

Interactive comment on “A geophysical analysis of hydro-geomorphic controls within a headwater wetland in a granitic landscape, through ERI and IP” by E. S. Riddell et al.

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Anonymous Referee #1

Many thanks to Anonymous referee #1 for the positive response to this manuscript. The manuscript will be submitted with the minor modifications that you suggest.

Addressing specific comments:

1) Prior to the complete data inversion the raw electrical resistivity data was assessed for its quality according to the methods of Loke (2004), where bad data points are re-

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moved from a preliminary inversion array according to high RMS error, and are therefore excluded from the final data inversion process. This is now discussed in Section 3.1 Overall approach and reiterated in Section 3.2 3-D approach.

2) No specific ground truthing occurred at this small hillslope-wetland interface 3D section, rather the occurrence of shallow clays was inferred from the nearby auger points along the large 3D transects at the wetland intersection (Fig. 15). Qualitative interpretation was also made as probes were inserted into the ground and a change in soil texture was noted increasingly shallower towards the origin.

3) Addressing the comment about the use of different arrays has been applied to the relevant section in the methods, section 3.1. In general the Wenner array was used as this is sensitive to vertical changes in the subsurface resistivity distribution and anticipated to be useful for delineating sedimentary layers. Meanwhile, the Schlumberger array was used specifically on transect 1 as this array is sensitive to both vertical and horizontal resistivity distributions and therefore anticipated to be useful for revealing intruding features such as bedrock outcrops, this array was used principally to assist in a complementary study in the catchment on hillslope hydrology.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 1973, 2010.

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