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BAB 3970-860

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

Dear Ms. Coady:

**RE: Husky Energy Drill Centre Construction and Operations Program
Environmental Assessment Report**

Fisheries and Oceans Canada (DFO) has reviewed the document entitled "*Husky White Rose Development Project: New Drill Centre Construction and Operations Program Project Environmental Assessment.*" It is understood that this environmental assessment (EA) covers activity including the construction of up to four drill centers within the licence areas held by Husky Energy; installation of associated sub-sea equipment and tie-ins; production equipment; drilling of up to 30 wells; production activities; and all ancillary activities. Project activities are proposed to commence in 2007, with all construction and drilling operations to be completed by 2011. Production activities will occur from 2009 through 2020, followed by project abandonment.

Please be advised that the project as described will result in a harmful alteration, disruption or destruction of fish habitat (HADD), therefore a Section 35(2) *Fisheries Act* Authorization will be required prior to project commencement. As such, DFO is a Responsible Authority in the review of the project pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Authorization includes the requirement for development of a Fish Habitat Compensation Agreement describing the proposed measures to be implemented by Husky Energy to compensate for the HADD of productive fish habitat. For purposes of conducting the CEAA review, the Department has reviewed and approved in principle the proponent's Fish Habitat Compensation Strategy. Also a requirement of the Authorization, is the need for development of a follow-up program. Accordingly, DFO will ensure that appropriate monitoring is carried out by the proponent; for example, monitoring near the spoils deposition area will be necessary to ensure that excavation material from the glory holes will not result in further HADD.

The following comments on the EA document are provided for your consideration.

Canada

General Comments

Species at Risk

Coverage of Species at Risk is, in the opinion of the Department, is dismissive and thus, inadequate. Evaluation of SAR is basically a description of the various listed species without the benefit of any added measures to ensure the protection of those species – something that should be the main component of the document. Species at Risk are considered a VEC for more reasons than due to regulatory concern. While the report addresses legal aspects of SARA by considering listed species, it is a minimum requirement and DFO recommends that the report fully acknowledge the rarity of all species at risk and that due caution will necessarily need to be exercised. Finally, the report, in assessing effects of both routine and accidental events, avoids directly assessing effects on SAR by stating: *“The details of potential effects...on relevant marine animals species...have been discussed in previous sections...”*. For SARA listed species with low estimated populations, a detrimental effect on individuals may translate into a significant effect at the population level. Given their importance, these sections are not adequate and a better effects analysis and specific mitigations for SAR should be presented. The SAR assessment should clearly identify adverse effects and significant adverse effects on listed SAR, propose and describe mitigation and monitoring to address the adverse effects. Where applicable, the proponent should refer to listed SAR recovery strategies/action plans to ensure that proposed mitigation is consistent with the applicable strategies/plans.

Marine Mammals and Sea turtles

In light of a vessel-strike incident associated with offshore oil production in 2004, DFO would like to reiterate the necessity to estimate potential impacts of ship strikes on marine mammals and sea turtles. There are computer models for these impacts which are freely-available and which would allow some assessment of the risk caused by the increased number of larger vessels moving through the study area.

Geohazard and VSP surveys will collect high resolution seismic, side scan sonar, sub bottom profiler, and multi-beam bathymetric data as needed during well operation. This variety of sound sources could output sound energy at a variety of frequencies and amplitude such that more than one species of marine organism might be impacted. For instance, higher frequency sources would be a concern for the beaked whales, whereas airgun sounds would be more of a concern for baleen whales. Each type of sound source should be considered separately. Additionally, trailing suction dredge vessel and operations will produce significant and long-duration underwater noise due to propeller cavitation and thruster operations, plus propagated dredge pump noise and material passage up and down pipes. These sound sources should be considered and reflected in the document.

Commercial Fisheries

The report appears to provide an accurate assessment of the fisheries and harvesting activities in the project area. However, there is no mention of potential effects on species under moratorium (Cod, American Plaice, etc.) and how the proposed activities might impact on recovery efforts for these species.

Physical Environment

In general, the material as it relates to the physical environment is acceptable. However, the ocean current models commonly used for spill trajectory tracking in the NL Region are inadequate. In this report the International Ice Patrol map of mean currents is used; these do not contain any fluctuations about the mean and miss much of the horizontal and temporal variability present in real currents. At some point, a future trajectory exercise should be conducted with a modern model that simulates the real ocean more closely.

General

This document often refers the reader to the White Rose Oilfield Comprehensive Study Report and other previous EA reports for details on effects assessment. Once again the Department reiterates that it is inefficient to expect reviewers to refer to other EA documents for detailed information on the biophysical environment and on effects assessment. The Department would prefer to see at least a summary of the information and original references to support it.

DFO has produced a review of the potential hydrophysical-related issues in Canada, risks to marine mammals, and monitoring and mitigation strategies for seismic activities (Lawson and McQuinn, 2004) that it recommends for referral as it is relevant to both this assessment and to other places in Canada. This reference, as well as others has been attached to this document.

