# Bangor Mill Pond (Black River) Cleanup Project

**June 2004**

The small town of Bangor, Michigan was no different than many other riverside communities in Michigan in the 1840s – wrapped up in the logging boom and eager to harness the power of water. The Black River, which flows through town on its way west to the waters of Lake Michigan, provided a suitable source of water power, and soon the river was impounded - forming the Bangor mill pond. A living laboratory for school kids, a fishing hole, and a cool spot to take a dip during the heat of summer – the Bangor mill pond was many things to many people.

Unfortunately as the industrial revolution progressed, what the Bangor mill pond represented to several industries in town was nothing more than a trash receptacle for dangerous chemicals. One such company near Bangor, Du-Wel, Inc. was releasing treated metal plating waste from its onsite wastewater treatment facility under a National Pollution Discharge Elimination System (NPDES) permit. However, several releases that constituted violations of its NDPES permit led to fish kills in the Black River and Fish Consumption Advisories in the immediate vicinity of the plant's outfall. Testing of sediment in the Bangor mill pond revealed 6,000 cubic yards of sediment contaminated with Polychlorinated Biphenyls (PCBs) – a dangerous bioaccumulative toxin – and an additional 16,000 cubic yards of chromium contaminated sediment into the Black River.

In 1982 a young boy swimming in the pond became caught in the impoundment and drowned along with a fireman trying to save him. This incident provoked the community to tear out the impoundment – but the dangerous chemically tainted sediment remained lurking below. In 1997 the Michigan Department of Environmental Quality (DEQ) reached a settlement agreement with Du-well, Inc., the company that had polluted the stream, whereby they would pay close to $1 million for the restoration.

Suddenly, this site that had been treasured by so many in the community was now a cause for grave concern. "Is it safe to let my kids play down there?" "We've got to clean this up!" A community concerned about the safety of their kids quickly became a community dedicated to ecosystem restoration. It wasn’t just parents of school kids that were supportive of restoration. Town leaders including the members of the city council, downtown development authority, and others were on board. But funding for the project was an obstacle; the money received from DEQ’s settlement with Du-Wel represented only about a third of the estimated cost of the project.

Enter State Representative Mary Ann Middaugh. Mary Ann worked with community members and went to bat for Bangor in the state legislature. She was able to raise the remaining two-thirds of the funding needed (over $3.3 million) through grants from the USDA and the State Revolving Loan Fund. Asked about her contribution to the project, Representative Middaugh is quick to commend local officials like those in Bangor who really "stepped up to the plate." Once the money was secured, contracts were put out for bidding, and by summer 2002 on the ground remediation and restoration were ready to begin.

The contractor, Homrich, Inc. faced a significant challenge in trying to remove the 27,000 cubic yards of contaminated sediment without re-releasing any sediment back into the system. To answer this challenge, Homrich worked cooperatively with Carol Hefferan of the DEQ to implement an extensive system of monitoring complete with turbidity gates and testing of water samples 4 times a day. Even the citizens of Bangor pitched in with the monitoring

effort. Local residents from town, self appointed foremen, would often gather near the work site and watch the proceedings.

Other challenges, including reducing transport weight and dealing with weather difficulties, were met by utilizing the best available technology and remaining patient. A difficult question was raised in how to avoid the extensive “water weight” when hauling the saturated sediments to a nearby landfill. This was accomplished through the use of a “geobag” system that captured sediment while filtering water. This water was then run through two filtering stages to catch progressively smaller particles, tested, and finally released back into the Black River. The old Michigan adage, “if you don’t like the weather, wait ten minutes,” did not prove to help the restoration effort, as in Spring of 2003 when engineers did not have enough water to work with and had to install a coffer dam to allow for a sucking dredging method. But the Black River restoration effort was not to be compromised by these challenges, and project leaders were even able to find creative ways to make restoration dollars work harder.

