1966

LIMNOLOGICAL DATA REPORT NO. 2

LAKE ONTARIO

CRUISE 66 - 3, JUNE 15 - 19

PUBLISHED BY
CANADIAN OCEANOGRAPHIC DATA CENTRE

CANADA CENTRE FOR INLAND WATERS

BURLINGTON • ONTARIO

Programmed by

GREAT LAKES DIVISION

INLAND WATERS BRANCH

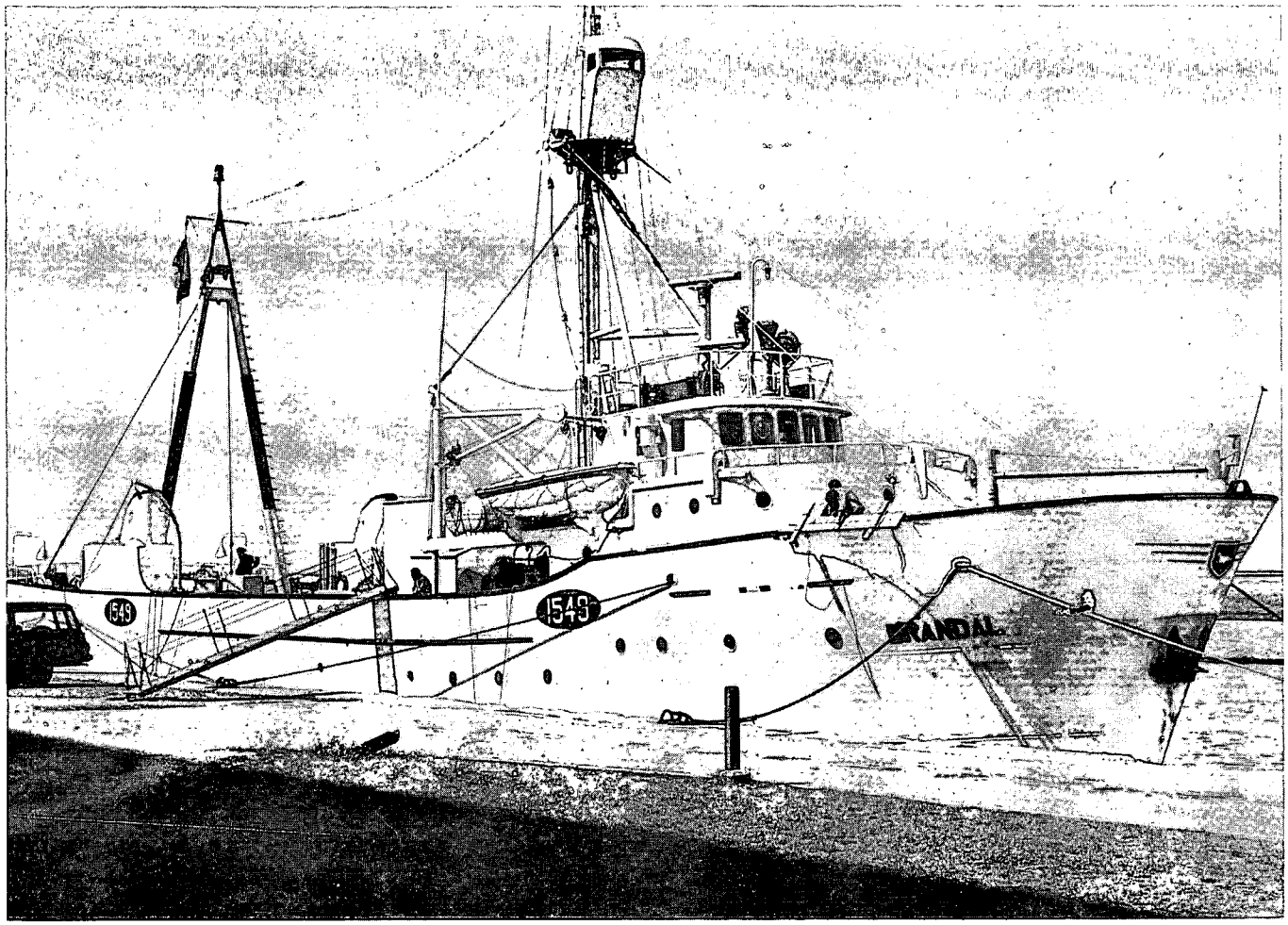
DEPARTMENT of ENERGY, MINES & RESOURCES

and

PUBLIC HEALTH ENGINEERING DIVISION

DEPARTMENT of NATIONAL HEALTH & WELFARE

CANADA



M.V. "Brandal"

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CANADA CENTRE FOR INLAND WATERS
BURLINGTON, ONTARIO

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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.