Specific Comments

Table 5.1, Page 40: The fin whale must now be added as it is now listed as "Special Concern". Please refer to Lawson, 2006, for preliminary information on distribution and abundance and population estimates of fin whales in waters off of Newfoundland and Labrador.

Section 5.5.3, Page 50: In terms of depth distribution of the 3 wolffish species, it appears that there might be some confusion between spotted and northern wolffish. Northern wolffish is the deepest residing species, based on Kulka *et al.*, 2004. Otherwise the descriptions are accurate.

Section 5.5.3.2, Page 52: An additional recommended reference is Rose and Kulka, 1999 who showed that just before final collapse, cod hyper-aggregated just north of the project study area, meaning it is possible that it is an area critical for recovery. This important aspect should be noted in this report.

Section 5.5.3.3, Page 54: The authors should make note of the Porbeagle Recovery Potential Proceedings (on the CSAS website under publications/ Proceedings/2005). A key point missed with regard to the Grand Banks is that the area, including White rose is the pupping ground for this species at risk and therefore a very ecologically important area. As well, the Grand Banks was once a major fishing ground for porbeagle. These are important details that should be mentioned.

Section 5.5.3.4, Page 55: White sharks are very rare in Canadian waters and sightings are recorded mostly in the Bay of Fundy area. They are extremely rare as far north as the Whiterose area. This should be noted.

Section 5.5.3.5 and 5.5.3.6, Page 55: Shortfin Mako and blue shark are common in the area and used to be taken in both the porbeagle and the swordfish fishery. Blue is the most common shark species in the world although both have shown decline. Both mako and blue are commonly seen on the banks and even in the bays, a point which should be mentioned.

Section 5.5.3.7, Page 55: It should be noted that cusk are at the extreme northern fringe of their range on the southern Grand Bank and would only be itinerant in the White Rose area.

Table 7.1, Page 128: This table does not include several activities which could have important effects, including well spudding and vertical profiling (during which airgun arrays or a single airgun would be used), and well severance during decommissioning (during which explosive charges might be used). These noise-producing activities should be included in the table especially as they are discussed later in section 7.5.

Section 7.4, Page 131, 1st Paragraph: Change the reference list from Payne, et al., 2000 to Payne *et al.*, 2001a, Payne *et al.*, 2001b, Andrews *et al.*, 2004. (See attached references).

Section 7.4, Page 131, 4th Paragraph, last sentence: This conclusion is also supported by the studies carried out on fish health and fish habitat over a three year period at the Terra Nova site where 6 wells were drilled using a combination of water-based and synthetic based muds (Mathieu *et al.*, 2005; Deblois *et al.*, 2005).

Table 7.4, Page 135: The table does not include data on the use of vessels with large dynamic positioning thrusters (e.g., larger thrusters than on a typical supply vessel). If data are available on these sources, then they should be included here as applicable.

Section 7.6.1.5.1, Page 144, Last Paragraph, last line: *"In fact, many project effects on benthic communities observed at other development areas have not been observed at White Rose"*. Please specify what development areas are being referred to – e.g. Offshore Newfoundland and Labrador, or development elsewhere. Also, please provide further explanation as to what effects are being referred to.

Table 7.17, Page 191: As the Department has expressed in previous EAs dealing with seismic-related sounds, the VSP array shutdowns should occur for more than just marine mammals that are listed as endangered. If a marine mammal or sea turtle is at risk of injury or death, the mitigation measures should be enacted regardless of SARA status.

Section 7.6.5.8, Page 197 (and relevant sections following): DFO would like to emphasize previously expressed concerns about the potential for displacement and temporary hearing sensitivity changes possible from activities such as seismic profiling, large-scale DSP thrusters, and well severance explosives. In all cases the Department recommends that standard mitigation measures be adopted, and that these measures account for all marine mammal species and sea turtles.

Section 7.6.5.8.6, Page 202, Paragraph 2: There is a recent paper that studies construction-related noise on ringed seal (responses to helicopter sound, Blackwell *et al.*, 2004) that should be referenced and included.

Section 8.7.3.2, Page 250, Paragraph 3, 3rd sentence: The effects of polycyclic aromatic hydrocarbons on fish have been reviewed more recently (Payne *et al.*, 2003).

Table 8.31, Page 267: Regardless of the intended interpretation of this table (i.e. the likelihood of occurrence of an event factored into the significance rating), the lack of data and uncertainty presented in the accompanying text does little to justify a rating of 3 (high level of confidence) to a significance rating of NS (Not Significant). This is particularly relevant for potential impacts to species at risk. A discussion regarding how this level of confidence is derived is warranted.

