

Water WoRDs

Updates from the Water Resources Division



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Jack Frost's Essay, Part 2

Last week, we introduced you to a Water Resources Division treasure: an old essay by Chief Engineer Jack Frost of a WRD predecessor, the Water Resources Commission. We're presenting Part 2 of Jack's essay this week, followed by a bit of commentary (and holiday greetings) from our current WRD Chief, Bill Creal. Bill's career in water quality protection happened to start right about where Jack's essay ends.

Dow Chemical's problem in 1935 was an organic problem. I remember my first sampling run on Dow's organic plant. I sampled a 4-inch pipe running about a quarter full. The waste was spilling out on the Tittabawassee River bank and disappearing into the sand. We began to notice a strange taste in the fish taken from the Tittabawassee, the Saginaw and the Saginaw Bay. It was a very obnoxious taste in the fish and the water supplies. If you went fishing, you had to protect the fish from your cats. Not that the cats wanted to eat them, but they kept trying to bury them.



A commercial fisherman up in Bayport asked me if I knew what the chemical was putting the taste into the fish.

I said, "Well, we have our ideas."

"A fellow from Dow told me what it was," he said. "I don't remember the chemical's name, but it was a short word that starts with an 'f.'"

I said, "Well, I don't know what that is, but we always thought it was phenol."

He said, "That's the word!"

In 1935, the Commission gave up any hope of ever recapturing the Saginaw River for water supply until the Legislature appropriated \$15,000 for the study of Saginaw Bay, looking to a new water supply for Saginaw, Bay City and Midland. Our staff then increased 150 percent. We went from two to five people and the \$15,000 covered the expenses of consulting engineers who were engaged to review the staff findings. That money supplied the salaries, expenses, equipment and supplies for four men in Saginaw Bay for a year.

We located the present water supply for Saginaw, which is at Whitestone Point. The war came along before Saginaw built their water supply system. About 1946, Saginaw started to build a water supply from Whitestone Point to service the Saginaw water plant, and another arm went over to Midland. For you people who are paying 8 percent interest on your mortgage, I would like to mention what they paid on those bonds. They borrowed \$15 million in 1946 and paid 1.8 percent.

Following the Saginaw Bay survey, the staff dropped back to two field people. In 1937, we hired one man and increased it by 50 percent. In 1939, the Commission decided to try its wings in court in an effort to clean up the interstate waters of the St. Joseph River. The Commission issued an order against the City of Niles, and Niles proceeded to tell the Commission what they could do with the order. The case went to Circuit Court in Lansing. That was the first time that we used scientific testimony in a court case for pollution control in Michigan. We presented all the data we had DO, BOD, primarily coliform and the effects to public health. After a week of testimony, the Court ruled in our favor. Niles took it to the Supreme Court, but the ruling was upheld. So Niles had to proceed with the sewage treatment plant.

On the flush of this victory, the Commission decided to work on the St. Clair River. They issued an order against the City of Port Huron with the same result. Port Huron did not proceed, so in 1940 this case went to Circuit Court in Port Huron. Here the court proceedings went on for two weeks. All of the witnesses were Commission witnesses. We got help from residents along the river.

Two of us were told to go to Port Huron, interview people who lived along the river, and find some who would be willing to get up in court and testify that they did not like the City of Port Huron's sewage in their backyards or front yards.

Imagine knocking on some lady's door and telling her you're from the Stream Control Commission.

She says, "From what?"

You explain that to her and she asks what you want.

We said we'd like to have her get up in court and say she didn't like sewage out in the river. We learned to get our noses out of the way when the doors slammed. After two or three days of this, we didn't have any witnesses. We went back to the office and told Mr. Adams no chance in the world could we get any witnesses from the riparian owners.

He said, "I want you two fellows to go back and I don't want to see you again until you have some witnesses." We went all the way, door-to-door, along the St. Clair River from downtown Port Huron to the center of the City of St. Clair. We went into the Diamond Crystal Salt Company finally, asked to talk to the president. The secretary wanted to know what we wanted to discuss with the president. We said we wanted to know if he liked sewage out in the river. She couldn't believe it, but she let us see him. The president wouldn't talk to us until he called in the Chairman of the Board. (It turned out that the chairman was his father-in-law.) We presented our problems to him.

The Chairman of the Board said, "I live along the river, I don't like that sewage out there, so I'll testify and so will he."

When the word came out that these two were willing to testify in court, it broke the log jam, we had all the witnesses we needed. The case went into court in May, 1940, and lasted for two weeks. As had been predicted, we lost it in Circuit Court. The Judge, who was up for re-election, said if there was any way not to get elected it would be to order the City of Port Huron to bond itself to build some ridiculous thing like a sewage treatment plant.

The Attorney General appealed to the Supreme Court and the case was reversed, so we had an order from the Supreme Court against the City of Port Huron. Those [Niles and Port Huron] were two landmark decisions which set the precedent for the Commission to proceed.

Of course, the war stopped all the pollution control activities. The Commission set up its Wyandotte or Detroit River Trenton office, District 1, in 1941 at the Wyandotte sewage treatment plant. They made space available to us in the plant and in the laboratory. There were two of us on the Commission field staff then. Fifty percent of the staff (me) set out to overwhelm Detroit River problems. Most activities ceased during World War II, and in 1946 we reopened the Wyandotte office. We kept it open until 1952. In January, 1948, we had a major duck killing on the Detroit River. It was a tough winter with a few open spots in the ice where the ducks accumulated and so did the oil. We counted about 15,000 to 20,000 dead ducks. We had a lot of newspaper publicity. Upset downriver sportsmen groups accumulated truckloads of the dead ducks, brought them up on the Capitol lawn and dumped them. The Legislature got the word and revised the water pollution control statute. This was the beginning of the Water Resources Commission in 1948. The law under which we have operated since enlarged the definition of pollution and required the submission of new use statements for State water use.