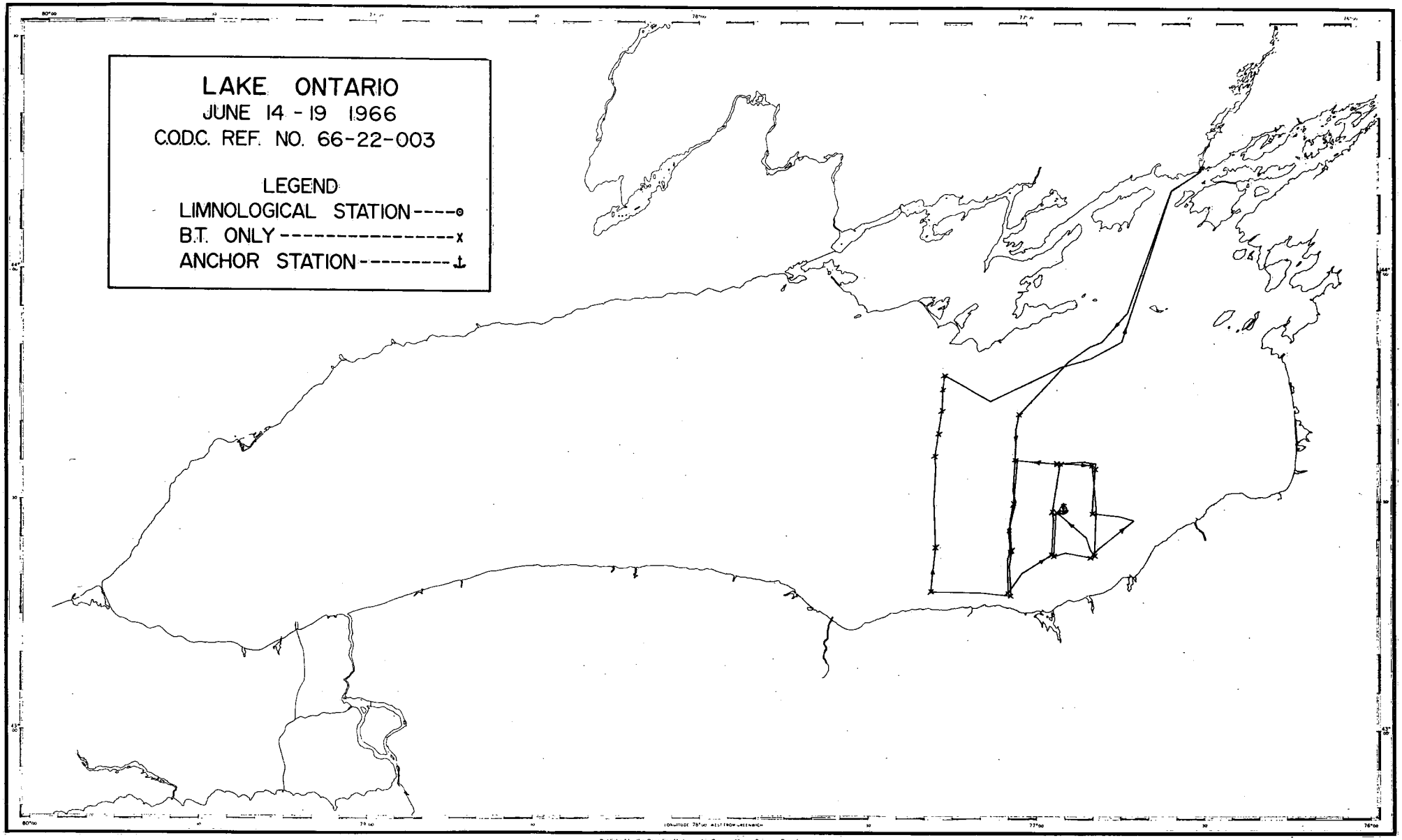
The 1966 surveys were carried out by the Great Lakes Division (Inland Waters Branch) and the Canadian Hydrographic Service (Marine Sciences Branch), both of which are Branches of the Department of Energy, Mines and Resources, and by the Public Health Engineering Division of the Department of National 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.



Published by the Canadian Hydrographic Service, Marine Sciences Branch.

LAKE ONTARIO

10501

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

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	SECCHI	meters	1	026	030
Sample depth	DEPTH	meters	1	998	001
Temperature	TEMP	°C	2	004	100
Conductance, 18°C.	CON 18	µmhos	0	014	no equivalent
Dissolved oxygen	D 02	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_6H_5OH/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:

130E02 = 1.30 X 10^2 = 130.
100E00 = 1.00 X 10^0 = 1.
000E00 = 0.00 X 10^0 = 0.

* Exponential Notation

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)

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

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.

pH	H^+	
7.0	$100. \times 10^{-9}$	gm atoms/liter
7.2	$63. \times 10^{-9}$	gm atoms/liter
7.5	$32. \times 10^{-9}$	gm atoms/liter
8.0	$10. \times 10^{-9}$	gm atoms/liter
8.2	6.3×10^{-9}	gm atoms/liter
8.5	3.2×10^{-9}	gm atoms/liter
9.0	1.0×10^{-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 $CaCO_3$/liter. The constituents reacting with the hydrogen ion during the alkalinity measurement were assumed to be CO_3^{-2}, and an equivalent amount of Ca^{++} was arbitrarily assumed to be present. Actually most of the alkalinity in Great Lakes waters is HCO_3^-. Conversion factor for alkalinity: 1 mg $CaCO_3$/liter = 1.219 mg HCO_3^-/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 $CaCO_3$/L, used in Data Reports Nos. 1 to 12, gives information for ($Ca^{++} + Mg^{++}$), but not for Ca^{++} or CO_3^{-2}. Conversion factor for hardness: 1 mg $CaCO_3$/L = 0.0200 milli-equivalents ($Ca^{++} + Mg^{++}$)/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).

(NO_3 + NO_2) 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 $2\frac{1}{2}$ times the values found on cruise 66-12 and subsequent cruises in 1966 and 1967. The (NO_3 + NO_2) results for cruises 5, 6, 8 and 10 are probably in error and have been omitted from these final Data Reports. The (NO_3 + NO_2) 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 (NO_3 + NO_2) 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 (NO_3 + NO_2) 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).

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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 66-3, LAKE ONTARIO

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

LAT 43-29-39N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 0131

NO. DEPTHS 09
SOUNDING 0221
BT SLIDE NO 013

DEPTH	SECCHI	TEMP
1.0		5.04
10.0		5.00
20.0		4.98
30.0		4.64
50.0		4.19
75.0		3.89
100.0		3.80
150.0		3.73
200.0		3.64

C-REF-NO 003
CONS. NO 002
COUNTRY 18
INSTITUTE 22

LAT 43-29-33N
LON 076-55-39W

YEAR 1966
MONTH 06
DAY 15
TIME 0228

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 014

DEPTH	SECCHI	TEMP
1.0		5.06
10.0		5.10
20.0		4.98
30.0		4.92
50.0		4.41
75.0		3.89
100.0		3.79
150.0		3.73
200.0		3.63

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

LAT 43-29-39N
LON 076-55-39W

YEAR 1966
MONTH 06
DAY 15
TIME 0323

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 015

DEPTH	SECCHI	TEMP
1.0		4.97
10.0		4.97
20.0		4.82
30.0		4.68
50.0		4.30
75.0		3.88
100.0		3.77
150.0		3.72
200.0		3.63

C-REF-NO 003
CONS. NO 004
COUNTRY 18
INSTITUTE 22

LAT 43-29-48N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 15
TIME 0432

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 016

DEPTH	SECCHI	TEMP
1.0		5.05
10.0		4.99
20.0		4.74
30.0		4.79
50.0		4.36
75.0		3.79
100.0		3.81
150.0		3.66
200.0		3.55

C-REF-NO 003
CONS. NO 005
COUNTRY 18
INSTITUTE 22

LAT 43-29-48N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 15
TIME 0532

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 017

DEPTH	SECCHI	TEMP
1.0		4.90
10.0		4.86
20.0		4.80
30.0		4.58
50.0		4.41
75.0		3.91
100.0		3.78
150.0		3.73
200.0		3.63

C-REF-NO 003
CONS. NO 006
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 0630

