

Tsurumi aerators deliver clog-free purification at Russian water treatment plant

Water in many parts of Russia is sourced underground and has a high iron content plus traces of manganese and silicic acid. These contaminants present a two-fold challenge for water treatment plants: they must of course be removed but in the process of that they cause damage to purifying equipment – aeration systems in particular.

Tyumen City's water-treatment plant in south Russia is one example of a site where equipment has suffered from pumping such water. Previously, the plant relied on a pressurised aeration system of polyethylene pipes and air blowers. But the system failed to meet the latest industry standards and was susceptible to blockages. The air blowers also needed a large power supply and introduced more than four times the required amount of air, which generated surface foam. Plus the system needed cleaning at least once a month to ensure a good level of efficiency.

To increase efficiency at the facility – and reduce costs – Reshetilovs Russia, Tsurumi's Russian distributor for aerators and sewage pumps, installed a mechanical aeration system consisting of two TRN aerators and a BER submersible ejector from Tsurumi. Once installed, in-house testing showed that maintenance for the system is required far less frequently, power requirements are reduced by up to 435 MW per year and efficiency yields remain higher for longer.

Water quality levels have also been improved. Samples were compared showing differences in the aeration processes, with an average of around 85% before the TRNs, while the new system increased this figure to between 86% and 95%.

"The new system is easier and cheaper to run, and it performs even better than before," says Carsten Bode, aeration and sewage pump manager at Tsurumi Europe. "The plant no longer needs to worry about breakdowns, and the system provides even purer water for the region."

Retrofitting the TRNs was quite simple. They are installed quickly and cheaply as free-standing units, and are easier to maintain. They also deliver a more balanced mix of oxygenated water compared to air blowers that deliver a high concentration only in the areas in which they are positioned.

TRN aerators have a further advantage. Other aerators are susceptible to sediment that builds up during the aeration process because of rising pH levels. But Tsurumi's aerators avoid this problem thanks to their unique design, which includes an Air-Seal-Principle. This ensures that the double mechanical seal never comes into contact with the aerated water, prolonging its operation without maintenance.

Tsurumi's TRN series is its most advanced range of pumps. The auto-suction submersible aerators are used for communal industrial wastewater clearance and treatment with power outputs from 0.75 kW to 40 kW.

The BER series combine many of the TRN's features with an ejector so that both agitation and aeration can be performed simultaneously. Power outputs range from 0.75 kW to 5.5 kW.



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