

Well Test Flare Plume Monitoring

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- Most well test flares in Alberta burn sour gas containing H₂S which when burned produces SO₂. The Alberta ambient ground level air quality guidelines for SO₂ can not be exceeded during a well test. Typically, dispersion modeling of the well test is used to show that the Guidelines will not be exceeded and downwind truck mounted monitoring equipment was employed to confirm the results of the model during the test.
- AEUB Guide 60 "Upstream Petroleum Flaring Industry Requirements" stipulates that dispersion modeling must be consistent with Alberta Environment Guidelines. In July of 1999 Alberta Environment issued new "Air Quality Model Guidelines" which resulted in a change to the practice of SO₂ dispersion modeling traditionally employed by industry.
- As a result of these regulatory changes accurate, practical and cost effective plume tracking methods and associated SO₂ measurement devices are required.
- A research project is proposed to investigate and identify methods to accurately track the center of the well test plume and measure SO₂

concentrations within the plume cost effectively.

- Risks associated with not conducting this research program include: continued decreased regulatory acceptance of well test flaring practices leading to greater command and control regulations which are not based on sound and credible scientific research, thereby leading to increased and unwarranted compliance costs and/or the severe restriction of well test flares.

Strategy: Identify and actively support a research group to investigate cutting edge well test flare plume monitoring techniques to ensure that credible scientific data is available for regulators, industry and public interest groups to base decisions on.

Alberta Research Council Final Report

Saskatchewan Research Council Final Report