

Emissions from Flares with Non-hydrocarbon Liquids in the Flare Stream

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Flaring is often used in the energy and petrochemical sectors to dispose of unwanted flammable gases. Flaring is preferred to simply venting the gases since the global warming potential of CO₂ is much lower than that of methane (IPCC, 2007). The United States Energy Information Administration estimated that 122 billion m³ of gas was flared or vented worldwide in 2008 (US Energy Information Administration, 2011), while in Alberta approximately 1.14 billion m³ was flared or vented in the upstream sector in 2008 (Johnson and Coderre, 2011).

Fracturing fluids have been successfully used for many years in the oil and gas industry to increase well-site productivity. However, in recent years the general public and government regulators have voiced concerns about the possible effects these fluids might have on ground water and air quality (e.g. "Northern BC Fracking License Concerns Critics", CBC 2011). The separation process at upstream battery sites can

potentially create scenarios where some droplets of liquid can enter the flare stack (Stroscher, 2000). This liquid is mostly water but can contain other substances like salt solutions and fracturing fluid. To the authors' knowledge, there are currently no scientific data available that show what effect flaring these substances has on flare efficiency or gas and particle-phase emissions.

Report

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