

Manufacturing East Connections

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Minister's Award for
Environmental Excellence
2015 Award Winner

NOVA Chemicals is proud to have received this award from the Ontario Ministry of Environment and Climate Change earlier this spring.

We were recognized for our work to transition our Corunna facility from oil-based to primarily ethane-based feedstock. We have already realized significant reductions in emissions of sulfur dioxide and nitrogen oxide (key air pollutants) and carbon dioxide (a greenhouse gas).

For related information, please see Tom Thompson's message, right.

Re-investment into our facilities leads to numerous benefits

During the last 10 years, we have invested more than \$1 billion into our Corunna, Moore and St. Clair River Sites — together a cornerstone in Ontario's petrochemical industry. We are also the largest private employer in the Sarnia area with 996 employees and approximately 300 contractors.

As NOVA Chemicals pursues our NOVA 2020 growth plan (see pages 3 and 4 for updates), we continue to make significant financial investments into our existing manufacturing facilities. These investments not only help position us for long-term competitiveness, but they also reflect our focus on sustainability and our long-standing commitment to Responsible Care®.

From 2011 to 2014, we undertook the \$250-million conversion of our Corunna ethylene cracker which allowed us to shift from oil-based feedstock to primarily ethane-based feedstock, currently supplied from the Marcellus Shale Basin. I am extremely proud to share with you that NOVA Chemicals recently received a 2015 Minister's Award for Environmental Excellence (see left) in recognition of this work. This Corunna Cracker Revamp is an excellent example of how we are leveraging process and equipment advances to improve both our competitiveness and our environmental performance.

My sincere thanks to all our teams for contributing to this work and to their current focus on our additional



Our Corunna facility is realizing significant reductions in emissions as a result of a revamp and move to ethane-based feedstock.

\$400-million project now underway to convert the Corunna cracker to enable it to use 100% ethane. We also greatly appreciate the support from our communities who continue to work with us and provide input on our growth projects and associated operations.

We all share in this award that demonstrates how we can work together to meet our business targets while achieving environmental objectives.

A handwritten signature in black ink, appearing to read 'Tom Thompson'.

Tom Thompson
Regional Manufacturing Director

In our community

Working with the YMCA to support First Nations youth

This spring NOVA Chemicals joined the Sarnia-Lambton YMCA in its vision to provide healthy communities through a donation of \$27,500. The donation enables the YMCA to offer leadership programs to First Nations youth at no charge and expand the curriculum to increase enrollment throughout the community.

The YMCA Youth Aboriginal Leadership and Leaders of Tomorrow programs are offered to youth aged 14 to 17 years. The programs provide a unique blend of outdoor adventure, community involvement and skill development, helping to build increased self-awareness, leadership, problem-solving skills, communication and teamwork.

This is the third year we are supporting the program. In 2015, NOVA Chemicals' support helped over 165 First Nations youth participate in the program and attend summer camps at the YMCA Leadership Challenge Centre.



Taking care...to protect and enhance our natural resources

Employees from Manufacturing East recently took part in the City of Sarnia Community Parks Clean-Up Day. Part of making an Earth Day pledge to help clean up in the community, promote civic pride and take care of our natural resources, the team hauled 15 bags of garbage, recycling and brush from a neighbourhood park.

NOVA Chemicals has also been the proud lead sponsor for this event for the past two years, supplying the clean-up kits including garbage and recycling bags, safety gloves and first aid kits.

Wheels to Lambton transportation program launched

NOVA Chemicals was pleased to support for the Wheels to Lambton initiative focused on alleviating the transportation barrier for First Nations students who attend Lambton College in Sarnia.

During the past two years, Walpole Island First Nation and Aamjiwnaang First Nation have worked together with other members of the Visions of Harmony organization — of which

NOVA Chemicals is a member — to establish a shuttle van service to help students get to their classes. Program collaborators recently provided support to purchase two 12-passenger vans to transport students. The vans make several round trips from the First Nations communities to Lambton College each school day.



