

BiOWiSH® Aqua

BiOWiSH® Aqua Helps Reduce Total Nitrogen Effluent Levels in a Leather Manufacturing Unit in South Korea

Background

Samyang Tongsang Co. Ltd produces leather for various purposes, providing customers with the best quality leather products. The group is committed to minimizing effluent production in an industry known worldwide for its poor environmental standards.

After testing several advanced biological treatments, Total Nitrogen (TN) levels in the industrial effluent continued to be a challenge.

Problem

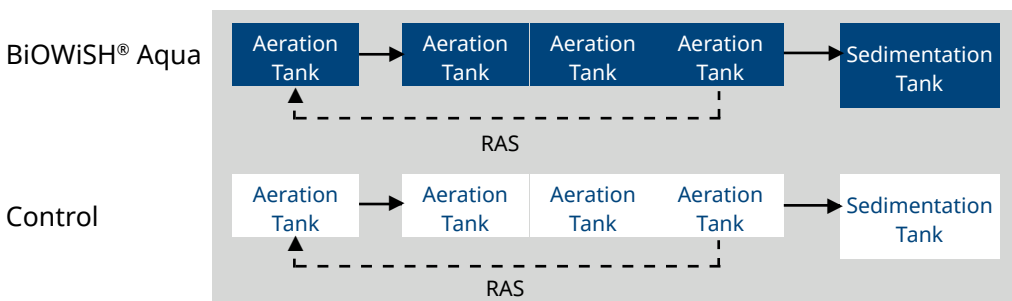
Despite implementing multiple advanced BNR designs, the plant’s ETP was not able to achieve TN levels below the required discharge limits.

Solution

BiOWiSH’s local partner in South Korea, ACE Solutions, proposed a 5-week trial with BiOWiSH® Aqua for treatment of TN levels in the wastewater. BiOWiSH® Aqua is a powerful bio-catalyst that accelerates the biological removal of nutrients from wastewater and has a unique ability to rapidly reduce nitrogen loading using multiple bacterial facilitated metabolic pathways.

Trial Setup

The trial was performed in two separate treatment units to compare the results of the BiOWiSH® treatment to a control plant. BiOWiSH® Aqua was dosed at 0.5 ppm during the entire trial via drip dosing. Several modifications were made in the BiOWiSH® treated unit to optimize the process flow, two weeks after starting the bioaugmentation. The modification involved converting the first aeration tank to an anoxic tank in order to enhance denitrification.



Before Modification

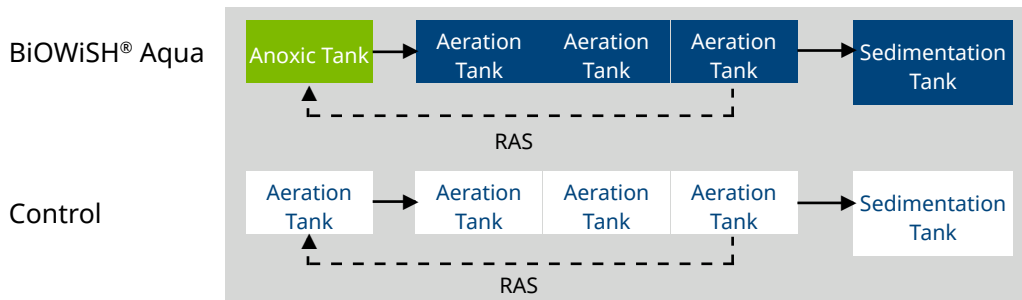
BiOWiSH® Aqua



- Rapid nitrification and denitrification in aerobic and anaerobic conditions
- Reduces sludge production
- Increases plant treatment capacity
- Reduces odors
- Reduces aeration requirements
- Reduces need for chemical additives
- Improves plant stability
- Pre-treats influent in collection systems
- Natural and non-toxic

