

THE NEXT GEN OF WASTEWATER TREATMENT



Probiotic
SOLUTIONS®

Enhancing Nature's Science™

**PRODUCT
CATALOG**

powered by



**MICRO CARBON
TECHNOLOGY®**

Efficiency & Quality For Less

Contents:

Our Vision, Mission & Values	2
Company Overview	3
History and Background	4
Probiotic Solutions® Today.....	5
Return on Investment	6
The Origins of MCT	7
Symbolism & Benefits of MCT	8
Features, Advantages & Benefits.....	9
MCT: The Catalyst	10
Probiotic Solutions® Products	11–12
Industrial Wastewater.....	13–14
Municipal Wastewater	15–16
Soil & Salt Remediation.....	17–18
Animal Waste Dissolver	19–20
Septic System.....	21
Ultra Efficient Carbon Source	22
Aquaculture	23–24
Bio Augmentation	25–28
Leading Wastewater Engineering.....	29–30
Will Probiotic Solutions® Products Work For Me?.....	31
See the Difference	32
Field Report Sludge Reduction Data	33
Get a Free Personalized Quote.....	34



Probiotic
SOLUTIONS®

Proud Member of the BHN Family of Brands

BIO
HUMA
NETICS™
Incorporated
Harnessing Nature's Science™

OUR VISION

“Bio Huma Netics, Inc. (BHN) to be the global leader in providing sustainable solutions to the world’s environmental challenges for agriculture, horticulture, turf & ornamentals, water & wastewater, and associated engineered technologies through its constantly improving Micro Carbon Technology®.”

OUR MISSION

“BHN provides technologically advanced and ecologically sustainable quality products and services that replenish the earth by restoring water quality, reviving soil fertility, renewing food and fiber value, and refocusing engineered technologies that minimize human environmental impact and enhance the quality of life worldwide.”

OUR OPERATING VALUES

“BHN treasures **quality relationships** by honoring and valuing each person’s contributions toward success.

BHN asserts that **honesty and integrity** are the foundation for successful business and communications.

BHN focuses on “**win-win**” **outcomes** that foster a culture of synergy and mutual success.

BHN believes in an **abundance mentality**—resources properly managed allow everyone to share in the fruits of the harvest.”

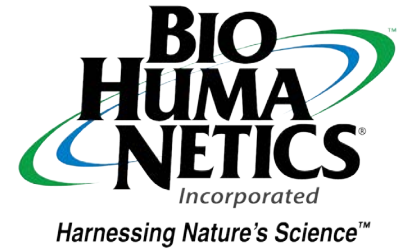


Company Overview

Founded as Sunburst Mining Company, Inc. in Mesa, Arizona, in 1973, Bio Huma Netics, Inc. (BHN) claims the uniqueness of “complexing” nutrients and other ingredients with very small organic molecules. These small molecules have come to be called by the company, “Micro Carbon Technology®” (MCT). MCT is what makes BHN’s liquid plant nutrition and specialty products much more effective and efficient than any other technology source on the market. Currently headquartered in Gilbert, Arizona, BHN offers over 70 sustainable liquid solutions and more than 10 bioaugmentation products. Each formulation is designed to increase the efficiency and productivity for wastewater treatment and environmental applications under the **PROBIOTIC SOLUTIONS®** brand, agriculture under the HUMA GRO® brand, and for turf & ornamentals under the HUMA GRO® TURF brand. BHN also offers Sustainable Smart SystemsSM technology infrastructure solutions with its wholly owned subsidiary engineering company OPUS-PRIME®.

Bio Huma Netics Defined

The name “Bio Huma Netics” signifies the study and application of the relationship (Netics) between the Earth (Huma) and living organisms (Bio).



History and Background

In 1973, Dr. Jordan Smith, Mr. Don Organ, and Mr. Delworth Stout made the first agricultural application of a unique oxidized humate material from a company-owned mine in the state of Idaho in the United States and called their company Sunburst Mining Company. This material is rich in natural organic compounds and minerals laid down over eons of time in fresh water. When applied to farm soils, it improved soil conditions, accelerated nutrient uptake, enhanced crop vigor, and increased yields.



Mr. Donald Organ



Dr. Jordan Smith



Mr. Delworth Stout

By 1980, Sunburst had developed a proprietary process to extract organic acids, valuable minerals, and other organic components from this material and updated the corporate name to Bio Huma Netics, Inc. (BHN). This extract contains the base of BHN's unique Micro Carbon Technology® (MCT) that is the foundational ingredient used in all HUMA GRO®, HUMA GRO® TURF, and **PROBIOTIC SOLUTIONS®** products. MCT is combined with other beneficial components to create over 80 products the company produces today to improve soils, promote plant nutrition, manage growth, protect against pests, and make wastewater treatment more effective and efficient.





Probiotic Solutions® Today

PROBIOTIC SOLUTIONS® is BHN's line of bioremediation products that are used for soil remediation & wastewater treatment.

In wastewater, our bioremediation products improve water quality, cut down on odor, break down FOGs, reduce sludge, and control BOD and COD levels naturally without introducing harsh chemicals into the environment. Wastewater, in its untreated form, usually does not meet all of the conditions for optimal microbial activity that leads to the complete breakdown of organic matter. When microbial activity is not optimized, odor gets out of control, sludge accumulates, and COD/BOD/FOG levels fall out of compliance with government regulations.

PROBIOTIC SOLUTIONS® products increase the production efficiency of biological wastewater treatment facilities by reducing biosolids more quickly, improving settleability and turbidity, and raising dissolved oxygen levels and overall water quality. This all translates to significant cost-savings in a number of operational areas, such as aeration, sludge dredging, handling and hauling, and more. Other benefits include less odor, reduced foaming, and maximized use of lagoons, aeration basins, digesters, and facilities with less downtime and greater capacity.

In contaminated soils, our bioremediation products improve overall soil vitality and health, while reducing chemical and petroleum contamination levels naturally without introducing harsh chemicals into the environment. Contaminated soil usually does not meet all of the conditions for optimal microbial activity that leads to the complete breakdown of the soil pollutants. When microbial activity is not optimized, contaminants are not reduced to meet strict governmental regulations. PROBIOTIC SOLUTIONS® products increase the efficiency and diversity of soil microorganisms to utilize the contaminant as a "food source," thereby more quickly breaking down the contaminant in the soil while improving soil texture and structure, aeration, water-holding capacity, and overall soil health. That all translates to significant cost-savings in a number of operational areas, such as reduced energy to perform the remediation and disposal costs of the remediated soil. With PROBIOTIC SOLUTIONS®, the overall soil health and quality are improved naturally, being more environmentally friendly and sustainable than typical remediation techniques.

Proven Technology

Research & field studies show our products delivered by MCT are more efficient than other similar products.

Thus producing better results with less product input.



Globally Trusted

There are many countries across the world that now proudly use Probiotic Solutions® products.

All our products are manufactured and complexed in our Arizona facilities.



Enhancing Nature's Science™



Mutual Success

We believe that our success and growth over the years is due to our loyal customers and trustworthy employees.



MAXIMIZE Your Investment...

with PROBIOTIC SOLUTIONS®



Whatever your wastewater or soil remediation issue, you can count on PROBIOTIC SOLUTIONS® liquid products to deliver high-quality water treatment and soil remediation at a much lower cost than most conventional products or engineered solutions. Each and every one of our high-quality products include our proprietary Micro Carbon Technology® as a base for ultra-efficient delivery and absorption. This improved efficiency benefits your bottom line by delivering effective treatment to your plant, lagoon, pond, or contaminated soil remediation project, at lower costs than expensive alternatives.

