IN PPM)

STATION NUMBER	DEPTH (M)	FE		MN		CA		CU		ZN	
		HAC	H2O2	HAC	H2O2	HAC	H2O2	HAC	H2O2	HAC	H2O2
80	10	2.78E 03	9.82E 02	3.10E 01	3.08E 01	4.48E 02	5.08E 02	2.00E 00	7.50E 00	1.80E 01	1.58E 01
81	11	1.96E 03	7.59E 02	2.80E 01	2.50E 01	4.16E 02	5.13E 02	2.00E 00	6.30E 00	1.70E 01	1.33E 01
82	15	1.94E 03	5.58E 02	1.60E 01	1.25E 01	2.08E 02	3.48E 02	2.30E 00	4.80E 00	1.60E 01	1.13E 01
83	27	1.88E 03	3.70E 02	3.30E 01	2.25E 01	4.77E 02	5.09E 02	5.00E-01	3.50E 00	1.40E 01	7.20E 00
84	27	1.71E 03	3.32E 02	3.30E 01	1.88E 01	4.58E 02	6.64E 02	5.00E-01	5.20E 00	1.70E 01	9.60E 00
85	30	2.29E 03	4.46E 02	5.00E 01	3.69E 01	6.00E 02	7.50E 02	1.50E 00	7.50E 00	1.80E 01	1.05E 01
86	31	2.00E 03	3.43E 02	2.90E 01	1.88E 01	4.16E 02	5.78E 02	2.00E 00	6.50E 00	1.70E 01	9.50E 00
87	25	1.90E 03	4.30E 02	3.10E 01	2.25E 01	6.66E 02	5.17E 02	1.30E 00	4.30E 00	1.70E 01	1.16E 01
88	17	1.06E 03	1.88E 02	2.90E 01	1.79E 01	2.27E 03	4.69E 02	1.00E 00	2.50E 00	1.80E 01	9.60E 00
89	17	6.43E 02	2.10E 01	2.60E 01	6.30E 00	4.91E 03	9.88E 02	5.00E-01	4.20E 00	4.50E 01	3.35E 01
90	18	1.30E 03	1.15E 02	2.50E 01	1.72E 01	1.19E 03	6.38E 02	1.80E 00	3.50E 00	2.80E 01	1.93E 01
91	27	2.33E 03	4.24E 02	2.50E 01	1.88E 01	4.16E 02	3.75E 02	2.00E 00	4.40E 00	1.70E 01	1.03E 01
92	17	1.72E 03	2.08E 02	2.80E 01	1.25E 01	2.08E 02	2.23E 02	2.00E 00	2.80E 00	1.30E 01	5.20E 00
93	26	1.07E 03	2.08E 02	1.40E 01	1.13E 01	5.91E 02	7.67E 02	2.00E 00	7.90E 00	1.70E 01	1.01E 01
94	25	1.75E 03	3.43E 02	2.50E 01	1.63E 01	6.83E 02	7.63E 02	1.50E 00	7.90E 00	1.60E 01	8.20E 00
95	25	2.81E 03	5.22E 02	2.50E 01	1.44E 01	4.16E 02	5.12E 02	1.30E 00	7.90E 00	1.80E 01	1.08E 01
96	26	2.56E 03	5.58E 02	3.10E 01	2.31E 01	7.66E 02	7.33E 02	1.30E 00	7.50E 00	2.10E 01	1.96E 01
97	20	2.32E 03	3.70E 02	3.70E 01	2.56E 01	6.00E 02	7.24E 02	1.30E 00	3.50E 00	1.60E 01	1.13E 01
98	26	2.79E 03	6.29E 02	2.50E 01	1.91E 01	6.00E 02	6.99E 02	2.30E 00	7.90E 00	2.90E 01	2.78E 01
99	12	2.11E 03	5.72E 02	2.50E 01	2.13E 01	7.66E 02	7.50E 02	2.50E 00	9.00E 00	3.80E 01	4.84E 01
100	18	2.68E 03	3.86E 02	4.70E 01	2.00E 01	4.16E 03	1.23E 03	2.00E 00	7.50E 00	3.30E 01	4.35E 01
101	24	3.05E 03	7.88E 02	6.70E 01	5.53E 01	1.60E 03	1.50E 03	1.00E 00	9.30E 00	3.50E 01	7.04E 01
102	22	3.30E 03	2.10E 01	6.40E 01	1.60E 01	4.31E 03	7.93E 02	5.00E-01	5.00E-01	2.40E 01	7.86E 00
103	25	3.91E 03	2.10E 01	3.60E 01	6.30E 00	5.07E 03	7.59E 02	1.50E 00	1.00E 00	3.20E 01	9.70E 00