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 018

DEPTH	SECCHI	TEMP
1.0		4.90
10.0		4.87
20.0		4.75
30.0		4.66
50.0		4.25
75.0		3.89
100.0		3.80
150.0		3.72
200.0		3.65

C-REF-NO 003
CONS. NO 007
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 0725

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 019

DEPTH	SECCHI	TEMP
1.0		4.95
10.0		4.93
20.0		4.85
30.0		4.73
50.0		4.42
75.0		3.91
100.0		3.80
150.0		3.72
200.0		3.62

C-REF-NO 003
CONS. NO 008
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 0837

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 020

DEPTH	SECCHI	TEMP
1.0		4.88
10.0		4.89
20.0		4.80
30.0		4.61
50.0		4.39
75.0		3.99
100.0		3.80
150.0		3.69
200.0		3.62

C-REF-NO 003
CONS. NO 009
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 0935

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 021

DEPTH	SECCHI	TEMP
1.0		4.96
10.0		4.91
20.0		4.76
30.0		4.64
50.0		4.35
75.0		4.00
100.0		3.80
150.0		3.71
200.0		3.62

C-REF-NO 003
CONS. NO 010
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 1023

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 022

DEPTH	SECCHI	TEMP
1.0		4.94
10.0		4.83
20.0		4.69
30.0		4.56
50.0		4.35
75.0		3.96
100.0		3.81
150.0		3.70
200.0		3.62

C-REF-NO 003
CONS. NO 011
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 1121

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 023

DEPTH	SECCHI	TEMP
1.0		4.76
10.0		4.68
20.0		4.63
30.0		4.55
50.0		4.35
75.0		3.88
100.0		3.80
150.0		3.70
200.0		3.63

C-REF-NO 003
CONS. NO 012
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 15
TIME 1224

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 024

DEPTH	SECCHI	TEMP
1.0		4.86
10.0		4.73
20.0		4.63
30.0		4.61
50.0		4.42
75.0		3.95
100.0		3.79
150.0		3.72
200.0		3.60

C-REF-NO 003
CONS. NO 013
COUNTRY 18
INSTITUTE 22

LAT 43-29-42N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1318

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 025

DEPTH	SECCHI	TEMP
1.0		4.86
10.0		4.68
20.0		4.60
30.0		4.55
50.0		4.26
75.0		3.87
100.0		3.79
150.0		3.70
200.0		3.62

C-REF-NO 003
CONS. NO 014
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1419

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 026

DEPTH	SECCHI	TEMP
1.0		5.09
10.0		4.78
20.0		4.62
30.0		4.57
50.0		4.37
75.0		3.91
100.0		3.79
150.0		3.73
200.0		3.61

C-REF-NO 003
CONS. NO 015
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1519

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 027

DEPTH	SECCHI	TEMP
1.0		4.91
10.0		4.69
20.0		4.61
30.0		4.58
50.0		4.27
75.0		3.86
100.0		3.79
150.0		3.71
200.0		3.62

C-REF-NO 003
CONS. NO 016
COUNTRY 18
INSTITUTE 22

LAT 43-29-24N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1626

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 028

DEPTH	SECCHI	TEMP
1.0		5.11
10.0		4.85
20.0		4.73
30.0		4.64
50.0		4.40
75.0		3.89
100.0		3.79
150.0		3.73
200.0		3.62

C-REF-NO 003
CONS. NO 017
COUNTRY 18
INSTITUTE 22

LAT 43-29-42N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1728

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 029

DEPTH	SECCHI	TEMP
1.0		5.19
10.0		4.94
20.0		4.81
30.0		4.76
50.0		4.48
75.0		3.95
100.0		3.80
150.0		3.74
200.0		3.64

C-REF-NO 003
CONS. NO 018
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-56-06W

YEAR 1966
MONTH 06
DAY 15
TIME 1827

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 030

DEPTH	SECCHI	TEMP
1.0		5.45
10.0		4.90
20.0		4.71
30.0		4.64
50.0		4.47
75.0		4.03
100.0		3.83
150.0		3.75
200.0		3.64

C-REF-NO 003
CONS. NO 019
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 1927

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 031

DEPTH	SECCHI	TEMP
1.0		5.46
10.0		5.21
20.0		4.81
30.0		4.58
50.0		4.42
75.0		3.96
100.0		3.82
150.0		3.75
200.0		3.65

C-REF-NO 003
CONS. NO 020
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 15
TIME 2020

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 032

DEPTH	SECCHI	TEMP
1.0		5.52
10.0		5.20
20.0		4.82
30.0		4.66
50.0		4.37
75.0		3.94
100.0		3.80
150.0		3.75
200.0		3.67

C-REF-NO 003
CONS. NO 021
COUNTRY 18
INSTITUTE 22

LAT 43-29-42N
LON 076-56-06W

YEAR 1966
MONTH 06
DAY 15
TIME 2122

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 033

DEPTH	SECCHI	TEMP
1.0		5.51
10.0		5.37
20.0		4.75
30.0		4.66
50.0		4.34
75.0		3.90
100.0		3.81
150.0		3.74
200.0		3.67

C-REF-NO 003
CONS. NO 022
COUNTRY 18
INSTITUTE 22

LAT 43-29-42N
LON 076-56-06W

YEAR 1966
MONTH 06
DAY 15
TIME 2217

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 034

DEPTH	SECCHI	TEMP
1.0		5.47
10.0		5.43
20.0		4.78
30.0		4.65
50.0		4.30
75.0		3.91
100.0		3.81
150.0		3.75
200.0		3.66

C-REF-NO 003
CONS. NO 023
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-56-06W

YEAR 1966
MONTH 06
DAY 15
TIME 2318

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 035

DEPTH	SECCHI	TEMP
1.0		5.35
10.0		5.42
20.0		4.74
30.0		4.57
50.0		4.33
75.0		3.88
100.0		3.82
150.0		3.73
200.0		3.64

C-REF-NO 003
CONS. NO 024
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-56-06W