In 1952, Blanchard Mills and I were sent to Detroit to operate as well as we could. We measured the oil, the biggest problem at the time. Oil from Great Lakes Steel measured some 4,000 gallons a day from one sewer. We estimated the total from the plant was some 10,000 gallons a day. Measurements indicated a like amount coming from Ford, which would total 20,000 gallons. Another 5,000 gallons was coming from the other industries along the river and from the City of Detroit. We got Great Lakes Steel to put in the big oil separators following that investigation. In the first three-month period they recovered 112,000 gallons of oil. So this was the beginning of the clean up on the Detroit River.

We think of industries as being so efficient, but I remember one company which used fish oil. We measured a loss of 23 million pounds a year. We asked them if it wasn't a valuable commodity. They said, "Yes, but we couldn't afford to recover it because we don't lose enough." It was worth 23 cents a pound and they were losing 23 million pounds a year. We told them that on a Friday; the following Monday they had samplers out themselves. On Tuesday they started construction of some big clarifiers.

We patrolled the Detroit River by boat in the '40's, but in 1960 we bought our own boat and hired Eddie Stolnicki to run it permanently. We started our regularly scheduled patrolling of the river.

In 1950, we had the granddaddy of all fish kills in Manistee Lake. This was traced to American Box Board Company's conversion of the old Kraft mill into a neutral sulphite operation, while continuing to discharge their wastes without treatment. In February we took samples through the ice and measured the BOD and DO in the stream. We measured BOD of around 14 to 15 parts per million throughout the lake. We wrote a letter to the company advising them that this was dangerously high and that in warm weather we expected dissolved oxygen to drop considerably. On May 22, the oxygen hit zero and the fish were dying by the millions. The rainbow spawners were up in the Little Manistee. When they went up, there was plenty of dissolved oxygen in the lake early in the spring and when they came back the lake had zero oxygen. We were fishing 18-pound rainbow with an oar. We hit them in the heads and pulled them aboard. They were a beautiful fish.

After a complete survey of the lake, we detected there was not a bit of oxygen anywhere in the lake, top or bottom. We went up the bank to the paper mill, a long walk. I was carrying a motor in one hand and some sample boxes in the other. When we got up to the top, there is an old fellow standing there who asked us what was killing the fish.

We said it was an oxygen kill.

The old guy said, "Who in heck would put that in the lake?"

In 1962, the Governor called the Detroit River-Lake Erie Conference. He invited the Feds in to determine what were the pollution problems existing. This sparked a three-year survey by the federal government and us. That conference was resumed in 1965, with our recommendations presented. Following this, the Commission issued goals of water quality for the Detroit River and sought Stipulations from all the industries and communities along the river for upgrading their waste treatment, so that we could meet those goals. Almost all signed voluntary agreements, including the City of Detroit. Industry is now, I believe, totally in compliance with those Stipulations. Despite the public's opinion, the Detroit River is a much cleaner river than the one we knew in 1948 or 1962. The City of Detroit is still constructing more treatment facilities and still having problems. They're spending close to 200 billion dollars on the City of Detroit sewage plant to upgrade treatment. Wayne County's sewage treatment plant has problems, financial problems, but they're on the way. Pollution Control Conferences, the Lake Michigan Enforcement Conference, and the Lake Superior Enforcement Conference speeded up control in other areas of the State.

In the mid-1960's we developed water quality standards and a plan of implementation. Also in the mid-60's, the Legislature revised the act and declared the discharge of raw sewage illegal. This took the burden of proof off our shoulders. Now we're heading into the wastewater discharge permit program, towards the best-level, best-control technology currently available, by 1977.

End of Year Message from WRD Chief, Bill Creal:

I hope our readers enjoyed taking a trip back in time with us by reading Jack Frost's essay. I generally view Jack's anecdotes as a testament to how far we've come in protecting Michigan's quality; today we have far more sophisticated tools at our disposal and knowledgeable citizens who care deeply about protecting Michigan's precious water resources. I have certainly learned over the years that partnerships matter and the WRD is lucky to have so many supporters. I have challenged my staff to continue to build those partnerships in the year ahead.

We continue to keep an eye out for emerging pollutants as 21st Century Technology improves the lives of Michiganders, but also introduces new byproducts that may ultimately be of concern for our waters. We still deal with issues related to municipal sewage collection and treatment, and how important maintaining and operating this out of sight infrastructure is. While in Jack's time, compelling primary treatment was a struggle, we are now working with our municipalities to put the controls in place to finally stop the discharge of raw sewage and insure proper treatment of our wastewater. The "wastewater discharge permit program" that Jack closes his essay with is our National Pollutant Discharge Elimination System or "NPDES" permitting program that I am proud to have worked in since its beginnings in the 1970s.

Challenges certainly remain, but what strikes me most as I again read Jack's words is how much more the WRD does now. With diverse programs that run the gamut from NPDES permitting, to wetland protection, critical dunes, aquatic invasive species, and water withdrawals, the WRD is busier than ever. So as another year comes to a close, I want to wish all our readers happy holidays. And to my incredible WRD team: I am so very proud of the work that you do. Cheers to an even better 2014!