- Exclusive Micro Carbon Technology®
- Higher Efficiency Means Lower Costs
- Reduces Operational Costs
- Consistently Meet Government Regulations and Avoid Fines
- Improves Water Quality
- Lowers BOD/COD
- Reduces FOG
- Speeds Bioremediation Time
- Restores Soil Vitality & Health



What is Micro Carbon Technology®

Micro Carbon Technology® (MCT) is a proprietary blend of extremely small organic carbon- and oxygen-rich molecules that act as a source of carbon that **greatly enhance existing microbial activity in wastewater**. It is formulated from our exclusive company-owned, processed, and refined leonardite that is composed of organic and mineral-rich compounds.

Origins of Our Technology

The beginning of MCT can be traced back to 1973, when our scientists discovered a unique organic material that, when applied to farm fields, improved both the soil's fertility and the plants' nutrient uptake. We now know this material to be mainly composed of a very high-quality leonardite. Our leonardite is a **soft, humic material, rich in carbon**, that was never compressed or heated to become coal.

Unique Proprietary Process

Over the years since the discovery of the leonardite deposit, our scientists are continuously improving the time-tested process that refines our leonardite into small carbon- and oxygen-rich organic molecules. These molecules act as an ultra-efficient vehicle to move essential elements into water biological systems. Using MCT, operators **can achieve more with less!** Our products have a **positive environmental impact** by promoting microbial development and species diversity. **These benefits dramatically improve wastewater treatment efficiency and effectiveness!**

The Base of All Our Products

Using Micro Carbon Technology® (MCT) as the base, Bio Huma Netics, Inc. (BHN) has developed highly efficient products in the PROBIOTIC SOLUTIONS® brand for nearly every wastewater and bioremediation application. These highly efficient products do the following:

- They create an active, healthy, diverse microbial population for improved microbial activity and efficiency.
- They provide biochemically complexed nutrients for effective treatment and high quality effluents.
- They control odors, reduce BOD/COD & FOG, decrease sludge, and eliminate foaming.
- They allow plant operators the option of a natural enhancement to biological wastewater treatment.
- They promote a high quality treatment that enhances the owners', operators', and managers' bottom line.
- They provide rapid bioremediation of contaminated soil, increasing the thru-put capacity.

MCT-based products have a positive environmental impact that promotes biological soil remediation and beneficial microorganisms in wastewater. They reduce the need for expensive engineered alternatives and create maximum results!

Origins of



MICRO CARBON TECHNOLOGY™

Delivering Nature's Science™

Micro Carbon Technology® is our special foundational ingredient for all products produced by Bio Huma Netics, Inc. This Micro Carbon Technology® adds efficiency and effectiveness to each product and generally makes PROBIOTIC SOLUTIONS® products several times more efficient than conventional chemicals and additives.

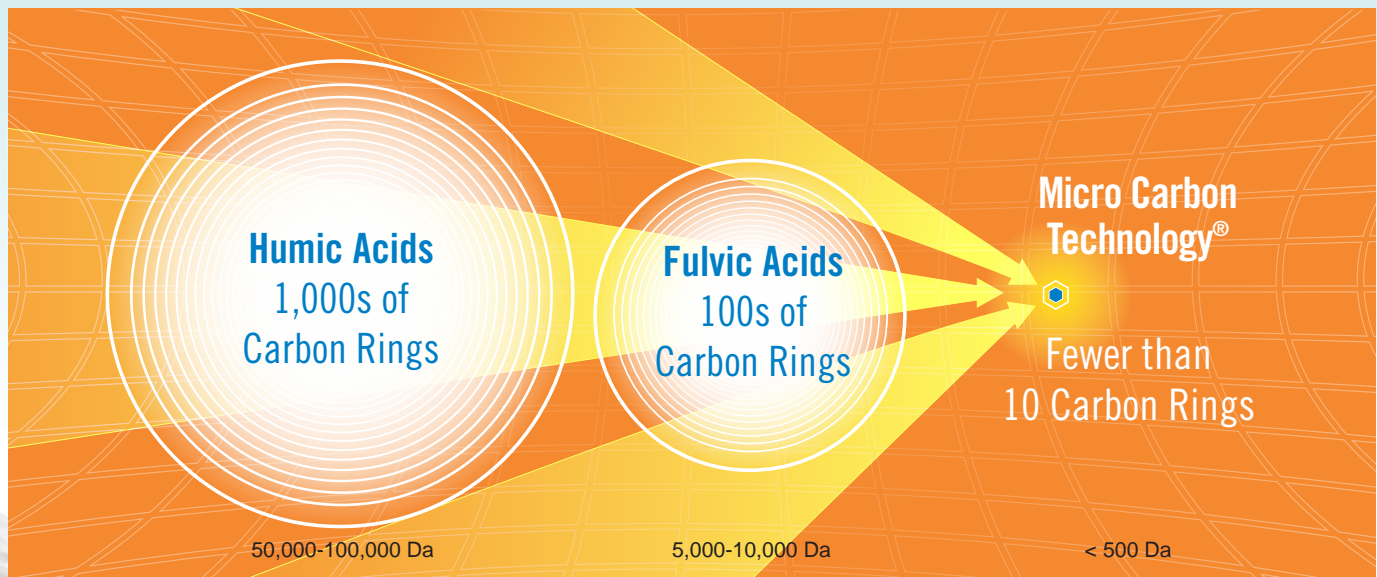
Benefits of Micro Carbon Technology®

- **Non-Selective**—Complexes with both positive and negative ions (anions and cations).
- **Very Efficient**—More efficient than conventional chemical additives and more effective than other biostimulants.
- **Versatile Delivery**—Can be applied manually or automatically via pumping or spraying systems.
- **Micro Molecule**—Very small molecule that adds effectiveness to nutrients and improves bioavailability.
- **Highly Oxidized**—Many chemically active carbon-based functional groups.
- **Greater Surface Area**—Higher number of complexing sites due to fractioning, splitting, or refining of complex carbon-rich molecules.

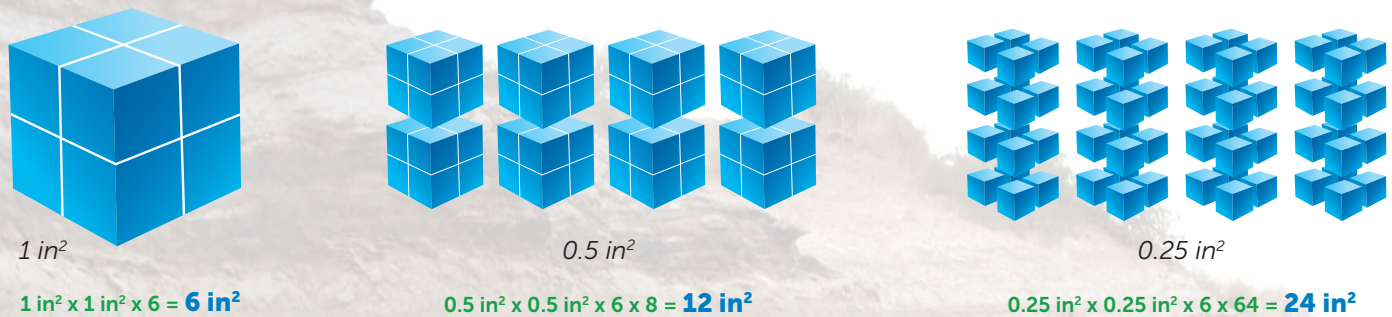
How does MCT produce such compelling results?