YEAR 1966
MONTH 06
DAY 16
TIME 0022

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 036

DEPTH	SECCHI	TEMP
1.0		5.49
10.0		5.44
20.0		4.73
30.0		4.67
50.0		4.37
75.0		3.96
100.0		3.82
150.0		3.73
200.0		3.64

C-REF-NO 003	LAT 43-29-24N	YEAR 1966	NO. DEPTHS 09
CONS. NO 025	LON 076-56-00W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 16	BT SLIDE NO 037
INSTITUTE 22		TIME 0116	

DEPTH	SECCHI	TEMP
1.0		5.49
10.0		5.32
20.0		4.63
30.0		4.48
50.0		4.34
75.0		3.91
100.0		3.81
150.0		3.73
200.0		3.64

C-REF-NO 003	LAT 43-29-12N	YEAR 1966	NO. DEPTHS 09
CONS. NO 026	LON 076-55-48W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 16	BT SLIDE NO 038
INSTITUTE 22		TIME 0218	

DEPTH	SECCHI	TEMP
1.0		5.48
10.0		5.49
20.0		5.33
30.0		4.62
50.0		4.37
75.0		3.96
100.0		3.81
150.0		3.74
200.0		3.67

C-REF-NO 003
CONS. NO 027
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-56-00W

YEAR 1966
MONTH 06
DAY 16
TIME 0317

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 039

DEPTH	SECCHI	TEMP
10.0		5.51
20.0		5.01
30.0		4.57
50.0		4.45
75.0		4.12
100.0		3.83
150.0		3.75
200.0		3.64

C-REF-NO 003
CONS. NO 028
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 0429

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 040

DEPTH	SECCHI	TEMP
1.0		5.46
10.0		5.27
20.0		4.64
30.0		4.51
50.0		4.42
75.0		4.26
100.0		3.87
150.0		3.77
200.0		3.64

C-REF-NO 003
CONS. NO 029
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 0529

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 041

DEPTH	SECCHI	TEMP
1.0		5.46
10.0		5.09
20.0		4.67
30.0		4.54
50.0		4.46
75.0		4.31
100.0		3.85
150.0		3.74
200.0		3.66

C-REF-NO 003
CONS. NO 030
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 0629

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 042

DEPTH	SECCHI	TEMP
1.0		5.29
10.0		4.97
20.0		4.63
30.0		4.51
50.0		4.48
75.0		4.26
100.0		3.84
150.0		3.74
200.0		3.65

C-REF-NO 003
CONS. NO 031
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 0727

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 043

DEPTH	SECCHI	TEMP
1.0		5.19
10.0		5.14
20.0		4.73
30.0		4.58
50.0		4.47
75.0		4.23
100.0		3.83
150.0		3.74
200.0		3.64

C-REF-NO 003
CONS. NO 032
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 0935

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 045

DEPTH	SECCHI	TEMP
10.0		4.91
20.0		4.69
30.0		4.55
50.0		4.40
75.0		4.02
100.0		3.80
150.0		3.73
200.0		3.62

C-REF-NO 003 LAT 43-29-30N YEAR 1966 NO. DEPTHS 09
CONS. NO 033 LON 076-55-54W MONTH 06 SOUNDING 0220
COUNTRY 18 DAY 16 BT SLIDE NO 046
INSTITUTE 22 TIME 1023

DEPTH	SECCHI	TEMP
1.0		5.22
10.0		5.11
20.0		4.71
30.0		4.63
50.0		4.44
75.0		4.00
100.0		3.78
150.0		3.72
200.0		3.62

C-REF-NO 003 LAT 43-29-30N YEAR 1966 NO. DEPTHS 09
CONS. NO 034 LON 076-55-54W MONTH 06 SOUNDING 0220
COUNTRY 18 DAY 16 BT SLIDE NO 047
INSTITUTE 22 TIME 1125

DEPTH	SECCHI	TEMP
1.0		5.32
10.0		5.15
20.0		4.91
30.0		4.69
50.0		4.45
75.0		4.03
100.0		3.84
150.0		3.77
200.0		3.62

C-REF-NO 003
CONS. NO 035
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1221

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 048

DEPTH	SECCHI	TEMP
1.0		5.42
10.0		5.34
20.0		4.89
30.0		4.64
50.0		4.36
75.0		3.96
100.0		3.87
200.0		3.88

C-REF-NO 003
CONS. NO 036
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1318

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 049

DEPTH	SECCHI	TEMP
1.0		5.48
10.0		5.13
20.0		4.64
30.0		4.49
50.0		4.26
75.0		3.93
100.0		3.82
150.0		3.75
200.0		3.66

C-REF-NO 003
CONS. NO 037
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1418

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 050

DEPTH	SECCHI	TEMP
1.0		5.49
10.0		5.43
20.0		4.69
30.0		4.58
50.0		4.31
75.0		3.96
100.0		3.82
150.0		3.76
200.0		3.67

C-REF-NO 003
CONS. NO 038
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1518

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 051

DEPTH	SECCHI	TEMP
1.0		5.62
10.0		5.29
20.0		4.72
30.0		4.60
50.0		4.27
75.0		4.02
100.0		3.81
150.0		3.76
200.0		3.67

C-REF-NO 003
CONS. NO 039
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1626

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 052

DEPTH	SECCHI	TEMP
1.0		5.54
10.0		5.25
20.0		4.84
30.0		4.61
50.0		4.41
75.0		4.11
100.0		3.84
150.0		3.76
200.0		3.65

C-REF-NO 003
CONS. NO 040
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1738

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 053

DEPTH	SECCHI	TEMP
1.0		5.79
10.0		5.62
20.0		5.22
30.0		4.76
50.0		4.69
75.0		4.49
100.0		3.82
150.0		3.74
200.0		3.63

C-REF-NO 003
CONS. NO 041
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1828

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 054

DEPTH	SECCHI	TEMP
1.0		6.02
10.0		5.68
20.0		5.20
30.0		4.58
50.0		4.52
75.0		4.20
100.0		3.81
150.0		3.77
200.0		3.66

C-REF-NO 003
CONS. NO 042
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 1929

