

PROBIOTIC SOLUTIONS®

Reduce Cost and Turbidity in Paperboard Lagoons

CASE STUDY

Location: Kentucky

Problem

A paper mill wastewater facility was treating 940 tons of paper bags, recycled linerboard, and corrugating medium, daily. The mill was interested in improving wastewater operating efficiency and lowering operating expenses over their standard polymer usage. The plant was experiencing filamentous bacteria, solids, and bulking issues in the final clarifier. It was discharging 4,000 pounds of fiber per day into the Ohio river.

The facility was treating 2.8 MGD. Effluent from the mill was distributed between the two anaerobic ponds via a splitter box. The combined effluent from the anaerobic ponds filled an aerobic pond before clarification. After clarification, effluent was discharged to the river and the biosolids were processed by a belt press for thickening before landfill application.

Solution

A 9-month test was developed in which BIO ENERGIZER® was administered to make nutrients more available to wastewater microorganisms, thereby stimulating natural bio-oxidation processes and enhancing sludge reduction. Samples were frequently collected at the effluent to test for BOD, COD, and total suspended solids (TSS).

Results

At the end of the 9-month period, the daily BOD and COD reduction improved (see Table 1).

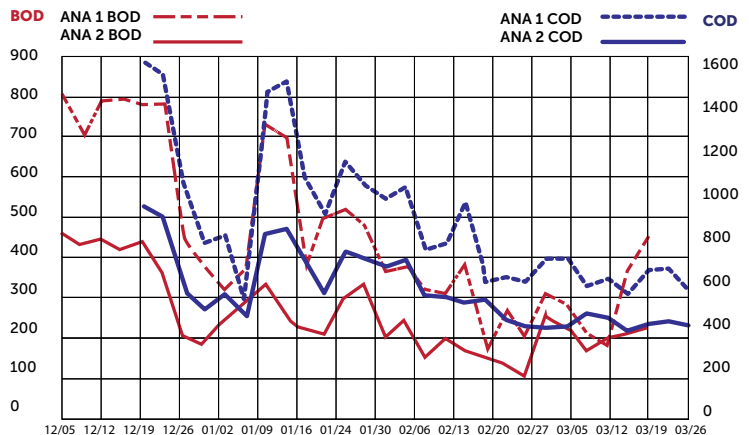
Table 1. Measure Results Before and After BIO ENERGIZER®

Measure	Before BIO ENERGIZER®	After BIO ENERGIZER®
Effluent BOD	500 mg/L	200 mg/L
Effluent COD	900 mg/L	300-400 mg/L
Fiber to OH River	4,000 lbs/day	300 lbs/day
TSS	9%	3.5%

Conclusions

Probiotic Solutions® BIO ENERGIZER® applied over a period of 9 months resulted in reduced filamentous bacteria, bulking issues, and TSS. Turbidity in the effluent dramatically improved with \$50,000 in polymer savings in the final clarifier. Additionally, fiber discharge was reduced, as were the BOD and COD levels in the effluent.

Chart 1. BOD/COD Discharges.



Product Information

Probiotic Solutions® BIO ENERGIZER® is a formulation of nutrients, organic acids, natural biological stimulants, and energy systems that balance the natural microbial ecosystem to increase bio-oxidation capacity in lagoon systems. BIO ENERGIZER® is a broad-spectrum bio-activator containing over 30 essential microbial growth-promoting ingredients.

Wastewater facility operators have been using BIO ENERGIZER® for many years to cut their sludge-hauling costs. For more information, go to www.probiotic.com.

Probiotic Solutions® Product Information

For many years, wastewater operators have continued to use BIO ENERGIZER® to cut sludge hauling costs.

BIO ENERGIZER® is a broad-spectrum bio-activator containing over 30 essential microbial growth-promoting ingredients. By design, BIO ENERGIZER® is a balanced formulation of vitamins, trace nutrients, enzymes, organic acids, and biostimulants that stimulate the existing microbial community to greater metabolic capacity and efficiency. BIO ENERGIZER® is not a bacterium nor an inoculum.

For more information, go to www.probiotic.com.

Operators Using BIO ENERGIZER® Report:

- 1) Increases in BOD removal efficiency.** BIO ENERGIZER® improves treatment plant BOD removal efficiency to increase plant treatment capacity and more easily meet effluent requirements.
- 2) The elimination of expensive dredging costs.** BIO ENERGIZER® converts sludge into gases and water, reducing sludge accumulations. No draining, drying, excavating, or inconvenient down time.
- 3) The reduction of odors and aeration costs.** BIO ENERGIZER® enhances aerobic and facultative biological ecosystems to reduce the production of objectionable and offensive odors and enhances dissolved oxygen levels, which decreases the need for aeration.

BIO ENERGIZER® enhances endogenous respiration for faster and more complete oxidation of sludge into carbon dioxide and water.



Our Probiotic Solutions® Products

Are Highly Efficient and Effective Due to Our Unique Delivery System

Call Toll-Free Today for Your Free Quote and System Evaluation.

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