The carbon molecule size makes the difference.

The significantly smaller particle mass allows nutrients to be transported through the cell wall at a higher rate.



MCT produces organic matter with greater specific surface area.



Greater specific surface area = incredibly more efficient products.

What are the key benefits of Micro Carbon Technology?

NON-SELECTIVE: works with both metallic (+) and non-metallic (-) ions.

VERSATILE DELIVERY: hand application, spray, or via simple pumping system.

LOW ENERGY: requires less effort from the microorganisms, providing more energy to break down waste.



FEATURES	ADVANTAGES	BENEFITS
Unique Vehicle	Tiny molecules enter and transport nutrients throughout plant/lagoon or soil structure.	Saves money in treatment and hauling costs. Get more for less.
Optimal Treatment	Complete treatment package that accelerates treatment effectiveness. Better microbial health.	Uses fewer chemicals, costs less money, and is more environmentally friendly. True sustainability that gives more alternatives.
Liquid Versatility	Can be applied in multiple types of application methods. Can be sprayed on surface or injected into all types of influent waters or soil types.	Flexibility. Easily Mixes. The right application method to meet current practices.
Concentrated	Smaller volume needed to treat wastewater, sludge, or soil. Easier to ship.	Less shipping costs. Lower application rates. Less handling.
Smaller Molecule	Facilitates the absorption of essential mineral nutrients from sludge and treatment systems. Stabilizes nutrients so they are not tied up.	Better performance from nutrients applied.
Soil Remediation	Works to transform unusable soil to usable, fertile soil. Breaks down hydrocarbons.	Soil becomes usable and fertile again.
More Availability	Resists tie-up and releases nutrients that are blocked.	Better results from your wastewater treatment, soil remediation, or environmental investment.
Eco-Friendly	Reduces sludge, BOD/COD, FOGs, and soil contamination naturally without harsh alternatives.	A more stable, sustainable, and naturally improved environment.



Micro Carbon Technology® The Catalyst for:

DIVERSE INDUSTRIES



- Food Processing
- Municipal Wastewater
- Pulp & Paper
- Chemical Refineries
- Animal Waste
- Soil Remediation
- Industrial Composting

EFFICIENT PLANTS



- Increasing Plant Capacity
- More Solids Destruction
- Lowering BOD/COD
- Better Settleability/SVIs
- Improving Decant
- Eliminating Foaming
- Reducing Operating Costs/Energy
- Less Than 1/10th the Cost of Dredging
- Lower Than 1/100th the Cost of New Facilities

CLEAN LAGOONS & PONDS



- Improving Water Quality
- Reducing Sludge/Solids
- Reducing Fats, Oils & Grease (FOG)
- Controlling Offensive Odors
- Lowering BOD/COD
- Avoid Dredging Costs
- Meet NPDES Permit
- Reducing Tipping Fees & Fines
- Less Hauling Costs

SOIL BIOREMEDIATION TREATMENT



- In-situ/Ex-situ Biological Treatment
- Minimal Mechanical Treatment
- Breaking Down Hydrocarbons and Chemical Compounds
- Transforming Soil to Usable, Fertile Soil
- Reducing Salt Toxicity

Probiotic Solutions® Products with MCT



INDUSTRIAL WASTEWATER

BIO ENERGIZER®
SUPER PHOS®
SUPER NITRO®
MICATROL®
NUTRIPLEX®
X-TEND®
MAX-PAK®

MUNICIPAL WASTEWATER

BIO ENERGIZER®
MICATROL®
BIO GENESIS®
MAX-PAK®

ULTRA EFFICIENT CARBON SOURCE

HUMA BURST®
HUMA PRO®
X-TEND®

AQUACULTURE

PHYTO-MAX™
BIO DREDGE®
SUPER PHOS®
MAX-PAK®

SALT REMEDIATION

ENCAPSALT®

SEPTIC SYSTEM

SEPTICURE®

It's Time to **Rethi**

SOIL REMEDIATION

BIO ENERGIZER®
MICATROL®
NUTRIPLEX®
KLEENUP™
SUPER NITRO®
MAX-PAK®
BIO GENESIS®
MICROPLEX™ HC

LIVESTOCK WASTE MANAGEMENT

LIQUIDATOR®
BIO ENERGIZER®
MICATROL®
MAX-PAK®

OPUS-PRIME® CIVIL & ENVIRONMENTAL ENGINEERING SERVICES

BIOAUGMENTATION

MICROPLEX™ JS
MICROPLEX™ N
MICROPLEX™ DN
MICROPLEX™ FLP
MICROPLEX™ FL
MICROPLEX™ LM
MICROPLEX™ HS
MICROPLEX™ BP
MICROPLEX™ HC
MICROPLEX™ HCD
MICROPLEX™ OD
MICROPLEX™ C

nk Bioremediation

INDUSTRIAL WASTEWATER

Pulp & Paper, Petrochemicals



"Feeding Pulp & Paper Microbes Has Never Been More Efficient"

BIO ENERGIZER®

Using Micro Carbon Technology®, BIO ENERGIZER® efficiently reduces odor, BOD/COD, and sludge while improving settleability, turbidity, and overall water quality. This improvement leads to improved water reuse viability within industrial facilities. BIO ENERGIZER® is a scientific formulation of organic acids, buffers, natural biological systems, nutrients, and energy systems that balance the natural microbial ecosystem

to increase bio-oxidation of wastewater. The increased bio-oxidation of wastewater reduces sludge accumulation, turbidity, and odor levels in wastewater treatment plants, lagoons, and ponds and reduces solids.

SUPER PHOS®

In response to the reactivity of phosphorus in wastewater, Probiotic Solutions® developed a specially complexed phosphorus product called SUPER PHOS®. Over the years this product has proven to save money and improve plant performance by maximizing phosphorus bioavailability with minimum phosphorus input.

SUPER PHOS® is an essential component of energy-carrying phosphate compounds (ATP & ADP), nucleic acids, several essential coenzymes, and phospholipids. SUPER PHOS® starts out as white phosphoric acid that is pre-complexed with organic acids to ensure maximum availability to microorganisms. SUPER PHOS® is many times more bio-available than regular phosphorus compounds because it is protected from complexing with other ions in water. SUPER PHOS® has proven itself in wastewater applications where maximum performance is required and minimum effluent phosphorus concentrations are demanded.

Typically 1/5th to 1/10th the amount of SUPER PHOS® is used compared with common grade agricultural type phosphoric acid sources. This means reduced costs and better bioavailability that result in better plant performance.

SUPER NITRO®

SUPER NITRO® with MCT is a complexed nitrogen source that can be applied by spray or pump application. It is a super-efficient and bioavailable nitrogen source for microorganisms in nitrogen deficient wastewaters. Typically 1/3 to 1/2 the amount of Super Nitro® is used compared with common grade agricultural type nitrogen sources.

Breaking Down Chemicals and Petroleum Has Never Been Easier



MICATROL®

A probiotic formulation of complexing agents, organic acids, buffers, nutrients, and energy systems that enhances biological degradation. MICATROL® catalyzes the breakdown of chemical and petroleum compounds and promotes microbial proliferation, causing biodegradation into harmless byproducts of carbon dioxide, water, and humus. It effectively detoxifies chemicals in wastewater.

