# City of Saskatoon and Ostara Launch Canada's First Commercial Nutrient Recovery Facility.

## *Technology will improve long term plant reliability; Recovered phosphorus & nitrogen transformed into enhanced efficiency fertilizer*

**SASKATOON, SK and VANCOUVER, BC – August 14, 2013** – The City of Saskatoon and Ostara Nutrient Recovery Technologies Inc. celebrated their successful collaboration today with the official opening of Canada's first commercial nutrient recovery facility at the city's Wastewater Treatment Plant (WWTP).

The project is the first commercial plant of its kind in Canada to use Ostara's Pearl® nutrient recovery process to recover phosphorus and nitrogen from the facility's wastewater stream and transform them into Crystal Green®, a slow-release and environmentally responsible enhanced efficiency fertilizer.

"The example of responsible stewardship of our resources begins at home," said Saskatoon Mayor Donald Atchison. "With the installation of Ostara's technology at the Wastewater Treatment Plant, we are proactively and cost-effectively, tackling the growing issue of nutrient overload in our regional waterways. And that's good for taxpayers and good for the environment."

"We are pleased to launch our first Canadian nutrient recovery facility in partnership with the City of Saskatoon," said F. Phillip Abrary, president and CEO of Ostara. "The City's embrace of new water treatment technologies reflects and enhances the province's reputation for agricultural innovation and sound land stewardship practices. It is only a matter of time before other Canadian cities follow Saskatoon's lead and incorporate sustainable nutrient recovery into their own wastewater treatment practices."

"Our priority is to protect the people, property and environment of the community we serve," said Utility Services General Manager, Jeff Jorgenson. "This system makes our world-class facility even stronger, helping to fulfill our mandate as frontline stewards of our region's watershed by removing otherwise polluting elements and transforming them into renewable and valuable resources.

**Enhanced Plant Reliability**

By removing potentially polluting nutrients from the treatment facility's wastewater stream, Ostara's technology helps the City meet nutrient discharge limits and overcome operational issues caused by the unintentional build-up of struvite scale in plant equipment.

Struvite is a concrete-like mineral deposit that chokes process equipment, increases operating and maintenance costs, and undermines plant reliability. The formation of struvite is a common challenge in plants that practice biological nutrient removal and anaerobic digestion.

In Saskatoon, the sludge is handled at a bio-solid facility which is twelve kilometers from the treatment plant where it is stored. The struvite problems are exacerbated as the sludge must travel this distance through pipes from the treatment plant to this facility, and then pump decant water back to the treatment plant. Keeping the pipes clear of struvite is a significant operational challenge, especially in the winter. Chemical additives can sometimes be used to mitigate struvite problems, however they are costly and result in a higher volume of sludge waste requiring disposal.

The Ostara system will help the City overcome these challenges by recovering 75 per cent of the phosphorus and 10 per cent of the nitrogen from the wastewater stream before they accumulate in the equipment.

Using Ostara's Pearl 2000 system, Saskatoon's new nutrient recovery facility has an annual production capacity of 730 metric tons of Crystal Green fertilizer using the nutrients recovered by the process, for which the City receives revenue.

This is also Ostara's first commercial implementation of WASSTRIP®, a process that increases the amount of phosphorus available for recovery by up to 40 per cent, enhancing the efficacy of the Pearl process and controlling struvite scale formations throughout the sludge treatment stream.

The nutrient recovery system installed at the plant will result in significant annual cost savings and provide a revenue stream earned from the fertilizer produced. The system installed at the Saskatoon WWTP cost $4.7 million (CAD).

**Enhanced Efficiency Fertilizer**
Ostara's nutrient recovery process helps to address one of the planet's most critical environmental challenges: the proliferation of algae blooms that impair waterways and destroy aquatic life. Ostara's technology recovers excess nutrients before they have an opportunity to accumulate and transforms them into an environmentally responsible, slow-release fertilizer called Crystal Green.

A blend of phosphorus, nitrogen and magnesium, Crystal Green is the first nutrient technology to offer a plant-activated, slow-release fertilizer sustainably made from renewable sources. Unlike conventional water-soluble fertilizers, Crystal Green responds to plant demand, releasing nutrients only when the roots need them, resulting in greater fertilizer efficiency, lower application rates, and reduced nutrient loss through leaching and runoff. It is used by growers in the agriculture, turf and ornamental sectors throughout North America and in Europe,

"We have the opportunity to transform a water challenge common throughout North America into a sustainable solution," said Mr. Abrary. "Removing nutrients from where they shouldn't be – in our waterways – and using them to create a new generation of eco-friendly, enhanced efficiency fertilizer is the smart thing to do agriculturally and the right thing to do environmentally."

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**About The Wastewater Treatment Plant**
The Saskatoon Wastewater Treatment Plant is a designated Level 4 plant, which is the highest level of certification. As such, all aspects of the wastewater treatment process are closely monitored twenty-four hours a day, seven days a week, by highly trained Plant operators. The treatment process is continuously analyzed through electronic controls, monitoring devices and computers to ensure the Plant is operating effectively. Additionally, an on-site laboratory performs approximately 30,000 analyses annually to ensure continuous quality control and to record the Plant's performance.

**About Ostara Nutrient Recovery Technologies Inc.**
Ostara designs, builds and markets a proprietary nutrient recovery technology that transforms phosphorus and nitrogen recovered from municipal and industrial water treatment facilities into a high-value, eco-friendly fertilizer, sold and marketed as Crystal Green®. Ostara currently operates five nutrient recovery facilities in North America and plans to launch two additional plants later in 2013, including its first European site in Slough, UK for Thames Water. The Company also operates a demonstration facility to treat industrial process water. Ostara is the recipient of numerous awards including the 2011 Technology Pioneer by the World Economic Forum, and being named to the Global Cleantech 100 for the past four years and is headquartered in

Vancouver, Canada. For more information visit www.ostara.com.

**About Crystal Green**
Crystal Green, enhanced efficiency fertilizer, is the first plant-activated, nutrient technology to offer plant-available, slow-release nutrients, sustainably made from renewable sources. Formulated with a 5-28-0 + 10% blend of phosphorus, nitrogen and magnesium, Crystal Green's citrate-soluble granules offer more consistent nutrient feeding to plant roots compared to conventional water-soluble phosphorus fertilizers, resulting in greater fertilizer efficiency, lower application rates, and reduced nutrient loss. Its slow release formulation and crystalline structure provides a season-long supply of plant-available nutrients while reducing the risk of leaching and runoff, thereby protecting sensitive regional waterways. Crystal Green is typically combined with other fertilizer inputs to create blends used by growers in the agriculture, turf and ornamental markets. For more information about Crystal Green, visit www.crystalgreen.com.

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**Downloads:**
Case Study, Photo Gallery, Corporate Brochure

For downloads, more information & photos please visit: www.ostara.com/saskatoon
**Event photos will be available online after 12pm, August 14, 2013*