

A Packaged Solution



from **Baldor**

Helps an Ohio
Wastewater Treatment Plant

SAVE MONEY

Most of us don't think about what happens when we flush the toilet, pop the bathtub drain or run the dishwasher. But all that wastewater has to go somewhere. If you are a resident in Maineville, Ohio, that "somewhere" is the Lower Little Miami Wastewater Treatment Plant.





When equipment needed to be replaced on the existing Vertical Loop Reactors (VLRs) at the Lower Little Miami Wastewater Treatment Plant, Warren County officials chose Baldor equipment. VLRs are an aerobic biological treatment process that utilizes large discs that are continually rotated to move wastewater and impart oxygen for aeration.

The purification of wastewater is important in any community, but it's especially critical at this plant because it releases the treated water back into a state and national scenic river, the Little Miami River. Because of the river's protected status, the plant must meet the Ohio Environmental Protection Agency's most stringent standards.

A major expansion is currently under way at the treatment plant, which will nearly double its capacity. Dave Walling, the deputy sanitary engineer for the Warren County Water and Sewer Department, not only monitors the expansion project, but was also recently tasked with replacing equipment on one of the existing Vertical Loop Reactors (VLRs) that was built in the 1990s.

A VLR is an aerobic biological treatment process that utilizes large discs that are continually rotated to move wastewater and impart oxygen for aeration. In this system, wastewater passes through a chain of four rectangular concrete tanks, each having two rotating shafts for a total of eight units. Each of the eight VLR shafts has two bearings, and a motor/reducer drive package.

When one of the shafts and an entire assembly broke apart, Walling realized that repair was no longer an option. "Clearly, the equipment had reached the end of its useful life, so we decided to upgrade and replace the shafts, bearings, motors and gearboxes on all four tanks," says Walling. "But when we got the price from an OEM to supply the equipment, it was very expensive.

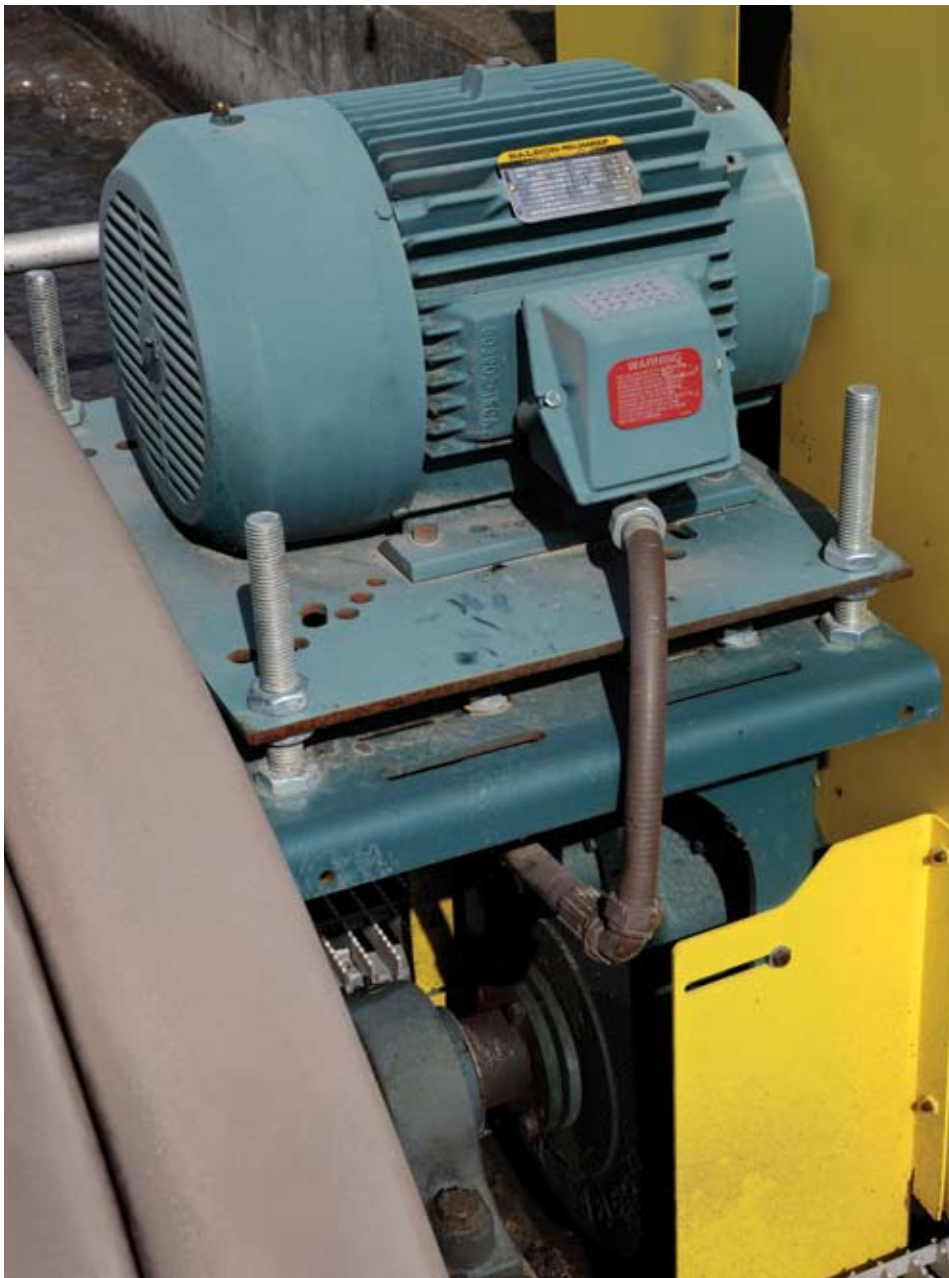
I wanted a package, which is what they were offering, but wanted to see if I could work with someone locally and find a more affordable solution."

