

Letter to the Editor

This letter is in regard to the short communication "A preliminary assessment of the chemical and microbial water quality of the Chunies River – Limpopo" (Germs et al., 2004), published in the April 2004 (Vol 30 No 2) issue of *Water SA*

27 June 2004

The short communication "A preliminary assessment of the chemical and microbial water quality of the Chunies River – Limpopo" is based on a research report (Germs, 2002) that I completed as part of my Honours degree at the then PU for CHE in 2002. Even though I am given as the **first** author (W. Germs) of the short communication, I played no role in the condensing of the original Honours research report into the short communication appearing in *Water SA*, nor was I informed whatsoever that the short communication was being submitted to *Water SA* for publication.

There are some errors in the short communication and significant differences between the short communication that appeared in *Water SA* and the original study, which need to be pointed out:

- 1) The abstract of the short communication states that "The chemical water quality of the second section of the river, fed by base-flow, was poor and unacceptable for both domestic and agricultural use." One sentence later, the abstract concludes by stating that "The most significant finding of this study was that the chemical water quality of the Chunies River, at the time the samples were taken, was acceptable and fit for agricultural and domestic use" (Germs et al., 2004). These two sentences are in direct conflict with each other and present a clear contradiction.

The concluding statement of the short communication is furthermore in direct conflict with the findings of the original report. This point might be elucidated by quoting directly from the abstract of the Honours research report (Germs, 2002), which states that:

"At the time of sampling, the river could be characterised into two sections. The first flowing from the source till a short distance downstream of sampling point CA12 (approximately 38.6km from the source), and the second section starting at CA13 (approximately 61.5km from the source where water re-occurred for the first time following a dry section) and flowing up to CA16 ..." " ...The chemical water quality of the second section of the river (CA13-CA16), fed by base-flow, was poor and unacceptable for both domestic and agricultural use. The microbial water quality was unacceptable throughout the course of the Chunies River, but could be used if chlorinated. The most significant finding of this study is that the chemical water quality of the Chunies River from CA1-CA12, at the time the samples were taken, is acceptable and fit for agricultural use. If the chromium levels were slightly lower at CA7, 8 and 10, the water in this section of the Chunies River would also be acceptable for domestic use" (Germs, 2002).

- 2) In the **Materials and methods** section of the short communication it is stated that "four sampling sites (with six replicates

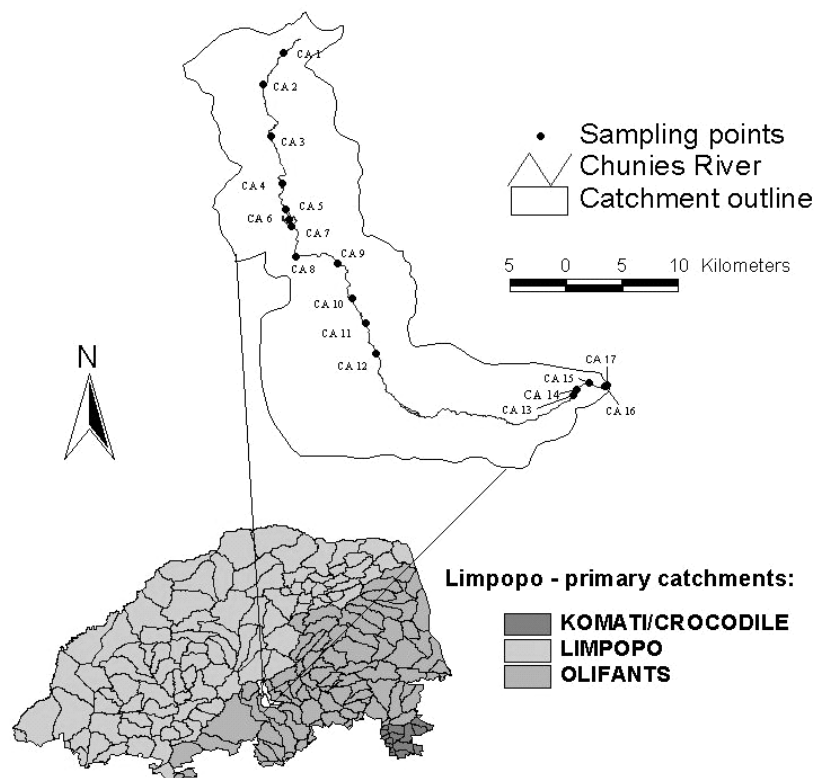


Figure 1

Map of the Chunies River catchment indicating sampling sites and the geographical location of the Chunies River catchment within Limpopo (Germs, 2002)

