



C. C. I. W.
LIBRARY
1966

C. C. I. W.
LIBRARY

LIMNOLOGICAL DATA REPORT NO 1

LAKE ONTARIO

CRUISE 66-1, JUNE 1-5

CRUISE 66-2, JUNE 7-10

PUBLISHED BY
CANADIAN OCEANOGRAPHIC DATA CENTRE

CANADA CENTRE FOR INLAND WATERS

BURLINGTON • ONTARIO

Programmed by

GREAT LAKES DIVISION

INLAND WATERS BRANCH

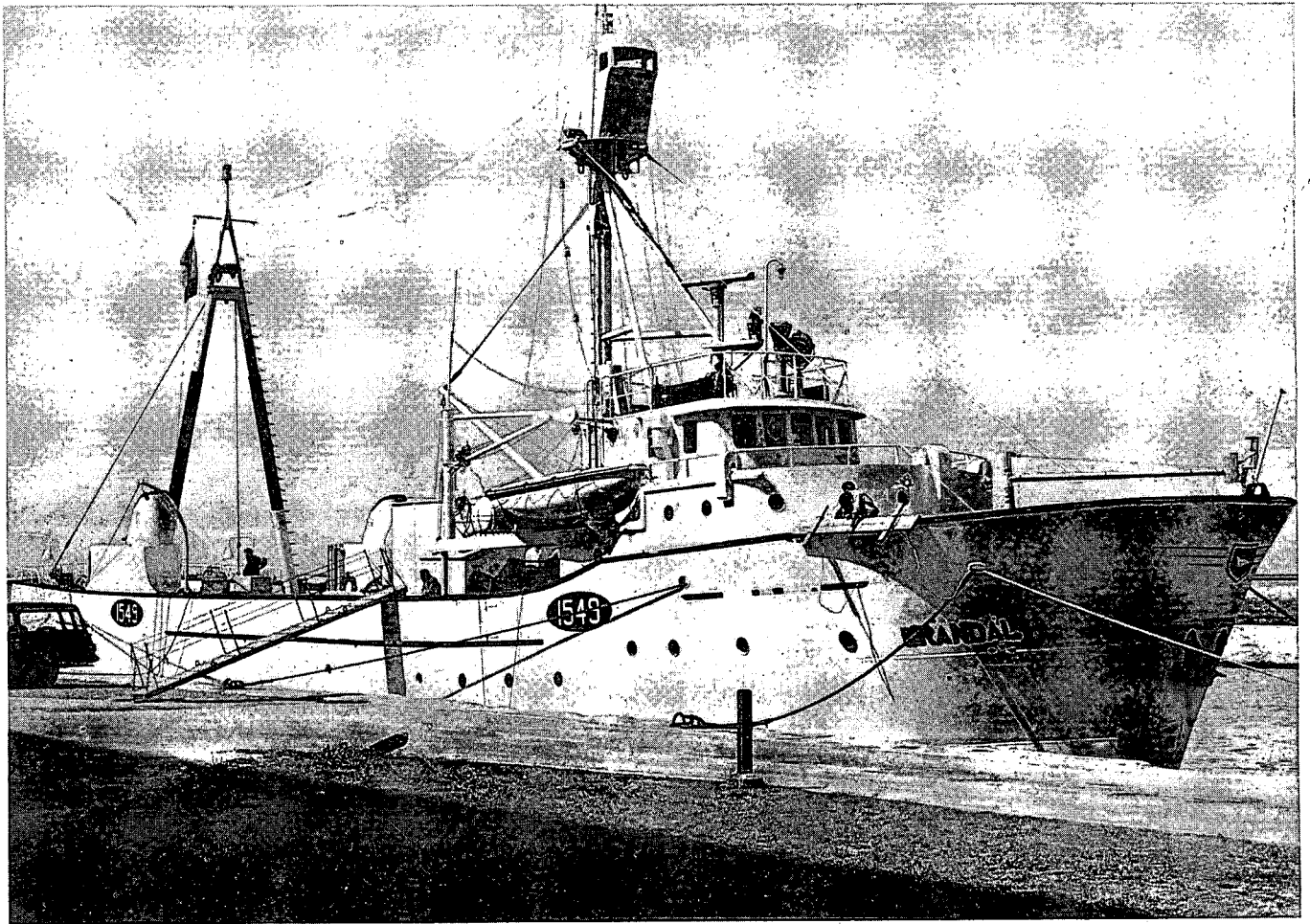
DEPARTMENT of ENERGY, MINES & RESOURCES

and

PUBLIC HEALTH ENGINEERING DIVISION

DEPARTMENT of NATIONAL HEALTH & WELFARE

CANADA



M.V. "Brandal"



LIMNOLOGICAL DATA REPORT NO.1

LAKE ONTARIO

CRUISE 66 - 1, JUNE 1 - 5

CRUISE 66 - 2, JUNE 7 - 10

1966

**CANADA CENTRE FOR INLAND WATERS
BURLINGTON, ONTARIO**

Published by
CANADIAN OCEANOGRAPHIC DATA CENTRE
1969

FOREWORD

This report contains limnological data gathered for research and monitoring purposes, primarily to provide data required in connection with the IJC reference on pollution of Lakes Erie and Ontario.

The agencies involved were:

Department of Energy, Mines and Resources
Department of National Health and Welfare

The joint reference of the Governments of Canada and the United States to the International Joint Commission was for information on the following questions:

- (1) Are the waters of Lake Erie, Lake Ontario and the International Section of the St. Lawrence River being polluted on either side of the boundary to an extent which is causing or is likely to cause injury to health or property on the other side of the boundary?
- (2) If the foregoing question is answered in the affirmative, to what extent, by what causes, and in what localities is such pollution taking place?
- (3) If the Commission should find that pollution of the character just referred to is taking place, what remedial measures would, in its judgement, be most practicable from the economic, sanitary and other points of view and what would be the probable cost thereof?

These data have been made available to International Joint Commission agencies, federal and provincial, operating under the respective Boards: The International Lake Erie Water Pollution Board and the International Lake Ontario - St. Lawrence River Water Pollution Board.

In view of their interest to limnological research workers who are not formally charged with studies on behalf of the International Joint Commission, these data are distributed widely in this report. Because of difficulties in interpretation, anyone using these data in the preparation of a paper or report which draws conclusions pertaining to the three questions posed above, is requested by the IJC Pollution Reference Boards to discuss the data interpretation with the agencies concerned before publishing the report or paper. Such discussion can be arranged through the Canada Centre for Inland Waters, P.O. Box 5050, Burlington, Ontario.

In all other respects, the data are free to be used for scientific research and studies and should be acknowledged in accordance with the usual scientific practice.

INTRODUCTION

This report is one of a series listing chemical, bacteriological and physical data for waters of Lake Ontario and Lake Erie, observed by Government of Canada agencies. The first twelve reports cover the year 1966, during which Lake Ontario was surveyed from June 1 to October 3, and Lake Erie, from August 8 to August 14.

The 1966 surveys were carried out by the Great Lakes Division (Inland Waters Branch) and the Canadian Hydrographic Service (Marine Sciences Branch), both of which are Branches of the Department of Energy, Mines and Resources, and by the Public Health Engineering Division of the Department of National Health and Welfare. Staff from the three agencies carried out the work aboard the 140-foot stern trawler "Brandal", chartered by the Department of Energy, Mines and Resources.

Water-quality data gathered during eighteen cruises in 1966 are contained in twelve separate reports in the present series. Not reported on is a nineteenth cruise, from August 23 to 28, which was for seismic purposes only. Supplementary bathythermograph data and weather data are available on request from the Canada Centre for Inland Waters, P.O. Box 5050, Burlington, Ontario.

The Canadian Government's program developed in response to a request directed to the International Joint Commission by the Governments of Canada and the United States, that information relating to pollution of Lake Ontario, Lake Erie, and the international section of the St. Lawrence River be gathered. Preliminary listings of the data have already been made available to agencies preparing a report for the International Joint Commission.

The bacteriological data have already been published in Manuscript Report No. 67-1 of the Public Health Engineering Division, Department of National Health and Welfare. These data are again published in the present series of reports to facilitate comparison with the chemical and physical data.

Figure 1 shows the geographical locations of the observations listed in this data record, together with the vessel's track and the locations of bathythermograph lowerings.

