

Taking Care

along the pipelines we operate in Ontario

A guide for landowners and neighbours



Operations



Communities



Products



Environment



Responsible Care®
Our commitment to sustainability.

Taking Care



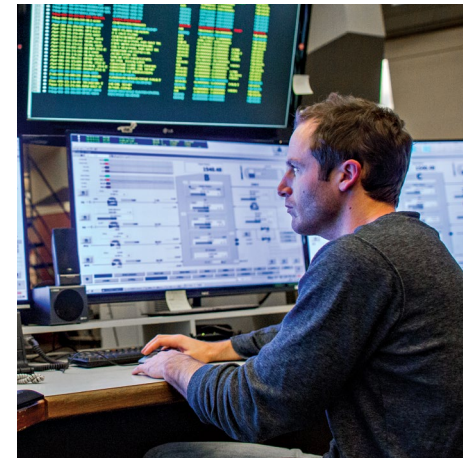
Our work at NOVA Chemicals results in plastic products that take care of food, water and other goods vital to life. To enable these products, we must first take care of the people, places, materials and processes that make them possible. We take care with respect to our operations, communities, products and the environment. Taking Care is a way to think and a way to work. It's our particular approach for putting Responsible Care® into practice.

About this guide

At NOVA Chemicals we care about the safety of our neighbours and landowners, the communities and the environment along the pipeline systems we operate — and at all of our petrochemical facilities.

Our commitment to Responsible Care, which includes Community Awareness and Emergency Response, is aimed at attaining the highest standards for health, safety and environmental performance in all of our operations.

Sharing information with you on how we are “taking care” along our pipelines is a key part of that commitment. This guide explains our approach to maintaining very high standards for pipeline safety and integrity, our emergency preparedness plans, and landowner rights and responsibilities.



NOVA Chemicals has been operating in Ontario for over 30 years. We work proactively to be a socially responsible neighbour in the communities where we operate and do business.

To achieve this, we continuously seek input and suggestions from our stakeholders.

We provide high quality, value-added products for our customers worldwide

NOVA Chemicals' mission is to be the leader in innovation that enables our customers to deliver plastic products that make everyday life healthier, easier and safer. Our employees work with a focus on health, safety, security and environmental stewardship through our commitment to sustainability and Responsible Care.

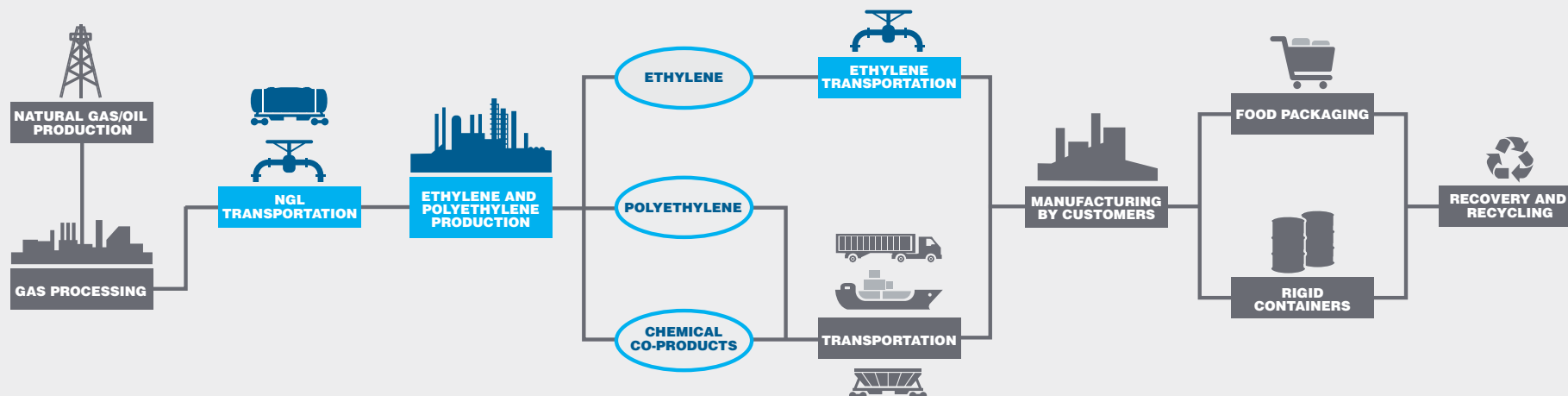
NOVA Chemicals owns and operates three petrochemical facilities in St. Clair Township in Ontario that produce ethylene and polyethylene, along with a number of co-products.

