



Northwest  
Territories Resources, Wildlife and Economic Development

May 24, 2002

By fax: 403-292-5503

Ms. Laura Van Ham  
Environmental Specialist  
National Energy Board  
444 Seventh Avenue  
Calgary, Alberta T2P 0X8

Dear Ms. Van Ham:

**WesternGeco Mackenzie River Valley 2-D Seismic Program**

The Department of Resources, Wildlife, and Economic Development (RWED) has reviewed the above application to conduct a 2-D seismic program along the Mackenzie River Valley, and has the following comments to offer for consideration by the National Energy Board.

**General**

RWED has had some difficulty assessing the merits of the proponent's discussion of sound intensity. In particular, the methodology has not been effectively described. The proponent should provide additional information detailing where and how the water ambient noise level was obtained, including whether the 140dB was averaged over a period of time and whether it was obtained by sampling the Mackenzie and Liard Rivers.

The proponent states on page 11 that: "In water, due to the higher acoustic impedance, similar sound intensities will give a pressure that in water is 61 times lower than that in air, or a difference of 35.6dB. Correcting for the difference in reference levels and the specific acoustic impedance, 62 dB must be added to measurements taken in air to compare with measurements taken in water." The proponent goes further to indicate that the relative background noise in water is therefore 140dB. Has the proponent added 62dB to all measurements of sound intensity? Please clarify.

Figure 7 displays the Sound Pressure Level (dB) Vs Range graph that was measured from a 480 in<sup>3</sup> airgun array. This figure shows that it took at least 1000 m or 1 km for the dB level to drop to the ambient noise level of approximately 132 dB. However, Figure 9 displays a Sound Intensity (dB) Vs Distance graph as measured from a 1500 in<sup>3</sup> airgun array. This figure shows that for the dB level to drop to 132 dB, it takes approximately



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600 m. The proponent should explain why the larger 1500 in<sup>3</sup> airgun array reaches 132 dB in a shorter distance than the 480 in<sup>3</sup> airgun array.

The proponent does not discuss monitoring efforts to determine the noise level (or sound intensity) at various distances parallel to the airguns. RWED suggests that the proponent employ a monitoring program that will enable quick responses to adverse impacts caused by the sound intensity of the airgun arrays. This monitoring will determine if the seismic program is herding fish. If the monitoring shows that the seismic program is causing harmful impacts across the width of the river, the seismic program should be cancelled or at a minimum, the operational air pressure should be lowered.

The proponent has indicated that seismic activity will not be conducted around the Ramparts at Fort Good Hope. Are there any other sensitive areas the proponent will avoid?

The proponent has also failed to provide a complete waste management plan. RWED suggests that the proponent provide this information for review.

#### **Wildlife**

RWED has concerns about the potential impact this project could have on the hearing and behaviour of freshwater fish and aquatic mammals. The proponent states that at 162dB fish and crustaceans will exhibit avoidance behaviour. However, it is not clear how this behaviour or dB level will affect the hearing and behaviours of freshwater aquatic mammals. Although the proponent indicates that encounters with freshwater aquatic mammals along the Mackenzie River will be minimal, RWED suggests that the proponent be required to undertake measures to mitigate the uncertainty.

The United States Government Department of Commerce's National Marine Fisheries Service (NMFS) Marine Mammal Protection Acts (MMPA), Incidental Harassment Authorizations (IHA) required that proponents monitor for marine mammals and shut down the airguns when mammals are detected within designated safety radii (Richardson, 1999). The NFMS established 180dB as the shutdown radius for a project undertaken in the Beaufort Sea. RWED suggests that the proponent undertake similar precautions during this 2-D geotechnical program.

RWED further suggests that it would be an appropriate condition of this project approval for the proponent to institute a study to determine the effects of overpressure and noise on freshwater aquatic mammals. RWED would be pleased to review the study proposal.

#### **Spill Contingency Plan**

The proponent indicates on page 15 that the Oil Transfer Preventative Measures, located in Appendix III will be followed to prevent spills while refueling. However, this was in fact not supplied. If this document is important for preventing spills and has been referred to in the application, then the proponent should be expected to supply this information.

In addition, Appendix III is entitled "*Oil Spill Contingency Plan and Emergency Response Plan*". However, it appears that an actual copy of the Transport Canada approved Spill Contingency Plan alluded to on page 15 has not been provided in this appendix. To ensure that an effective review of this application is undertaken, a copy of a complete Spill Contingency Plan should be provided to reviewers.

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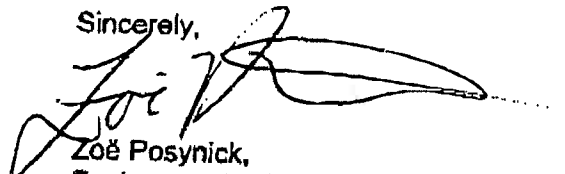
The proponent also did not supply a copy of the *Maritime Shipboard Contingencies Manual and Shipboard Oil Pollution Emergency Plan*, which were alluded to in Appendix III. Once again, to ensure that the proponent has appropriate spill contingency measures in place, all documents that are referred to as part of the spill contingency or emergency response measures should be provided in the information package for review.

Thank you for the opportunity to review and provide comments on the WesternGeco Mackenzie River Delta project. If you have any questions or require any clarification on the above comments, please do not hesitate to contact myself at 867-920-6392.

**Reference:**

Richardson, W.J. 1999. Marine mammal and acoustical monitoring of Western Geophysical's open-water seismic program in the Alaskan Beaufort Sea, 1998. LGL Ltd., Environmental Research Associates, and Greeneridge Sciences Inc. For Western Geophysical and National Marine Fisheries Services.

Sincerely,



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