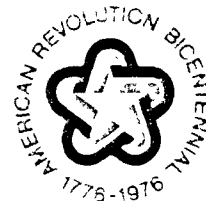


REPORT OF SUB-GROUP A
ON
REVIEW OF GREAT LAKES WATER QUALITY AGREEMENT

April 29, 1977



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO, ILLINOIS 60604



APR 29 1977

Ms. Barbara Blum, Chairperson
United States Senior Review Group
Great Lakes Water Quality Agreement Review

Dear Ms. Blum:

The accompanying Report of Sub-Group A of the Great Lakes Water Quality Agreement Review is submitted in fulfillment of the Sub-Group A assignment to review the operation and effectiveness of the Canada-U.S. Great Lakes Water Quality Agreement and to make recommendations as appropriate.

This review exercise was carried out within a period of three months. Because of this time constraint the Report includes informal contributions from many Federal and State experts who participated in preparation of the Report through telephone calls and informal meetings and discussions, which supplement documentation in the Position Papers and other written commentary accompanying the Report.

A debt of gratitude is owed to the many persons who contributed to this Report, particularly the 72 members of Sub-Group A and the Advisory Groups listed in the attachment to the Report. Their contributions are all the more notable when it is realized that this review was accomplished outside of the normal scope of duties of most of the participants.

A draft of this Report was sent to the Public Interest Groups listed in the Report for review and comment, and a copy of this final Report is also being sent to them. The Canadian representatives who will be meeting with the Sub-Group Chairmen on May 16, 1977, have also been provided with a copy of the Report.

We have appreciated the opportunity to participate in the review and trust that this Report provides the desired information.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "George R. Alexander, Jr.", written over the typed name.

George R. Alexander, Jr.
Chairman, Sub-Group A
Great Lakes Water Quality Agreement Review

Attachment

TABLE OF CONTENTS

	Page
Report of Sub-Group A As a Whole	
Introduction	1
Background	2
Problems under the Agreement.	6
General Summary and Recommendations	9
Detailed Discussions & Recommendations	10
Preface (Preamble).	12
Article I - Definitions	14
Article II - General Objectives & Goals.	17
Article III - Water Quality Objectives	20
Annex 1. Specific W.Q. Objectives	23
Article IV - Standards & Other Regulatory Requirements.	37
Article V - Programs & Other Measures	39
Annex 2. Control of Phosphorus	47
Annex 3. Vessel Design, Construction & Operation	51
Annex 4. Vessel Wastes	52
Annex 5. Studies of Pollution from Shipping Sources.	53
Annex 6. Identification & Disposal of Polluted Dredge Spoil.	54
Annex 7. Discharges from Onshore & Offshore Facilities.	55
Annex 8. Joint Contingency Plan	58
Annex 9. Hazardous Polluting Substances	59
Article VI - Powers, Functions & Responsibilities of the IJC ..	67
Article VII - Joint Institutions.	70
Article VIII - Submission & Exchange of Information.	72
Article IX - Consultation & Review.	
Article X - Implementation	
Article XI - Existing Rights & Obligations	
Article XII - Amendment	
Article XIII - Entry Into Force & Termination	
Article XIV - Supersession.	77

Attachments:

1. Fourth Annual Report of IJC on Great Lakes Water Quality
2. 1975 Annual Report of Water Quality Board (Summary)
3. Draft Position Papers of Sub-Groups B, C & D
4. Sub-Group A Functional Chart and Membership
5. Comments from Public Interest Groups and Others

Appendix I - Position Papers (Bound Separately)

Water Quality Objectives Work Group
 Surveillance Work Group
 Phosphorus Work Group
 Point Source Discharges Work Group
 Non-Point Sources Work Group
 Hazardous Substances Work Group
 Nuclear Wastes (Radioactivity) Work Group
 Research Work Group

REPORT OF SUB-GROUP A AS-A-WHOLE
IN REVIEW OF
THE GREAT LAKES WATER QUALITY AGREEMENT

INTRODUCTION

In connection with the Fifth Year Review the Canada-U.S. Great Lakes Water Quality Agreement of 1972, Sub-Group A was organized during February 1977 as part of the U.S. Government's Great Lakes Water Quality Agreement Review Structure. Sub-Group A was charged with reviewing the principal environmental issues involved in the Agreement and was requested to prepare specific position papers on the following eight topics; water quality, surveillance (in broad general terms in addition to water quality surveillance and monitoring) phosphorus, point source discharges, non-point sources, hazardous substances, nuclear wastes (radioactivity), and research.

As was further requested by the Senior Review Group, this report of Sub-Group A discusses the general aspects of the Agreement in addition to the topics mentioned above. It presents a general summary and recommendations and addresses, in greater specificity, each Article and Annex of the Agreement in a separate prefacing discussion and presents conclusions and recommendations in the form of recommended changes in the wording of each of the parts of the Agreement. The specific discussions highlight any minority views where appropriate which do not appear in the separate Position Papers included with this report.

The separate Position Papers from the Work Groups for each of the subjects listed in the first paragraph are also appended to provide the Senior Review Group with background information on each topic and with the full

range of issues and views considered in this review, some of which may not be reflected in the recommendations of the Sub-Group as a whole. Each Position Paper is designed to stand alone and contains an introduction and discussion of the issues involved and its own summary, conclusions and recommendations.

Because the topics assigned to Sub-Group A cover the entire environmental spectrum a brief general background for the Agreement is also provided to supplement the background statements in each of the separate Work Group Position Papers.

BACKGROUND

The Great Lakes are a major and unique international water resource which we share with Canada. The Lakes constitute 80% of the fresh water surface area of the United States and over 97% of the nation's fresh surface water storage. Within the Basin lives 15% of the nation's population, most of whom depend on the Great Lakes for their drinking water. The Lakes are heavily used for swimming, sports fishing, and pleasure boating. Approximately 20% of the nation's manufacturing activity, and 17% of the nation's income derives from the Great Lakes Basin. Fifty percent of the nation's steel is produced in the Basin and 100 billion ton-miles of shipping is carried on the Great Lakes annually. The Lakes still support what is now a declining commercial fishing industry, which will probably disappear unless a method is found for controlling toxic materials and other people-induced stresses.

The attached map shows the Great Lakes and the drainage basin which constitute the "Great Lakes System" as defined in the Water Quality Agreement.

The system drains in a generally easterly direction, via the five lakes, their inter-connecting channels and the St. Lawrence River, into the Atlantic Ocean. The Basin encompasses portions of eight States and the Province of Ontario, and the map vividly illustrates the need for a basin-wide approach to water quality management of the Great Lakes as recognized in the Agreement.

Early pollution control philosophy regarded the Great Lakes as an inexhaustible pollution sink. The fallacies of such assumptions became obvious in a rather dramatic way several years ago when stories (albeit not completely accurate ones) on the "Death of Lake Erie" were prevalent in the press. Although the volumes of water contained in the Great Lakes is enormous, the cumulative consequence of continued pollution is far more serious and long lasting in these large lakes than in a river. When pollution abatement has been implemented on a stream segment, the improvement of water quality is usually noted in a relatively short time. This is not so in the Great Lakes. In Lake Michigan, for example, which has a flush out time on the order of 100 years, it is obvious that we are yet to see the consequence of current pollution loads. The worldwide PCB problem, particularly acute in Lake Michigan, is dramatic evidence of the unknowns we face in attempting to design pollution control programs in these large bodies of water. Mirex (de-chlorane) and uncounted other organic persistent contaminants have caused most Lake Ontario fish to be unsuitable for human consumption. While it is expected that adequate control programs and sufficient time will restore most of the beneficial uses of the lakes, there is no guarantee that all of the changes that have occurred can be reversed. Five years of intensive surveillance of

pollution control programs by the institutions of the Agreement, particularly the Water Quality Board of the International Joint Commission have shown that much now needs to be done if we are to achieve the objectives of the Agreement. The attached copies of the International Joint Commission's Fourth Annual Report of Great Lakes Water Quality and the summary of the 1975 Great Lakes Water Quality Board Report give an accurate picture of the progress made and actions needed. For the reasons mentioned above special attention has been focused both in Canada and in the U.S. on the water quality problems of the Great Lakes.

The U.S.-Canada Great Lakes Water Quality Agreement, a Federal Executive Agreement signed on April 15, 1972, provided a special cooperative mechanism under the Boundary Waters Treaty of 1909 for focusing pollution control efforts of the two nations on clean-up of the Great Lakes through the adoption of common objectives and development and implementation of remedial programs and other measures. The lead Federal role in water quality matters has been given to the U.S. Environmental Protection Agency. Environment Canada has the lead Federal role in that country. Full cooperation of the eight Great Lakes States and the Province of Ontario has been effected through the Agreement.

The two countries separately have focused attention on the Great Lakes. In the U.S. Public Law 92-500 recognizes the special nature of the Great Lakes since it makes special provisions for research and technical development activities under Section 104(f), for a Great Lakes Pollution Control Demonstration Grant Program under Section 108(a) and for a special study of Lake Erie under

Section 108(d). Similar attention has been focused on the Great Lakes by Canada by special agreements between the Canadian Federal government and the Province of Ontario. These Federal-Provincial agreements use the Great Lakes Water Quality Agreement as a basis for their programs.

In summary, the uniqueness of the Great Lakes as an important international fresh water resource, the preservation of present areas of excellent water quality, present areas of degradation, and the continued pressure from man-made activities are the principal reasons for the special national and international attention given to protecting and improving water quality in the lakes and their tributaries.

PROBLEMS UNDER THE AGREEMENT

The Water Quality Agreement was signed on April 15, 1972. The U.S. negotiators attempted to anticipate the then pending legislation to amend the Federal Water Pollution Control Act. However, the full significance of the amendment in the form of PL 92-500 which was enacted on October 18, 1972, was not fully realized until long after the law was enacted and in some instances has not even yet been fully realized. Such far-reaching changes in pollution control in this country have created very significant differences in the actual approach of the two countries to pollution control. The Canadian approach, which is essentially that of the Province of Ontario because it is the only Province bordering the Great Lakes, is similar to the pre-PL 92-500 approach by the U.S. which is reflected in the Agreement and which was found to be ineffective. At the same time it must

be recognized that progress was made under the Agreement and particularly by Ontario with respect to the phosphorus effluent limitation on Lakes Erie and Ontario,, and even more so in their establishment of phosphorus limitations for detergents. But there is a need to look forward, not backward, and to do so, a comparison of the Canadian and U.S. approaches to pollution control is necessary.

Sub-Group A believes that, despite the many recognized deficiencies in PL 92-500, it is the most progressive water pollution control law ever enacted and that the Agreement must be brought into compatibility with it, and to do so will require significant changes in the Agreement and in Canada's participation in the Agreement. Some comparisons of U.S. and Canadian approaches follow:

- The Canadians do not have water quality standards as the U. S. does. They adopt objectives which are little more than criteria as defined in the U.S.
- The Canadians have no universally applicable effluent requirements as the U.S. does. (The principle of universal applicability of uniform effluent limits was recently affirmed in the U.S. law by the U.S. Supreme Court). Instead the Canadians attempt to tailor the discharge to the assimilative capacity of the receiving water without having any legally mandated minimum effluent requirement. This results in primary treatment for some municipalities and generally a maximum of primary equivalent for industry, as opposed to the minimum of BPT in the U.S.
- Canada has no effluent discharge permit system. Instead they (Ontario) have "program orders" which are not legally enforceable. While their program has been comparatively more effective for municipalities, it has been much less so for industrial dischargers.

- The Canadians have interpreted the Water Quality Agreement to apply only to boundary waters (i.e., the Great Lakes and interconnecting channels) contending that the "internal waters of Canada" are not subject to the Agreement; e.g., the Canadian Chairman of the Great Lakes Water Board at the last IJC meeting in July 1976 extended this interpretation even to dischargers to the Welland Canal, an artificial interconnecting channel between Lakes Erie and Ontario paralleling the Niagara River and wholly within Canada.
- Canada unlike the U.S., has no system for tracking land use practices nor does it provide local technical assistance to the landowner in planning agricultural conservation practices.

This is a rather bleak picture on the industrial side and belies the frequently voiced position that Canada is ahead of the U.S. in pollution control efforts.

As mentioned previously, the Agreement has been interpreted by the Canadians to imply a distinction between the waters of the system and the boundary waters and this distinction must be ended for purposes of pollution control because we cannot address the problems in the Great Lakes by interpreting the provisions of the Agreement to apply just to the boundary waters when it is convenient to do so. Article V, para 3, specifically states that remedial programs are applicable to the tributary waters. This provision should be literally interpreted. All of the discharges to surface waters of the entire basin are of mutual concern to both the U.S. and Canada. This poses problems for the Canadians, especially with regard to industrial discharges, since they do not have the same requirements for public disclosure

as we do. Their "in camera" approach to pollution control is perhaps more ingrained than in any other aspect of their society. However, on the more positive side, there have been recent discussions in the Canadian parliament to open up the system by a Freedom of Information type approach - this should be strongly encouraged.

Not only must the basin as a whole be looked at from the standpoint of pollution control, but eventually a basin-wide approach to water and related land resources planning must be addressed.

GENERAL SUMMARY AND RECOMMENDATIONS

To summarize, significant changes in pollution control laws in the U.S. require significant changes in the Agreement if the U.S. is to continue to be a party to the Agreement. Broadly these are:

- A system-wide approach must be made to water pollution control.

The distinction between "boundary waters" and "tributary waters" must be ended.

- The principle of "objectives" merely as goals must be replaced by a recognition that objectives are to be translated into enforceable standards

- The basic thrust of the Agreement must be changed to require the application of system-wide legally enforceable minimum treatment requirements for each and every point source discharge.

- Some common system-wide planning criteria must eventually be agreed upon for the Great Lakes System.

- In order to control toxic pollutants the general ongoing surveillance program must be supplemented with detailed process evaluations for those industries which are most likely to be sources of persistent toxicants (coke plants, pharmaceuticals, electroplating, mining, organic and inorganic chemicals, etc.

Notwithstanding all of these problems the Agreement itself has served a useful purpose and can continue, in a changed form, to serve a useful purpose in the future. It provides both countries with an opportunity to focus attention at the highest levels on the unique needs of the Great Lakes and it provides for an independent expression of opinion through a binational organization. Furthermore, we have a mutual need with the Canadians to deal not just with the boundary waters but with the waters of the entire system.

DETAILED DISCUSSION AND RECOMMENDATIONS

The rest of this paper will be based on the premise that we should attempt to renegotiate the Agreement to bring it into line with water quality and pollution control programs in this country. The preface to the Agreement and each of the Articles and Annexes will be dealt with separately in the following discussion. The existing text of the Agreement is reproduced in regular type, deletion of wording is shown by dash line-out, and *new wording has been inserted in script.*

AGREEMENT BETWEEN
CANADA AND THE UNITED STATES OF AMERICA
ON GREAT LAKES WATER QUALITY

²
Revised Ottawa, April-15,-1972

In Force April-15,-1972

DISCUSSION OF PREFACE

The Sub-Group believes that the preface is essentially as appropriate today as it was when the Agreement was first signed. Accordingly, only minor word changes have been proposed in the attached draft of the revised preface.

The original Agreement did not include a title for the prefacing statement and it is suggested that the word "Preamble" be used. The revised Preamble and Agreement will be based upon the Fourth Annual Report of the International Joint Commission, because that report is the latest that has been accepted and includes some of the conclusions and recommendations of the report of the Upper Lakes Reference Group which has not, as yet, been acted upon by the Commission. Another change in wording is the suggestion that the words "adoption of common objectives" be deleted and that the phrase "agreement on common goals and objectives" be used instead. While Canada actually adopts objectives as part of their Federal-Provincial Agreement the United States has never formally adopted objectives although the Federal government does encourage their use in the adoption of Federal-State Water Quality Standards; therefore, the term "agreement on" rather than "adoption of" is more appropriate terminology.

The revised preface follows:

PREFACE

The Government of Canada and the Government of the United States of America *having previously entered into Agreement on Great Lakes Water Quality now are -*

* *determined Reaffirming their determination to restore and enhance water quality in the Great Lakes System.*

* *Continuing to be seriously concerned about the grave deterioration of water quality on each side of the boundary to an extent that is causing injury to health and property on the other side, as described in the 1970-report-of Fourth Annual Report on Water Quality of the Great Lakes by the International Joint Commission, on-Pollution-of-Lake-Erie,-Lake-Ontario-and-the-International-Section-of-the-St.-Lawrence-River;*

* *Reaffirming their intent upon preventing further pollution of the Great Lakes System owing to continuing population growth, resource development and increasing use of water;*

* *Reaffirming in a spirit of friendship and cooperation the rights and obligations of both countries under the Boundary Waters Treaty signed on January 11, 1909, and in particular their obligation not to pollute boundary waters;*

* *Recognizing Continuing to recognize the rights of each country in the use of its Great Lakes waters;*

* *Satisfied that the 1970-report Great Lakes Water Quality Agreement of April 15, 1972, and the Fourth Annual Report of the International Joint Commission provide a sound basis for new and more effective cooperative actions to restore and enhance water quality in the Great Lakes System;*

* *Convinced that the best means to achieve improved water quality in the Great Lakes System is through the adoption-of agreement on common goals and objectives, the development and implementation of-cooperative common remedial programs and other measures, and the assignment of special responsibilities and functions to the International Joint Commission:*

* *Have-agreed Entering into a new Agreement as follows:*

DISCUSSION OF ARTICLE I - DEFINITIONS

In general the definitions as existing are satisfactory except that it is proposed to define the term "agreement" in order to distinguish this document from the original. It is also proposed that a definition of the word "parties" be included since the term is used throughout the Agreement without having been defined.

It is proposed that the definitions of "research" be added in this part of the Agreement. The definition of research has been changed to include reference to air quality. The existing Reference on the Research Advisory Board is proposed to be deleted and its provisions included under Article VII of the Agreement.

It is suggested that two additional new terms be added to the list of definitions to accommodate proposed changes or additions to Article V. The terms are "Best Practicable Treatment (BPT)" and "Best Management Practices (BMP)". The rationale for these definitions are given in the Position Papers on Water Quality and Point and Non-Point Sources attached to this Report.

The revised definitions and the added terms and their definitions follow:

ARTICLE I

DEFINITIONS

As used in this Agreement:

- (a) *"Agreement" means this revised Agreement as distinguished from the original Agreement of April 15, 1972.*
- (b) *"Parties" means the Federal government of the U.S. and the Federal government of Canada,*
- (c) **"State and Provincial Governments" means the Governments of the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, and the Government of the Province of Ontario;**
- (d) **"International Joint Commission" or "Commission" means the International Joint Commission established by the Boundary Waters Treaty;**
- (e) **"Boundary Waters Treaty" means the Treaty between the United States and Great Britain Relating to Boundary Waters, and Questions Arising Between the United States and Canada, signed at Washington on January 11, 1909;**
- (f) **"Boundary waters of the Great Lakes System" or "boundary waters" means boundary waters, as defined in the Boundary Waters Treaty, that are within the Great Lakes System;**
- (g) **"Tributary waters of the Great Lakes System" or "tributary waters" means all the water of the Great Lakes System that are not boundary waters;**
- (h) **"Compatible regulations" means regulations no less restrictive than agreed principles;**
- (i) **"Great Lakes System" means all of the streams, rivers, lakes and other bodies of water that are within the drainage basin of the St. Lawrence River at or upstream from the point at which this river becomes the international boundary between Canada and the United States;**
- (j) **"Harmful quantity" means any quantity of a substance that if discharged into receiving waters would be inconsistent with the achievement of the water quality objectives;**

- (k) "Hazardous polluting substance" means any element or compound identified by the Parties which, when discharged in any quantity into or upon receiving waters or adjoining shorelines, presents an imminent and substantial danger to public health or welfare; for this purpose, "public health or welfare" encompasses all factors affecting the health and welfare of man including but not limited to human health, and the conservation and protection of fish, shellfish, wildlife, public and private property, shorelines and beaches;
- (l) "Phosphorus" means the element phosphorus present as a constituent of various organic and inorganic complexes and compounds;
- (m) "Specific water quality objective" means the level concentration of a substance or physical level of effect that the Parties agree, after investigation, to recognize as a maximum or minimum desired limit for a defined body of water or portion thereof, taking into account the beneficial uses of the water that the Parties desire to secure and protect;
- (n) "Water quality objectives" are broad descriptions of water quality conditions which will protect the boundary waters of the Great Lakes System for the beneficial uses that the Parties desire to secure and which will provide overall water management guidance and a framework for the development of the specific water quality objectives."
- (o) "Research" means development, demonstration and other research activities but does not include regular monitoring and surveillance of water or air quality.
- (p) "Best Practicable Treatment (BPT)" means the level of treatment for wastewaters from municipal and industrial sources as defined in Article III and Annex I.
- (q) "Best Management Practices (BMP)" means the most practical and effective measure or combination of measures, which when applied to agriculture, forestry practices, road construction, mining, urban development, urban drainage and other land use activities, will prevent or reduce the generation of pollutants to a level compatible with the water quality goals and objectives of this Agreement.

DISCUSSION OF ARTICLE II

The Sub-Group believes that the general water quality objectives, now under Article II should be combined with the Specific Water Quality Objectives under Article III and that Article II should become a statement of goals and policy.

This new Article is considered necessary to emphasize the new approach of "minimum treatment requirements" and a basin wide approach to pollution control and water quality management for the restoration and preservation of the Great Lakes. The rationale for this new Article is given in the introductory paragraphs and in the appended Position Papers.

The Pennsylvania representative on the State Advisory Group (See letter included in attachment 5) has objected to what he considers an attempt to force the Canadians into a PL 92-500 type law. The Sub-Group, however, did not agree that this is the thrust of the Report. The intent of the report is to bring the Agreement into conformance with pollution control programs in the U.S.

The proposed revised Article II follows:

ARTICLE II

GENERAL WATER-QUALITY GOALS AND OBJECTIVES

~~The following general water quality objectives for the boundary waters of the Great Lakes System are adopted. These waters shall be:~~

- ~~(a) -- Free from substances that enter the waters as a result of human activity and are liable to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life or waterfowl;~~
- ~~(b) -- Free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or deleterious;~~
- ~~(c) -- Free from materials entering the waters as a result of human activity producing colour, odour or other conditions in such a degree as to create a nuisance;~~
- ~~(d) -- Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life;~~
- ~~(e) -- Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.~~

The objective of this Agreement is to restore and maintain the chemical physical and biological integrity of the waters of the Great Lakes System. In order to achieve this objective it is hereby agreed that consistent with the provisions of this Agreement: -

- (a) It is the goal that minimum treatment requirements for dischargers of pollutants into boundary waters and tributary waters of the Great Lakes System be met no later than _____.*
- (b) It is the policy that the discharge of toxic pollutants in toxic amounts be prohibited and that as an ongoing goal, the discharge of any or all persistent toxicants be reduced to the maximum feasible extent.*

- (c) *Financial assistance to construct publicly owned waste treatment works be provided by a combination of local, state and federal participation.*
- (d) *Great Lakes Systemwide planning processes and best management practices be developed and implemented to assure adequate control of all sources of pollutants.*
- (e) *A major research and demonstration effort be made to develop technology necessary for an understanding of the Great Lakes and to eliminate the discharge of pollutants to the boundary waters and the tributary waters of the Great Lakes System,*

DISCUSSION OF ARTICLE III

As discussed in Article II, The General Water Quality Objectives are proposed to be included in Article III along with the Specific Water Quality Objectives.