NUTRIPLEX®

NUTRIPLEX® is a probiotic formulation of complexing systems, organic acids, nutrients, natural biological systems, buffers, and energy systems that enhance biological degradation. NUTRIPLEX® is a nutrient-rich formulation containing complexed and bio-activated sources of nitrogen, potassium, and phosphorus with trace amounts of iron, manganese, and zinc. It provides nutrients and energy to support probiotic bioremediation systems.

X-TEND®

X-TEND® is a concentrated MCT product with higher levels of organic acids and metabolites. X-TEND® is formulated to be blended with liquid nitrogen or potassium nutrient sources or to be impregnated onto nitrogen (urea) and phosphorus (P_2O_5), which extends the effectiveness of the nutrient source.

MAX PAK®

MAX PAK® complexed with MCT ensures efficient and effective uptake of this broad-spectrum micronutrient formulation containing complexed and bio-activated sources of zinc, sulfur, manganese, iron, copper, cobalt, molybdenum, and boron.

MUNICIPAL WASTEWATER SLUDGE, ODOR, BOD/COD, FOGs REDUCER



Before



After

BIO ENERGIZER®

Using Micro Carbon Technology®, BIO ENERGIZER® efficiently reduces odor, BOD/COD, FOG, and sludge while improving settleability, turbidity, and overall water quality. This improvement leads to improved water reuse within the municipality. BIO ENERGIZER® is a scientific formulation of organic acids, buffers, natural biological systems, nutrients, and energy systems that balance the natural microbial ecosystem, increasing bio-oxidation of wastewater. The increased bio-oxidation of wastewater reduces sludge accumulation, turbidity, and odor levels in wastewater treatment plants, lagoons, and ponds. This same bio-oxidative capacity significantly reduces grease problems in sewer lines and lift stations.

MICATROL®

A probiotic formulation of complexing agents, organic acids, buffers, nutrients, and energy systems that enhances biological degradation. MICATROL® catalyzes the breakdown of chemical and petroleum compounds and promotes microbial proliferation, causing biodegradation into harmless byproducts of carbon dioxide, water, and humus. MICATROL® effectively detoxifies chemicals in the wastewater stream.

Fighting Sludge Starts From the Bottom Up™



Before



After



BIO GENESIS®

PROBIOTIC SOLUTIONS® BIO GENESIS® 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 activated sludge systems. BIO GENESIS® stimulates beneficial bacteria in activated sludge systems, improving overall operational stability. BIO GENESIS® reduces operating costs by lowering BOD/COD, reducing solids generation, and improving settleability while controlling filamentous bacteria and reducing FOG.

MAX PAK®

MAX PAK® complexed with MCT ensures efficient and effective uptake of this broad- spectrum micronutrient formulation containing complexed and bio-activated sources of zinc, sulfur, manganese, iron, copper, cobalt, molybdenum, and boron.

SOIL REMEDIATION



BIO ENERGIZER®

Using Micro Carbon Technology®, BIO ENERGIZER® promotes microbial activity in the soil. It's a scientific formulation of organic acids, buffers, natural biological systems, nutrients, and energy systems that balance the natural microbial ecosystem to increase bio-oxidation of chemical contamination. Furthermore, BIO ENERGIZER® increases the bio-oxidative capacity of the microbial population to speed the natural degradation time frame.

MICATROL®

A probiotic formulation of complexing agents, organic acids, buffers, nutrients, and energy systems that enhances biological degradation. MICATROL® catalyzes the breakdown of chemical and petroleum compounds and promotes microbial proliferation, causing bio-degradation into harmless byproducts of carbon dioxide, water, and humus. MICATROL® effectively detoxifies chemicals in the soil.

NUTRIPLEX®

NUTRIPLEX® is a probiotic formulation of complexing systems, organic acids, nutrients, natural biological systems, buffers, and energy systems that enhances biological degradation. It provides essential nutrients and energy to the microorganisms to support probiotic bioremediation systems in the soil.

KLEENUP™

KLEENUP™ is a soil surfactant with MCT that promotes a favorable soil environment, improves aeration, and increases the water-holding capacity of soils. Through the exchange capacity, KLEENUP™ sequesters heavy metals and breaks carbon chains to speed up the degradation and breakdown of harmful and toxic chemical residues.

SUPER NITRO®

SUPER NITRO® with MCT is a complexed nitrogen source that can be applied via spray or pump application. It is a super-efficient and bioavailable nitrogen source for microorganisms in nitrogen deficient contaminated soils.

Creating a Healthy & Sustainable Soil



ENCAPSALT®

ENCAPSALT® combines surfactants in an MCT base that helps diminish salt stress in the root zone. It aids with water penetration and resolves crusty, hard soils. ENCAPSALT® is also used to complex the salts that are present in the soil, making them less available to cause stress to the plant.

MAX PAK®

MAX PAK® complexed with MCT ensures efficient and effective uptake of this broad-spectrum micronutrient formulation containing complexed and bio-activated sources of zinc, sulfur, manganese, iron, copper, cobalt, molybdenum, and boron.

