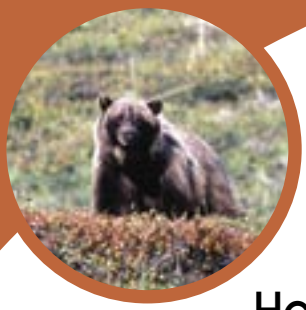

June 2004

Science & Community Environmental Knowledge Fund

Health and Safety Funding Envelope

Background:

The Health and Safety envelope of the SCEK Fund promotes research that advances oil and gas industry practices related to health and safety. It supports projects that focus on:

- Protecting the health of the public and all living things
- Ensuring effective and efficient preparedness in the case of emergencies

Areas of Interest:

- Impacts of oil and gas operations on the health of humans, livestock, wildlife and fish
- Emergency preparedness and response plans
- Air emissions monitoring, modelling and management
- Monitoring of environmental impacts due to sour gas
- Water contamination from oil and gas operations (e.g., drilling muds, sumps, etc.)

The Health and Safety envelope of the Fund is one of five funding envelopes within the program. The other four envelopes are Education and Extension, Ecosystem and Cumulative Impact Management, Engineering and Technology, and Community Environmental Knowledge.

For more information on the SCEK Fund, contact:

Oil and Gas Commission
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Current Portfolio of Projects

Title	Proponent	SCEK Investment	Status
Western Canada Animal Health Study	WISSA	$600,000.00	Anticipated completion summer 2005
Determination of Threshold Levels of Sour Gas and H_2S on the Mammalian Brain	University of Calgary	$269,061.00	Anticipated completion March 2005
Prophet River Moose Study	Wildland Resources	$78,100.00	Completed Dec. 2002
Benzene Emissions from Glycol Dehydrators	Canadian Association of Petroleum Producers	$6,000.00	Completed March 2004
Assessment of Atmospheric Sulphur Deposition to and Proportion of Sulphur in Surrounding Ecosystems due to Sour Gas Emissions	University of Calgary	$47,799.72	Completed June 2002
Impacts of Sour Gas Production Flare Tests on Vegetation	Golder Associates Ltd.	$74,415.00	Completed April 2004
Regional Background Assessment of Groundwater Wells in the Greater Hudson's Hope Area	Diversified Technical Services	$13,700.00	Completed December 2003
Investigation of Tsinhia Lake Fish Kill	Diversified Environmental Services	$2,501.00	Completed February 2004

Western Canada Study on Animal Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities

Proponent:
Western Interprovincial Scientific Studies Association

Project Purpose:
To study animal and human health effects associated with exposure to emissions from oil and natural gas field activities.

Project Summary:
Partially funded by the SCEK Fund, this large scale project is being conducted in BC, Alberta and Saskatchewan. It involves both cattle and wildlife and encompasses 33,000 animals in 200 herds. Key study components are beef cattle productivity and immunotoxicology, wildlife health, exposure assessment, water quality sampling and field analysis.

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Grizzly bear photograph on front cover courtesy of Tom Kitchen.

Determination of Threshold Levels of Sour Gas and Hydrogen Sulphide (H_2S) on the Mammalian Brain

Proponent:
University of Calgary

Project Purpose:
To help evaluate whether the guidelines for hydrogen sulphide (H_2S) exposure are adequate to prevent impacts on human health, and if the guidelines are appropriate for a mixture of compounds.

Project Summary:
Exposure to H_2S has a broad spectrum of toxic effects on the nervous and respiratory systems of mammals. These effects are dependent on concentration, duration and rate of exposure. This study looks at H_2S, sour gas and H_2S/organic compound mixtures at the LOAEL (lowest observable effect levels) and the NOAEL (no observable adverse effect level). The study has arrived at some key findings concerning the effects of H_2S and further experiments are planned.

Contact:
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Prophet River Moose Study

Organization:
Wildland Resources

Project Purpose:
To provide a preliminary investigation to verify the nature of external and internal cysts occurring on moose in the Prophet River First Nation area.

