



novozymes®

Rethink Tomorrow

WASTEWATER SOLUTIONS

# Novozymes BioSpikes® 5000

## Lower sludge levels without dredging

BioSpikes® 5000 helped a paper mill increase treatment capacity.

### Benefits

- 0.19 m (0.6 ft) reduction in sludge level
- 41% increase in treatment capacity

### Background

A Southeast fiber mill needed to increase treatment capacity in its wastewater treatment lagoon. The mill discharges into a tidal zone, and the water level averaged 0.61 m (2 ft) in depth. The mill owned a dredge for the back end of the treatment lagoon, but they needed to create more treatment capacity toward the front end of the system. The 15-hectare (37-acre) lagoon treated approximately 45,000 m<sup>3</sup> per day (12 MGD). The lagoon has a design depth of 3.7 m (12 ft).

### Application

Novozymes treated two areas of the front end of the aerated stabilization basin (ASB) with BioSpikes® 5000. There was no record of any previous dredging of this area, and the sludge was thick and compact. An adjacent untreated area was used as a control plot.

## Results

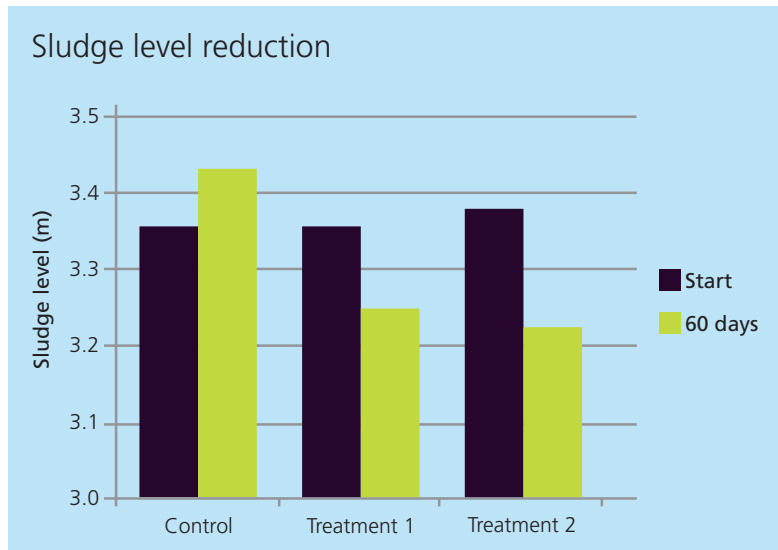


Fig. 1. A consistent sludge level reduction in the two treated areas and an increase in the control plot were observed at the end of the trial period.

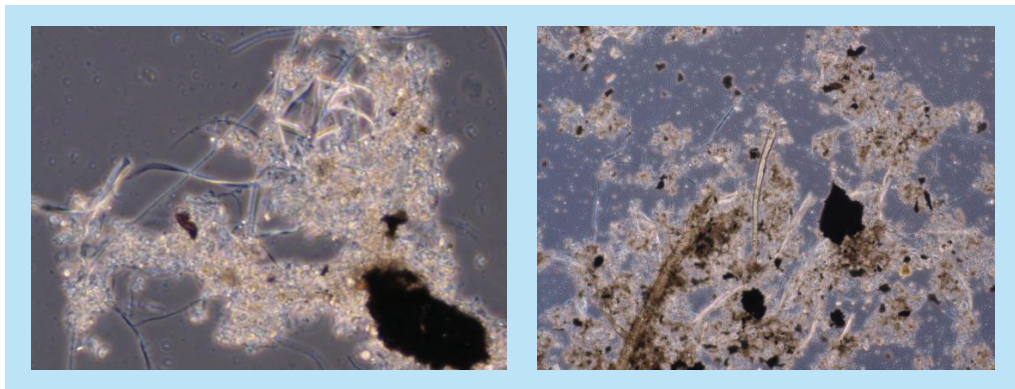


Fig. 2. Shows sludge from a treated portion of the lagoon. The bulk water appears much cleaner, and the floc particles are more compact compared to untreated controls.

## Conclusion

- BioSpikes<sup>®</sup> 5000 reduced sludge levels and increased treatment capacity by 41%
- Observations of settled sludge samples show biological changes as a result of adding BioSpikes<sup>®</sup> 5000

For more information please visit [www.novozymes.com/wastewatersolutions](http://www.novozymes.com/wastewatersolutions)

Novozymes Biologicals, Inc. • 5400 Corporate Circle • Salem, VA 24153 • Tel. 800 859 2972

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