Dear Colleague,

Thank you for your review, which will help us improve our technical note. Please find below a detailed response to the points you raised:

Specific comments

Line 50, Table 1: use mg S L-1 instead of Smg L-1, more over the coefficient of variation could be added to give a simple measure for the variation within the data set, although the less often used (q90-q10)/µ) statistic is already presented but without mentioning it in the manuscript anymore.

With respect to the nomenclature of the sulphate ion, we will make the corresponding changes in the final manuscript.
We will replace (q90-q10)/µ) with the Coefficient of Variation (CV) in the final manuscript, and also add a few explanatory lines on this criterion.

Line 143 ff: the use of the NSEB criteria reduces the sensitivity of this objective function compared to the original NSE. If the concertation variability is small compared to the discharge variability solute loads are highly controlled by discharge. Therefor combining concentration with load objective function will further reduce the sensitivity of these criteria in those cases. To provide a most transparent evaluation I suggest to provide all five given criteria separately not only in the calibration mode but also in the validation mode
Line 187, Table 6: here all five introduced evaluation criteria should be given to allow an assessment of the new approach in more detail, e.g. distinguish between concentration and load calculations.

We will add the four remaining criteria (NSE and NSEB of concentration and load) in the final version of the manuscript.

Line 169, Table 5: I would suggest to provide the mean concentration of the solutes in the table although they have been provided already in table 1 making the assessment of the RMSE easier

We will add the mean concentration of solutes in Table 5 in the final version of the manuscript.

Line 187: It seems that the new approach has especially advantages if the variability of concentration and probably also discharge is large. If this is the case this would allow for a more detailed discussion of the advantages and possibly also limitations of the new approach.

We wanted to keep the discussion short because this is a technical note, however in the final manuscript we will add a short section showing the advantages and limitations of this new approach.