

Proposed Technology Overview

The GORE™ Cover System technology is an aerobic, in-vessel, oxygen based controlled aeration process, resulting in uniform, reliable and stable compost.

The typical components and equipment utilized in the Gore facilities is as follows:

➤ **Preparing (Feedstock Preparation):**

- A. Scales/Scale-House
- B. Tipping Building (fully enclosed and a number of air changes per hour negative air system discharged through an adequately sized biofilter to manage possible feedstock and grinding odours)
- C. Front End Loader for managing materials received and processing them through the facility preprocessing equipment (grinders or shredders)
- D. Slow speed shredder for preparing the feedstocks for composting
- E. Moisture addition equipment to adjust the moisture content of the mixed feedstocks, if necessary
- F. Conveyor Systems to transport the prepared feedstocks to the GORE™ Cover System.

➤ **Processing (Composting and Curing)**

- A. Aeration System:
 - a. In-Floor aeration ducts serving to deliver air and remove leachate from the windrows (2 per windrow)
 - b. Water Traps to separate the aeration trenches from the leachate collection and transport system (2 per windrow)
 - c. Aeration Trench Covers
 - d. Aeration Blowers (1 per windrow)
- B. Control System
 - a. Oxygen and Temperature Sensors
 - b. Controllers
 - c. Computer and Software
- C. GORE™ Covers
- D. GORE™ Cover Handling Machine (Winder)

➤ **Post Processing**

- A. Front End Loader or Conveyor System to transport the finished compost to the facilities Post Processing (Screening and Refining) system
- B. Screening equipment (Trommel Screen) and plastic removal (if necessary)

Acceptance and Weighing Procedures

Prior to acceptance at the site, all feedstock material is reviewed to ensure compliance with the Certificate of Approval. Acceptance must be confirmed before delivery of material to the site.

Vehicles entering the facility will pass over a weigh scale and deliver organic materials to a fully enclosed receiving building. After tipping the organic materials, the materials will be prepared for composting (ground/mixed) in the enclosed receiving building.

Pre-processing Operations

IMS will utilize a slow speed grinder for de-bagging and contamination separation. A slow speed grinder allows for proper tearing of plastic bags in the appropriate sizing for post process screening. This also permits the exposure of the SSO materials to the composting process. Removal of plastic and other contaminants takes place during the screening process where it can be separated and removed from the compost product. This also ensures maximum capture of the compostable materials since earlier removal of plastic includes some component of the SSO materials.

IMS will design a pre-processing system within a fully enclosed tipping building with bio-filter that will minimize oversized materials at the post processing stage. Once pre-processing is complete, the organic materials will then be conveyed to the GORE™ covered windrow areas.

Processing Operations

The GORE™ cover, manufactured by Gore Creative Technologies Worldwide, utilizes positive aeration and a specially designed cover to create an enclosed system that controls odours and microorganisms, and creates a consistent process unaffected by outside environmental conditions. Medium-pressure aerators connect to in-floor aeration ducts. Stainless steel probes inserted into the pile monitor oxygen and temperature parameters. The data is relayed to and stored in a computer. This data controls the aerators to keep pile conditions consistent.

After a pile is constructed, the GORE™ cover, a specially developed Gore-Tex® membrane laminated between two polyester layers, is pulled over the pile. The cover protects the pile from weather conditions, but allows release of CO₂. These controlled conditions allow a consistent product to be produced without the risk of damp pockets, eliminating the possibility for anaerobic conditions and thus mitigating odours.

The GORE™ cover controls odour emissions in three ways:

- Prevention of anaerobic pockets
- The cover acts as a physical barrier against gas escaping from the decomposing pile, and
- Controlled condensation on the interior of the cover.

A fine film of condensation develops during the composting process that collects on the inside of the cover. The moisture helps to dissolve the gases. The condensation then drips back onto the pile, which continues to be broken down by the composting process.

Throughout the composting process, organic material spends six weeks under the GORE™ covers. The six week process is broken up into two phases. Phase I is four weeks under the GORE™ Cover. In Phase II, the material is moved to another windrow for two more weeks under the GORE™ cover followed by an additional two weeks of curing on the aerated pad. After the eight weeks of composting, the material is ready to be screened and stockpiled for further curing, and ready for sale.

End Product Marketing

IMS has successfully marketed its finished product to a number of local firms for use typically as a soil amendment or as a component in making a triple mix product.

IMS targets specific high quality needs segments including; nurseries, vineyards, greenhouses, and soil manufacturers in Ontario and Upstate New York. Our goal is to provide the highest quality compost product in Ontario, while at the same time increasing the value of compost in the

soil enhancement market. With a potentially large influx of compost end product in the market place as a result of increased municipal diversion initiatives, IMS will continue to differentiate by exceeding our own high quality standards, and those that may soon be in place in Ontario.

IMS has sold out of end product in both 2004 and 2005 and has markets for all produced end product in 2006. Much of this end product is made from the SSO material from the Region currently being processed at the site.