

NOVA Chemicals Joffre Site

Milestones 1973 – 2019

2019

NOVA Chemicals Joffre Site is one of the largest ethylene and polyethylene production complexes in the world, producing over six billion pounds of ethylene and nearly two and a half billion pounds of polyethylene annually.



The 1970s...

- 1973** The Alberta Gas Trunk Line Company Limited (predecessor of NOVA Chemicals Corporation) made a commitment to expand its participation in Alberta's economic base by investigating the opportunity for ethylene and derivative manufacturing.
- 1974** The Alberta Gas Ethylene Company Ltd. (AGEC) was incorporated.
- 1975** A public hearing of the application by Alberta Gas Ethylene for an Industrial Development permit was held in Red Deer in June. A letter of understanding outlining the Alberta Petrochemical Project was sent to the Alberta Government in September.
- 1976** Following two years of planning and negotiation, key agreements defining the Alberta Petrochemical Project were signed on July 14, following which construction of the first ethylene plant (E1) began on a 150 acre-site at Joffre, 19 kilometres east of Red Deer in Central Alberta.
- 1977** Arrangements for long-term financing of the ethylene plant were successfully concluded in November after several months of negotiation.
- 1978** Hiring of operating staff for the plant commenced.
- 1979** E1 was brought into operation at the beginning of August, one month ahead of schedule. This plant was officially opened on October 22.



The 1980s...

- 1981** Order in Council received to proceed with the second ethylene plant (E2) and a polyethylene plant (PE1), following which construction began.
- 1982** The community liaison group FARM-AGE (now Joffre Community Advisory Panel [JCAP]) is formed to facilitate communication and co-operative relationships between the company and its neighbours.
- 1984** PE1 started up on June 22; E2 brought into operation on June 29. Commenced delivery of carbon dioxide to Vikor for utilization in enhanced oil recovery, and high purity hydrogen to Canadian Liquid Air.

- 1986** The Canadian Chemical Producers' Association (CCPA) launches its Responsible Care® program; Novacor's leaders are instrumental in the program's development and the company adopts the on-going commitment to protect human health and the environment.
- 1987** The Hydrogen Off-Gas Facility (HOG) started up in the spring to supply Cominco with high purity hydrogen for the manufacture of ammonia-based fertilizer. Started up polyethylene pelletizer unit and comonomer recovery facility. Debottlenecked E2 to increase capacity from 1.5 to 1.7 billion pounds.
- 1988** Debottlenecked E1 to increase capacity from 1.2 to 1.4 billion pounds and PE1 to increase capacity from 600 to 850 million pounds.
- 1988** 10th anniversary of E1 celebrated with Open House attended by nearly 1,300 visitors.



The 1990s...

- 1990** Introduction of hexene linear low density polyethylene (LLDPE) resins.
- 1991** AGECE was amalgamated with Novacor Chemicals Ltd. Started up second polyethylene pelletizer unit.
- 1992** PE1 increased nameplate capacity to one billion pounds per year.
- 1993** Debottlenecked E1 to increase capacity to more than 1.5 billion pounds/year. This additional feedstock allowed PE1 to meet or exceed new nameplate.
- 1994** PE1 increased nameplate capacity to 1.2 billion pounds / year.
- 1995** Novacor, as a member of the CCPA and a Responsible Care company, completed a successful verification of the six Codes of Practice, allowing us to remain an industry leader in safety, health, environment, and risk management.
- 1996** Novacor changes name to NOVA Chemicals. Announced expansion of the site including a third ethylene plant (E3), and a second polyethylene plant (PE2) utilizing NOVA Chemicals' Advanced SCLAIRTECH™ polyethylene technology. Regulatory application process commences.
- 1997** Construction of Joffre 2000 began with E3 in mid-year. Investigated feasibility and economics of a cogeneration facility (COGEN) to supply the site's electrical and steam/heat needs. Developed commercial agreements with BP Amoco for a new Linear Alpha Olefins (LAO) plant for the Joffre Site. NOVA Chemicals is a major supplier and customer.
- 1998** Following the July 2 merger with TransCanada Pipelines Limited and the spin-off of NOVA Chemicals, NOVA Chemicals Corporation became a focused commodity chemicals company. COGEN (a joint venture of ATCO Power, EPCOR and NOVA Chemicals) construction commences.
- 1999** NOVA Chemicals celebrated 20 years of success at the Joffre Site and surpasses the 50% complete milestone on Joffre 2000 projects. First company in Canada to receive CCPA Round 2 Verification. BP's LAO plant construction commences.





Growing with Alberta

The 2000s...

