

Supplementary Agreement Amending the Agreement Between The US and Canada on Great Lakes Water Quality

Signed at Halifax October 16, 1983;

Entered into force October 16, 1983.

The Government of the United States of America and the Government of Canada,

DESIRING to amend the Agreement on Great Lakes Water Quality, 1978^[1] to incorporate a Supplement of Phosphorus Load Reduction,

HAVE AGREED as follows:

ARTICLE I

Annex 3 of the Great Lakes Water Quality Agreement, 1978 is amended by adding to that Annex the Supplement on Phosphorus Load Reduction in the Great Lakes attached hereto. This Supplement shall be regarded as an integral part of the Great Lakes Water Quality Agreement, 1978.

ARTICLE II

This Supplementary Agreement shall enter into force on signature.

In WITNESS WHEREOF, the undersigned, duly authorized to that effect, have signed this Supplementary Agreement.

DONE in duplicate at Halifax this [16th] day of [October] 1983, in the English and French languages, each version being equally authentic.

EN FOI DE QUOI les soussignés, dûment autorisés à cet effet, ont signé le présent Accord supplémentaire.

FAIT en double exemplaire à Halifax, ce [16^{eme}] jour d' [octobre] 1983, dans les langues française et anglaise, chaque version faisant également foi

For the Government of the United States of America

Pour le Gouvernement des États-Unis d'Amérique

1 William D. Ruckelshaus

For the Government of the United States of America

Pour le Gouvernement des États-Unis d'Amérique

2 George P. Shultz.

For the Government of Canada

Pour le Gouvernement du Canada

3 Charles Caccia.

For the Government of Canada
Pour le Gouvernement du Canada
4 Allan J. MacEachen

PHOSPHORUS LOAD REDUCTION
SUPPLEMENT TO ANNEX 3 OF THE 1978 AGREEMENT
BETWEEN THE UNITED STATES OF AMERICA
AND CANADA ON GREAT LAKES WATER QUALITY

1. The purpose of this supplement is to outline measures to fulfill the commitments undertaken pursuant to paragraph 3 of Annex 3 of the 1978 Great Lakes Water Quality Agreement which requires that:

"...The Parties, in cooperation with the State and Provincial Governments, shall within eighteen months after the date of entry into force of this Agreement confirm the future phosphorus loads, and based on these establish load allocations and compliance schedules, taking into account the recommendations of the International Joint Commission arising from the Pollution from Land Use Activities Reference..."

Phosphorus Target Loads

2. Table 1 establishes the recommended phosphorus target loads which represent planning guides for the Parties.

Table 1 replaces the table contained in paragraph 3 of Annex 3 of the 1978 Great Lakes Water Quality Agreement (GLUCA).

Table 1

| <i>Basin</i> | <i>Phosphorus Target Loads (<u>metric tones per year</u>)</i> |
|-----------------|---|
| Lake Superior | (see Section 3 (b) below) |
| Lake Michigan | " |
| Main Lake Huron | " |
| Georgian Bay | " |
| North Channel | " |

| | |
|--------------|----------------|
| Saginaw Say | 440 (Note 1) |
| Lake Erie | 11000 (Note 2) |
| Lake Ontario | 7000 (Note 2) |

Note 1 Target load designed to alleviate drinking water taste and odour problems.

Note 2 Target loads proposed to meet ecosystem Objectives in Annex 3. The allocation of the phosphorus target loads between the two countries shall be consistent with the equal rights of both Parties in the use of their boundary waters.

3. Phosphorus Load Reductions

(a) Lower Lakes:

Table 2 summarizes the estimated phosphorus loadings that will be discharged to the Lower Lakes basins when all municipal waste treatment facilities over one million gallons per day achieve compliance with the 1 milligram per litre (1 mg/l) effluent concentration (on a monthly average basis) as required by Article VI, 1(a) of the 1978 GLWQA. The table also shows the further reductions required to meet the Phosphorus Target Loads.

Table 2
Phosphorus Load Reduction Targets — metric tonnes per year

| Basin | Estimated Loadings at 1 mg/l (Note1) | Phosphorus Target Load | Estimates of Further Reductions Required |
|---------------|--------------------------------------|------------------------|--|
| Lake Erie | 13,000 | 11,000 | 2,000 |
| Lake Superior | 8,210 | 7,000 | 1,210 |

(b) Upper Lakes:

Load reductions for the Upper Lakes will be accomplished by achieving the 1 mg/l phosphorus effluent concentration (on a monthly average) at municipal waste treatment facilities discharging more than one million gallons per day. The Parties further agree to maintain the present oligotrophic state of the open waters and relative algal biomass of Lakes Superior and Kuron. In addition, the United States agrees to undertake efforts to achieve the substantial elimination of

algal nuisance growths in Lake Michigan. Further measures will be implemented as required for Saginaw Bay, various localized nearshore problem areas and Green Bay.