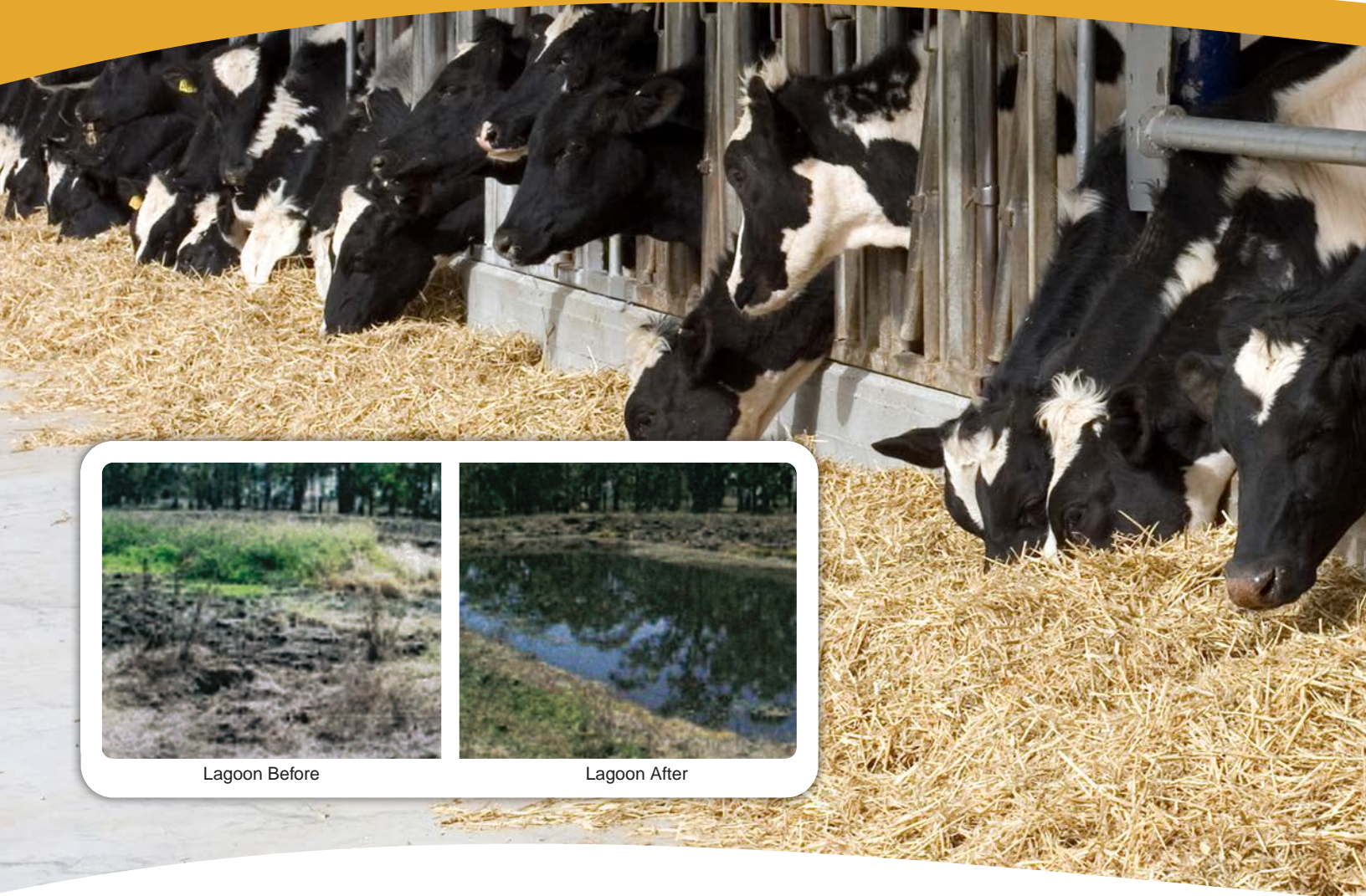
BIO GENESIS®

BIO GENESIS® improves soil structure and stimulates the activity of beneficial bacteria in the soil. This balances the carbon-oxygen ratio, creating a carbon-rich soil that allows the bacteria to be more active. BIO GENESIS® increases availability of nutrients blocked by mineralization in soils. BIO GENESIS® also helps to diminish the stress of saline soils and pH extremes.

MICROPLEX™ HC

MICROPLEX™ HC is a highly concentrated natural blend of bacteria that degrades a wide variety of short- and long-chain petroleum hydrocarbons. This includes crude oil, fuel oil, diesel, BETEX, acetone, glycols, naphthalene, kerosene, solvents, anti-freeze, aromatics, and many others. This product degrades the hydrocarbons into cell mass, CO₂ and H₂O. The organisms are non-pathogenic.

LIVESTOCK, DAIRY, & POULTRY WASTE MANAGEMENT



Lagoon Before

Lagoon After

LIQUIDATOR®

LIQUIDATOR® complexed with our Micro Carbon Technology®, works by balancing the natural biology of the lagoon or waste pit. Rapid microbial action digests solids and controls odors. Solids are liquefied into a healthy liquid compost. The water quality and turbidity is improved, which increases the reuse potential. Manure nitrogen is converted to organic nitrogen that is more stable in soil root zone and is less subject to leaching. In addition, LIQUIDATOR® increases the biological activity in the soil, improving nutrient conversion for the plants irrigated by the treated wastewater.

LIQUIDATOR® Applications:

- Digest sludge/solids
- Decrease agitation time
- Compost nutrients for crops
- Reduce pump-plugging problems
- Control noxious odors
- Buffer salts
- Improve farm soil conditions
- Reduce mosquitoes & flies
- Cut dredging costs
- Reduce nitrate problems
- Simplify irrigation & hauling

Keep Livestock Environments Clean the Safe Way



BIO ENERGIZER®

Using Micro Carbon Technology®, BIO ENERGIZER® efficiently reduces sludge, odor, BOD/COD, and FOG. It's a scientific formulation of organic acids, buffers, natural biological systems, nutrients, and energy systems that balance the natural microbial ecosystem to increase bio-oxidation of wastewater. Furthermore, BIO ENERGIZER® efficiently reduces sludge and odor levels in wastewater lagoons and ponds.

MICATROL®

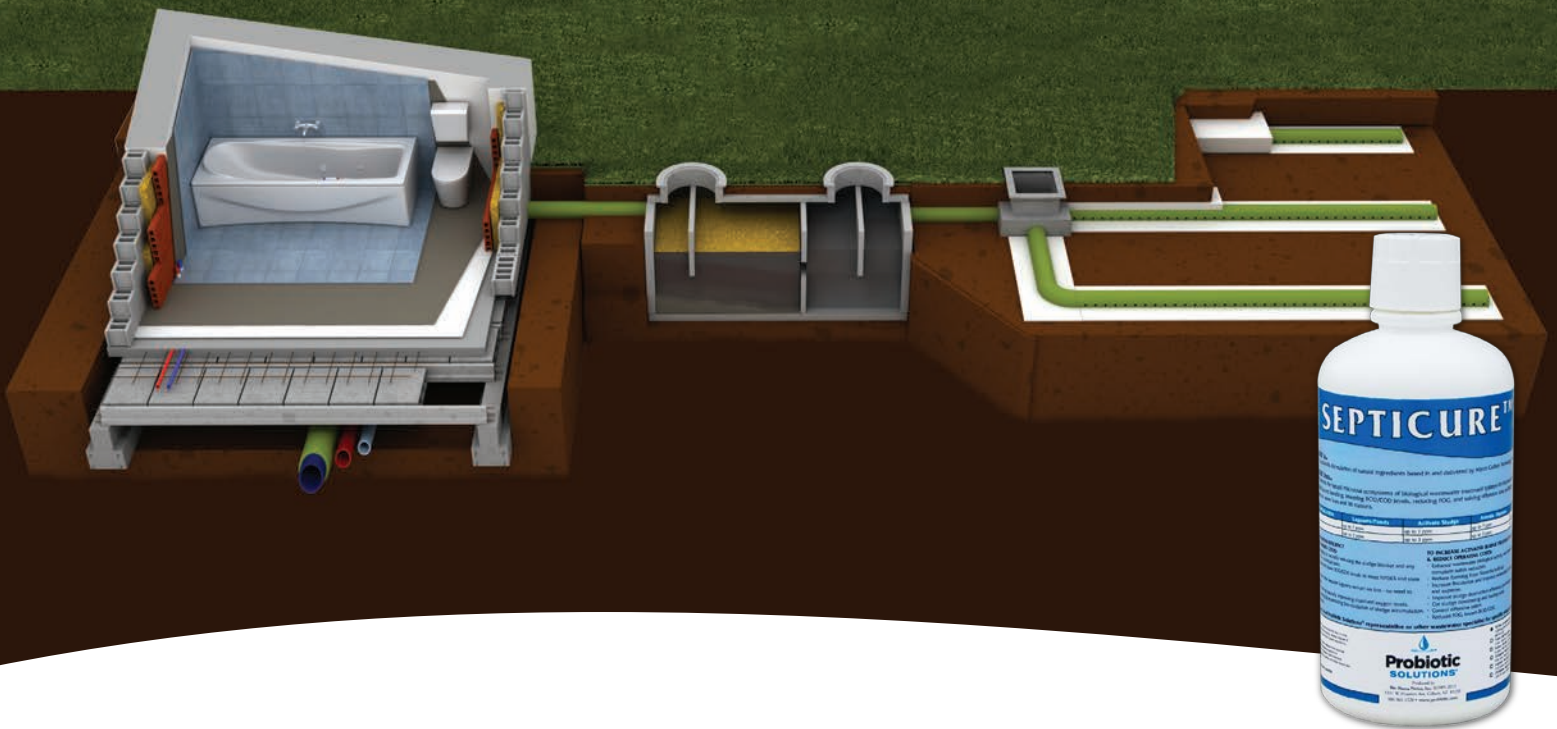
A probiotic formulation of complexing agents, organic acids, buffers, nutrients, and energy systems that enhances biological degradation. MICATROL® catalyzes the breakdown of clean-in-place chemicals as well as petroleum-based compounds and promotes microbial proliferation causing biodegradation into harmless byproducts of carbon dioxide, water, and humus. MICATROL® effectively detoxifies chemicals in the soil and water.

