

# **Report for 2003WV15B: WRI55: Hydrologic Connections and Impacts on Water Supply in the Great Valley Karst Aquifer. A Case Study in Martinsburg, West Virginia**

- unclassified:
  - None.

Report Follows

# Hydraulic Connections and Impacts on Water Supply in the Great Valley Karst Aquifer. A Case Study in Martinsburg, WV

D.J. Vesper and J.J. Donovan

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## 1. Synopsis of Accomplishments

This project includes two main types of data collection activities – continuous electronic logging and water quality sampling. Thus far the following has been accomplished:

- Logging equipment for stage, conductivity and temperature was installed in Water Street Spring (also known as Martinsburg Water Supply Spring) and Kilmer Spring during summer 2003. Data has been collecting continuously since that time.
- A pressure transducer (for measuring stage) was installed in Lake Thomas Fall 2003 and is currently collecting data.
- Discharge has been measured at Water Street Spring 6 times since the program began. These data allow the stage data to be converted into flow discharges.
- Field screening chemical data (temperature, pH, conductivity) has been collected numerous times at all springs
- Three rounds of water samples have been collected and analyzed (Nov 03, Feb 04, Apr 04) for Kilmer, Water Street, Big and Snodgrass Springs

In addition to these tasks, a relational database has been designed and populated for the project

## 2. Publications. – None.

## 3. Information transfer activities

- D.J. Vesper gave a public talk at the Berkeley Springs Festival of the Waters (February 2004): “The History, Mystery and Science of Springs” and incorporated data collected in the Martinsburg area. (J.T. Donovan was a preliminary judge at the same water-tasting competition)
- D.J. Vesper presented data-to-date at the WRI Advisory Committee annual meeting (December 2003): “Impacts on Water Supply in the Great Valley Karst Aquifer: A Case Study in Martinsburg, WV”
- D.J. Vesper presented an overview of this and related team projects at the U.S. Geological Survey Great Valley Water-Resources Science Forum (May 2004): “Karst Spring Research at WVU: An Update on Ongoing Work”

## 4. Student Worker Summary as follows:

Rachel Grand is conducting her M.S. Research on this and related work. The WRI Grant is supplying Grand’s supper research stipend.

5. NIWR-USGS Student Interns (if any) – None.
6. Notable achievements and awards – None.