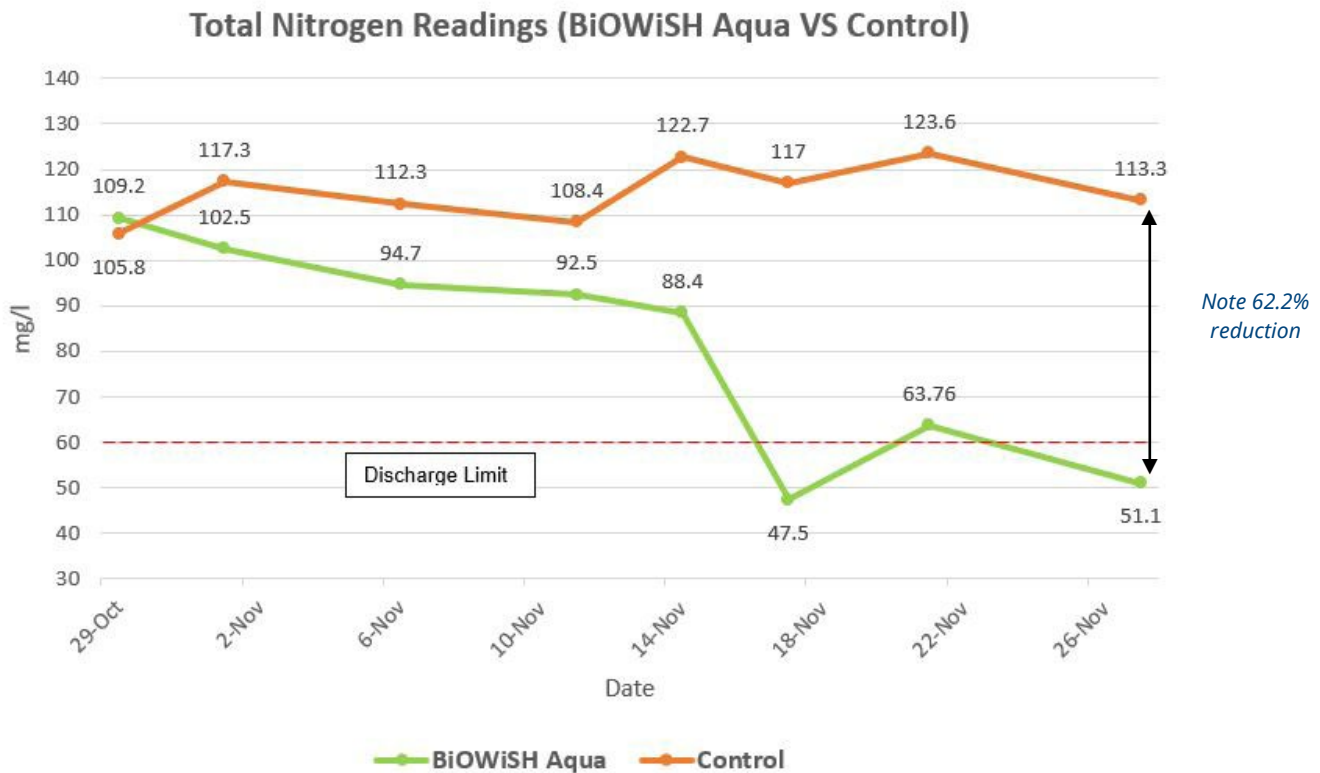
Available Sizes

- 100 g/3.5 oz
- 1 kg/2.2 lbs
- 5 kg/11 lbs
- 10 kg/22 lbs



After Modification – The first aeration tank was modified and converted to anoxic tank to enhance denitrification

Results



Total Nitrogen Readings (BiOWiSH® Aqua vs Control)

The TN levels in the BiOWiSH® treated plant were reduced by 53% and discharge quality was brought into compliance with local discharged limits (< 60 mg/L). In comparison, the control plant did not show any improvement in the TN levels throughout the trial period.

Conclusion

- BiOWiSH® treated effluent showed improved effluent quality.
- The TN levels in the effluent treated with BiOWiSH® Aqua were < 60 mg/L, meeting local discharge limit compliance.
- Plant operations reported BiOWiSH® Aqua delivered significant odor reduction from the plant's multiple unit operations.



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