Section 8.7.4, Page 251: The section mentions mitigation of an oil spill only in the context of financial compensation for fishers. This is most certainly a short-term solution and does not include the potential harm of a major accidental event to the future fishery in the area. Please revisit and revise accordingly.

Section 8.7.8, Page 271: Further to a point previously mentioned, the conclusion of the effects of an accidental event on species at risk as *Not Significant*, (even in keeping within the definition of high magnitude, greater than one year and over 100 km²), given with a high level of confidence, is questionable considering the sensitivity to harm for some of these species. As

well, it is also debatable whether the definition of *Significant Effect*, as applied throughout the report is even appropriate for the assessment of potential impacts on species at risk. The Department recommends a more thorough discussion of the potential for harm due to accidental events on species at risk.

Section 9.2, Page 273: Cumulative effects estimations cannot be expressed with such certainty as we know very little about effects of industry on marine mammal distribution and abundance – or even basic information on marine mammal distribution and abundance itself. Given these two sources of uncertainty, DFO would like to see cooperation, in the future, on large-scale baseline surveys to assess abundance and distribution of marine megafauna over larger areas of the region.

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@df-mpo.gc.ca).

Yours Sincerely,

M. M. Roberge
A/ Division Manager
Marine Environment & Habitat Management

rp/sk

Recommended Additional References

Andrews, C., French, B., Fancey, L., Guiney, J. and Payne, J.F. 2004. Chronic toxicity study on snowcrab exposed to drilling fluid being used on the Grand Banks (abstract) Proc. 31st Annual Aquatic Toxicity Workshop: October 24-27, 2004, Charlottetown, Prince Edward Island. Can. Tech. Rep. Fish. Aquat. Sci.: 2562. 138 p.

Blackwell, S.B., J.W. Lawson, and M.T. Williams. 2004. Tolerance by ringed seals (*Phoca hispida*) to impact pipe-driving and construction sounds at an oil production island. *Journal of the Acoustical Society of America*, 115 (5, Pt. 1):2346-2357.

Deblois, E.M., Leeder, C., Penney, K.C., Murdoch, M., Paine, M.D., Power, F., and Williams, U.P. 2005. Terra Nova environmental effects monitoring program: from environmental impact statement onward. In: *Offshore Oil and Gas Environmental Effects Monitoring : Approaches and Technologies*. Edited by S.L. Armsworthy, P.J. Cranford and K. Lee. Batelle Press, Columbus, Ohio. Pp 475-491.

Lawson, J.W. and I. McQuinn. 2004. Review of the potential hydrophysical-related issues in Canada, risks to marine mammals, and monitoring and mitigation strategies for seismic activities. DFO Canadian Science Advisory Secretariat Research Document. Ottawa, ON, Department of Fisheries and Oceans: 53p + iv. (available on the CSAS web site).

Lawson, J.W. 2006. Preliminary information on distribution and abundance of fin whales (*Balaenoptera physalus*) in Newfoundland and Labrador, Canada. SC/14/FW/21-SC/M06/FW21. Joint NAMMCO/IWC Scientific Workshop On The Catch History, Stock Structure And Abundance Of North Atlantic Fin Whales. Reykjavík, Iceland, 23-26 March, 2006. 12 p.

Mathieu, A., Melvin, W., French, B., Dawe, M., Deblois, E.M., Power, F., Williams, U.P. 2005. Health effects indicators in American plaice (*Hippoglossoides platessoides*) from the Terra Nova development site, Grand Banks, NL, Canada. In: *Offshore Oil and Gas Environmental Effects Monitoring: Approaches and Technologies*. Edited by S.L. Armsworthy, P.J. Cranford and K. Lee. Batelle Press, Columbus, Ohio. Pp 297-317.

Payne, J.F., Mathieu, A. and Collier, T.K. 2003. Ecotoxicological studies focusing on marine and freshwater fish. In: *PAHs: an Ecotoxicological Perspective*. Edited by P.E.T. Douben, John Wiley and Sons, London. Pp 191-224.

Payne, J.F., Andrews, C., Whiteway, S. and Lee, K. 2001a. Definition of sediment toxicity zones around oil development sites: dose response relationships for the monitoring surrogates Microtox® and amphipods, exposed to Hibernia source cuttings containing a synthetic base oil. *Can. Man. Rep. Fish. Aquat. Sci. No. 2577*, 10p +vi.

Payne, J.F., Fancey, L., Andrews, C., Meade, J., Power, F., Lee, K., Veinott, G. and Cook, A. 2001b. Laboratory exposures of invertebrate and vertebrate species to concentrations of IA-35 (Petro-Canada) drill mud fluid, production water and Hibernia drill mud cuttings. *Can. Man. Rep. Fish. Aquat. Sci. No. 2560*, 27p +iv.

Rose, G. A. and D. W. Kulka 1999. Hyper-aggregation of fish and fisheries: how CPUE increased as the northern cod declined. *Can. J. Fish. Aquat. Sci.* 56p.