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## HAMMOND REEF GOLD PROJECT RESPONSE TO COMMENTS ON FINAL EIS/EA

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### COMMENT – T-19

**Source:** Canadian Environmental Assessment Agency

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#### Summary of Comment

All applicable adjustments that have been made to the measured/calculated Project-related operational noise levels in the derivation of the final percentage highly annoyed (%HA) for each impacted receptor need to be clarified through the rating levels used in calculating the %HA.

Research indicates that certain sound characteristics can increase community annoyance (Canadian Standards Association or CSA, 2005). Note that a rating level is an adjustment applied to a measured or calculated sound level. Procedures on how to calculate %HA using a rating level with the applicable adjustments can be found in ISO 1996-1 (2003) or CSA (2005).

#### Proposed Action

Clarify if any sound adjustments (such as the day/night sound level adjustment or the impulsive/highly impulsive noise adjustment) were applied to predicted operational noise levels at any of the impacted receptors.

#### Reference to EIS

HHERA TSD, Table 4-9

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#### Response

The predictions of percent highly annoyed (%HA) presented in the Atmospheric Environment Technical Support Document) (TSD) included an adjustment to the predicted Project noise levels of +10 dB based on the noise receptors being located in a rural area. This is consistent with the ISO 1996-1 (CSA 2005) guideline. In addition to the +10 dB adjustment for a quiet rural area, additional adjustments were included where appropriate for specific sources. For example, for simplification and conservatism, a +5 dB adjustment was applied to noise sources that were considered tonal. However, as the resulting noise levels at the receptor locations are not predicted to be tonal, the addition of the 5 dB adjustment was not required as specified in Appendix A of CSA (2005), *"Adjustments for tonal character should only be applied when the total sound is audibly tonal at the receiver location."* Therefore, the predictions of %HA are likely conservative.

No other adjustments were warranted as the sources are not expected to be impulsive, highly impulsive or high energy impulsive. Also, as noted in CSA 2005, a 0 dB adjustment is recommended for industrial sources. The sources of sound involved during operations of the Project would be road traffic and industrial type sources. If more than one adjustment applies for a source of noise, CSA 2005 states that only the largest adjustment shall be applied. Therefore, no other adjustments were made.