(c) Table 3 presents the distribution of further reductions in phosphorus loading required for Lake Erie (in metric tonnes/year) in order to achieve the estimated target loads. These figures will be used by the Parties in the development of detailed plans for achieving further phosphorus reductions as described in 4(a) and (b) below.

Note 1 Estimated loading when all municipal waste treatment facilities over one million gallons/day achieve 1 mg/l phosphorus effluent target levels.

Table 3
Allocation of reductions to meet target loads
for Lake Erie as shown in Table 1

| Canada | U.S. | Total |
|--------|------|-------|
| 300 | 1700 | 2000 |

(d) For Lake Ontario, the Parties, in cooperation and full consultation with State and Provincial governments, agree to review the measures to achieve further Phosphorus reductions in this Basin and will, within one year, meet to allocate the further phosphorus reductions between the Parties. Plans to achieve the required reductions Set Out in Table 2 will be developed using these figures in accordance with the procedures described in 4(a) and (b) below.

4. Phosphorus Load Reduction Plans

(a) Phosphorus load reduction plans will be developed and implemented by the Parties in cooperation and full consultation with State and Provincial governments to achieve the phosphorus reductions for Lakes Erie and Ontario described in Table 2. The plans will include phosphorus control programs and other measures as outlined in Section 5 and will describe any additional measures which will be undertaken to evaluate and review progress in achieving the phosphorus load reductions. A Staged approach, incorporating target dates for achieving further reductions, will be included in the plans to provide the Parties and State and Provincial governments with a framework for implementing and evaluating the effectiveness of controls.

(b) These detailed plans shall be tabled by the Parties with the International Joint Commission 10 months after agreement on this Supplement to Annex 3. The Parties will provide the Commission with progress reports and annual updates of these plans.

5. Programs and Other Measures

The following phosphorus control programs and measures will be developed and implemented by the Parties in cooperation and full consultation with State and Provincial governments to achieve the required reductions in accordance with the plans developed pursuant to Section 4. The Parties recognize that the responsibility for the control of nonpoint sources is shared between the Parties and the State and Provincial governments.

(a) Municipal Waste Treatment Facilities

(i) Priority will be given to the continuation and intensification of efforts to ensure that municipal waste treatment facilities discharging more than one million gallons per day achieve an effluent concentration of 1 mg/l total phosphorus on a monthly average.

(ii) Where necessary, consideration will be given to operating facilities capable of greater phosphorus reduction at higher levels of phosphorus removal than that required in 5(a)(i).

(iii) Where necessary, municipal waste treatment facilities designed, built, expanded or modified after October 1, 1983 should allow for later modification to provide for greater removal of phosphorus than that required under 5(a)(i).

(b) Detergent Phosphorus Limitation

Priority will be given to continuing efforts to limit phosphorus in household detergents.

(c) Industrial Discharges

Reasonable and practical measures will be undertaken to control industrial sources of phosphorus.

(d) Nonpoint Source Programs and Measures

Priority management areas will be identified and designated for application of urban and agricultural programs **and** measures which include:

(i) Urban drainage management control programs where feasible consisting of level 1 measures throughout the Great Lakes Basin; and level 2 measures where necessary to achieve reductions or where local environmental conditions dictate (Note 1); and

(ii) Agricultural nonpoint source management programs where feasible consisting of level 1 measures throughout the Basin and level 2 measures where necessary to achieve reductions or where local environmental conditions dictate (Note 1).

Note 1

Level 1 nonpoint source control options include:

Agricultural: adoption of management practices such as: animal husbandry control measures, crop residue **management**.conservation tillage, no—till, winter cover—crops, crop rotation, strip cropping, vegetated buffer strips along stream and ditch banks, and improved fertilizer management practices.

Urban: adoption of management practices such as:

erosion controls, use of natural storage capacities and Street cleaning.

Level 2 nonpoint source controls include Level 1 plus:

Agricultural: adoption of intensive practices such as:

contour plowing, contour strip cropping, contour **diversions, tile** outlet—terraces, flow control structures, grassed waterways, sedimentation basins and livestock manure storage facilities.

Urban: adoption of practices such as: artificial detention and sedimentation of stormwater and runoff, and reduction of phosphorus in combined sewer overflows.

(e) Research

Pursuant to the provisions of paragraph 2(e) of Annex 3, the Parties will make special efforts to assure that their research activities will be responsive to the Programs and Other Measures described herein.

(f) Monitoring and Surveillance

The Parties will develop and implement surveillance and monitoring measures to determine the progress of the Phosphorus Load Reduction Plans for the Lower **Lakes as** called for under Section 4 above, and to evaluate efforts taken by the Parties to reduce phosphorus in the Great Lakes Basin. These measures will include an inventory of areas treated, watershed modelling and improved measurement of tributary loadings to the Lower Lakes for the purpose of providing improved nonpoint source loading estimates and the monitoring of mass loadings to the Upper Lakes to maintain or improve the environmental conditions described in Section 3(b).

6. Review

The Parties shall meet later than December 31, 1988, to review the effectiveness of the programs and measures described herein, and any remaining load reduction measures required to achieve the target loads.