greenmarket SOLUTIONS

# GMS BIOWASTE DIGESTER

gms BD™
BIOWASTE DIGESTER

## GMS BioWaste Digester

### Benefits

GMS BioWaste Digester is a cost-effective method for reducing waste build-up and controlling the associated odors. Application of BioWaste Digester will:

- "Pre-digest" organic wastes, breaking complex organic compounds down to simple molecules.
- Promote a rapid reproduction of aerobic bacteria, which produce enzymes that break down solids as well as anaerobic bacteria, the odor producers.
- Reduce pump-able solids by 70 percent while also producing H2O and CO2, which improve the efficiency of the septic system.

GMS BioWaste Digester has been laboratory-tested and is environmentally-safe to soil and groundwater.

### Possible Uses of GMS BioWaste Digester

Treatment of organic solid wastes as found in:
- Landfills
- Pit, Vault, and Portable Toilets
- Holding Tanks
- Sludge Drying Beds
- Sewage Treatment Plants
- Lagoons
- Septic Drainfields

### GMS Biowaste Digester Process

The GMS Digester Process is a treatment utilizing GreenMarket Solutions BioWaste Digester, The GMS Digester Process offers a unique, environmentally safe, and cost-effective method for reducing waste build-up and controlling odors. It can be used for the deodorizing and digestion of organic solid wastes, as found in pit toilets, vault toilets, holding tanks, portable toilets, sludge drying beds, sewage treatment plants, landfills, lagoons, septic drain fields, etc.

The GMS Digester Process provides on-site, in-place reduction of waste build-up and odor control. It reduces pumpable solids by up to 70 percent, which reduces the frequency of periodic rodding and enables easier maintenance of an ailing drain field.

### The Way GMS Biowaste Digester Works

The GMS Digester Process chemically "pre-digests" organic wastes, breaking complex organic compounds into simple molecules. This increases water penetrability and lowers the capillarity and plasticity of the soil.

The process breaks up oxygen molecules from the water in huge quantities, promoting a rapid reproduction of aerobic bacteria. The aerobic bacteria produce enzymes, breaking down solids as well as anaerobic bacteria (the odor producers) into products that the bacteria consume, creating more enzymes. This bacterial process also creates H2O and CO2, by-products that greatly increase the efficiency of the septic system.

**WINDMASTER CORNER HOOD RIVER, OR**
Septic Remediation and Restoration

At Windmaster Corner, GMS BioWaste Digester was applied to a resident's septic system to digest organic matter, breaking down the septic's sludge and slurry and eliminating odors.

### Notes On The GMS Digester Process;

- Flash Point – Non-Flammable
- Environmentally safe!
- pH=0.9 at the concentrated form.
- This process incorporates a bacteria/enzyme interaction. It is important that the system not be tainted by introducing phenol or formaldehyde products into the system. This will kill the bacteria that are present.

BD

greenmarket SOLUTIONS

# GMS BIOWASTE DIGESTER

## Case Studies

***"The septic tank material offers a method of controlling odor and solids build-up in septic systems. The response of the drain field to the septic tank effluent is excellent…The odor control feature is unique…The success with the topical application to the drain field makes the package complete for rest area applications. The ability to maintain a functioning field or upgrade a failing field is economically desirable if it alleviates the necessity of periodic rodding and the occasional building of new fields."***

Marty Laylor, Research Project Coordinator
Materials Section Laboratory Record
Oregon State Highway Division

The Oregon State Highway Division tested an earlier-generation of both GMS BioWaste Digester and GMS Soil Optimizer in septic drainfields located at the Santiam River Safety Rest Area on Interstate 5, Oregon, 15 miles south of Salem, the state capital.

The BioWaste Digester was tested to gauge its effectiveness at breaking down organic waste and anaerobic bacteria. The GMS Soil Optimizer was tested to gauge its effectiveness at increasing the water penetrability of the soil in the septic drainfields.

The average daily traffic was estimated to be 25,800 vehicles per day. The rest area had a history of problems with the septic tank drain field systems. The southbound side of the rest area was chosen for testing because:

- This side supported the heavier traffic load.
- This side operated off a new drain field.
- The septic tank required pumping two to three times per year.
- The rest area would occasionally have an odor problem in the building.
- The drain field would fail in late summer. Septic tank effluent would break through to the surface of the drain field and create a health and odor problem.

The conditions of the southside prior to testing were:

1) The septic tank had a heavy blanket and was due to be pumped.
2) There was solid material in the distribution box.
3) Effluent in the distribution box was up to a level of about 1.5 inches in the 4-inch line leading to the field.
4) Both the septic tank and distribution box had a strong odor.
5) The lawn area over the drain field was a mottled green and yellow.

The septic system was treated with the BioWaste Digester product, and the soil in the drain field was treated with the Soil Optimizer product. Within one month, the area exhibited the following:

1) The septic tank had a heavy blanket.
2) There was no solid material in the distribution box.
3) Effluent in the distribution box had dropped so that the level in the line was about ¾" in the 4-inch line leading to the field and the water was freely flowing to the field.
4) Both the septic tank and distribution box were odor-free.
5) The lawn area over the drain field was green and growing well.

***"There will be a complete and beneficial digestion of the organic material, and this includes the cellulose material in the toilet paper."***

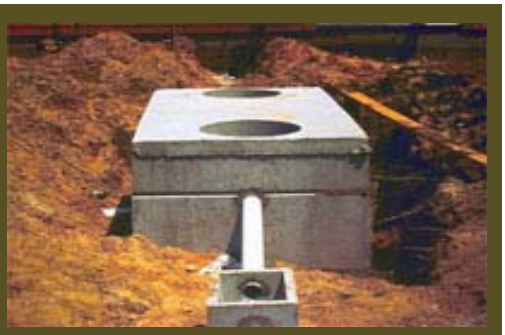
Jon C. Hill, Inspector/Instructor
United States Marine Corps, Portland Oregon

The United States Marine Corps, 6th Engineer Support Battalion, 4th Force Service Support Group, performed testing to measure the adequacy of an earlier-generation version of Digester in the treatment of human waste and grease, fats and cooking oils in field kitchens and messes. This was done in order to eliminate or reduce the associated odors, smoke, burns, and potential of disease or groundwater contamination associated with the standard practice of "burning out the head," or burning such waste using petroleum fuel.

**WINDMASTER CORNER HOOD RIVER, OR**
Septic Remediation and Restoration

Drainfield Surface Layer Saturation

Pre-application



Septic system

Highway rest area