**Testimony to U.S. E.P.A. re: Injection Wells –April 10, 2021**

**Dr. George Banziger**

I’m Dr. George Banziger. I am a resident of Marietta, which is located in Washington County, Ohio. I have many questions about Class II injection wells, which I think have not been adequately addressed by the Ohio Department of Natural Resources, Oil & Gas Resource Management. In 2019 Washington County had the second highest figure of injection well activity in the state at 8.1 million barrels of brine waste , 68% of which was from out-of-state (PA & WV) sources. Our county has the highest number of wells in the state. In 2011 there were 1.9 million barrels of brine waste injected in our county. Washington County is one of 22 counties in the officially designated Appalachian region, where the vast majority of injection wells is located. This leads to my first question: If there are deleterious effects of injection wells in this region, wouldn’t this constitute a disproportionate impact and involve an issue of environmental justice?

I am aware that injection wells have cement casings and annulus controls and that they are customarily drilled to a depth of approximately 3,000 feet while aquifers, from which drinking water is obtained normally are drilled at 200-300 feet. This means that, if properly done, injection wells should not pose any risk to aquifers or surface water. The key word in this conclusion is “properly.” Spills. leaks, discharges and other potentially harmful events are not uncommon at injection well sites.

On November 9, 2020 I contacted Adam Schroeder of ODNR and, under the “public record request” practice, I asked for reports on the Class II injection wells in Washington County and posed some procedural and technical questions. In a timely response Mr. Schroeder answered my questions and provided me with 23 violation reports, 26 compliance reports, and 1,155 inspection reports. I reviewed all these reports. On November 15 I sent Mr. Schroeder some follow-up questions about the compliance and violation reports. He responded to some of these questions but not all. On November 29 I sent these questions to Ms. Mary Mertz, Director of ODNR, who sent them directly to Mr. Schroeder without responding to their substance. These questions had to do with specific reports on injection wells in the county, where spills or related violations were reported, what action was taken, and whether follow-up was made. On December 9 I sent Mr. Schroeder a list of over 25 questions from inspection reports, which I grouped into the following categories: Redbird #4 injection well (aka #24), where numerous problems were cited, spills & leaks, conditions of wells at inspection, issues related to the recently approved barge offload facility in Marietta (owner Deep Rock), ownership of wells, and roads and transport to wells. I have not yet received responses to any of these questions, several of which relate to spills and leaks (at dykes and other places), which may have flowed into aquifers, streams, and rivers.

On February 5, 2021 I sent another message to Mr. Schroeder, asking him to please respond to the questions I posed on December 9 regarding inspection reports and to respond to some immediate questions I had about a reported spill on January 20, 2021 at a Deep Rock injection well facility near Marietta. One of my questions about this spill was whether there is any evidence that brine waste from this spill entered streams and the Ohio River. At this date I have not yet received any response to these questions. Neither have there been any public hearings on injection wells in this county regarding spills at these wells, what follow-up and enforcement actions ODNR has taken, and how such spills can be reduced or eliminated in the future.

I have written to State Senator Frank Hoagland (who represents Washington County) about my questions. His office contacted ODNR, which responded in a message merely identifying their standard procedures. I also contacted State Representative Don Jones (who represents the part of Washington County where I reside), and have received no response.

As a concerned resident of Washington County and one who has reviewed the numerous reports of Class II injection wells in the county, it is my observation that ODNR does not have the human or physical resources to conduct a complete regimen of inspection (which they are supposed to do every 11-13 weeks), follow-up and enforcement required of these facilities which pose environmental and health risks to the county and indeed to the entire state. Until ODNR answers these numerous questions, it my recommendation that all activity at injection wells be halted—or at the very least no additional permits for Class II injection wells be approved.

For further information about the health and environmental risks of hydraulic fracturing and the significant amount of brine waste that results from this process, I refer you to a significant national (and indeed international) review study of all health and environmental aspects of hydraulic fracturing by the Concerned Health Professionals of New York: *Concerned Health Professionals of New York, & Physicians for Social Responsibility. (2020, December). Compendium of scientific, medical, and media findings demonstrating risks and harms of fracking (unconventional gas and oil extraction) (7th ed.). http://concernedhealthny.org/compendium*/. One of the “emerging trends” noted in this report is that fracking waste threatens drinking water in the form of spills, discharges into rivers, underground migration of chemicals, and water depletion.

I have also attached a copy of my questions on the 1,155 inspection reports that I reviewed.

An additional document attached is a report by Dr. R. Pokladnik (July 14, 2020), in which she raised several questions about fracking waste including: Can spills at injection wells be detected by public water facilities? Can these facilities test for radionuclides (present in much of brine waste)? Who is responsible if a spill occurs? Who will cover clean-up costs for spills?

There are as many questions about Class II injection wells as they are wells in Ohio—and dearth of answers.