



Port Huron, Michigan is known as the Maritime Capital of the Great Lakes. It is located on the shore of the St. Clair River at the base of Lake Huron. The City of Port Huron owns and operates a Water Reclamation Facility that treats industrial, commercial and residential wastes, and removes about 2,000 tons of residuals each year in the form of biosolids. These biosolids are removed from the wastewater prior to discharging the treated wastewater to the St. Clair River and they are recycled to area farms to use as fertilizer.

The City of Port Huron implements and enforces Industrial Pretreatment Program standards, which demand that industrial and commercial customers meet local and federal standards on sewage discharges. This in turn, protects the wastewater plant's ability to produce high quality biosolids.

The treatment plant experiences an average flow of 11 MGD (0.48 m<sup>3</sup>/s) from the City of Port Huron, as well as from neighboring townships such as Fort Gratiot and Kimball. In 2004, the City of Port Huron determined that the two 30-year old single rake screens previously in place could no longer meet the requirements that had evolved over the years. The old screens' efficiency had decreased enormously with age and wear, and the one-inch spacing was too wide to capture fine debris. This resulted in clogged pumps and piping



Bar Spacing: ½ inch  
Max MGD: 30

downstream and substantial associated maintenance costs. In addition, due to the long cleaning cycle of the single rake design, the lower elevation was prone to flooding in the two-story wet well causing solids to by-pass the screen creating even more difficulties in the plant.

The City along with consulting firm, Tetra Tech concluded that the most beneficial solution would be the Headworks® MS™ Bar Screen. Among their many reasons for choosing the Headworks MS™ Bar Screen, they were most pleased that the screens were able to be installed vertically so it could fit their two-story layout. In addition to the screen's durable all stainless steel design that handles the most severe applications, as well as the patented automatic reversing feature which makes each screening unit self

cleaning. The ½" (12.70 mm) bar spacing removes significantly more solids than the old screens and the multirake design eliminates flooding and by-pass problems. The Headworks screening system were installed into a channel depth of 18ft (5.49 m) and with a width of 5.50 ft (1.68 m). The water depth at the plant is 11 ft (3.35 m).

Since installation, the screens have proven to be the right choice. Only one screen is needed to handle the entire peak flow of 30 MGD, and virtually no large solids have been reported downstream. Facility Superintendent Randy Studaker states:

***"We are very pleased with the Headworks® screens thus far. They have fewer moving parts compared to the previous system, they're very well built and very heavy duty. We look forward to using them for years to come"*** (21 February 2005).

Since their installation, a vast improvement has been noted throughout the treatment plant, with fewer solids in the primary and secondary clarifiers as well as in the sludge.

