



*Rochester Committee
for Scientific Information
Rochester, NY*

*RCSI Bulletin 165
Improved Condition of Rochester Beaches; Still a Long Way from Clean Water*

*By: Herman S. Forest, George Berg
October 1973*

Improved Condition of Rochester Beaches,
Still a Long Way from Clean Water

by

Herman S. Forest and George Berg*

Summary

Ontario Beach on Lake Ontario was in an acceptable sanitary condition on most days in the summer of 1973 judging by coliform tests performed by the County Health Department. Violation of standards could not be predicted for any given day in advance; therefore swimmers could not be protected or warned away from occasional exposures to excessively polluted water.

There were at least six factors which could make positive contributions to cleaner beaches for Rochester:

- (1) New sewage treatment facilities were put into operation.
- (2) Several old and inadequate sewage treatment plants were closed.
- (3) The operation of existing sewage treatment facilities in the City of Rochester was improved under the Pure Waters program.
- (4) Spring floods reduced the crop of filamentous algae.
- (5) Unusually dry summer weather helped to curb storm overflows of sewage.
- (6) New York State banned the sale of phosphates in detergents.

The beaches are still polluted, and this bulletin describes the prospects of having clean water for swimming by 1975.

Background

The Lake Ontario beaches nearest to Rochester were popular and heavily used in every swimming season up to the mid-1960's. This part of the waterfront bears the brunt of water pollution from the urban area. Ontario Beach extends to the west of the Genesee River mouth. Durand Eastman Beach lies east of the Genesee, and east of the deep-water outlet of the City's sewage treatment plant. The prevailing flow of water in the Lake is eastward. The more heavily exposed beach at Durand Eastman was closed by the City for a few seasons in the early 1950's and then reopened.

* Contributions to this writing are gratefully acknowledged from Olga Berg (RCSI), Robert Hallenbeck of the Monroe County Pure Waters Agency, and G. Richard Sutherland and DeWayne Day of the Monroe County Health Department. Dr. Glenn Haughie, Director of the Health Department, cooperated in this participation by staff members with RCSI on this bulletin.

RCSI is particularly grateful for the correction of a number of errors in the review process. Major differences in viewpoint and interpretation remain in this complex, extended issue. RCSI will continue to offer its bulletins as a medium for clarifying information and educating citizens. The work of public agencies, such as the Health Department and the Pure Waters Agency can only benefit from their willingness to engage in such meaningful discussion and clear presentation of objective information.

In 1964, pollution at the beaches became the subject of a public controversy (1). Large numbers of people responded to the published evidence by leaving the beaches unusually empty in the following season. In 1966, the New York State Department of Health closed the Rochester beaches to swimming. In 1967 Monroe County became a leader in the nation's fight against water pollution by putting into operation a regional Pure Waters Program. Two key features of this program are the new Van Lare sewage treatment plant at the site of the old Durand Eastman Plant of the City of Rochester which is scheduled to open in 1975, and a series of new sewers leading to the plant. Not included in the initial program but also essential to the cleanliness of the embayment are new facilities to intercept the overflows from Rochester sewers which now drain into the Genesee River. Two alternate methods of controlling the combined sanitary-storm sewers have been designed, one an interceptor sewer with a series of holding tanks, the other a larger interceptor trunk line. The Pure Waters Division of the County of Monroe is initiating a monitoring program in September (1973) to determine the flow rates and the pollutants that come out of the major storm overflow lines. After monitoring for a year they will decide which method or combination of methods is needed to control storm overflow (2). This means that there will not be maximum control until the storm overflow problem has been solved completely. There are substantial doubts that priorities on allotment of funds for abatement will permit a complete solution in the foreseeable future. Until the interceptor system is completed the City of Rochester will remain a polluter of Lake Ontario in terms of the standards of purity set forth in the Federal Water Pollution Control Act of 1972.

Cleaner Beaches in 1973

Before 1973, the Health Department of Monroe County spot checked the sanitary condition of beaches by taking water samples two or three times a week for coliform tests. Many of the readings were high (in excess of several thousand coliforms per 100 ml.), and this was a reason for the State Health Department's decision to close the City's beaches to swimming. Monitoring was substantially improved in July, 1973, when the County Health Department put in a constant monitor at Ontario Beach west of the Genesee River. The system samples the water 200 ft. and 2,000 ft. out once every hour. The samples are checked for a number of variables including coliform bacteria. The number of coliform bacteria in a sample is known 18 to 24 hours after the sample is taken. The results are not published, but can be seen by permission of Dr. Glenn Haughie, Director. On most days during the summer of 1973 the coliform counts were low, less than a hundred organisms per 100 ml., so that the beach met the State's sanitary standard for public bathing. RCSI observers also noted other signs of improvement. The edge of the water at Ontario Beach was not covered by a scum of greaseballs, and was not cluttered with masses of filamentous algae during the summer. Some algae appeared in late season, however, to remind Rochester that abatement of nutrient pollution is not an immediate process. On the other hand, biological oxygen demand in the water, as reported by the Health Department, was still high in certain samples, although low in others. The high values may or may not be attributed to waste organic matter, and some certainly resulted from rotting algae. The sand was still dark and had a clinging texture associated with grease pollution, and the inshore water was murky with suspended particulate matter. There was, however, a marked improvement in cleanliness compared to the conditions of seven years ago. This has been a gradual, not a sudden improvement. The first signs were reported by the RCSI in 1968 (3).

At least six factors could have helped to make the beaches cleaner.