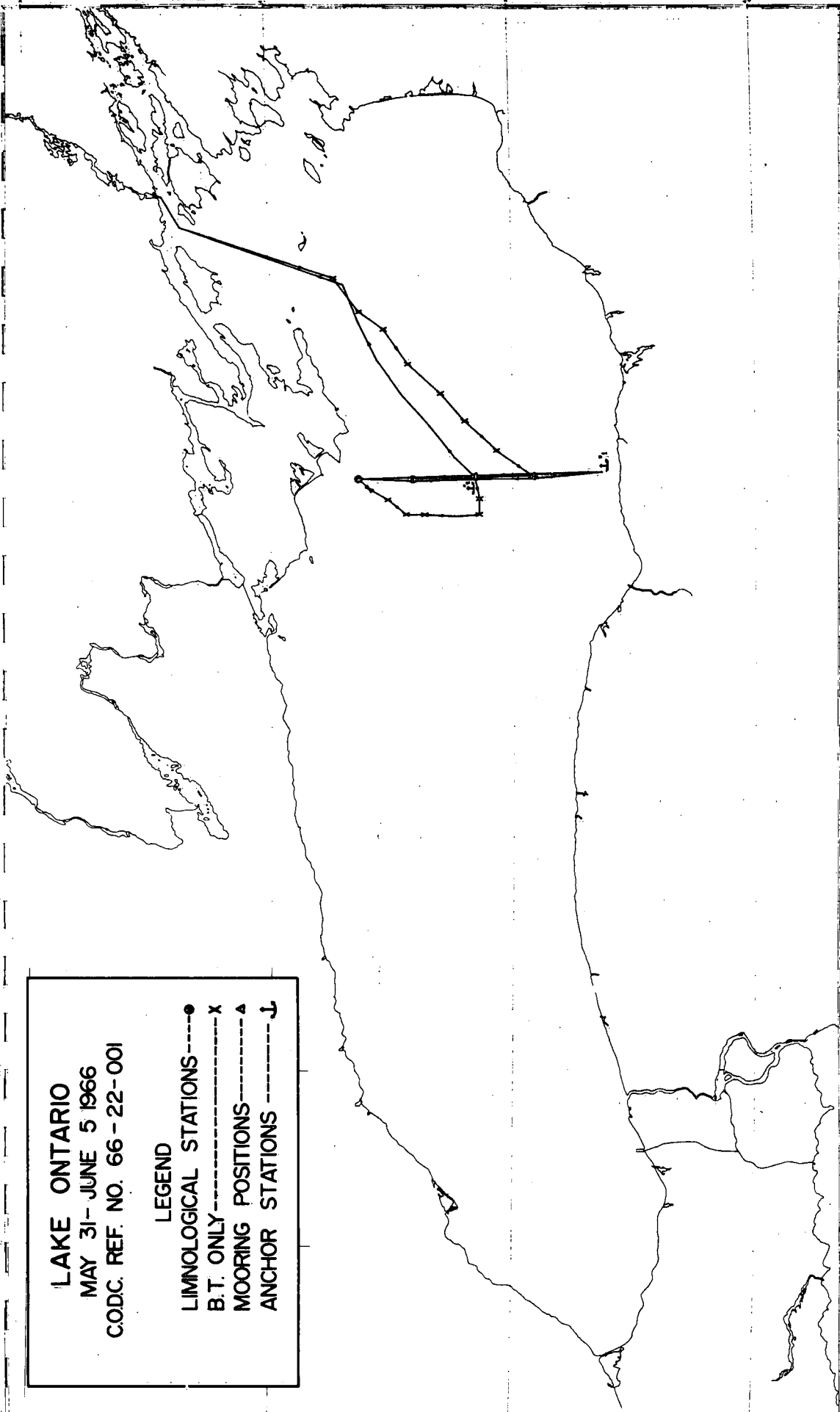
LAKE ONTARIO

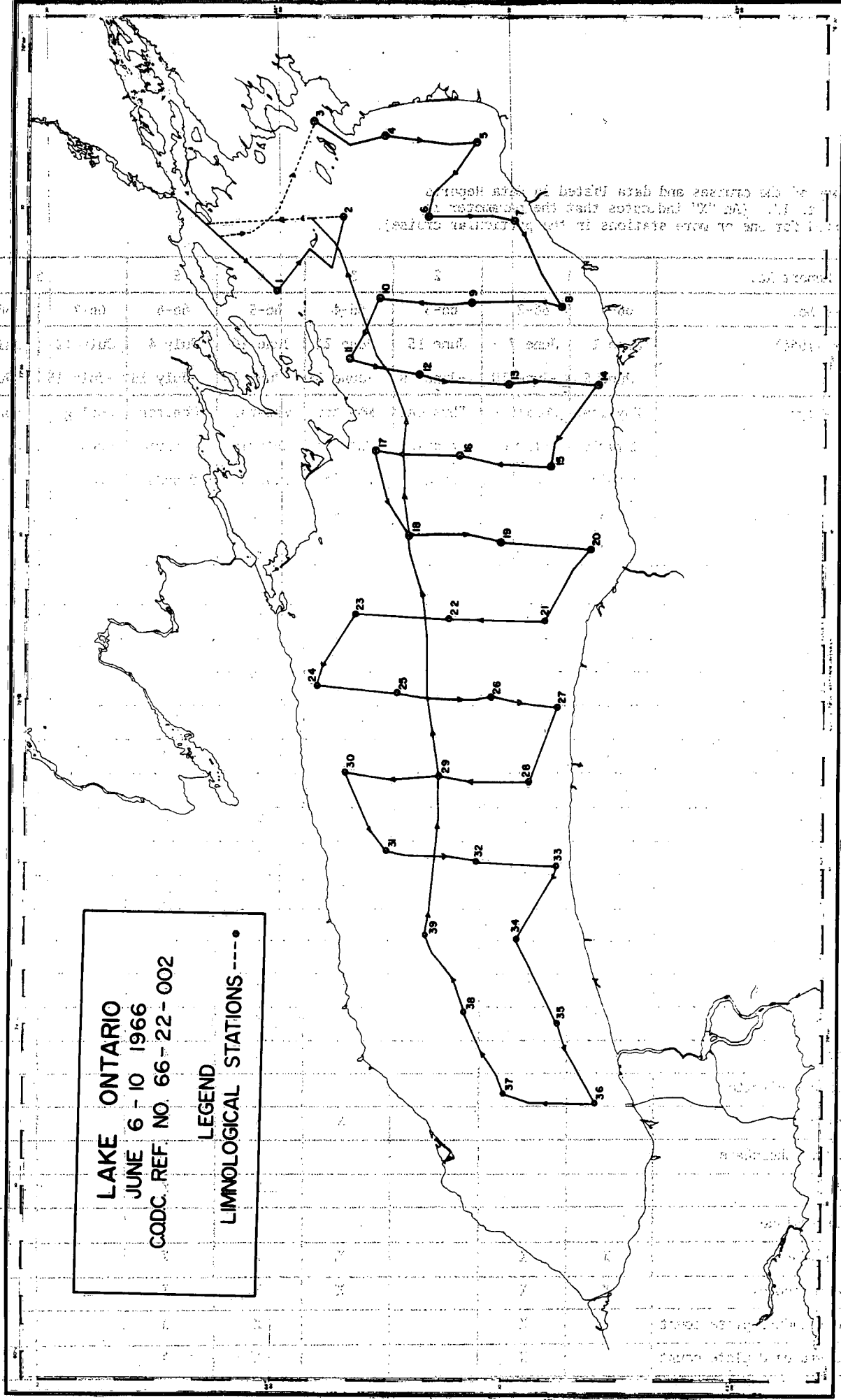
MAY 31 - JUNE 5 1966

CODC. REF. NO. 66-22-001

LEGEND

- LIMNOLOGICAL STATIONS -----●
- B.T. ONLY -----X
- MOORING POSITIONS -----▲
- ANCHOR STATIONS -----↓





LAKE ONTARIO
 JUNE 6 - 10 1966
 CODC. REF. NO. 66-22-002

LEGEND
 LIMNOLOGICAL STATIONS ----•

Original data were obtained from the Ontario Ministry of Natural Resources and the Ontario Ministry of the Environment. The data were processed and plotted by the Canadian Hydrographic Service, Marine Sciences Branch.

Summary of the cruises and data listed in Data Reports
Nos. 1 to 12. (An "X" indicates that the parameter is
reported for one or more stations in the particular cruise).

Data Report No.	1		2	3	4	5	6	
Cruise No.	66-1	66-2	66-3	66-4	66-5	66-6	66-7	66-8
Dates (1966)	June 1 -June 5	June 7 -June 10	June 15 -June 19	June 21 -June 25	June 26 -June 30	July 4 -July 10	July 12 -July 15	July 19 -July 24
Cruise type	Physical	Monitor	Physical	Monitor	Coastal	Monitor	Geology	Monitor
Lake	Ontario	Ontario	Ontario	Ontario	Ontario	Ontario	Ontario	Ontario
Vessel	Brandal	Brandal	Brandal	Brandal	Brandal	Brandal	Brandal	Brandal
No. of stations	35	39	107	88	113	125	75	88
No. of BT slides	133	39	120	88	115	125	76	116

Station data:

Date/time	X	X	X	X	X	X	X	X
Sounding	X	X	X	X	X	X	X	X
BT slide no.	X	X	X	X	X	X	X	X
Secchi depth	X	X	X	X	X	X		X
Sample depth	X	X	X	X	X	X	X	X
Temperature	X	X	X	X	X	X		X
Conductance, 18°C.	X	X		X	X	X	X	X
Dissolved oxygen				X	X	X	X	X
pH at 25°C.				X	X	X	X	X
Turbidity					X			X
B.O.D.						X		X
Total alkalinity		X		X	X	X		X
Hardness					X	X		X
Chloride					X	X		X
Nitrate + nitrite								
Nitrite				X	X	X		X
Reactive phosphate								
Phenol					X	X		X
Total residue								
MF coliforms	X	X		X	X	X		X
MF enterococci	X	X		X	X	X		X
20°C standard plate count		X			X	X		X
35°C standard plate count		X			X	X		X