NOVA Chemicals has production facilities located in Canada and the United States. We are primarily an ethylene / polyethylene producer. We also have Research and Technology Centres in Canada and the United States. We employ about 2,800 people worldwide.



Using our resins, our customers produce consumer, industrial and packaging products.

Ethylene / polyethylene value chain:



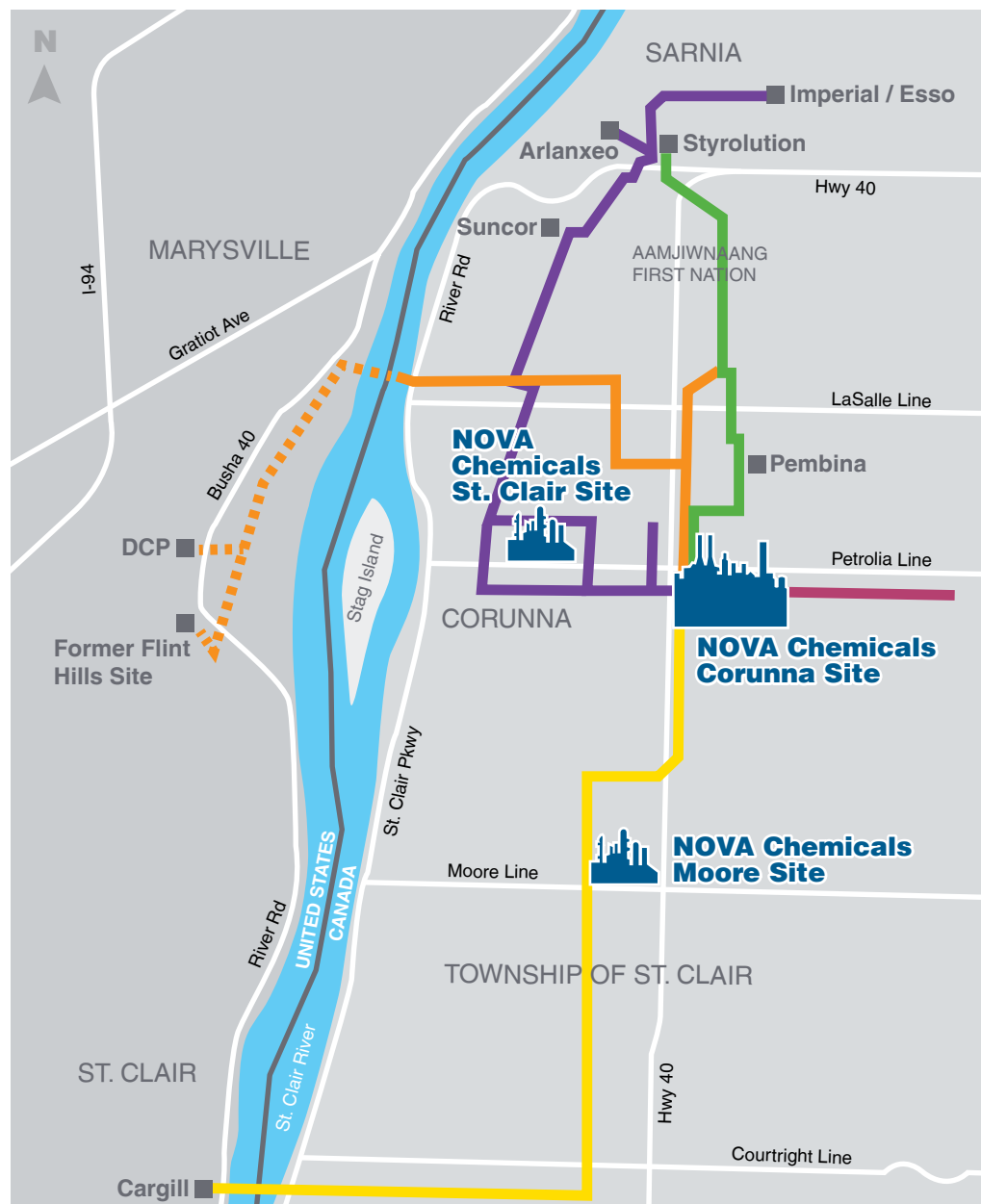
Pipelines in our Manufacturing East operations

