

**Before**



**After**



**Case Study: North Hills**

When Oak Hill Utility Operating Company (UOC) acquired the North Hills Wastewater Treatment Facility, it quickly became evident that significant improvements were required to restore the facility to proper operational standards and ensure compliance with environmental regulations. The facility had a history of noncompliance with NPDES permit requirements, consistently failing to meet limits for ammonia nitrogen, Biochemical Oxygen Demand (BOD), fecal coliform, Total Suspended Solids (TSS), and Dissolved Oxygen (DO). Additionally, the facility lacked essential infrastructure, such as remote monitoring capabilities and a complete security fence, which heightened safety concerns and liability risks.

Oak Hill UOC promptly implemented a comprehensive improvement plan to address these critical deficiencies. Electrical upgrades were performed to stabilize the facility's power supply. The absence of a generator quick connect posed a risk of extended downtime during power outages, compromising the facility's ability to maintain continuous operations; therefore, a quick connect for a generator is planned to ensure the plant can quickly resume operations when needed. To further enhance site safety, plans are also underway to install a secure perimeter fence to reduce liability risks.

Significant improvements were made to the treatment process as well. The UV disinfection system, which is critical for proper treatment, was non-functional and required a complete rebuild. It was fully restored with new units and housing to ensure effective disinfection of the effluent. A Micro Moving Bed Biofilm Reactor (MBBR) was installed within the existing tank to improve biological treatment. The effluent pump was replaced to enhance the transportation of treated water for discharge, and a new flow meter was installed to ensure volume accuracy for treated water. Yard piping was upgraded to support these improvements, and new blowers were installed to further enhance treatment efficiency.

The installation of a new tertiary filter also contributed to the facility's improved performance. These upgrades have had a measurable impact on effluent quality, with the facility achieving a 42% reduction in TSS levels - from an average of 23.2 mg/L in 2019 to 13.5 mg/L in the past year.

Through these efforts, Oak Hill UOC has significantly improved the operational efficiency and regulatory compliance of the North Hills Wastewater Treatment Facility, ensuring reliable service and environmental stewardship for the community.