7		8	9		10		11	12	
66-9	66-10	66-11	66-12	66-14	66-15	66-16	66-17	66-18	66-19
July 26	Aug. 2	Aug. 8	Aug. 15	Aug. 29	Sept. 6	Sept. 12	Sept. 20	Sept. 26	Oct. 1
-July 29	-Aug. 7	-Aug. 14	-Aug. 19	-Sept. 2	-Sept. 11	-Sept. 16	-Sept. 24	-Sept. 29	-Oct. 3
Physical Ontario Brandal 62 105	Monitor Ontario Brandal 79 106	Monitor Erie Brandal 105 97	Monitor Ontario Brandal 69 96	Monitor Ontario Brandal 47 70	Geology Ontario Brandal 92 92	Monitor Ontario Brandal 54 81	Coastal Ontario Brandal 109 109	Monitor Ontario Brandal 47 72	Physical Ontario Brandal 45 94

X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	

Description of the Data Record

Information in the headings for each station:

- | | | | |
|--------------|---------|----------|------------------|
| 1. C-REF-No. | 5. LAT. | 7. YEAR | 11. No. DEPTHS |
| 2. CONS. No. | 6. LON. | 8. MONTH | 12. SOUNDING |
| 3. COUNTRY | | 9. DAY | 13. BT SLIDE No. |
| 4. INSTITUTE | | 10. TIME | |

Explanations:

- (1) Cruise number: the 1966 cruises are numbered consecutively from 01 to 19, without regard for the lake involved. (In following years, consecutive numbers will be assigned to each lake separately).
- (2) Consecutive station number: the stations within each cruise are numbered in chronological order.
- (4) Institute: For filing purposes, the institute code was 22 (Inland Waters Branch, Department of Energy, Mines and Resources).
- (5) and (6) indicate the latitude and longitude of the vessel, in degrees, minutes and seconds, at the time of the observations.
- (7), (8) and (9) indicate the date of the observations, according to Greenwich Mean Time.
- (10) Indicates the messenger time in hours and minutes (Greenwich Mean Time) for the first bottle cast at the station. The hours of each day are numbered from 00 to 23.
- (11) The number of depths at which observations were made. This should correspond to the number of depths actually listed. The count is listed to reveal omissions due to the loss of punch-cards.
- (12) The sounding is listed in meters, to the nearest meter.
- (13) Indicates the bathythermograph slide number corresponding to the particular station. The slides are numbered consecutively within each cruise.

Explanation of the data listing for each station

Parameter Name	Abbreviation (column heading)	Units used in the Data Reports	No. of decimals printed	1966 processing code	1967 (Star System) code
Secchi depth	SECCI	meters	1	026	030
Sample depth	DEPTH	meters	1	998	001
Temperature	TEMP	°C	2	004	100
Conductance, 18°C.	CON 18	umhos	0	014	no equivalent
Dissolved oxygen	D O2	mg/L	2	003	245
pH at 25°C.	PH 25	pH units	3	055	215
Turbidity	TURB	Jackson units	1	015	123
B.O.D.	BOD	mg O ₂ /L/5 days	1	001	239
Total alkalinity	T ALK	mg CaCO ₃ /L	1	051	220
Hardness	HARD	mg CaCO ₃ /L	1	050	300
Chloride	CL	mg/L	1	057	290
Nitrate + nitrite	NO3NO2	mg N/L	3	022	275
Nitrite	NO2	mg N/L	3	021	273
Reactive phosphate	R PO4	mg PO ₄ /L	3	028	262
Phenol	PHEN	mg C ₆ H ₅ OH/L	3	024	410
MF coliforms	MF COL	colonies/100 ml.	*	080	700
MF enterococci	MF ENT	colonies/100 ml.	*	084	706
20°C standard plate count	SPC 20	colonies/ml.	*	082	720
35°C standard plate count	SPC 35	colonies/ml.	*	083	721

Note: The four bacteriological parameters are listed in exponential form: * Exponential Notation

130E02 = $1.30 \times 10^2 = 130$.
 100E00 = $1.00 \times 10^0 = 1$.
 000E00 = $0.00 \times 10^0 = 0$.

Note: For some parameters, the analytical methods listed in the Star System manual (Glennie and MacLeod 1967, pp. 23-33) are not the methods used for Data Reports Nos. 1-12.

Methods of Sampling and Measurement

Water sampling was carried out on the port side of the vessel, amidships, where a davit and a "chains" platform were installed. A small wooden deckhouse provided shelter for reading the thermometers and for transferring water from the primary sampling devices to small bottles which were taken to the shipboard laboratory. The sampling procedure together with photographs of the equipment are published in Manuscript Report No. 67-1 of the Public Health Division, Department of National Health and Welfare.

Samples were collected at standard depths of 1, 10, 20, 30, 50, 75, 100, 150 and 200 meters, where the depth of water permitted. The water sampling devices were metal Knudsen bottles with a capacity of 1.2 liters, and polyvinylchloride Van Dorn bottles with capacities of 2 and 3 liters. Oceanographic reversing thermometers, and rubber bulbs for bacteriological sampling, were mounted on the Knudsen bottles.

For bacteriological sampling, a sterile deflated pear-shaped rubber bulb was attached to a Knudsen bottle. A brass plug in the opening of the rubber bulb was pulled out by the reversing Knudsen bottle. (I.J.C. agencies 1966, pp 88-90).

Position (Latitude and longitude) was determined using radar ranges and bearings on identifiable shoreline features. Occasionally, dead-reckoning had to be used when the vessel was far from shore.

Sounding The depth of water at each station was measured with the ship's echo sounder. Corrections for the transducer depth have been applied.

Secchi depth is the depth of disappearance of a white disc, 30 centimeters in diameter, when it is lowered slowly into the water.

Sample depth The length of wire was measured with a meter wheel, using the water surface as the reference level. Wire-angle corrections were applied whenever depths were one meter or more.

Temperature Oceanographic reversing thermometers manufactured by Yoshino Keiko Co. of Japan were lowered in series to all the required depths, and were turned over after five minutes. Later, each thermometer was read twice in the vessel's deckhouse. Scale corrections and thermal-expansion corrections were applied to the readings. There were usually two thermometers on each Knudsen bottle. A single mean temperature value is reported in this final data record, but the individual readings are kept on file at the Canada Centre for Inland Waters. The difference between readings of paired thermometers was usually less than 0.05°C. (U.S. hydrographic Office 1955).

Additional temperature measurements were made with bathythermographs, and with a thermistor thermometer towed at a depth of one meter while the ship was underway. The BT and thermistor data are available on request from the Canada Centre for Inland Waters.

Storage conditions for the chemical samples Most of the analyses reported here were done in the ship's laboratory and were completed within about 12 hours after sampling.

Conductance at 18°C The electrical conductance was measured at laboratory temperature with an "Industrial Instruments" Model RC 16 B2 bridge and a dip cell with cell constant 1.00. At the time of the measurement, the temperature of the sample was measured with a mercury thermometer and recorded to the nearest 0.1°C. These temperature readings varied throughout the survey period, with a range of from 15 to 28°C.

Conductance at 18.0°C listed in the Data Reports Nos. 1 to 12, was computed from Dr. G.K. Rodgers' correction tables for Great Lakes Waters (I.J.C. agencies 1966, p. 51). However, 25°C will be the reference temperature used in future data reports in this series. To convert the conductance at 18.0°C to conductance at 25.0°C, multiply by 1.176.

Dissolved oxygen was measured using the Winkler iodometric method. One milliliter of each reagent was added to each sample. In 1966, the alkaline iodide solution contained 700 grams potassium hydroxide and 150 grams potassium iodide per liter. Azide was not used. (I.J.C. agencies 1968, pp. 67-78).

Oxygen percent saturation may be computed (Dobson 1967) from the measured oxygen concentration and the temperature, using the following equations:

Oxygen percent saturation (Lake Erie and upper Great Lakes)

$$= \frac{100 \text{ (oxygen in mg/L)}}{(14.380 - 0.4105 T + 0.008800 T^2 - 0.00009500 T^3)} \%$$

Oxygen percent saturation (Lake Ontario)

$$= \frac{98.8 \text{ (oxygen in mg/L)}}{(14.380 - 0.4105 T + 0.008800 T^2 - 0.00009500 T^3)} \%$$

A graph showing percent saturation as a function of oxygen concentration and temperature, according to either of these equations, provides a convenient way to evaluate percent saturation.

pH The pH is an approximate measure of $(-\log H^+)$ where H^+ is the hydrogen ion concentration.

<u>pH</u>	<u>H⁺</u>	
7.0	100. X 10 ⁻⁹	gm atoms/liter
7.2	63. X 10 ⁻⁹	gm atoms/liter
7.5	32. X 10 ⁻⁹	gm atoms/liter
8.0	10. X 10 ⁻⁹	gm atoms/liter
8.2	6.3 X 10 ⁻⁹	gm atoms/liter
8.5	3.2 X 10 ⁻⁹	gm atoms/liter
9.0	1.0 X 10 ⁻⁹	gm atoms/liter

Samples were analysed for pH about 10 to 20 hours after sampling. Changes in pH during the storage interval were probably ±0.1 to 0.3 pH units.

The pH near 25°C was measured using a Corning Model 10 meter, and glass and reference electrodes, calibrated with pH 7.4 (phosphate) and pH 9.2 (borax) standard solution. (I.J.C. agencies 1966, pp. 112-120).

