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Interactive comment on "Soil biochemical properties after six years in amended brown and gray mine soils in West Virginia" *by* C. Thomas et al.

Anonymous Referee #1

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This is an interesting paper about changes in soil properties of a reclaimed mine site with different substrates and amendments after six years. The main new aspcet is the study of hydroseeded subplots. The paper is well structures and well-written. Abstract and Introduction are concise and report on previous or similar studies. The site and methods used are well described. Results and discussion chapter presents mainly measured soil paramters like pH and EC, but also microbial parameter like biomass (MBC) and potentially mineralizable nitrogen (PMN). I appreciate that the authors related MBC to "soil organic carbon" instead of total C, which is very relevant given the site conditions with carbonate and coal C contents. As the authors demonstrate in

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their discussion, results are not very surprising or new. Thus the overall scientific value may not be too high. I have the following questions/remarks: page 679 - the samples were taken "from the top 15 cm". Does this include an organic surface layer? Is there any surface layer formed from litter fall? If yes, why wasn't it sampled seperately since microbial activity should be high there and important for nutrient recycling. This should be presented more clear. page 681 - the authors mention that several species were hydroseeded that are legumes. The effect of N fixation by these species in the context of soil N contents and availabilty has to be adressed. page 683 - since MBC and PMN are significantly affected by hydroseeding, it makes no sense to discuss the overall mean of subplots on different substrates. The values given in the text confuse with the data in table 7. Since data from these sites were reported earlier, the paper should focus more on the hydroseeding effect, also in the title, because this seem to be the really new data. For the same reason, I think the overall length of the manuscript could be shortened.

Interactive comment on SOIL Discuss., 2, 675, 2015.