TABLE 7 - SIZE ANALYSES OF SEDIMENTS (RESULTS IN PERCENT)

STATION NUMBER	DEPTH (M)	GT 1.0 MM	1.0-0.5 MM	0.5-0.25 MM	0.25-0.125 MM	0.125-0.063 MM	0.063-0.016 MM	LT 0.016 MM
80	10	1.0E-01	1.0E-01	3.8E 00	3.3E 01	4.4E 01	1.4E 01	5.0E 00
81	11	1.2E 00	4.0E-01	6.0E-01	1.1E 01	5.4E 01	2.5E 01	8.5E 00
82	15	4.0E-01	3.0E-01	7.4E 00	3.0E 01	2.6E 01	2.8E 01	7.8E 00
83	27	9.0E-01	2.4E 00	2.1E 01	3.3E 01	2.7E 01	9.9E 00	5.6E 00
84	27	7.0E-01	6.0E-01	2.2E 00	4.8E 01	3.4E 01	8.6E 00	5.5E 00
85	30	1.0E-01	5.0E-01	2.0E-01	6.9E 01	2.6E 01	2.6E 00	1.7E 00
86	31	3.0E-01	9.0E-01	9.0E-01	7.0E 01	2.0E 01	3.6E 00	4.4E 00
87	25	1.7E 01	1.1E 01	2.3E 01	4.0E 01	6.2E 00	1.8E 00	1.1E 00
88	17	2.9E 01	1.9E 01	3.1E 01	1.2E 01	5.6E 00	2.0E 00	7.0E-01
89	17	1.4E 01	1.2E 01	2.4E 01	2.9E 01	1.4E 01	5.4E 00	1.6E 00
90	18	5.8E 00	8.1E 00	2.2E 01	3.4E 01	2.0E 01	7.4E 00	2.9E 00
91	27	6.8E 00	4.5E 00	1.2E 01	5.1E 01	1.5E 01	5.6E 00	6.3E 00
92	17	3.8E 00	5.1E 00	2.2E 01	4.3E 01	1.7E 01	6.4E 00	2.5E 00
93	26	1.0E-01	1.0E-01	1.0E-01	6.5E 01	1.8E 01	7.5E 00	9.3E 00
94	25	1.0E-01	1.0E-01	3.0E 01	4.6E 01	1.6E 01	3.9E 00	1.5E 00
95	25	1.0E-01	2.0E-01	1.0E-01	5.8E 01	2.9E 01	5.4E 00	7.6E 00
96	26	3.0E-01	5.0E-01	1.1E 00	6.5E 01	2.2E 01	4.3E 00	5.9E 00
97	20	3.0E-01	7.0E-01	5.5E 00	5.7E 01	2.3E 01	9.5E 00	4.6E 00
98	26	5.0E-01	5.0E-01	1.0E 01	6.3E 01	1.1E 01	9.0E 00	5.2E 00
99	12	1.0E 00	3.0E-01	8.0E-01	3.8E 01	4.0E 01	1.2E 01	7.5E 00
100	18	8.3E 00	3.5E 00	8.7E 00	4.0E 01	2.8E 01	8.5E 00	3.8E 00
101	24	3.9E 00	7.0E-01	5.0E-01	4.6E 01	1.9E 01	2.5E 01	5.8E 00
102	22	5.2E 01	7.4E 00	1.8E 01	6.3E 00	7.3E 00	3.6E 00	5.2E 00
103	25	2.6E 01	1.7E 01	2.8E 01	1.1E 01	1.1E 01	4.6E 00	2.2E 00

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