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Canada – Nova Scotia Offshore Petroleum Board
6th Floor, TD Centre
1791 Barrington Street
Halifax NS B3J 3K9

Attention: Mr. Eric Theriault
Advisor, Environmental Affairs

Dear Mr. Theriault:

**Re: Deep Panuke Offshore Gas Development Project
Natural Resources Canada Response to EnCana's April 2007 Reply**

In response to Natural Resources Canada's (NRCan) letter dated May 4, 2007 to the CNSOPB requesting further information on our responses provided on April 25, 2007, EnCana provides the following clarifications.

1. NRCan Issue 3: Pipeline trenching and burial depth and criteria; Section 2.2.3

"NRCan is satisfied that the proponent has indicated that the pipeline will be trenched in water depth less than 85 m. However, the response (current response and NRCan-ECA-1.2) did not indicate how this water depth criterion was determined. It is recommended that an addendum to the proponent's Environmental Assessment Report provide additional information to section 2.2.3, in which the proponent describes the methodology or cites the publications used to establish this 85 m depth criterion."

EnCana's Response: Further to our response to information request no. NRCan-ECA-1.2 (a), the requirement for pipeline trenching above 85 m was determined based upon on-bottom stability considerations.

On-bottom stability ensures that once the pipeline is 'laid' on the ocean floor that it does not move. The hydrodynamic forces that move the pipe are primarily from currents and waves. It must be ensured that the horizontal load from these forces do not result in movement of the pipe. Two ways to ensure that the pipe cannot move is to either increase the weight of the pipe (via concrete weight coating) or bury it. Practically, there is a limit to which you can increase the thickness of concrete on a pipe; that limit is approximately 100mm [4 inches].

The on-bottom stability analysis was performed along the pipeline route (which included water depth consideration) for the established wave and currents expected at the various locations. The amount of concrete required to keep the pipeline stable was determined. If the amount of concrete exceeded 100 mm [4 inches], it was determined that burial was required for on-bottom stability. As a result of this analysis, it was determined that the

optimal transition point between buried and unburied was 85 m. The soil conditions where the pipeline was to be buried for on-bottom stability were then checked to ensure that the pipeline could be trenched with the available trenching equipment in those areas with a water depth of less than 85 m.

2. **NRCan Issue 4:** Pipeline trenching depth and water depth criterion for trenching; Sections 2.2 and 2.3

“The proponent has indicated that the issues of pipeline trenching depth and water depth criterion for trenching will be dealt with in a separate design report that will be reviewed by the Certifying Authority. Given the importance of these issues, NRCan recommends that the proponent provide additional information to section 2.3.5, in an addendum to the Environmental Assessment Report, concerning the rationale for choosing this 1 m trenching depth (e.g. the factors of waves, currents, sediment transport, and bedform mobility are considered in determining if trenching will be needed and what the trenching and burial depth will be).”

EnCana’s Response: 1 m was chosen as the depth of cover based upon EnCana’s previous experience on the Cohasset Project (see response to information request no. NRCan-ECA-1.2 (b)) and EnCana’s understanding of the existing Sable Offshore Energy Project pipeline. However, it was stated in the EA Report that this was approximate as EnCana is planning to perform a study to confirm this value. This study will consider the relevant parameters, including those suggested by NRCan (i.e. sediment transport, etc.). EnCana did not feel that it was necessary for the EA Report to “acknowledge that waves, currents, sediment transport and bedform mobility are some of the factors considered in determining ... what the trenching and burial depth will be” as this will be fully covered in the study to confirm the trenching depth.

If you have any questions regarding these clarifications, please contact me at 492-5424.

Yours sincerely,

ENCANA CORPORATION



Donna Morykot, P.Eng.
Regulatory Lead, Deep Panuke Project

/dfm

cc: Curtis Lockett, Natural Resources Canada
Aruna Dixit, Natural Resources Canada
Derek McDonald, CEAA, Federal Environmental Assessment Coordinator