Turbidity was measured within 24 hours after sampling, using a Hellige turbidimeter.

B.O.D. (Biochemical oxygen demand) One-liter samples were stored for a few hours so that they attained laboratory temperature. Then air was bubbled through each sample to produce oxygen concentrations near the equilibrium value for that temperature. Two 300-ml B.O.D. bottles were filled from each sample by means of a siphon. Dissolved oxygen in the sample of one of the B.O.D. bottles was measured immediately by the Winkler method. The sample in the other bottle was stored in the dark at 20°C, and after 5 days, its final oxygen concentration was measured. The "B.O.D." was the difference between the initial and final oxygen concentrations. A water seal was maintained around the top of each bottle during incubation. The dilution and seeding procedures of the American Public Health Association (1965, p. 415), were not included.

Alkalinity was measured using an Auto-Analyzer colorimetric instrument system. Samples were mixed with a buffered acidic methyl orange indicator solution. The final color was measured at 550 millimicrons. Standard solutions contained sodium bicarbonate. (I.J.C. agencies 1968, pp. 34-36). The unit for alkalinity in this report is mg CaCO₃/liter. The constituents reacting with the hydrogen ion during the alkalinity measurement were assumed to be CO₃⁻², and an equivalent amount of Ca⁺⁺ was arbitrarily assumed to be present. Actually most of the alkalinity in Great Lakes waters is HCO₃⁻. Conversion factor for alkalinity: 1 mg CaCO₃/liter = 1.219 mg HCO₃⁻/liter.

Hardness (Ca⁺⁺ + Mg⁺⁺) was measured using an Auto-Analyzer. The sample was mixed with disodium magnesium EDTA + disodium EDTA, then with Eriochrome Black T + pH 10.3 buffer. The resulting color was measured at 520 millimicrons. Standard solutions contained calcium. (I.J.C. agencies 1966, pp. 91-93). Lake-water samples contained some magnesium as well as calcium. The conventional unit, mg CaCO₃/L, used in Data Reports Nos. 1 to 12, gives information for (Ca⁺⁺ + Mg⁺⁺), but not for Ca⁺⁺ or CO₃⁻². Conversion factor for hardness: 1 mg CaCO₃/L = 0.0200 milliequivalents (Ca⁺⁺ + Mg⁺⁺)/L.

Chloride was measured using an Auto-Analyzer. Unfiltered samples were mixed with ferric ammonium sulfate + nitric acid + mercuric thiocyanate. The resulting color was measured at 480 millimicrons. (I.J.C. agencies 1966, pp. 97-98).

Nitrate + nitrite was measured using an Auto-Analyzer. Samples were not filtered. Nitrate was reduced to nitrite by adding sodium hydroxide, hydrazine sulfate, and copper sulfate. The mixture was passed through a 38°C heating bath. Then total nitrite was measured by adding orthophosphoric acid + sulfanilamide + N-(1-naphthyl) ethylenediamine dihydrochloride, and measuring the resulting color at 520 millimicrons. (I.J.C. agencies 1966, pp. 102-104).

(NO₃ + NO₂) was sampled on cruises 5, 6, 8 and 10, but the results for the 4°C water in Lake Ontario on those cruises were near 0.5 mg N/L, about 2½ times the values found on cruise 66-12 and subsequent cruises in 1966 and 1967. The (NO₃ + NO₂) results for cruises 5, 6, 8 and 10 are probably in error and have been omitted from these final Data Reports. The (NO₃ + NO₂) data for cruise 66-11 on Lake Erie include values near 0.1 mg N/L for the eastern bottom water, which is in agreement with the 1967 data. Therefore the (NO₃ + NO₂) data from cruise 66-11 are probably correct, and have been printed in Data Report No. 8. For cruise 66-12 and following cruises on Lake Ontario, the (NO₃ + NO₂) data for the 4°C water have values near 0.2 mg N/L, which is also in agreement with 1967 results. Therefore the data for cruise 66-12 and later cruises are probably correct, and are included in the final Data Reports.

Nitrite Nitrite in unfiltered samples was measured, using an Auto-Analyzer, by adding sodium hydroxide + ortho-phosphoric acid + sulfanilamide + N-(1-naphthyl) ethylenediamine dihydrochloride. The resulting color was measured at 520 millimicrons. (I.J.C. agencies 1966, pp. 102-104).

Reactive phosphate Phosphate in unfiltered samples was measured, using an Auto-Analyzer, by adding ammonium molybdate + hydrochloric acid + stannous chloride, and measuring the resulting color at 660 millimicrons. (I.J.C. agencies 1966, pp. 94-96).

Ammonia was measured during 1966 on cruises 8, 10, 11, 12, 14, 16, 17 and 18. The maximum value was .072 mg N/L. There were very many results of .000 mg N/L, except for cruise 10 for which the minimum was .020 mg N/L. There was no obvious spatial distribution of the higher values. These data have not been included in the Data Reports Nos. 1 to 12.

Phenol and related substances. The pH of the sample was adjusted to 4.0 by adding ortho-phosphoric acid, and copper sulfate was also added, immediately after sampling. Analyses were done up to one week later. The sample was distilled, and phenol in the distillate was measured by adding ammonium chloride; then, ammonium hydroxide (to produce pH 10.0 ± 0.2), 4-aminoantipyrine and potassium ferricyanide were also added. The resulting color was extracted into chloroform and measured at 460 millimicrons (American Public Health Association 1965, pp. 516-520, distillation step and method A).

Storage conditions for bacteriological samples The analyses began within one or two hours after sampling, except for samples collected between midnight and 7.30 a.m. These night-time samples were stored at 10°C for up to 8 hours before their analyses commenced.

Total coliform density determinations were obtained by membrane filtration techniques using Bacto-m Endo MF Broth. Membranes were incubated at 35°C for 20±2 hours (American Public Health Association 1965, p. 616, Method A).

Fecal Streptococcus density determinations were obtained by membrane filtration techniques using Bacto-m Enterococcus Agar. Membranes were

incubated at 39°C for 48±3 hours (American Public Health Association 1965, p. 619).

20°C and 35°C Standard Plate Counts were made using 1 ml samples mixed with liquified (45°C) Bacto-Plate Count Agar, allowed to solidify and then incubated at 20°C for 48±3 hours or at 35°C for 24±2 hours. (American Public Health Association 1965, p. 592).

Personnel (Great Lakes Division, Department of Energy, Mines and Resources; Canadian Hydrographic Service; Public Health Engineering Division, Department of National Health and Welfare).

Program co-ordination:

Dr. R.K. Lane (Acting Chief, Great Lakes Division)
H.H. Dobson (G.L.D.)
P.M. Higgins (N.H. & W.)
H.B. Macdonald (C.H.S.)
H.E. Sweers (G.L.D.)

Chemical analyses aboard "Brandal":

G. Baulne (N.H. & W.)
M. Charette (N.H. & W.)
H.H. Dobson (G.L.D.)
B. Hutcheon (N.H. & W.)
D. Ide (N.H. & W.)
D. Jenkinson (G.L.D.)
R. Orr (N.H. & W.)
R. Selcage (G.L.D.)

Bacteriology:

J.B. Bell (N.H. & W.)
A. Bruce (N.H. & W.)
B.J. Dutka (N.H. & W.)
J. Reid (N.H. & W.)
W. Winters (N.H. & W.)

Chemical analyses in shore laboratories:

C. McBratney (N.H. & W.)
W.J. Traversy (Water Quality Division, E.M. & R.)

Physical studies:

M. Nunez (G.L.D.)
H.E. Sweers (G.L.D.)
Dr. H.S. Weiler (G.L.D.)

Geology:

Dr. C.F.M. Lewis (Geological Survey of Canada)

Seismic surveys:

Dr. G.D. Hobson (Geological Survey of Canada)
E. Holzl (Geological Survey of Canada)

Operations and engineering support:

H.B. Macdonald (C.H.S.)	P. Davies (C.H.S.)
G. Armstrong (C.H.S.)	J. Heidt (G.L.D.)
K.N. Birch (G.L.D.)	M. Landry (C.H.S.)
P. Bishop (G.L.D.)	P. Lawrence (G.L.D.)
R. Boswell (C.H.S.)	D. Matte (C.H.S.)
E. Brignell (C.H.S.)	H. Savile (G.L.D.)
T. Charbonneau (C.H.S.)	W. Whyte (C.H.S.)

Data processing: (Great Lakes Division, Inland Waters Branch, E.M. & R.)

J.R. Chevrier
W. Nagel
Mrs. K. Schopf
G. Warren

Other Participating Agencies

The Canadian Oceanographic Data Centre produced and distributed the preliminary data records, and published final reports in the present series.

The Meteorological Branch of the Department of Transport provided meteorological instruments, and trained the personnel who carried out the weather observations.

Captain R. Caldwell and the crew of the "Brandal" operated the vessel in support of the limnological program.

