



P.O. Box 5667  
St. John's, NL A1C 5X1

Your file    *Votre référence*

Our file    *Notre référence*  
BAB 3990-10

Ms. Kimberly Coady  
Environmental Assessment Officer  
Canada-Newfoundland and Labrador Offshore Petroleum Board  
5<sup>th</sup> Floor, TD Place  
140 Water Street  
St. John's, NL                    A1C 6H6

Dear Ms. Coady:

**Subject:                            Jeanne d' Arc Basin 3D Seismic Program**  
**Environmental Assessment (CEAR 06- 01-17492)**

---

As requested, the DFO has reviewed the document entitled, "*Environmental Assessment of Petro-Canada's Jeanne d' Arc Basin 3D Seismic Program*", dated March 2007. Based upon the description of the proposed project, it is understood that Petro-Canada is proposing to conduct approximately 520 km<sup>2</sup> of 3-D seismic data in 2007. The work is to be undertaken within SDL 1092 in the Jeanne d' Arc Basin. The following comments respecting the document are offered for your review and consideration.

***Principal Comments***

**Survey Timing**

The document states that the survey timing for 2007 (and subsequent years) is 1 May and ending 31 December. With no real time frame presented for this project, it limits the value of the EA by making it more difficult to determine potential impact on resources, possible conflict with fisheries, overlap between projects in time and space, and cumulative effects. Understanding the challenges due to equipment availability and other circumstances, nonetheless it would be preferable that the timing window be tightened to reflect the actual period required to conduct the work. In the absence of this information, DFO requests that it be notified of actual project commencement when it does occur.

**Marine Mammals and Safety Radii**

The current safety zone recommended is 500m. As previously stated by DFO and acknowledged in this report, there have been no regional acoustic measures to verify the received sound levels at this distance and research shows considerable variability in the effectiveness of current safety radii in different circumstances. Field validations in the past have translated into practical changes in the mitigation measures proposed, as the safety radius around seismic vessels has increased in other jurisdictions from 500m to 700m after validation of general propagation models. Therefore, the Department emphasizes a need for sound propagation modeling to provide more accurate estimates of safety radii in this region.

**Marine Mammals and Cumulative Effects**

The EA presents a very thorough review of the potential effects of seismic sounds on marine mammals and sea turtles and it is evident that the proponent is attempting to address comments previously put forward by DFO on this issue (such as separate consideration of sources of noise, consideration of sound impacts on different species, the uncertainty with respect to acoustic modelling and data gaps with respect to both species presence and behavioural effects). Evidence suggests that the likelihood of auditory system damage is low. However, the potential for calling and behavioural disturbance due to seismic activity is well presented and may exist. With the adjacency of petroleum industry activities in the Jeanne d'Arc Basin and surrounding areas, with the number of seismic programs in the area, with the annual occurrence of this activity and with the lack of certainty, the potential for behavioural disturbance and displacement of marine animals due to seismic activity (and discussed in the report) could be better addressed in the assessment of cumulative effects.

Finally, the report should include a better overview of offshore petroleum exploration activity that has occurred in the past, and is occurring presently, on the Grand Banks. This would then offer an objective and regional context for offshore oil and gas activities and may help frame the discussion of the potential for cumulative effects. A map depicting other projects in EL 1092 and the Jeanne d'Arc Basin would also be helpful in assessing cumulative impact.

#### Mitigations

- < Ramp-up procedures are only mentioned for the onset of the seismic survey. If for any reason airguns are shut down, ramp-up procedures should be followed prior to recommencing survey operations.
- < The list of mitigations should involve continuous firing of one gun during vessel turning for line change. This is a common mitigation for marine mammals, sea turtles and fish and should be listed here.
- < As previously stated in other reviews by DFO, risk to marine animals will be the same at night and in poor visibility conditions as they are in the daytime or with clear visibility. The mitigations presented (observers, delays, ramp-up and shut-down) will only work during times of good visibility. Passive acoustic monitoring (PAM) is the only available mitigation technique that will increase the detection of marine mammals prior to ramp up while having no adverse effect on marine mammals of its own. DFO encourages the use of PAM as it will increase the detection of marine mammals.
- < DFO requests that the Marine Mammal report be submitted to Jack Lawson (772-2285) within 90 days of completion of the program.
- < DFO requests that it be notified, in addition to C-NLOPB, if dead or distressed marine mammals or sea turtles are spotted and particularly in the event that sea turtles or mammals are injured or killed by project activities.

