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

## COMMENT – T-4

**Source:** Canadian Environmental Assessment Agency

### Summary of Comment

In the Alternatives Assessment for Mine Waste Disposal, several inconsistencies were noted in the data for the footprint of the tailings management facility, the length of the pipeline, and the height of the tailings management facility. For example, the footprint for TMF 1, TMF 2 and TMF 3 are stated as 8.6 M-m2, 9 M-m2 and 8.3 M-m2, respectively, on page 15 whereas they are stated as 860 ha, 900 ha and 813 ha, respectively, on page 25.

In addition, under the Geotechnical Risk indicator (page 36), the Proponent used the maximum height of dams as the metric, with the dam heights for TMF 1 and TMF 2 given as a range (20-30 m and 40-45 m, respectively) and that for TMF 3 as a single value (32 m). The rationale for this is not clear.

Furthermore, under the Maximum Height of TMF indicator (page 43), the Proponent has used the maximum TMF height as a metric with a different scale and stating that the dams associated with TMF 1, TMF 2 and TMF 3 will be up to 35 m, 45 m and 32 m, respectively. The scores for this indicator could potentially change if the same scale for maximum TMF height as used in page 36 for the Geotechnical Risk indicator was used here.

### Proposed Action

Correct the inconsistencies and revise the multiple accounts analysis to determine if any changes in the conclusion would result.

Clarify whether or not the scores for the indicator could potentially change if the same scale was used for the ‘Geotechnical Risk’ indicator as was used for the ‘Maximum Height of TMF’ indicator.

### Reference to EIS

Appendix 4.1 Mine Waste Disposal Alternatives Assessment Version 2 Pages 25, 15, 36, 43

### Response

The inconsistencies in design and measurements found within the Mine Waste Alternatives Assessment Report are related to the ongoing and iterative planning process.

**Footprint Area**

The TMF alternative descriptions on page 15 were developed in January 2012 during the Terms of Reference stage for pre-screening purposes. Through this initial pre-screening assessment, Alternative TMF-1, Alternative TMF-4, and Alternative TMF-2 were considered to be viable alternatives and were carried forward for more detailed assessment. For simplicity in the detailed assessment, an alternative naming scheme was used in which:

- Alternative TMF-1 was carried forward as TMF-1;
- Alternative TMF-4 was carried forward as TMF-2; and
- Alternative TMF-2 was carried forward as TMF-3 (base case).

The TMF-3 (base case) concept was revised after the pre-screening assessment based on additional engineering to reduce the dam volume, footprint area and cost. Through this effort, the footprint area of Alternative TMF-3 was reduced to 8.13 M-m$^2$ (or 813 ha) compared to the description provided in the ToR (page 15). The other alternatives maintained the same footprint areas compared to the description in the ToR (page 15).

**Pipeline Lengths**

The pipeline lengths included in the descriptions on page 15 were preliminary estimates for pre-screening purposes. After the viable candidates were identified, additional work was undertaken to estimate conceptual pipeline routes for the alternatives based on engineering and environmental considerations (e.g., topography and proximity to waterbodies), the location of relevant mine infrastructure (e.g., processing plant, utility corridors) and the centroid of the TMF area. For these reasons, the pipeline lengths identified in the detailed assessment are different from those in the preliminary pre-screening description.

**Dam Height**

At the time of the assessment, the engineering design of TMF-3 had advanced further compared to TMF-1 and TMF-2. For this reason, a discrete maximum dam height of 32 m had been defined for TMF-3, while the maximum heights for TMF-1 and TMF-2 remained as ranges. Had the height of TMF-3 been described as a range of 30-40 m, it would have been assigned the same score and the results would remain the same.

**Maximum TMF Height**

The 'maximum height of TMF indicator' considers both the height of the dams and the height of the tailings stack inside the dams. The maximum height of TMF-1 was estimated incorrectly using a maximum dam height of 35 m. As per the Geotechnical Risk indicator, the maximum dam height is up to 30 m and this would result in a potential maximum tailings height of 62 m (compared to 67 m as estimated in the assessment). With this maximum height TMF-1 would have been assigned the same score and the results would remain the same.

**Conclusion**

With respect to footprint area and pipeline length, it is acknowledged that the values used in the assessment are not consistent with the preliminary estimates assumed in the pre-screening assessment. The detailed alternatives assessment was carried out using the best information available at the time.

With respect to the dam heights, it is acknowledged that minor inconsistencies exist in the values and ranges presented in the assessment but the magnitude of these inconsistencies is small and does not affect the outcome of the assessment.