

## NOVA Chemicals Joffre Site

# Why do we flare and is it safe?

All ethylene and polyethylene manufacturing facilities on the Joffre Site are equipped with flare systems. Flare systems are designed to safely dispose of intermediate process gases until products (ethylene, polyethylene or co-products) meet quality specifications. Site facilities go to the flare system when required to shutdown or re-start for maintenance work (every three to four years) and when process upsets occur. Process upsets can result from a variety of situations including the loss of electrical power or equipment malfunctions.

Our operating policy is to minimize flaring to reduce economic and environmental impacts, and where possible to restrict this activity to non-sleeping hours. NOVA Chemicals has, and will continue to reduce flaring frequency from our operations.

**What is in the flared gas?** Composition of the flared gas varies throughout a shutdown or start-up process, but it is typically a combination of hydrocarbons (ethane, ethylene, methane) and hydrogen. These hydrocarbons are components of natural gas — very similar to the fuel burned in most home furnaces.

**Is it safe?** Flaring is considered to be a safe, environmentally acceptable way to dispose of hydrocarbons. An in-depth Environmental Impact Study suggests “near complete” combustion of hydrocarbon products directed to site flare systems. Our Approval from Alberta Environment includes conditions related to the operation of our flare systems. Regulations under Alberta’s Environmental Protection and Enhancement Act outline provisions for smokeless operation of sources of combustion, including flares. We comply with these conditions.

To ensure ambient air quality around the site, we operate a system of four air monitoring stations, measuring the air for levels of hydrocarbons (total and non-methane), ethylene, oxides of nitrogen and ozone.

**Are the flare systems loud?** Flare systems do generate noise and can cause concern for surrounding neighbors. The Joffre Site works to reduce flaring impacts through:

- operating practices that balance smokeless operating requirements with the need to minimize off-Site noise impacts
- noise monitoring on Site and at two off-Site locations
- the use of best available flare tip technology
- flaring during non-sleeping hours (where possible)
- focusing on facility reliability to reduce the number of flaring events.