

PROBIOTIC SOLUTIONS®

Industrial Wastewater Treatment for Plastic Producer

CASE STUDY

Location: Taipei, Taiwan

Problem

A plastic manufacturer in Taiwan needed a new process to efficiently treat elevated incoming COD to comply with stringent EPA regulations for effluent discharge. The plant is an activated sludge treatment system with an influent of approximately 2,000 cubic meters per day (CMD) which is equivalent to approximately 530,000 gallons per day (GPD). The plant was unable to bring the plant into compliance using alternative technologies.

Solution

A 60-day test was developed in which liquid probiotics were introduced into the wastewater stream. BIO ENERGIZER®, BIO FEED, and MICATROL® were administered to make nutrients more available to wastewater microorganisms, thereby stimulating natural bio-oxidation processes and enhancing COD reduction. The test involved an initial dose of 7 ppm for 30 days. After the initial treatment period, the dose was reduced to 3 ppm and watched carefully. Samples were frequently collected at the influent as well as the effluent to test for COD.

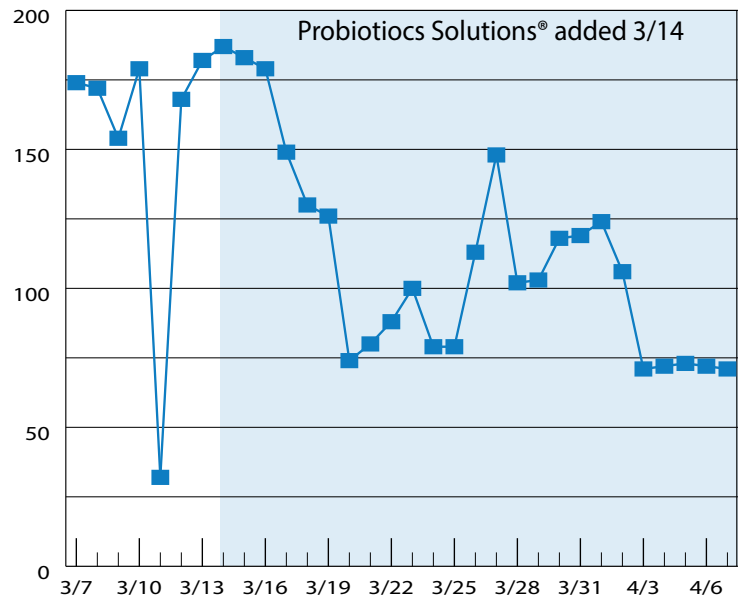
Results

Prior to treatment, plant effluent COD varied widely, but was consistently over 100 mg/L, climbing above 200 mg/L if influent COD rose above 2,500 mg/L. Whenever influent COD exceeded 3,000 mg/L, bio-treatment would be unstable for days to weeks, and the facility would not meet standards.

By the end of a 30-day period, the daily COD reduction had improved (see Chart 1). Effluent COD significantly improved over a period of only 7 days, and after 20 days COD consistently stabilized below 100 mg/L.

On days when influent was higher than normal, effluent increased above 100 mg/L, but returned below 100 mg/L in a short time. Several times, the influent COD rose above 5,000 mg/L, but effluent COD never rose above 150 mg/L and decreased below 100 mg/L within 3 days.

Chart 1. Effluent COD Before and After BIO ENERGIZER®



Conclusions

Probiotic Solutions® BIO ENERGIZER®, BIO FEED, and MICATROL® were able to keep the biome and effluent COD stable under normal operating conditions and during times of system overload. The probiotics applied to the plastic manufacturer’s wastewater treatment system not only improved COD reduction, but also reduced odors, improved sludge settleability, decreased the volume of chemicals required to control pH, and improved turbidity.

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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