**Hydrology and
Earth System
Sciences
Discussions**

Interactive comment on "Improving confidence in deep drainage estimates, for arid and semi-arid areas using multiple linear regression with percent clay content and rainfall" *by* D. L. Wohling et al.

Anonymous Referee #2

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1   General comments

The paper aims to develop a generic relationship between drainage and annual average rainfall and average clay content of soil for two major vegetation types (annual, perennial) in Australia, and therefore addresses a relevant scientific question within the scope of HESS. The study is based on a database of field observations and previous research from across Australia. The authors determine the statistical significance of drainage relationships, the best metric of clay content regarding to soil depth, and provide uncertainty estimates by using multiple linear regression. The novel part of this study is to use both rainfall and clay content as predictors for drainage. The authors conclude that annual average rainfall and the clay content of the top 2m of soil are statistically significant predictors of drainage. This is well supported by the results and applied methods.

I recommend the paper for publication after minor revisions. I provide supplementary material, which includes some specific comments and technical corrections. Please consider those comments as suggestion provided by a reader who has limited experience in the field of deep drainage / ground water recharge. I avoided to make comments on issues already given by Cuan Petheram, since the authors already revised their paper according to their comments given in HESSD.