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June 2, 2009

Ira Rosen
Project Manager
Department of Environmental Conservation
State of Alaska

RE: Comments on the Proposed Risk Assessment Methodology for Alaska's Oil and Gas Infrastructure

Dear Mr. Rosen:

The Yukon River Inter-Tribal Watershed Council (YRITWC) has reviewed the Proposed Risk Assessment Methodology for Alaska's Oil and Gas Infrastructure¹ ('ARA'), prepared by Doyon Emerald and ABS Consulting. The following comments are submitted in response to the invitation for public comment on this proposed methodology.

The YRITWC is an Indigenous grassroots organization, consisting of 70 Tribes and First Nations, dedicated to the protection and preservation of the Yukon River Watershed (encompassing the sacred Yukon River and its numerous tributaries). Our mission is to preserve the Yukon River for the protection of current and future generations of Tribes / First Nations, and for the continuation of traditional Native way of life. Therefore, we are very concerned that all infrastructure located within the watershed be managed properly, with an emphasis on minimizing activities that have the potential to adversely impact the environmental conditions on which the traditional activities of the various Tribes and First Nations depend upon.

¹ Revision 1, March 20, 2009.

Based on our review of the Proposed Risk Assessment Methodology, we have identified certain concerns for which we offer the following comments:

Tribal Council Involvement:

We would like to emphasize the vital importance of including Tribal Governments in all consultation stages of the ARA. We expect that the State of Alaska, and key departments responsible for implementing the ARA, will consult with the YRITWC and Tribal Governments in all matters of safety and environmental risks that may impact the safety of tribal members and/or environmental conditions on tribal lands.

In terms of environmental risks, we would like to emphasize that consultation with Tribal Governments be made whenever a category 3 environmental sensitivity category (‘waterways’)² is identified. Further, consultation with local Tribal Governments should be made in the determination of category 2 environmental sensitivity category sites (‘sensitive lands’)³, to account for traditional knowledge regarding unique ecosystems, cultural or historic sites, and specific areas used for local subsistence hunting activities.

We request that the State of Alaska share information with the YRITWC and Tribal Governments on both the risk profiles eventually compiled through the finalized risk assessment process, as well as the associated risk management decisions and specific actions planned to mitigate these risks.

Risk Assessment Nodal Analysis Framework:

We agree with the comment submission made by Alaska Wild that the proposed nodal analysis framework adopted for petroleum facility event classification is an insufficient tool to incorporate the issues arising from the extreme variability of Alaska’s geography, hydrology and climatic conditions. We do not believe that this ARA will provide the State of Alaska with valuable risk assessment results for use in policy decisions without the acquisition of sufficient field data (which must be secured from facility operators, and not merely estimated from public resources) and without the derivation of stronger definitions.

Inclusion of Climate Change Considerations:

The significant potential impacts of climate change on northern environments have been clearly recognized in numerous scientific studies for several decades. These potential impacts arise from, amongst others, the melting of the fragile permafrost soils and the increased frequency of natural hazardous events coupled with increased intensity of such events. Based on our review, we do not feel that there has been sufficient accounting for climate change considerations in the proposed ARA, especially for the northern Alaskan environment which is particularly vulnerable to these impacts. Although climate change

² ARA; page 121, table 7-5.

³ ARA; page 121, table 7-5.

and permafrost are occasionally mentioned in the proposed methodology, we do not feel that the methodology, as a whole, sufficiently incorporates the increasing complex impacts of climate change. This is further evidenced by select statements included in the ARA, including the statement that “*natural hazards occur at low frequencies*”⁴. The impacts of climate change are already becoming evident (especially in the North), and these will likely only continue to impact those ‘average conditions’ on which historic risk assessments have been traditionally based upon.

We recommend that, at a minimum, the potential impacts of climate change be incorporated in the first step of the Natural Hazards Assessment Process⁵. Scientific data to support the climate change impacts in the risk assessment can be obtained from various sources, including those listed in the ARA⁶, as long as there is an emphasis on circumstances unique to northern environments.

In terms of the components required for establishing worst case environmental scenarios, the second component (namely that the liquid release event is not contained in secondary containment⁷) does not sufficiently incorporate permafrost and climate change considerations, which may significantly increase the potential for the rupture of secondary containments (as discussed briefly in the ARA with respect to major earthquakes⁸). Therefore, we do not feel that ‘worst case environmental scenarios’ have been adequately evaluated / defined in the ARA.