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 055

DEPTH	SECCHI	TEMP
1.0		6.25
10.0		5.24
20.0		4.74
30.0		4.52
50.0		4.36
75.0		3.89
100.0		3.82
150.0		3.75
200.0		3.65

C-REF-NO 003
CONS. NO 043
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 2025

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 056

DEPTH	SECCHI	TEMP
1.0		6.83
10.0		5.21
20.0		4.80
30.0		4.58
50.0		4.41
75.0		4.26
100.0		3.89
150.0		3.76
200.0		3.65

C-REF-NO 003
CONS. NO 044
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 16
TIME 2124

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 057

DEPTH	SECCHI	TEMP
1.0		7.12
10.0		5.28
20.0		4.75
30.0		4.60
50.0		4.53
75.0		4.31
100.0		3.91
150.0		3.77
200.0		3.64

C-REF-NO 003 LAT 43-29-30N YEAR 1966 NO. DEPTHS 09
CONS. NO 045 LON 076-55-54W MONTH 06 SOUNDING 0220
COUNTRY 18 DAY 16 BT SLIDE NO 058
INSTITUTE 22 TIME 2222

DEPTH	SECCHI	TEMP
1.0		6.6C
10.0		5.25
20.0		4.64
30.0		4.58
50.0		4.49
75.0		4.28
100.0		3.87
150.0		3.74
200.0		3.65

C-REF-NO 003 LAT 43-29-30N YEAR 1966 NO. DEPTHS 09
CONS. NO 046 LON 076-55-54W MONTH 06 SOUNDING 0220
COUNTRY 18 DAY 16 BT SLIDE NO 059
INSTITUTE 22 TIME 2322

DEPTH	SECCHI	TEMP
1.0		5.96
10.0		5.24
20.0		4.70
30.0		4.53
50.0		4.39
75.0		3.98
100.0		3.83
150.0		3.73
200.0		3.63

C-REF-NO 003
CONS. NO 047
COUNTRY 18
INSTITUTE 22

LAT 43-29-06N
LON 076-55-24W

YEAR 1966
MONTH 06
DAY 17
TIME 0016

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 060

DEPTH	SECCHI	TEMP
1.0		6.71
10.0		5.30
20.0		4.71
30.0		4.58
50.0		4.39
75.0		4.10
100.0		3.82
150.0		3.75
200.0		3.64

C-REF-NO 003
CONS. NO 048
COUNTRY 18
INSTITUTE 22

LAT 43-29-06N
LON 076-55-24W

YEAR 1966
MONTH 06
DAY 17
TIME 0116

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 061

DEPTH	SECCHI	TEMP
1.0		6.05
10.0		4.86
20.0		4.66
30.0		4.56
75.0		4.63
100.0		4.39
150.0		3.82
200.0		3.72

C-REF-NO 003
CONS. NO 049
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 17
TIME 0215

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 062

DEPTH	SECCHI	TEMP
1.0		6.42
10.0		5.13
20.0		4.71
30.0		4.58
50.0		4.45
75.0		4.03
100.0		3.85
150.0		3.74
200.0		3.64

C-REF-NO 003
CONS. NO 050
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 17
TIME 0313

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 063

DEPTH	SECCHI	TEMP
1.0		6.53
10.0		5.30
20.0		4.70
30.0		4.58
50.0		4.44
75.0		4.03
100.0		3.83
150.0		3.75
200.0		3.65

C-REF-NO 003
CONS. NO 051
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 17
TIME 0424

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 064

DEPTH	SECCHI	TEMP
1.0		6.17
10.0		5.01
20.0		4.70
30.0		4.60
50.0		4.45
75.0		4.04
100.0		3.83
150.0		3.77
200.0		3.65

C-REF-NO 003
CONS. NO 052
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 17
TIME 0526

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 065

DEPTH	SECCHI	TEMP
1.0		5.98
10.0		5.10
20.0		4.77
30.0		4.56
50.0		4.39
75.0		4.03
100.0		3.82
150.0		3.77
200.0		3.65

C-REF-NO 003
CONS. NO 053
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 17
TIME 0626

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 066

DEPTH	SECCHI	TEMP
1.0		6.15
10.0		5.80
20.0		4.96
30.0		4.61
50.0		4.49
75.0		4.06
100.0		3.77
150.0		3.92
200.0		3.75

C-REF-NO 003
CONS. NO 054
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 0721

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 067

DEPTH	SECCHI	TEMP
1.0		6.59
10.0		5.24
20.0		4.79
30.0		4.66
50.0		4.46
75.0		4.07
100.0		3.81
150.0		3.77
200.0		3.64

C-REF-NO 003
CONS. NO 055
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 0822

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 068

DEPTH	SECCHI	TEMP
1.0		6.47
10.0		5.30
20.0		4.72
30.0		4.56
50.0		4.43
75.0		4.06
100.0		3.83
150.0		3.75
200.0		3.67

C-REF-NO 003
CONS. NO 056
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 0923

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 069

DEPTH	SECCHI	TEMP
1.0		6.40
10.0		5.19
20.0		4.82
30.0		4.61
50.0		4.44
75.0		4.03
100.0		3.84
150.0		3.75
200.0		3.64

C-REF-NO 003	LAT 43-29-18N	YEAR 1966	NO. DEPTHS 09
CONS. NO 057	LON 076-55-42W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 17	BT SLIDE NO 070
INSTITUTE 22		TIME 1018	

DEPTH	SECCHI	TEMP
1.0		6.33
10.0		5.07
20.0		4.72
30.0		4.55
50.0		4.43
75.0		4.05
100.0		3.84
150.0		3.76
200.0		3.65

C-REF-NO 003	LAT 43-29-18N	YEAR 1966	NO. DEPTHS 09
CONS. NO 058	LON 076-55-42W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 17	BT SLIDE NO 071
INSTITUTE 22		TIME 1117	

DEPTH	SECCHI	TEMP
1.0		6.00
10.0		5.82
20.0		4.78
30.0		4.73
50.0		4.53
75.0		4.30
100.0		3.85
150.0		3.75
200.0		3.63

C-REF-NO 003
CONS. NO 059
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 1221

