



March 12, 2007

Ms. Kathy Knox  
Husky Energy  
Scotia Centre, 235 Water Street  
St. John's, NL A1C 1B6

Dear Ms. Knox:

Re: Husky White Rose Development Project:  
New Drill Centre Construction, and Operations Program  
Environmental Assessment

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The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB), the Department of Fisheries and Oceans, and Environment Canada (Regulatory Authorities) have reviewed the "Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Addendum" submitted on January 17, 2007.

Pursuant to paragraph 11(2) of the CEAA, the RAs cannot exercise a regulatory duty or function until the associated environmental assessment process is complete and they are satisfied that significant adverse environmental effects are unlikely to occur. In order for the RAs to complete the Screening Report, and make a determination of significance, a response to the following comments is required.

1. In the March 2, 2007 letter (M. Allen to J. Crocker) outlining Husky Energy's plans for the tie-back of the North Amethyst drill centre (NADC) to the FPSO, a brief explanation of the required upgrades to the FPSO to accommodate the NADC is provided. The letter indicates that no further environmental assessment should be required for the development application. However, it is stated in the EA report that there is no requirement for upgrades or modifications to the existing FPSO associated with the tie-back of the new drill centres. Based on the information provided in the March 2, 2007 letter, this statement is incorrect. FPSO upgrades or modifications that are required for the tie-back and operation of the drill centres assessed in the EA and EA addendum must be included in the scope of the project and an environmental assessment of these activities undertaken accordingly.

2. Once again, DFO would like to reiterate a concern which was raised in the last review, which is the conclusion of the effects on Species at Risk (SAR) as *not significant*, given with a high level of confidence. To expound this point, the report states that it is not known with certainty if northern or spotted wolffish spawn in the study area, although it is probable given the limited migration of the species. It subsequently makes a determination of the effects of sediment excavation and deposition as *not significant*, given with a high level of confidence but with no attributed scientific certainty (Table 7.23). Even if the affected area is small compared to the known distribution of the species there is still a possibility that some individuals could be affected. The absence of data for the affected areas does not equate to unlikely effect, therefore a precautionary and perhaps more pragmatic, assessment is necessary. Thus, it is recommended that the assessment tables should more closely reflect the data and more importantly, the data gaps presented throughout the text.
3. Section 7.6.2.2, Sediment Excavation, Page 72: The glory hole dimension presented (70mx70m) is not a true reflection of the amount of area to be affected as it does not include ramp area (an additional 130mx70m). The total area to be affected should be as accurate as possible.
4. Table 7.22, Page 79. The determination of no significant *residual* effect is given when no mitigations for effects of excavation and deposition of sediment are presented.
5. Section 7.6.1.7, Atmospheric Emissions – The proponent’s response is not completely adequate. For greater clarity and certainty, the proponent should provide emission estimates for SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S, PM, PM<sub>2.5</sub>, PM<sub>10</sub> and VOCs according to source.
6. The recently announced categorization process for chemical substances may result in specific risk management actions under CEPA ([www.chemicalsubstanceschimiques.gc.ca](http://www.chemicalsubstanceschimiques.gc.ca)). An online database is available at [http://www.ec.gc.ca/CEPARRegistry/subs\\_list/dsl/dslsearch.cfm](http://www.ec.gc.ca/CEPARRegistry/subs_list/dsl/dslsearch.cfm) <[http://www.ec.gc.ca/CEPARRegistry/subs\\_list/dsl/dslsearch.cfm](http://www.ec.gc.ca/CEPARRegistry/subs_list/dsl/dslsearch.cfm)> to verify whether chemicals that would be in use at an expanded White Rose facility have been categorized. EC requests that Husky identify these chemicals and clarify how their current chemical management system will address any identified risk management actions resulting from the above referenced categorization system. In particular, how will chemicals that are currently in use in the offshore be assessed if new chemical management objectives are required?

In the review of the Addendum, Environment Canada and the Department of Fisheries and Oceans provided additional comments on certain sections of the Addendum. The attached document highlights reviewers’ comments that should be considered in future environmental assessments undertaken by Husky Energy in the Jeanne d’Arc Basin area.