(1) New sewage treatment facilities were built and put to work. In 1967 Irondequoit installed a plant with secondary sewage treatment which continues to discharge into the Genesee River (4). The nearby Summerville Plant was replaced by a station pumping to Pattonwood. Later the Eastman Kodak Co. installed a treatment plant for its industrial waste outflow into the Genesee River. That plant is very difficult to operate because it handles a wide variety of chemical wastes but it comes closer to 100% efficiency every year. These two new plants relieve the river of a heavy organic load. The river now carries more dissolved oxygen and can cleanse itself at least in part of the pollution that still comes in from the City's sewer overflows. Thus, less pollution comes to the beaches from the river mouth. The largest of the new plants, the Northwest Quadrant Plant of the County of Monroe, started operation in mid 1973.

(2) Some old sewage treatment plants were closed. The Northwest Quadrant plant replaced several smaller and older sewage treatment plants, such as the Latta Road plant in the Town of Greece. These plants used to release inadequately treated effluents into Lake Ontario or its tributary streams (5), and the general nearshore drift may have carried this pollution eastward toward the Rochester beaches.

(3) The operation of existing sewage treatment facilities in the City of Rochester was improved. In 1972 the County Pure Waters Division took over the operation of the City's sewage treatment plants. Old equipment in the Durand Eastman plant was repaired and the level of disinfection with chlorine was stepped up. This meant that the outflow from the Durand Eastman pipe into Lake Ontario could be kept relatively free of grease and could have a low bacterial count on most days. More recently, overflows into the Genesee River have been curbed by a program of inspection and repairs to all the gates that direct the flow in the network of sewers under the City and keep sewage from overflowing. This means that the River was relieved of some of its pollution with raw sewage while the weather remained dry.

(4) Unusual spring floods occurred in 1973. As a consequence, high levels of water in Lake Ontario this spring interfered with the usual growth pattern of Cladophora algae in the shallows. In past years, these algae piled up near shore and rotted during much of the summer.

(5) The following summer weather was unusually dry. This reduced considerably the storm overflows that usually flush raw sewage into the Genesee River and the Lake.

(6) New York State banned, by law, the use of phosphate additives in laundry detergents. This deprived the algae of a major source of phosphate fertilizer. In the long run, and in combination with other measures, the phosphate control strategy will reduce over-fertilization in the Great Lakes and many inland waters. Nevertheless, luxuriant growths of Cladophora have occurred from time to time for many decades and disappearance should not be expected.

It is not possible to say precisely to what extent the beaches were helped by each of these factors, but it is clear that the present improvement in water quality is neither sufficient nor reliable. Even when it operates at its best, the Durand Eastman Sewage Treatment Plant is greatly overloaded, and discharges both organic pollution and suspended particulates into the Lake. Raw sewage still overflows into the Genesee. Shifts of wind and lake current bring more or less of this pollution to the beaches; and bacterial counts may go up suddenly either with rain, or with some malfunction of equipment in the treatment plant.

The Van Lare Plant, now under construction, will replace the Durand Eastman Plant, and will be able to give secondary treatment plus phosphate removal to 200 million gallons of waste a day when it opens. The Pure Waters Division hopes it will open in 1975. When completed the plant will be running at full capacity with no safety margin to compensate for breakdowns in equipment or for further growth of the City. If the storm overflows from Thomas and Densmore Creek as well as those from the Genesee are led into the plant further enlargement will be necessary, and plans for an addition are being made.

In summary, Rochester will have clean and sanitary beaches when Monroe County (a) completes its Pure Waters program, and (b) builds the storm sewer interceptor system planned for the Genesee River.

Are Beaches Clean Enough for Swimming?

Health Department officials were reluctant to publicize the fact that the coliform counts have been low this summer on most days. They are obligated to release public records, and did so when information was requested by the Times-Union. Swimmers had returned in large numbers to Ontario Beach where lifeguards were on duty even though the beach is still posted closed. The RCSI reminds the public that it still considers the beaches potentially hazardous at times. The City's and County's sewage treatment systems are still not working well enough to give reasonable assurance that bathers will not be exposed to excessive pollution. The exposures would be infrequent, but the health authorities do not now have the means of predicting them in advance or of closing the beaches when needed. There is, consequently, no satisfactory basis for declaring the beaches officially open to public swimming.

An individual citizen, however, may reasonably decide that the hazard to himself is small, and choose to swim at a city beach for convenience. The evidence in this Bulletin would be consistent with such a decision. We remind the swimmers that the work on control of water pollution is still far from complete in our region. Clear water and reliable sanitary swimming conditions can only be expected at Rochester beaches a few years from now. A virtually complete cleanup is technologically possible, but the shorter range goal is limited use during times when the water meets a high standard of cleanliness.

References

- (1) RCSI Bulletins (#1(W) - #45(W)), 1964-1968
- (2) Proposal. Combined sewer overflow abatement program Rochester, New York. Environmental Protection Agency. O'Brien and Gere Engineers, Inc. December 1972
- (3) RCSI Bulletin #44(W), "Our Beaches in 1968", September 1968
- (4) RCSI Bulletin #24(W), "Town of Irondequoit: Improvements in Sewage Treatment Facilities", March 1967
- (5) RCSI Bulletin #17(W), "Coliform Counts on Slater Creek and Greece's Latta Road Sewage Treatment Plant", August 1966
- (6) RCSI Bulletin #15(W), "How Not to Lie with Statistics", July 1966