Revised General Water Quality Objectives as recommended by the Great Lakes Water Quality Board are proposed.

Revised Specific Water Quality Objectives essentially as recommended by the Great Lakes Water Quality Board are proposed.

Revisions to Annex 1 are related to the Specific Water Quality Objectives of this Article. Annex 1 (as are the other Annexes) is discussed separately and follows the corresponding revised Article for convenience of the reader, rather than as an attachment at the end of the Agreement.

Significant change is proposed in the specific Water Quality Objectives to bring the concept of a minimum level of treatment into the Agreement. The rationale for this is discussed in the Position Paper on Water Quality Objectives which is attached to this Report.

The Revised Article III and a discussion of Annex 1 and revisions thereto follow:

ARTICLE III

~~-SPECIFIC-~~ WATER QUALITY OBJECTIVES

1. The following general water quality objectives for the boundary waters of the Great Lakes System are ~~adepted~~ *agreed upon*. These waters should be:
 - (a) Free from substances that enter the waters as a result of human activity and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life or waterfowl;
 - (b) Free from *flotsam floating-debris* and other floating materials *such as* oil, scum, and immiscible substances ~~entering the-water-as-a-result-of~~ *resulting from* human ~~activity~~ *activities* in amounts ~~sufficient-to-be that are~~ unsightly or deleterious.
 - (c) Free from materials and heat entering the waters as a result of human activity ~~producing that alone, or in combination with other materials, will produce~~ colour, odour, taste, or other conditions in such a degree as to ~~create-a-nuisance interfere with any beneficial uses;~~
 - (d) Free from ~~substances materials and heat~~ entering the waters as a result of human activity in ~~concentrations-that-are that alone, or in combination with other materials, will produce conditions~~ that are toxic or harmful to human, animal or aquatic life.
 - (e) Free from nutrients entering the waters as a result of human activity in ~~concentrations~~ *amounts* that create ~~nuisance~~ *growths* of aquatic ~~weeds-and-algae~~ *plants that interfere with beneficial uses.*

2. The specific water quality objectives *for the boundary waters of the Great Lakes System and minimum treatment requirements* for the boundary waters of the Great Lakes System set forth *below and* in Annex I are adopted *agreed upon*:

- (a) The *minimum treatment requirements and* specific water quality objectives may be modified and additional specific water quality objectives ~~for the boundary waters of the Great Lakes System or for particular sections thereof~~ may be adopted *agreed upon* by the Parties in accordance with the provisions of Articles IX and XII of this Agreement.
- (b) The *minimum treatment requirements and the* specific water quality objectives adopted pursuant to this Article represent the minimum *levels of treatment and the* minimum desired ~~levels of water quality in the boundary waters of the Great Lakes System~~ and are not intended to preclude the establishment of more stringent requirements.
- (c) Notwithstanding the ~~adoption of~~ *agreement on* minimum *treatment requirements* and specific water quality objectives, all reasonable and practicable measures shall be taken to maintain the ~~levels of~~ water quality existing at the date of entry into force of this Agreement in those areas ~~of the boundary waters of the Great Lakes System~~ where such ~~levels exceed the water quality is better than that prescribed by the specific water quality objectives.~~
- (d) *In areas designated by the appropriate jurisdiction as having outstanding natural resource value and which have existing water quality better than that prescribed by the specific water quality objectives, that water quality should be enhanced.*

DISCUSSION OF ANNEX I

The Great Lakes Water Quality Board in their Annual Report for 1975 made certain recommendations for the adoption of new objectives to the International Joint Commission. The Commission has already held hearings on the objectives but has not made a recommendation to the Parties. In view of this and in view of the fact that the Senior Review Group proposes to hold hearings on the revisions to the Agreement it appears that it would be an appropriate time to act upon the recommendations of the Board. Accordingly it is proposed that Annex I be reorganized substantially as recommended in the 1975 Annual Report of the Water Quality Board. The contents of Tables 17 and 18 of the Water Quality Board Report have been incorporated into the proposed revision to the Annex. The original Annex I is not reproduced since this is a complete revision and reorganization of the existing Annex and the Tables from the Board Report and reflects both the new and old material. New material is done in script and existing material brought forward is done in regular type. The asterisk items are proposed for further study. Existing criteria for iron and temperature are continued in the revised Annex and are shown in regular type.

The specifics of the "minimum treatment" concept are proposed in paragraph 3 and as previously indicated, the rationale for this is discussed in the Position Paper on Water Quality Objectives attached to this report.

The majority of Sub-Group A recommends that the radioactivity objective be included in this Annex as had previously been recommended to the Parties by the U.S. and Canadian Advisory Groups on Radioactivity. The rationale for this recommendation is contained in the Position Paper on Radioactivity attached to this Report. Controversy still surrounds this matter and the various views are discussed in the Position Paper on Radioactivity appended to this Report.

ANNEX 1

SPECIFIC WATER QUALITY OBJECTIVES

1. Specific Objectives. The Specific Water Quality Objectives for the boundary waters of the Great Lakes System are classified as follows and defined in paragraph 2 of this Annex;

(a) Chemical Characteristics

(1) Persistent Toxic Substances

a. Organic

(i) Pesticides

Aldrin/Dieldrin
Chlordane
DDT and Metabolites
Endrin
Heptachlor
Lindane
Methoxychlor
Toxaphene

(ii) Other Compounds -

Phthalic Acid Esters
Polychlorinated Biphenyls
Other Organic Contaminants

b. Inorganic

(i) Metals

Arsenic
Cadmium
Chromium
Copper *
Iron
Lead
Mercury
Nickel *
Selenium
Zinc

(ii) Others

Fluoride
Total Dissolved Solids

(2) Non-Persistent Toxic Substances

1-2
a. Organic

(i) Pesticides

General Objective
Diazinon
Guthion *
Parathion*

(ii) Other Compounds

Cyanide *
Oil and Petrochemicals
Unspecified Non-Persistent Toxic
Substances and Complex Effluents

b. Inorganic

Ammonia *
Chlorine *
Hydrogen Sulfide *

(3) Other Substances

a. Dissolved Oxygen

b. pH

c. Nutrients

(1) Phosphorus *

d. Tainting Substances

(b) Physical Characteristics

(1) Settleable and Suspended Solids and Light Transmission

(2) Temperature *

(3) Asbestos

(4) Radioactivity

(c) Microbiological Characteristics

*Specific water quality objective for further immediate consideration by
the International Joint Commission for recommendations of definitions to
the Parties

2. Definition of Specific Objectives. The specific water quality objectives for the boundary waters of the Great Lakes System, listed in paragraph 1 are defined as follows:

PESTICIDES (PERSISTENT)

Aldrin/Dieldrin

The sum of the concentrations of aldrin and dieldrin in water should not exceed the recommended quantification limit of 0.001 micrograms per litre. The sum of concentrations of aldrin and dieldrin in the edible portion of fish should not exceed 0.3 micrograms per gram for the protection of human consumers of fish.

Note: Based on U.S. Food and Drug Administration guidelines.

Chlordane

The concentration of chlordane in water should not exceed 0.06 micrograms per litre for the protection of aquatic life.

DDT and Metabolites

The sum of the concentrations of DDT and its metabolites in water should not exceed the recommended quantification limit of 0.003 micrograms per litre. The sum of the concentration of DDT and its metabolites in whole fish (wet weight basis) should not exceed 1.0 micrograms per gram for the protection of fish consuming aquatic birds.

Endrin

The concentration of endrin in water should not exceed the recommended quantification limit of 0.002 micrograms per litre. The concentration of endrin in the edible portion of fish should not exceed 0.3 micrograms per gram for the protection of human consumers of fish.

Note: Based on U.S. Food and Drug Administration guidelines.

Heptachlor

The sum of the concentrations of heptachlor and heptachlor epoxide in water should not exceed the recommended quantification limit of 0.001 micrograms per litre. The sum of the concentrations of heptachlor and heptachlor epoxide in edible portions of fish should not exceed 0.3 micrograms per gram for the protection of human consumers of fish.

Note: Based on U.S. Food and Drug Administration guidelines.

Lindane

The concentration of lindane in water should not exceed 0.01 micrograms per litre for the protection of aquatic life. The concentration of lindane in edible portions of fish should not exceed 0.3 micrograms per gram for the protection of human consumers of fish.

Note: Based on U.S. Food and Drug Administration guidelines.

Methoxychlor

The concentration of methoxychlor in water should not exceed 0.04 micrograms per litre for the protection of aquatic life.

Toxaphene

The concentration of toxaphene in water should not exceed 0.008 micrograms per litre for the protection of aquatic life.

OTHER PERSISTENT TOXIC SUBSTANCES

Phthalic Acid Esters

The concentrations of dibutyl phthalate and di(2-ethylhexyl) phthalate in water should not exceed 4.0 micrograms per litre and 0.6 micrograms per litre, respectively, for the protection of aquatic life. Other phthalic acid esters should not exceed the recommended quantification limit of 0.2 micrograms per litre in waters for the protection of aquatic life.

Polychlorinated Biphenyls (PCBs)

The concentration of total polychlorinated biphenyls in fish tissues (whole fish, calculated on a wet weight basis), should not exceed 0.1 micrograms per gram for the protection of fish consuming birds and animals.

Note:

The detection limit for PCBs in water samples is not low enough to permit setting a water quality objective for concentrations in water. Therefore the proposed objective is based on levels detectable in fish tissue. It is believed that water concentrations less than 0.001 micrograms per litre would be required to preclude significant bioaccumulation of PCBs.

The U.S. Food and Drug Administration has set an administrative guideline of 5 micrograms per gram of PCB as the maximum levels acceptable in the edible portion of fish for human consumption. The Canadian Department of National Health and Welfare has set a similar guideline at 2 micrograms per gram of PCB. The above defined limitation is a more stringent objective for the Great Lakes to protect birds and animals whose main diet consist of fish from the lakes.

OTHER PERSISTENT TOXIC SUBSTANCES

Note: (Continued)

Under Sec 307(a) of PL 92-500, US EPA has recently promulgated regulations to control PCB, in the transformer/capacitor industry. The FDA has proposed that the administrative guideline of five micrograms per gram of PCB in fish flesh be lowered to two micrograms per gram.

Other Organic Contaminants

For other organic contaminants, the levels of which are not specified but which can be demonstrated to be persistent and are likely to be toxic, it is recommended that the concentrations of such compounds in water or aquatic organisms be limited to the detection level as determined by the best scientific methodology available at the time.

METALS

Arsenic

Concentrations of total arsenic in an unfiltered water sample should not exceed 50 micrograms per litre to protect raw waters for public water supplies.

Cadmium

Concentrations of total cadmium in an unfiltered water sample should not exceed 0.2 micrograms per litre to protect aquatic life.

Chromium

Concentrations of total chromium in an unfiltered water sample should not exceed 50 micrograms per litre to protect raw waters for public water supplies.

Iron (Fe) .

Levels should not exceed 0.3 milligrams per litre.

METALS (Cont'd)

Lead

Concentrations of total lead in an unfiltered water sample should not exceed 10 micrograms per litre in Lake Superior, 20 micrograms per litre in Lake Huron and 25 micrograms per litre in all remaining Great Lakes to protect aquatic life.

Mercury

Concentrations of total mercury in a filtered water sample should not exceed 0.2 micrograms per litre nor should the concentration of total mercury in whole fish exceed 0.5 micrograms per gram (wet weight basis) to protect aquatic life as well as fish-consuming birds.

Selenium

Concentrations of total selenium in an unfiltered water sample should not exceed 10 micrograms per litre to protect raw water for public water supplies.

Zinc

Concentrations of total zinc in an unfiltered water sample should not exceed 30 micrograms per litre to protect aquatic life.

OTHER PERSISTENT TOXIC INORGANICS

Fluoride

Concentrations of total fluoride in an unfiltered water sample should not exceed 1.2 milligrams per litre to protect raw waters for public water supplies.

Total Dissolved Solids. In Lake Erie, Lake Ontario and the International Section of the St. Lawrence River, the level of total dissolved solids should not exceed 200 milligrams per litre. In the St. Clair River, Lake St. Clair, the Detroit River and the Niagara River, the level should be consistent with maintaining the levels of total dissolved solids in Lake Erie and Lake Ontario at not to exceed 200 milligrams per litre. In the remaining boundary waters, pending further study, the level of total dissolved solids should not exceed present levels.

ORGANIC PESTICIDES (NON-PERSISTENT)

General Objective

Concentrations of unspecified, non-persistent organic pesticides should not exceed 0.05 of the median lethal concentration in a 96-hour test for any sensitive local species.

Diazinon

The concentration of Diazinon in an unfiltered water sample should not exceed 0.08 micrograms per litre.

OTHER NON-PERSISTENT TOXIC ORGANIC SUBSTANCES

Oil and Petrochemicals

Oil and petrochemicals should not be present in concentrations that:

- 1) can be detected as visible film, sheen or discoloration on the surface;
- 2) can be detected by odour;
- 3) can cause tainting of fish or edible invertebrates;
- 4) can form deposits on shorelines and bottom sediments that are detectable by sight or odour, or deleterious to resident aquatic organisms.

Unspecified Non-Persistent Toxic Substances and Complex Effluents

Unspecified non-persistent toxic substances and complex effluents of municipal, industrial or other origin should not be present in concentrations which exceed 0.05 of the median lethal concentration (96-hour LC50) for any sensitive local species to protect aquatic life.

OTHER SUBSTANCES

Dissolved Oxygen. In the Connecting Channels and in the upper waters of the Lakes, the dissolved oxygen level should be not less than 6.0 milligrams per litre at any time; in hypolimnetic waters, it should be not less than necessary for the support of fishlife, particularly cold water species.

pH

Values of pH should not be outside the range of 6.5 to 9.0, nor should discharges change the pH at the boundary of the designated mixing zone more than 0.5 units from the ambient.

OTHER SUBSTANCES (Cont'd)

Phosphorus (P). Concentrations should be limited to the extent necessary to prevent nuisance growths of algae, weeds and slimes that are or may become injurious to any beneficial water use.

Tainting Substances

1) Raw public water supply sources should be essentially free from objectionable taste and odour for aesthetic reasons.

2) Substances entering the waters as a result of human activity that cause tainting of edible aquatic organisms should not be present in concentrations which will lower the acceptability of these organisms as determined by organoleptic tests.

PHYSICAL CHARACTERISTICS

Settleable and Suspended Solids and Light Transmission

For the protection of aquatic life, waters should be free from substances attributable to municipal, industrial or other discharges resulting from activity that will settle to form putrescent or otherwise objectionable sludge deposits or that will alter the value of the Secchi disk depth by more than 10 percent.

Temperature.

There should be no change that would adversely affect any local or general use of these waters.

Asbestos

Asbestos should be kept at the lowest practicable levels and in any event should be controlled to the extent necessary to prevent harmful effects on health.

Radioactivity.

The specific water quality objective for radioactivity in the Great Lakes is that level of radioactivity which results in a wholebody dose commitment not exceeding one millirem due to the ingestion of water in any one year. Source investigation and corrective action if releases are not as low as reasonably achievable are recommended for dose commitments between 1 and 5 millirem. For dose commitments greater than 5 millirem corrective action by the responsible regulatory authorities is recommended.

MICROBIOLOGICAL CHARACTERISTICS

Microbiology. The geometric mean of not less than five samples taken over not more than a thirty-day period should not exceed 1,000/100 millilitres total coliforms, nor 200/100 millilitres fecal coliforms. Waters used for body contact recreation activities should be substantially free from bacteria, fungi, or viruses that may produce enteric disorders or eye, ear, nose, throat and skin infections or other human diseases and infections.

3. Minimum Levels of Treatment. To accomplish these objectives, the Parties shall require the following:

a. municipal sources shall be provided a minimum level of treatment which shall produce an effluent described as follows:

--BOD₅ 30 day arithmetic mean, 30 mg/l
 7 day arithmetic mean, 45 mg/l
 plus not less than 85% removal (30 day period)

--TSS 30 day arithmetic mean, 30 mg/l
 7 day arithmetic mean, 45 mg/l
 plus not less than 85% removal (30 day period)

--PH 6.0 to 9.0

--Total Phosphorus (P) 1 mg/l maximum

--Disinfection, as required to:

- 1) protect potable water supplies
- 2) protect aquatic life
- 3) protect irrigation and agricultural waters
- 4) protect waters where human contact is likely

Where such treatment is inadequate to meet water quality standards or to meet the objectives of this Agreement, additional treatment shall be required.

b. Industrial sources shall be provided a minimum level of treatment that shall produce an effluent consistent with the best practicable control technology currently available for that industry. Where such treatment is inadequate to meet water quality standards or to meet the objectives of this Agreement, additional treatment shall be required.

4 6. Sampling Data. The Parties agree that the determination of compliance with specific objectives shall be based on statistically valid sampling data.

7. Mixing Zones

The responsible regulatory agencies may designate restricted mixing zones in the vicinity of outfalls within which the specific water quality objectives shall not apply. Mixing zones shall not be considered a substitute for adequate treatment or control of discharges at their source.

The following guidelines should be used in the designation of mixing zones.

- (a) *A mixing zone is an area, contiguous to a point source, where exceptions to water quality objectives and conditions otherwise applicable to the receiving waterbody may be granted.*
- (b) *Specific water quality objectives and conditions applicable to the receiving waterbody should be met at the boundary of mixing zones.*
- (c) *Limitations on mixing zones should be established by the responsible regulatory agency on a case-by-case basis, where "case" refers to both local considerations and the waterbody as a whole, or segment of the waterbody.*
- (d) *Mixing zones, by definition, represent a loss of value.*
- (e) *Many of the general water quality objectives should apply to discharge-related materials within mixing zones. The zones should be free of:*
 - (1) *objectionable deposits;*
 - (2) *unsightly or deleterious amounts of flotsam, debris, oil, scum and other floating matter;*
 - (3) *substances producing objectionable colour, odour, taste, or turbidity; and*
 - (4) *substances and conditions or combinations thereof at levels which produce aquatic life in nuisance quantities that interfere with other uses.*

- (f) No conditions within the mixing zone should be permitted which are either (a) rapidly lethal to important aquatic life (conditions which result in sudden fish kills and mortality or organisms passing through the mixing zone); or (b) which cause irreversible responses which could result in detrimental post-exposure effects; or (c) which result in bioconcentration of toxic materials which are harmful to the organism or its consumers.
- (g) Concentrations of toxic materials at any point in the mixing zone where important species are physically capable of residing should not exceed the 24 to 96-hour LC50.
- (h) When designing conditions to protect specific organisms it is necessary to know that the organisms would normally inhabit the area within the mixing zone. Zones of passage should be assured either by location or design of conditions within mixing zones. Mixing zones should not form a barrier to migratory routes of aquatic species or interfere with biological communities or populations of important species, to a degree which is damaging to the ecosystem, or diminish other beneficial uses disproportionately.
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- (i) Mixing zones may overlap unless the combined effects exceed the conditions set forth in other guidelines.
- (j) Municipal and other water supply intakes and recreational areas should not be in mixing zones as a general condition, but local knowledge of the effluent characteristics and the type of discharge associated with the zone could allow such a mixture of uses.
- (k) Areas of extraordinary value may be designated off-limits for mixing zones.
- (l) The size, shape and exact location of a mixing zone should be specified so that both the discharger and the regulatory agency know the bounds.
- (m) Existing biological, chemical, physical and hydrological conditions should be known when considering location of a new mixing zone or limitations on an existing one.

~~8. -- Localized Areas. -- There will be other restricted, localized areas, such as harbours, where existing conditions such as land drainage and land use will prevent the objectives from being met at least over the short term; such areas, however, should be identified specifically and as early as possible by the responsible regulatory agencies and should be kept to a minimum. -- Pollution -- from such areas shall not contribute to the violation of the water quality objectives in the waters of the other Party. -- The International Joint Commission shall be notified of the identification of such localized areas, in accordance with Article VIII.~~

6. Special Areas. In addition to mixing zones there will be other areas where objectives will not be met as follows:

- (a) NATURAL AREAS - Areas that do not meet water quality objectives due to natural conditions.
- (b) PROBLEM AREAS - General geographical locations where water quality objectives and/or standards are not being met. The water quality in these locations can be improved through remedial measures.

7. Flow Augmentation.

The responsible regulatory agencies shall not consider flow augmentation as a substitute for the use of adequate treatment to meet water quality standards.

8. Amendment.

- (a) The objectives adopted agreed to herein shall be kept under review and may be amended by mutual agreement of the Parties.
- (b) Whenever the International Joint Commission, acting pursuant to Article VI of the Agreement, shall recommend the establishment of new or modified specific water quality objectives, this Annex shall be amended in accordance with such recommendation on the receipt by the Commission of a letter from each Party indicating its agreement with the recommendation.

DISCUSSION OF ARTICLE IV

The changes proposed in this Article relating to standards and other regulatory requirements are made to be consistent with the proposed changes in Articles II and III.

The revised Article IV follows:

ARTICLE IV

STANDARDS AND OTHER REGULATORY REQUIREMENTS

Water quality standards and other regulatory requirements of the Parties shall be consistent with the achievement of the ~~water-quality-objectives~~ *objectives and goals of this Agreement*. The Parties shall use their best efforts to ensure that water quality standards and other regulatory requirements of the State and Provincial Governments shall similarly be consistent with the achievement of the ~~water-quality-objectives~~ *objectives and goals of this Agreement*.

DISCUSSION OF ARTICLE V

This Article on programs and other measures is really the heart of the Agreement. It is here in addition to the revised Article II and III that the philosophical difference between the U.S. and Canadian programs must be also dealt with if we are to get an effective control program for the entire Great Lakes System..

Significant changes are proposed in the wording of Article V to conform to the philosophy of "minimum treatment requirements" conforming to the recommendation in the Position Papers on Water Quality and Point Source Discharges appended to this Report.

No change is necessary in the paragraph on, "Phosphorus", but a completely new Annex 2 is proposed dealing with this subject as recommended in the Position Paper on Phosphorus appended to this Report.

Changes in wording are proposed in the paragraph dealing with non-point source pollution conforming to the recommendations in the Position Paper on Non-Point Sources appended to this Report.

