



Customer Success Story

Customer Details



Client: Poplar Bluff, Missouri

Location: Poplar Bluff, Missouri

Application: BOD, TSS, and Ammonia Treatment

Product: LemTec™ Biological Treatment Process

About Our Customer/Problem

Poplar Bluff is a small city in Southeast Missouri. It is the county seat of Butler County and is known as "The Gateway to the Ozarks" among other names. Poplar Bluff takes its name from a bluff that overlooks the Black River.

Due to its vicinity from several natural wonders, this small city boasts sparkling springs and rivers, a national forest, and state parks making it an excellent outdoor destination. Nestled close to a string of springs and rivers, this community was faced with a vital decision.

They needed to improve their existing treatment plant so it could meet more rigorous effluent requirements. With the city seeking a solution that would be both cost-effective and simple to operate, the plant needed to deliver effective and ongoing treatment for many years to come. The problem was further compounded by the city's four-cell aerated lagoon plant, which could process only 2.9 million gallons per day and was falling short on permit requirements. The city reached out to Lemna Environmental Technologies (LET) to provide a solution to their complex problem.

Our Recommendation: LemTec™ Biological Treatment Process

Through utilization of advanced integrated lagoon technology and intelligent process modeling, LET delivered a tailored wastewater treatment solution thoughtfully designed with the specific goals and objectives of the city in mind. Our cutting-edge approach and customized methods allowed the city to meet their unique needs with unparalleled efficiency and effectiveness.

This involved the installation of a new LemTec Biological Treatment System complete with upgraded aeration equipment for three 10-acre lagoon cells. In addition, we fitted all three cells with modular insulated covers to help stabilize temperatures, filter sunlight, and prevent surface disturbances.

With a focus on increasing aeration capacity, the blower equipment building was upgraded with new electronics and two 175 horsepower blowers. The three existing blowers along with existing iron piping in the blower building was modified for additional aeration capacity.

To further optimize performance, the upgraded treatment facility also included a 25,000 square foot concrete polishing reactor with additional blowers and aeration equipment along with an insulated cover for supplemental BOD and ammonia nitrogen removal.

Design Parameters

Constituent	Influent	Effluent
BOD	250 mg/l	30 mg/l
TSS	250 mg/l	30 mg/l
NH3	25 mg/l	1.3 mg/l

Air Temperature	Celsius
Coldest Month	30° F

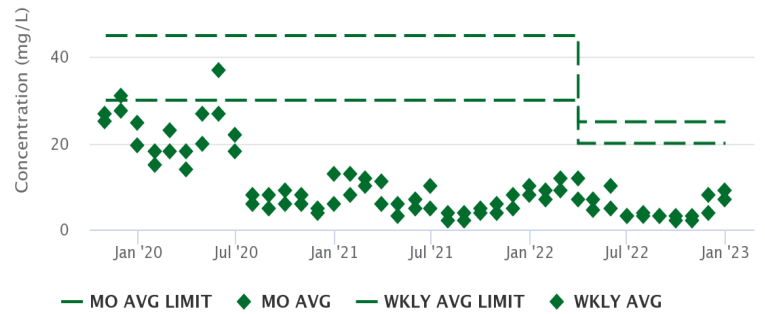
Results

The city of Poplar Bluff has been very pleased with the results and all the concerns were addressed with the Lemna solution. The sampling data from the facility have been excellent and are summarized in effluent data graphs below for the levels of BOD, TSS and Ammonia following the installation of the integrated lagoon system.

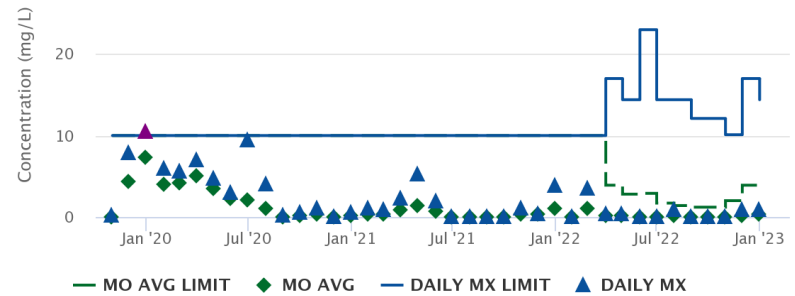
The community is now able to confidently discharge to the local stream, knowing that they now meet their permit requirements while protecting their natural resources now and for generations to come. Our comprehensive approach ensured that the project was completed to the highest standard, making a tremendous difference for the city's wastewater treatment needs.

Data Results

BOD



Ammonia



TSS

