

The work by Bijl et al. presents an overview of the state of the art of the analysis and interpretation of GDGTs in the marine environment. In this review the authors discuss the processing of GDGT related information from the sample collection, analysis, to ultimately the long-term storage of the information for future use, following the FAIR principles. Along the text the authors discuss both the history, current state, as well as considerations for each of the steps. I find the review very engaging and easy to read, with the structure of the text accessible for people that might want to consult specific details on the topic.

I am happy to recommend this manuscript for publication once some minor comments are addressed.

Reply: we thank the reviewer for the positive assessment, and for the constructive comments that will improve the paper. Below we respond to each comment, how we intend to improve the manuscript.

Line 107. Change "Next to these". Additionally, the list of compounds in this paragraph breaks the flow of the idea. Consider breaking the paragraph.

Reply: we will change this accordingly

Line 110 (and others). My recommendation would be to stick with "GMGTs" as that's the most descriptive name. For clarity I understand making the clarification, but later they should be referred as GMGTs.

Reply: we will change this accordingly

Lines 139. I am not sure if IPLs are mentioned enough in the rest of the text to include them in this sentence.

Reply: We will remove IPLs from this sentence

Line 258. Correct this section: "all metal tools.extraction"

Reply: we will make the section correct

Section 3.2. This section would benefit from some references.

Reply: we will add relevant references

Line 329. I don't know if I would make emphasis on Soxhlet being used for "larger samples" when the described range is very close to that of ASE.

Reply: agreed. The advantage of Soxhlet over other techniques is the cleanliness and completeness of the extraction. We will highlight this information in this section.

Line 345. Consider starting a new section or starting a new paragraph here.

Reply: we will adjust this so that the paragraph matches the flow of the rest of the paper better

Line 348. Here the Bligh-Dyer method is mentioned but only a very brief description is given, and it is not until a paragraph later that some information about this protocol is given. Maybe it would be worth explaining it within the Ultrasonic extraction section.

Reply: we move the Bligh-Dyer protocol within the section of Ultrasonic extraction, and remove repetition of that in the paragraphs below

Line 373. Make the 2 underscore in N2.

Reply: we will correct this formatting error

Lines 547-548. I am not sure why the temperatures are given in F here.

Reply: we thank the reviewer for spotting this. We will remove Fahrenheit and keep Celsius

Line 576. I think this should be Figure 3f?

Reply: yes, we will correct this error

Section 6.7. Maybe the explanation of how OPTiMAL could be improved, since it is a bit hard to follow.

Reply: we will make sure that the description of OPTiMAL is consistent with the flow of the rest of the paper, and improve the readability.