- 2000** COGEN synchronized to Provincial power grid in March; official opening June 21. E3 start of initial operations in August recognized through \$25,000 contribution toward the first Habitat for Humanity homes in Red Deer. PE2 completes construction and commences commissioning for 2001 start-up.
- 2001** PE2 achieves initial start-up in April, successfully producing polymer product. E3 officially achieves commercial operations in July, demonstrating operation at an average of 100% of nameplate over three months.
- 2002** Altogas Liquids Inc. / Taylor Operations start-up the Joffre Ethane Extraction Plant (JEEP) increasing Joffre Site's ethane supply.
- 2004** Recognizing safety excellence priority, and as part of 25th site anniversary celebrations, contributed \$25,000 to support injury prevention initiatives of the Safe Communities Coalition of Central Alberta.
- 2005** Added the Alberta Ethane Gathering System, a 1,300-km system and key component of Alberta's energy infrastructure to pipeline operating responsibilities. A new Joffre Feedstock Pipeline delivers first propane providing feedstock flexibility to the ethylene business.
- 2006** Delivery of carbon dioxide (CO₂) to Glencoe Resources for use in enhanced oil recovery reduces additional CO₂ emissions from the site. A \$1-million investment in Red Deer College expansion helps address growing demand for skilled trades.
- 2007** E2 successfully extends major turnaround (maintenance and renewal) to a five-year run cycle. For the third consecutive year, site is recognized with a Work Safe Alberta Safety Performer award.
- 2008** Commissioned a new packaging line with the capacity to process 2,000 bags per hour of polyethylene pellets. Construction of a PE1 comonomer recovery facility commences to reduce emissions, flare visibility and energy costs.
- 2009** NOVA Chemicals now 100% owned by the International Petroleum Investment Company (IPIC), continuing to operate as a Responsible Care[®] company. Site celebrates 30th anniversary with the same spirit and ethic that built this world-class petrochemical site. After another successful fundraising campaign, together with our employees, we have now contributed \$2.5 million to the United Way of Central Alberta.

The 2010s...

- 2010** CCPA changes name to Chemistry Industry Association of Canada (CIAC). NOVA Chemicals achieved our fourth third-party Responsible Care[®] verification since becoming a CIAC-member company.
- 2011** As part of our business growth strategy, we completed a feasibility study related to the addition of a third polyethylene reactor (R3) within the existing Polyethylene 1 (PE1) facility. Success in securing new feedstock supplies positioned the full utilization of existing facilities and growth consideration in light of growing North American polyethylene demand.



2012 PE1 Expansion Project announced to increase the site's polyethylene production capacity by about 40%. Regulatory approvals were received for the main project, with ongoing consultation with the community and stakeholders on all aspects of the new project and associated infrastructure such as the new electricity substation. Preliminary site preparation civil work commenced in the Fall. To commemorate JCAP's 30 years of community liaison, NOVA Chemicals made a donation to purchase a Vital Signs Monitor for the Lacombe Hospital and Care Centre.

2013 A June 7 stakeholder event celebrated the official kick-off to start construction of the PE1 Expansion Project (also referred to as R3). NOVA Chemicals Community Nature Trail, encompassing about 89 hectares (200 acres) east of the rail yard, was announced as the project's legacy at the event.

2014 Now using incremental ethane feedstock from oil sands upgrading and ethane supply from the Williston Basin. Construction progress on PE1 expansion continued and work on the expanded rail yard commenced. Refurbishment of five of our E2 furnaces got underway with projected air quality and noise management benefits. We commemorated our 35th anniversary milestone with the signature sponsorship of a unique community resource outdoor classroom: the NOVA Chemicals Imagination Grove.

2015 The expanded rail yard north of the Joffre Site was officially turned over from construction to operations. Company and community volunteers planted approximately 8,000 trees and shrubs in the NOVA Chemicals Community Nature Trail which opened in the Fall. NOVA Chemicals achieved our fifth third-party Responsible Care verification since becoming a CIAC-member company. The company's first annual public sustainability report was published, reinforcing Taking Care as our particular approach to putting Responsible Care into practice. The PE1 Expansion Project reached peak manpower in early Fall and finished the year 65% construction complete. A proposal for a new stormwater retention pond was announced.

2016 Community members, employees and leaders celebrate the official opening of the NOVA Chemicals Community Nature Trail. We reached a major company milestone: the \$1-billion PE1 Expansion project marked the first linear low density polyethylene reactor start-up in the America's in a decade. By year-end, the first granular test product was produced from the expansion. We started the installation of a second, (back-up) caustic deep well on the site to enhance reliable operations and provide flexibility for system maintenance. Construction began on the new stormwater retention pond.

2017 NOVA Chemicals is now 100% owned by Mubadala Investment Company following a merger with IPIC and their respective assets. In June, we celebrated World Environment Day by announcing the addition of an Educational Pollinator Trail at the NOVA Chemicals Community Nature Trail. It includes native plantings and a bee hotel to help increase sources of nectar and pollen for Alberta native pollinators as well as an enhanced pollinator habitat. NOVA Chemicals dedicated a bench overlooking the bee hotel commemorating JCAP's 35 years of community liaison. The Joffre Site United Way campaign reached a new milestone of just over \$8-million donated since the campaign began in 1995.

2018 New stormwater retention pond commissioning completed. NOVA Chemicals presented 2018 PAMZ Blue Skies Award. Educational Pollinator Trail officially opened. NOVA Chemicals announced \$2 million (US) to prevent plastic debris from reaching ocean by investing in Project STOP. Pembina Pipeline Corporation as owner of Alberta Ethane Development Company Ltd, assumes operations of Alberta Ethane Gathering System (AEGS). Joffre Site United Way campaign nears \$9-million mark.

2019 Activated our sponsorship of the 2019 Canada Winter Games including our exhibit at Festival Place consisting of the American Chemistry Council Tiny House and their *Plastics Makes It Possible™* campaign. About 4,500 visitors explored the Tiny House and learned more about energy efficiency through the use of plastic products. 20,000 pins and lanyards were distributed to exhibit visitors and The Games spectators. Received CIAC verification status.