

CASE STUDY

Flexible Launder Cover

CUSTOMER OVERVIEW



Rochester, MN Water Reclamation Plant, Est. 1952.
(Photo courtesy of Google Earth – circa May 2016)

Owner:	City of Rochester
Facility:	Water Reclamation Plant
Location:	Rochester, MN USA
Year Established:	1952
Capacity:	Approx. 24 MG per day
Treated Volume:	Current avg. 13 MG per day

The **City of Rochester's** (Minnesota) **Water Reclamation Plant** treats the wastewater from city residents and that of local industries, including the renowned Mayo Clinic. The original treatment facility, built in 1926, was known to be one of the first wastewater treatment plants to operate in the State. A new facility at a different site was completed in 1952 and now utilizes two parallel treatment processes with a total treatment capacity of approximately 24 MG per day. Currently, the facility treats an average of 13 MG of wastewater per day.

The PROBLEM

Since the construction of the facility's **120-ft diameter final clarifier** (clarifier #5), the Water Reclamation Plant has experienced **issues with algal growth in the weir and launder area**. The extremely well-maintained facility regularly provides public educational tours. Therefore, the launder area required regular cleaning of algae to



October 2018 photo showing weir and launder area of final clarifier that required weekly cleaning

preserve the impeccable appearances at the plant, but also to avoid clogging of the weirs and to avoid potential TSS problems. The City was spending numerous labor-hours cleaning the launder and weirs throughout the year which was tying up multiple plant staff for more than half a day on weekly basis. Over the years, the time and expense of this activity was becoming a burden, so engineers with the City's Water Reclamation Plant sought an economical solution to prevent or reduce further algae growth, or for a more efficient means of cleaning.



October 2018 photo showing weir and launder area of final clarifier that required weekly cleaning

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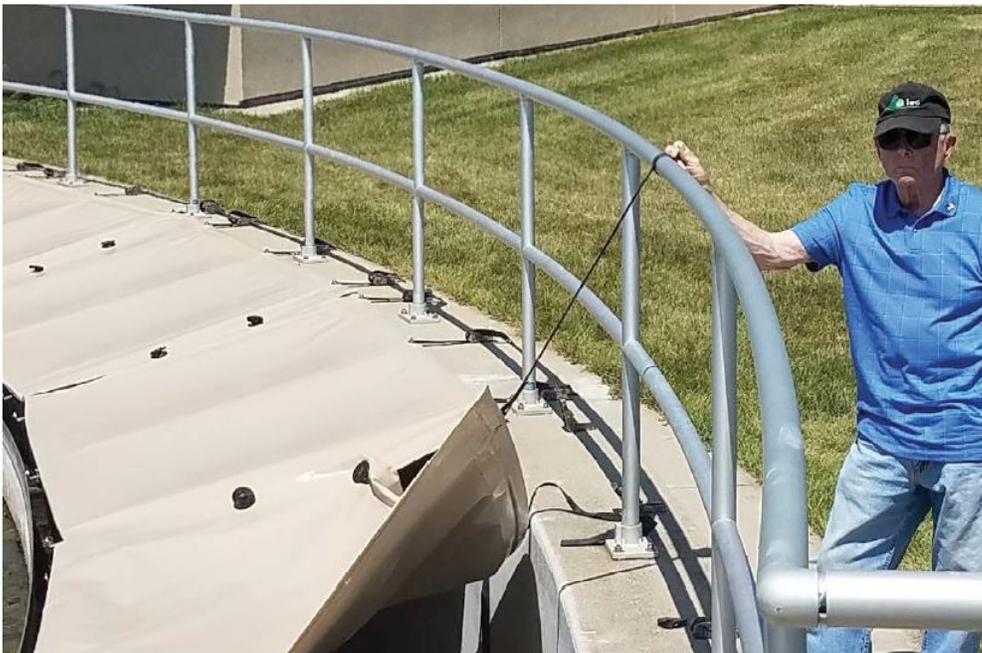
Flexible Laundry Cover

The SOLUTION

In 2018, engineers with the **City of Rochester's Water Reclamation Plant** in Rochester, MN contacted **Industrial & Environmental Concepts, Inc. (IEC)**, located in nearby Lakeville, MN, looking for a solution to cover the launder area of their final clarifier that has been subject to algae problems for many years. IEC recommended the company's new **Flexible Laundry Cover** system designed to block sunlight (UV) in the weir and launder area of clarifiers, thus preventing algal growth. The "clean look" of IEC's **Flexible Laundry Cover** system also reduces the visibility of dirt, thus achieving the facility's desire to maintain an overall pristine appearance for regular public educational tours. After evaluating the options available to them, the City agreed that IEC's **Flexible Laundry Cover** system was the most economical solution available and decided to proceed with the purchase. The new **cover system was completed in August 2019**.



