

## New Clean Water Services facility in Hillsboro turns waste into gold

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Oregon Treasurer Ted Wheeler, Ostara board member Robert Kennedy Jr., Ostara CEO Phillip Abrary and Washington County Commissioner Andy Duyck inspect newly pelletized fertilizer Tuesday at Clean Water Services' Rock Creek Advanced Treatment Facility. Ostara, a Canadian company, is partnering with the public agency in the \$4.5 million effort, which is expected to pay for itself within six years.

HILLSBORO -- A wastewater treatment plant doubling as a licensed agricultural production facility may seem disconcerting to some.

At **Clean Water Services'** Rock Creek treatment plant in **Hillsboro**, however, the pairing of those functions is fast gaining notice around the world.

Several dozen elected officials and business leaders turned out Tuesday for the unveiling of technology developed by a Canadian company capable of turning waste from more than 500,000 **Washington County** residents into 1,200 tons of high-grade, phosphorus-rich fertilizer annually.

It may not rise to the level of water into wine or straw into gold but this new type of transformation

appears to seamlessly solve problems that have bedeviled sewage treatment plants for decades.

For starters, it allows treated effluent from the plant to meet federal guidelines that place strict limits on how much phosphorus can be dumped back into the slow-flowing, ecologically fragile **Tualatin River**.

Mining phosphorus and other naturally occurring chemicals from recirculating wastewater also prevents those substances from congealing into a concrete-hard material that can hopelessly clog a treatment plant's internal piping and other equipment.

Finally, there is the marketable product -- white pelletized fertilizer now being sold under the brand name Crystal Green to local nurseries and turf farms in the Portland area, as well as to fertilizer distributors across North America and Europe.

The \$4.5 million facility will be paid for in six years through savings from reduced chemical and electrical use, increased plant capacity and reduced operations and maintenance expenditures.



Helping the project pencil out is a \$1.15 million state business energy tax credit. The amount of the credit is based on the energy conservation value of recycling phosphorus to produce Crystal Green compared to costs of producing a conventional fertilizer.



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Two newly installed 30-foot-tall chemical reactors are now turning human waste into phosphorus-rich fertilizer at Clean Water Services' Rock Creek facility. The operation is expected to produce about 1,200 tons of high-grade fertilizer annually.

"It's one of those rare situations that is almost too good to be true," said **Andy Duyck, Washington County Board of Commissioners chairman**. "It creates something of value while solving difficult problems. That doesn't happen very often."

The project, touted as making the **Rock Creek plant** the "largest municipal nutrient recovery facility in the world," is a partnership between Clean Water Services and British Columbia-based **Ostara Nutrient Recovery Technologies**.

They got together almost by happenstance several years ago at a national wastewater treatment conference. A Clean Water Services operations analyst was giving a talk about preventing formation of pipe-clogging struvite. There, he met an Ostara technician, who was working on a chemical process to convert the problematic substances into a pelletized fertilizer.

The two parties agreed to start a pilot program at Clean Water Services' treatment plant in **Tigard**. Success there formed the basis for scaling up the nutrient harvesters at Rock Creek by a factor of four.

"We are now using machines that are 400 times larger than the first versions we came up with," said Phillip Abrary, Ostara's president and CEO. "This is really a milestone for us."

The new technology is catching on elsewhere, as well. Municipal wastewater treatment plants in York, Penn., and Suffolk, Va., installed Ostara harvesters in 2010. Similar installations in Saskatoon, Saskatchewan and London are now underway.

It also benefits Oregon-based steel fabricators, who so far have chalked up about \$1 million in equipment sales, said **state Treasurer Ted Wheeler**, who attended Tuesday's unveiling.

Environmental attorney and activist **Robert F. Kennedy Jr.**, who sits on Ostara's board of directors, also spoke, saying he has sued hundreds of municipal wastewater plants across the country for dumping these same nutrients into rivers and streams.

Now that technology is at hand to virtually eliminate the problem, he said, it is refreshing to approach plant managers with a proposed solution, rather than a potentially expensive lawsuit.

"I'm not the last person on Earth they want to see anymore," Kennedy said in an interview before his talk. "That's a big step forward for all of us."

– **Dana Tims**