References

- American Public Health Association. 1965. American Water Works Association, and Water Pollution Control Federation. Standard Methods for the Examination of Water and Wastewater, Twelfth Edition. 769 pp.
- Dobson, H.H. 1967. Principal ions and dissolved oxygen in Lake Ontario. Proceedings, Tenth Conference on Great Lakes Research, pp. 337-356.
- Glennie, C.J., and T.M. MacLeod. 1967. The Star system for storage and retrieval of scientific data. Canadian Oceanographic Data Centre, Ottawa. 43 pp.
- I.J.C. agencies. 1966. Working Committee on Methodology. A digest of analytical methods employed by laboratories associated with International Joint Commission Research on the Great Lakes. 135 pp.
- I.J.C. agencies. 1968. Working Committee on Methodology. Revised analytical methods employed by laboratories associated with International Joint Commission Research on the Great Lakes. 89 pp.
- U.S. Hydrographic Office. 1955. Publ. No. 607. Instruction Manual for Oceanographic Observations. Second Edition, 211 pp.

CRUISE 66-1, LAKE ONTARIO

C-REF-NC 001
 CCNS. NC 001
 CCOUNTRY 18
 INSTITUTE 22

LAT 43-27-00N
 LON 077-17-00W

YEAR 1966
 MONTH 06
 DAY 01
 TIME 0026

NO. DEPTHS 08
 SCUNDING 0214
 BT SLIDE NO 010

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		4.00			
10.0		3.64			
30.0		3.63			
50.0		3.60			
75.0		3.68		000ECO	000ECO
100.0		3.69		100E00	CC0E00
150.0		3.62		500E00	000E00
190.0		3.62			

C-REF-NC 001
 CCNS. NC 002
 COUNTRY 18
 INSTITUTE 22

LAT 43-49-12N
 LON 077-17-18W

YEAR 1966
 MONTH 06
 DAY 01
 TIME 1900

NO. DEPTHS 04
 SOUNDING CC27
 BT SLIDE NO 011

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		8.90	282		
10.0		8.08	281	000E00	000E00
20.0		6.56	283	000E00	
25.0		6.09	283	000E00	000E00

C-REF-NO 001
 CONS. NO 003
 COUNTRY 18
 INSTITUTE 22

LAT 43-42-24N
 LON 077-17-24W

YEAR 1966
 MONTH 06
 DAY 01
 TIME 2028

NO. DEPTHS 08
 SOUNDING 0106
 BT SLIDE NC C12

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.70	284	100E01	000E00
10.0		6.47	283	000E00	000E00
20.0		5.87	283	000E00	000E00
30.0		5.79	284		
50.0		5.31	284	000E00	000E00
63.0		5.18	284	100E00	000E00
87.0		4.43	285	000E00	000E00
105.0		4.42	286	000E00	000E00

C-REF-NC 001
 CCNS. NO 004
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-42N
 LON 077-17-12W

YEAR 1966
 MONTH 06
 DAY 01
 TIME 2230

NO. DEPTHS 08
 SOUNDING 0155
 BT SLIDE NC C13

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		7.10	284	900E00	000E00
20.0		4.83	283	000E00	
30.0		4.67	282	000E00	000E00
40.0		4.62	284	000E00	000E00
50.0		4.56	283	000E00	000E00
72.0		4.57	284	000E00	000E00
96.0		4.49	283	000E00	000E00
144.0		4.15	283	000E00	000E00

C-REF-NC 001
 CGNS. NC 005
 COUNTRY 18
 INSTITUTE 22

LAT 43-33-30N
 LON 077-17-18W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 0001

NO. DEPTHS 08
 SOUNDING 0170
 BT SLIDE NC 014

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.00		000E00	000ECO
10.0		4.71		000E00	000ECO
20.0		4.41		000E00	000ECC
30.0		4.16		000E00	000ECO
50.0		4.12		000E00	000ECO
72.0		4.10		000E00	000ECO
96.0		4.03		000E00	000ECC
144.0		3.86		000E00	000ECC

C-REF-NC 001
 CGNS. NC 006
 COUNTRY 18
 INSTITUTE 22

LAT 43-25-06N
 LON 077-16-30W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 0304

NO. DEPTHS 10
 SOUNDING 0225
 BT SLIDE NC 015

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		3.90		000E00	000ECC
10.0		3.67	281	000E00	000E00
20.0		3.67	280	000E00	000E00
30.0		3.65	281	000E00	000ECC
50.0		3.57	282	000E00	000ECC
75.0		3.57	282	000E00	000ECO
100.0		3.60	283	000E00	000E00
150.0		3.59	283	000E00	000E00
190.0		3.57	282	000E00	000ECO
194.0		3.61			

C-REF-NC 001
 CONS. NO 007
 COUNTRY 18
 INSTITUTE 22

LAT 43-20-30N
 LON 077-16-30W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 0603

NO. DEPTHS 06
 SOUNDING C078
 BT SLIDE NO C17

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.30		000E00	000E00
10.0		5.17	280	000E00	000E00
20.0		5.01	280	100E00	000E00
30.0		4.74	280	000E00	000E00
40.0		4.54	281	000E00	000E00
50.0		4.34	282	000E00	000E00

C-REF-NC 001
 CONS. NC 008
 COUNTRY 18
 INSTITUTE 22

LAT 43-20-30N
 LON 077-16-36W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 0906

NO. DEPTHS 06
 SOUNDING C080
 BT SLIDE NO 021

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.10		100E00	000E00
10.0		4.94	281	000E00	000E00
20.0		4.82	281	000E00	000E00
30.0		4.65	282	000E00	000E00
50.0		4.43	282	000E00	000E00
70.0		4.44	282	000E00	000E00

C-REF-NC 001
 CONS. NO 009
 COUNTRY 18
 INSTITUTE 22

LAT 43-20-24N
 LON 077-16-30W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 1154

NO. DEPTHS 06
 SOUNDING CC80
 BT SLIDE NC 026

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	5.5	5.20	282	CC0E00	CC0E00
10.0		4.95	280	CC0E00	CC0E00
20.0		4.68	282	000E00	000E00
30.0		4.65	282	000E00	
50.0		4.55	282	0C0E00	0C0E00
74.0		4.55	282	0C0E00	CC0E00

C-REF-NO 001
 CONS. NO 010
 COUNTRY 18
 INSTITUTE 22

LAT 43-20-24N
 LON 077-16-24W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 1400

NO. DEPTHS 06
 SOUNDING CC77
 BT SLIDE NC 029

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.20	282	0C0E00	000E00
10.0		4.99	283	CC0E00	CC0E00
20.0		4.45	282	0C0E00	000E00
30.0		4.40	281	CC0E00	0C0E00
50.0		4.40	282	1C0E00	000E00
60.0		4.36	283	CC0E00	CC0E00

C-REF-NO 001
 CONS. NO 011
 CCOUNTRY 18
 INSTITUTE 22

LAT 43-20-24N
 LON 077-16-24W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 1624

NO. DEPTHS 06
 SOUNDING CC77
 BT SLIDE NO 032

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.60			
10.0		4.96			
20.0		4.86			
30.0		4.54			
50.0		4.36	282		
65.0		4.34	282		

C-REF-NG 001
 CONS. NO 012
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-16-48W

YEAR 1966
 MONTH 06
 DAY 02
 TIME 2223

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NO 035

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.00		0C0E00	
10.0		5.40	282	000E00	000E00
20.0		4.65	288	000E00	000E00
30.0		4.15	282	0C0E00	
50.0		4.04	282	0C0E00	
75.0		3.96	282	000E00	
100.0		3.92	282	000E00	
150.0		3.92	282	0C0E00	

C-REF-NO 001
 CONS. NO 013
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 0125

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NO C38

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.90	283		
10.0		5.49	283		
20.0		4.06	284		
30.0		4.02	283		
50.0		3.93	284		
75.0		4.13			
100.0		4.07	283		
150.0		4.05	282		

C-REF-NO 001
 CONS. NO 014
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 0320

NO. DEPTHS 08
 SOUNDING 0166
 BT SLIDE NO 041

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.40	284	000E00	
10.0		4.88	282	0C0E00	
20.0		4.11	283	0C0E00	
30.0		4.13	284	0C0E00	
50.0		4.04	283	0C0E00	
75.0		3.98	284	0C0E00	
100.0		3.95	283	0C0E00	
150.0		3.92	282	0C0E00	

C-REF-NC 001
 CCNS. NC 015
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 0823

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NC 043

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.00	284	100E00	
10.0		4.93	284	000E00	
20.0		4.45	283	000ECO	
30.0		4.36	283	000E00	
50.0		4.06	284	000E00	
75.0		4.03	283	000E00	
100.0		3.97	282	000E00	
150.0		3.84	282	000E00	

C-REF-NO 001
 CCNS. NO 016
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 1149

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NC 049

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.00	282		
10.0		5.19	282		
20.0		4.48	282		
30.0		4.38	281		
50.0			282		
75.0		4.04	282		
100.0		4.00	281		
150.0		3.87	282		

C-REF-NO 001
 CONS. NC 017
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-42N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 1413

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NO 054

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	9.5	5.70	283		
10.0		4.96			
20.0		4.61	282		
30.0		4.26	282		
50.0		4.12	282		
75.0		4.05	282		
100.0		3.97	282		
150.0		3.89	281		

C-REF-NC 001
 CONS. NC 018
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-06W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 1624

NO. DEPTHS 08
 SOUNDING 0165
 BT SLIDE NC 058

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.50	283		
10.0		5.07	283		
20.0		4.54	283		
30.0		4.27	283		
50.0		4.20	283		
75.0		4.11	282		
100.0		4.04	282		
150.0		3.87	283		