MAX PAK®

MAX PAK® complexed with MCT ensures efficient and effective uptake of this broad-spectrum micronutrient formulation containing complexed and bio-activated sources of zinc, sulfur, manganese, iron, copper, cobalt, molybdenum, and boron.

SEPTIC SYSTEM

*Reduce Maintenance Headaches
Renew Your System With Ultra-Effective Additive*



SEPTICURE®

SEPTICURE® is a scientific formulation of organic acids, buffers, natural biological systems, nutrients, and energy systems based on our Micro Carbon Technology® that balance the natural microbial ecosystem to increase bio-oxidation of wastewater within the septic system. SEPTICURE® prevents septic systems backups and failures, reduces sludge build up in the tanks and in the leach field pipelines, further reducing headaches and improving the water quality being delivered to the environment. SEPTICURE® also improves the drain field capacity. The reduction of solids helps to alleviate system overloading while significantly reducing the need to pump out accumulated bio-solids.

ULTRA EFFICIENT CARBON SOURCE



HUMA BURST®

HUMA BURST® is a dry, uniform, granulated leonardite from a highly oxidized naturally occurring carbon-rich material. For the treatment of carbon-depleted wastewater and improved microbial balance within the wastewater system.

HUMA PRO®

HUMA PRO® complexed with MCT is an activated liquid Humic Acid source derived from a highly oxidized naturally occurring carbon and mineral deposit for carbon deficient wastewater treatment systems. HUMA PRO® delivers the necessary carbon to ensure a healthier microbial population to improve the nitrogen-removing capacity of the system.

X-TEND®

X-TEND® is a concentrated MCT product with higher levels of organic acids and metabolites. X-TEND® is formulated to be blended with liquid nitrogen or potassium nutrient sources or to be impregnated onto nitrogen (urea) and phosphorus (P_2O_5) to extend the effectiveness of the nutrient source.

AQUACULTURE



PHYTO-MAX™

PHYTO-MAX™ fish pond fertilizer and algae nutrition product is used to create healthy green phytoplankton blooms in fish ponds and lakes. PHYTO-MAX™ uses a balanced nutritional strategy to prevent sudden phytoplankton die-off and avoid bluegreen algae blooms caused from high nutrient loads and nutrient imbalances. This balanced mixture of micronutrients eases phosphorus release from pond bottoms, creating a stable phytoplankton bloom. Unlike regular pond fertilizers, PHYTO-MAX™ accelerates the pond's/lake's naturally occurring bio-oxidative processes to consume organic materials, prevent sludge buildup, and manage nutrient overload in fish ponds and lakes.

BIO DREDGE®

BIO DREDGE® is a probiotic formulation of organic acids, natural biological systems, buffers, nutrients, and energy systems that enhances biological degradation. It is non-toxic, concentrated, and easy to use. BIO DREDGE® oxidizes tank/pond accumulated sludge into carbon dioxide through an innovative "wet burn" process. BIO DREDGE® helps balance the microbial ecosystem of the indigenous microbes, causing biodegradation of the carbonaceous materials to harmless gases, water, and humus. BIO DREDGE® also reduces noxious odor produced from organic waste decomposition, while elevating dissolved oxygen levels.

*Create a Balanced Water
Eco-System for Nature to Thrive*



SUPER PHOS®

SUPER PHOS® is an essential component of energy-carrying phosphate compounds (ATP & ADP), nucleic acids, several essential coenzymes, and phospholipids. SUPER PHOS® starts out as white phosphoric acid (tech grade) that is pre-complexed with organic acids to ensure maximum bioavailability of phosphorus to algae through our Micro Carbon Technology® to improve the vitality of the algae within the pond. SUPER PHOS® is many times more bio-available than regular phosphorus compounds because it is protected from complexing with other ions. This means reduced costs, lower inputs, and better bioavailability that result in a better algae bloom.

MAX PAK®

MAX PAK® complexed with MCT ensures efficient and effective uptake of this broad-spectrum micronutrient formulation containing complexed and bio-activated sources of zinc, sulfur, manganese, iron, copper, cobalt, molybdenum, and boron.

BIO AUGMENTATION



**Jump Start Your System
Speeds Nutrient Removal**

MICROPLEX™ JS

MICROPLEX™ JS is a two-part formulation of a live synergistic blend of natural, Class I bacteria, specifically chosen for their ability to rapidly degrade solids, fats, lipids, proteins, detergents, hydrocarbons, and other compounds. MICROPLEX™ JS is formulated to help inoculate new or recovering wastewater systems, as well as maintain the existing microbial ecosystem to increase bio-oxidation capacity. MICROPLEX™ JS reduces sludge build-up, lowers BOD/COD, reduces FOG, and solves odor concerns in an affordable manner.

MICROPLEX™ N

MICROPLEX™ N is a liquid suspension of preselected and adapted *Nitrosomonas* and *Nitrobacter* microbial strains, specifically chosen for their ability to nitrify ammonia. MICROPLEX™ N is formulated to enhance the nitrification process under toxic, inhibitory, or cold weather conditions and specifically to reseed nitrifying systems and maintain the nitrification process. MICROPLEX™ N has been developed for use in the chemical, food processing, petroleum refining, textile, and related industries and for use in municipal plants receiving wastes containing ammonia.

MICROPLEX™ DN

MICROPLEX™ DN consists of preselected, safe, naturally occurring adapted microbial strains with denitrifying capabilities. MICROPLEX™ DN contains a combination of facultative anaerobic microorganisms selected from nature for their ability to use nitrate as an oxygen source and thereby reduce nitrate/nitrite in the wastewater. MICROPLEX™ DN daily applied in anoxic/denitrifying zones in the wastewater treatment facility will augment the nitrate/nitrate removal capability.



*Create a Healthy
Microbial Ecosystem*



MICROPLEX™ FLP

MICROPLEX™ FLP contains a combination of enzymes and aerobic and facultative anaerobic microorganisms selected from nature for their ability to break down a broad range of substances encountered in pulping and paper-making wastes. These include lignins, celluloses, sizes, surfactants, fibrous solids, and other wastes.

