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Sewage Phosphates and Algae in Lake Ontario. II.
Report of the Lake Erie Enforcement Conference Technical Committee*

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THE ROCHESTER COMMITTEE FOR SCIENTIFIC INFORMATION

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SEWAGE PHOSPHATES AND ALGAE IN LAKE ONTARIO. II. REPORT OF THE LAKE
ERIE ENFORCEMENT CONFERENCE TECHNICAL COMMITTEE

I. Background.

The RCSI has published two reports on phosphate pollution of Lake Ontario and its relation to massive blooms and wash-ins of algae. The first was a short report concerned with phosphate-containing rust inhibitor; the second, background information on the whole phosphate problem, a large quantity of data on local waters, and calculations assessing the seriousness of the problem in Lake Ontario. The second report concluded that the enrichment of Lake Ontario with algal nutrients from municipal sewage is one of the most serious pollution problems we have.

Our present report presents a discussion of the phosphate problem in Lake Erie. In 1965, Governor Rhodes, of Ohio, requested the Federal Government to call an enforcement conference on the pollution of Lake Erie and its tributaries. Lake Erie receives large quantities of phosphate in municipal sewage, particularly from the Detroit-Windsor area, and this has resulted in enormous growth of floating and attached algae, with disastrous results. In March, 1967, the technical committee of the enforcement conference submitted a report on the situation. We feel that the report is quite relevant to the phosphate problem in Lake Ontario, and have therefore prepared the following summary with commentary. The technical committee was headed by Grover Cook and (later) by George Harlow, of the Federal Water Pollution Control Administration; one of the committee members was Robert Hennigan, of the New York State Health Department, who has long been involved in water pollution abatement.

II. Summary of the Report's Conclusions.

The most serious pollution problem in Lake Erie is the tremendous growth of algae in the lake. These growths are caused by nitrates and phosphates (plant nutrients) which enter the lake primarily in municipal sewage. The most serious result of these algal growths is the reduction of dissolved oxygen levels in large portions of the lake to zero, so that all normal aquatic life is killed. It is not feasible to control these growths by chemical means (with plant poisons such as copper sulfate). The most practical method of control is the removal of phosphate from municipal sewage. Several methods are known for doing this, one being a modification of the activated sludge process. Also, a suitable substitute for phosphates

in detergents should be found. Sewage treatment plants should be routinely tested for phosphate in their effluent, and the results reported to the state authorities.

III. The Report in Detail.

A nine-page summary of the report has been prepared by the R. C. S. I. and will be mailed to members who request it.

Address your request to:
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IV. Relevance to Lake Ontario.

Lake Ontario, like Lake Erie, receives municipal sewage from a large metropolitan population, including Toronto, Hamilton, the Buffalo-Niagara Falls area, Rochester and numerous smaller cities. We can therefore expect to face the same problems now confronting the people of the Lake Erie basin, although the smaller population of the Lake Ontario basin and the larger volume of the lake will cause the problems to develop more slowly. In the Rochester Embayment algae problems resulting from overfertilization are very serious already. It will be necessary for New York and Ontario to implement most, if not all, of the suggestions made by the technical committee with regard to the Lake Erie basin.

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David J. Wilson
Water Pollution Subcommittee

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