C-REF-NO 001
 CONS. NO 019
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-16-54W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 1824

NO. DEPTHS 08
 SOUNDING 0163
 BT SLIDE NO 062

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.50			
10.0		4.75	282		
20.0		4.59	282		
30.0		4.27	283		
50.0		4.23	284		
75.0		4.15	283		
100.0		4.09	283		
150.0		3.89	282		

C-REF-NG 001
 CONS. NO 020
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-17-12W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 2020

NO. DEPTHS 08
 SOUNDING 0163
 BT SLIDE NO 065

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.50	283		
10.0		5.06	282		
20.0		4.87	283		
30.0		4.53	282		
50.0		4.21	283		
75.0		4.17	283		
100.0		4.09	283		
150.0		3.90	282		

C-REF-NC 001
 CONS. NO 021
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-00W

YEAR 1966
 MONTH 06
 DAY 03
 TIME 2250

NO. DEPTHS 09
 SOUNDING 0165
 BT SLIDE NC 069

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	6.5	6.10	283		
1.0		6.11	282		
10.0		5.50	283		
20.0		4.92	282		
30.0		4.29	282		
50.0		4.17	284		
75.0		4.11	284		
100.0		4.09	282		
149.0		3.94	283		

C-REF-NO 001
 CONS. NO 022
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-48W

YEAR 1966
 MONTH 06
 DAY 04
 TIME 0120

NO. DEPTHS 08
 SOUNDING 0161
 BT SLIDE NC 071

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	7.5	6.00	282		
10.0		5.26	282		
20.0		4.14	284		
30.0			283		
50.0		4.02	283		
75.0		3.99	282		
100.0		3.97	282		
150.0		3.94	282		

C-REF-NO 001
 CCNS. NO 023
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-06W

YEAR 1966
 MONTH 06
 DAY 04
 TIME 0340

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 075

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.20	284		
10.0		4.14	284		
20.0		4.10	284		
30.0		4.06	284		
50.0		4.02	282		
75.0		3.96	283		
100.0		3.93	283		
150.0		3.93	283		

C-REF-NO 001
 CONS. NO 024
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-17-12W

YEAR 1966
 MONTH 06
 DAY 04
 TIME 0625

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 080

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		5.60			
10.0		5.36			
20.0		4.91			
30.0		4.49			
50.0		4.14			
75.0		4.11			
100.0		4.06			
150.0		3.93			

C-REF-NO 001
 CONS. NO 025
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-17-12W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 0919

NO. DEPTHS 09
 SOUNDING 0162
 BT SLIDE NC 085

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	7.5	5.60			
1.0		5.50			
10.0		5.51			
20.0		4.91			
30.0		4.55			
50.0		4.15			
74.0		4.12			
99.0		4.07			
149.0		3.96			

C-REF-NO 001
 CONS. NO 026
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-00N
 LON 077-17-06W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 1143

NO. DEPTHS 09
 SOUNDING 0161
 BT SLIDE NC 090

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	7.3	5.90			
1.0		5.68			
10.0		5.54			
20.0		4.81			
30.0		4.34			
50.0		4.23			
74.0		4.14			
99.0		4.08			
148.0		3.95			

C-REF-NO 001
 CONS. NO 027
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-48N
 LON 077-16-54W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 1428

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 095

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.80			
10.0		5.84			
20.0		4.79			
30.0		4.26			
50.0		4.21			
75.0		4.12			
100.0		4.07			
150.0		3.86			

C-REF-NO 001
 CONS. NO 028
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-00N
 LON 077-17-30W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 1624

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 099

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		7.00			
10.0		6.12			
20.0		5.12			
30.0		4.52			
50.0		4.20			
75.0		4.14			
100.0		4.10			
150.0		3.78			

C-REF-NO 001
 CONS. NO 029
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-00N
 LON 077-17-00W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 1856

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 104

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		6.79			
10.0		6.38			
20.0		5.99			
30.0		4.88			
50.0		4.19			
75.0		4.16			
100.0		4.11			
150.0		3.76			

C-REF-NO 001
 CONS. NO 030
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-00W
 YEAR 1966
 MONTH 06
 DAY 04
 TIME 2147

NO. DEPTHS 09
 SOUNDING 0160
 BT SLIDE NO 108

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		7.20			
1.0		6.98			
10.0		6.08			
20.0		5.08			
30.0		4.47			
50.0		4.29			
75.0		4.19			
99.0		4.12			
149.0		3.78			

C-REF-NC 001
 CONS. NC 031
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-12N
 LON 077-17-42W

YEAR 1966
 MONTH 06
 DAY 05
 TIME 0024

NO. DEPTHS 07
 SOUNDING 0160
 BT SLIDE NO 113

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
1.0		7.93			
10.0		5.93			
20.0		4.90			
30.0		4.54			
50.0		4.29			
75.0		4.16			
100.0		4.10			

C-REF-NC 001
 CONS. NC 032
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-54N
 LON 077-17-00W

YEAR 1966
 MONTH 06
 DAY 05
 TIME 0432

NO. DEPTHS 08
 SOUNDING 0160
 BT SLIDE NO 120

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		7.35			
10.0		5.79			
20.0		4.80			
30.0		4.49			
50.0		4.23			
75.0		4.19			
100.0		4.09			
150.0		3.77			

C-REF-NC 001	LAT 43-34-54N	YEAR 1966	NO. DEPTHS 08
CONS. NO 033	LON 077-17-00W	MONTH 06	SOUNDING 0160
COUNTRY 18		DAY 05	BT SLIDE NC 124
INSTITUTE 22		TIME 0652	

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
1.0		7.66			
10.0		6.05			
20.0		4.84			
30.0		4.52			
50.0		4.23			
75.0		4.17			
100.0		4.07			
150.0		3.77			

C-REF-NO 001	LAT 43-34-54N	YEAR 1966	NO. DEPTHS 09
CONS. NO 034	LON 077-17-00W	MONTH 06	SOUNDING 0160
COUNTRY 18		DAY 05	BT SLIDE NC 128
INSTITUTE 22		TIME 0916	

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0		7.70			
1.0		7.32			
10.0		5.68			
20.0		5.05			
30.0		4.64			
50.0		4.28			
75.0		4.20			
99.0		4.12			
149.0		3.81			

C-REF-NO 001
CONS. NO 035
COUNTRY 18
INSTITUTE 22

LAT 43-34-54N
LON 077-17-00W

YEAR 1966
MONTH 06
DAY 05
TIME 1137

NO. DEPTHS 09
SOUNDING 0161
BT SLIDE NO 133

DEPTH	SECCHI	TEMP	CON 18	MF COL	MF ENT
0.0	5.5	7.40			
1.0		7.36			
10.0		5.83			
20.0		4.81			
30.0		4.46			
49.0		4.28			
74.0		4.17			
98.0		4.08			
148.0		3.83			

CRUISE 66-2, LAKE ONTARIO

C-REF-NO 002
 CONS. NO 001
 COUNTRY 18
 INSTITUTE 22

LAT 44-00-24N
 LON 076-45-54W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 0112

NO. DEPTHS 04
 SOUNDING CC32
 BT SLIDE NC C01

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		11.56	278	94.0	000E00		400E00	000E00
10.0		9.24	276		000E00	000E00		
20.0		7.46	280		000E00	000E00		
25.0		7.02	280	92.5	000E00	000E00	160E01	100E01

C-REF-NC 002
 CONS. NO 002
 COUNTRY 18
 INSTITUTE 22

LAT 43-51-39N
 LON 076-32-27W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 0327

NO. DEPTHS 04
 SOUNDING CC31
 BT SLIDE NO C02

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		11.77	278	90.5	000E00	000E00	170E02	100E00
10.0		9.15	280	91.0	000E00	000E00		
20.0		7.47	280	93.5	000E00	000E00		
25.0		7.18	280	93.5	000E00	000E00	600E02	700E00

C-REF-NC 002
 CONS. NC 003
 COUNTRY 18
 INSTITUTE 22

LAT 43-55-00N
 LON 076-15-12W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 1535

NO. DEPTHS 03
 SOUNDING 0021
 BT SLIDE NO C03

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	4.0	14.19	290	92.5	500E00	200E00	400E01	400E00
10.0		13.63	295	94.0	000E00			
17.0		11.51	296	93.5	200E00	000E00	450E01	400E00

C-REF-NO 002
 CONS. NC 004
 COUNTRY 18
 INSTITUTE 22

LAT 43-46-06N
 LON 076-18-06W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 1717

NO. DEPTHS 04
 SOUNDING C035
 BT SLIDE NO C04

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF CCL	MF ENT	SPC 20	SPC 35
1.0		9.98	279	93.5	000E00	400E00	520E01	100E00
10.0		9.02	279	92.5	000E00	000E00		
20.0		7.31	280	94.0	000E00		310E02	200E00
30.0		5.83	282	94.0	000E00			

C-REF-NO 002
 CONS. NO 005
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-06N
 LON 076-19-48W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 1916

NO. DEPTHS 04
 SOUNDING C040
 BT SLIDE NO C05

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	5.0	10.52	277	93.5	300E00	310E01	100E01	400E00
10.0		9.71	278	93.5	200E00	100E00		
20.0		9.19		93.5	200E00			
30.0		8.53	278	93.5	200E00	000E00	230E01	400E00