Main Pipeline Corridors

- Pipeline Corridor A
- Pipeline Corridor B
- Pipeline Corridor C
- Pipeline Corridor D
- Pipeline Corridor E
- - - U.S. Pipeline Corridor



We refer to our Ontario operations as Manufacturing East. We continue to make significant investments into our petrochemical facilities located in the Sarnia-Lambton region.



The pipelines we operate

NOVA Chemicals owns and operates numerous pipelines in Ontario that safely transport the feedstocks and products essential to our operations as well as to others in the petrochemical industry. Five of our pipelines cross the St. Clair River to connecting facilities located in Michigan. We also own, operate and maintain a number of small length pipelines adjacent to our Manufacturing East facilities.

Our pipeline systems involve more than 125 kilometres (km) of pipeline. In these pipelines we transport a variety of hydrocarbons including high vapour pressure liquids and oil as well as commodities such as brine.

- Pipelines entering our facilities carry natural gas liquids such as ethane, propane and butane. These materials are used as feedstocks in our processes.
- Pipelines exiting our facilities carry finished products and co-products including ethylene, brine and a variety of hydrocarbon blends and fuel products.



Moving products by pipeline is the safest, most efficient and environmentally responsible form of transportation. NOVA Chemicals has a consistent record of safe, responsible pipeline operations.

Most of the hydrocarbon products carried in our pipelines are slightly heavier than air and normally would tend to accumulate in low-lying areas. Please see page 12 for what to do if you suspect a leak.

Our commitment: safety, health and environment

We are a Responsible Care company. We are committed to Responsible Care and sustainability in our daily operations as well as our future growth. We operate with regard to the safety and well-being of our co-workers, communities and the environment.

NOVA Chemicals' culture is built on the ethics and standards of Responsible Care

Responsible Care, launched in 1985 by the Chemistry Industry Association of Canada (CIAC), is the chemistry industry's approach to addressing stakeholder concerns about the potential effects of chemicals and chemical facilities on human health and the environment.

We are committed to minimizing our impact on the environment because it is the right thing to do and is key to the sustainability of our business.

For more information, please see:
www.canadianchemistry.ca

Taking Care along the pipelines we operate

Taking Care is NOVA Chemicals' approach to putting Responsible Care and sustainability into practice.

Our experienced Pipeline Team of field and technical staff is focused on operating our pipelines with the utmost consideration for public safety, adjacent landowners, environmental protection and pipeline integrity. We also take a proactive approach to communicating and working with stakeholders.

Taking Care



Responsible Care®
Our commitment to sustainability.

Safety is a priority in our operations. We take care to attract and develop talented people committed to the safety and well-being of themselves and others. We foster relationships that promote community safety and other social and environmental values.

Meeting regulatory requirements

NOVA Chemicals operates within all applicable regulatory standards and guidelines, including Federal, Provincial and State depending on the jurisdiction that governs the pipeline.

Ontario pipeline facilities are under the jurisdiction of the Ontario Energy Board (OEB) and Technical Standards & Safety Authority (TSSA).

The Canada Energy Regulator (CER) regulates the Canadian portion of all interprovincial and international pipeline systems under the terms and conditions of the *CER Act* and applicable regulations.