If you wish to discuss the any of the above, I may be reached at 709-778-1431, or via email at kcoady@cnlopb.nl.ca.

Yours truly,

*Original Signed by K. Coady*

Kim Coady  
Environmental Assessment Officer

Attachment

cc     D. Burley  
       J. Crocker  
       G. Troke (EC)  
       R. Power (DFO)  
       D. McDonald (CEA Agency)

## Husky Drill Centre EA Addendum

### Review Comments

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1. The format chosen to respond to comments in the EA Addendum is cumbersome and difficult to review. References, such as “Comment No. 73: Recommend additional references” whereby the reviewer must search an appendix to determine the response to the comment, are inappropriate. In future, if sections are changed or modified to address review comments, those portions of the section modified, including the response, should be placed in its entirety within the main body of the report.
2. Section 5.5.3.2, Page 48: Rose and Kulka, 1999 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. While part of the comment regarding cod, made during the last review was incorporated into the text, this important aspect was not. In other words, the area of last aggregation noted in Kulka and Rose may be an important location in terms of recovery, as it was the last place that cod occurred in significant amounts, should recovery in fact occur in the future.
3. Section 5.5.3.3, Page 49: A point with respect to porbeagle raised in the last EA review and again missed is that the Grand Banks, including White Rose is the mating ground for this potentially SARA-listed species 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.
4. Section 4.0. Physical Environment, Page 29: 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, which do not contain any fluctuations about the mean and therefore miss much of the horizontal and temporal variability present in real currents. In addressing this comment, the new document points to Appendix 3 which appears to be adjustments made to the Physical Environment Section in the first EA report. However this addition does not make any changes in terms of currents - only wind and wave data have been addressed.
5. The proponent response indicates that the requested information is available in its report to the CNLOPB titled *Condition 36: Cooling water Discharge*. Please provide a copy of this report to EC for information.

### ***Winds and Waves***

6. Relating to EC Comments Number 26, 27, 30, 31, 32, and 33. The information contained in Appendix 3 goes a long way toward meeting the recommendations in the comments.

One of the recommendations was to include analyses of the relatively long record of platform meteorological data (especially wind) and wave measurements on the Northern Grand Banks since the 1980s, which became nearly continuous (on a 3-hourly reporting basis) in 1997 (see Comment 30). Hibernia started regular observations by 1998 and observations began at the Terra Nova site in 1999. However this recommendation was only partly followed: the Appendix included 3-hourly data from the White Rose site, from 2003 to 2006. The value of the analysis would have been much improved with the extension of the record backward in time

through use of the Terra Nova and Hibernia platform data, with appropriate adjustments for winds. This seems particularly important for winds, as the AES40 analyzed winds generally used are for one-hour mean winds at 10 metres, while platform winds are for higher heights and averaging intervals of one minute (for aviation) and 10 minutes (for marine reports). As pointed out in the Appendix also, there can be greater uncertainty in adjusting the winds from high platform anemometer heights to 10 metres in stable flow regimes. This supports the need for the additional analysis of those platform winds.

For the comparisons of AES40 winds and waves to platform wind and waverider waves, in order to make meaningful statements about bias, it would have been better to show comparisons of data covering the same period of time. We can't conclude from just one data point value that the AES40 wave heights are biased low, as might be suggested by the example of the 2003 Feb 11-12 storm. Comparison of the monthly mean values in Table 15 suggests that at least for the bulk of the observations the AES40 wave dataset is not biased low.

Recommend that future work developing wind and wave climatology make better use of the full record of wind and wave measurements near the site, including those from Hibernia and Terra Nova. In addition, remotely sensed QuikScat winds will be useful for comparison with height-adjusted platform winds (Cardone et al. 2004).

Recommend that future descriptions of the climate include a separate description of extra-tropical storms and extreme events, in a similar way to the separation of tropical cyclones in the Appendix.