C-REF-NO 002
 CONS. NO 006
 COUNTRY 18
 INSTITUTE 22

LAT 43-40-24N
 LON 076-33-12W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 2107

NO. DEPTHS 08
 SOUNDING 0132
 BT SLIDE NO C06

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		12.98	289	100.0	000E00	220E01	400E00	400E00
10.0		6.53	282	96.0	000E00			
20.0		4.52						
30.0		4.01						
49.0		3.95						
74.0		3.95						
99.0		3.94						
119.0		3.91	281	96.0	000E00	400E00	800E00	300E00

C-REF-NC 002
 CONS. NO 007
 COUNTRY 18
 INSTITUTE 22

LAT 43-29-54N
 LON 076-34-00W

YEAR 1966
 MONTH 06
 DAY 07
 TIME 2244

NO. DEPTHS 05
 SOUNDING 0055
 BT SLIDE NO C07

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	4.5	10.04	287	103.5	100E00	000E00	500E00	100E00
10.0		7.95	278	94.0	300E00			
20.0		7.48	278	94.0	200E00	000E00	120E01	100E00
30.0			280	94.0	100E00			
45.0		7.54	280	92.5	000E00		350E01	130E01

C-REF-NC 002
 CONS. NO 008
 COUNTRY 18
 INSTITUTE 22

LAT 43-23-36N
 LON 076-49-21W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 0051

NO. DEPTHS 05
 SOUNDING 0066
 BT SLIDE NO C08

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		8.70	280	94.0	000E00	000E00	500E00	200E00
10.0		7.78	280	95.0	000E00	000E00		
20.0			280	95.0	000E00	000E00	100E01	200E00
30.0		6.08	280	94.0	000E00			
50.0		5.05	282	95.0	000E00	100E00	400E01	120E01

C-REF-NO 002
 CGNS. NO 009
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-18N
 LON 076-48-42W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 0301

NO. DEPTHS 08
 SCUNDING 0205
 BT SLIDE NO C09

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		7.48	282	95.5	000E00	000E00	400E00	100E00
10.0		4.82	281	95.0	000E00			
20.0		3.94						
30.0		3.90						
50.0		3.90						
75.0		3.83						
100.0		3.80						
150.0		3.70	280	94.0	000E00	000E00	240E02	500E00

C-REF-NO 002
 CONS. NC 010
 CCOUNTRY 18
 INSTITUTE 22

LAT 43-47-21N
 LON 076-47-39W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 0512

NO. DEPTHS 05
 SCUNDING C070
 BT SLIDE NO C10

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		11.82	282	93.5	100E00	100E00	650EC1	230E01
10.0		8.27	282	92.5	000E00	000E00		
20.0		6.31	284	93.0				
30.0		5.84	282	93.5	000E00	000E00		
50.0		5.26	282	95.5	000E00		100EC2	500E00

C-REF-NO 002
 CONS. NO 011
 COUNTRY 18
 INSTITUTE 22

LAT 43-51-18N
 LON 076-58-42W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 0644

NO. DEPTHS 03
 SOUNDING C027
 BT SLIDE NO 011

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		10.35	286	95.0	000E00	000E00	400E01	600E00
10.0		8.50	288	95.0	000E00			
20.0		7.14	286	95.0	000E00	000E00	150E01	700E00

C-REF-NO 002
 CONS. NO 012
 COUNTRY 18
 INSTITUTE 22

LAT 43-42-12N
 LON 077-01-33W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 0818

NO. DEPTHS 07
 SOUNDING 0110
 BT SLIDE NO 012

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		10.40	282	95.0	000E00	000E00	150E01	600E00
9.0		7.79	278	95.0	000E00			
19.0		5.84						
28.0		5.30						
47.0		5.10						
71.0		4.78						
95.0		4.45	279	93.5	000E00	000E00	800E01	500E00

C-REF-NC 002
 CONS. NO 013
 COUNTRY 18
 INSTITUTE 22

LAT 43-30-39N
 LON 077-03-00W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 1029

NO. DEPTHS 09
 SOUNDING 0234
 BT SLIDE NC 013

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	6.5	7.54	282	94.0	000ECO	000ECC	600EC1	200ECO
10.0		5.66	283	94.0	000ECO			
20.0		4.30						
30.0		4.10						
50.0		3.95						
75.0		3.93						
100.0		3.91						
150.0		3.88						
199.0		3.80	280	95.0	000E00	000ECC	550EC1	200E00

C-REF-NC 002
 CONS. NO 014
 COUNTRY 18
 INSTITUTE 22

LAT 43-19-15N
 LON 077-03-30W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 1212

NO. DEPTHS 05
 SOUNDING 0049
 BT SLIDE NC 014

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	4.0	10.13	278	95.0	000ECO	200ECC	450EC1	100ECC
10.0		8.45	280	93.5	000ECO			
20.0		6.89	283	94.0	100E00			
30.0		5.65	279	95.0	130EC1			
40.0		5.03	282	96.0	200ECC	000ECC	700EC1	600E00

C-REF-NG 002
 CONS. NO 015
 COUNTRY 18
 INSTITUTE 22

LAT 43-25-00N
 LON 077-18-00W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 1420

NO. DEPTHS 08
 SOUNDING 0220
 BT SLIDE NO 015

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	10.0	8.06	278	95.5	000E00	000E00	300E01	000E00
10.0		4.50	285	96.0	000E00			
20.0		3.95						
29.0		3.89						
49.0		3.88						
74.0		3.83						
98.0		3.81						
148.0		3.74	284	93.5	000E00	000E00	450E01	200E01

C-REF-NG 002
 CONS. NO 016
 COUNTRY 18
 INSTITUTE 22

LAT 43-36-57N
 LON 077-16-51W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 1614

NO. DEPTHS 07
 SOUNDING 0141
 BT SLIDE NG 016

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	4.0	9.58	280	92.5	000E00	700E00	250E01	500E00
10.0		7.26	280	92.5	000E00			
20.0		5.22						
30.0		4.61						
50.0		4.49						
75.0		4.27						
100.0		4.13	283	93.5	000E00		400E01	700E00

C-REF-NO 002
 CONS. NO 017
 COUNTRY 18
 INSTITUTE 22

LAT 43-47-39N
 LON 077-15-09W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 1759

NO. DEPTHS 04
 SOUNDING C038
 BT SLIDE NO C17

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	3.5	11.29	281	97.0	000E00		170EC1	100E00
10.0		7.97	281	96.0	000E00			
20.0		6.64	281	97.0	000E00			
30.0		5.96	284	97.5	000E00		120E01	400E00

C-REF-NC 002
 CONS. NO 018
 CCOUNTRY 18
 INSTITUTE 22

LAT 43-43-24N
 LON 077-30-21W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 2003

NO. DEPTHS 06
 SOUNDING C080
 BT SLIDE NO 018

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	3.0	11.16	279	97.5	000E00	200E00	130EC1	700E00
10.0		9.12	280	95.5				
20.0		6.52						
30.0		5.85						
50.0		5.16						
65.0		4.38	283	96.0	000E00	000E00	350EC1	500E00

C-REF-NO 002
 CONS. NO 019
 COUNTRY 18
 INSTITUTE 22

LAT 43-32-00N
 LON 077-31-27W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 2150

NO. DEPTHS 09
 SOUNDING 0183
 BT SLIDE NO 019

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	9.5	6.39	280	95.5	000E00	000E00	150E01	200E00
10.0		4.26	280	95.5	000E00			
20.0		3.89						
30.0		3.87						
50.0		3.86						
75.0		3.83						
100.0		3.81						
150.0		3.75						
160.0		3.71	282	94.0	000E00	000E00	400E01	100E00

C-REF-NO 002
 CONS. NO 020
 COUNTRY 18
 INSTITUTE 22

LAT 43-19-42N
 LON 077-32-54W

YEAR 1966
 MONTH 06
 DAY 08
 TIME 2359

NO. DEPTHS 05
 SOUNDING 0055
 BT SLIDE NO 020

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	5.0	8.29	280	95.0	000E00	600E00	900E01	500E00
10.0		8.18	281	95.5	000E00			
20.0		5.96	281	95.5	000E00			
30.0		5.38	281	96.0	000E00			
45.0		4.08	280	93.0	400E00	100E00	110E02	100E01

C-REF-NO 002
 CONS. NO 021
 COUNTRY 18
 INSTITUTE 22

LAT 43-26-12N
 LON 077-46-06W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 0147

NO. DEPTHS 07
 SOUNDING 0129
 BT SLIDE NO 021

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		7.00	281	91.0	000E00	100ECC	200E01	300E00
10.0		4.73	281	92.5	000E00			
20.0		4.07						
30.0		3.91						
50.0		3.88						
75.0		3.84						
100.0		3.78	280	93.5	000E00	200E00	200E01	500E00

C-REF-NO 002
 CONS. NO 022
 COUNTRY 18
 INSTITUTE 22

LAT 43-38-12N
 LON 077-45-27W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 0335

NO. DEPTHS 07
 SOUNDING 0156
 BT SLIDE NO 022

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		8.75	280	93.5	000E00	000ECC		
10.0		6.13	281	94.0	000E00			
19.0		4.76						
29.0		4.54						
49.0		4.17						
73.0		3.92						
97.0		3.90	282	93.5	000E00	000ECC		

