



# Fact Sheet

## Phase 2: Human Health Risk Assessment of Oil and Gas Activities in Northeastern B.C.

### Project Update: February 2014

Intrinsic Environmental Sciences Inc has completed Task 1 (Information Collection and Issues Identification) and is well underway with Task 2 (Human Health Risk Assessment). Work on Task 3 (Review of Regulatory Frameworks) has also begun.

Phase 2 is now expected to be complete in the summer of 2014. The activities in Phase 2 are summarized below.

### Task 1: Information Collection and Issues Identification (Completed)

Intrinsic carried out a detailed review of the Fraser Basin Council's report that was commissioned under Phase 1. The report (*Identifying Health Concerns Relating to Oil and Gas Development in Northeastern B.C.*) outlines the public's major concerns about the potential health impacts of oil and gas activities in northeastern B.C.

Intrinsic also reviewed the types of oil and gas activities – both current and proposed for the region – to identify relevant scenarios, chemicals and exposure pathways for further consideration.

### Task 2: Human Health Risk Assessment

A human health risk assessment estimates the nature and probability of adverse health effects in humans from exposure to environmental contaminants, by comparing estimated levels of exposure to chemical-specific toxicology data. The HHRA (Task 2) has three parts:

- 1) a comprehensive scientific literature review
- 2) a qualitative screening level risk assessment
- 3) a quantitative (detailed) human health risk assessment

#### 1. Literature Review (Completed)

Intrinsic conducted a comprehensive literature review to identify published information on potential health effects that may be associated with upstream oil and gas activities.

#### 2. Screening Level Risk Assessment (Completed)

A screening level risk assessment (SLRA) refines the scope of the HHRA to identify the exposure scenarios and contaminants of greatest concern. Intrinsic submitted the final draft of the SLRA in January 2014. The screening exercise considered 30 air-related and 20 water-related oil and gas activity scenarios that could potentially have human health impacts. Each emission scenario was assessed and scored according to its potential exposure and health hazard – using industry data, scientific literature and professional judgement.

#### 3. Quantitative Human Health Risk Assessment (In Progress)

The quantitative HHRA is underway and completion is anticipated in the spring of 2014. As part of this assessment, predictive modeling will be completed for the selected emission scenarios to assess the possible risk to human health due to chemicals of potential concern.

Estimates of exposure will be calculated for people in the identified study area. Exposure models have been developed for people in First Nations, small town and agricultural communities. An exposure model for visitors/tourists has also been developed. Each exposure model takes into consideration the possible pathways of exposure of each community, as well as how the potential

effects of chemical exposure can vary among individuals (e.g., children, people with weakened immune systems and the elderly).

These exposure estimates will be compared to chemical-specific toxicology data from provincial and/or federal regulatory agencies to characterize potential health risks.

Intrinsic will conduct the HHRA using widely accepted methods endorsed by regulatory organizations worldwide, including Health Canada, the United States Environmental Protection Agency and the World Health Organization.

### **Task 3: Review of Regulatory Frameworks (In Progress)**

Task 3 is a review of the current regulatory provisions for managing risks from oil and gas activities in B.C. The review's purpose is to determine how well existing B.C. regulatory frameworks safeguard human health with respect to oil and gas activities, and identify potential improvements. Intrinsic anticipates that this review will be completed in the spring of 2014.

### **Task 4: Development of Recommendations**

Based on the combined outcomes of the study, Intrinsic will make recommendations to the B.C. Ministry of Health on a number of topics – including management strategies and monitoring programs that could be implemented to identify and reduce potential health risks for people in the region. Intrinsic anticipates that the recommendations will be submitted to the Ministry of Health in the early summer of 2014.

### **More Information**

Visit the Ministry of Health's website, Oil and Gas Activities in Northeastern B.C:  
<http://www.health.gov.bc.ca/protect/oil-gas-assessment.html>