



## CASE STUDY 4 – SUMMARY

## PULP & PAPER INDUSTRY:

### Reducing Aeration Costs

## APPLICATION

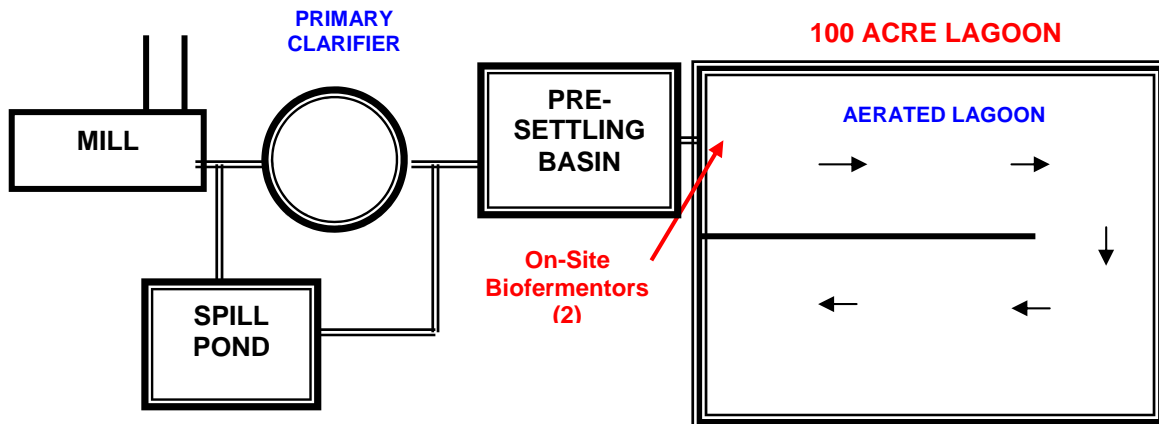
A Pulp & Paper mill wanted to determine whether it was possible to reduce operating costs of aeration by moving the “Pressure Point” of biological activity in the aerated lagoon from the middle of the basin to the front by addition of bacteria using ABS’s proprietary On-site Biofermentation process.

## PROBLEMS

- Manual methods of switching aerators on/off was labor and monitoring intensive;
- Manual methods did not improve biological health;
- Manual methods held no potential for reducing oxygen injection in the river;

## TREATMENT PLANT

The WWTP consists of a Primary Clarifier, Spill Pond, Pre-settling Basin and an Aerated Lagoon. Nutrients (N & P) are fed continuously at the front of the aerated basin. Wastewater from the Pulp mill is high volume, medium organic loading and the spill pond wastewater is low flow, high organic loading. Typical loading rates to the aerated lagoon are 60-70,000 lbs BOD<sub>5</sub> per day.

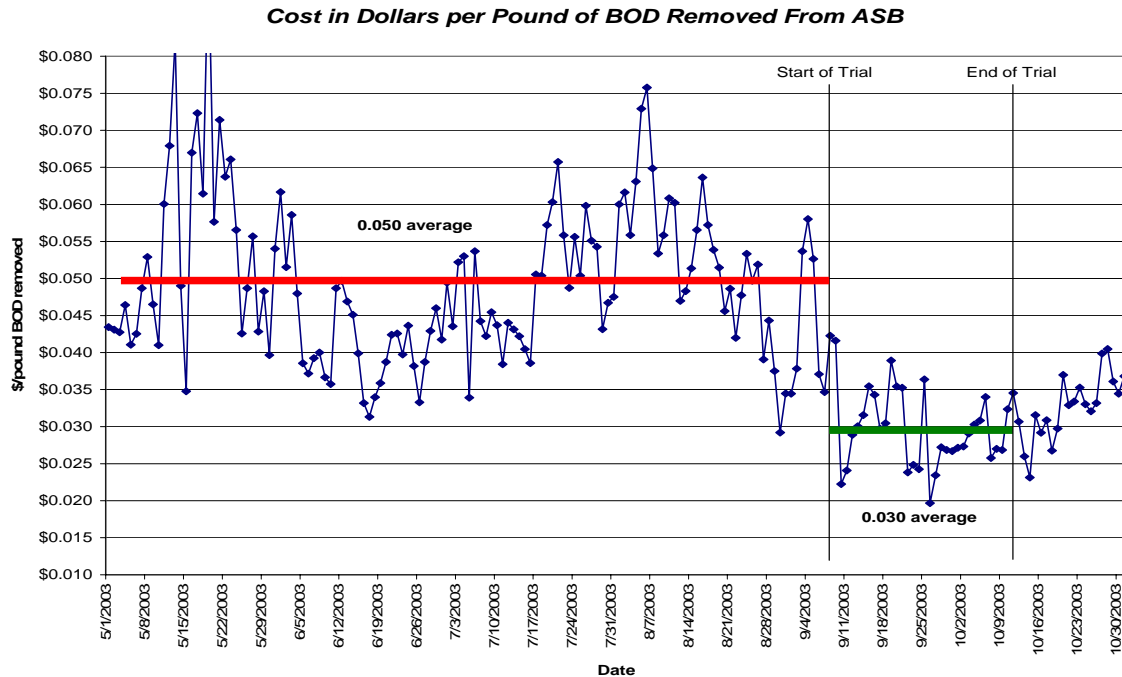


## OBJECTIVES

1. Demonstrate the ability of on-site Biofermentation to reduce aeration costs;
2. Acquire 30 days data;
3. Characterize changes in biological health.

# Reducing Aeration Costs

## COST PER LB BOD REMOVED



## RESULTS

The on-site Biofermentation trial provided the following information to the mill:

- Data demonstrating a reduction of 40% in the cost of aeration per lb/BOD removed;
- Data showing improved biological health overall and movement of the pressure point. Viable counts increased from  $<10^3$  cfu/mL to  $>10^6$  cfu/mL;
- Data showing improved stability despite 30% higher than normal loads during the trial period resulting in prolonged periods exceeding 100,000 lbs/d BOD<sub>5</sub>;
- Operator friendly on-site Biofermentation technology;

## BENEFITS TO THE FACILITY

- 40% reduction in the overall cost of aeration with a projected net benefit in the region of \$15,000 per month annualized savings;
- Improved biological health and stability of the system with 1000-fold increase in viable counts;
- Operator and user friendly technology to implement;