C-REF-NC 002
 CONS. NO 023
 COUNTRY 18
 INSTITUTE 22

LAT 43-50-15N
 LON 077-44-36W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 0529

NO. DEPTHS 06
 SOUNDING C071
 BT SLIDE NC 023

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		10.75	280	93.5	000E00	000ECC		
10.0		7.55	280	94.0	000E00			
20.0		6.09	281	93.5	000E00			
30.0		5.79	281	95.0	000E00			
40.0		5.27	282	96.0	000E00			
60.0		4.62	281	94.0	000E00	100ECC		

C-REF-NO 002
 CONS. NO 024
 COUNTRY 18
 INSTITUTE 22

LAT 43-55-51N
 LON 077-57-24W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 0711

NO. DEPTHS 03
 SOUNDING C039
 BT SLIDE NO 024

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		7.96	281	94.0	000E00	000ECC		
10.0		5.21	281	95.5	000E00			
20.0		4.91	281	95.0	000E00	000ECC		

C-REF-NO 002
 CONS. NO 025
 COUNTRY 18
 INSTITUTE 22

LAT 43-44-51N
 LON 077-59-06W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 0848

NO. DEPTHS 07
 SOUNDING 0119
 BT SLIDE NO 025

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		10.02	277	93.5	000ECO	000E0C		
10.0		9.06	278	95.0	000ECO			
20.0		5.30						
30.0		4.81						
50.0		4.33						
75.0		4.09						
100.0		3.92	282	95.0	000E00	000ECC		

C-REF-NO 002
 CONS. NO 026
 COUNTRY 18
 INSTITUTE 22

LAT 43-32-57N
 LON 077-59-15W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1042

NO. DEPTHS 09
 SOUNDING 0181
 BT SLIDE NO 026

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	8.5	4.19	281	95.0	100E00	100ECC		
10.0		4.15	280	95.0	000ECO			
20.0		3.94						
30.0		3.88						
50.0		3.87						
75.0		3.83						
100.0		3.78						
150.0		3.71						
160.0		3.67	281	96.5	000E00	100ECC		

C-REF-NO 002
 CONS. NO 027
 COUNTRY 18
 INSTITUTE 22

LAT 43-24-24N
 LON 078-01-12W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1210

NO. DEPTHS 05
 SOUNDING C064
 BT SLIDE NC 027

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		8.47	280	93.5	300E00	100E00		
10.0		7.63	280	91.0	000E00			
20.0		7.09	279	93.0	000E00			
30.0		6.24	280	93.5	000E00			
50.0		4.88	280	92.0	000E00	000E00		

C-REF-NO 002
 CONS. NO 028
 COUNTRY 18
 INSTITUTE 22

LAT 43-27-39N
 LON 078-15-03W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1358

NO. DEPTHS 07
 SOUNDING 0126
 BT SLIDE NC 028

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	8.5	5.91	281	92.0	000E00	000E00		
10.0		5.30	280	87.0	100E00			
20.0		4.12						
30.0		3.95						
50.0		3.88						
75.0		3.84						
100.0		3.81	281	84.0	000E00	000E00		

C-REF-NC 002
 CONS. NO 029
 COUNTRY 18
 INSTITUTE 22

LAT 43-39-45N
 LON 078-13-54W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1549

NO. DEPTHS 07
 SOUNDING 0153
 BT SLIDE NO 029

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		9.17	279	89.5	000ECO			
10.0		6.03	281	89.5	000ECO			
20.0		4.03						
30.0		3.90						
50.0		3.90						
75.0		3.86						
100.0		3.84	281	88.0	000E00			

C-REF-NC 002
 CCNS. NO 030
 COUNTRY 18
 INSTITUTE 22

LAT 43-51-39N
 LON 078-13-18W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1730

NO. DEPTHS 04
 SOUNDING 0049
 BT SLIDE NO C30

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	3.5	9.86	280	83.0	000ECC	000ECC		
10.0		6.42	282	95.0	000E00			
20.0		5.53	280	93.0	000E00			
30.0		4.91	280	91.5	000E00			

C-REF-NC 002
 CONS. NO 031
 COUNTRY 18
 INSTITUTE 22

LAT 43-46-27N
 LON 078-27-30W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 1907

NO. DEPTHS 06
 SOUNDING 0077
 BT SLIDE NO 031

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	4.0	8.77	280	90.5	000E00	000E00		
10.0		8.68	281	93.0	000E00			
20.0		6.11	282	92.0	000E00			
30.0		5.22	283	90.5	000E00			
50.0		4.17	281	90.5	000E00			
65.0		4.07	281	93.5	000E00	200E00		

C-REF-NO 002
 CONS. NO 032
 COUNTRY 18
 INSTITUTE 22

LAT 43-34-39N
 LON 078-29-09W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 2043

NO. DEPTHS 08
 SOUNDING 0170
 BT SLIDE NO 032

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0	5.5	4.54	282	91.5	000E00	400E00		
10.0		4.44	280	90.0	000E00			
19.0		4.38						
29.0		3.88						
48.0		4.01						
72.0		3.87						
96.0		3.86						
145.0		3.73	282	89.5	000E00	500E00		

C-REF-NO 002
 CONS. NO 033
 COUNTRY 18
 INSTITUTE 22

LAT 43-24-15N
 LON 078-30-15W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 2217

NO. DEPTHS 05
 SOUNDING C060
 BT SLIDE NC C33

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		11.44	290	97.5	190E01	C00ECC		
10.0		11.32	280		160E01			
19.0		5.79	281		200E00			
29.0		4.96	281		C00ECC			
48.0		4.25	281		100E00	600ECC		

C-REF-NO 002
 CONS. NC 034
 COUNTRY 18
 INSTITUTE 22

LAT 43-29-09N
 LON 078-43-15W

YEAR 1966
 MONTH 06
 DAY 09
 TIME 2349

NO. DEPTHS 08
 SOUNDING 0152
 BT SLIDE NC C34

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		6.88	279	90.5	000E00	C00ECC		
10.0		6.39	279	92.0	C00ECC			
20.0		3.98						
29.0		3.86						
49.0		3.85						
74.0		3.80						
99.0		3.79						
133.0		3.74	280	93.0	C00ECC	120EC1		

C-REF-NO 002
 CGNS. NO 035
 COUNTRY 18
 INSTITUTE 22

LAT 43-23-54N
 LON 078-58-24W

YEAR 1966
 MONTH 06
 DAY 10
 TIME 0131

NO. DEPTHS 06
 SOUNDING 0106
 BT SLIDE NO 035

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		5.93	280	90.5	000E00	300E00		
10.0		5.96	280	90.5	000E00			
20.0		5.93	280	92.0	000E00			
30.0		5.81	279	90.5	000E00			
50.0		4.46	280	89.5	000E00			
75.0		4.00	280	90.0	000E00	000E00		

C-REF-NG 002
 CONS. NG 036
 COUNTRY 18
 INSTITUTE 22

LAT 43-18-36N
 LON 079-13-12W

YEAR 1966
 MONTH 06
 DAY 10
 TIME 0305

NO. DEPTHS 05
 SOUNDING 0086
 BT SLIDE NO 036

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		9.12	279	89.0	130E01	500E00		
10.0		9.12	279	87.5	160E01			
20.0		6.82	279	90.0	300E00			
30.0		4.28	281	89.5	000E00			
50.0		4.16	281	94.0	000E00	100E00		

C-REF-NO 002
 CONS. NO 037
 COUNTRY 18
 INSTITUTE 22

LAT 43-30-45N
 LON 079-11-54W

YEAR 1966
 MONTH 06
 DAY 10
 TIME 0449

NO. DEPTHS 07
 SOUNDING 0128
 BT SLIDE NC 037

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		8.17	278	93.5	000ECO	000ECC		
10.0		8.11	278	94.0	000ECO			
20.0		4.98						
30.0		4.15						
50.0		4.12						
75.0		4.08						
100.0		3.94	280	90.0	CC0ECC	CC0ECC		

C-REF-NO 002
 CONS. NO 038
 COUNTRY 18
 INSTITUTE 22

LAT 43-35-24N
 LON 078-57-06W

YEAR 1966
 MONTH 06
 DAY 10
 TIME 0631

NO. DEPTHS 07
 SOUNDING 0132
 BT SLIDE NC 038

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF CCL	MF ENT	SPC 20	SPC 35
1.0		9.09	280	90.5	100E00	100ECC		
10.0		9.11	280	92.0	000E00			
20.0		5.49						
30.0		4.51						
50.0		4.11						
75.0		3.96						
100.0		3.87	281	93.0	000ECO	100ECC		

C-REF-NO 002
CCNS. NC 039
COUNTRY 18
INSTITUTE 22

LAT 43-41-12N
LON 078-42-39W

YEAR 1966
MONTH 06
DAY 10
TIME 0804

NO. DEPTHS 07
SOUNDING 0117
BT SLIDE NO 039

DEPTH	SECCHI	TEMP	CON 18	T ALK	MF COL	MF ENT	SPC 20	SPC 35
1.0		6.64	280		000ECC	100ECC		
10.0		6.59	280	88.0	000ECC			
20.0		5.34						
30.0		4.12						
50.0		3.94						
75.0		3.91						
100.0		3.84	281	88.0	000ECC	200ECC		