

***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.***

**b. Heijman (Referee)**

s.g.j.heijman@tudelft.nl

Received and published: 31 March 2009

Data of two watersheds were collected about land use; rain fall; pH and concentration of 5 heavy metals. The samples were collected from three locations in each watershed.

No information is given about the detection limit and the accuracy of the measurements for each metal. Also no duplo's are presented. This is essential to give an interpretation to the measurements.

No correlation was observed between the concentrations of heavy metals and land use; rain fall or pH. A number of possible conclusions can be drawn from this: 1) there is no correlation 2) The number of samples was too low. 3) The system was too complex,

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)



there were too many variables

To my opinion it is a combination of 2 and 3 and the subject is too complex to investigate with the small amount of analyses performed in this study. The data are still important enough to be published but the author should be clear about this aspect in his conclusions.

some detailed remarks: \*page 32 s19: "These results of heavy metal concentrations at these watersheds highlight the need for continuous sampling under similar conditions" (I agree on this) "and illustrate a potential use of models in helping to design and coordinate sampling" (I really can't see how you can conclude this from the results)

\*page 33 s8: "The results of this study yielded some intriguing observations for the effects of spatial and temporal variability particularly on heavy metal concentration in these two watersheds." (This is not a conclusion. Please mention the intriguing observations here; if there are any)

\*page 33 s17: "This study supports the importance of dissemination of educational programs.. " This is not a conclusion of this study nor is it discussed within the results.

\*remark for the conclusions: It was mentioned that "this study should provide a baseline for future water quality studies." It is not mentioned in the conclusions if it can be concluded that this study provide indeed a baseline as mentioned.

\*In table 4 there should be a section for 2004 (as shown in table 3).

\* In table 4 in 2003 the pH varies between 3.1 and 9.3 this must have an impact on the heavy metals measured. Can you show a graph of the correlation between concentrations and pH in the sample. Most heavy metals become more mobile at lower pH's.

---

Interactive comment on Drink. Water Eng. Sci. Discuss., 2, 25, 2009.

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)

