

PROBIOTIC SOLUTIONS®

Citrus Plant Wastewater Treatment

CASE STUDY

Location: Florida

Problem

A citrus plant struggled with poor settling in the clarifier of its wastewater treatment, which caused the sludge blanket to remain high. Even at a low flow rate of 1.2 million gallons per day (MGD), the high sludge blanket allowed less than 18" of free board. The slightest flow increase caused solids to carry over the weir with the effluent. Since the citrus plant frequently produced wastewater flows 1.5 to 2.5 MGD, the wastewater treatment plant continued to suffer from solids washout and clarifier effluent total suspended solids (TSS) excursions. The citrus plant wastewater treatment was a 6 million gallon per day (MGD) traditional aeration system with secondary clarification.

Solution

The Wastewater Manager's overall objective was to obtain better settling in the secondary clarifier by improving the quality of the biological sludge. High sludge blankets and solids washouts were occurring frequently. A sludge volume index (SVI) of 200 indicated a poor quality sludge with bulking problems. All attempts to cure the bulking, including return sludge chlorination, provided little relief.

BIO ENERGIZER® was applied at an initial rate of 2 ppm per day for two weeks to activate the biological processes in the treatment system. In this case, the activating dose was 3 GPD. The dosage rate was reduced to 1 ppm or 1.5 GPD after two weeks of application. BIO ENERGIZER® was fed directly from a 55-gallon drum into the influent flume at the aeration basin by means of a chemical injection pump. Return activated sludge (RAS) chlorination was continued.

Plant Operator Dan L.

"Look at this: Now I can decant without solids washout. This plant has never run better. "

Results

Sludge settling rates began to improve after about 30 days of treatment with BIO ENERGIZER®. After 45 days, the SVI had dropped to 95, a reduction of over 50%, compared with pre-application levels. The clarified sludge blanket was down. Clarifier carry-over and solids washout stopped, even at peak flows of 2.5 MGD.

Table 1. Measure Results Before and After BIO ENERGIZER®

Measure	Before BIO ENERGIZER®	After BIO ENERGIZER®
SVI	200	95

Conclusions

A 50% improvement in SVI reduced the sludge blanket and put a stop to TSS excursions into the effluent, improving operation efficiency of the citrus plant wastewater treatment.

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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