

Interactive comment on “Response of soil microorganisms to radioactive oil waste: results from a leaching experiment” by P. Galitskaya et al.

P. Galitskaya et al.

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Dear Referee, we are very thankful for your comments. Below you will find our answers on them. In attachment, there is the revised manuscript where changes are tracked by red color.

It reads more like a technical report than a report of a scientific study. Try to articulate major findings and new ideas revealed as Paper that the reader has a good story in addition to the report of the data. We have made several improvements according to the comments of the other Referees. We hope that now the paper became more attractive for the reader. 1) The abstract is mostly okay. The paragraph describing ‘toxicity and effects’ needs editing. I cannot follow the logic of the H-column and R-column from reading the paragraph alone. Either delete the values or change the

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notation, which would make the paragraph readable. Also the last sentence of the abstract should give a conclusion. What did you learn from the study? Merely knowing that microorganisms were affected is only mildly interesting – otherwise why do the study? We added the sentences explaining what are the R- and H- samples into the “Abstract”. Besides, we added one sentence in the end of the article. We did not find it possible to delete the values from the Abstract, because, as mentioned by the Referee, it should be understandable for the reader independent from the whole manuscript.

3) The description of the experimental design could use some editing. Did you apply the waste one time then was it into the soil for 30 days? Otherwise the methods are straightforward. Yes, we applied it only one time. We added some more explanation into “Materials and Methods” section (2.1)

4) The results are okay. My one suggestion is to not rely heavily on the ANOVAs. You have a sample size of $N=2$ per treatment, and depth is confounded because the depths are not independent of each other, i.e., from the same column. Statistics are okay, but the power is weak. We agree with referee, but we use the data we have. We need more data to improve the degree of freedom, and it could be done in future

5) Much of the conclusion repeats results. Delete the redundancy and try to articulate only the major findings and what was novel about the results. We deleted one paragraph concerning toxicity estimation from Conclusions and slightly rephrased the other part.

Technical comments

1) Page 1754, line 4: please be specific rather than saying ‘and other properties’. You are making the reader guess what you are thinking. deleted 2) Page 17 54, line 11: change ‘estimated’ to ‘examined’. changed 3) Page 1754, line 14: I suppose the relative change is okay, but the reader will not know if these changes are large, or not. We did use the relevant level to make the reading of the manuscript less difficult and full of details

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- 4) Page 1755, line 13: 'soil surface' where? This is a bit confusing because soils are everywhere. Improved, details added
- 5) Page 1756, line 19: this sentence about raw and treated could be repeated in the abstract. I did not catch this from reading the abstract alone. Repeated in the Abstract
- 6) Page 1759, line 27: what were the sample sizes and number of replicates for each test? The sample size differed from assay to assay according to the analyzing procedure provided. The number of replicates are described in the paragraph 2.6: "Sampling and chemical analyses were carried out in triplicate and biological analyses in quintuplicate, and all results were expressed on an air-dried soil basis"
- 7) Table 1: what do the letters for the Waste Sample indicate? Where in the methods do you describe each sample? These are just the names (numbers) of the samples obtained from the petroleum production yard. In order to make the manuscript less difficult for the reader, we renamed the samples in Table 1.
- 8) Page 1763, line 22 to 25: is it necessary to give the values of the ranges? The numbers are obvious in the table. Perhaps just say range was xx-fold. We deleted the ranges
- 9) Page 1765, line 15: the wording should be 'raw waste was more toxic than treated waste'. 'Higher' and 'lower' can be confusing. The whole paragraph was deleted according to recommendations of the other reviewer
- 10) Figure 3: Consider changing the lines to dots and dashes rather than colors. Colors are difficult to discern, especially, if one is colorblind! The lines and dots were changed to colors according to recommendation of the handling editor
- 11) Page 1767, line 20: I am not following your logic here. What are the percentage values? Rephrased
- 12) Page 1769, line 26: delete the word 'authors'. Deleted
- 13) Page 1771, line 10: is there a quantitative measure, rather than 'jumps up C1638

suddenly'? Rephrased

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/12/C1636/2015/bgd-12-C1636-2015-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 12, 1753, 2015.