

Interactive comment on “Spatial and temporal variability of heavy metals in streams of the Flint Creek and Flint River Watersheds from non-point sources” by I. Abdi et al.

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Answers to comments by reviewer #1 The purpose of the study was to examine the influence of temporal and spatial variability on the occurrence of selected heavy metals and their ranges in waters and provide pertinent water quality data in two watersheds that may assist in total maximum daily loads (TMDL). You might want to delete the part that saysmay assist in total maximum daily loads (TMDL). This needs to go to both abstract and introduction sections. Page 33 s8: The results of this study yielded some intriguing observations for the effects of spatial land use and land cover can be deleted. Less info is sometimes better. Page 33: s 17: Please delete the sentence that

C48

says: This study supports the importance of dissemination of educational programs at local and federal levels that will address best management practices that will reduce non-point source pollutions in these watersheds. Please add the following on page 33. This study showed that changes in pH during sampling may have affected some pH dependent activities of some metals. We observed significant increases in Pb levels during 2004 monitoring season. Please add this to Page 33: The means for some of the heavy metals (Pb and Ni) were significantly higher during the 2004 monitoring period compared to 2003 period (Fig. 8). Land use during the 2004 period may have played some role for this increase. Statistical analysis of the data from the two watersheds revealed significant water quality changes between 2003 and 2004 for both water sheds for some heavy metals (Pb and Ni). Analysis of variance of heavy metal loads in these two watersheds suggests that there were no seasonal influence existed ($P>0.05$) except for Pb. We observed significant increases during winter seasons compared to the rest of the seasons (fall, spring and summer). It seems that land use and land cover did not play any significant role for heavy metals for this study. Page 40, yes, we forgot to put 2004 at the middle of the table 4. Please insert 2004 that will strength our idea of temporal variability for the parameters tested. The comment the editor mentioned about table 4, in 2003 about pH between 3.1 and 9.3 is incorrect. We did not have pH 9.3 in table 4.0. So we can ignore this one.

Answer to Comments by reviewer #2 Sampling is done twice per month or bi-weekly basis for each sampling location.

Objective of the study is as follows: The purpose of the study was to examine the influence of temporal and spatial variability on the occurrence of selected heavy metals and their ranges in waters and provide pertinent water quality data in two watersheds that may assist in total maximum daily loads (TMDL). You might want to delete the part that saysmay assist in total maximum daily loads (TMDL). Please delete some of the references as you see fit. I agree with that.

Objective of the study given above

C49