With a phone call, Walling was able to find the local help he needed, along with a package that included products with a brand name he knew and trusted. "Dave Marsh with Kaman Industrial Technologies, and Brian Fields, a Baldor•Dodge® field sales engineer, visited me at the plant and did an on-site inspection – really studying the application so they understood what we needed," explains Walling.

The team received additional help from Malcolm Pirnie, the environmental engineering consulting firm in charge of the expansion project. While problems with the existing tank were

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Dave Walling, deputy sanitary engineer,
Warren County Water and Sewer Department



Baldor’s System-1 group engineered a complete packaged solution for the Lower Little Miami Wastewater Treatment Plant. Each package contained a 20 HP Baldor•Reliance Super-E Severe Duty motor, a size 6 Baldor•Dodge Torque-Arm II reducer and two Baldor•Dodge Imperial bearings. The motor and reducer packages arrived on-site pre-assembled and ready to install.

not in the firm’s original scope of work, Malcolm Pirnie’s project engineer, Erik Torgersen, offered his help to ensure the work on the VLR was a success.

“Dave and Brian contacted me, and I was more than willing to share information,” says Torgersen. “Most of the time, plant officials will go back to the company that put in the original equipment, but this can be expensive. Warren County was willing to break that mold and work with Baldor, and I was happy to help.”

With all of the information gathered, it was then up to Baldor’s System-1™ group to engineer the individual systems. System-1 specializes in designing, quoting and ordering the required products in order to deliver a complete packaged solution to the customer. Each package designed for the Lower Little Miami plant contained a 20 HP Baldor•Reliance® Super-E® Severe Duty motor, a size 6 Baldor•Dodge Torque-Arm II™ reducer and two Baldor•Dodge Imperial™ bearings. The motor and reducer packages arrived on-site pre-assembled and ready to install.

“Because of System-1, I didn’t have to try to source all of these different pieces of equipment and then worry about how to put them all together,” says Walling. “The whole package works as a system, making it simple for us. I have one source of contact if I ever have any questions, plus I have the local support, which is really important to us.”



Plant officials describe the Baldor•Dodge Torque-Arm II gear reducer as robust and worry-free. Because of its design, the gearbox runs cooler, which contributes to a long and reliable life.

More than the Package – It's the Performance of the Products

While Walling was pleased with the System-1 packaged solution, after two years in operation, he is equally pleased with the performance of the products. He notes that because the Baldor•Dodge

Imperial bearings have a concentric grip, they seem to be holding the shaft better without causing the fretting corrosion they dealt with when using setscrew bearings.

“The Imperial bearing is a much improved solution for us,” states Walling. “There’s less vibration, and we won’t have to worry about setscrews

wearing grooves into the shaft. It’s good to know that we won’t have to repair or replace these shafts ever again.”

Walling also describes the Baldor•Dodge Torque-Arm II gear reducers as robust and worry-free. Because of its design, the gearbox runs cooler, which he believes will lead to a long and reliable life. As for the final



Warren County Deputy Sanitary Engineer Dave Walling calls the Baldor•Dodge Imperial bearing a much improved solution over the setscrew-type bearings they had been using. The Imperial's concentric grip holds the shaft tightly without causing any fretting corrosion. Walling says it's nice to know that they won't have to repair or replace these shafts ever again.

piece of the package, Baldor•Reliance Super-E motors, Walling says he has never had any doubts about their performance.

"We have used Baldor•Reliance motors throughout the rest of the plant, and I know they are bulletproof and last forever," says Walling. "These motors have proven they can perform in this harsh environment. Plus, with the premium efficient design, we'll enjoy lower energy costs for the life of the motors."

Torgersen is also pleased with the packaged solution and gives credit to both Kaman and Baldor for getting the project done quickly. And he believes that the capabilities of Baldor's System-1 group are a great resource for other wastewater treatment plants that find themselves in a similar situation.

"Baldor's System-1 group can handle the individual engineered solution," says Torgersen. "It saved Warren County a substantial amount of money, but more

than that, I believe they got a better product out of it. I think it's a more reliable gear assembly, the bearings are more durable, the equipment will be easy to maintain, and the premium efficient motors will help them save energy."



The purification of water is important in any community, but it's especially critical at the Lower Little Miami Wastewater Treatment Plant because it releases the treated water back into a state and national scenic river, the Little Miami River. Because of the river's protected status, the plant must meet the Ohio Environmental Protection Agency's most stringent standards.

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