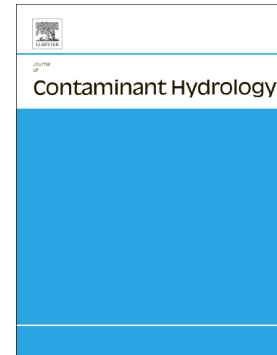


Accepted Manuscript

Validation of a new device to quantify groundwater-surface water exchange

Mackenzie Cremeans, J.F. Devlin

PII: S0169-7722(17)30055-4
DOI: doi: [10.1016/j.jconhyd.2017.08.005](https://doi.org/10.1016/j.jconhyd.2017.08.005)
Reference: CONHYD 3324
To appear in: *Journal of Contaminant Hydrology*
Received date: 21 February 2017
Revised date: 2 August 2017
Accepted date: 6 August 2017



Please cite this article as: Mackenzie Cremeans, J.F. Devlin , Validation of a new device to quantify groundwater-surface water exchange. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Conhyd(2017), doi: [10.1016/j.jconhyd.2017.08.005](https://doi.org/10.1016/j.jconhyd.2017.08.005)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Validation of a New Device to Quantify Groundwater-Surface Water ExchangeMackenzie Cremeans^{a,c} and J.F. Devlin^{b, c}

^aDepartment of Geology, University of Kansas, Lindley Hall Room 215,
1475 Jayhawk Blvd., Lawrence, KS 66045, email: mackenziecremeans@ku.edu

^bDepartment of Geology, University of Kansas, Lindley Hall Room 215,
1475 Jayhawk Blvd., Lawrence, KS 66045, Tel. 785-864-4994, email: jfdevlin@ku.edu

^cCorresponding author

Abstract

Distributions of flow across the groundwater-surface water interface should be expected to be as complex as the geologic deposits associated with stream or lake beds and their underlying aquifers. In these environments, the conventional Darcy-based method of characterizing flow systems (near streams) has significant limitations, including reliance on parameters with high uncertainties (e.g., hydraulic conductivity), the common use of drilled wells in the case of streambank investigations, and potentially lengthy measurement times for aquifer characterization and water level measurements. Less logistically demanding tools for quantifying exchanges across streambeds have been developed and include drive-point mini-piezometers, seepage meters, and temperature profiling tools. This project adds to that toolbox by introducing the Streambed Point Velocity Probe (SBPVP), a reusable tool designed to quantify groundwater-surface water interactions (GWSWI) at the interface with high density sampling, which can effectively, rapidly, and accurately complement conventional methods. The SBPVP is a direct push device that measures *in situ* water velocities at the GWSWI with a small-scale tracer test on

Download English Version:

<https://daneshyari.com/en/article/8885881>

Download Persian Version:

<https://daneshyari.com/article/8885881>

[Daneshyari.com](https://daneshyari.com)