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## Bring a Friend With a Chemistry Set



We couldn't have completed the project without the assistance of City staff Mike Born, Ron Hyberger, and Cody Courtney (from left to right)

The City of Cresco, IA had a problem with its waste treatment facility. It was fine for the municipal waste stream it was designed to handle. But new industries in town were sending a different kind of waste down the pipe and the plant was struggling to handle it.

Frustrated by a lack of useful answers from equipment suppliers and reps, the City turned to WHKS for help. When the engineers realized that they were dealing with a complex chemistry problem, they reached out to colleagues at Mainsail Global, a leading industrial wastewater solutions provider, to collaborate on a solution.

It quickly became clear that, on any given day, the influent coming into the plant could vary widely in its chemical makeup. This was causing the aeration membranes to degrade far too quickly as their surface chemistry was being changed in unpredictable ways by the incoming waste stream.

Acting like the analytical scientists they are, the consulting team set up an extended testing process to determine exactly what was in the influent, what effect it had on the membrane, and what materials might be able to stand up to and effectively aerate this widely variable waste stream.



Field test unit in service to evaluate different membranes

Eventually, Mainsail Global developed a proprietary membrane coating that is predicted to reduce maintenance, decrease fouling of the system, maintain the desired oxygen levels and reduce energy consumption.

While the testing and refinement remains ongoing, all three parties have learned a tremendous amount from this real-time test bed. Their willingness to collaborate and innovate has meant that Cresco can handle the waste stream while remaining open to industries that fuel the city's economy.