The United States Department of Transport (DOT), through the office of Pipeline and Hazardous Materials Safety Administration (PHMSA), has jurisdiction for the U.S. portion of the international pipeline systems.



Canadian information sources:

Ontario Energy Board: www.oeb.ca

Technical Standards & Safety Authority: www.tssa.org

Canada Energy Regulator (CER): www.cer-rec.gc.ca

As a Responsible Care company, we adhere to a strict security management standard to safeguard our facilities. This includes vulnerability assessments of our transportation systems. As landowners and neighbours, you can help us by reporting unusual or suspicious activities.

Our responsibilities as pipeline operator

Our responsibilities as pipeline operator include

- integrity management;
- damage prevention;
- security management;
- safety management;
- public awareness;
- environmental protection;
- co-operative working relationships with stakeholders; and
- emergency preparedness and response.

People, systems and equipment make safety a priority

All of the pipelines we operate were constructed in accordance with applicable Provincial, State and Federal (Canada and United States) requirements.

Experienced operators monitor our pipelines 24 hours per day, 365 days per year. Operators continuously monitor pipeline pressure, temperature and flow conditions.

Built into the pipelines are essential systems and equipment:

Supervisory Control and Data Acquisition (SCADA)

System — The SCADA Systems electronically gather flows, temperatures and pressures from the block valve sites located along each pipeline. This information is used by the pipeline operators to make operating decisions. SCADA also relays information to other computer systems, such as the Leak Detection System, and provides data on amounts flowing in and out of the system (material balance).

Leak Detection System — These computerized systems immediately sound an alarm condition to the operators if any abnormalities are detected (e.g. more product flowing into

the system than out). The systems identify the condition and approximate location of the problem.

Controlled Block Valves — In keeping with regulatory specifications, block valves are located regularly along the pipelines. Operators and technicians use these valves to isolate portions of the pipeline for periodic maintenance or in case of an emergency. Block valve stations are located in secure compounds and are checked regularly, in accordance with regulatory requirements.

Safety management is an integrated component of our operations, aimed at preventing and mitigating releases of substances from our pipelines. Specifically, safety management involves the identification and mitigation of occupational and industrial safety hazards for the protection of people and property.

Pipeline integrity management

Inspections — A sophisticated internal inspection tool called a “smart pig” travels through the pipelines to detect any defects, corrosion or abnormalities. Defects found are assessed and repaired as required.

Corrosion Protection — Corrosion protection systems are an essential component in the maintenance of all steel-based pipelines. Cathodic protection systems use a low voltage current along the pipelines to prevent electro-chemical reactions that can cause steel to corrode. All of our pipelines also have special pipe coatings that provide a layer of corrosion protection between the pipeline and soil.

Damage prevention

Aerial Patrol — We use aircraft patrol to fly over the entire network of pipelines on a regular basis.

Ground Patrol — Regular right-of-way inspections are conducted by contracted pipeline personnel along the pipeline corridors.

Because of these comprehensive practices, pipeline incidents rarely occur. If a potential problem or leak is detected, maintenance crews are dispatched immediately to safely deal with the situation.

Our Security Management Program protects people and assets from third-party impacts that could cause an injury or incident. This includes fenced compounds, locked valves, alarms, cameras and patrols.

Environmental considerations along our pipelines

Soil management — Topsoil is an important non-renewable resource. When excavation activities occur along the pipeline rights-of-way, we ensure topsoil is carefully removed, stored and returned upon completion of work.

Fugitive emission controls — Above-ground facilities such as block valves, pig traps or metering stations are monitored to identify and repair any minor leaks.

Air / Noise management — Any construction maintenance or operations activities include noise mitigation measures to reduce impacts on neighbours. For example, we minimize flaring at our facilities in consideration of both noise and environmental impacts.

Waste management — Any waste generated through the operation or maintenance of our pipelines is handled in a responsible manner, consistent with regulatory requirements and Responsible Care standards.

Emergency preparedness and response

Our pipeline systems have an Emergency Management Program (EMP) and a Pipeline Emergency Response Team (PERT) Manual in place to help protect people, the environment and assets.