Several wording changes have also been proposed conforming to recommendations by Sub-Group B related to pollution from shipping activities.

No change is proposed in the paragraph on dredging but further comments are presented in the discussion of Annex 6.

No change is proposed in the paragraph on Pollution from Onshore and Offshore Facilities but additional commentary is provided in the discussion of Annex 7.

Comments related to the paragraphs on Contingency Plans are presented in the discussion of Annex 8.

Changes are suggested in the paragraph on Hazardous Polluting Substances. It is further proposed that the Annex 9 developed by the Work Groups under the original Agreement be included in the new Agreement. Further discussion is provided in the Position Paper on Hazardous Substances appended to this report.

Article V appears to be where the question of pollution of the lakes from atmospheric fall-out should be dealt with. (Parts of the Agreement dealing with research have also been revised to include air pollution.)

A section on Surveillance has been added based on the recommendations in the Position Paper on Surveillance appended this Report.

Other self-explanatory changes are also proposed.

Although responsibility for Position Papers dealing with Annexes 3, 4, 5, 6, 7 and 8 was given to other Sub-Groups, Sub-Group A was asked to comment on these Annexes and the Position Papers of Sub-Groups B, C, and D and accordingly these comments are provided in separate discussions.

The revised Article V and separate discussions and revisions to Annexes 3 through 9 follow:

ARTICLE V

PROGRAMS AND OTHER MEASURES

1. Programs and other measures directed toward the achievement of the ~~water quality goals and objectives~~ shall be developed and implemented as soon as practicable ~~in accordance with legislation in the two countries,--Unless otherwise agreed,--such programs and other measures shall be either completed or in process of implementation by December 31, 1975.--~~ They shall include the following: *on all point and non-point sources of pollution in the Great Lakes System. Pollution control programs and measures in both Countries should be fully compatible in all respects including minimum levels of treatment, maximum schedules of compliance, breadth of program implementation and public accountability. These pollution control programs and other measures shall be implemented and completed in the shortest possible time but no later (date to be negotiated).* The programs and measures shall include the following:

- (a) Pollution from municipal Sources. Programs for the abatement and control of discharges of municipal sewage into the Great Lakes System including:
 - (i) construction and operation in all municipalities having sewer systems of waste treatment facilities providing levels of treatment consistent with the achievement of the ~~water quality objectives, including minimum prescribed levels of treatment and phosphorus removal,~~ taking into account the effects of waste from other sources *with additional treatment if the achievement of prescribed water quality so requires.*
 - (ii) provision of financial resources to assist prompt construction of needed facilities;
 - (iii) establishment of requirements for construction and operating standards for facilities;
 - (iv) *requirements for the control of the discharge of toxic pollutants into the Great Lakes Basin thru comprehensive programs;*
 - (v) measures to find practical solutions for reducing pollution from overflows of combined storm and sanitary sewers;
 - (vi) *embodiment of all pollution abatement requirements including schedules, monitoring and effluent restrictions in a single document that is periodically reviewed and placed before the public;*
 - (vii) monitoring and surveillance activities necessary to ensure compliance with the foregoing programs and measures;
 - (viii) *establishment of effective enforcement programs to ensure the above pollution abatement requirements are fully met.*

b. Pollution from Industrial Sources. Programs for the abatement and control of pollution from industrial sources, including:

- (i) establishment of waste treatment or control requirements for all industrial plants discharging waste into the Great Lakes System, to provide levels of treatment ~~or reduction of inputs of substances and effects consistent with the achievement of the water quality objectives, taking into account the effects of waste from other sources;~~ *at least as restrictive as best practicable control technology currently available.*
- (ii) ~~requirements for the substantial elimination of discharges into the Great Lakes System of mercury and other toxic heavy metals;~~
establishment of pre-treatment requirements for all industrial plants discharging waste into publically owned treatment works;
- (iii) ~~requirements for the substantial elimination of discharges into the Great Lakes System of toxic persistent organic contaminants;~~
requirements for the control of the discharge of toxic pollutants into the Great Lakes Basin thru comprehensive programs;
- (iv) *embodiment of all pollution abatement requirements including schedules, monitoring and effluent restrictions in a single document that is periodically reviewed and placed before the public;*
- (v) *establishment of effective enforcement programs to ensure the above pollution abatement requirements are fully met.*
- (iv) ~~requirements for the control of thermal discharges;~~
- (v) ~~measures to control the discharge of radioactive materials into the Great Lakes System;~~
- (vi) ~~monitoring, surveillance and enforcement activities necessary to ensure compliance with the foregoing requirements and measures;~~
- (vi) *measures to control the hauling and disposal of toxicants by contract disposal services.*
- (vii) *requirement that intake and discharge structures be designed to avoid any adverse environmental effects.*

c. Eutrophication. Measures for the control of inputs of phosphorus and other nutrients including programs to reduce phosphorus inputs, in accordance with the provisions of Annex 2,

(d) Pollution from Agricultural, Forestry and Other Land Use Activities. Measures for the abatement and control of pollution from agricultural, forestry and other land use activities, including agriculture, forestry practices, road construction, mining, urban development, urban drainage, and other land use activities.

- (i) measures for the control of pest control products (*pesticides*) with a view to limiting inputs into the Great Lakes System, including regulations to ensure that pest control products judged to have long term deleterious effects on the quality of water or its biotic components shall be used only as authorized by the responsible regulatory agencies, and that pest control products shall not be applied directly to water except in accordance with the requirements of the responsible regulatory agencies;
- (ii) measures for the abatement and control of pollution from animal husbandry operations, including encouragement to appropriate regulatory agencies to adopt regulations governing site selection and disposal of liquid and solid wastes in order to minimize the loss of pollutants to receiving waters;
- (iii) measures governing the disposal of solid wastes and contributing to the achievement of the water quality objectives, including encouragement to appropriate regulatory agencies to ensure proper location of land fill and land dumping sites and regulations governing the disposal on land of hazardous polluting substances;
- (iv) ~~advisory programs and measures that serve to abate and control inputs of nutrients and sediments into receiving waters from agricultural, forestry and other land use activities.~~

advisory programs and measures that serve to abate and control inputs of nutrients, sediments, and other pollutants into receiving water from agriculture, forestry practices, road construction, mining, urban development, urban drainage and other land use activities including encouragement to appropriate agencies to adopt and implement Best Management Practices.

(e) Pollution from Shipping Activities. Measures for the abatement and control of pollution from shipping sources, including:

- (i) programs and compatible regulations for vessel design, construction and operation, to prevent discharges of harmful quantities of oil and hazardous polluting substances, in accordance with the principles set forth in Annex 3;

- (ii) compatible regulations for the control of vessel waste discharges in accordance with the principles set forth in Annex 4;
 - (iii) such compatible regulations to abate and control pollution from shipping sources as may be deemed desirable in the light of studies to be undertaken in accordance with the terms of references set forth in Annex 5;
 - (iv) programs ^{including provisions for adequate shore facilities} for the safe and efficient handling of shipboard generated wastes, including oil, hazardous polluting substances, garbage, waste water and sewage, and their subsequent disposal, including any necessary compatible regulations relating to the type, quantity and capacity of shore reception facilities *in accordance with the principles set forth in Annexes 3 and 4.*
 - (v) establishment of a coordinated system for the surveillance and enforcement of regulations dealing with the abatement and control of pollution from shipping activities.
- (f) Pollution from Dredging Activities. Measures for the abatement and control of pollution from dredging activities, including the development of criteria for the identification of polluted dredged spoil and compatible programs for disposal of polluted dredged spoil, which shall be considered in the light of the review provided for in Annex 6; pending the development of compatible criteria and programs, dredging operations shall be conducted in a manner that will minimize adverse effects on the environment.
- (g) Pollution from Onshore and Offshore Facilities. Measures for the abatement and control of pollution from onshore and offshore facilities, including programs and compatible regulations for the prevention of discharges of harmful quantities of oil and hazardous polluting substances, in accordance with the principles set forth in Annex 7.
- (h) Contingency Plan. Maintenance of a joint contingency plan for use in the event of a discharge or the imminent threat of a discharge of oil or hazardous polluting substances, in accordance with the provisions of Annex 8.

- (i) Hazardous Polluting Substances. Consultation within one year from the date of entry into force of this Agreement for the purpose of developing ~~Implementation of an~~ Annex 9 identifying hazardous polluting substances; the Parties shall further consult from time to time for the purpose of revising the list of hazardous substances, of identifying harmful quantities of these substances and of reviewing the definition of "harmful quantity of oil" set forth in Annexes 3 and 7.
- (j) Pollution from Atmospheric Fallout. Programs and measures from the identification and control of water pollution caused by transfer of pollution from the atmosphere.

2. Notwithstanding the preceding surveillance monitoring and analysis requirements a coordinated, bilateral program that will meet the following objectives:

- (a) Surveillance. Programs to detect excursions from objectives to determine water quality trends and to describe and quantify cause and effect relationships, specifically;
 - (i) Surveillance to detect excursions from water quality objectives for parameters with numerical limits.
 - (ii) Surveillance to determine water quality and biological trends for the purpose of evaluating compliance with the non-degradation requirement and determining long-term effects of remedial programs.
 - (iii) Surveillance, to describe and quantify cause (loads) and effect (water quality) relationships to understand how the Great Lakes physical, biological and chemical system operates. Together with mathematical modeling, this forms the basis for determining whole lake response to remedial programs, the need for new remedial programs such as the phosphorus control program, altering or establishing new water quality objectives, and a means to detect new and emerging problems.
 - (iv) Surveillance to include quality assurance programs to provide for sampling and analytical methodology, inter-laboratory comparisons, and compatible data management.

(b) Sample Collection, Analysis, Evaluation and Quality Assurance. As a minimum the program will include sufficient sample collection, analysis and evaluation including quality assurance to allow assessments of the following:

- (i) Inputs from tributaries, point source discharges, atmosphere, and connecting channels.
- (ii) Whole Lake including nearshore areas, such as harbors and embayments, general shoreline and cladophora growth area, open waters of the Lakes, fish contaminants, and wildlife contaminants.
- (iii) Outflows including connecting channels water intakes and outlets.
- (iv) Point source discharges including detailed process evaluation for critical industries.

3. The Parties shall develop and implement such additional programs as they jointly decide are necessary and desirable for the achievement of the water quality *goals and* objectives.

4. The programs and other measures provided for in this Article shall be designed to abate and control pollution of tributary waters where necessary-
or desirable for the achievement of the water quality objectives for the boundary waters of the Great Lakes System.

DISCUSSION OF ANNEX 2

A completely revised Annex on control of phosphorus is proposed, as recommended in the Position Paper on Phosphorus appended to this Report.

The Sub-Group recognizes the difficulties that have been experienced in attempting to control phosphorus and agrees with the Position Paper that a phosphorus control program is still valid. The Sub-Group particularly takes note of and concurs with the recommendation for:

- a phosphorus limit in household detergents
- a phosphorus effluent limitation
- development of phosphorus load allocations

The proposed new Annex 2 follows:

ANNEX 2

CONTROL OF PHOSPHORUS

1. Objectives. The objective of the following programs is to minimize eutrophication problems in the boundary waters Great Lakes system. It is anticipated that successful implementation of these programs will accomplish the following results, which are of critical importance to the success of the joint undertaking to preserve and enhance the quality of the boundary waters of the Great Lakes system:

- (a) Restoration of year-round aerobic conditions in the bottom waters of the Central Basin of Lake Erie.
- (b) Substantial reduction in the present levels of algal biomass to a level below that of a nuisance condition in Lake Erie.
- (c) Reduction in present levels of algal biomass to below that of a nuisance condition in Lake Ontario including the International Section of the St. Lawrence River.
- (d) Maintenance of the oligotrophic state and relative algal biomass of Lakes Superior and Huron;
- (e) Substantial elimination of algal nuisance growths in Lake Michigan to restore it to an oligotrophic state;
- (f) The elimination of algal nuisances in bays and in other areas wherever they occur.

2. Program shall be developed and implemented to reduce inputs of phosphorus to achieve the objectives. These programs shall include:

- (a) Construction and operation of municipal waste treatment facilities to achieve an effluent concentration of 1 mg/l total phosphorus (P) maximum in the Great Lakes system or such lower levels as may otherwise be required.
- (b) Regulation of phosphorus introduction from industrial discharges to the maximum practicable extent.
- (c) Reduction of phosphorus introduced from non-point sources to the maximum extent practical.
- (d) Reduction of phosphorus to at least 0.5 percent by weight in household detergents to control phosphorus introductions from raw or inadequately treated sewage.

- (e) Maintenance of a viable research program to seek maximum efficiency and effectiveness in the control of phosphorus introductions into the Great Lakes.

3. Reductions for the Great Lakes. In addition, the above stated programs are designed to control input of phosphorus to the Great Lakes system, which will, or are, projected to maintain oligotrophic conditions and reduce eutrophic conditions in other areas. To meet all of the objectives of the phosphorus control program accurate phosphorus loadings and lake load limits must be estimated:

- (a) The Parties, in cooperation with the State and Provincial government and with the International Joint Commission, shall within one year through the joint scientific effort of the applicable jurisdictions, estimate the phosphorus loading, lake load limits and reductions required to meet the above stated objectives. In-Lake phosphorus and chlorophyll concentrations necessary to achieve the objectives are to be determined and included in Annex 1.
- (b) The Parties, in consultation with the State and Provincial Governments and with the International Joint Commission, shall within one year after establishing the phosphorus loading, determine the allocation of phosphorus on a jurisdictional basis through a joint scientific effort of the applicable jurisdiction. The jurisdiction shall also furnish phosphorus load allocations to eliminate nuisance plant growths in bays and other areas. The jurisdictions will provide compliance schedules within one year after the establishment of the allocations. In some cases, this will include controls on non-point sources.

4. Refinement of Data. The loads shall be based upon best available data. The Parties, in cooperation with the State and Provincial Governments and with the International Joint Commission, shall continue to refine these estimates to ensure a comparable data base. These estimates are subject to revision upon agreement by the Parties to reflect future refinement of the data.

5. The Parties shall consider recommendations of the International Joint Commission made as the result of the studies of the pollution from agricultural, forestry and other land use activities, in order to develop and implement appropriate programs for control of inputs of phosphorus from these sources.

6. Monitoring. The Parties, in cooperation with the State and Provincial Governments and with the International Joint Commission, shall continue to monitor the extent of cultural eutrophication in boundary waters in the Great Lakes System and the progress being made in reducing or preventing it. They

shall consult periodically to exchange the results of research and to pursue proposals for additional programs to control cultural eutrophication.

7. Submission of Information. The International Joint Commission shall be given information at least annually, in accordance with procedures established by the Commission in consultation with the Parties and with the State and Provincial Governments, concerning:

- (a) Total reductions in gross inputs of phosphorus achieved.
- (b) Anticipated reductions in gross inputs of phosphorus for the succeeding twelve months.

DISCUSSION OF ANNEX 3

This discussion of Annex 3, which deals with vessel design, is based on the Position Paper of Sub-Group B. The revision of par. 4 proposed by Sub-Group B should include specific dates by which the various programs are to be completed. Rather than calling for measures "to be adopted," these wordings should be changed to say that measures "shall be adopted by (specify date)". The lack of time tables for these programs was a deficiency in the original Annex and should not be repeated in the new Agreement.

For reference purposes, a copy of the draft Position Paper of Sub-Group B which was referred to this Sub-Group for comment is included in attachment 3,

DISCUSSION OF ANNEX 4

This discussion of Annex 4 dealing with vessel wastes is based on the Position Paper of Sub-Group B. The 4th Annual Report of the Great Lakes Water Quality Board summarizes the problem with vessel wastes most succinctly and reflects the views of the majority of Sub-Group A on this matter. A copy of the Board Report Summary is attached to this Report. Apparently the only level at which the conflict can be resolved is in direct negotiation with the Canadians. The States of Wisconsin and Michigan already prohibit discharge under PL 92-500 and other states may follow suit. Minnesota has a request pending for authority to prohibit discharge.

The Senior Review Group should be aware of a recent communication and Resolution by the Michigan Wastes Resources Commission on this subject, a copy of which is included in Attachment 5. This issue is one of the most controversial on the Great Lakes. Since some and possibly all eight Great Lakes States intend to prohibit discharges under PL 92-500, the only way compatibility can be achieved is if the Canadians prohibit discharge from commercial vessels.

For reference purposes, a copy of the draft Position Paper of Sub-Group B which was referred to this Sub-Group for comment is included in Attachment 3.

DISCUSSION OF ANNEX 5

This discussion of Annex 5, dealing with Studies of Pollution from Shipping Sources is based on the Position Paper of Sub-Group B.

Sub-Group A defers to Sub-Group B on para 1.(a) through 1.(e) since these are subjects not within the expertise of this Sub-Group.

The Sub-Group B Position Paper was completely silent on paragraphs 1.(f), 1.(g) and 1.(e) which are of primary concern to this Sub-Group. These three sub-paragraphs should be included in the Sub-Group B Position Paper. The Paper should tell what has been done regarding study of these items and what further needs to be done.

Sub-Group A suggests that the Coast Guard be required to address a full reporting and any necessary re-writing of this Annex. If this Annex is continued, it should include required studies of vessel hold cleaning practices and the disposal of washings therefrom and also include a study of the need for shore facilities for the reception of such vessel washings and other vessel waste discharges.

For reference purposes, a copy of the draft Position Paper of Sub-Group B which was referred to this Sub-Group for comment is included in Attachment 3.

DISCUSSION OF ANNEX 6

This discussion of Annex 6, dealing with dredged spoil, is based upon the Position Paper of Sub-Group D.

A majority of Sub-Group A agrees with the position taken by the Great Lakes Water Quality Board as stated in the Board's Summary Report attached with this Report.

Sub-Group A took additional note of commentary previously provided by the Regional Administrator of EPA Region V on the 1975 Report of the International Dredging Work Group and a copy of the Region V commentary is included in Attachment 5.

In summary, Sub-Group A recommends that dredging activities be brought under the purview of a standing committee of the Water Quality Board of the International Joint Commission, and a further study should be required for the development of general criteria which was called for in the original Agreement.

For reference purposes a copy of the draft Position Paper of Sub-Group D which was referred to this Sub-Group for comment is included in Attachment 3.

DISCUSSION OF ANNEX 7

Annex 7 "fell through the cracks" in administration of the original Agreement. The broad comprehensive nature of this Annex and the lack of any defined responsibility resulted in this lack of attention.

The Annex still appears to be needed and should be continued without change in the revised Agreement. To remedy the lack of defined responsibility changes have been proposed in Article VI. A new par 1.(d) is proposed and reporting on Annex 7 as well as other Annexes by the International Joint Commission is proposed in a change to Par 3. Furthermore Sub-Group A concurs in a recommendation by the Water Quality Board to establish a standing committee under its purview to deal with Annex 7 as well as all other Annexes. Sub-Group A further believes that with the above mentioned changes in Article VI, the establishment of such a committee could be handled administratively and need not be specified in the Agreement.

For reference, a copy of the original Annex 7 is reproduced on the following pages.

DISCHARGES FROM ONSHORE AND OFFSHORE FACILITIES

1. Definitions. As used in this Annex:

- (a) "Discharge" means the introduction of oil or hazardous polluting substances into receiving waters and includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting or dumping; it does not include continuous effluent discharges from municipal or industrial treatment facilities;
- (b) "Harmful quantity of oil" means any quantity of oil that, if discharged into receiving waters, would produce a film or sheen upon, or discoloration of the surface or the water or adjoining shoreline, or that would cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shoreline;
- (c) "Offshore facility" means any facility of any kind located in, on or under any water;
- (d) "Onshore facility" means any facility of any kind located in, on or under, any land other than submerged land.

2. Facilities. The term "facility" includes motor vehicles, rolling stock, pipelines, and any other facility that is used or capable of being used for the purpose of processing, producing, storing, transferring or transporting oil or hazardous polluting substances, but excludes vessels.

3. Oil. As used in this Annex, "oil" refers to oil of any kind or in any form, including, but not limited to petroleum, fuel oil, oil sludge, oil refuse, and oil mixed with wastes, but does not include constituents of dredged spoil.

4. Principles. Regulations shall be adopted for the prevention of discharges into the Great Lakes System of harmful quantities of oil and hazardous polluting substances from onshore and offshore facilities in accordance with the following principles:

- (a) Discharges of harmful quantities of oil or hazardous polluting substances shall be prohibited and made subject to appropriate penalties;
- (b) As soon as any person in charge has knowledge of any discharge of harmful quantities of oil or hazardous polluting substances, immediate notice of such discharge shall be given to the appropriate agency in the jurisdiction where the discharge occurs; failure to give this notice shall be made subject to appropriate penalties.

5. Programs and Measures. The programs and measures to be adopted shall include the following:

- (a) Programs to review the design, construction, and location of both existing and new facilities for their adequacy to prevent the discharge of oil or hazardous polluting substances;
- (b) Programs to review the operation, maintenance and inspection procedures of facilities for their adequacy to prevent the discharge of oil or hazardous polluting substances;
- (c) Programs to train personnel to perform all functions involving the use and handling of oil and hazardous polluting substances;
- (d) Programs to ensure that at each facility plans and provisions are made for appropriate equipment for the containment and clean up of spills of oil or hazardous polluting substances;
- (e) Programs including compatible regulations for the identification and placarding of containers and vehicles carrying oil or hazardous polluting substances.

DISCUSSION OF ANNEX 8

This discussion of Annex 8 dealing with shipping regulations and contingency plans is based on the Position Paper of Sub-Group C.

Sub-Group A has no objections to the thrust of the recommendations on Article V.1.(e)v., but recommends the following language to give better focus to the ongoing activities of the agency involved:

- (v) *establishment by the U.S. and Canadian Coast Guard of a coordinated system of aerial and surface surveillance and enforcement of regulations directed toward the early identification, abatement and clean-up of any spills of oil or any other hazardous polluting substances.*

The revised Annex 8 proposed by Sub-Group C is acceptable with the following replacement of the second sentence of Par 1.:

The Parties further agree that the U.S. and Canadian Coast Guard shall, in cooperation with all other affected parties, identify and provide detailed contingency plans for areas of high risk and of particular concern in augmentation of the CANUSLAK.

For reference purposes, a copy of the draft Position Paper of Sub-Group C which was referred to this Sub-Group for comment is included in Attachment 3.

DISCUSSION OF ANNEX 9 (New)

The original Agreement, by Article V 1.(i), called for the development of a hazardous materials Annex to the Agreement. A proposed Annex 9 with the list of hazardous materials as appendixes was developed by a Joint U.S.-Canadian Work Group and submitted to the Parties in 1976 for inclusion in the Agreement.

Sub-Group A understands that since that time, there have been differences of opinion related to Section 311 of PL 92-500. This apparent conflict must be resolved at EPA Headquarters, but in the interim Sub-Group A is not aware of any other reason why the Joint Work Group recommendations should not be incorporated in the new Agreement.