Incorporation of Future Oil and Gas Development Projects into the ARA:

We acknowledge the complexity of this project, and understand that certain limits must be placed on the scope of the project to ensure it be completed effectively. However, we are concerned that no plans have been outlined for incorporating future oil and gas development projects (i.e., those for which production start-up was planned after July 1, 2008⁹) into the ARA. We recommend that facility owners / operators of future oil and gas development projects be required to produce (or at a minimum estimate) the data required for the risk assessment evaluation prior to their projects being given final approval by the State of Alaska. Significant resources have already been expended in this ARA process, and it would be an unfortunate loss to the State if this important management tool could not be easily extended to future development projects.

Screening of Environmental Consequences:

The ARA limits environmental consequences to those that would arise from spills of hydrocarbons and seawater¹⁰. Seawater is held to include produced water¹¹. In turn,

⁴ ARA; page 127, second paragraph.

⁵ ARA; page 129, section 8.1.3.

⁶ ARA; page 131, section 8.1.4.1.

⁷ ARA; page 98-99.

⁸ ARA; page 99, first paragraph.

⁹ ARA; page 27.

¹⁰ ARA; page 98, first paragraph of section 6.3.

produced water typically includes oil along with various metals. However, there is no indication in the ARA that metals, and their associated environmental impacts, are to be included in the risk assessment process.

There are numerous reported metals whose release into the natural environment can have severe adverse effects (including increased toxicity and/or acidic effects) on fragile ecosystems and dependent species, perhaps most notably sensitive fish species. As mentioned previously, metal contamination was not expressly discussed in the ARA. However, based on its potential deleterious impacts, we contend that it must be incorporated into the risk assessment methodology to adequately inform the process on the magnitude of potential environmental consequences.

According to the ARA, the size of a potential spill is the initial factor to be used in “*determining whether or not the impacts may be significant enough to be included in the risk assessment*”¹². We believe that applying this factor as the primary factor in screening environmental consequences significantly undermines the environmental component of the risk assessment. There are several cases where a smaller spill into an ecologically sensitive area will result in a much greater detrimental environmental impact than a larger one might have in a different environment with greater contaminant assimilation capacity (a fact acknowledged by the authors in the ARA¹³).

Various Additional Comments:

The following comments concern other specific issues that we identified during our review of the ARA:

- **Operational Hazard Events**: We contend that although the operational hazard events “*can occur within the boundaries of a plant or facility*”¹⁴, it should be acknowledged that these hazard events also have the potential to impact the surrounding environment, outside the boundaries of the specific plant or facility.
- **Definition of “Environmental Risk”**: ‘Air’ should be included in the definition of Environmental Risk¹⁵. In addition, ‘water’ should include both water flowing through the facility boundaries, and groundwater flowing below the relevant infrastructure or facility.
- **Facility-Specific Information and Data**: It is vital that facility operators directly provide the risk assessment team with all required assessment input data to ensure the validity and strength of the overall risk assessment process¹⁶. Without accurate input data, risk management decisions cannot be adequately developed. For

¹¹ ARA; page 118.

¹² ARA; page 98, second paragraph of section 6.3.

¹³ ARA; page 117.

¹⁴ ARA; page 23, first paragraph of section 3.5.2.

¹⁵ ARA; page 104, section 7.1.1.

¹⁶ ARA; page 106, section 7.1.3.

example, if the normal production flow rates and estimated time for shutoff are not accurately reported, the spill size, a key element in the environmental risk classification, cannot be adequately predicted. This would lead to an ultimate erroneous risk assessment of the specific infrastructure in terms of worst case environmental scenario.

- Environmental Risk Assessment: We are concerned about the approach taken towards the environmental risk assessment component of the ARA. A typical approach in environmental risk assessments is to evaluate contaminant sources, local receptors, and possible pathways. We do not feel that the ARA sufficiently incorporates a pathway analysis in the environmental risk assessment.

We would like to thank-you for this opportunity to comment on the Proposed Risk Assessment Methodology for Alaska’s Oil and Gas Infrastructure. Should you have any questions regarding our comments, please feel free to contact us to discuss the matter further. Thank-you in advance for your consideration of our comments and concerns.

Sincerely:

A handwritten signature in blue ink, appearing to read "Rob Rosenfeld".

Rob Rosenfeld / International Policy and Development Advisor / Yukon Region Director

Yukon River Inter-tribal Watershed Council

Cc: Jon Waterhouse / Alaska Region Director (907)388-2683