August 2019 – Newly installed Flexible Laundry Cover system designed and installed by Industrial & Environmental Concepts, Inc. (IEC) for the City of Rochester Water Reclamation Plant (Rochester, MN).



IEC's Flexible Laundry Cover system consists of easy-to-open panels, and is designed to accommodate local code loads for wind, and snow. Materials are high-strength, corrosion-resistant, and UV-protected to ensure a maximum service-life under harsh conditions.



Typical cross-section over clarifier launder area. Strong lightweight flexible panels block sunlight (UV) to prevent algae growth, and keep out unwanted debris.

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Flexible Launder Cover

The RESULT

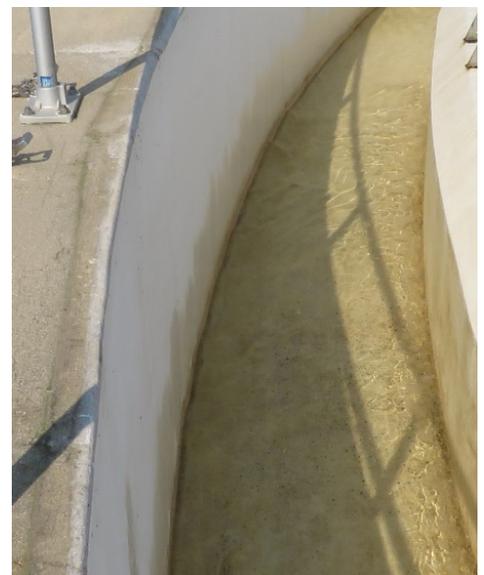
In August 2020, after one full year of the cover being in service, and having never been opened, the **City of Rochester's Water Reclamation Plant** (Rochester, MN) has not had any issues with algae clogging the clarifier weirs or algae creating downstream maintenance problems with other equipment. Staff decided it was time to open the cover for a closer look. **The result was zero algae** after one full year of operation. Only a thin layer of biofilm was adhered to the launder floor and walls, which was to be expected. Plant staff decided to remove the entire cover and proceeded to clean the launder and weirs of biofilm in preparation for reinstalling the cover system. Their next planned cover opening will be in two (2) years (summer of 2022). **IEC's Flexible Launder Cover has reduced cleaning of their clarifier launder and weirs from once per week to once per two years; a savings in both time and money.**



October 2018 Photo - Before cover installation; before a regular weekly cleaning



August 2019 Photo - Newly installed Flexible Launder Cover system by IEC



August 2020 Photo - After removal of cover having been in place for one (1) full year.



Fully installed IEC Flexible Launder Cover System



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Flexible Laundry Cover

CONCLUSION(S)

IEC's **Flexible Laundry Cover** is performing as intended to prevent algal growth in the launder area of the 120-ft diameter final clarifier at the **City of Rochester Water reclamation Plant** in Rochester, Minnesota. After one full year in service the cover has withstood the environmental exposure to rain, wind, snow, and sunlight (UV), showing little to no signs of wear.

The entire cover took approximately four (4) hours to completely remove, and another four (4) hours to fully reinstall. However, given this was their first time, plant staff believes they will shave off at least one (1) full hour the next time.

IEC's **Flexible Laundry Cover** system is a high-quality cover product at a lower cost compared to other products available such as FRP or Aluminum.

IEC's **Flexible Laundry Cover** system is designed to accommodate local snow and wind loads. It consists of high-strength, corrosion-resistant, and UV-protected materials. It has a very low-level of required maintenance and is easily opened and closed by plant staff in a reasonable period of time, further reducing the facility's long-term O&M costs.

IEC's **Flexible Laundry Cover** system is also a good choice to keep out unwanted dirt, dust, and other debris, which can also create ongoing cleaning and maintenance costs for plant staff.

"At the Rochester Water Reclamation Plant we take great pride in keeping our clarifier launders clean," says Corey Bjornberg, PE, Process Control Supervisor of the city of Rochester Water Reclamation Plant, "not only for algae control, but for aesthetics, as we give numerous tours for public education. For this reason, we spent numerous hours cleaning the launder each year which typically was done weekly by multiple staff and took approximately half a day."

Mr. Bjornberg also went on to say, "The IEC Flexible Laundry Cover has effectively stopped algae growth and keeps the clean look we desire when we give tours to educate our community about wastewater treatment. With the reduced maintenance hours our return on investment is less than three years. With IEC, we found a great product with great value that met all our needs."

Industrial and Environmental Concepts (IEC) has been an industry leader in the design, fabrication and installation of geomembrane cover and liner systems for tanks, ponds, and lagoons since 1993.

Municipal, industrial and agricultural clients across four continents have relied on our innovative designs. That's because IEC engineers design each system to meet each customer's unique needs and operational requirements.

Our innovative product designs and years of industry expertise, provide the advantages you deserve and the quality you need.

Contact us today to learn more!



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