The proposed Annex 9, which is the latest version of the Joint Work Group recommendation available to Sub-Group A, follows this discussion. The appendixes to Annex 9 comprising the lists are not reproduced since the lists seem to be a large part of the apparent conflict.

ANNEX 9

HAZARDOUS POLLUTING SUBSTANCES

1. PURPOSE

This Annex was prepared pursuant to Article V(1)(i) of the Canada-U. S. Great Lakes Water Quality Agreement which calls for the development of an Annex identifying hazardous polluting substances. The list in Appendix I of this Annex will facilitate the development of other related programs such as the prompt joint spill reporting and response action (Annex 8), compatible regulations or programs for the prevention and control of discharges of such substances from vessels (Annex 3), from shipping activities (Annex 5), from dredge spoil disposal (Annex 6) and from onshore-offshore facilities (Annex 7).

The list in Appendix II will serve as a guide for indicating other potentially hazardous polluting substances, and will be subject to review and revision as described below under Section 4.

Consideration will be given to the eventual development of Appendix III which will designate harmful quantities of hazardous polluting substances. This is further described in section 5.

2. PRINCIPLES OF LISTING AND REVISION FOR HAZARDOUS POLLUTING SUBSTANCES (APPENDIX I)

The Parties recognize that any list of hazardous polluting substances should not be regarded as complete, all-encompassing, or final. Any such list will require revision since discharges of non-listed substances threatening human health, human welfare, or the living resources of the Great Lakes could occur at any time. Inclusion of the elements and compounds listed in Appendix I will be based upon the following principles:

- Selection of all hazardous substances identified in this Appendix will be based upon documented toxicological and discharge potential data which have been evaluated by the parties and deemed to be mutually acceptable.
- Revisions to Appendix I will be initiated and ratified through the joint action of the parties. Using the agreed to selection criteria, either party may recommend at any time a substance(s) to be added to the list in Appendix I. Such a substance(s) may or may not be listed in Appendix II. The party receiving the recommendation has 60 days to review the associated documentation for purposes of acceptance or rejection. Cause for rejection must be documented and submitted to the initiating party as the basis for any further negotiations if deemed necessary. Acceptance of the initiating party's recommendation automatically affirms the substance(s) as a candidate for the list of Appendix I, pending the completion of any requisite modification of national implementing regulations or alternative administrative procedures pertaining to the designation of new hazardous polluting substances. Such requirements from either party may be necessary before programs and measures (Annexes 3 and 7) to prevent discharges of the newly added substances can be legally implemented. However, any such administrative delay in confirming the candidate substance(s) for Appendix I listing will not apply to the carrying out of the provisions of Annex 8, Joint Contingency Plan, in event of a pollution incident involving the candidate substance(s).

3. HAZARDOUS POLLUTING SUBSTANCES SELECTION CRITERIA

Rationale

The criteria for determining relative hazards posed by chemicals to the environment fall within three general areas. These are toxicological data, information relating to the probability of a discharge occurring (discharge potential), and data on the chemical and physical properties of the material which affect its dispersal and persistence in a given body of water.

From a toxicological standpoint an element, compound or mixture thereof, is considered hazardous if it poses a threat to one or more of the following areas or aspects of the environment:

- (i) Toxic effects on aquatic plant or animal life where the exposure is from immersion;
- (ii) Toxic effects on animal life where the exposure is from dermal contact, inhalation, or oral ingestion.

Additional factors which are considered relate to assessing the reasonable chance of the material being discharged. These factors are quantified by knowing the spill history, production quantities, use and distribution patterns, or the extent of other regulation because of special threats to safety, health or welfare.

Any revisions or additions to the selection criteria will be initiated and ratified through the joint action of the parties.

Criteria

a) Toxicological

Any element, compound or mixture thereof which is lethal to:

- one-half of a test population of aquatic animals in 96 hours or less at a concentration of 500 milligrams per liter (mg/l) or less, or
- one-half of a test population of animals in 14 days or less when administered in a single oral dose equal to or less than 50 milligrams per kilogram (mg/kg) of body weight; or

- one-half of a test population of animals in 14 days or less when dermally exposed to an amount equal to or less than 200 mg/kg body weight for 24 hours; or
- one-half of a test population of animals in 14 days or less when exposed to a vapor concentration equal to or less than 20 cubic centimeters per cubic meter (volume/volume) in air for one hour; or
- aquatic flora as measured by a 50 percent decrease in cell count, biomass, or photosynthetic ability in 14 days or less at concentrations equal to or less than 100 mg/l;

b) Discharge Potential

Substances must pose a reasonable potential to be discharged into the Great Lakes which is determined by:

- establishing information on history of discharges or accidents;
- assessing the modal risks during transport and determining the use and distribution patterns;
- identifying quantities manufactured or imported.

Those substances which have the toxicological properties and reasonable potential to be discharged as specified above are identified as hazardous polluting substances in Appendix I to this Annex.

4. PRINCIPLES OF LISTING AND REVISION FOR POTENTIAL HAZARDOUS POLLUTING SUBSTANCES (APPENDIX II)

Substances listed in Appendix II will serve as a guide for indicating other potentially hazardous polluting substances which, due to insufficient data or for any one of a variety of reasons, are not presently listed in Appendix I. These substances will be given priority attention for examination and possible future

inclusion in Appendix I. Appendix II should not be regarded as complete, all encompassing or final. Inclusion of the elements or compounds listed in Appendix II will be based upon the following principles:

Either party may add new substances to Appendix II by notifying the other in writing that the substance is considered to be a potential hazard because of documented information concerning aquatic toxicity, mammalian and other vertebrate toxicity, phytotoxicity, persistence, bio-accumulation, mutagenicity, teratogenicity, carcinogenicity, environmental translocation or because of documented information on the potential for relatively high discharge to the environment. The documentation of the potential hazard and the selected criteria upon which it is based will also be submitted. Such an interchange could usefully serve as a basis for any necessary revisions or additions to the selection criteria for Appendix I.

Removal of substances from the list shall be by mutual consent.

5. HARMFUL QUANTITY DETERMINATION

It is recognized that harmful quantities of hazardous polluting substances could be useful to clarify notification requirements for pollution incidents, alert levels, contingency planning concerns, and hazards of transportation. These quantities are to be specified in Appendix III of this Annex. Until that Appendix is completed, the parties recognize that any quantity of substance listed in this Annex may be harmful and that in Canadian waters appropriate steps will, therefore, be taken for any discharge.

In the U. S. waters appropriate notification and enforcement actions will be undertaken for discharges in excess of harmful quantities specified in 40 CFR Part 113.

In conformance with Annex 3 both parties will take appropriate joint response action for a spill of any substance of any magnitude judged to be a pollution incident as defined therein.

6. COMPATIBLE PROGRAM DEVELOPMENT STEPS

The parties agree to implement programs in keeping with the requirements of the Agreement and this Annex using appropriate federal, state, or provincial legislation.

Canada

The Canadian program of control of discharge of hazardous polluting substances is to be implemented through Federal and Provincial authorities using legislation such as:

- Ontario Petroleum Resources Act.
- Ontario Water Resources (OWR) Act.
- Environmental Protection Act. (Ontario)
- The Canada Shipping Act (R. S. C. S-9, C. 381 [1st Supplement]; S. 65)
- Fisheries Act (R. S. C. 1970, C. F-14)
- Environmental Contaminants Act

It should be noted that Canada can implement the spill control program for all materials discharged into Great Lakes areas under Canadian jurisdiction and, therefore, materials listed in this Annex are noted as priority substances and do not limit Canadian authorities for discharges of unlisted substances.

United States:

The United States program of control of discharge of hazardous polluting substances is to be implemented through Federal and State Authorities using legislation such as:

- The Federal Water Pollution Control Act as amended 1972 (P. L. 92-500)
- The Ports and Waterways Safety Act (P. L. 92-342)

The Water Pollution Control Act is to be recognized as the primary instrument to allow the United States to implement the spill control program which is thereby limited to materials specifically listed as Hazardous Substances (40 CFR Part 116).

7. ANNEX REVIEW

The parties shall conduct a comprehensive review of the effectiveness of this annex during the fifth year of the agreement for this Annex. Thereafter, further comprehensive review shall be conducted upon the request of either party.

8. ENTRY INTO FORCE & TERMINATION

This Annex shall enter into force upon signature by the duly authorized representatives of the parties and shall remain in force for the period of the agreement unless terminated by twelve months notice given in writing by one of the parties to the other.

DISCUSSION OF ARTICLE VI

A new sub-paragraph 1.(d) is proposed to bring the matters under Annexes 3, 4, 6, 7 and 9 under the purview of the International Joint Commission. The Commission appears to be the only practical mechanism to provide a continuing overview of these matters, a deficiency which has been previously called to the attention of the Parties in reports by the IJC. The intent is to bring the shipping and dredging related activities under the purview of the IJC and its Water Quality Board.

Par 1.(g) is revised to reiterate the land use reference and to delete mention of the Upper Lakes reference since the latter should be completed before this Agreement is firmed up.

Changed wording is proposed for the newly numbered par 1.(f) to conform to changes proposed in Article VII and to conform to the Position Paper on Research appended to this Report.

Changes in wording are proposed for paragraph 3 to require a full report by the IJC only biennially instead of annually and to extend the reporting responsibilities to shipping and dredging matters. This also corresponds to a recommendation of the Water Quality Board. The reporting requirement has also been enlarged to conform to the changes proposed in par.1.(d).

A new paragraph 6 is proposed to conform to changes proposed in the administrative support for Agreement-related work.

The proposed revised Article VI follows:

ARTICLE VI

POWERS, RESPONSIBILITIES AND FUNCTIONS OF THE INTERNATIONAL JOINT COMMISSION

1. The International Joint Commission shall assist in the implementation of this Agreement. Accordingly, the Commission is hereby given, pursuant to Article IX of the Boundary Waters Treaty, the following responsibilities:

- (a) Collation, analysis and dissemination of data and information supplied by the Parties and State and Provincial Governments relating to the quality of the boundary waters of the Great Lakes System and to pollution that enters the boundary waters from tributary waters;
- (b) Collection, analysis and dissemination of data and information concerning the water quality objectives and the operation and effectiveness of the programs and other measures established pursuant to this Agreement;
- (c) Tendering of advice and recommendations to the Parties and to the State and Provincial Governments on problems of the quality of the boundary waters of the Great Lakes System, including specific recommendations concerning the water quality objectives, legislation, standards and other regulatory requirements, programs and other measures, and intergovernmental agreements relating to the quality of these waters;
- (d) *Tendering of advice and recommendations to the Parties on problems in connection with matters covered under Annexes 3, 4, 6, 7 and 9.*
- (e) Provision of assistance in the coordination of the joint activities envisaged by this Agreement, including such matters as contingency planning and consultation on special situations;
- (f) *Provision of assistance in the co-ordination of and advice on matters related to Great Lakes water quality research, including identification of objectives for research activities, tendering of advice and recommendations concerning research to the Parties and to the State and Provincial Governments and dissemination of information concerning research to interested persons and agencies;*
- (g) Investigations of such subjects related to Great Lakes water quality as the Parties may from time to time refer to it. At the time of signature of this Agreement, the Parties are requesting- *reiterating their request to the Commission to enquire into and report to them upon*

pollution of the boundary waters of the Great Lakes System from agricultural, forestry and other land use activities, in accordance with the terms of reference to this Agreement.

(iii) ~~actions-needed-to-preserve-and-enhance-the-quality-of-the-waters-of-Lake-Huron-and-Lake-Superior-in-accordance-with-the-terms-of-reference-attached-to-this-Agreement.~~

2. In the discharge of its responsibilities under this Agreement, the Commission may exercise all of the powers conferred upon it by the Boundary Waters Treaty and by any legislation passed pursuant thereto, including the power to conduct public hearings and to compel the testimony of witnesses and the production of documents.

3. The Commission shall make a *full* report to the Parties and to the State and Provincial Governments no less frequently than annually *biennially* concerning progress toward the achievement of the water quality objectives, *including matters related to Annexes 1, 2, 3, 4, 6, 7, and 9.* This report shall include an assessment of the effectiveness of the programs and other measures undertaken pursuant to this Agreement, and advice and recommendations. *In alternate years the Commission may submit a summary report.* The Commission may at any time make special reports to the Parties, to the State and Provincial Governments and to the public concerning any problem of water quality in the Great Lakes System.

4. The Commission may in its discretion publish any report, statement or other document prepared by it in the discharge of its functions under this Agreement.

5. The Commission shall have authority to verify independently the data and other information submitted by the Parties and by the State and Provincial Governments through such tests or other means as appear appropriate to it, consistent with the Boundary Waters Treaty and with applicable legislation.

6. *The Commission shall carry out the provisions of this Article utilizing principally the services of the Water Quality Board and the Science Advisory Board established under Article VII.*

DISCUSSION OF ARTICLE VII

This Article has been rearranged to incorporate the concept of the Reference on the Research Advisory Board into the Article itself. The Research Advisory Board, re-named the Science Advisory Board, needs to become a permanent institution of the Agreement and this is the mechanism proposed for accomplishing it. The purview of the Science Advisory Board has for obvious reasons, been extended to "related fields" which is intended to include the problems of atmospheric fall-out as they affect water quality. The rationale for the changes are contained in the Position Paper on Research attached to this report.

A change is proposed in the wording, regarding the Water Quality Board to establish what, already exists; i.e., the Water Quality Board as the principal Advisor to the International Joint Commission on Great Lakes Water Quality matters.

This Article proposes to abolish the Great Lakes Regional Office and distribute these duties to the Parties. The Sub-Group A believes that this would make for a more efficient utilization of manpower and other services, and would simplify administration of the programs under the Agreement.

Two members of the State Advisory Group and one member of the Federal Advisory Group disagreed with the proposed abolition of the Regional Office. (See Attachment 5 for their comments).

The revised Article follows: (Since the proposed revisions are a complete change in the sense of the Article the existing Article has not been reproduced; i.e., the line-out is not used here):

ARTICLE VII

JOINT INSTITUTIONS

1. *The International Joint Commission shall establish the following: Two Boards to serve as its principal advisors to assist in the exercise of the powers and responsibilities assigned to the Commission under this Agreement:*

(a) *One board shall be the Water Quality Board to be the principal Advisor on all policy matters. The Board shall be composed of an equal number of members from Canada and United States, including representatives from the Parties and from each of the State and Provincial governments.*

(b) *A second Board shall be the Science Advisory Board to advise on all scientific matters. The Board shall consist of recognized experts on Great Lakes Water Quality problems and related fields.*

2. *The members of the Great Lakes Water Quality Board and the Research Science Advisory Board shall be appointed by the Commission and their duties determined after consultation with the appropriate government or governments concerned. In addition, the Commission shall have the authority to establish as it may deem appropriate such subordinate bodies as may be required to undertake specific tasks, as well as a regional office, which may be located in the basin of the Great Lakes System, to assist it in the discharge of its functions under this Agreement. ~~The Commission shall also consult the Parties about the site and staffing of any regional office that might be established.~~*

3. *The Commission shall dis-establish the Great Lakes Regional Office and in lieu thereof the functions of the Regional Office shall be performed by the lead agencies of the Parties. The lead Agency for the U.S. shall be the U.S. Environmental Protection Agency and the lead agency for Canada shall be Environment Canada. The personnel and resources of the Regional Office shall be reassigned to the respective lead agencies of their governments.*

4. *The Commission shall submit an annual budget, of anticipated expenses to be incurred in carrying out its responsibilities under this Agreement, to the Parties for approval. Each Party shall seek funds to pay one-half of the annual budget so approved, but neither Party shall be under an obligation to pay a larger amount than the other toward this budget. ~~the~~ portion of the annual expenses as agreed upon by the two Boards and as approved by the lead agencies.*

DISCUSSION OF ARTICLES VIII THROUGH XIV

Changes in wording are proposed for Articles VIII through XII which are self-explanatory.

A new Article XIV has been added and is self-explanatory.

With regard to Article X, Implementation, it should be pointed out that one member of the State Advisory Group felt very strongly that the Agreement should call for specific identification of costs associated with meeting its terms. However, the Sub-Group believes that pollution control program costs for the Great Lakes are simply an increment of our State and national pollution control programs which are already required under our own State and federal laws, and that it would be misleading to attribute costs to the Agreement other than those costs over and above what would be considered normal program costs. These latter costs will be identified in agency budget proposals as required by Article X. Furthermore, the specific costs for administering the Agreement are identified separately in the annual cost estimates required under Para 3 of Article VII.

The rationale for the proposed Article X, 2(c) is contained in the Position Paper on Surveillance appended to this report.

One member of the Sub-Group felt that a further in-depth look should be made of the proposed surveillance program by means of a systems analysis before committing to long-range funding. The majority of Sub-Group A in endorsing the surveillance proposals of the Water Quality Board was aware that a continuing review would be required of the program but was also cognizant of the extensive efforts by a wide range of experts that went

into its preparation and believes that it is a valid program and further that there is sufficient flexibility in the program to enable changes to be made if further study so indicates.

The revised Articles follow:

ARTICLE VIII

SUBMISSION AND EXCHANGE OF INFORMATION

1. The international Joint Commission shall be given at its request any data or other information relating to the quality of the boundary waters of the Great Lakes System *including quality of discharges thereto*, in accordance with procedures to be established by the Commission, ~~within three months of the entry into force of this Agreement or as soon thereafter as possible, by the Commission in consultation with the Parties and with the State and Provincial Governments.~~

2. The Commission shall make available to the Parties and to the State and Provincial Governments upon request all data or other information furnished to it in accordance with this Article.

3. Each Party shall make available to the other at its request any data or other information in its control relating to the quality of the waters of the Great Lakes System, *including quality of discharges thereto*.

4. Notwithstanding any other provision of this Agreement, the Commission shall not release without the consent of the owner any information identified as proprietary information under the law of the place where such information has been acquired.

ARTICLE IX

CONSULTATION AND REVIEW

1. Following the receipt of each report submitted to the Parties by the International Joint Commission in accordance with paragraph 3 of Article VI of this Agreement, the Parties shall consult on the recommendations contained in such report and shall consider such action as may be appropriate, including:

- (a) The modification of existing water quality objectives and the ~~adoption~~ *adoption* agreement on new objectives;
- (b) The modification or improvement of programs and joint measures;
- (c) The amendment of this Agreement or any annex thereto.

Additional consultations may be held at the request of either Party on any matter arising out of the implementation of this Agreement.

2. When a Party becomes aware of a special pollution problem that is of joint concern and requires an immediate response, it shall notify and consult the other Party forthwith about appropriate remedial action.

3. The Parties shall conduct a comprehensive review of the operation and effectiveness of this Agreement during the fifth year after its coming into force. ~~Thereafter, further comprehensive reviews shall be conducted upon the request of either Party.~~

ARTICLE X

IMPLEMENTATION

1. The obligations undertaken in this Agreement shall be subject to the appropriation of funds in accordance with the constitutional procedures of the Parties.
2. The Parties commit themselves to seek:
 - (a) The appropriation of the funds required to implement this Agreement, including the funds needed to develop and implement the programs and other measures provided for in Article V, and the funds required by the International Joint Commission to carry out its responsibilities effectively;
 - (b) The enactment of any additional legislation that may be necessary in order to implement the programs and other measures provided for in Article V;
 - (c) *Appropriation of not less than five years advance funding of the Surveillance Program specified in Article V, Par 2, beginning with U.S. Fiscal Year 1978. Funding levels will be reviewed and adjusted annually as necessary,*
 - (d) The cooperation of the State and Provincial Governments in all matters relating to this Agreement.

ARTICLE XI

EXISTING RIGHTS AND OBLIGATIONS

Nothing in this Agreement shall be deemed to diminish the rights and obligations of the Parties as set forth in the Boundary Waters Treaty.

ARTICLE XII

AMENDMENT

This Agreement and the Annexes thereto may be amended by agreement of the Parties. The Annexes may also be amended as provided therein, subject to the requirement that such amendments shall be within the scope of this Agreement.

ARTICLE XIII

ENTRY INTO FORCE AND TERMINATION

This Agreement shall enter into force upon signature by the duly authorized representatives of the Parties, and shall remain in force for a period of five years and thereafter until terminated upon twelve months' notice given in writing by one of the Parties to the other.

ARTICLE XIV

SUPERSESSION

This Agreement supersedes the original Agreement of April 15, 1972, and should be referred to as the "Great Lakes Water Quality Agreement".

SEE SEPARATELY BOUND VOLUME FOR

APPENDIX NUMBER I

FOURTH ANNUAL REPORT

GREAT LAKES WATER QUALITY



WASHINGTON

INTERNATIONAL JOINT COMMISSION
UNITED STATES / CANADA



OTTAWA

ATTACHMENT 1

To the Government of Canada
Government of the United States
Government of the State of Illinois
Government of the State of Indiana
Government of the State of Michigan
Government of the State of Minnesota
Government of the State of New York
Government of the State of Ohio
Government of the State of Pennsylvania
Government of the State of Wisconsin
Government of the Province of Ontario

The International Joint Commission is pleased to transmit, with its endorsement, the 1975 Annual Report of the Great Lakes Water Quality Board, including its assessment of the progress made in the United States and Canada during the year 1975 in implementing the terms of the Great Lakes Water Quality Agreement of 1972. This progress, according to the Board, was "generally slow, uneven, and in certain cases disappointing." Also included in the Board's report is an evaluation of the water quality condition of the lakes at the end of 1975.

The Commission wishes to first make note of this departure in form of reporting to the various governments and the public from its previous three reports. It is the Commission's view that the Great Lakes Water Quality Board, and its several subgroups and committees have presented an excellent report on the effectiveness of the Great Lakes Water Quality Agreement and efforts of the Parties to improve the water quality of the lakes. Its assessment is forthright everywhere and critical where necessary. Its findings and recommendations are well documented with substantive data contained in the four appendices. Therefore, the Commission believes that it is not necessary for it to summarize and comment on all aspects of the Board's report.

ATTACHMENT 1

The Commission endorses, in general, all recommendations contained in the report and offers the following special comments on several important matters as a means of identifying those issues to which it believes the governments should give substantial priority consideration:

Municipal Treatment

While the Commission recognizes that sizable programs for the construction of water pollution control facilities in the Great Lakes Basin are currently in progress in the United States and Canada, it nevertheless perceives that these efforts must be strengthened and in fact accelerated if the water quality objectives of the Agreement are to be achieved by the end of this century.

The cities of Detroit and Cleveland continue to be the two largest sources of municipal pollution in the Basin. The Commission cannot emphasize too strongly, the need to complete these two major municipal projects on the highest priority basis.