It was recommended that any analyses of platform winds make appropriate adjustments for anemometer height, to make them equivalent to a reference height such as 10 metres. This was not done. The anemometer height (presumably of the semi-submersible platform the GSF Grand Banks) was given (82.5 m) and the difference in height was given as a reason for departures from the AES40 (which remained even after adjusting peak values of one-hour mean winds to be equivalent to peak values of 10-minute mean winds). Although there are uncertainties in height adjustment methods, these can be reduced by use of platform temperature measurements. Recommended height and averaging method adjustments for offshore platforms are described in international standard ISO 19901-1, "Petroleum and natural gas industries - Specific requirements for offshore structures — Part 1: Metocean design and operating conditions". Any further analysis should make these height adjustments to facilitate comparison with winds at a different level. [Note it is not appropriate to adjust (for averaging interval) the monthly mean values of one-hour means to make them equivalent to monthly means of 10-minute mean. The adjustment relates to peak values of a particular averaging interval.]

Further work in developing a wave climatology for the area would be enhanced by use of the MSC50 as it becomes available and replaces the AES40 (Swail et al, 2006).

Comment 27 recommended study of atmospheric circulation patterns and the relationship to the marine climate over the Grand Banks. This was presented in Section 7 of the Appendix "Interannual Variability and Short-Term Climate Trends". The results are interesting and show some relationship between increasing North Atlantic Oscillation indices and increasing winds and waves over the site over the past few decades. Further work could also examine the Pacific North America Pattern as this is more closely related to the El Nino Southern Oscillation and tropical cyclone frequency. There do appear to be at least short term increasing trends in winds

and waves in summer and winter. Trends in long time series data will affect the results of extremal analysis. The issue of climate change and extremes will be considered in an upcoming workshop organized by the Oil and Gas Producers Metocean Committee on 28<sup>th</sup> March 2007 (see <http://info.ogp.org.uk/metocean/>). In future studies of this site, as the design process for the project continues, the authors may wish to consider the work of Anderson et al. (2001) which describes a method for extreme value analysis for data that may contain trends. This method uses the peaks-over-threshold method and the Generalized Pareto Distribution, rather than the Weibull distribution chosen here.

### *References*

Anderson CW, Carter DJT, Cotton PD, 2001, Report on Wave Climate Variability and the Impact on Extreme Values, prepared for Shell International, 88 pages. Online at: [http://info.ogp.org.uk/metocean/JIPweek/WCEReport\\_2sided.pdf](http://info.ogp.org.uk/metocean/JIPweek/WCEReport_2sided.pdf)

Cardone V.J., A.T. Cox, E.L. Harris, E.A. Orelup, M.J. Parsons and H.C. Graber. ***Impact of QuikSCAT Surface Marine Winds on Wave Hindcasting***. 8th International Wind and Wave Workshop, Oahu, Hawaii November 14-19, 2004.

ISO 19901-1 “ Petroleum and natural gas industries - Specific requirements for offshore structures — Part 1: Metocean design and operating conditions”. (More information online at: <http://www.galbraithconsulting.co.uk/iso/index.htm> )

Swaile, V.R., V.J. Cardone, M. Ferguson, D.J. Gummer, E.L. Harris, E.A. Orelup and A.T. Cox, 2006 ***The MSC50 Wind and Wave Reanalysis***. 9th International Wind and Wave Workshop, September 25-29, 2006, Victoria, B.C.

7. Comment No. 34 - There may have been some misunderstanding for this one. The initial comment was for clarification of the statement about the frequency of presence of sea ice at the site and the exact range of years implied when referring to “the last 10 years” in the iceberg section. The proponent has now provided an analysis of sea ice and icebergs for the period 1997-2006 (last 10 years) and this has replaced the previous information. I think the information that was removed should be reintroduced as climate information and the new analysis for the period 1997-2006 should highlight any changes to the climatology in the last 10 years (1997-2006).
8. Comment No. 35 - Again we were asking for clarifications on the meaning of a statement on ice thickness. The proponent’s reply was to remove the sentence as well as the whole section and replace it with this basic analysis on the presence of sea ice for the period 1997-2006. Again I would like the previous section to be reintroduced and clarified. The new section refers to a mean concentration of 4.3; this does not represent a real ice occurrence and we usually prefer to use a median.