Water quality trading markets subject of hot debate

Since the 1980s, water quality trading (WQT) has been a concept that many farmers, businesses and municipalities have embraced as a voluntary way to reduce nutrient pollution, and in some cases, generate additional revenue. But a recent report by the environmental advocacy group Food and Water Watch (FWW) is sharply critical of WQT operations in several states and calls for an end to the practice, alarming WQT advocates who say newer WQT systems are working better than ever.

The trading systems allow pollution point sources – like power plants and concentrated animal feeding operations (CAFOs), which are regulated under the Clean Water Act – to purchase "credits" to offset the amount of effluent they discharge over what is allotted by their EPA-issued, state-administered National Pollution Discharge Elimination System (NPDES) permit.

The credits are generally generated and sold by farmers who have agreed to reduce the amount of nutrient leaving their own operations, using conservation best management practices (BMPs), in exchange for compensation. Policymakers have taken particular interest in WQT systems in recent years because implementing BMPs on agricultural land upstream is considered a cheaper and faster way of reducing nutrient pollution than upgrading point source effluent systems to comply with their NPDES permits.

FWW's report took aim at the state-led WQT market in Pennsylvania, claiming the program couldn't verify that farm credits were actually being generated. Scott Edwards, a co-director of FWW's legal arm, the Food and Water Justice Project, told reporters as the assessment was being released that FWW was "looking to challenge water pollution trading in the courts… because this isn't how the Clean Water Act was supposed to work."

Lancaster County, Pennsylvania dairy producers install manure storage tanks like the one shown above to better manage nutrients. Photo courtesy of NRCS

Pennsylvania's WQT program, which was initiated in 2005, gave brokerage firms the responsibility of helping farmers pick BMPs to use, verifying the effectiveness of the BMPs, and selling the credits generated by those BMPs at auction. This set-up, FWW claims, explains why just 0.16 percent of the phosphorous credits and 7.66 percent of the nitrogen credits generated between 2005 and November 2015 were sourced through comparatively more expensive "on-farm" BMPs, like buffer strips or reduced tillage.

The vast majority of the credits farmers generated were through the export of poultry manure, or litter, to areas outside the Chesapeake Watershed, and poultry litter combustion, according to Pennsylvania Department of Environmental Protection (DEP) data compiled by FWW.

The U.S. EPA had the same concerns, and in April 2014 told the DEP to establish additional

eligibility and credit calculation requirements, or it would no longer issue new NPDES permits. At the start of October, the DEP implemented a 3-to-1 trading ratio – meaning farmers will have to reduce their nutrient runoff three times over to earn one credit – as an interim step until it could develop a performance-based tool that establishes baseline eligibility for nonpoint sources. The state agency will also require that all credit-generating poultry litter exports be applied to certified nutrient deficient fields.

Mark O'Neill, the media and strategic communications director for the Pennsylvania Farm Bureau, said the state's original WQT program "was embraced" by Pennsylvania farmers and garnered "modest" farmer participation, but it wasn't "a windfall program" or "as good… as farmers thought it would be." Now, with the newly imposed changes, O'Neill said farmers will be even less likely to participate.

Neil Shader, DEP's press secretary, told *Agri-Pulse* that his agency is reviewing FWW's 28-page report, and intends to evaluate "the efficacy and design" of its WQT program "with the goal of improving its effectiveness."

"Like anything new, emerging environmental markets have experienced disappointments and failures," Brent Fewell, an attorney with Troutman Sanders, the firm that represents the National Water Quality Trading Alliance, wrote shortly after FWW report's release. "Learning from mistakes is a good thing, and these markets continue to evolve and improve with greater public transparency, accountability, and scientific rigor."

Fewell testified before Congress last year that the current WQT pilot program running in Ohio – spearheaded by the industry-backed Electric Power Research Institute (EPRI) in 2012 – is a good example of how WQT programs are improving with time. Ohio's first WQT pilot program, which ran between 2007 and 2011, received criticism from FWW for poor record keeping, unverified farmer-generated credits and numerous NPDES permit violations.

James Lee, media relations manager with Ohio EPA, told *Agri-Pulse* Tuesday that FWW "inaccurately" characterized the number and type of permit violations the first pilot incurred over the five-year program, and stressed that "in the right circumstances," the agency still believes **"water quality trading can be a tool for water quality improvement and more cost effective nutrient reduction by point sources."**

EPRI's project spans the Ohio River Basin, but focuses its efforts in Kentucky, Indiana and Ohio. It uses scientific tools to measure nutrient runoff baselines and the effects of BMPs on farms, and has a strict and transparent credit system that is coordinated by the American Farmland Trust (AFT), an organization that works to protect farmland nationwide. By the end of the pilot this year, EPRI expects to have reduced phosphorous pollution in the basin by 30,000 pounds and nitrogen pollution by 66,000 pounds – the equivalent of 2,950 50-pound bags of fertilizer.

According to Brian Brandt, a spokesman for AFT, the EPRI project will continue, but it could be six months to a year before the project partners decide on what "the next phase will look like." In late October, the project received nearly $2 million in grants from the U.S. Endowment for Forestry and Communities and USDA's Natural Resources Conservation Service.