**Interactive comment on** “Isotopic and chromatographic fingerprinting of the sources of dissolved organic carbon in a shallow coastal aquifer” by Karina T. Meredith et al.

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Overall: Please proof-read the MS carefully, there seem to be a few small typos/grammatical errors.

Data analysis: The dataset is well-suited for a multivariate data analysis to decipher GW sources (see RDA as example in cited Coutourier et al. 2016). I recommend the inclusion of a multivariate analysis (RDA or PCA).

Methods, p4, l15 “Dissolved”. Also, I think the company name is Waterra.

p5, l10 ff: Why was GW age (years) not calculated? What is the merit of using TU?
All methods: Please include details for 14C analysis. Why was 14C of DOC not measured?

Results, p5, l25: Would the authors expect seawater infiltration, due on tidal inundation and/or storm floods, at S5? Or is the GW pressure so high that it immediately dilutes any seawater influence?

All results and following discussions: Please use either present or past tense continuously throughout. Results contain interpretations (e.g. indications of marine carbonate dissolution...ion exchange processes...methanogenesis...) which may better fit in the Discussion section.

p7, l1: “The average DOC concentration (...) is high” compared to what? It is not high considering the conditions (anoxic, advective flow, peat hydrolysis in the aquifer).

Section 4.1., first two paragraphs: Please refrain from switching between past and present tenses.

Discussion, p9, l5-8: Please provide additional literature which supports your claim of a global occurrence. I have added some examples to the reference list below.

Overall Discussion: It seems that 14C-DIC is not included in the discussion of the results. Why? How can it help in interpreting GW sources?

Conclusion, p12, l1ff: Please explain how the estimate of an “order of magnitude higher” is achieved.

p13, l1: Please explain how the estimate of an “export up to ten times” is achieved.

Figure 2: Perhaps there is a way to improve the quality of the figure (some features appear to be blurred). What do the blue, pink, and red arrows mean in contrast to the black ones?

References


