

From: [Winsor, Jennifer \(CC\)](#)
To: [Feisal Somji](#); [Brent Bullen](#); [Laura Weeden](#); [Samoiloff, Clifton](#) [Burland Ross, Siobhan \(CC\)](#)
Cc: Sio Silica - Silica Sand Extraction Project - File 6057.00
Subject: January 20, 2022 1:03:00 PM
Date: [6119 Responses to TAC GMS Review.pdf](#)
Attachments:

Good afternoon,

The responses you provided to the Technical Advisory Committee (TAC) were sent for review to the TAC members who had requested additional information.

Attached is a letter from the Groundwater Management Section requesting additional information based on your initial response.

Please provide a response to the request at your earliest convenience such that the review process may continue.

Best regards,

Jennifer Winsor, P.Eng.

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DATE: January 07, 2021

Memorandum

TO: Jennifer Winsor, P.Eng.
Environmental Approvals Branch
Conservation and Climate

FROM: Groundwater Management Section
Water Branch
Agriculture & Resource Development

FILE: 5.07.04.02

Re: Proponent Response to Technical Advisory Committee (TAC) Comments

Groundwater Management Section has reviewed Proponent Response to Technical Advisory Committee (TAC) Comments (TAC response) and provided the following comments:

Comment to Response of Question #47 and #50

It is acknowledged that several industrial standard for numerical groundwater modelling were adopted as calibration performance assessment reference. The mentioned widely used evaluation criteria was agreed, but the calibration quality of this model remained question-marked as: First of all, $NRMSE = RMSE / (h_{max} - h_{min})$; based on the plotted head observation range and the calculated RMSE (Figure 6-2), NRMSE is estimated to be approximately 5-6%, not 1.7% mentioned in the proposal and the TAC response. Secondly, zero or near-zero is a common target for residual mean being adjusted to, mean residual of 3.27 m is considered obvious over-prediction comparing to the maximum observed head difference (~100 m). Finally, there is more room to optimize the calibration within the Project Site (Figure 6-3), apply weighing calibration to the provincial observation wells and the wells within the Project Site for Steady State calibration is recommended, in addition, this may benefit to set a better initial condition for the transient model and justify if the model presented the issue with equifinality (FERGUSON-5, appendix B).

Groundwater Management Section
Water Branch
Agriculture and Resource Development