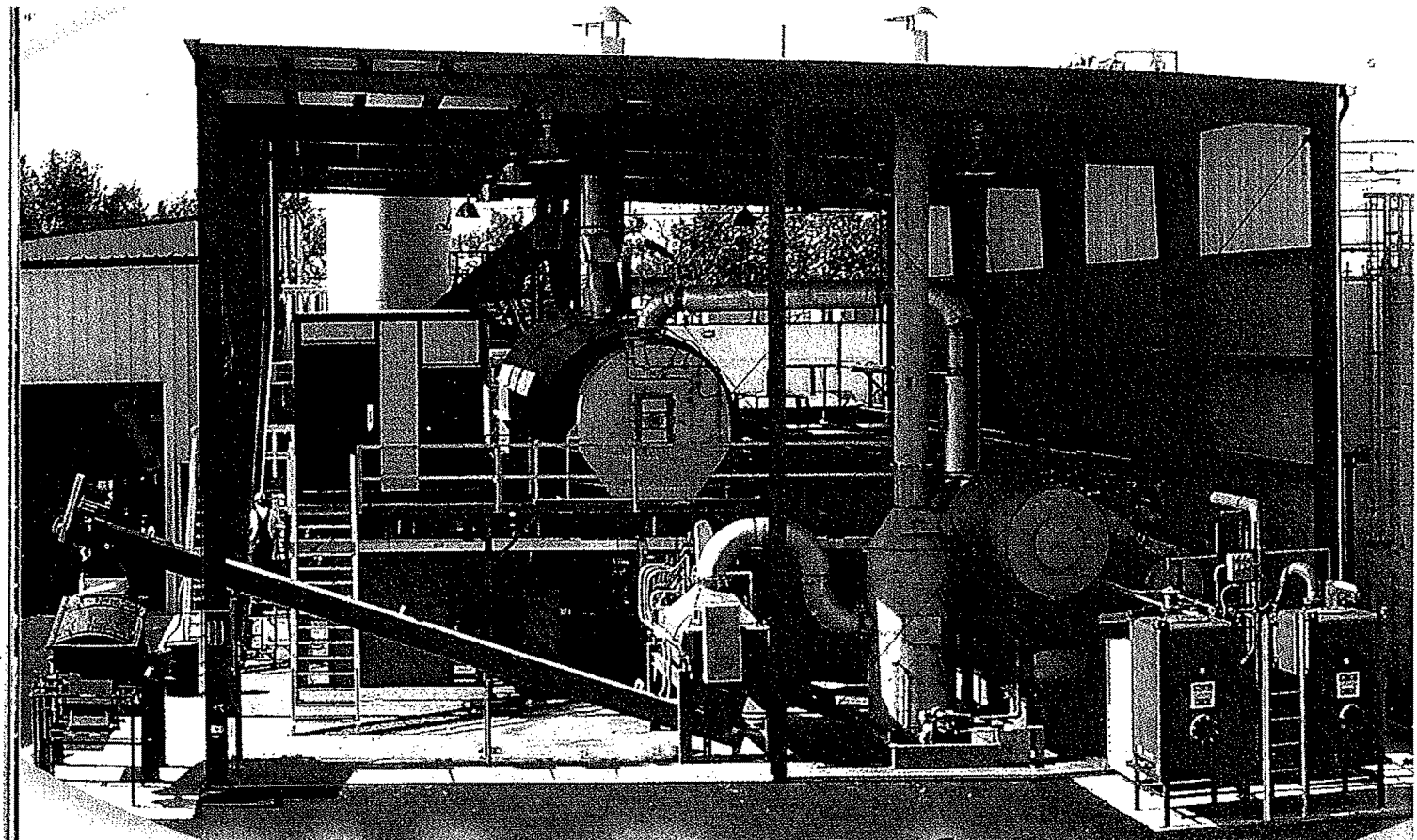


SDS Rallies for Waste Recycling

By Roy Bigham

On a cold December day in East Chicago, Ind., Pollution Control Industries broke ground for installation of a new recycling system that could represent a significant step forward in waste recycling technology. As construction nears completion, excitement builds over the realization of an organic solid waste processing system that should be able to render the material non-hazardous with its volatile and semi-volatile portions separated for recycling or reuse by industry.

The process, dubbed the Solid Distillation System (SDS), and the design for the first installation to implement it were approved by the EPA and Region V last year. The company began in 1986 to assist waste generators around the country in handling their wastes. They hold part B permits to operate in Chicago and Memphis, Tenn., with headquarters located at the Chicago facility.