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 072

DEPTH	SECCHI	TEMP
1.0		6.18
10.0		6.21
20.0		4.97
30.0		4.69
50.0		4.55
75.0		4.31
100.0		3.89
150.0		3.77
200.0		3.63

C-REF-NO 003
CONS. NO 060
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 1318

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 073

DEPTH	SECCHI	TEMP
1.0		6.27
10.0		6.38
20.0		4.81
30.0		4.65
50.0		4.47
75.0		4.09
100.0		3.85
150.0		3.75
200.0		3.63

C-REF-NO 003	LAT 43-29-18N	YEAR 1966	NO. DEPTHS 09
CONS. NO 061	LON 076-55-36W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 17	BT SLIDE NO 074
INSTITUTE 22		TIME 1418	

DEPTH	SECCHI	TEMP
1.0		5.51
10.0		5.22
20.0		4.73
30.0		4.56
50.0		4.45
75.0		4.01
100.0		3.83
150.0		3.74
200.0		3.64

C-REF-NO 003	LAT 43-29-36N	YEAR 1966	NO. DEPTHS 09
CONS. NO 062	LON 076-55-48W	MONTH 06	SOUNDING 0220
COUNTRY 18		DAY 17	BT SLIDE NO 075
INSTITUTE 22		TIME 1517	

DEPTH	SECCHI	TEMP
1.0		6.30
10.0		5.40
20.0		4.66
30.0		4.56
50.0		4.48
75.0		3.97
100.0		3.81
150.0		3.74
200.0		3.63

C-REF-NO 003
CONS. NO 063
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 17
TIME 1624

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 076

DEPTH	SECCHI	TEMP
1.0		6.43
10.0		5.25
20.0		4.69
30.0		4.57
50.0		4.42
75.0		3.94
100.0		3.82
150.0		3.72
200.0		3.63

C-REF-NO 003
CONS. NO 064
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 1727

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 077

DEPTH	SECCHI	TEMP
1.0		6.75
10.0		4.90
20.0		4.64
30.0		4.54
50.0		4.32
75.0		3.96
100.0		3.83
150.0		3.71
200.0		3.63

C-REF-NO 003
CONS. NO 065
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 1824

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 078

DEPTH	SECCHI	TEMP
1.0		6.58
10.0		5.01
20.0		4.74
30.0		4.54
50.0		4.33
75.0		3.91
100.0		3.81
150.0		3.75
200.0		3.64

C-REF-NO 003
CONS. NO 066
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 1924

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 079

DEPTH	SECCHI	TEMP
1.0		6.98
10.0		5.67
20.0		4.80
30.0		4.55
50.0		4.31
75.0		3.89
100.0		3.79
150.0		3.74
200.0		3.64

C-REF-NO 003
CONS. NO 067
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 2021

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 080

DEPTH	SECCHI	TEMP
1.0		7.27
10.0		5.28
20.0		4.64
30.0		4.53
50.0		4.33
75.0		3.93
100.0		3.83
150.0		3.75
200.0		3.65

C-REF-NO 003
CONS. NO 068
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 2120

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 081

DEPTH	SECCHI	TEMP
1.0		7.65
10.0		5.00
20.0		4.62
30.0		4.54
50.0		4.41
75.0		3.92
100.0		3.86
150.0		3.74
200.0		3.65

C-REF-NO 003
CONS. NO 069
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 2221

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 082

DEPTH	SECCHI	TEMP
1.0		6.69
10.0		4.90
20.0		4.62
30.0		4.54
50.0		4.36
75.0		4.14
100.0		3.84
150.0		3.74
200.0		3.64

C-REF-NO 003
CONS. NO 070
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 17
TIME 2321

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 083

DEPTH	SECCHI	TEMP
1.0		7.30
10.0		4.89
20.0		4.65
30.0		4.56
50.0		4.40
75.0		4.13
100.0		3.82
150.0		3.75
200.0		3.66

C-REF-NO 003
CONS. NO 071
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 18
TIME 0020

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 084

DEPTH	SECCHI	TEMP
1.0		7.21
10.0		5.14
20.0		4.72
30.0		4.64
50.0		4.40
75.0		4.15
100.0		3.78
150.0		3.72
200.0		3.63

C-REF-NO 003
CONS. NO 072
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 0118

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 085

DEPTH	SECCHI	TEMP
1.0		7.65
10.0		5.32
20.0		4.82
30.0		4.71
50.0		4.49
75.0		4.14
100.0		3.81
150.0		3.73
200.0		3.65

C-REF-NO 003
CONS. NO 073
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 0216

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 086

DEPTH	SECCHI	TEMP
1.0		7.58
10.0		6.00
20.0		4.93
30.0		4.66
50.0		4.50
75.0		4.12
100.0		3.82
150.0		3.72
200.0		3.63

C-REF-NO 003
CONS. NO 074
COUNTRY 18
INSTITUTE 22

LAT 43-29-36N
LON 076-55-42W

YEAR 1966
MONTH 06
DAY 18
TIME 0320

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 087

DEPTH	SECCHI	TEMP
1.0		7.58
10.0		6.01
20.0		4.90
30.0		4.67
50.0		4.51
75.0		4.11
100.0		3.84
150.0		3.70
200.0		3.63

C-REF-NO 003
CONS. NO 075
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 0425

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 088

DEPTH	SECCHI	TEMP
1.0		7.75
10.0		7.44
20.0		4.96
50.0		5.21
75.0		4.60
100.0		4.14
150.0		3.78
200.0		3.67

C-REF-NO 003
CONS. NO 076
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 0527

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 089

DEPTH	SECCHI	TEMP
1.0		7.55
10.0		7.23
20.0		4.91
30.0		4.65
50.0		4.56
75.0		4.20
100.0		3.89
150.0		3.71
200.0		3.64

C-REF-NO 003
CONS. NO 077
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 0628

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 090

DEPTH	SECCHI	TEMP
1.0		7.58
10.0		5.33
20.0		4.61
30.0		4.57
50.0		4.53
75.0		4.17
100.0		3.88
150.0		3.74
200.0		3.65

C-REF-NO 003
CONS. NO 078
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 0723

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 091

DEPTH	SECCHI	TEMP
1.0		7.39
10.0		5.77
20.0		4.62
30.0		4.56
50.0		4.49
75.0		4.08
100.0		3.82
150.0		3.74
200.0		3.67

C-REF-NO 003
CONS. NO 079
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 0825