The first priority in any emergency response is the safety of neighbours and employees. Effective communication is critical and the PERT Emergency Procedures Manual includes details on notification of the public and others.

We work closely with landowners, residents, community officials, police, fire and other first responders and mutual aid groups to develop the PERT manual. The manual is updated and tested on an annual basis to ensure procedures are effective. All pipeline personnel understand and know their roles, and the roles of other emergency responders. Drills and exercises are conducted regularly in conjunction with emergency response personnel from the municipalities through which our pipelines travel.

In the event of a pipeline leak or rupture, we notify the local municipality to assist with emergency management and response. The municipality in conjunction with NOVA Chemicals will direct the community to either shelter in place or evacuate.

As part of our Taking Care program, we provide information on pipeline emergency response plans and landowner awareness to residents along the pipeline corridors.

For more information, please see our fact sheet: NOVA Chemicals Pipeline Operations: Preparation for an Emergency Response on our pipeline operations page (<http://www.novachem.com/pages/company/pipeline-operations.aspx>).



The first priority in any emergency response is the safety of neighbours and employees.

Working with others

To ensure public safety, pipeline security and integrity, damage prevention and environmental protection, NOVA Chemicals has established co-operative working relationships with:

- Counties and municipalities through which our pipeline systems run;
- Emergency responders and agencies;
- Industry associations such as Sarnia-Lambton Community Awareness and Emergency Response (CAER) and the Chemical Valley Emergency Coordination Organization (CVECO);
- Regulatory agencies; and
- Neighbouring industries.

Stakeholder and public awareness — working together

Working co-operatively with stakeholders — from landowners along our rights-of-way to municipal agencies to industry associations — is essential.

NOVA Chemicals has right-of-way agreements with all landowners along the pipeline systems we operate. These agreements outline the obligations of both NOVA Chemicals and the landowner with respect to activities on the right-of-way.

Most of the obligations are designed for landowner safety. Our intent is to ensure you have the right to use the land within the right-of-way — without negatively impacting safety.

We provide information to all residences along our pipeline rights-of-way about operations and products carried, potential hazards and our emergency response plans.

As landowners and neighbours, you are our additional eyes and ears along the pipeline. Through our outreach programs and regular communications, we work hard at building a solid relationship with you. We want you to feel comfortable contacting us for information or to discuss any activities you see or hear that seem out of the ordinary — such as odours, noise, suspicious activities or other disturbances.

Please call us at any time if you have any questions, concerns or suggestions.

**NOVA CHEMICALS TOLL FREE:
1-844-346-3202 (press 0 for an attendant)**

24/7 PIPELINE EMERGENCY: 1-800-278-0584



At all road and railway crossings along pipelines and at major water crossings, you will find markers such as this. These markers are not necessarily on top of the pipeline. It is important to remember they may not indicate the exact location, route or number of pipelines in the right-of-way.

BEFORE YOU DIG

Unapproved ground disturbances are one of the most common causes of pipeline damage. It is the responsibility of landowners and contractors, when operating within the "prescribed" area, to adhere to the provisions of Federal and Provincial regulatory requirements. This area is defined by the National Energy Board as 30 metres (100 feet) either side from the centreline of the pipe.

Before any ground disturbance of more than 30 centimetres or one foot in this prescribed area can take place, it is essential that you:

Contact Ontario One Call at least five full working days before you dig to ensure that all utility lines are located and marked. As part of this contact, and for your safety, NOVA Chemicals will be sent out to mark the pipeline as necessary — at no cost to you.

www.on1call.com or call toll-free **1-800-400-2255**



For complex or significant work, notify NOVA Chemicals as early as possible about your plans. We will help determine whether your planned activity constitutes a ground disturbance, and provide you with instructions on working near the pipeline. You will need permission from us before you can proceed with any work classed as a ground disturbance. For more information on how to receive consent to proceed with your work, please see *Guidance for Working Near Our Pipelines* at <http://www.novachem.com/Pages/company/pipeline-operations.aspx> or email us at MEPipeline@novachem.com.

