

metals producer reduces wastewater toxicity, gains process improvement

challenge

One of Canada's best known companies and largest exporters, this SUEZ customer is primarily a producer of Nickel and other precious and rare metals.

Located on the shore of one of the Great Lakes, the plant treats over 11,000 liters per minute of process wastewater. This wastewater is discharged into two settling ponds, which ultimately flow into this sensitive Great Lake. Plant management was extremely concerned about the quality of the water not only because they place a high premium on environmental protection, but because the company must comply with Municipal Industrial Strategy for Abatement (MISA), a provincial program for addressing levels of persistent toxic substances in industrial direct discharges entering the Province's waterways.

As part of the MISA initiative, the plant was subject to the Acute Toxicity for Wastewater test, which evaluates the ability of rainbow trout and daphnia magna (water fleas) to live in the plant's effluent for 96 consecutive hours. Test results are reported in "percent mortality"; if more than 50% of the organisms die, the test is a failure.

While the company was diligent about treating its wastewater, the polymers being using to treat the water were not performing adequately, as an unacceptable level of toxins was finding its way into the lake. And while an "acceptable" percent of fish were dying in the acute toxicity test, the company felt the level was still too high.

What was needed - a new polymer, a new process, or both?



solution

On the advice of another facility that was using its services, the plant went to SUEZ Water Technologies & Solutions for a solution. Two technical experts from SUEZ analyzed the problem, ultimately providing the plant with two new clarification polymers based on a different technology. These SUEZ polymers lowered the level of toxins in the wastewater, while still effectively removing the nickel and other primary metals. The SUEZ experts also created an improved control and monitoring system.

results

Using the SUEZ polymers, the plant hasn't failed any of the toxicity tests for the past year. In fact, since switching to the new polymers, the percent kills have been zero for both trout and daphnia. What's more, instead of being performed on a monthly basis, because of the excellent performance, the toxicity testing is now being conducted quarterly.

The plant has also gained tighter process control and has, in general, improved its water treatment procedures.

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