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 092

DEPTH	SECCHI	TEMP
1.0		7.66
10.0		5.71
20.0		4.61
30.0		4.57
50.0		4.45
75.0		4.07
100.0		3.82
150.0		3.74
200.0		3.66

C-REF-NO 003
CONS. NO 080
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 0922

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 093

DEPTH	SECCHI	TEMP
1.0		7.54
10.0		5.11
20.0		4.63
30.0		4.56
50.0		4.41
75.0		3.96
100.0		3.81
150.0		3.76
200.0		3.66

C-REF-NO 003
CONS. NO 081
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 1021

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 094

DEPTH	SECCHI	TEMP
1.0		6.93
10.0		5.00
20.0		4.72
30.0		4.37
75.0		4.22
100.0		3.92
150.0		3.80
200.0		3.68

C-REF-NO 003
CONS. NO 082
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 1118

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 095

DEPTH	SECCHI	TEMP
1.0		6.55
10.0		5.01
20.0		4.62
30.0		4.46
50.0		4.36
75.0		4.01
100.0		3.82
150.0		3.75
200.0		3.65

C-REF-NO 003
CONS. NO 083
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-36W

YEAR 1966
MONTH 06
DAY 18
TIME 1217

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 096

DEPTH	SECCHI	TEMP
1.0		6.84
10.0		5.30
20.0		4.69
30.0		4.46
50.0		4.37
75.0		4.06
100.0		3.83
150.0		3.75
200.0		3.63

C-REF-NO 003
CONS. NO 084
COUNTRY 18
INSTITUTE 22

LAT 43-29-30N
LON 076-55-30W

YEAR 1966
MONTH 06
DAY 18
TIME 1318

NO. DEPTHS 06
SOUNDING 0220
BT SLIDE NO 097

DEPTH	SECCHI	TEMP
1.0		7.16
10.0		6.55
20.0		4.55
30.0		4.46
50.0		4.34
75.0		3.97
100.0		3.81
150.0		3.71

C-REF-NO 003
CONS. NO 085
COUNTRY 18
INSTITUTE 22

LAT 43-29-24N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 18
TIME 1416

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 098

DEPTH	SECCHI	TEMP
1.0		7.30
10.0		5.31
20.0		4.66
30.0		4.49
50.0		4.36
75.0		4.11
100.0		3.86
150.0		3.73
200.0		3.65

C-REF-NO 003
CONS. NO 086
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-54W

YEAR 1966
MONTH 06
DAY 18
TIME 1516

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 099

DEPTH	SECCHI	TEMP
1.0		7.43
10.0		5.05
20.0		4.60
30.0		4.49
50.0		4.33
75.0		4.04
100.0		3.82
150.0		3.73
200.0		3.64

C-REF-NO 003
CONS. NO 087
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 1629

NO. DEPTHS 08
SOUNDING 0220
BT SLIDE NO 100

DEPTH	SECCHI	TEMP
1.0		7.89
10.0		5.01
20.0		4.59
30.0		4.51
50.0		4.27
75.0		4.10
100.0		3.81
150.0		3.64

C-REF-NO 003
CONS. NO 088
COUNTRY 18
INSTITUTE 22

LAT 43-29-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 1725

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 101

DEPTH	SECCHI	TEMP
1.0		8.39
10.0		5.38
20.0		4.64
30.0		4.53
50.0		4.22
75.0		4.02
100.0		3.86
150.0		3.74
200.0		3.62

C-REF-NO 003
CONS. NO 089
COUNTRY 18
INSTITUTE 22

LAT 43-24-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 1818

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 102

DEPTH	SECCHI	TEMP
1.0		8.53
10.0		5.78
20.0		4.87
30.0		4.60
50.0		4.27
75.0		3.86
100.0		3.85
150.0		3.73
200.0		3.62

C-REF-NO 003
CONS. NO 090
COUNTRY 18
INSTITUTE 22

LAT 43-24-18N
LON 076-55-48W

YEAR 1966
MONTH 06
DAY 18
TIME 1921

NO. DEPTHS 09
SOUNDING 0220
BT SLIDE NO 103

DEPTH	SECCHI	TEMP
1.0		10.80
10.0		6.04
20.0		4.76
30.0		4.60
50.0		4.42
75.0		4.11
100.0		3.88
150.0		3.70
200.0		3.61

C-REF-NO 003
CONS. NO 091
COUNTRY 18
INSTITUTE 22

LAT 43-23-48N
LON 076-56-48W

YEAR 1966
MONTH 06
DAY 18
TIME 2115

NO. DEPTHS 08
SOUNDING 0139
BT SLIDE NO 104

DEPTH	SECCHI	TEMP
1.0		7.96
10.0		6.48
20.0		5.47
30.0		4.28
49.0		4.12
74.0		3.89
99.0		3.85
119.1		3.81

C-REF-NO 003
CONS. NO 092
COUNTRY 18
INSTITUTE 22

LAT 43-23-30N
LON 076-49-30W

YEAR 1966
MONTH 06
DAY 18
TIME 2219

NO. DEPTHS 06
SOUNDING 0070
BT SLIDE NO 105

DEPTH	SECCHI	TEMP
1.0		11.23
10.0		6.99
20.0		5.57
30.0		5.33
50.0		4.18
55.0		4.14

C-REF-NO 003 LAT 43-28-12N YEAR 1966 NO. DEPTHS 07
CONS. NO 093 LON 076-41-30W MONTH 06 SOUNDING 0115
COUNTRY 18 DAY 18 BT SLIDE NO 106
INSTITUTE 22 TIME 2342

DEPTH	SECCHI	TEMP
1.0		7.45
10.0		5.97
20.0		4.98
30.0		4.56
50.0		4.43
75.0		4.14
95.0		4.01

C-REF-NO 003 LAT 43-29-15N YEAR 1966 NO. DEPTHS 08
CONS. NO 094 LON 076-48-57W MONTH 06 SOUNDING 0199
COUNTRY 18 DAY 19 BT SLIDE NO 107
INSTITUTE 22 TIME 0050