Project Summary:
Using a combination of traditional knowledge and scientific analysis, the study looks at the nature of cysts and green fluids in the body cavities of harvested moose near the Prophet River Indian Band Reserve. A possible connection between the cysts and ingestion of sump water and mud solids at well sites was examined, but no connection could be found. The study concluded that companies should be held responsible for securing, monitoring and cleaning up open well sites.

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Benzene Emissions from Glycol Dehydrators

Proponent:
Canadian Association of Petroleum Producers (CAPP)

Project Purpose:
To evaluate the health and environmental risks associated with benzene emissions, and to determine appropriate methods of regulating and reducing emissions.

Project Summary:
Benzene is a naturally occurring compound considered to be a non-threshold carcinogen. It is released as a by-product from hydrocarbon combustion. In the oil and gas industry, glycol dehydrators represent a disproportionate single source of benzene emissions. This project is led by the Benzene Technical Advisory Team, a working group comprised of several federal and provincial authorities. The group was formed to monitor and evaluate the health and environmental risks associated with benzene. Aside from managing the monitoring project, the group also communicates with stakeholders on the issue of benzene emissions.

Contact:
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Photograph courtesy Leveton Consultants Ltd.

Impacts of Sour Gas Production Flare Tests on Vegetation

Proponent:
Larkspur Biological/Golder Associates Ltd.

Project Purpose:
To complete an inventory of vegetation response to well flaring.

Project Summary:
The study compared pre-flare and post-flare data to determine potential impact on vegetation at several well test sites in the Sukunka-Grizzly and Buick gas fields. Acute injury from sulphur dioxide was noted in pine up to approximately 150 metres from the well sites. Overall, results indicate that short duration winter flaring had few adverse impacts on surrounding vegetation or forest health.

Contact:
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Assessment of Atmospheric Sulphur Deposition to and Proportion of Sulphur in Surrounding Ecosystems due to Sour Gas Emissions

Proponent:
Department of Physics and Astronomy, University of Calgary

Project Purpose:
To determine the feasibility of quantifying the effects from multiple sour gas emissions on a forested ecosystem using stable isotope techniques.

Project Summary:
Remediation programs and emission reduction strategies help mitigate cumulative impacts from flaring, sour gas processing and gas emissions. In order to understand the effectiveness of these mitigation measures, it is important to understand the current state of environments close to gas processing facilities and their sensitivity to sour gas emissions. This study examines whether it is possible to map present day and cumulative sulphur distribution in soils and vegetation affected by a single sour gas processing plant.

Contact:
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Investigation of Tsinhia Lake Fish Kill

Proponent:
Diversified Environmental Services

Project Purpose:
To investigate an unusual looking fish kill in Tsinhia Lake. There was concern by a trapper that the quantities of dead fish surfacing in the lake might be related to oil and gas activity in the area.

Project Summary:
The project comprises a preliminary investigation into a report from a local Fort Nelson First Nations member of numerous dead fsh along the shoreline of Tsinhia Lake. No potential surface contamination was found at a nearby gas well and water from the lake was analyzed for possible contaminants. No direct evidence linking the fish kill to industrial activity could be found. It appears probable that the event was the result of natural phenomona.

Contact:
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Regional Background Assessment of Groundwater Wells in the Greater Hudson's Hope Area

Proponent:
Diversified Technical Services

Project Purpose:
To establish environmental monitoring sites in the Greater Hudson's Hope area to collect baseline data on water quality and quantity prior to coalbed methane exploration.

Project Summary:
Concerns by local residents of Hudson's Hope over environmental impacts from oil and gas exploration activities led the Oil and Gas Commission to establish eight environmental monitoring sites in the area during the fall of 2003. Diversified Technical Services identified suitable locations for the monitoring sites and conducted water quality analysis for potability, dissolved metals and extractable petroleum hydrocarbons. Water quantity analysis included static water level measurement, pump tests and flow measurements on springs and creeks.

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The Oil and Gas Commission administers the SCEK Fund on behalf of the Small Explorers and Producers Association of Canada (SEPAC) and the Canadian Association of Petroleum Producers (CAPP). The SCEK Fund is a broad-based fund that incorporates science and community knowledge while supporting studies that address environmental issues related to the oil and gas industry in British Columbia.

CAPP OGC sepac