Ground disturbance includes digging, excavating, tilling, trenching, plowing, drilling, tunnelling, auguring, backfilling, blasting, topsoil stripping, land levelling, peat removal, clearing and grading.

Agricultural activity

If you are a landowner or tenant who performs agricultural activity near pipelines, you must exercise due diligence in your operations. Normal agricultural activity, at a depth no greater than 45 centimetres (1.5 feet), is permitted over the pipeline right-of-way. The crossing of pipelines with vehicle or mobile equipment for agricultural activity is authorized if the equipment is operated within the manufacturer's approved limits and operating guidelines.

Agricultural activity means the production of crops and the raising of animals and includes tillage, plowing, disking, harrowing and pasturing, but does not include the construction of new buildings or impervious areas or the installation of tiling, drainage, placement of footings, foundations, pilings or posts, including fence posts.

If you are farming at a depth greater than 45 centimetres (1.5 feet), do not meet the agricultural equipment requirements or are planning additional activities on your land, please notify us by calling Ontario One Call.

What to do if you suspect a leak

In the unlikely event of a pipeline incident, it is important to know what to do in the event of a leak — or a suspected leak.

If you see a vapour cloud (these clouds look like fog), or there may be frosted ground or wilted vegetation near a pipeline, or discoloured snow. . .

If you smell an odour similar to gasoline or oil, but stronger. . .

If you hear a loud hissing or roaring noise. . .

Do the following:

- ✓ Protect yourself and the safety of those around you
- ✓ Shut off any equipment operating on or near the pipeline
- ✓ Extinguish any tobacco products or any ignited material in the area
- ✓ Shut off your cell phone or any other electronic devices until you are well removed from the area
- ✓ Alert others in the area
- ✓ Immediately leave the area — if possible travel uphill, crosswind or upwind from the leak
- ✓ As soon as you feel you are in a safe location, call 911 or our 24-hour emergency number **TOLL FREE 1-800-278-0584**

In the event of a pipeline leak or rupture, we notify the local municipality to assist with emergency management and response. The municipality in conjunction with NOVA Chemicals will direct the community to either shelter in place or evacuate.



Shelter in Place

Do not:

- ✗ Make sparks or create a heat source
- ✗ Start motorized equipment
- ✗ Drive a vehicle through the affected area
- ✗ Touch or go near any product leaking from the pipeline
- ✗ Turn on or off any lights or appliances powered by electricity, batteries or natural gas
- ✗ Use your cell phone in the affected area

Investing in our Ontario operations

We have invested more than \$1.2 billion in our Ontario manufacturing facilities over the last 10 years to ensure ongoing safe and reliable operations that will remain competitive in global markets.



Corunna Site



Moore Site



St. Clair River Site

The Corunna Site can produce 1.8 billion pounds of ethylene and up to 700 million pounds of co-products annually. It began operations in late 1977 and was purchased by NOVA Chemicals in 1988. It was the first fully integrated cracker and petrochemical complex in North America.

Moore and St. Clair convert ethylene supplied by Corunna into up to 1.3 billion pounds of low-density and high-density polyethylene.

We are the largest private employer in the region:

- About 1,000 permanent employees
- About 300 contractors

From a corporate perspective, we pay approximately:

- \$40 million in Ontario income taxes annually
- \$2.3 million in property and pipeline taxes annually

We believe community involvement is an important part of doing business. Locally, we have contributed nearly \$4 million over the last 5 years through our community investment program. Our employees are also active volunteers in the community.



Please contact us at any time if you have any questions, concerns or suggestions about the pipelines we operate, or any of our operations.

Pipeline Contact Information

Emergency (24 hours per day): 1-800-278-0584

General Inquiries: 1-519-862-2911 or 1-844-346-3202 (press 0 for an attendant)
manestcomm@novachem.com

For more information about NOVA Chemicals,
please visit us at **www.novachem.com** or
<https://www.novachem.com/locations/sarnia-lambton-on-canada/>

