

Temperature signals for monitoring groundwater travel times (T-MON)

Context

About 80% of Berlin's drinking water originate from river bank filtration or managed aquifer recharge. The routine operation involves iron and manganese removal via aeration and filtration but no chemical disinfection. To ensure the hygienic safety of drinking water supply, the drinking water protection zones, in particular those in the proximity of drinking water wells (zone II) are of particular importance. Zone II is defined as the start line from which groundwater has a travel time of 50 days in the underground before it is pumped from the wells to the waterworks.

Objectives

Within the project, investigations are carried out on whether seasonal temperature variations of the surface water bodies and the delayed and damped temperature signals in the drinking water wells can be used to quickly and easily evaluate the subsurface travel times.

Activities

- Configuration of one riverbank filtration site and one MAR site with loggers
- Continuous performance of accompanying samplings
- Diagramming of all temperature data as time series
- Assessment of data in terms of their extreme values and amplitudes and comparison to conservative tracer measurements
- Installation of a routine operation with visualisation of the groundwater travel time to control the infiltration and withdrawal quantities



Duration: 4/2015 – 12/2017

Project Volume: 174 k€

Financial Support



Contact

DR. HELLA SCHWARZMÜLLER, hella.schwarzmueller@kompetenz-wasser
Kompetenzzentrum Wasser Berlin gGmbH