



Customer Success Story

Customer Details



Client: Consolidated Koshkonong Sanitary District

Location: Koshkonong, WI

Application: Municipal

Product: LemTec™ Biological Treatment Process



About Our Customer/Problem

Koshkonong, WI is a charming and picturesque town located in Jefferson County, known for its beautiful natural landscapes and friendly community. The town with a population of just under 3,800 is situated on the shores of Lake Koshkonong, which provides ample opportunities for outdoor activities such as fishing, boating, and swimming.

The Consolidated Koshkonong Sanitary District was looking to upgrade their existing municipal treatment plant to bring the system into compliance with State of Wisconsin code requirements, all while staying true to their environmental values. They also needed to accommodate for the next twenty years of projected growth and loading in their service area.

The existing wastewater treatment plant consisted of influent pumping, three – six acre partially mixed aerated lagoons, and chlorine disinfection. Aeration was provided by two 30 HP positive displacement blowers (one service, one standby) and course bubble aeration.

Unfortunately, the lagoons were not meeting the DNR required groundwater separation distance and maximum leakage rates. Lemna Environmental Technologies (LET) was approached by the city to offer a solution to their complex problem.

Our Recommendation: LemTec™ Biological Treatment Process

Taking into consideration the unique objectives of the city, Lemna Environmental Technologies (LET) custom tailored a treatment design based on their parameters. By implementing our integrated lagoon technology and sophisticated modeling techniques, we were able to deliver a tailor-made solution that exceeded all expectations. This entailed fitting a brand new LemTec Biological Treatment System into the three lagoon basins with a phosphorus removal system and a polishing reactor at the effluent end.

The first two lagoons were each divided into two partial mixed cells with low-rate diffusers and customized LemTec™ Hydraulic Baffle systems which ensured minimal short-circuiting between each cell. The two lagoons were followed by a LemTec™ phosphorus removal system and a third lagoon with a partial mix cell and a settling cell.

To stabilize temperatures, filter sunlight, and prevent surface disturbances, all the cells were fitted with modular insulated covers. A polishing reactor equipped with additional blowers and aeration equipment was placed after the treatment lagoons to address and treat any remaining BOD and ammonia.

Design Parameters

Constituent	Influent	Effluent
BOD	154 mg/l	15 mg/l
TSS	170 mg/l	15 mg/l
NH3	34 mg/l	1 mg/l
P	5mg/l	1mg/l

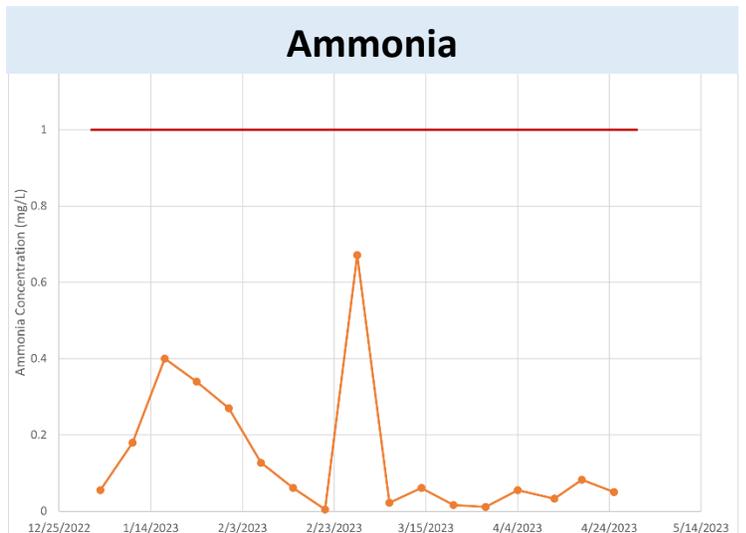
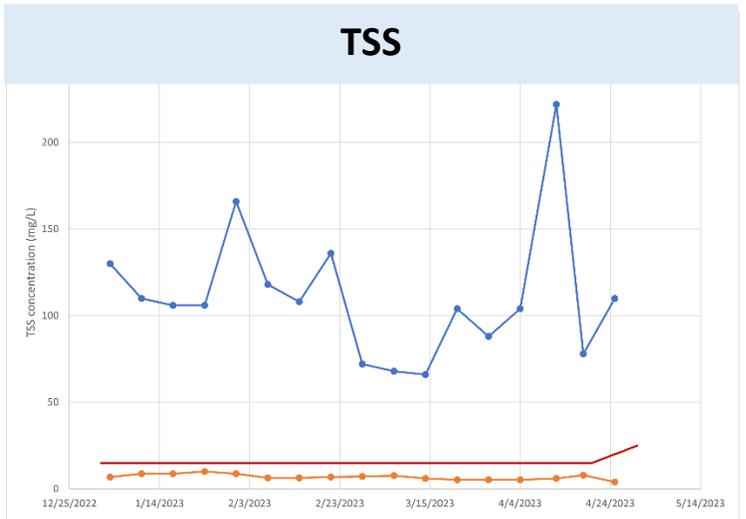
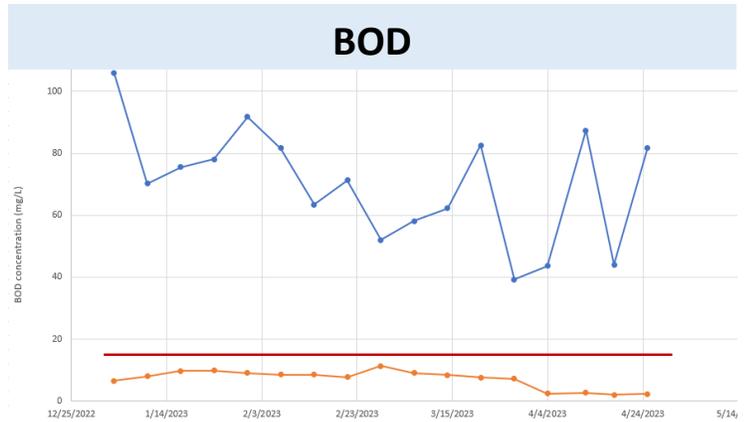
Temperatures	Celsius
WasteWater	10° C
Ambient Air	-12.2° C

Results

In addressing the wastewater concerns of Koshkonong, the LET solution surpassed all expectations and proved to be a remarkable success. The effluent data graphs have displayed consistent and excellent sampling results ever since it was installed. With the new solution in place, the Koshkonong Sanitary District can now discharge their wastewater without any concerns, confident in their ability to comply with permit regulations while safeguarding their natural resources.

By utilizing our comprehensive and integrated approach, we were able to deliver a project of the highest standard, leaving a lasting impact on the city's wastewater needs for years to come.

Data Results



-Limit •Influent •Effluent