each) were selected along the Chunies River, from the headwaters to the confluence with the Olifants River" (Germs et al., 2004). It goes on to state that "A 4th sampling site was located in the Olifants River at the point where the Chunies River enters the Olifants River." During the study undertaken as part of my Honours degree sixteen sampling sites were selected along the Chunies River (from the headwaters to the confluence with the Olifants River and numbered CA 1-16 in a downward stream direction). These sites were sampled during the same two days given in the short communication, and their locations can be seen in Fig. 1. During sampling a seventeenth sampling site was furthermore located in the Olifants River at the point where the Chunies River enters the Olifants. One grab sample was taken for chemical analysis and one grab sample for microbial analysis at each sampling point. No duplicate/replicate samples were taken by myself with which the standard deviations given in the article for a sampling site could have been calculated, and I would appreciate it if the authors of the article could clarify how the data appearing in the article was obtained.

- 3) The figure of the Chunies River catchment appearing in the short communication does not indicate the sampling sites, even though the caption of the said figure states "Map of the Chunies River catchment indicating sampling sites" (Germs et al.,

2004). As the short communication deals with spatial data this a significant omission on the side of the compilers of the short communication.

The contents of the short communication appearing in *Water SA* and that compiled in the Honours research report of the original study differ in terms of the data analysis, data representation and the findings of the research. Considering the major differences between my research report and the short communication published in *Water SA*, coupled with the fact that I had no part in the condensing of my Honours research report into the short communication, I wish to distance myself fully from the said short communication. I furthermore suggest that all further reprints (and the availability of digital copies of the short communication) be halted until a third party has evaluated the correctness of the short communication in its present form.

I sincerely hope that this letter will serve to rectify some of the misrepresentations that have arisen from this unfortunate event, and I am looking forward to any clarification offered by the (real) authors of the short communication on the matters raised in this

letter. The importance of effective water quality management necessitates the provision of the highest possible quality of information regarding water quality and the processes affecting it, which is the responsibility of all parties involved.

Best regards

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References

GERMS WJ (2002) A Preliminary Assessment of the Chemical and Microbial Water Quality of the Chunies River – Limpopo. Thesis submitted in partial fulfillment of the requirements for the degree B.Sc. (Honours), Potchefstroom University for Christian Higher Education.

GERMS WJ, COETZEE MS, VAN RENSBURG L and MABOETA MS (2004) A preliminary assessment of the chemical and microbial water quality of the Chunies River – Limpopo. *Water SA* **30** (2) 267-272.

Response by Prof Leon van Rensburg

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- i) The reason Mr. Germs was made first author of the paper was, because as he correctly states, he was the person that collected the samples and because the short communication does represent a condensed version of the report he submitted before he took the option to exit our M.Sc. program with a Honss. degree (could you imagine the repercussions if we did not acknowledge his contribution in some manner). What I would also like to point out is that Mr. Germs was from the onset aware that this work was going to be presented to be published as it represented the first step of a broader program we are working on, that is why the report he refers to as being attached was written in the same broad format as the paper.
- ii) With regard to the sampling "points/sites" I would like to clarify that as he stated in the **Materials and methods** section of the short communication; the river was divided into four sections and that within each section four combined to obtain a single value with standard deviation in order to typify (with

a value and associate standard deviation) each of the sections of the river.

- iii) Finally, with regard to Mr. Germs' opinion as to the water quality being unfit for use at sites "CA7, CA8 and CA10" specifically in terms of Cr concentration (his abstract) and he is questioning the final conclusion drawn in the short communication, it should be stated that the values at the sites he refers to represents a very short portion of the total system and when a more holistic and balanced approach is taken to the average values for more even portions of the river, the impact of these values are not as significant as he would like to think and only contributes to increasing the standard deviations of the values presented.

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