## **Specific Comments**

- < Section 2.2.7, Page 8: *“Petro-Canada will require that the seismic operator ramp up its airgun array after prolonged periods of shutdown.”* It is not understood what constitutes a “prolonged” time period. A specific time period should be given, after which the ramp up process will be required.
  
- < Section 3.4 and 3.5, Page 43: The EA report should be a stand alone document containing all information required to make a proper evaluation of potential impact. It is inappropriate to refer readers/reviewers to other EA documents for detailed information on the biophysical environment and on effects assessment. It is recommended that this practice be discontinued. This would make for a much more comprehensive EA Report and a more efficient review process.
  
- < Section 4.2, Page 45: *“Since the project has no potential to significantly affect phytoplankton or zooplankton at the ecosystem level, plankton are not discussed further in this EA...”* DFO discourages predetermined conclusions of effects to the point where they are dismissed from the outset as the practice undermines the value of the environmental assessment. Some discussion, however brief, is warranted.
  
- < Section 4.3, Page 45: The third paragraph relates more to the effects assessment than it does to the description or characterization of the benthic community.
  
- < Section 4.5.2, Page 78: The Latin names for northern shrimp and snow crab are linked to the wrong common name. Also, there is a reference to COSEWIC listing of Atlantic cod in 2003. This should read that COSEWIC assessed and designated the NL population of Atlantic cod as endangered. However, this species was not subsequently listed as such under SARA (related comment below for Sec 4.8.1.2 and Table 4.22).
  
- < Section 4.7.1, Page 114: Half of this paragraph appears irrelevant. Again, the authors refer the reader to other reports. This is followed by a statement that the Parsons and Brownlie (1981) report is the most comprehensive data available, yet the data will not be presented (even in summary). If information is not considered important enough to be included it doesn’t deserve mention. However, the EA report must contain all information considered necessary to lead a reader to a determination on environmental effect.
  
- < Table 4.22, Page 128: Porbeagle shark is not under consideration for addition to schedule 1. In September 2006, an *Order Giving Notice of Decisions not to add Certain Species to the List of Endangered Species* was issued, including the decision not to list porbeagle to Schedule 1. Also, correction to this effect needs to be made in Section 4.8.1.3, page 133.

- < Section 4.8.1.2, Page 131: Atlantic cod has been assessed by COSEWIC as several units. The population found in the project area is the Newfoundland and Labrador population, and is designated by COSEWIC as endangered, but has no status under SARA. However, documents on Atlantic cod in general are still included in the Public Registry as a result of the species previously being included. This correction should be made in Table 4.22, page 128 as well.
  
- < Section 5.6.2.1, Page 154: Different units are used to describe the array sound level here (peak to peak) than in the other parts of the document including the project description, where 0 to peak is used. Also, sections on page 188, Humpback whale and page 196, Sperm whales, use peak to peak. Proper conversion for peak and RMS measurements should be provided or one unit should be chosen for ease of comparison.
  
- < Section 5.6.6.7, Page 224: With respect to arguments of the conservative nature of the sound level criterion and disturbance effects, the first point is a statement which may be used to support the argument (based on literature cited on previous pages). However, the second point is more of a prediction than a supportive statement. The same can be said for page 225, disturbance effects on baleen whales.

Thank you for the opportunity to provide comments on this document. If you have any questions or comments regarding the above, please do not hesitate to contact Mr. Randy Power by phone at 772-8888, or by e-mail ([powerrg@dfo-mpo.gc.ca](mailto:powerrg@dfo-mpo.gc.ca)).

Yours sincerely,

M. M. Roberge  
A/Division Manager  
Marine Environment and Habitat Management Division  
Oceans and Habitat Management Branch

rp/sk