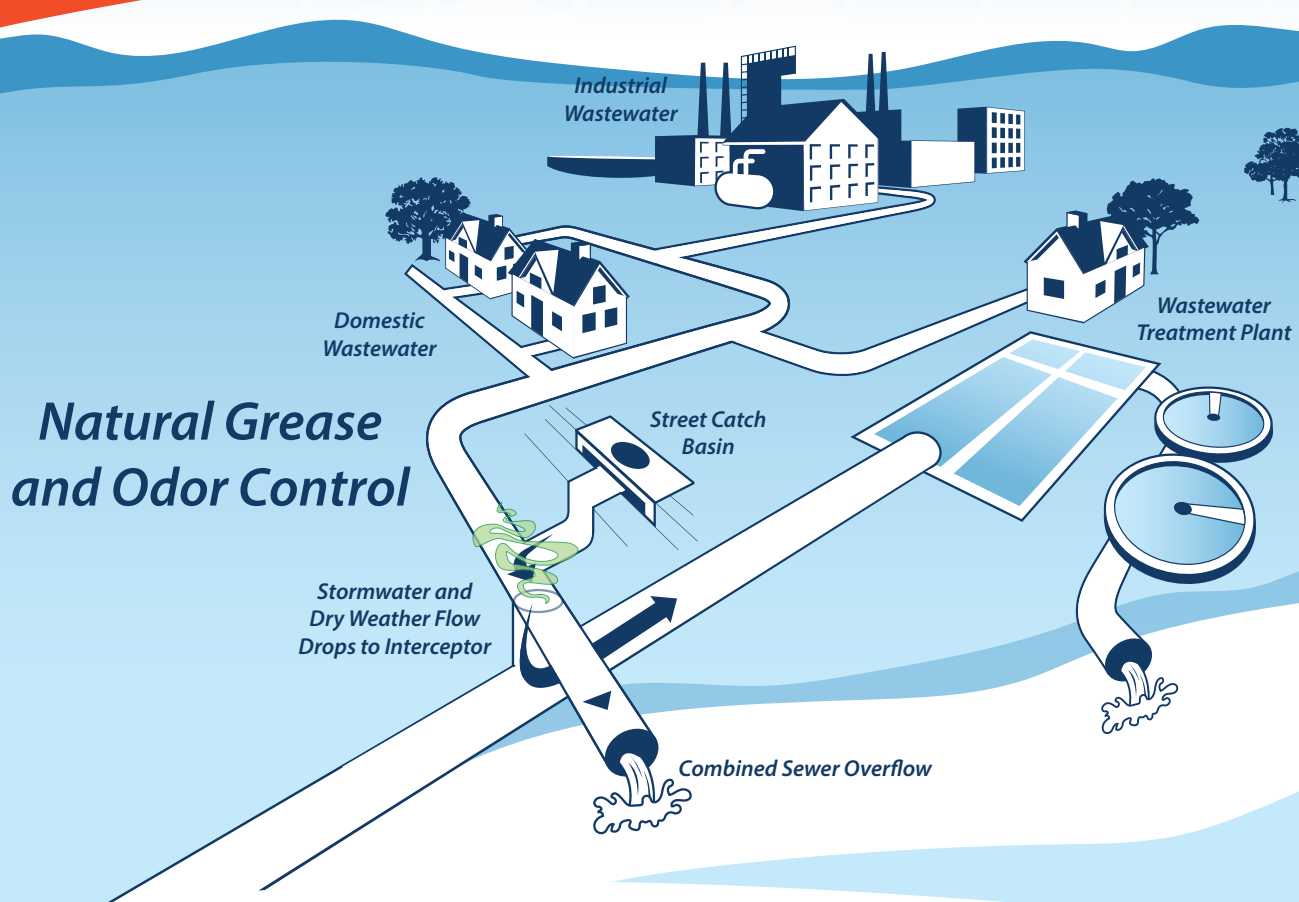
MICROPLEX™ LM

MICROPLEX™ LM is formulated to liquefy and deodorize animal droppings, simplifying their use and improving their effectiveness. MICROPLEX™ LM is formulated to help retain the nitrogen in the manure and, thereby, enhance its fertilizer value.

MICROPLEX™ FL

MICROPLEX™ FL is formulated with natural enzymes, surfactants, and microbes to enhance plant operations and reduce odor. MICROPLEX™ FL contains a combination of enzymes and aerobic and facultative anaerobic microorganisms selected from nature for their ability to break down a broad range of substances encountered in domestic, industrial, and dairy wastes. These include lignocellulosics, greases, fats, proteins, fibrous solids, and other wastes.

BIO AUGMENTATION



MICROPLEX™ HS

MICROPLEX™ HS is a liquid suspension (with an activator packet) of preselected and adapted anaerobes designed to improve biodegradation under anoxic and anaerobic conditions—such as sewer lines, primary treatment, anaerobic lagoons, and sludge handling/processing—to reduce hydrogen sulfide odors in conveyance and treatment systems. MICROPLEX™ HS has been developed for use in food processing, meat packing, and municipal sludge and waste treatment facilities.

MICROPLEX™ BP

The MICROPLEX™ BP cakes are composed of slowly dissolving biodegradable matrix material packed inside a durable, porous mesh netting. They are designed to be dropped into or suspended in lift stations, sewer lines, drains, grease traps, etc., by a line or rope. MICROPLEX™ BP cakes contain only environmentally safe, naturally occurring microbes. The microbes are specially selected for their ability to break down (not just dissolve) the organic contaminants common in food preparation, manufacturing, and domestic wastewaters. The cakes are available in several sizes to efficiently and cost-effectively meet the needs of every application.

*Help Your System
Break Down
Harsh Chemicals*



MICROPLEX™ HC

MICROPLEX™ HC degrades a wide range of hydrocarbon compounds, including crude oil, gasoline, diesel and jet fuels, motor oil, lubricating oil, heating oil, and paraffin. MICROPLEX™ HC effectively degrades BTEX (benzene, toluene, ethylbenzene, and xylene) contamination and other aromatic compounds, such as phenol, found in industrial wastes. MICROPLEX™ HC is effective in bioremediating contaminated soils.

MICROPLEX™ HCD

MICROPLEX™ HCD is formulated for use in biological wastewater treatment facilities that receive industrial wastes containing a range of hydrocarbons and organic chemicals that are toxic or difficult to degrade. MICROPLEX™ HCD can immobilize low-level toxicants in the wastewater flow and enhance the biodegradation of organic chemicals.

MICROPLEX™ OD

MICROPLEX™ OD can absorb and break down a broad range of hydrocarbon-containing wastes (from crude oil, gasoline, diesel, machine oils, solvents, and other derivatives) generated from various industries—including refining, petrochemical, transportation, textile, and steel-making.

MICROPLEX™ C

MICROPLEX™ C is formulated to help wastewater treatment systems bioremediate industrial waste streams from petroleum refineries, textile, metals, pharmaceutical, and chemical manufacturing facilities. When used as a preventive maintenance program, MICROPLEX™ C will enhance the overall system operation and performance.

LEADING ENVIRONMENTAL ENGINEERING



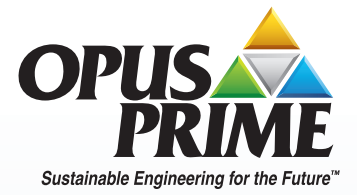
OPUS-PRIME® CIVIL & ENVIRONMENTAL ENGINEERING SERVICES

PROBIOTIC SOLUTIONS® also offers a variety of high-quality civil and environmental engineering services for water, wastewater, and soil remediation systems through OPUS-PRIME®. With our experienced engineers, we have the capabilities to take your project from design to completion, in a budget and time conscious manner. We are available for consulting on projects during all phases of completion.

Wastewater Engineering Services Offered:

- Feasibility Studies & Permitting
- Water Supply, Storage & Treatment Facilities
- Pumping Stations
- Sanitary Sewer, Force Main & Pump Station Design
- Computer Modeling
- Wastewater Treatment Facilities
- Transmission Mains & Distribution Systems
- Storm Water Systems
- Analysis & Design
- Drainfield Analysis
- Project Management

Practical & Sustainable Solutions



Will Probiotic Solutions® Products Work For Me?

Our ultra-efficient biostimulants will work at your facility if you have two things:

1. Biological activity
2. Time for the products to work

Product applied in plant starts working right away



Product works through aeration basins

Product works through clarifiers

Product continues to work on wastewater after entering lagoon

Product is safe for use in riverines and natural waterways

Key Locations Where Probiotic Solutions® Products Work

Satisfied Customer Feedback

"I love the product, I like how it works. I like how you can see it working, you can see the results almost immediately."

