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Report on Honeoye Creek*

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#8  
The Water Pollution Subcommittee of the Rochester Committee for Scientific Information has made some observations on Honeoye Creek, in and downstream from the Village of Honeoye Falls.

A section of the Creek below the village, is classified by the New York State Water Resources Commission as "F: (best use: disposal of sewage, industrial and other wastes). A hearing has been scheduled to determine whether this classification should be raised, our results may be of interest at this hearing.

### Bacteriological Determinations

<u>Location and comments<sup>1</sup> (Order: upstream to downstream)</u>	<u>Results<sup>2</sup></u>	
	<u>August 6, 1965</u>	<u>September 3, 1965</u>
1. Village of Honeoye Falls; 50-100 ft. upstream from bridge near Dutch Hollow Creamery.	coliforms: more than 100,000/100ml	coliforms: 5,000/100ml (approx)
2. 100-200 ft. downstream from outfall from Honeoye Falls Sewage Treatment Plant. Creek filthy, dead, full of sludge, smell of chlorine.	no coliform or other bacteria detected in 10 ml samples of water (same for both dates).	
3. At bridge near Sibleyville, approx. 1 mile below sewage treatment plant. Stream appears clear.	coliforms: more than 100,000/100ml	coliforms: 7,000/100 ml (approx.)
4. At bridge near Rochester Junction (Plains Rd.). Stream appears clear.	coliforms: 700/100ml (approx.)	coliforms: less than 1,000/100 ml

<sup>1</sup>Samples collected and comments by T.T. Bannister

<sup>2</sup>Determinations by Roger Christensen

### Chemical Determinations (By David Wilson)

Samples were taken on January 2, 1966, at and near the outfall from the Honeoye Falls Sewage Treatment Plant. The stream was in full flow, yet extensive sludge beds were observed in the Creek below the outfall; none were observed upstream.

The residual free chlorine content of the treatment plant effluent was quite high; some fine solids were observed in the effluent. There was no residual free chlorine in samples taken from the stream 20 and 50 yards downstream from the outfall.

A sample was collected from the creek in the vicinity of these sludge banks; some stirring up of the sludge occurred during the collection. The smelly, black water of the sample had a chemical oxygen demand of 448 ppm. This is very high; about as high, for example, as was found in samples taken from the outfall of the Irondequoit Sewage Treatment Plant at the Genesee River. (See previous report.)

### Discussion

It is clear the the sewage treatment plant was practicing heavy chlorination on all three dates of sampling. The bacteriological results at location 2 show that the creek was not only free of coliforms, but of normal stream bacteria as well; undoubtedly this was due to the presence in the treatment plant effluent of enough free chlorine to almost "sterilize" the creek. The odor of chlorine was strong. The recent chemical results show that chlorination is continuing.

Despite this "kill zone", however, there are high coliform counts both upstream and downstream from the outfall. The August 6 samples from locations 1 and 3, (following several weeks of extreme drought) both show counts of over 100,000; the exact count was too high for accurate determination, since the count exceeded that which we expected when planning the analysis. On September 3, (following significant amounts of rainfall) the values are only approximate; they are much lower than the dry weather samples, but they are clearly in excess of 2,400/100 ml.

This last number is of importance since the amended New York State Public Health Law states that surface waters " which pass through residential communities where there is a potential exposure of population to the surface waters, shall be protected by the requirement that all effluents from sewage treatment plants shall be adequately disinfected prior to discharge into surface waters in order to maintain an average MPN that will not exceed twenty-four hundred coliform organisms per one hundred milliliter sample in a series of four or more samples collected during any thirty day period on the surface water."

By the time the stream reached Rochester Junction, it has clearly undergone considerable self purification, as shown by the low coliform counts.

We have not determined any source for the coliform organisms above the treatment plant. It seems unlikely that these counts are due primarily to soil organisms, although such organisms can contribute to the total coliform count of surface waters. For one thing, the extremely high counts were obtained after a prolonged dry spell, so that surface run-off would be a minimal factor. Furthermore, almost all the bacteria noted in these particular determinations (locations 1 and 3, August 6) were coliform. In most stream samples plated by the Millipore Filter technique used here, non-coliform organisms considerably outnumber the coliforms. The possibility of faulty septic tanks or privies, or household sewer lines opening directly into the Creek in the village of Honeoye Falls or of North Bloomfield (just upstream) should be considered in seeking the source of these organisms.

As for the treatment plant, the extensive sludge banks, plus direct observation, show that particulate matter is being discharged. Chlorine cannot penetrate to the interior of even fairly small particles; bacteria in the interior are thus protected from effective disinfection. This could be the major source of the coliform contamination which was found downstream.

### Conclusions

The Honeoye Falls sewage treatment plant is responsible for the accumulation of extensive and objectionable sludge banks immediately downstream from the outfall. These have persisted through many weeks of heavy stream flow. The sludge is organic matter.

On all dates of observations, heavy chlorination of the treatment plant effluent was evident.

High coliform counts, in excess of legal standards for residential areas, occur both above the treatment plant (in the village, where the classification is "B"), and well below it.

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