What is SDS?

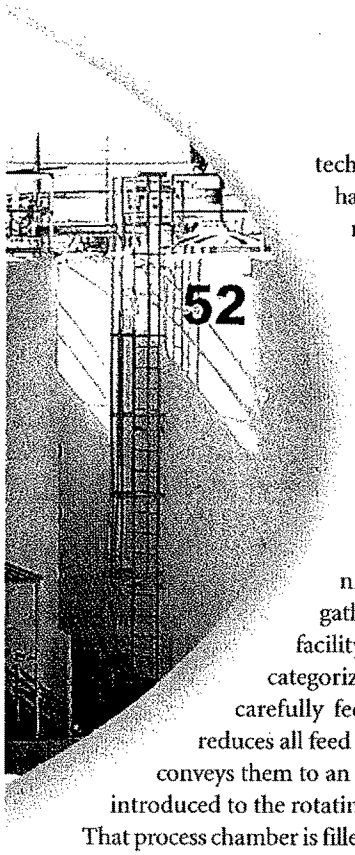
Most thermal treatment processes drive off volatiles and burn the excess gases from the waste to destroy its organic content. This system differs in that the heat source is never directly applied to the material. The waste is processed and fed into a long furnace. This oven-like chamber is constantly rotated as material travels down its interior. An anaerobic atmosphere prevents hydrocarbon gases from oxidizing. The system then collects and cools excess gases so that the chemicals can be returned to manufacturing processes.

A natural evolution

Normally, waste recycling processes collect waste from a generator and process the material by cataloging and separating it into compatible areas. Wastes are then sorted and sent to various off-site operations for treatment and disposal. This system requires a lot of handling and paperwork to meet EPA and Department of Transportation regulations for shipping materials to the company site and subsequent off-site locations. Specifically, as the EPA imposes cradle-to-grave responsibility on the generator for all wastes that a company may produce, such shipping of materials to and through third parties often represents a continuing risk for the waste generator.

The new system attempts to avoid the necessity of trusting third parties with compliance liability by rendering the waste completely non-hazardous and subsequently recycling the leftover organic material. Once accomplished, the generator receives a Certificate of Recycling and generator liability terminates.

Nearly all organic solid wastes can be handled on-site with the SDS



technology. Treated wastes do not have hazardous solid components, making them safe for disposal of in a normal manner. All organic components are separated from the solids during the process.

The process

SDS technology relies heavily on the aptitude of on-site personnel. Wastes are collected and tested by qualified technicians at the plant, who then gather samples to be tested in the facility's laboratory. Materials are then categorized and safely stored. Wastes are carefully fed to a special shredder, which reduces all feed materials to a uniform size, and conveys them to an entry valve. The wastes are then introduced to the rotating processing chamber.

That process chamber is filled with an anaerobic atmosphere designed to prevent the oxidation of hydrocarbon components as they are driven from the wastes. As wastes move through the chamber, they are heated to very high temperatures; as the heat is applied indirectly, the material is never exposed to direct flame. Such high temperatures drive all volatile and semi- volatile organic chemicals from the solids. The organic components of the wastes are condensed and sent to an oil/water separator as a water/organic mixture to be processed. The resulting organic concentrate is then processed through a fractionation distillation process for reclaiming and recycling organic chemicals back into industrial processes. The closed loop system produces no emissions.

The technology is capable of handling a number of generated waste streams, including:

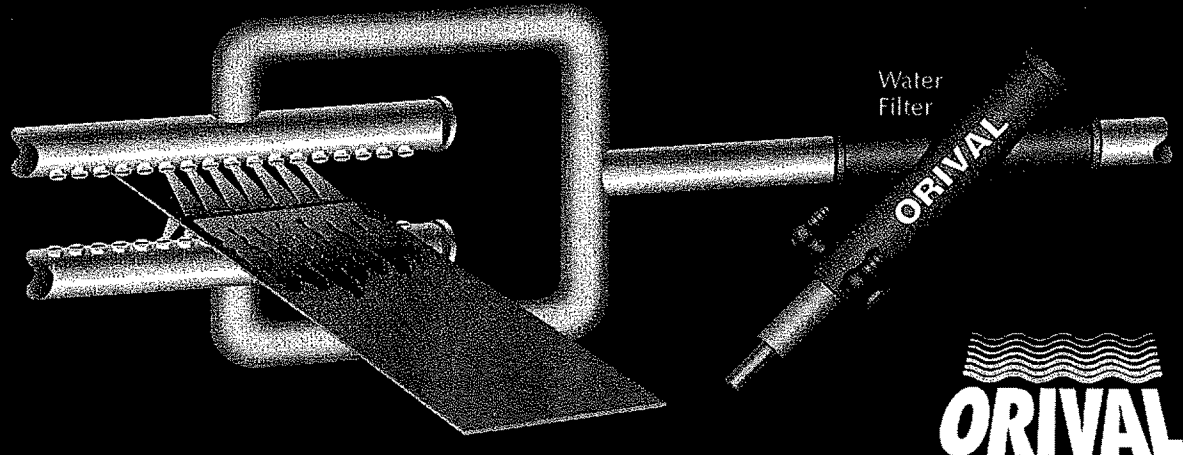
- Paint waste
- Solvent-soaked rags
- Resins
- Polymers
- Production debris
- Refinery waste
- Discarded commercial products
- Many other solid waste streams

What wastes are processed?

Most organic solids can be processed, including paint waste,

The Ultimate Nozzle Protection

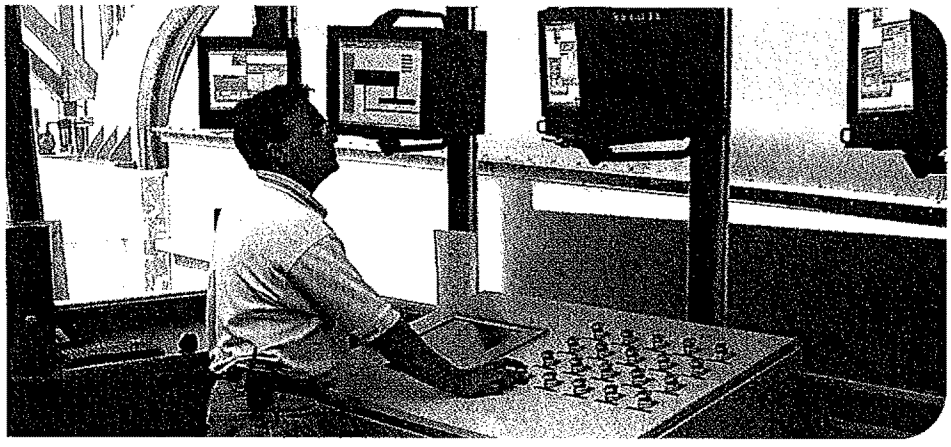
Typical Applications: H.V.A.C. Intake Water Make-Up Water Reclaimed Water Gland Seal Protection Process Cooling Water Spray Nozzle Protection Traveling Screen Nozzle Protection Turf & Agriculture Irrigation Air Compressor Protection Fire Sprinkler Protection I.E. & R.O. Prefiltration Food Pasteurizer Potable Water Waste Water Deep Well Injection Filter Backwash Reclaim Sludge Reclaim



40 N. Van Brunt St., Englewood, NJ 07631
(201) 568-3311 • (800) 567-9767 • Fax (201) 568-1916
WWW.ORIVAL.COM

ORIVAL
Automatic Self-Cleaning
WATER FILTERS

eProduct Number 107



The treatment process is continuously monitored and controlled.