Surveillance

Each year since the signing of the Agreement, the Commission has advised governments that it could not report accurately on progress, or lack of it, toward achieving the goals of the Agreement because existing surveillance programs were inadequate. The Water Quality Board has now developed a comprehensive surveillance program which when implemented would overcome the shortcomings of the present programs. The Commission fully endorses this program which is described in Appendix B of the Board's report.

Because of the critical need to launch the program as soon as possible and recognizing time constraints of the budgetary cycle in the United States and Canada, the Commission has already taken action on this matter. In a separate communication, dated August 27, 1976, to the Parties, the Commission has urged them to ensure that fiscal programs over the next 10 years provide ongoing funds at the level proposed (\$16 million annually), for the Agencies of federal, state and provincial governments having responsibility for water quality surveillance and monitoring activities in the Great Lakes. The Commission now reiterates its concern and urges once more the recommended actions.

Combined Sewers

The Commission is concerned that programs to control pollution from the overflow of combined stormwater and sanitary sewers are fragmented and obviously inadequate. The Commission is aware that any solution to this problem will be extremely costly, but it also recognizes that strong efforts by appropriate authorities to find adequate solutions must be continued. It is imperative that this significant source of pollution from major metropolitan areas of the Great Lakes be brought under control at the earliest practicable time. The Commission, therefore, recommends that the governments continue both research and demonstration programs at least at present levels, including programs for reducing the amount of pollutants reaching storm sewers and for treating the stormwater itself. The Commission also recommends that site-specific studies be initiated or strengthened in the major metropolitan areas of the Basin.

Industrial Pollution

In spite of the progress of governments in instituting remedial programs in industrial pollution control by the end of 1975 as provided in the Great Lakes Water Quality Agreement, the Commission notes with concern that a number of major polluting industries are not expected to have adequate controls in place by the end of 1977. In view of the substantial increase in data available on the discharge of pollutants from point sources, the Commission urges the vigorous enforcement of the industrial pollution control laws in both countries without delay.

Toxic Substances

Toxic substances, e.g., heavy metals and persistent organic contaminants, may well be the most serious and long term problem governments face in ensuring future beneficial uses of the Great Lakes. They pose threats to water quality, the fishery, human health and ecology in general. Too little is known about these substances, their identity, sources, amounts present, characteristic forms and behavior, and their effects. Control and monitoring programs are imperative. Research is required to enable the establishment of objectives and the evaluation of potential hazards. Effective control laws must be enacted and implemented to the fullest extent possible in both countries as quickly as possible.

Radioactivity

A new, refined Great Lakes radioactivity water quality objective has been proposed by Task Forces established by the two Governments and is now undergoing review by appropriate federal, state and provincial agencies. The Commission believes that the Governments should reach agreement on a refined radioactivity objective as soon as possible. Public hearings on these objectives should be held in the Basin.

Because of the growing number of nuclear facilities in the Great Lakes Basin, including power reactors, mining and raw materials processing, as well as waste materials processing, storage and disposal, the Great Lakes Water Quality Board has developed a special Radioactivity Surveillance Plan as part of the proposed IJC-Coordinated Surveillance Plan described in Appendix B of the Board's report.

Non-Point Pollution

As controllable discharges from municipal and industrial point sources are reduced to established limits, the significance of non-point sources of pollution, especially atmospheric fallout and sediment transport, is becoming more apparent. Research activities must provide improved methods of identifying such sources and indicate mechanisms to accelerate the design and implementation of control measures.

While recognizing that some investigatory programs are under way to address these problems, an interim strategy is required pending the outcome of these studies. Accordingly, the Commission urges all governments to strengthen their support of programs to identify loadings from diffuse sources, determine their relative significance, and implement measures to control further increases in pollutional loadings from these sources.

Phosphorus

The Commission believes that the United States policy of constructing phosphorus removal facilities has not been an effective means of reducing phosphorus reaching the lower lakes. The targets for phosphorus loadings contained in the Agreement are not being met.

Though completion and proper operation of facilities at Detroit and Cleveland, as well as other municipalities, will produce an early and measurable effect on Lake Erie and in turn Lake Ontario, more must be done to accelerate the recovery of the Lakes, including solutions to the problem of phosphorus input from the non-sewered population. Further, action must be taken to reduce loadings and thus prevent degradation of the Upper Lakes.

Since 1970 the Commission has recommended the limitation of phosphates in detergents. Recent studies and short-term results where limitations have been implemented have not only supported this recommendation, but suggest even greater limitations are in order. Therefore, the Commission believes that the Board's recommendation that a uniform 0.5% phosphorus by weight limit be placed on all detergents manufactured for use in the Great Lakes Basin, including dishwashing materials, should be implemented by the appropriate authorities as quickly as procedures will permit.

This action, however, will still not provide sufficient controls on phosphorus loading to the lakes. Therefore, the Commission supports the Board's recommendations to extend a 1 mg/l effluent limitation on all point source discharges of phosphorus throughout the entire Great Lakes System. In addition, there is an urgent need to define the pathways and design regulatory schemes to control the phosphorus contributions from the atmosphere, sediments and land drainage, and all other non-point sources.

Water Quality Objectives

The water quality objectives in the Great Lakes Agreement have been adopted by several governments as water quality standards for boundary waters within their jurisdictions. New and revised water quality objectives have now been developed by the Commissions's Water Quality Board and its subcommittees for adoption in the Agreement.

The Commission intends to hold public hearings on these new and revised objectives to assist it in making a firm recommendation to the Governments at an early date. The Commission suggests that until its final recommendations on all the objectives recommended in the Board's report are submitted, all the objectives be accepted as guidelines for the development of water quality standards by the various jurisdictions and for planning future uses of the Great Lakes.

Special Studies

In July 1976 the Commission received the report of the International Reference Group on Upper Lakes Pollution. The Commission will hold public hearings and submit its final report to the two Governments in 1977.

The progress of studies being conducted under the Reference Group on Pollution from Land Use Activities is reported in the attached 1976 report of the Group. A major public consultation program is planned by the study group for implementation in 1977. This program is expected to increase public understanding of the objectives of the study and the complexities of the problems of pollution from land use. The final study report is expected in 1978.

The Great Lakes Research Advisory Board has again compiled an extensive Directory of Great Lakes Research and Related Activities, and is continuing its efforts to coordinate as closely as possible the Great Lakes related research programs in both countries. These efforts are reported in the attached Annual Report of the Board. Several effective seminars were held during the year under Commission auspices and others are planned for the current year. All are designed to focus on problems related to Great Lakes water quality.

The Commission wishes to commend the individual and collective efforts of a significantly large number of persons, including skilled scientists, effective administrators and dedicated public servants who have worked hard during recent months to collect large amounts of data, assess and evaluate it, and prepare these excellent documents. It reflects great credit on the cooperative efforts of both countries to correct the very complex problems of Great Lakes water quality which have resulted from human neglect over many years.

Finally, the Commission notes that the Agreement calls for the Parties to "conduct a comprehensive review of the operation and effectiveness of this Agreement during the fifth year after its coming into force." It is the Commission's intention to prepare a special report within the next few months which will set forth the Commission's views on various provisions of the Agreement for consideration by the Governments during the aforementioned review process.

Respectfully submitted

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Chairman, United States Section
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September 16, 1976

GREAT LAKES WATER QUALITY

FOURTH ANNUAL REPORT TO THE INTERNATIONAL JOINT COMMISSION

GREAT LAKES
WATER QUALITY BOARD
JULY 1978

*Copies of the complete Report and
the Appendices are available from:*



INTRODUCTION

April 15, 1976 marked the beginning of the fifth year of the Great Lakes Water Quality Agreement and the year in which the Parties are to conduct a comprehensive review of its operation and effectiveness. This Fourth Annual Report of the Great Lakes Water Quality Board to the International Joint Commission together with its supporting Appendices provide much of the information required for this review.

The water quality objectives of the Agreement were reviewed, a detailed evaluation made of conditions and trends of water quality in Lake Ontario, and the findings of the Upper Lakes Reference Study were prepared for presentation to the Water Quality Board and the Commission. During the year the Governments formally responded to the Second Annual Report of the Commission and this has improved the dialogue between the Commission and the eleven governments. Investigations under the Pollution from Land Use Activities Reference Group continue and a separate progress report has been prepared.

The first Chapter of this Report provides a general assessment of water quality in the boundary waters with particular reference to the nearshore problem areas. The remedial programs in place, underway or required to improve water quality in the problem areas are also reviewed. In addition, a detailed assessment of Lake Ontario in terms of existing water quality conditions and an analysis of trends is presented.

The next three chapters review the status of the major remedial programs outlined in the Agreement. These include the construction of municipal wastewater treatment plants, measures to reduce phosphorus inputs to the lakes, and industrial waste treatment programs.

Chapters 5 and 6 deal with two very significant problems in the Great Lakes: toxic substances and radioactivity. Government programs to reduce their impact on uses of the Great Lakes, particularly on fish and wildlife are described. Similarly, Chapters 7, 8 and 9 review dredging, land use and shipping activities and efforts to minimize any adverse effects these may have on water quality.

The Board presents its view of a framework for implementing the Great Lakes Water Quality Agreement and improving its effectiveness in Chapter 10.

The final chapters of the Report discuss future strategies to cope with new or emerging problems, propose new or revised water quality objectives and present an International Great Lakes Surveillance Program to provide the basic information required to show progress in achieving the objectives. In the past, emphasis has been placed on the measures to correct water quality problems caused by readily controllable sources. However, the Board has begun to evaluate the adequacy of current water quality management planning programs as a means to supplement point source controls to achieve and maintain the water quality objectives.

Detailed data and information on all the topics discussed are included in Appendices A - D, the reports of the various subcommittees of the Board. These Appendices, although published as part of this Report, represent the independent efforts and views of the subcommittees, and consequently some of the subcommittee's views may not be reflected, in the Board's Report.

SUMMARY & CONCLUSIONS

Progress towards attainment of the goals established by the 1972 Agreement has been made but it is generally slow, uneven, and in certain cases disappointing.

In those cases where wastewater treatment has been up-graded there has been noticeable improvement in the water quality of affected nearshore areas. Municipal pollution abatement on the United States side has been hampered by the slow use of available funds. Phosphorus loadings to Lake Erie from major urban centers are three times greater than 1975 targets - Cladophora and other aquatic plants are still a problem in the lower lakes and may worsen unless programs for readily controllable sources are accelerated and solutions found for remaining sources. Waste controls at certain paper mills on the Canadian side of Lake Superior are inadequate and the discharge from Reserve Mining Company on the U.S. side continues.

New findings of toxic substances - particularly serious in Lake Ontario - point to the need for further attention and federal legislation on the United States side.

Steady progress was made in several programs and a number of important legislative measures were passed in both countries. In Canada, the federal Environmental Contaminants Act and the Ontario Environmental Assessment Act were passed. Intergovernmental agreements between Canada and Ontario pertinent to the Great Lakes were revised to strengthen administration and financing of programs. In the United States, legislation to limit or ban polychlorinated biphenyls (PCBs) was passed by the states of Indiana, Michigan, Minnesota and Wisconsin and federal legislation in the form of a Toxic Substances Control Act is still pending. PCB control in Canada will be addressed under existing provincial legislation and the new federal Environmental Contaminants Act.

The permanent obligation of the countries to maintain and enhance water quality of the Great Lakes requires early adoption and implementation of preventive measures, and effective surveillance programs. Coordination of planning and its implementation by governments is central to prevention of further pollution owing to continuing population growth, resource development and increasing use of water.

WATER QUALITY AND SURVEILLANCE

General improvements in water quality were observed in some local areas of Lake Ontario and parts of Lake Erie where remedial programs have been put in place. However, there are major municipal and industrial remedial programs still to be completed and it will be several years before significant improvements are likely to be observed in the open waters due to the long response time.

Problems having the greatest adverse effect on the recreational use of the lakes are offensive growths of the alga Cladophora and unacceptable bacterial levels at a number of public beaches.

The trophic status of the main body of Lake Ontario has not changed significantly since 1967 and may not improve over the next decade or so. A recent analysis of Lake Ontario suggests expected improvements in its trophic state may be limited by the effects of phosphorus inputs from land drainage and the atmosphere. Because these sources are difficult to control renewed emphasis must be placed on the effective operation of existing municipal phosphorus removal facilities, completion of all proposed facilities on a priority basis, extension of phosphorus control to all point sources in the Great Lakes system and on limiting the phosphorus content of detergents where this measure has not been adopted by state and federal governments.

Lake Erie continues to have excessive algal growths and depressed oxygen levels. The anoxic area which developed in the bottom waters of Lake Erie in 1975 was greatly reduced over conditions found in previous years. This situation is believed to be the result of unusually calm and warm meteorological conditions in the spring which allowed a larger hypolimnion to be formed. A much greater area of anoxia likely would have occurred in 1975 if the hypolimnion had been smaller. Therefore, the reduced situation is not being taken as a definite indication of improvement but will be watched carefully in future years.

Whole Lake Contaminant Problems

Extensive contamination by toxic substances has damaged the important commercial and sport fisheries of the Great Lakes. The chief concern for Lake Ontario is the bioaccumulation of toxic contaminants such as PCBs and Mirex (a pest control and flame retardant product) in fish and wildlife. Mercury contamination of fish is a problem in the western basin of Lake Erie. In Lakes Huron, and Michigan PCBs in fish are a major concern. In Lake Superior, items of concern include accumulation of PCBs and mercury in fish and high concentrations of asbestiform fibres in the water.

Lake Ontario studies in 1975 revealed almost total reproductive failure of some herring gull colonies in contrast to the reported near normal reproductive success in other Great Lakes colonies. The eggs of the Lake Ontario gulls contain some of the highest organochlorine residue burdens reported in any biological system. The adult gulls were found to contain fifteen organochlorine compounds and fourteen polynuclear aromatic hydrocarbon compounds (e.g. PCBs and DDT and its metabolites) in their tissues. The concentrations of DDT, approached concentrations of DDT.

Nearshore "Problem Areas"

There are 63 "problem areas" in the nearshore areas of the Great Lakes where one or more water quality objectives are not being met. Progress is slow in correcting pollution in these areas from municipal, industrial and land drainage sources, where such activities have their greatest measurable impact. These intensively used areas along the coasts of the lakes, are important for drinking water supplies, recreation, providing a habitat for fish as well as receive wastes and drainage from the land. Also, it is in these areas where the quantity and quality of data is often the poorest. They must be assessed regularly for the effects of pollutants, including harmful chemical substances and radioactivity, to determine progress in the correction of water quality problems.

The lack of an adequate nearshore surveillance program on the U.S. side has hampered complete identification of "problem areas". An improved surveillance program as outlined in Appendix B, is needed and deserves the full support of the governments in the United States.

MAJOR REMEDIAL PROGRAMS

The Agreement requires that by December 31, 1975, major remedial programs be completed or underway to abate pollution of the Great Lakes from municipal and industrial sources and reduce the inputs of phosphorus.

Municipal Waste Control

Further delays have occurred in major sewage treatment plant construction projects at Detroit, Cleveland and Duluth. The Board urges the responsible federal, state and local agencies to review current program efforts with a view to expediting completion of these projects and to ensure continued progress in other municipalities.

In the United States municipal pollution abatement programs and support funding gathered considerable momentum in 1975 and obligations by September 30, 1977 are expected to double to a total of \$5 billion for Great Lakes projects. Most of the remaining construction grant funds are scheduled for the larger projects including Detroit, Cleveland and Duluth. Some smaller projects will not be funded under current

Administration proposals until FY 1978 since the Administration has not requested additional funding for this program in FY 1977. This is particularly serious in the states of Minnesota, Ohio and Wisconsin and may be a problem in other states where the construction grant program will come to a halt unless funding for FY 1977 is provided.

Disposal and utilization of the increasing amounts of sewage sludge resulting from improved levels of treatment and phosphorus removal at municipal sewage treatment plants remains one of the difficult problems facing plant operators.

Combined and Storm Sewer Overflows

Combined and storm sewer problems continue to be significant causes of water quality impairment in the "problem areas" identified in this report. Unfortunately, progress in developing corrective programs is not uniform. Considerable improvements are under construction or planned in certain Ontario communities, and in the United States some construction is underway as well as much planning and demonstration work. However, progress in the United States will be hampered by proposed Administration amendments to PL 92-500 which would result in a reduced level of federal assistance for the correction of combined sewer problems. Additional administrative requirements and a shift in the burden of funding to local governments will inevitably delay correction of this long-standing problem.

Phosphorus Control

The reductions in phosphorus loadings to Lake Ontario and Lake Erie anticipated in the Agreement are not likely to be met on schedule. New estimates of the response of Lake Ontario indicate the likelihood of delayed recovery of the lake in response to current scheduled phosphorus reductions and the growing recognition of the importance of non-point sources of phosphorus. Only marginal further reductions in phosphorus loadings from municipal and industrial sources are possible after achieving 1 mg/l P, while significant amounts are entering the lake from the atmosphere, lake sediments and land drainage. The Board considers attainment of the target of 1 mg P/l or less in municipal sewage effluents to be imperative. Further, Great Lakes states which have not already done so should reconsider limitations on phosphorus in detergents.

In addition, while efforts are being made to improve the use of lake effect models for predictive purposes, further aspects which deserve the early attention of governments include consideration of:

- 1) a complete ban on phosphates in detergents used in the Great Lakes Basin
- 2) the full attainment of the 1.0 mg P/l for all facilities in the Great Lakes System and investigation of the feasibility and cost effectiveness of requiring further reductions from point-source discharges of phosphorus

The United States Congress is considering a Toxic Substance Control Act and in Canada the Environmental Contaminants Act was passed in late 1975. Regulations developed under these Acts will provide control of the manufacture, use and disposal of substances deemed as danger to human health or the environment. The early adoption by the Parties of Annex 9, a list of hazardous polluting substances, is essential to the development of cooperative programs to control these.

RADIOACTIVITY

Problem areas have been identified in Lakes Ontario, Michigan and Huron with radioactive substances resulting from uranium mining and refining and nuclear fuel reprocessing and power generation. The need, for continuing surveillance in these areas is indicated. The Board is concerned with the potential impact on water quality of the growing nuclear power industry.

LAND USE

The Governments are participating with the Commission in developing a definitive report on pollution from land use. The authority for this work was contained in the reference to the Commission in the Agreement and is being undertaken by the Pollution from Land Use Activities Reference Group. The report of the Reference Group is expected in 1978.

The Governments recognized that progress was being made in controlling pollution from certain specific land use activities and identified the following: urban land use, pesticide use, animal wastes and fertilizer, transportation, forestry, mining, recreation, pollution from sediments, shoreline and river bank erosion, land filling, and solid and liquid waste disposal. The progress being made in remedial programs in these areas will be of particular significance as governments proceed to increase their efforts in planning and preventive strategies in anticipation of continuing population growth, resource development and the increasing use of water.

DREDGING

The report of the International Working Group on Dredging recommended site specific assessment of polluted dredge spoils. The Board was disappointed that the Working Group was unable to recommend universal criteria for designating polluted dredge spoils, rather than the site specific assessment which the Board considered unduly burdensome to regulatory agencies. However, if the standing committee, as recommended by the Working Group, is established under the IJC, as the Board recommends, the Board would encourage further examination of the two approaches by the standing committee.

- 3) identification of the specific sources of phosphorus loadings from the atmosphere and land drainage, and determination of their relative significance.

- 4) measures to control further increases in phosphorus loadings resulting from new uses of land including agriculture, urban and general industrial development.

These conclusions also underline the importance of continuing to improve the municipal phosphorus control program in the Lake Erie Basin especially at Detroit, the largest single source of municipal phosphorus in the Great Lakes System. Other communities in the Lower Lakes lacking effective phosphorus control measures currently include Cleveland, Ohio, and Buffalo, Syracuse, Niagara Falls and Tonawanda, N. Y. Hamilton, Ontario unexpectedly failed to meet the 1 mg/l limit for phosphorus during 1975 with its existing treatment facilities and the need for installation of phosphorus control facilities is now under consideration.

Industrial Waste Control

Considerable progress has been made in the control of industrial wastes in both countries. With very few exceptions, requirements for industrial waste treatment or control have been established for all plants in the Great Lakes System and program emphasis has shifted to monitoring, surveillance and enforcement. Industrial wastes data management systems have been developed and where necessary should be improved for the purpose of exchange of information between the Governments and the Commission. Industries have been identified as contributors to water quality "problem areas", and programs in these cases should be given priority attention.

TOXIC AND HAZARDOUS SUBSTANCES

Toxic and hazardous materials represent a major threat to water quality and the fishery of the Great Lakes. PCBs occur throughout the system in the Upper Lakes as well as the Lower Lakes and notably Lake Ontario where a large part of the population of salmonid species and American eel contain PCBs at levels above both the U.S. FDA guideline of 5 µg/g and Health and Welfare Canada's guideline of 2 µg/g for human consumption.

Once PCBs have entered the environment there is relatively little that can be done to remove them. Their persistence ensures that they will be a long term environmental problem and it should be noted that most organisms in the Great Lakes presently contain more PCBs than the objective of 0.1 µg/g proposed by the Board.

SHIPPING ACTIVITIES

Progress has been made by the U.S. and Canadian Coast Guards to control and abate pollution from shipping activities by reducing the potential for marine accidents through formalizing traffic routes, and reviewing and improving navigational aids and the development and implementation of cooperative international programs for the detection, control and clean-up of spills of oil or other hazardous polluting substances. Since the signing of the Agreement in 1972, very little has been accomplished in further developing programs with respect to improved vessel design, construction and operation, control of shipboard wastes, improvements in navigational equipment and manning standards for Great Lakes vessels.

Both existing United States and proposed Canadian regulations to control pollution from vessel wastes, allow for either complete containment or the discharge of adequately treated sewage. The proposed Canadian federal regulations will apply only to commercial vessels while Ontario by agreement with the federal government, continues to require no discharge of sewage from pleasure craft. However, a significant incompatibility in the regulations in each country has arisen from the granting by U.S. EPA under PL 92-500 Section 312(f)(3) of the requests by some Great Lakes States to prohibit discharge of sewage for both commercial and pleasure craft. Michigan has been granted such a request for all the Great Lakes waters within its jurisdiction and Wisconsin has been granted a similar request for Lake Michigan. Wisconsin has been denied its initial application for Lake Superior. Minnesota has been denied a similar petition for Lake Superior under Section 312 (f)(4). The effect of prohibiting discharges in major portions of the Great Lakes from commercial vessels will mean that incompatible regulation of shipping exists between the two countries.

The majority of the Board, as in the past, continues to support regulations that completely prohibit the discharge of sewage from all vessels on the Great Lakes.

FUTURE STRATEGIES

As remedial programs are being implemented in both countries to "repair past damage" to the lakes, the attention of governments is being focussed on measures to prevent further pollution of them owing to population growth, resource development, increasing use of water and the implications these factors hold for the use of land. The responsibility for planning future use of the Great Lakes-St. Lawrence Drainage System has been accepted by the eleven governments and new legislation and policy initiatives have been taken to get at some of the root causes of the many problems affecting the quality of the boundary waters.

