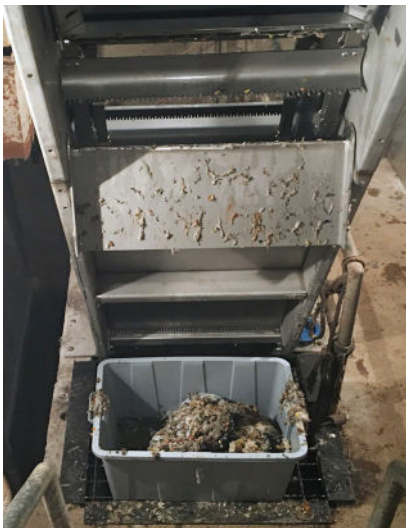
DUPERON®
CASE STUDY

MUNICIPAL WASTEWATER



CITY OF CROOKSTON

PROJECT-AT-A-GLANCE

Duperon's FlexRake IQ® Screens Increase Safety, Decrease Costs and Minimize Risk in Crookston, MN

SITE: *City of Crookston, MN Wastewater Treatment Plant*
EQUIPMENT: *One (1) Flexrake IQ®*
INSTALLED: *Fall 2019*

FLEXRAKE IQ® SCREENS INCREASE SAFETY, DECREASE COSTS AND MINIMIZE RISK IN CROOKSTON, MN

The City of Crookston, Minnesota, treats wastewater for a community of about 8,000 residents. Its pond treatment system uses several pump stations to remove solids from incoming sewage before sending it out for treatment. At one of these pump stations, an aged climbing screen was no longer operational, resulting in more frequent pump plugging that required service calls and even the station manager having to physically enter the channel with a pitchfork to shovel out debris.

WINTER SNOWS DELIVER SPRING RAINS – AND MORE

Like many Minnesota towns, Crookston is a river community that co-exists with the ebb and flow of water that begins as winter snow. When that snow melts in the spring, it fills the rivers and carries with it rocks and sand, much of which enters Crookston's antiquated underground sewer lines through inflow and infiltration. Wastewater and its own challenging contents – including flushable wipes, which are very hard on a sewer system – then carries the rocks and sand to the pumping stations, where solids are removed.

Pump Station #3 has an average flow of .75 MGD and a peak flow of 2 MGD, and for years it had been dealing with an old screening system that was failing to do its job. Pumps were regularly getting plugged, which resulted in increased calls to a service provider to unplug them. The station manager himself was even climbing into the channel with a pitchfork to remove rocks and rags. Sand and grit were getting into the pumps, causing unnecessary wear and tear.

A stopgap solution was the use of double drum grinders to intercept the problem contaminants, but the volume was so high that the station was wearing out grinders much too fast, increasing operational and capital expense costs.

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A MORE COST-EFFECTIVE AND PERMANENT SOLUTION

In the fall of 2019, the station manager and one of his service providers began researching solutions to their dangerous and expensive problem. They chose the FlexRake® IQ screen from Duperon.

Designed with a patent-pending sequence technology, the FlexRake IQ® screens deliver exceptional debris removal. The scrapers have an enhanced tooth profile and unique collection geometry that handle stones and remove solids cleaned at the higher speed while also dramatically reducing the likelihood of damaged teeth and stones embedded in bar openings. Large debris is managed without shutdown, and the FlexLink™ system ensures that scrapers return to cleaning the screen field faster.

Additionally, the FlexRake IQ® screen delivers an intelligent response to actual hydraulic and debris conditions in the channel by automatically detecting flow rates and adjusting raking speed accordingly. This feature enhances the screen's performance and extends its life.

MULTIPLE BENEFITS, LONG-LASTING PERFORMANCE

In addition to better debris removal, the station is saving on service calls, grinder purchases and reduced pump wear, as the FlexRake IQ® is keeping sand and grit out of the pumps. Other benefits to the City of Crookston include the decreased risk of sewage backing into homes due to a plugged pump and increased worker safety, as no one is having to physically enter the channel to remove debris.

Three years after installation, the original rake is still a workhorse, pulling everything out that was previously getting stuck, without operator intervention. In fact, the manager says that the screen is one of the best pieces of equipment he's ever installed and looks forward to using more Duperon products in the future.

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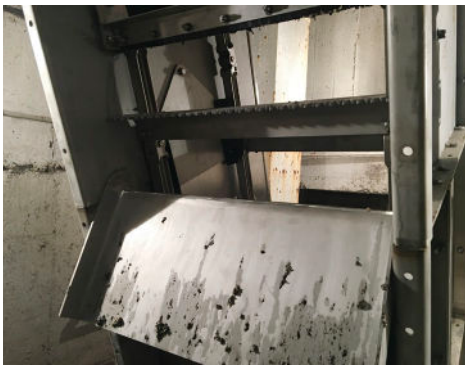

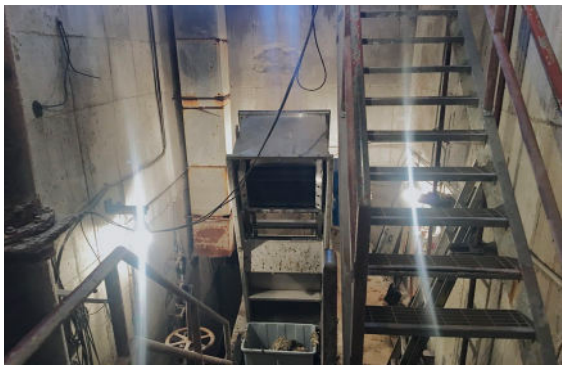

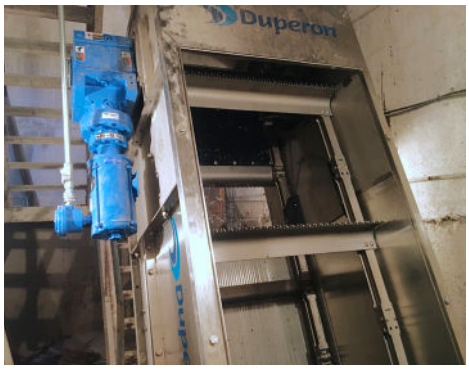

ABOUT DUPERON

Duperon Corporation is the leader in innovative preliminary liquid/solids separation systems. For more than 35 years, Duperon has provided simple yet innovative solutions for a variety of screening and solids handling applications in the water and wastewater industry. Duperon technologies are designed and manufactured in Saginaw, Michigan.

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