



# Micro-Bac Wastewater Treatment

Nature's own intricate recycling system relies on bacteria that are naturally present in the environment to degrade wastes. Most wastewater facilities, as well as ponds, lagoons, and surface impoundments, depend on this natural process to handle waste influent. But when disruptions occur to change the balance of nature, treatment specialists turn to Micro-Bac International, Inc., and its family of microbial products.

## The Products

Micro-Bac Wastewater Treatment, a highly concentrated liquid bacterial product (and the namesake of Micro-Bac International, Inc.) is a biological preparation of microorganisms selected for their superior ability to degrade materials in wastewater influent. The product, which is proprietary to Micro-Bac International, consists of 100% naturally occurring, non-pathogenic bacteria that are safe even in environmentally sensitive areas.

In municipal wastewater systems, Micro-Bac Wastewater Treatment can reduce sludge, decrease accumulations of grease, fats, and oils, and reduce problem odors. Micro-Bac products can also lower BOD, COD, and TSS contaminant levels, improve operating efficiencies, and reduce operating costs.

Ponds, lagoons, and surface impoundments can also benefit from Micro-Bac. Companies that use ponds to treat wastewater must closely monitor their effluent discharges. This means that BOD, TIC, pH, oil and grease, nutrient level, and temperature are regularly measured. A change in any one of these conditions can literally stop the activity in the pond. But Micro-Bac Wastewater Treatment products can effectively handle these sudden shocks.

## Sludge Reductions

Micro-Bac Wastewater Treatment reduces sludge in a variety of wastewater applications.



*Before Treatment*



*After Treatment*

In fact, Micro-Bac International's first commercial application in 1981 was the successful bio-treatment of a 75-acre municipal sludge oxidation pond (see photos). For most ponds and lagoons, this can mean lower operating costs and expanded volume capacity. In municipal wastewater systems, Micro-Bac's sludge-reducing capabilities also promote improved flocculation and settling performance. And Micro-Bac helps control the growth of filamentous bacteria, thus eliminating bulking in clarifiers. Accumulated wastes had reduced the pond's volume by more than half. Over the five-month treatment period, Micro-Bac Waste Treatment reduced the sludge content by more than 50% and returned the pond to full active use.

## **Decreased Accumulation of Grease, Fats, and Oils**

Micro-Bac reduces accumulations of grease, fats, and oils in wastewater systems by digesting and converting them to fatty acids, glycerols, carbon dioxide, and water, thus eliminating the need for chemical emulsification agents and other expensive removal techniques. With Micro-Bac, scum formation is reduced and algae control is increased. And because of the reduced FOG content, there can be appreciable reductions in system line blockages.

## **Odor Control**

Odor problems often plague ponds, lagoons, and wastewater facilities because bacterial digestion normally produces the unpleasant odors of hydrogen sulfide, ammonia, amines, and mercaptan. With the use of Micro-Bac, these odors are easily controlled - usually within 72 hours of the initial inoculation.

## **Contaminant Reduction**

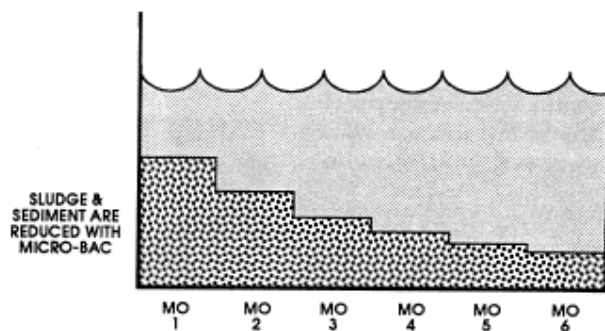
Micro-Bac products help the environment by significantly reducing not only the fats and greases, but also the water's BOD, COD, and TSS levels. And these are benefits we can all enjoy.

## **Cost Savings**

Micro-Bac saves water system operators significant amounts of money by solving expensive operating problems. As FOG problems are brought under control, so are those of BOD, COD, and TSS. As a result, water systems can effectively expand their capacity without actual modification or addition to the physical plant. And equipment should last longer under the lighter loads.

Because Micro-Bac bacteria reduce sludge and function in lower than normal dissolved oxygen (DO) levels, and because they reduce oxygen-blocking surface greases and oils, most facility users can reduce aerator time and power by using Micro-Bac. And that means daily savings to the bottom line.

And when overloads, organic or chemical shocks occur, Micro-Bac can also help to control problems associated with increased accumulated solids, higher contamination levels, and noncompliance with effluent standards. Micro-Bac bacteria are resistant to toxic compounds; and Micro-Bac can handle organic shock loads better than conventional methods by reducing the concentration of organic wastes in a shorter period of time.



## **Easy Application**

When Micro-Bac is added to the wastewater, the bacteria begin working immediately to accelerate the natural bacterial recycling process. And because Micro-Bac bacteria are facultative, they can function with or without oxygen. Due to its broad application characteristics, Micro-Bac can be used in numerous types of wastewater treatment systems without requiring redesign or modification.

## **Environmental Protection**

Over and above the compelling cost benefits, Micro-Bac Wastewater Treatment is also environmentally safe. With Micro-Bac, wastewater systems, ponds, lagoons, and surface impoundments can be treated without chemicals. And this means no added contaminants to pollute our natural resources.

Micro-Bac products are non-pathogenic, non-toxic, and environmentally safe; in fact, these naturally occurring, non-genetically engineered microorganisms are so safe, the EPA has chosen not to regulate them at all. Micro-Bac products pose no hazard to people, down-line systems, equipment, or city wastewater plants. And Micro-Bac products comply with all applicable federal safety regulations.

## **Strong Service and Support**

Unlike most other companies, Micro-Bac International, Inc. has been specializing in bacteria for over twenty years. As a leader in the microbiology industry, Micro-Bac stands behind these products with sophisticated lab facilities, and an ongoing commitment to research and development, proprietary technology for in-house production and quality control, a top notch network of national distributors in in-field service, and the worldwide resources of an organization with operations in the United States, Europe, Central and South America, Asia, Australia, and Canada.



Today, Micro-Bac offers a broad range of microbiological products and services for the petroleum industry, municipal wastewater systems, food preparation and food processing facilities, agricultural industries, and a host of hazardous waste applications. With over twenty years of experience, you can count on Micro-Bac for the quality biological products you need to solve your wastewater problems.