DEPTH	SECCHI	TEMP
1.0		9.20
10.0		5.36
20.0		4.67
30.0		4.51
50.0		4.33
75.0		3.98
100.0		3.86
150.0		3.72

C-REF-NO 003
CONS. NO 095
COUNTRY 18
INSTITUTE 22

LAT 43-35-27N
LON 076-48-24W

YEAR 1966
MONTH 06
DAY 19
TIME 0152

NO. DEPTHS 08
SOUNDING 0201
BT SLIDE NO 108

DEPTH	SECCHI	TEMP
1.0		12.80
10.0		7.40
20.0		5.51
30.0		5.02
50.0		4.02
75.0		3.80
100.0		3.82
150.0		3.76

C-REF-NO 003
CONS. NO 096
COUNTRY 18
INSTITUTE 22

LAT 43-35-48N
LON 076-55-39W

YEAR 1966
MONTH 06
DAY 19
TIME 0259

NO. DEPTHS 08
SOUNDING 0190
BT SLIDE NO 109

DEPTH	SECCHI	TEMP
1.0		14.39
10.0		8.23
20.0		5.54
30.0		5.00
50.0		4.31
75.0		3.94
100.0		3.84
150.0		3.80

C-REF-NO 003
CONS. NO 097
COUNTRY 18
INSTITUTE 22

LAT 43-36-06N
LON 077-02-39W

YEAR 1966
MONTH 06
DAY 19
TIME 0350

NO. DEPTHS 07
SOUNDING 0165
BT SLIDE NO 110

DEPTH	SECCHI	TEMP
1.0		14.05
10.0		7.69
20.0		5.77
30.0		4.20
50.0		3.91
75.0		3.87
100.0		3.86

C-REF-NO 003
CONS. NO 098
COUNTRY 18
INSTITUTE 22

LAT 43-30-18N
LON 077-03-15W

YEAR 1966
MONTH 06
DAY 19
TIME 0507

NO. DEPTHS 09
SOUNDING 0216
BT SLIDE NO 111

DEPTH	SECCHI	TEMP
1.0		9.65
10.0		5.68
20.0		5.31
30.0		4.91
50.0		4.22
75.0		3.86
100.0		3.79
150.0		3.79
200.0		3.65

C-REF-NO 003
CONS. NO 099
COUNTRY 18
INSTITUTE 22

LAT 43-24-30N
LON 077-03-54W

YEAR 1966
MONTH 06
DAY 19
TIME 0613

NO. DEPTHS 08
SOUNDING 0186
BT SLIDE NO 112

DEPTH	SECCHI	TEMP
1.0		8.88
10.0		5.55
20.0		4.87
30.0		4.63
50.0		3.92
75.0		3.83
100.0		3.83
150.0		3.78

C-REF-NO 003
CONS. NO 100
COUNTRY 18
INSTITUTE 22

LAT 43-18-36N
LON 077-04-09W

YEAR 1966
MONTH 06
DAY 19
TIME 0705

NO. DEPTHS 04
SOUNDING 0035
BT SLIDE NO 113

DEPTH	SECCHI	TEMP
1.0		13.69
10.0		10.46
20.0		8.30
30.0		7.66

C-REF-NO 003 LAT 43-19-12N YEAR 1966 NO. DEPTHS 05
CONS. NO 101 LON 077-18-21W MONTH 06 SOUNDING 0055
COUNTRY 18 DAY 19 BT SLIDE NO 114
INSTITUTE 22 TIME 0843

DEPTH	SECCHI	TEMP
1.0		12.91
10.0		8.99
20.0		8.20
30.0		7.67
45.0		6.61

C-REF-NO 003 LAT 43-25-00N YEAR 1966 NO. DEPTHS 09
CONS. NO 102 LON 077-17-21W MONTH 06 SOUNDING 0218
COUNTRY 18 DAY 19 BT SLIDE NO 115
INSTITUTE 22 TIME 0946

DEPTH	SECCHI	TEMP
1.0		8.94
10.0		6.51
20.0		5.14
30.0		4.81
50.0		4.45
75.0		3.93
100.0		3.83
150.0		3.78
195.0		3.66

C-REF-NO 003
CONS. NO 103
COUNTRY 18
INSTITUTE 22

LAT 43-36-54N
LON 077-17-09W

YEAR 1966
MONTH 06
DAY 19
TIME 1136

NO. DEPTHS 08
SOUNDING 0143
BT SLIDE NO 116

DEPTH	SECCHI	TEMP
1.0		12.09
10.0		8.71
20.0		6.24
30.0		4.79
50.0		4.56
75.0		4.28
100.0		4.10
120.0		3.98

C-REF-NO 003
CONS. NO 104
COUNTRY 18
INSTITUTE 22

LAT 43-39-48N
LON 077-16-30W

YEAR 1966
MONTH 06
DAY 19
TIME 1225

NO. DEPTHS 06
SOUNDING 0110
BT SLIDE NO 117

DEPTH	SECCHI	TEMP
1.0		13.60
10.0		9.22
20.0		7.49
30.0		5.61
50.0		5.09
75.0		4.49

C-REF-NO 003 LAT 43-42-48N YEAR 1966 NO. DEPTHS 06
CONS. NO 105 LON 077-16-00W MONTH 06 SOUNDING 0095
COUNTRY 18 DAY 19 BT SLIDE NO 116
INSTITUTE 22 TIME 1306

DEPTH	SECCHI	TEMP
1.0		13.33
10.0		10.69
20.0		7.00
30.0		5.59
50.0		5.27
75.0		4.48

C-REF-NO 003 LAT 43-45-21N YEAR 1966 NO. DEPTHS 05
CONS. NO 106 LON 077-16-03W MONTH 06 SOUNDING 0066
COUNTRY 18 DAY 19 BT SLIDE NO 119
INSTITUTE 22 TIME 1344

DEPTH	SECCHI	TEMP
1.0	4.0	13.40
10.0		9.36
20.0		7.34
30.0		5.83
50.0		4.69

C-REF-NO 003
CONS. NO 107
COUNTRY 18
INSTITUTE 22

LAT 43-47-36N
LON 077-15-36W

YEAR 1966
MONTH 06
DAY 19
TIME 1422

NO. DEPTHS 04
SOUNDING 0040
BT SLIDE NO 120

DEPTH	SECCHI	TEMP
1.0	4.5	13.67
10.0		9.85
20.0		6.65
30.0		6.26