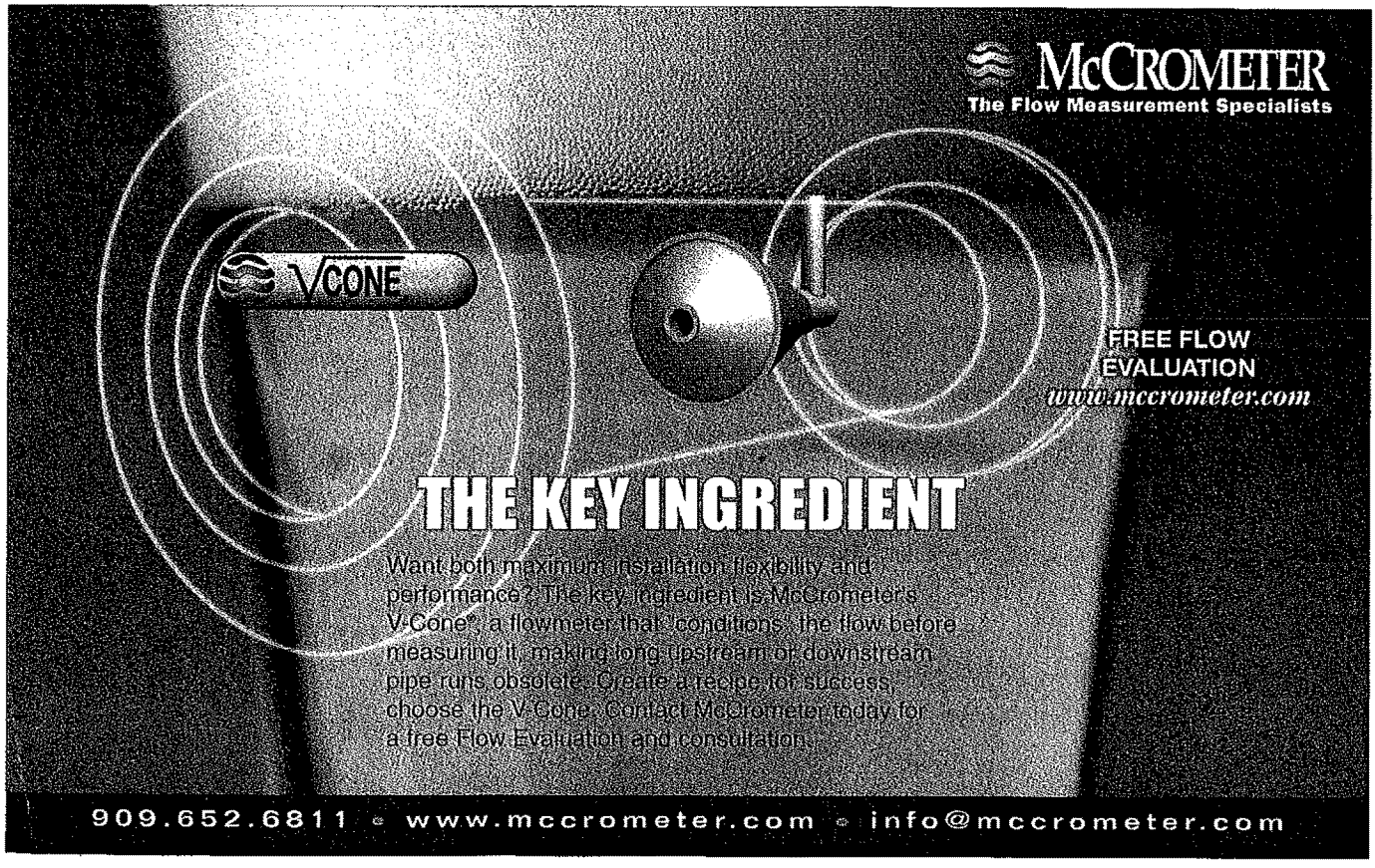
solvent soaked rags, resins, polymers, production debris, refinery waste and discarded commercial products. So long as the material is recycled, the process is exempt from Resource Conservation and Recovery Act rules. Rather, once the material has been processed, the generator receives a Certificate of Recycling that affirms the materials have been recycled. The generator then has no further liability.

However, as Ken Carle of Pollution Control Industries points out, "the solid hazardous waste shipped to this unit is still a hazardous waste until it is recycled in this process – meaning the generator still generates a hazardous waste and ships it on a manifest, and PCI receives and stores it as a hazardous waste until it is recycled in SDS. The generator does receive a certificate of recycling on the waste, which is beneficial in ISO 14001 programs and Environmental Management System goals for recycling.

"There are several exclusions for materials headed to legitimate recycling (SDS), such as discarded commercial chemical products and characteristic byproducts as described in 40CFR261.2. These exclusions do take the concurrence of the state where the generator is located, but if granted, these are not solid wastes, are not counted as waste generated and can be shipped to SDS on a bill of Lading. These exclusions would then give the generator the benefit of waste minimization/source reduction."

There are many benefits utilizing this process for organic solid wastes. By virtue of receiving a Certificate of Recycling, the material is removed from the solid waste definition in 40CFR261. Putting potentially hazardous chemicals back into industrial processes, the environmentally friendly SDS process achieves waste minimization and recycling goals by turning a waste into a valuable product for industry. **PE**

Ken Carle, is PCI's executive vice president for business development at Pollution Control Industries. He can be reached at (800) 388-7242 or e-mail at kcarle@pollutioncontrol.com.



ɛProduct Number 159