Biogeosciences Discuss., 11, C4930–C4931, 2014
www.biogeosciences-discuss.net/11/C4930/2014/

Biogeosciences
Discussions
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Interactive comment on "Role of extracellular polymeric substances (EPS) from *Pseudomonas putida* strain MnB1 in dissolution of natural rhodochrosite" *by* H. Wang and X. Pan

Anonymous Referee #2

Received and published: 4 September 2014

Wang & Pan submitted a manuscript describing results from an experimental study on the role of EPS on the oxidative dissolution of natural rhodochrosite ((MnX)CO3). The presented topic is of clear fundamental international interest and fits into the scope of BGS. However, as outlined below, in its concept and present shape it is not suitable for publication.

First of all, the presented study contains numerous linguistic and grammatial errors that make a detailed evaluation of the short ms not easy. The referencing is clearly not complete and up to date.

In particular, the experimental results show that EPS is impacting the oxidative dis-

solution of natural rhodochrosite, which is interesting. However, having sayd this, it remains questionalbe, why natural rhodochrosite and not pure MnCO3 was for used for the study! Based on the very limited chemical analysis of the initial and final solid as well as the aqueous solution, more then 50% of the used solid seems to be actually SiO2. The powder XRD makes clear that the carbonate fraction is not homogeneous in its chemical composition but likely contains foreign ions as Ca, Mg and Fe. These components significantly impacts the dissolution kinetics of MnXCO3 solid-solutions (e.g., Boettcher & Dietzel, EMU notes 2010). The Impact of foreign ions on the reactions at the solid-water interface may be enormous. This is not considered in this study at all and since a complete chemical analaysis of the solid is lacking, can also not be evaluated for comparative later use.

Therefore, I can, unfortunately, not recommend the publication of this study.

Interactive comment on Biogeosciences Discuss., 11, 7273, 2014.