Version 3 Hammond Reef Gold Project EIS/EA – Addendum (Part B)
Responses to Provincial Information Requests   *1656263*

Identifier	Topic	Reference to EIS/EA Report	Summary of Comment	Proponent's Response	Subsequent Comment
			Date: August 2015		
MOE Hydrology-3	Drainage modelling Hydrology		HEC-HMS hydrologic model was used to evaluate effects on flows and levels in the Lumby Creek drainage system, in the Lynxhead-Turtle-Trap Bays watershed due to project activities. The model choice (i.e., HEC-HMS) was appropriate for this type of analysis. Model setup, watershed schematisation, basin model, meteorological model, routing techniques etc. have been closely reviewed, and appeared to be reasonable. Model calibration results such as comparison of observed and simulated hydrographs, and evaluation of various model performance criterion such as root mean square error, Nash-Sutcliffe efficiency, and coefficient of determination, indicate model's performance was not that great, can be termed as "poor". The poor performance of the model could be attributed to a number of factors such as consideration of homogeneous watershed characteristics at sub-basin scale, choice of loss and routing models, choice of 100% perviousness of the sub-watersheds, non-spatially varied meteorological data, and most importantly uncertainty of the observed flows and water levels data against which model was calibrated. Model performance can be improved through a number of measures such as by refining basin and meteorological models and adopting more accurate observed data, but that should not be a critical necessity at this stage, because this was not a forecasting model. It was used only to know relative differences in flows and water levels between existing and post-project conditions. Even with a good calibrated model, the results describing relative changes would not change appreciably compared to the current results. Therefore, changes in flows and levels as simulated by the model in the Lumby Creek drainage system, can be considered in decision making with less uncertainty.	Thank you for your comment.	