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Biogeosciences Discussions

Interactive comment on "Organic carbon and total nitrogen stocks in soils of the Lena River Delta" *by* S. Zubrzycki et al.

Anonymous Referee #1

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General comments: The information presented in this paper is an excellent example and could serve as a model for the next generation of detailed carbon stock studies. The paper is well written and well organised. I have only one minor comment relating to the lack of any representative soil descriptions and/or photographs. This information should be provided in order to show the types of soils occurring on Holocene terraces and active floodplains. I recommend that the paper be published with minor changes.

Detailed comments: Page 17270, lines 12-14. I assume that you have stored these four unsampled cores in a frozen state. How did you do manage to keep the cores frozen in the field and during shipping to the lab? Perhaps you will want to comment on this. Page 17276, lines 8 and 9. The C% of 0.17-42.46% and 0.13-27.71% probably include both mineral and organic soil horizons. Soils having >17% organic carbon

are considered to be organic soils or horizons. It would be better to report the C % separately for organic and mineral soils. Page 17280, lines 13-26. I do not think it is realistic to compare soil carbon estimates (29.5 kgm-2) for the Lena Delta Holocene terrace to the estimates made by other authors. For example, the estimates reported by Tarnocai et al. (2009) for Turbels and Orthels refer to upland soils, not to soils developed on alluvium. Page 17282, lines 10-25. My experience with deltaic soils is that most of the organic matter is brought in by the river and deposited with the alluvium. It is interesting to note that the authors emphasize the lack of vegetation and do not consider the organic matter deposited with the alluvium.

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