The initial steps being taken in both countries include area-wide or regional development planning measures, implementation of water-related facilities plans and the gradual development of plans and assessments for more orderly use of the resources of drainage basins. It is now imperative that efforts to develop these plans be hastened to take full account of both countries' increasing use of water and the lands being drained by that water.

In order to provide a coordinated basis for assessing programs in achieving the water quality objectives, the Great Lakes Surveillance Plan has been developed in this report, as well as the proposal for refinement of the water quality objectives.

The concepts of non-degradation and enhancement contained in the water quality objectives of the Agreement should be reinforced and be used as explicit guides for planning and, where appropriate, be embodied in developmental planning policies, legislation, plans, or by-laws. That is, these measures must be translated into requirements for reduction of presently uncontrolled sources of phosphorus and other pollutants, resulting from existing and new uses of land for urban and industrial development, food production and related energy supplies.

The public has a right to be informed and participate where possible in the planning of communities consistent with the goal of preventing further pollution of the Great Lakes environment. While legislation in some cases provides opportunities for public access to information the procedures involved are often complex and other avenues may exist to increase the public's information, influence and participation in this area. These opportunities should be clearly identified and supported by governments.

RECOMMENDATIONS

The Great Lakes Water Quality Board recommends that:

1. WASTE TREATMENT

- as a matter of urgency, population centres with the greatest impact on water quality, initiate or complete construction and operate adequate wastewater treatment facilities with phosphorus removal, to the level of 1 mg P/l or less, as soon as possible.
- for Lake Erie, extraordinary efforts should be applied to complete sewage treatment facilities at Cleveland and Detroit by 1980 and to achieve adequate phosphorus removal as soon as possible.
- for Lake Ontario, communities scheduled to begin phosphorus removal by January 1976, particularly Metropolitan Toronto, Hamilton and Rochester, should assure operation at the recommended level. Acceleration of the programs at Niagara Falls, N.Y., Buffalo, Syracuse and other major centers where phosphorus removal is not operational is also recommended.
- for the Upper Great Lakes, early completion of treatment facilities at Duluth, Minnesota and Thunder Bay, Ontario are required. Further, it is recommended that an effluent limitation of 1 mg/l of phosphorus be extended to all municipalities in the Upper Great Lakes System.
- clean-up programs in all "problem areas" involving controllable municipal and industrial waste discharges be given urgent priority to meet the schedules for each discharger identified in this report.
- adequate waste control programs be concluded by Abitibi Paper Company and Great Lakes Pulp and Paper at Thunder Bay and Polysar at Sarnia, Ontario where present controls on these significant waste discharges contributing to "problem areas" are incomplete.

11

2. DETERGENT PHOSPHORUS CONTROL

- those jurisdictions in the Great Lakes Basin not now having any limitation on the phosphorus content of detergents, namely Ohio, Pennsylvania and Wisconsin, consider the imposition of a ban on phosphorus in detergents, and further that
- those jurisdictions having partial limitations, namely Canada and Michigan, also consider banning phosphorus from detergents for use in the Great Lakes Basin, and further that
- pending such action by the respective states, the municipalities in the major metropolitan areas of Cleveland and Detroit in the Lake Erie Basin give immediate consideration to banning phosphorus in detergents for use in their jurisdictions.
- the Governments meet to consider the alternatives for the re-formulation of detergents to exclude phosphorus compounds.

3. TOXIC AND HAZARDOUS POLLUTING SUBSTANCES

- as a matter of high priority, source identification, monitoring and control programs for persistent chemicals, such as polychlorinated biphenyls (PCBs), Mirex, polynuclear aromatic hydrocarbons (PAHs) and mercury, which adversely affect human health, wildlife, fish and other aquatic life be intensified. To this end, Canada expedite implementation of its recently enacted Environmental Contaminants Act and similarly the United States as a matter of urgency enact the Administration's proposed Toxic Substances Control Legislation.
- all federal, state and provincial programs be accelerated to eliminate controllable discharges of mercury and other toxic substances where these continue to exist.

4. DREDGING

- a Standing Committee on Dredging, with functions as recommended by the International Dredging Working Group, be established under the International Joint Commission to facilitate close cooperation between dredging activities and other water quality activities in the Great Lakes.

5. SHIPPING ACTIVITIES

- in keeping with previous Board and Commission recommendations, Governments adopt compatible regulations for the control of vessel wastes. The majority of the Board continues to support regulations based on complete prohibition of the discharge of sewage.

12

- the programs, studies and other measures for the control and abatement of pollution from shipping activities, onshore and offshore facilities, vessel design, construction and operation including the discharge of harmful quantities of hazardous polluting substances required by Annexes 3, 4, 5 and 7 be brought under the full purview of the Commission and the Board. In addition, the Board urges the Commission to recommend to the Parties that they assign specific responsibilities and deadlines for completion of these joint activity obligations of the Parties required in the Agreement.

6. WATER QUALITY OBJECTIVES

- the new and revised specific water quality objectives recommended in this Report be submitted to the Parties for adoption in the Agreement. In the Report there are other new specific water quality objectives which the Board has under review and these should also be brought to the attention of Governments to consider the implications of their being recommended for adoption.
- either the Commission or the Parties hold public hearings on the recommended water quality objectives and that the proposed objective for radioactivity, developed by the Parties, be included.

7. MODELLING

- continued support be given to the development of "lake effect models" to provide guidance for eutrophication and other pollution control programs. Further, it is recommended that increased efforts be made to refine the estimates of phosphorus loadings from the atmosphere and land drainage, and determine the fraction available for biological growth.

8. PLANNING AFFECTING WATER QUALITY

- because policies for the economic, social and physical development in the Great Lakes Basin affect the water quality of the lakes, the governments specify measures and programs to ensure achievement of the Agreement's water quality objectives in the formulation of such policies and further that
- the eleven governments actively support remedial programs on pollution from land use, and further that
- governments accept the water quality objectives of the Agreement as explicit guides in planning by embodying the objectives in relevant planning policies, legislation, control programs and by-laws.

- implementation of planning to achieve the water quality objectives be based on full consideration of existing and new uses of land for urban and industrial development, food production and related energy requirements.

9. PUBLIC AWARENESS AND COMMUNICATIONS

- the governments strengthen public awareness of the Great Lakes Water Quality Agreement by undertaking specific public information programs.
- the dialogue between the Commission and the eleven governments be strengthened and utilized to develop support for correction of the problems occasioned by delays in the municipal and industrial clean-up, the need to address the complicated issues of land drainage and storm and combined sewer-discharges and the lack of adequate data from surveillance, nearshore and effluent monitoring.

10. FUNDING REQUIREMENTS

- the United States Government be requested to continue funding for municipal waste treatment plant construction grants under PL 92-500 at levels sufficient to ensure continued progress in providing the needed facilities.
- renewed attention be given by all governments to the provision of adequate funding, where this is presently lacking, for the identification and control of storm and combined sewer overflow problems.
- adequate funding be provided for the monitoring of municipal and industrial waste discharges, including radioactivity, by federal, state, provincial and municipal governments to assess the effectiveness of control programs.
- governments support and provide adequate funding for the International Great Lakes Surveillance Program described in this Report and its Appendix B. Special efforts are required to develop an adequate nearshore surveillance program on the United States side.

DRAFT POSITION PAPERS

SUB-GROUPS B, C AND D

ATTACHMENT 3

Great Lakes Water Quality Agreement

Five Year Review

Report of the Work Group B on Annex 3

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1. Vessel Design, Construction and Operation (reference Annex 3)

Title of annex should be changed to "Oil and Hazardous Polluting Substances from Vessels" to bring it in line with other annexes.

(A) Definitions (ref. annex 3 par. 1 & 2)

Definition of tanker changed to mean a vessel designed for the carriage of liquid cargo in bulk.

Even with the change, the definitions as used in the laws and regulations of both Parties are fully compatible with definitions in the reference paragraphs.

Minor differences between the definition used by the two Parties do exist, for example, the term "tank vessel" is used in U.S.A. regulations to designate both bulk oil and bulk chemical carriers, whereas in Canadian regulations the differentiation is made. The expression "harmful quantity of oil" is not employed in either the Canada Shipping Act or Regulations. As the discharge of oil or oily mixtures from ships is prohibited, the need to use this expression does not arise. U. S. A. regulations use the same definition for "harmful quantity of oil" as the Agreement.

Depending on outcome of EPA/USCG discussions, discharge from approved oil process equipment of 15 ppm oil or less will not be considered a harmful quantity even if a sheen is present. If so, there U.S. regulation wording will be changed which will put it in

conflict with the Agreement definition. Changing the Agreement definition will not be incompatible with the Canadian Shipping Act or Regulations as they prohibit the discharge of oil. There may be incompatibility with Canada's intentions, however.

(B) General Principles (Annex 3 para. 3)

Editorial change in paragraph 3b to add "of the vessel" after "person in charge".

Both Parties have addressed themselves to the principles contained in the reference paragraph. Both Parties have regulations prohibiting the discharge of oil, oily mixtures and hazardous polluting substances from ships. In accordance with the Canada Shipping Act, the term pollutant is used in place of hazardous polluting substances. Under the Federal Water Pollution Control Act the term hazardous substance is employed.

At such time as the Annex required by Article V, 1(i) of the Agreement is complete and a list of hazardous polluting substances identified, both Parties will take the appropriate action to apply the principles of this paragraph of the Agreement to the substances so listed.

With regard to the reporting of discharges to designated officials as reference in subparagraph 3(b) of Annex 3 both Parties have fully implemented this provision through legislation and regulations.

(C) Programs (ref. annex 3 para. 4)

Paragraph 4 has been rewritten to take into account substantive changes proposed by the working group which was worked into the

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basic format of the agreement. It is as follows:

4. Programs.

(a) ~~The~~ programs and measures to be adopted for the prevention of discharges of harmful quantities of oil shall include the following:

(i) Compatible regulations for design and construction of vessels based on the following principles:

- (1) each tanker shall have a suitable means of containing on board cargo oil spills caused by loading or transfer operations;
- (2) each vessel shall have a suitable means of containing on board fuel oil spills caused by loading or transfer operations, including those from tank vents and overflow pipes;
- (3) each vessel shall have a capability of retaining on board oily wastes accumulated during vessel operation;
- (4) each vessel shall be capable of off-loading contained oily wastes to a shore facility.

(ii) Compatible regulations for vessel operating procedures based on the following principles:

- (1) tankers shall be provided with a means for rapidly and safely stopping the flow of cargo oil during transfer operations in the event of an emergency;
- (2) suitable deck lighting shall be provided to illuminate all cargo and fuel handling areas if the transfer occurs at night;

DRAFT

(3) hose assemblies used aboard vessels for oil transfer shall be suitably designed, marked and inspected to minimize the possibility of failure.

(4) oil transfer, loading and off-loading systems shall be designed to minimize the possibility of failure.

(iii) Programs to train merchant vessel personnel in all functions involved in the use, handling and stowage of oil and in procedures for abatement of oil pollution.

(b) The programs and measures to be adopted for the prevention of discharges of hazardous polluting substances shall include the following:

(i) Compatible regulations for design and construction of vessels based on the following principles:

- (1) each tanker shall have a suitable means of containing on board cargo hazardous polluting substances spills caused by loading or transfer operations;
- (2) each vessel shall have a capability of retaining on board hazardous polluting substances wastes accumulated during vessel operation;
- (3) each vessel shall be capable of off-loading contained hazardous polluting substances wastes to a shore facility.

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(ii) Compatible regulations for vessel operating procedures based on the following principles:

- (1) tankers shall be provided with a means of rapidly and safely stopping the flow of cargo hazardous polluting substances during transfer operations in the event of an emergency;
- (2) suitable deck lighting shall be provided to illuminate all cargo and hazardous polluting substances handling areas if the transfer occurs at night;
- (3) hose assemblies used aboard vessels for hazardous polluting substances transfer shall be suitably designed, marked and inspected to minimize the possibility of failure;
- (4) hazardous polluting substances transfer, loading and off-loading systems shall be designed to minimize the possibility of failure.

(iii) Programs to train merchant vessel personnel in all functions involved in the use, handling and stowage of hazardous polluting substances and in procedures for abatement of hazardous polluting substances pollution.

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(iv) The programs and measures to be adopted for the prevention of discharges of hazardous polluting substances shall use as a guide the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk of the International Maritime Consultative Organization (IMCO). Such programs and measures shall include design and construction features, operating procedures, and merchant vessel personnel qualification standards with respect to handling hazardous polluting substances and pollution abatement. In addition, the programs shall establish compatible regulations for:

- (1) Identification and placarding of vessels carrying hazardous polluting substances as well as containers and packages containing hazardous polluting substances when carried by vessels;
- (2) Identification in vessel manifests of all hazardous polluting substances carried;
- (3) Procedures for notification to responsible authorities of all hazardous polluting substances carried.

The United States Pollution Prevention Vessel and Oil Transfer Facilities regulations are fully compatible with the programs and measures under the reference paragraph.

DRAFT

The Canadian Oil Pollution Prevention Regulations are presently compatible with the programs and measures regarding oil transfer, loading and off-loading systems, hose assemblies and the means for rapidly and safely stopping the flow of oil during transfer operations. Regarding the provisions of subparagraph 4(c) dealing with the training of merchant vessel personnel, pollution prevention procedures and regulations are now being incorporated into the syllabuses for certificates of competency as master and mate. A knowledge of the handling procedures for oil cargoes has been included in these syllabuses for many years. A proposed amendment to the Canadian Oil Pollution Prevention Regulations has been drafted in order to cover the items contained in clauses 4(a)(i) to (iv) and clauses 4(b)(1) to (iv) of Annex 3.

A further amendment to these Regulations is now being prepared in order to require that a licensed operator be in attendance on unmanned oil barges when oil transfer operations are in progress.

Although knowledge of cargo handling procedures has been a part of U. S. Merchant Officer License requirements for years, the Coast Guard is currently drafting new standards for the qualifications of Tankerman. These new Tankerman regulations will require specific qualifications (including Firefighting training) and examinations for all persons who serve as the person in charge of a transfer or tank cleaning, including those licensed officers who are now considered qualified on the basis of holding a license. Additionally, they will provide for recertification at 5 year intervals. The standards are expected to be published as a proposed rule in 1 April 1977.

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Since July 1973 all applicants for U. S. Merchant Marine License and certificates have been required to demonstrate their knowledge of pollution laws and regulations, procedures for discharge containment and cleanup and methods for disposal of sludge and waste material from cargo and fueling operations.

Additionally, a manual for Safe Handling of inflammable and combustible liquids and other Hazardous Products has recently been revised for use as a guide for those persons involved in the transport or transfer of these products.

At such time as the Annex required by Article V, 1(i) of the Agreement is complete and a list of hazardous polluting substances is identified, both Parties will take appropriate action to apply the programs listed in paragraph 4b.

(reference Annex 3, paragraph 5)

Title 46, United States Code of Federal Regulations, applies requirements which, with the exception of the provisions contained in subparagraph 5(a) of Annex 3, are fully compatible with the reference paragraph.

In Canada, the proposed Chemical Carrier (Steamship) Regulations were drafted and circulated to the industry and other interested agencies for comment. A second draft of the proposed Regulations has now been drafted and is now being examined for legal form and draughtsmanship. This second draft will eventually be circulated for further comment. In addition to the provisions of the IMCO Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, the proposed Regulations would also specify the procedures to

DRAFT

be followed when dangerous chemical cargoes are being loaded and unloaded. All dangerous chemical cargoes carried would have to be identified on the ship's manifest and information on the nature of the cargo would also have to be carried on board.

All ships passing through the St. Lawrence Seaway are now required to notify the Seaway Authority in order to identify cargoes carried, however no provision has been made with respect to the placarding provisions in subparagraph 5(a) of Annex 3.

Definite pros and cons exist regarding the placarding of vessels and both Parties feel that this subject warrants continuing study.

(D) Additional Measures (ref. annex 3 para.5)

Amended to read:

Additional Measures shall be taken as necessary by both Parties to insure the provision of adequate shore facilities for the reception and treatment of oil and hazardous polluting substances waste from vessels.

(E) Article 5e (iv) should be amended to reference annex 3 and 4

PRELIMINARY REPORT OF SUBGROUPS B ON REVIEW OF
ANNEX 4, G-LWQA

1. Definitions - It is recommended the definition of "garbage" be reviewed and that consideration be given to replacing it with the definition in Annex V of the 1973 Convention for the Prevention of Pollution from Ships (i.e., "garbage" means all kinds of victual, domestic, and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically, except those substances that are defined or listed elsewhere in the Agreement). This meaning encompasses the intent of the present one in the Agreement without becoming at all restrictive. It would, appropriately, also bring the Agreement more into concert with another international accord.

2. It is recommended that the phrase "within one year from the entry into force of the Agreement" be deleted, as it is no longer applicable.

2. (b) This will also remedy the problem that regulations for waste water do not exist on either side (waste water has been and continue to be a low priority item - not considered to be a pollution problem at this time).

2. (c) Question as to what constitutes an adequate degree of treatment still exists. States prefer no-discharge, and apparently would accept adequate treatment at least for a time except that they don't feel 150 mg/liter of suspended solids is adequate.

3. It was reaffirmed that critical use area designations may be made involving only localized unilateral determinations.

4. No comments.

DRAFT

5. It is recommended that a new paragraph 5 be added:

The Parties shall take action as necessary to ensure the provision of adequate shore facilities for the reception and treatment of garbage, waste water, and sewage from vessels.

SUB-GROUP B.
ATTACHMENT 3

Studies of Pollution from Shipping Services

(reference Article V 1(e) (iii) and Annex 5)

1. Navigational Equipment (Annex 5, paragraphs 1 (a))

Periodic comparisons have been made of the requirements of the several Administrations respecting navigational equipment. It has been established that while variations in specialized equipment fittings are unavoidable, the general equipment requirements are common with the regulations of the U.S.C.G., C.C.G. and S.L.S.A./S.L.S.D.C.

The S.L.S.A./S.L.S.D.C. regulations are the result of a joint agreement between the Administrations of the U.S.A. and Canada, and they reflect compatibility with the intent of the Great Lakes Water Quality Agreement of 1972.

The following list of navigational equipment summarizes the actions taken by each Administration in establishing minimum safe standards.

	<u>U.S.C.G.</u>	<u>S.L.S.A./S.L.S.D.C.</u>	<u>C.C.G.</u>
Magnetic Compass	Required	Required	Required
Gyro Compass	Required	Required	Required
Sounding Equipment	Required	Required	Required
Radar	Required	Required	Required
Internal Communications	Required	Required	Required
VHF Radio	Required	Required	Required
Radio Direction Finder	Not Mandatory	Required	Required
Charts	Required	Required	Required

DRAFT

List of navigational equipment (CONTINUED)

	<u>U.S.C.G.</u>	<u>S.L.S.A./S.L.S.D.C.</u>	<u>C.C.G.</u>
Course Recorder	Not required	Not Required	Required
Maneuvering System Indicators and Appliances	Required	Required	Required

This equipment must be maintained in operating condition and periodically tested.

All mariners are required by the ordinary practice of seamen to make proper use of all navigational equipment. Failure to do so may result in proceedings directed toward revocation or suspension of the mariner's license or certificate.

Consideration is being given to and a NPRM has been published reflecting the possible requirement for all vessels of 1600 GT or more to be fitted with LORAN C receiving equipment. This equipment will facilitate vessel navigation during both normal and ice operations.

SUB-GROUP B
ATTACHMENT 3.

2. Manning of Vessels

(reference Annex 5, subparagraph 1 (d))

A review of the United States Coast Guard Rules and Regulations for the licensing and certificating of Merchant Marine personnel and the Canadian Coast Guard standards under the Canada Shipping Act, including the Ship's Deck Watch Regulations, shows a similarity of ship-organization for larger vessels trading in Great Lakes waters. In U. S. and Canadian vessels, all officers in charge of a watch must possess a certificate of competency. It is also considered that the existing manning requirements provide an acceptable minimum standard with regard to towing vessels and to all other vessels navigating in high traffic density and in ice or in any adverse weather condition.

The training and examination systems administered in the U.S.A. and in Canada reflect the intent of the agreement and both exceed acceptable minimum standards. Both countries are revising their examinations from the subjective type to the objective or multiple-choice answer form which will serve to modernize the licensing programs. The standardization of the licensing exam is considered to be a great step forward. Throughout the U. S. every applicant for the same grade of Great Lakes engineer's license receives the same examination which is administered on the same days at a predesignated schedule. The examinations are then graded at a central control area. Although the Great Lakes Masters and Pilots objective type examination has not been fully developed, as yet, an effort is currently underway addressing this area. Questions on tankship safety, pollution control, and engineering safety are provided for in the new examinations and the system permits continual updating as new areas of concern or unsafe conditions are identified through studies or casualty evaluations.

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Although the written examination is a necessary tool for determining basic skill qualification, greater emphasis is being placed on the methods of training and retraining for shipboard personnel, particularly in the critical skill areas such as the knowledge and comprehension to load and discharge oil tankers, liquefied gas carriers and hazardous chemical carriers, radar piloting, ship maneuvering and firefighting. Simulator type proficiency Testing and training facilities for radar observer, sponsored by both government and private interests are presently available on all four coasts of the U. S. for use in testing all applicants for original and renewals of deck officer licenses.

Although not specifically required by regulation encouragement has been given and labor/management sponsored facilities providing automated engine room console simulator training and automated cargo control simulator training have been established. In addition, government and private sponsored firefighting schools have been established. In this area the Maritime Administration with the cooperation of the Coast Guard is developing a firefight hand book and standard classroom curriculum. The government sponsored firefighting field exercise training facilities will be expanded in FY 78 with new facilities being constructed one each in the Gulf of Mexico and Great Lakes areas.

A study of casualties involving towing vessels led to the enactment of the Uninspected Towing Vessel Licensing Act in 1972. This act and subsequent regulations have established a minimum requirement for licensed operators on all towing vessels of 26 feet or more in length engaged in the service of towing.

SUB GROUP B
ATTACHMENT 3

In regard to foreign vessel competency standards, the Coast Guard is active internationally, participating on the IMCO Sub-committee on Standards of Training and Watchkeeping in an effort to establish the highest international standard of qualifications and training for all maritime personnel. A conference to consider the subcommittees draft convention and recommendations is scheduled for the autumn of 1978. These efforts will be reflected in regulatory action which will impact on the crews of foreign vessels navigating the Great Lakes and will meet the objectives of this agreement.