With the restoration complete as of summer 2004, Bangor is now delving into the question posed by Bangor City Manager Larry Nielsen and many others, "How do we protect this pearl and live with it as good stewards?" Bangor has recently finished a community visioning process in which the protection of the Black River was repeatedly raised as a major issue by community members. From that process, the city has created a five year plan to develop walking trails and enhance public parks along the river. City manager Larry Nielsen is excited about being in a position to seek grants for promoting the use of the river. And when school teachers call asking if it's okay to bring classes to the area now, Nielsen is overjoyed that he can now say "please do." "Today, I get calls from excited residents telling me they saw deer, or a fox, or geese with goslings, and even seven swans swimming in our pond," Nielsen exclaims. "Now the challenge is to make sure we continue being good stewards of the river and mill pond. Our planning process kept this in mind and we have set many goals to keep this pearl polished for generations to come."

The City of Bangor's efforts to utilize the historic Bangor mill pond area as a community asset in an ecologically respectful way is a tremendous example of the beneficial "side effects" of well planned ecosystem restoration.

## PICTURE THIS: JUST HOW MUCH IS 27,000 CUBIC YARDS OF MUCK?

### 1. Imagine: Bangor to New York City - 742.3 mi

Engineers said the sediment removed equaled 5,343,920 gallons. If the sediment were put in plastic 1-gallon milk jugs and set side by side they would stretch for 759.79 miles. The line of milk jugs would stretch from Bangor City Hall all the way to downtown New York City!

### 2. Imagine: African Elephants - GENUS: Loxodonta and SPECIES: africana

The adult male is much larger than the adult female. Head and body length including trunk: 19-24 feet. Shoulder height: 10-13 feet. Weight: 5.5 - 7 tons. Tail: 4 feet.
Assumption: each African Elephant is 13 feet ground to shoulder; 24 feet from tusk tip to tail, head and body length, and 7 tons in weight.

The sediment removed equals the combined weight of 3,857 Adult Male Elephants.
Standing one on top of another, the tower of 7-ton elephants would reach a height of 9.49 miles.

Standing tusk to tail, the line of the biggest adult male African Elephants would extend 17.53 miles.

**3. Imagine: Dump Trucks**
A typical City dump truck can carry between 5 and 7 cubic yards and is 24 feet in length. The muck removed would fill - at 6.5 yards per truck - 4,154 dump trucks. Put end to end, these would make a line just under 19 miles long.

## ADDITIONAL INFORMATION

**Where In The Basin Was The Project:** Southern Branch of the Black River, Van Buren County, City of Bangor. The City of Bangor is 10/11 miles by road upstream from Lake Michigan. By river route, Bangor is almost 21 miles upstream.

**What Type Of Ecosystem Was Restored:** River and adjacent wetland areas in the City of Bangor

**Who Was Involved:**

**MDEQ** - Carol A. Hefferan, MDEQ - Kalamazoo District, Remediation and Redevelopment Div., 7953 Adobe Road, Kalamazoo, MI 49009-5026; (269) 567-3522; fax (269) 567-9440; hefferac@michigan.gov and the

**Project Engineering: MACTEC** - Janelle Williams, Senior Project Manager; MACTEC Engineering and Consulting, Inc.; Novi, MI; Office: 248-926-4008, Ext. 3008; JMWilliams@mactec.com

On Site Engineer - Paul Shen, MACTEC, POShen@mactec.com

**Contractor** - Homrich, Inc., Environmental Contractors, Timothy J. Homrich, 200 Maitlin Road, Carleton, MI, 48117; (734) 654-9800; timh@homrichinc.com

**City of Bangor**, Larry Nielsen, City Manager, City of Bangor, 257 West Monroe Street, Bangor, MI 49013; TX: 269.427.5831 FAX: 269.427.7919; email: bangormi@btc-bci.com.

This success story is due in large part to the perseverance and energy of Carol Hefferan (MDEQ), Janelle Williams and Paul Shen (MACTEC) and the hard working crew of Homrich, Inc.