"I have seen changes in using BIO ENERGIZER® as opposed to other stimulants . . . it's phenomenal when it's mixed with our system. It completely took care of our grease situation."

"You can see that it changes the entire environment that it's added to. I have a lot of faith in the product."

"While I was adding it once a week or so, I got a 20% sludge reduction."

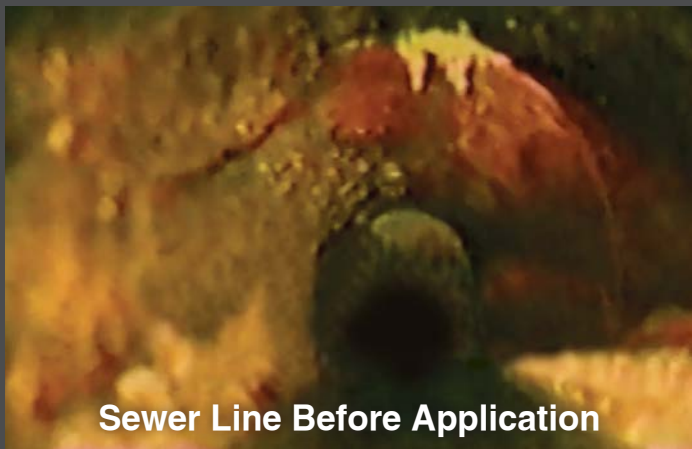
"I think it was going to cost them about \$120,000 and we were able to do the same thing for about \$18,000–\$20,000."

"Thanks so much for your product. I'll keep providing a maintenance dose. It's as if the product is free, since I have been able to reduce my dosing of alum and polymer."

See the Difference

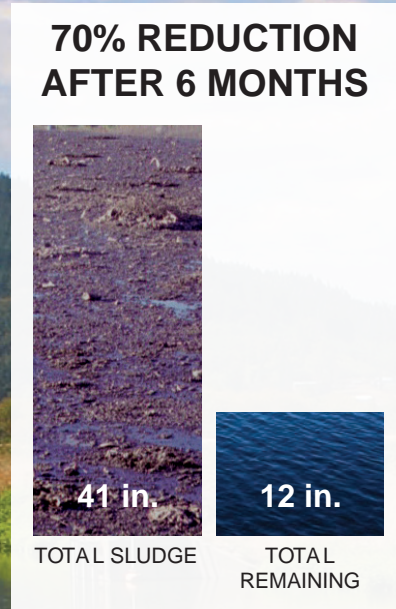
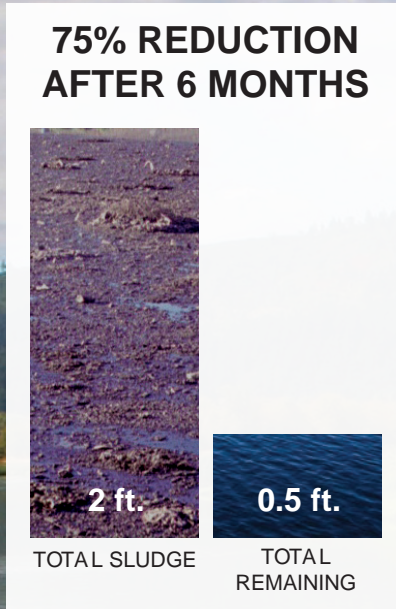


Confirmed by Science, Wastewater Resolved™

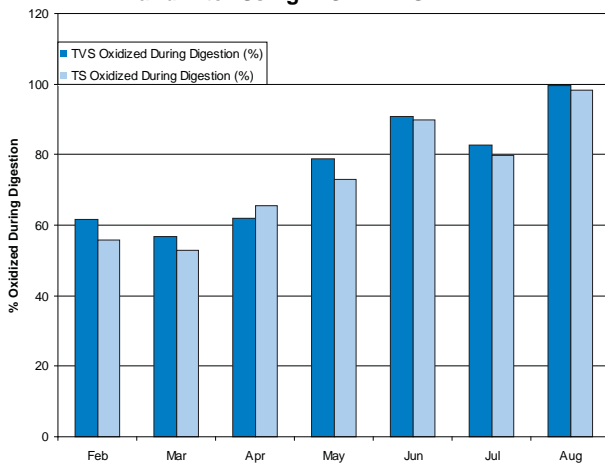


Sludge Reduction Data

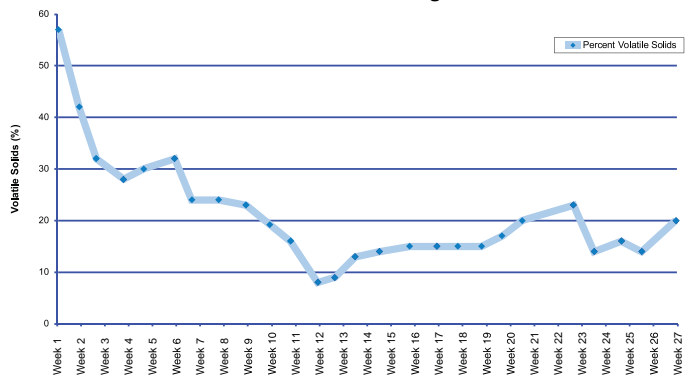
The following data are from official field reports, demonstrating the sludge reduction efficacy of Probiotic Solutions® products over various periods of time. The results vary based on amount of product applied, biological activity, and environmental conditions.



Volatile Solids Destruction Efficiency Before and After Using BIO ENERGIZER®



Percent Volatile Solids After Using BIO ENERGIZER®



Access Our Field Report Data and More Case Studies by Scanning the QR Code or Visiting: www.probiotic.com/case-studies

Get a Free Personalized Quote

Fill out our online questionnaire for us to better serve you.



**Liquidator
Dairy Waste Questionnaire**
Ph: 800/961-1220 Fax: 480/425-3061



**Liquidator
Hog Waste Questionnaire**
Ph: 800/961-1220 Fax: 480/361-3501



Wastewater Pond & Lagoon Evaluation Form
Ph: 800/961-1220 Fax: 480/361-3501



Grease Evaluation Form
Ph: 800/961-1220 Fax: 480/361-3501



Municipal Wastewater Evaluation
Ph: 800/961-1220 Fax: 480/361-3501



Anaerobic Digester Evaluation
Ph: 800/961-1220 Fax: 480/361-3501



Aerobic Digester Evaluation Form
Ph: 800/961-1220 Fax: 480/361-3501

1. Facility Name: _____
2. Phone: _____ Fax: _____
3. Email Address: _____
4. Address: _____
5. Supervisor: _____
6. Operator(s): _____

7) Digester Configuration: _____

8) Number of Digester(s) _____ Volume(s) _____

9) Detention Time: _____ Temperature Range: _____

10) Source and Type of Sludge: _____

(How is primary sludge & waste activated sludge handled? Is it blended or separated when wasted to digester?)

SOLIDS

Raw Digester Feed:

- 11) Average Volume of Solids Wasted to the Digester in 24 hours _____ ADF to Plant _____ mgd.
- 12) Average % solids entering the digester(s) _____
- 11) pH _____ Alkalinity _____
- 12) Description of wasting frequency to the digester(s) _____
- 13) Is there any alkalinity adjustment to the influent digester solids? _____ 14) Chemicals fed to the digester? _____
(Lime, Ferric Chloride, Other)



Interested in a Facility Evaluation and Quote? Please Fill Out the Appropriate Form by Scanning the QR Code or Visiting:
www.probiotic.com/evaluation-forms



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