



Institute for Modelling Hydraulic and Environmental Systems (IWS)

VEGAS - Research Facility for Subsurface Remediation

Directors PD Dr.-Ing. Claus Haslauer Dr.-Ing. Simon Kleinknecht

Contact person Ramona Häckl

contact Pfaffenwaldring 61 70569 Stuttgart T: 0711 685-64717 F: 0711 685-67020 vegasinfo@iws.uni-stuttgart.de www.vegas.uni-stuttgart.de

February 20, 2025

Accumulation of PFAS in Soils from Irrigation Water

Motivation

When pristine soils are irrigated with PFAS-contaminated groundwater, the question arises as to whether and at what concentrations the "clean" soils become polluted. Since irrigation is urgently needed for certain crops (such as asparagus), simply refraining from using groundwater as a precautionary measure is not feasible. In order to estimate how much can be irrigated without contaminating additional areas, knowledge is required about the adsorption behavior of the pollutants and the existing soils. Depending on the rainfall, properties of the soil and of the contaminants, different acceptable irrigation rates can be derived.

In our model, such rates were calculated depending on various soils, precipitation sequences, and pollutants. Based on this, further combinations of soils and pollutants should be calculated.

For this purpose, both adsorption experiments, experiments to assess the transport behaviour in the unsaturated zone and further calculations with the simulation software Hydrus are required.

The focus of this thesis can be in the modelling aspects and/or the experimental aspects.

Supervision: PD Dr.-Ing. Claus Haslauer, Dipl.-Ing. Elisabeth Nißler Examiners: PD Dr.-Ing. Claus Haslauer

Starting Date: As soon as possible / to be discussed



