

ENERGY EFFICIENCY

MICHAEL KANELLOS: JUNE 10, 2009

Fertilizer, Feed and Other Valuables in Wastewater

And you thought you were just flushing the toilet. A few startups want to screen wastewater for valuables.

There probably isn't gold in that there wastewater, but you likely can get fertilizer.

Ostara Nutrient Recovery Technologies is unveiling a system in Oregon that extracts phosphorous and other nutrients from wastewater and then recycles it into fertilizer. Oregon Governor Ted Kulongoski and VantagePoint celebrity venture partner Robert Kennedy, Jr. will be on hand for the festivities.

The system is installed at Clean Water Services, a water utility with more than 500,000 customers in urban Washington County, west of Portland. Ostara estimates that approximately 200 plants in North America and several hundred plants in Europe and the rest of the world are candidates for the technology.

The company has been running a plant in Edmonton, Alberta since 2007. The reactor extracts more than 75 percent of the phosphorus and 15 percent of the ammonia from a sewage sludge stream of 500,000 liters per day. The resulting mixture is used to make roughly 500 kilograms of Crystal Green. That's not a powdered drink mix or a song from the late '60s -- that's the fertilizer.

Wastewater is the new frontier for a handful of companies. A number of companies, such as Israel's **Aqwise**, have popped up with new solutions for processing wastewater cheaper. Additionally, there are more companies and agencies coming up with ways to recycle wastewater. In Singapore, NEWater – which makes up a small portion of the country's drinking water – is recovered from the sewage system. It's a way to help Singapore move away from importing water from Malaysia.

And then there are those trying to sell the minerals. **Oberon FMR**, for instance, harvests bacteria from wastewater streams at food processing plants and turn it into feed for fish farms.

"We transform waste products in food and beverage manufacturing into high quality feed grade," said CEO Randy Swenson earlier this year. In a test with growing tilapia, the fish grew 43 percent larger after eight weeks with Oberon's feed than with regular feed, he said.

On an industrial scale, 212 Resources and Altela clean water at refineries through a process that is similar to natural evaporation. At the end, the cleaned water gets reused in refinery operations and the extracted methyl ethyl ketone and other substances are packaged and sold.

Other cool wastewater things to look for: Japanese and Australian companies are both beginning to export a unique water saving toilet for green buildings. There is a sink on top of the tap. The water you wash your hands with flushes the toilet (see **video**).