



## Unique Dewatering Method Minimizes Handling

*Throughout the 70s and 80s, a dramatic evolution took place in the area of environmental regulations. In the midst of these rapidly changing government mandates, numerous technological advancements were made, as business and industry raced to keep in compliance.*

One such technology to emerge during this time was “dewatering.” New regulations required that all solids bound for landfill must be free of liquids to the point that they could pass a paint filter test. Dewatering filled this need.

In the mid-to-late 80s, the dewatering industry took a leap forward with a fine-tuned process developed by Ron Harris, industry veteran and founder of Spectrum Environmental Inc. in Livingston, Louisiana. While working with the typical equipment used in dewatering — filter presses, belt pressed, centrifuges, drying beds and other standard materials — Harris discovered and patented a new and unique method of dewatering he named the Phase Separator filter container.

Designed to minimize the handling and exposure of personnel, Spectrum’s Phase Separator is a heavy duty sludge container which takes the form of a roll-off, self-dumping hopper, lugger box, end-dump trailer or a wide variety of shapes. The container has a stainless-steel mesh liner which covers the entire inside of the container and has the additional benefit of being spaced three inches to five inches from the walls and bottom of the container.

“In the best use of the equipment, a disposable filter is put into the container covering all of the inside and is supported by the stainless mesh,” Harris said. “It works much like a giant coffee filter. The sludges and slurries are put into the container, and the liquid is allowed to drain out leaving the dewatered solids in the filter.”

“The container may then be transported, dumped and returned to be refilled,” he added.

In the initial testing and development of the Phase Separator filter container, some major problems had to be solved. A great deal of time and effort was devoted to resolving the problem of material sticking to and plugging the filter cloth or screen. The ultimate solution was the disposable filter as opposed to the fixed filter. The plugging problem is then disposed of with each load of solids, and then when the container is returned it also is very clean.

Additionally, Spectrum’s design also makes it easier to clean out any solids that go through the filter and build up in the bottom of the container. The space between the screen and wall facilitates easy and thorough cleaning, which cuts rust and corrosion caused by the build up of waste product.

The effect of rust and corrosion on the longevity of the filter sup-

port systems were minimized by welding galvanized grating to thick steel supports welded to the container. Stainless steel strips are then welded to the grating at all points necessary to attach the stainless steel mesh with the stainless pop rivets. The end-product is a very resilient filter support system that is able to resist most corrosion and rusting.

A desire to achieve a faster dewatering rate for the material in the top center of the container led to yet another improvement in the system. Spectrum was able to increase the rate by placing a filter dividing wall vertically in the container which increased the filter surface area by roughly 33 percent and cuts the pathway for water to access free flow space by about 60 percent, thus greatly increasing the dewatering efficiency by cutting time and getting drier material.

Numerous U.S. and foreign patents have been secured for both the original design and subsequent improvements of the Phase Separator filter container dewatering equipment, preventing successful replica-

tion by other companies whose attempts often suffer critical problems such as material sticking, plugging, slow dewatering, premature rusting of the unit, leaking doors and smaller volumes per container.

The Phase Separator has been used in a wide range of industrial applications to dewater sludges and slurries of



all kinds for more than a decade. In addition to being the equipment’s manufacturer, Spectrum also sells and rents the unit.

Spectrum’s customers have noted how the system is more efficient, longer lasting, safer to operate, and less demanding to maintain and clean. Some additional advantages that have made believers out of the Spectrum clientele include —

- Up to 520 sq. ft. dewatering surface area
- Corrosion resistant coatings used on the container
- Six-point binding system on the door to eliminate leaking
- A variety of standard sizes including 1-5 cu. yd. self-dumping hoppers; 20-30 cu. yd. roll-offs; 20-25 cu. yd. vacuum loadable; 6-10 cu. yd. lugger boxes as well as custom units.

Some of the industries which have opted for Spectrum’s equipment include engineering and consulting firms, potable water treatment plants, wastewater treatment plants, stormwater treatment plants, power plants, animal processing plants, food processing plants, grease trap collection and septic waste, chemical plants, refineries, vacuum truck services, mineral recovery and mining, drilling mud, steel mills, industrial service companies, paper mills, and metal and plastic machining and manufacturing.

For further information, phone Spectrum Environmental at 800-806-1016 or write in 1110 on this issue’s Reader Service Card.