Update on NOVA 2020 Growth Projects

We are currently working on several permit applications to the Ministry of Environment and Climate Change that support our growth plans. If you are interested in more information, or if you have any questions or suggestions, please contact us (see page 4 for contact details). Please see our web site for an overview of potential future growth projects in this area: www.novachem.com/pages/sarnia-lambton/sarnia-news.aspx

Waste management regulatory amendment

We demonstrate leadership in Responsible Care through our commitment to the health and safety of people and the environment, and the responsible manufacture and use of plastics. NOVA Chemicals believes that waste must be managed, treated and disposed of responsibly. We reduce, recycle, reuse and reclaim our waste.

Land farming is an accepted practice for certain types of waste. Land farming does not include hazardous waste — our hazardous waste is taken off-site for disposal.

We have been land farming at the Corunna Site since 1986. During the process, waste is injected about 15 centimetres below the surface and mixed in with the soil. The waste breaks down naturally over time. Acceptable wastes are sampled in advance of spreading to confirm the waste meets permit and regulatory requirements.

We will be requesting a regulatory amendment to our permit in June 2016 to reduce the area used for land farming. We will **not** be asking for changes to the amount or types of waste to be managed through land farming. These specifications will remain as currently defined in our Corunna Site permit from the Ministry of Environment and Climate Change.



During the land farming process, waste is injected about 15 centimetres below the surface and mixed in with the soil. The waste breaks down naturally over time.

Permit to Take Water renewal

Water is important to our operations, and our management programs focus on minimizing our impact on this valuable resource.

We use water from the St. Clair River in our Corunna Site manufacturing facilities for heating and cooling purposes. The water we use goes through extensive testing on-site to meet regulatory obligations and strict environmental standards before it is returned to the river.

Our Corunna Site has a permit to withdraw water from the St. Clair River. Every 10 years, we apply for a renewal to this permit. As part of the permit renewal in 2017, we will **not** be requesting a change to our current permit level. We plan to provide, within the current permit level, for additional water use for a potential new polyethylene facility at the Corunna Site and possible Corunna cracker expansion.



The water we use goes through extensive testing on-site to meet regulatory obligations and strict environmental standards before it is returned to the St. Clair River.

Update on other Manufacturing East projects

Flare improvement work continues

Flares are important safety devices in petrochemical facilities and refineries. Flares safely burn hydrocarbon gases produced during manufacturing activities that cannot be recovered or recycled. Flares are also an important safety feature during unplanned disruptions to operations, such as a power outage. Flaring is subject to strict environmental controls and approvals.

We minimize the use of flaring when possible and reduce the number of plant start-ups or shut-downs which can cause higher periods of flaring. Our transition to an ethane-based feedstock has also helped flare performance.

Planned upgrades are the latest in a series of enhancements to improve Corunna flare performance and reduce flaring events. Proposed 2017 improvements include replacement of the flare tip incorporating updated flare technology which will increase the flare system's reliability and smokeless capacity. We expect to file the necessary applications in the next few months. With regulatory approvals, the replacement flare tip will be installed during the planned 2017 turnaround.



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Welcome to the team

Earlier this year, NOVA Chemicals was pleased to welcome Meaghan Kreeft, who joined the team in Manufacturing East as our new Communications Consultant.



Meaghan is a communications professional with more than 10 years of experience in strategic communications, stakeholder relations and public participation. She is working alongside local leadership on our community outreach plans in support of ongoing regional manufacturing and growth projects.

We encourage you to connect with Meaghan at meaghan.kreeft@novachem.com should you have any questions, suggestions or comments on our communications materials or on any aspect of our operations and growth plans.



Taking Care

Safety involves staying alert to the hazards around us. Not just at work but at home too. Here is how you can keep safety top of mind and protect yourself and your loved ones. Always ask yourself:

- **When faced with a hazard, do I know what the 'right' or safe approach is?**
- **Do I always choose to take this path?**
- **If I take a different action, am I putting myself or others at risk when I truly know better?**

Connections is published by NOVA Chemicals Corporation

If you have any questions, suggestions or concerns, please contact:

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For more information, please see these websites:

- www.novachem.com/pages/sarnia-lambton/sarnia-lambton.aspx
- Chemistry Industry Association of Canada: www.canadianchemistry.ca
- American Chemistry Council: www.americanchemistry.com