The Ports and Waterways Safety Act of 1972 and implementing regulations have provided the Coast Guard additional authority to control vessels in U. S. waters which includes control of vessels that do not meet the minimum standards considered necessary for the existing circumstances. Under this authority, Navigation Safety Regulations (33 CFR 164) have been promulgated which will become effective 1 June 1977. These regulations impose standards of Performance for the Navigation Watch and require specific navigational equipment to be in operating condition, tested and aboard all vessels entering U. S. navigable waters. The required navigational procedures cover vessel operations underway general, in confined or congested waters and at anchor and are considered substantially compatible with the Canadian Coast Guard Code of Navigating Practices and Procedures (1972 edition)

The vessels navigating the Great Lakes are subject to compulsory pilotage regulations administered under the terms of a separate joint agreement. These regulations are the subject of continuing review to ensure, among other things, their compatibility with the objectives of the Water Quality Agreement. The issuance of "Navigation Certificates ("B" Certificates) by the Canadian Coast Guard has generated concern with respect to whether

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or not this practice meets the objective of this agreement. Basically these certificates provides or permits Master of Foreign flag vessels to be their own pilot while transiting the Great Lakes. The issuance of such certificates should be reviewed.

In a continuing effort to keep abreast^{of} rapid changes in technology, numerous studies have been initiated that address the man/machine interface and standards of Qualifications of Personnel responsible for the security and transfer of LNG and Hazardous and Noxious cargoes. Undoubtedly as more knowledge is acquired in the human factors area, additional regulatory efforts to improve safety aboard vessels will be initiated.

SUB-GROUP B
ATTACHMENT 3

DRAFT

- Great Lakes Water Quality Agreement

Report of Sub Group C

Article V 1.(e)(v)

Surveillance and Enforcement (Work Group 5)

And

Annex 8

Joint Contingency Plan (Work Group 6)

1. Sub Group C met, with not all members present, on 3 and 4 March 1977 to:

- a. Review the terms of reference for completeness.
- b. Review program activity and measures for the abatement and control of pollution from shipping sources including the review of the several joint stocktaking meetings, the Joint Report of February 1976, and the Annual Reports of both the International Joint Commission and the Water Quality Board.
- c. Analyze the specific language of the Agreement and measure effectiveness towards achieving the objectives of the Agreement.
- d. Make appropriate recommendations on language changes in the Agreement.
- e. Make appropriate recommendations on program, if necessary.

Surveillance and Enforcement

Discussion: Sub Group C endorses the Joint Progress Report of February 1976, pages 28 and 29, copies attached herewith as enclosure (1). However, the formal surveillance mechanism does not extend to surface as well as aerial surveillance. In making their recommendation, the Sub Group recognized and desired to emphasize, that the intent of Article V 1.(e)(v) is to provide for visual observation and prosecution of violators of both countries' water quality statutes and not to provide for actual water quality monitoring as a function of determining the quality of the water.

SUB-GROUP C
ATTACHMENT 3

Recommendation: That Article V 1.(e)(v) of the Agreement be revised as follows:

- (v) establishment of a coordinated system of aerial and surface surveillance, including enforcement of regulations dealing with the abatement and control of pollution from shipping activities.

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Joint Contingency Plan

Discussion: Sub Group C endorses the Joint Progress Report of February 1976, page 30; attached herewith as enclosure (2). However, Annex 8 of the Agreement does require revision to provide for:

- a. reflecting the current title of the Joint Plan and custodians of the Plan.
- b. identification of and increased planning for high risk areas and areas of particular concern;
- c. elimination of a misleading term in paragraph 3.(a), i.e.: "or any other substance" as used within the text of this paragraph is inclusive and when referring to paragraph 4, the inference can be drawn that a Party would bear the cost of operation, no matter what the pollutant. If the term were changed to "or any hazardous polluting substance" it would more clearly conform with the remainder of the Agreement and U. S. Law, i.e. the National Revolving Fund may pay for operations related to hazardous (Polluting) Substance spills at such time as the substances are designated.
- d. elimination of additional misleading terms in paragraph 3(b)(iii). An objective of the Plan is not "to provide adequate equipment to respond to pollution incidents" but to "provide adequate cleanup response" including of course, adequate equipment.

Recommendation: That Annex 8 of the Agreement be revised as reflected in enclosure (3).

The Sub Group also recommends that the Custodians of the Plan submit a joint semi-annual report to the IJC on Contingency Planning Activities in addition to the current practice of reporting on major pollution incidents. The Sub Group agreed however, that such reports need not be directed by Annex 8.

(reference Article V 1(e) (v))

In July 1975, representatives of the Canadian Coast Guard and United States Coast Guard signed a Memorandum of Understanding Concerning Aerial Surveillance Pursuant to the Great Lakes Water Quality Agreement. This Memorandum of Understanding established a coordinated Canadian/U.S. system for the aerial surveillance of Great Lakes Waters the purpose of which is to abate and control pollution from shipping activities. Pollution noted from other sources is not, of course, exempt from the Agreement.

Under this programme of aerial surveillance the waters of all five Great Lakes and their connecting waterways are patrolled, on a regular basis throughout the shipping season, by aircraft of the Canadian or United States Coast Guard which are manned by persons experienced in the identification of pollution from shipping activities.

Included in the Agreement is a mechanism for the expedient notification of cognizant enforcement officials, whether Canadian or U.S., which is compatible with the rapid alerting system established in the Joint Canada/U.S. Marine Pollution Contingency Plan.

Both the Canadian and U.S. Coast Guard have pre-designated specific officials, called Pollution Prevention Officers and Captains of the Ports respectively, who are strategically located throughout the Great Lakes. These officials are charged with enforcement of pollution prevention regulations, investigation of and removal action on all pollution incidents reported from any source and the initiation of legal action for contro-
vention of pertinent legislation or regulations. A close liaison and

exchange of information is maintained between the Canadian and United States Coast Guard toward effective investigative and enforcement activities.

The Agreement has been formally presented to the International Joint Commission. Copies of applicable legislation and regulations have also been deposited with the Commission.

While not included in the formal Agreement, incidents of pollution observed by Canadian and U.S. Coast Guard surface vessels are also reported in consonance with the Agreement.

Report of Work Group 6

Contingency Plan

(reference Article V 1(h) and Annex 8)

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The Joint Canada - United States Marine Pollution Contingency Plan, signed 20 June, 1974, provides for coordinated and integrated response to pollution incidents by federal, state, provincial and regional contingents of both Parties. The Plan provides for pre-designated On-Scene-Commanders and Deputy On-Scene-Commanders who coordinate the response activities to spills and for a Joint Response Team to provide advice and assistance to the On-Scene-Commanders. It establishes alerting and notification procedures, command structure, post clean-up requirements and arrangements for assuming the responsibility for the cost of operations. The Plan replaced the 1971 Joint U.S./Canadian Oil and Hazardous Materials Pollution Contingency Plan for the Great Lakes Region.

It is the view of both the Canadian and U.S. Coast Guard that emergencies in recent years, for which provisions of the Plan were invoked and the Joint Resource Team activated, resulted in prompt, direct and decisive action by all concerned. The Canadian Coast Guard Emergency Office in the Central Region and the Marine Environmental Protection Branch in the office of Commander, Ninth U.S. Coast Guard District enjoy a close and harmonious relationship which has resulted not only in prompt invocation of the Plan but frequent reviews and recommendations for change, communication exercises and a frequently updated directory of cognizant personnel.

A copy of the Plan has been deposited with the International Joint Commission.

SUB-GROUP C
ATTACHMENT 3

SPECIMEN

ANNEX 8

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JOINT CONTINGENCY PLAN

1. The Plan. The Parties agree that the "Joint Canada - United States Marine Pollution Contingency Plan for the Great Lakes (CANUSLAK)", adopted on 20 June 1974, shall be maintained in force, as amended from time to time. The Parties further agree that areas of high risk and of particular concern shall be identified and provided with detailed contingency plans which will augment the CANUSLAK. It shall be the responsibility of the United States Coast Guard and the Canadian Coast Guard to coordinate and to maintain the plan, as so amended, in written form.
2. Purpose. The purpose of the Plan is to provide for coordinated and integrated response to pollution incidents in the Great Lakes System by responsible federal, state, provincial and local agencies. The Plan supplements the national, provincial and regional plans of the Parties.
3. Pollution Incidents.
 - (a) A pollution incident is a discharge, or an imminent threat of a discharge, of oil or any hazardous polluting substance, of such magnitude or significance as to require immediate response to contain, clean up or dispose of the material.
 - (b) The objectives of the plan in pollution incidents are:
 - (i) to develop appropriate preparedness measures and effective systems for discovery and reporting the existence of a pollution incident within the area covered by the plan;
 - (ii) to institute prompt measures to restrict the further spread of the pollutant;
 - (iii) to provide adequate cleanup response to pollution incidents.
4. Funding. Unless otherwise agreed, the costs of operations of both Parties under the Plan shall be borne by the Party in whose waters the pollution incident occurred.
5. Amendment. The United States Coast Guard and the Canadian Coast Guard are empowered to amend the Plan subject to the requirement that such amendments shall be consistent with the purpose and objectives of this Annex.

SUB-GROUP C
ATTACHMENT 3

SPECIMEN

POSITION PAPER
GREAT LAKES WATER QUALITY AGREEMENT
SUBGROUP D, DREDGING SPOILS

BACKGROUND:

As a result of the concerns expressed in Article V, Section (f) of the Great Lakes Water Quality Agreement, a joint Canadian-United States Working Group was formed on 15 November 1972. The Working Group was to look into the environmental impacts of dredging activities on the Great Lakes and make recommendations for the compatible control of dredging so as to protect environmental quality of the Lakes. In May 1975, the Working Group completed its report to the Secretaries of State for the United States and for Canada.

REPORT'S CONCLUSIONS:

The Working Group's Report provides the basis for developing a position to be used by the Department of State in the upcoming review of the Agreement. First, it was apparent from a review of dredging performed prior to the 1970's that the choice of disposal method, usually open water, did not impose rigorous requirements for precise definition of the sediment characteristics. Therefore, past experience provides a very limited basis for evaluation of environmental factors involved in dredging activities. Second, the potential pollution hazards due to dredging are related to the physical characteristics of the sediment as well as its biological and chemical properties. Third, a number of the chemical analyses that are

used to assess the presence in sediments of heavy metals and organic materials provide a measure of total concentrations but yields little direct evidence of their availability for biochemical activity. Fourth, many locations have natural background levels higher than the criteria concentrations that have been used in the past to classify dredged sediments as polluted. Fifth, environmental protections will best be served by site-specific evaluation. Sixth, the effective formulation and evaluation of projects will require continuing coordination of experience and the application of sound judgment to achieve a consistent and compatible approach. Seventh, the approach to evaluation of dredging projects from an environmental standpoint must, of necessity, proceed with two fundamental objectives in view; the preservation of designated water uses, including viable aquatic and terrestrial ecosystems, and the optimization of net socio-economic benefits to society. Eighth, to accomplish dredging activities in an environmentally acceptable and socially optimum manner will require evaluation of all practical alternatives. Ninth, confined terrestrial sites should make the best use of available materials and engineering knowledge to achieve a facility which can be of some future use to the community. Tenth, maintenance dredging projects are more likely to give rise to adverse and intense short-term pollutional effects than would be expected from new or capital works projects. Eleventh, the choice of dredging plant, generally, has little influence upon long-term effects. However, plant and operating procedures should be considered with respect to various short-term aspects of environmental concern. Twelfth, the consideration of project alternatives, of the beneficial utilization of dredged material and of permanent works to reduce or eliminate maintenance dredging require more lead time than has been provided. Working from a five-year program forecasts, a reasonably

firm indication of programs should be established at least two years before execution which allow for detailed project formulation taking fully into account considerations of environmental concerns. Thirteenth, there appears to be no lack of legislation as may be required to implement the procedures in the report for programming, assessment, and control of dredging activities. However, there may be a need to modify regulation and improve administration procedures to implement the intent. Lastly, the question of financing, and of continuing responsibility for disposal facilities requires further consideration by the different jurisdictions. It will be essential to determine the basis for cost allocation between purposes and to develop a workable basis for financing of multi-purpose projects developed to meet environmental constraints. The complete text of the conclusions can be found on pages 139-143 of the Report.

REPORT'S RECOMMENDATIONS:

With respect to recommendations the Working Group was directed to conduct its studies and formulate its recommendations on the basis of the following principles:

- a. Dredging activities should be conducted in a manner that will minimize harmful environmental effects.
- b. All reasonable and practicable measures shall be taken to ensure that dredging activities do not cause a degradation of water quality and bottom sediments.
- c. As soon as practicable, the disposal of polluted dredged ~~spill~~ in open water should be carried out in a manner consistent with the achievement of the water quality objective, and should be phased out.

With these principles in mind the Working Group recommended that the basic criteria for all dredging activities should be the preservation of designated water uses, including viable aquatic and terrestrial ecosystems and the optimization of the net socio-economic benefits to society. Accordingly, all future evaluations of dredging projects will be site-specific in accordance with the guidelines developed to protect the water quality objectives established in the Great Lakes Water Quality Agreement as well as any more stringent objectives imposed by other authorities which are over-riding. Further, that the characteristics of bottom sediments at proposed open water disposal sites, be determined so as to provide indications of chemical and other constituents in terms of their availability to the ecosystem. To accomplish the foregoing, the Working Group recommended that:

a. Adoption of the recommended guidelines and criteria for the evaluation of environmental and socio-economic considerations relating to all dredging projects be accomplished by administrative action, and that their application be evaluated in practice before any substantial revision in legislation is contemplated.

b. Research be encouraged to investigate advances in dredging technology and the availability of materials such as nutrients and potentially toxic substances as related to dredging procedures and to define specifically the nature of such impacts.

c. Project proponents retain appropriate technical competence to ensure the recognition of all potential environmental impacts and the adjustment of proposals as well as to facilitate their audit by the appropriate regulatory agencies.

d. Administrative procedures be adapted to provide a forward indication of dredging requirements on a running five-year basis and a

minimum of two years between commencing detailed project formulation and actual execution.

e. Project financing policy for multipurpose dredging projects be addressed by the relevant authorities. Finally, it is recommended, that:

A standing committee be established:

To ensure the compatible implementation of the guidelines for environmental assessment as presented herein,

To review the effectiveness of the guidelines in maintaining water quality as a result of dredging operations,

To encourage the exchange of information from both experience and research, and

To recommend, from time to time, changes in criteria and guidelines in the light of advances in knowledge and the accumulation of reliable experience records. The complete text of the recommendations can be found on pages 144-145 of the Report.

U.S. PERFORMANCE:

Section 123 of PL 91-611 authorizes the construction, operation and maintenance of contained disposal facilities of sufficient capacity for a period not to exceed ten years for the containment of polluted materials from dredging operations in the Great Lakes and connecting channels.

Construction of diked disposal facilities have been completed to date at eight locations, namely: Milwaukee, Manitowoc and Kenosha, Wisconsin; Grand Haven and Lake St. Clair, Dickenson Island, Michigan; and Cleveland, Huron and Toledo, Ohio. The facility at Buffalo, New York, is practically completed and will be operational by summer.

Construction contracts are underway for five more diked disposal facilities, namely: Saginaw River, Pointe Mouillee or Detroit-Rouge River site, and Holland, Michigan; Lorain and a second site at Cleveland, Ohio. A contract for Bolles Harbor, Michigan, is being advertised for bidders now.

The \$33,310,000 recommended in the FY 78 budget for the diked disposal program will provide for the completion of all of the above projects with the exception of the facilities at Cleveland, Ohio, which will continue in FY 79. It also provides for two new starts, Green Bay, Wisconsin and Erie, Pennsylvania. Design will continue for the balance of the projects for which diked disposal facilities are required.

We have monies to start the disposal site at Duluth/Superior. This harbor, which has undergone major port expansion, must be provided a site this coming year. The lake levels of Lake Superior are in fact declining and our ability to dredge this vital harbor must not be impaired.

In summary, we will provide 41 sites to accommodate 58 projects, which have polluted materials to be dredged. The current estimated cost for construction is \$265 Million; funding for this program prior to FY 77 was \$102.3 Million; FY 77 funding is \$36.7 Million; for a total to date of \$34.0 Million.

The same River and Harbor Act of 1970 that authorized the Confined Disposal Area Program, under Section 123 (i), authorized the Dredged Material Research Program. This \$30 Million, 5-year study, has been under the management supervision of the U. S. Corps of Engineers Waterways Experiment Station.

The study is to provide-through research-definitive information on the environmental impact of dredging and dredged material disposal operations and to develop technically satisfactory, environmentally compatible, and economically feasible dredging and disposal alternatives, including considerations of dredged material as a manageable resource. This program is scheduled for completion in March 1978. The research output should be useful in assessing the environmental impacts of dredging and dredge material disposal.

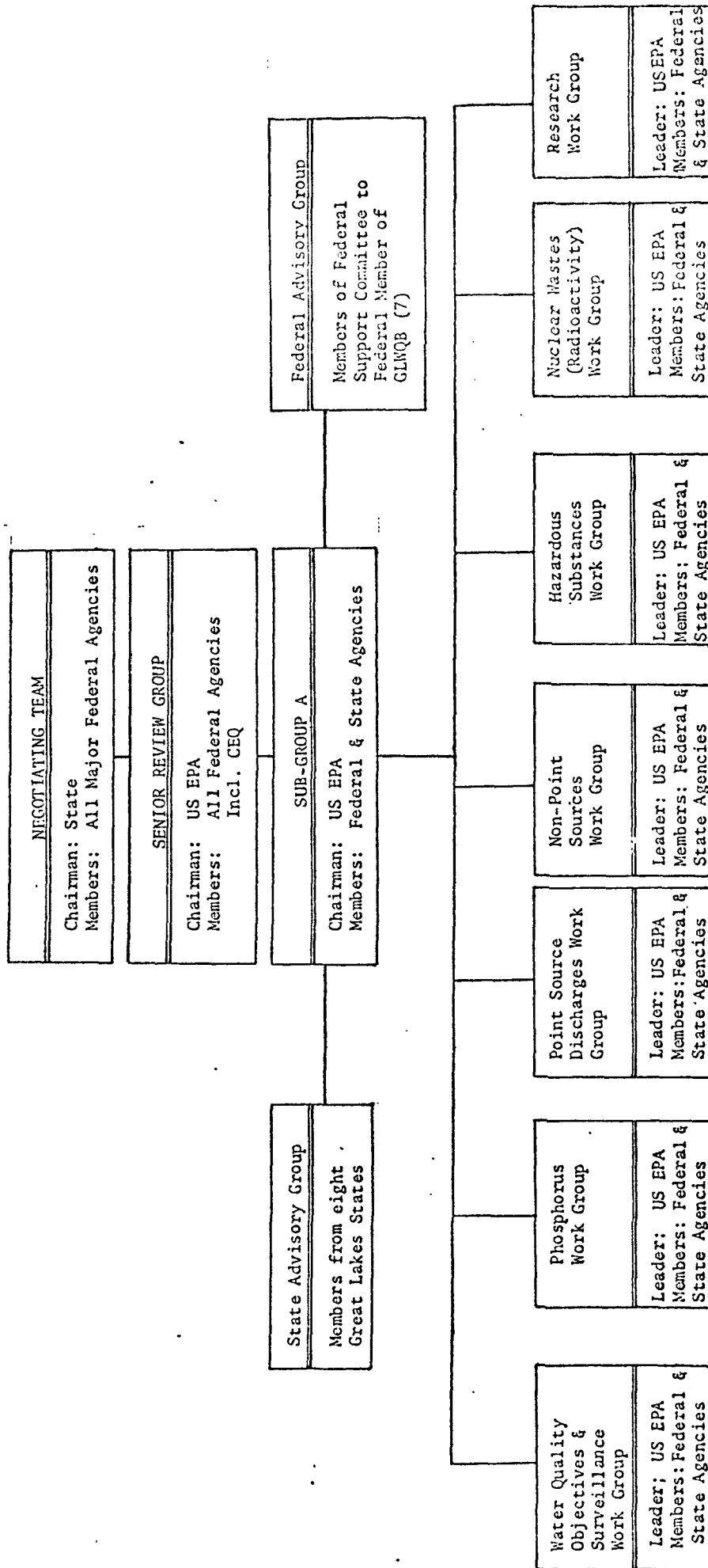
The U. S. has issued interim final guidelines pursuant to Section 404 (b) of the Federal Water Pollution Control Act Amendment of 1972, PL 92-500. These guidelines are to be applied in evaluating proposed discharge of dredged or fill material in navigable waters. The pertinent part of these guidelines deals with the tests to be used to evaluate the effects of proposed discharges of dredged or fill material. To date, certain physical and chemical biological effects have been identified and test procedures established to assess the impact of discharges of dredged or fill material. The development of additional tests is on going and it is the intent of the U. S. Environmental Protection Agency and the U. S. Army, Corps of Engineers, to issue final testing procedures in the very near future.

RECOMMENDED U. S. POSITION:

The Subgroup conducted a public seminar on 11 March 1977 at Chicago, Illinois, to assess the progress made to date by the United States with respect to the Agreement, in particular Article V, Section (f). The consensus of those attending the Seminar was that the Working Group

Report, while it represented a good background document on dredging activity on the Great Lakes, it had not recommended "measures for the abatement and control of pollution from dredging activities, including the development of Criteria (emphasis added) for the identification of polluted dredged spoil and compatible Programs for disposal of polluted dredged spoil." It was the feeling of the Seminar that the site-specific approach recommended in the Working Group Report was valid, provided one did not have to start from "ground zero" each time in evaluating a project. The consensus of the Seminar that the United States position should be to press for implementation of guidelines and criteria currently being formulated by the U.S. EPA-COE Technical Committee for Regulatory Criteria for Dredge and Fill Activities. Another view of the attendees at the Seminar was that additional effort is needed to reduce sediment loading to our waterways and thus reduce the need for dredging in these same waterways. Comments were made along the lines that guidelines and criteria similar to that contained in the final Ocean Dumping regulations (Federal Register 11 January 1977) should be developed for inland waters, including the Great Lakes. The Subgroup accordingly, suggests that the U. S. position be that guidelines and criteria be compatible with that being developed for inland waters. Further, it is suggested that the Working Group's recommendation that a Standing Committee be established to provide a forum for continual updating of guidelines and criteria be adopted.

SUB-GROUP A
FUNCTIONAL CHART
AND
MEMBERSHIP



SUB-GROUP A

GLWQA REVIEW STRUCTURE

NOTE: Full Membership Shown on Membership List

MEMBERSHIP

SUB-GROUP A

George R. Alexander, Jr. (CHAIRMAN)
Regional Administrator
U.S. EPA, Region V

Gerald M. Hansler
Regional Administrator
U.S. EPA, Region II

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Director, GLERL, NOAA
Department of Commerce

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Ms. Janis Rasgus
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Regional Director
Fish & Wildlife Service
Dept. of the Interior

Karl Bremer
A&HM Division
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Pennsylvania DER

Ms. Sandra Gardebring
Executive Director
Minnesota PCA

William G. Turney, Chief
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Michigan DNR

Ned E. Williams, Director
Ohio EPA

Anthony S. Earl Secretary
Wisconsin DNR

Leo M. Eisel, Director
Illionis EPA

Oral H. Hert, Tech. Sec.
Stream Pollution Control Bd.
State of Indiana

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Dr. Morris Tepper
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George Marienthal
Deputy Asst. SECDEF
DOD, Washington, D.C.

