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Tracking changes in natural organic carbon character during artificial infiltration using flourescence spectroscopy

Stephan J. Köhler (1), Elin Lavonen (1), Philip McCleaf (2), Angelica Hummel (2), Dan Berggren Kleja (3), and Per-Olof Johansson (4)

(1) Swedish university of agricultural sciences, Aquatic sciences and assessment, Sweden (stephan.kohler@slu.se), (2) Uppsala vatten och Avfall AB BOX 1444 75144 Uppsala, (3) Swedish university of agricultural sciences, Soil and environment SLU BOX 7014 75007 Uppsala, Sweden, (4) Artesia Grundvattenkonsult AB Propellervägen 4B, 1 tr 183 62 Täby, Sweden

In many Nordic countries more than half of the drinking water is produced using surface water. Artificial infiltration allows increasing water withdrawal from groundwater but may not be sustainable during longer periods. Here we report results from a one year study on changes in dissolved organic carbon concentration (DOC) and DOC character along the whole infiltration area starting with the stream water until the drinking water plant raw water intake. Both DOC, fluorescence spectroscopy and LC-OCD are used to understand the observed changes in the aquatic phase. Large seasonal changes close to the infiltration basin contrasts with stable conditions further away. Selective removal of terrestrial type of DOC is coherent using both analytical techniques. A simple empirical relationship between Humic like material and absorbance developed elsewhere also holds in this system (Köhler et al 2016). Fluorescence is a fast and promising tool for tracking changes in natural organic carbon character during artificial infiltration.

References

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