The following report was submitted by Carol Bitting to the Arklansas Pollution Control and Ecology Commission meeting on April 25, 2014.

Preliminary results of the dye tracing test on Big Creek are these; we initially injected dye into a dug well across the county road from C & H Hog Farm at 9:30 am Tuesday morning, April 22. We recovered the dye and visually observed it in three springs on the banks and beneath Big Creek. We also had a visual confirmation in a water sample from a nearby well, with a first observation at about 27 hours after injection, about 12:30 pm on Wednesday. The first observation of dye at land surface was noted and photographed at about 30.5 hours after injection in the three springs previously mentioned.

Our preliminary calculation of groundwater velocity of these proven point-to-point locations on the groundwater flowline, assuming a straight-line determination, ranges from 1500 to 1700 feet per day in the subsurface, which is definitely a fast-flow karst system. The estimate of surface water velocity in the stream channel is about 50 times the groundwater velocity, around 3500 to 3600 feet per hour. This is consistent with rapid flux of waste, nutrients, and pathogens to Big Creek, and from there to the Buffalo National River. It is also consistent with increasing biofilm and bacterial growth on the streambed, and the high values of pathogens that Chuck Bitting of the National Park Service measured in the Buffalo National River about two weeks ago, and that Mike Masterson reported in the Arkansas Gazette on Saturday, April 19, 2014 on page 7B.