Ed Geismar
River Basins Coordinator
U.S. EPA, Region III

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Lovell E. Richie, Jr. (LEADER)
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Gerald R. Lowry
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Erie, PA

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Merle Tellekson
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U.S. EPA, Region V

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(Alternate-Dr. Robert Holt)

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Dept. of the Interior

Albert Bromberg
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New York DEC

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G.L. Surveillance Branch
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Dr. J. Kutkuhn, Director
Great Lakes Fishery Lab.
U.S. Fish and Wildlife Service

Dr. Herman Mark
Lewis Research Center
NASA, Cleveland, Ohio

Archie McDonnell
Land and Water Research
Penn State University

Comments from Public Interest Groups and Others

The attached memorandum requesting comments from selected public interest groups is self-explanatory and contains a list of the groups to whom copies of the draft material was sent. No comments of substance were received from the public interest group because of the short time frame in which comments were requested.

Also attached is a letter from one of the public interest groups, Great Lakes Tomorrow, requesting copies of the original review material. A copy of the complete report of Sub-Group A will be provided as indicated in the attached reply.

Other pertinent written commentary is also included in this attachment.

2-031163E103 04/13/77 ICS IPMMTZZ CSP CGAB
7177879639 MGM TDMT HARRISBURG PA 272 04-13 1246P EST

GEORGE R ALEXANDER JR
US EPA REGION 5
230 SOUTH DEARBORN ST
CHICAGO IL 60604

RECEIVED

APR 14 1977

EPA REGION 5
OFFICE OF REGIONAL
ADMINISTRATOR

DEAR GEORGE,
WE STRONGLY OBJECT TO THE POSITION SUGGESTED IN DRAFT STATEMENT OF
SUB-GROUP A WORKING ON THE GREAT LAKES WATER QUALITY AGREEMENT REVIEW.
WE UNDERSTAND THE PURPOSE OF THE POSITION TO BE THAT CANADA SHOULD
ADOPT A PROGRAM SIMILIAR TO P.L. 92-500 AND THAT UNLESS THIS HAPPENS
THE GREAT LAKES POLLUTION PROBLEMS WILL NOT BE SOLVED. THE STATEMENT AS
DRAFTED EXPRESSES CONCERN ABOUT PROGRAM ELEMENTS AND NOT RESULTS

THE PURPOSE OF THE AGREEMENT IS TO PROTECT THE GREAT LAKES FROM
POLLUTION AND TO REMOVE THE CURRENT SOURCES OF POLLUTION. THE PROPOSED
POSITION STATEMENT THAT WAS SENT FOR COMMENT INDICATES THAT CANADA DOES
NOT HAVE AFFLUENT LIMITS SIMILIAR TO THOSE REQUIRED UNDER P.L. 92-500
AND THEREFORE, THEY HAVE AN INFERIOR PROGRAM, YET, THE ONE AFFLUENT
LIMIT THAT WAS ESTABLISHED UNDER THE AGREEMENT, THAT IS THE PHOSPOROUS
LIMIT, HAS BEEN IMPLEMENTED IN CANADA AND HAS NOT BEEN SUCCESSFULLY
IMPLEMENTED IN THE UNITED STATES EVEN WITH P.L. 92-500

WHILE WE DO NOT DISAGREE THAT THE PARTIES MIGHT CONSIDER AN AGREEMENT
ON APPROPRIATE MINIMUM AFFLUENT LIMITS, WE DO NOT BELIEVE THAT THE
RECOMMENDED POSITION WILL ENHANCE THE CLEAN-UP AND PROTECTION OF
QUALITY OF THE LAKES. OUR POSITION SHOULD EMPHASIZE RESULTS, RATHER
THAN FORMS

THE SPECIFIC CHANGES TO MAKE THE AMMENDED AGREEMENTS MATCH P.L. 92-500
WILL PROBABLY DO VERY LITTLE TO IMPROVE THE QUALITY OF THE GREAT LAKES.
FORCING CANADA TO ADOPT THE CONCEPT OF P.L. 92-500 WILL BE
COUNTER-PRODUCTIVE. WE DO NOT AGREE WITH RENEGOTIATION OF PROVISIONS
THAT ARE NEEDED TO ADEQUATELY ADDRESS PROBLEMS THAT HAVE BEEN
RECOGNIZED IN THE LAST FIVE YEARS. SINCERELY YOURS

WALTER A LYON, DIRECTOR
BUREAU OF WATER QUALITY MANAGEMENT
DEPT OF ENVIRONMENTAL RESOURCES

12:46 EST

MGMCOMP MGM

ATTACHMENT 5

COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

POST OFFICE BOX 2063
HARRISBURG, PENNSYLVANIA 17120

April 26, 1977

Mr. George R. Alexander, Jr.
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear George:

I would like to reemphasize the point that was made in my April 13, 1977 mailgram to you concerning the United States position on the Great Lakes Water Quality Agreement review.

The draft report of Subgroup A (with an April 29 date) would appear to us to serve as an excellent stimulus for Canada to withdraw from a Great Lakes agreement.

The assumption that P.L. 92-500 is the only sound basis for a water pollution control program is not a valid position to take, especially in international negotiations.

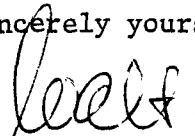
We have no objection to having the agreement consider all the waters of the boundary waters system rather than just the boundary waters themselves. We have no disagreement with the concept of system-wide planning criteria for the entire Great Lakes system.

A rather significant recommendation, for which the need is not documented in the report, is the recommendation to abolish the IJC Great Lakes regional office. Although we have had some disagreements in the past over the staffing and organization of the regional office, it seems to serve as a good resource for negotiations and doing work that the agencies might have a difficult time doing otherwise. As a matter of fact, this is why the office was created. To abolish it now would be a serious error. The discussion in the report provides no basis for this decision.

We urge that the "adopt P.L. 92-500 or else" policy be dropped in favor of a much harder look at the goals, objectives and standards that are needed to protect the Great Lakes system.

Our quick review does not disclose any proposal to strengthen the program planning and evaluation aspects of the agreement. No effort to evaluate fiscal, legal and manpower resources and gaps on a year-to-year basis appears to be proposed.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Walter A. Lyon".

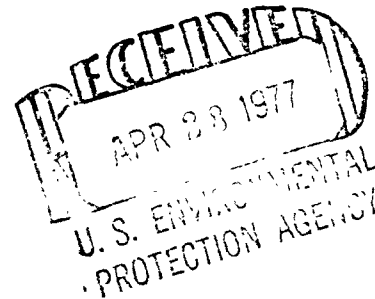
Walter A. Lyon, Director
Bureau of Water Quality Management



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
ENVIRONMENTAL RESEARCH LABORATORIES

Great Lakes Environmental Research Laboratory
2300 Washtenaw Avenue
Ann Arbor, Michigan 48104

April 26, 1977



To: George R. Alexander, Jr.
Chairman, Sub-Group A
Great Lakes Water Quality Agreement Committee

cc: Eugene J. Aldert
Member, Sub-Group A

SUBJECT: Comments on April 20, 1977 "Final Draft" of Sub-Group A Report

I have three comments which I would like to make, consistent with the discussion I had on the phone today with Bob Schneider, on the subject report:

1. IJC Windsor Office. I am in favor of retaining the IJC Windsor Office. I believe it serves a useful function as a neutral international forum on common ground for U.S. and Canadian participants of the Great Lakes Water Quality Agreement. Members of the IJC Windsor Office wear international hats rather than taking the view of a federal agency. I recognize that there are deficiencies in the presently constituted Windsor Office, both with respect to its responsiveness and staff capability. I favor that the IJC Windsor Office be improved—that it be made more responsive to the needs of the Water Quality Board, the Research Advisory Board, and the Reference Groups. This could be accomplished by recommending the establishment of a Board of Directors for the IJC Windsor Office made up of U.S. and Canadian representatives of the IJC, the Water Quality Board, the Research Advisory Board and the Reference Groups. The Board of Directors should have responsibility for approval of personnel actions (hiring, firing, promotion, awards) and the program plan.

2. Control of Great Lakes Water Quality. I agree with Don Mount that the use of water quality objectives is not the way to control pollution on the Great Lakes. One needs to control pollution loads. The water quality objectives, however, developed over the last several years by WQOS/SAWQC and approved by the Water Quality Board apply to the boundary waters of the Great Lakes, not to the waters of the Great Lakes system or to tributary waters.

Specifically, on page 8 of the introductory remarks to the report, the point is made that a system-wide approach must be made to water pollution control and the distinction between boundary waters and tributary waters must be ended. This is not true with respect to the water quality objectives which have been agreed to by the Water Quality Board although it is true with respect to minimum treatment requirements. As revised, the Agreement now specifies that the specific water quality objectives apply



to all the waters of the Great Lakes system. I feel this is unwise because the objectives were developed specifically for the waters of the Great Lakes and are not applicable to inland waters. Further, the pollution of inland waters is not an international problem until the pollutants reach the Great Lakes and here the water quality objectives will be protective if they are met. This recommended change in concept requires modification in several parts of the "final draft":

(a) Article III-1, Page III-2: Reinsert boundary where it was deleted in line 1.

(b) Article III-2, Page III-3: Change line 1 to read "The specific water quality objectives for the boundary waters and minimum treatment requirements. . ."

(c) Annex 1-1: Change line 1 to read "The specific water quality objectives for the boundary waters of . . ."

(d) Annex 2-1: Change line 1 to read "The objective of the following programs is to minimize eutrophication problems in the boundary waters of the Great Lakes system."

(e) Annex 2-6: Change the first sentence to read ". . .of cultural eutrophication in the boundary waters of the Great Lakes system. . ."

3. Reference Article X-2(c) (recommendation by the Surveillance Work Group): I agree that a significant surveillance program is required. It is my view that the recommended \$16M per year surveillance program has not been adequately studied. There should be an in-depth detailed feasibility study undertaken to define the surveillance program required. This should include the establishment of the objectives for surveillance and a cost effectiveness analysis of alternative surveillance sub-systems, components, etc., to meet these objectives. I recognize that the Surveillance Work Group has been very industrious and has, I believe, done a reasonably good job under the circumstances in developing a surveillance program. I believe, however, that this study should not be pursued by committee but should be undertaken by a contractor in some significant depth (a cost approximating \$300,000, for one year). The development of such a large surveillance program of a continuous nature should have an in-depth systems engineering analysis coupled with limnological and observational data acquisition systems know-how.

In lieu of the text contained in Article X, Section 2(c), I recommend that such a study be recommended.

RECORD OF COMMUNICATION	<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY)			
	(Record of item checked above)			
TO:	FROM:		DATE	
Mr. Schneider	Oral Hert, Indiana Stream Pollution Cont. Bd.		April 26, 1977	
			TIME	

SUBJECT

Comments on Final Draft of Sub-Group A Report on Review of G.L.W.Q.A.

SUMMARY OF COMMUNICATION

Mr. Hert had the following comments:

Article II (b) - Disagrees with the prohibition of discharges of toxic pollutants. Believe that objective is impractical and that paragraph should be changed to conform with similar paragraph of PL-92-500.

Article II (c) - Questions whether the Agreement can tie the States and local governments into an overall assistance program.

Article V 1 (j) - Questions how a Water Quality Board can get involved with air pollution problems?

Article V 2 (a) (i) - Questions appropriateness of "detection of violations of Water Quality objectives." Suggest that the word "Violation" be changed to "Excursions" (deviations).

Article VII - Objects to abolishing Region Office. Believes that the Regional Office provides the focal point for bi-lateral cooperative efforts and that government agencies could not provide this focus. Suggests that the functions and direction of the Regional Office may need to be changed and that the Boards need to exercise better control of Regional Office.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

Article II (b) Changes made as suggested.
 Article II (c) Change not made. This is a goal to work toward.
 Article V 1 (j) Boards' purview would be broadened by this change.
 Article V 2 (a) (i) Change made as suggested.
 Article VII Change not made--see discussion of Article VII.

INFORMATION COPIES

TO:

ATTACHMENT 5



WILLIAM G. MILLIKEN, Governor

RESOURCES COMMISSION

T. JOHNSON

LAITALA

PRIDGEON

Y. F. SNELL

Y. H. WHITELEY

L. WOLFE

ILES G. YOUNGLOVE

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, BOX 30028, LANSING, MICHIGAN 48909

HOWARD A. TANNER, Director

April 1, 1977

RECEIVED

APR 08 1977

EPA REGION 5
OFFICE OF REGIONAL
ADMINISTRATOR

Mr. Colgate S. Prentice
Special Assistant for Liaison
with the Governors
United States Department of State
Washington, D.C. 20520

Dear Mr. Prentice:

It is difficult to understand to what lengths the citizens, Legislature and the Governor of the State of Michigan must go to convey their commitment to the maintenance of the environment of the Great Lakes. It is even more difficult to understand the failure on the part of so many to recognize the sincerity of this commitment for it is one that has persisted and continued to grow for over a decade. It began with a 70 percent vote of the people to expend \$330 million on sewage treatment construction and continued with the passage and implementation of a number of pioneering and unique environmental protection laws, and most recently was expressed through an over 70 percent vote of the people to ban throwaway cans and bottles.

An outstanding example of the environment ethic of the people of Michigan is the acceptance and support of the Watercraft Pollution Control Act of 1970 (Public Act 167) which prohibited the overboard discharge of treated or untreated sewage. Our most recent surveillance of recreational boats indicates over 95 percent compliance with the statute.

The rationales which led to a no discharge provision are as valid now as when the law was enacted. Three important factors are the mobility of the watercraft, the areas frequented by the watercraft and the difficulty of adequate onboard maintenance and operation of the waste treatment or control facilities.

While commercial vessels do not normally follow navigational routes close to shore, they may, however, pass close to recreational areas while entering or departing from ports and they often pass over domestic or municipal water intakes.

Several flow-through sewage treatment systems produce impressive results while being tested in the laboratory or under controlled conditions on land. Efficiency may be excellent while operated by trained technicians devoting full time attention to the device



April 1, 1977

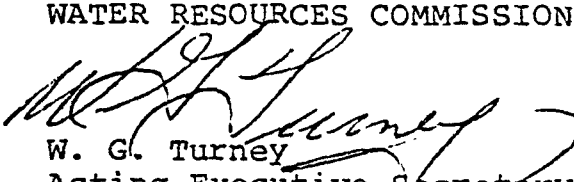
under observation. When this same device is installed in a vessel which may be subjected to only occasional inspection or checking by the operator and when rough weather, lack of maintenance equipment, etc., is the rule rather than the exception, there is no assurance that it will continue to provide adequate treatment. Even the most sophisticated and automated municipal sewage treatment plant experiences breakdowns and malfunctions and requires regular monitoring and maintenance, conducted by trained and licensed personnel.

In this light, the Michigan Water Resources Commission was disappointed over the promulgation of rules by the Canadian Government allowing the discharge of partially treated sewage from commercial vessels on the Great Lakes. While the Canadian requirements are more stringent than those implemented by the United States Coast Guard, they are substantially less than the U.S. Environmental Protection Agency requirements for municipal discharges.

The Administrator of the U.S. Environmental Protection Agency has granted Michigan authority under Section 312(f)(3), P.L. 92-500, to enforce its statute prohibiting the overboard discharges of sewage. It is our full intent to do so in a reasonable manner. The concerns of the Michigan Water Resources Commission are expressed in the enclosed Resolution.

Very truly yours,

WATER RESOURCES COMMISSION



W. G. Turney

Acting Executive Secretary

cc: Mr. Henry Smith III
Mr. Karl Jonietz
Mr. Douglas Costle
Mr. George Alexander ✓
Premier William Davis
Governor Milliken
Governor Anderson
Governor Lucey
Governor Thompson
Governor Bowen
Governor Rhodes
Governor Carey
Governor Shapp
Michigan Natural Resources Commission
Canadian Department of the Environment

cc: S & A
Mr. Schneider

MICHIGAN WATER RESOURCES COMMISSION

RESOLUTION

COMMERCIAL WATERCRAFT POLLUTION CONTROL

WHEREAS, it has come to the attention of the Michigan Water Resources Commission that the Canadian Government on February 4, 1977, promulgated regulations allowing the discharge of partially treated sewage from commercial vessels cruising the Great Lakes and connecting channels; and

WHEREAS, the new Canadian regulations do not comply with the no discharge requirements of the State of Michigan covering all of Michigan's portion of the Great Lakes and connecting channels, and the no discharge provisions of the states of Minnesota, Wisconsin, Illinois, Ohio and Indiana; and

WHEREAS, the new Canadian regulations contravene the no discharge recommendation for all Great Lakes water adopted by the Water Quality Board of the International Joint Commission in consideration of and in support of the 1972 Great Lakes Water Quality Agreement between the United States and Canada.

NOW THEREFORE BE IT RESOLVED, that the Michigan Water Resources Commission hereby records its extreme disappointment in this action of the Canadian Federal Government and implores the United States Government to seek reconsideration of this matter; and

BE IT FURTHER RESOLVED, that copies of this Resolution be sent to Governor Milliken, Michigan Natural Resources Commission, the International Joint Commission, United States Environmental Protection Agency, Canadian Department of the Environment, and to the Governors and Premiers of the other Great Lake States and Provinces.

At the Water Resources Commission March 24, 1977, meeting, Mr. Quackenbush made a motion, supported by Mr. Lay, that the above resolution be adopted and transmitted as stated therein. Motion unanimously carried.

Review of Final Report - International Working Group
on the Abatement and Control of Pollution from
Dredging Activities

FEB 20 1976

Acting Regional Administrator
Region V

Mr. Conrad Klevens
Office of International Activities (A-106)

This is in response to the letter dated December 23, 1975, from Mr. Lindsey Grant, Acting Deputy Assistant Secretary, Environmental and Population Affairs of the Department of State, requesting that comments on the subject report be forwarded to you for compilation. These comments are being made by me as Acting Regional Administrator. I expect that Mr. Mayo will also make comments to the Water Quality Board of the IJC on behalf of the Federal Support Committee in his role as the federal member of the Water Quality Board.

Let me first acknowledge the extensive and excellent cooperative effort of the Working Group. It has developed a treatise on the subject clearly expressing the problem, the state of the art, the myriad of technical and environmental complexities involved, and the challenges to any regulatory agency who would hope to control this activity in a manner consistent with the Water Quality Objectives.

In the section on Deficiencies, a major theme develops around the emphasis on improving, adapting or initiating effective and appropriate program planning procedures. This theme stresses the need for sufficient lead time to allow adequate review of the broad environmental, technical and socio-economic concerns on dredging activities via the application of appropriate criteria, whether they are site-specific or common in some respect to all. I strongly support this concept, and the recommendations made with respect to this deficiency. Such planning should be equivalent to the facilities planning for municipal sewage treatment works or construction projects required under PL 92-500. This type of planning mechanism provides for the necessary preliminary public disclosure of a project at its conceptual stage.

In keeping with this planning aspect, the technical aspects of the program planning cycle could be clearly enhanced by new information dealing with the problem as developed by any technical group. For example, we in EPA are concerned to increase disclosure in relation to the dredging from channels with ACHS requirements and also to re-evaluate the possible change in the demand on the sedimentation characteristics of dredged material. EPA is also working with various Federal agencies to develop site-specific disposal procedures based on the character of the dredged material and the environmental characteristics of the area of disposal.

FEB 20 1976

A major theme in the conclusions and recommendations is that all future evaluations be site-specific. Such a case-by-case approach would theoretically answer any concern. However, this approach would strain any regulatory agency's resources possibly beyond its capability to exercise meaningful control. There seems to be a need to more fully explore the common denominators in dredging activities to determine where recurring features would constitute a basis for criteria, and thus reduce to a manageable minimum the site-specific aspects to be evaluated. The recently promulgated Corps of Engineers regulations "Permits for Activities in Navigable Waters or Ocean Waters," 33 CFR Part 209, and the companion USEPA regulation, "Discharge of Dredged or Fill Material," 40 CFR Part 230, would seem to offer some opportunity in this regard.

The effort to establish applicable criteria and guidelines should be included in the charge to the Standing Committee. I fully concur in the recommendation for this Committee. It should be established under the Water Quality Board of the IJC for maximum effectiveness.

The rationale for site-specificity is developed strongly in the report wherein the diverse socio-economic, technical and environmental aspects would have to be considered on their merits. The Working Group, with its broad expertise on the subject, has developed a consistent approach which is difficult to refute. However, one of the principles cited as the basis of the recommendations, e.g. that open water disposal should be phased out, will undoubtedly remain an issue in further deliberations by regulatory agencies. In light of this concern, a more substantial response to this principle will probably need to be made.

Although the Working Group did not specifically meet the objective of developing compatible criteria for the characterization of dredged spoil as stated in Annex E of the Water Quality Agreement, it did address the problem comprehensively in pulling together diverse information and establishing for the first time a solid base of information which clearly emphasizes deficiencies in the present program. From this creditable effort and on this base, I am certain that the appropriate parties can proceed to take the steps necessary to insure adherence to the Water Quality Objectives in the Great Lakes.

Valdez W. Anderson

DEC 20 1976

Review of Comments by the National Wildlife Federation on the International Working Group Report on Abatement and Control of Pollution from Dredging Activities

Valdas V. Adamkus

Deputy Regional Administrator (5)

Pittsburgh Green, OIA (A-106)

Attn: Conrad O. Klaveno

In reviewing the subject comments by the Federation, it was noted that their views are substantially in accord with the comments submitted on the Report by this Region on February 20, 1976. The in-depth proposition for developing usable criteria for dredging projects was particularly interesting. This proposition recognizes the complexities and variables inherent in dredging projects, takes firm exception to the Working Group's recommendation that universal criteria are not applicable, and goes on to indicate the kind of criteria that could be developed for dredging projects, criteria which a Standing Committee could reasonably be expected to develop in a relatively short time.

The Federation's views support this Region's earlier comments, concerning the need for a Standing Committee to be established under the Water Quality Board. Such Committee's responsibilities would then follow to be principally oriented to the development of a usable system involving numerical criteria. We reiterate our recommendation (and the Federation's) that the Standing Committee be established under the Great Lakes Water Quality Board. The recommendation by the Federation that the Standing Committee's work be completed in not more than 12 months appears to be a supportable time frame and as such is fully endorsed by this Region, and as I am sure it would be by the Water Quality Board.

cc: Kenneth A. Oakley, Director IJC, WQC

ATTACHMENT 5