

Environmental Issues Facing Virginia Dairy Producers

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On May 19, 2009, President Barack Obama issued the Chesapeake Bay Protection and Restoration Executive Order which established a Federal Leadership Committee charged with leading the nation's effort to restore and protect the Chesapeake Bay. In September of that year, the Environmental Protection Agency (EPA) announced its intent to create a Chesapeake Bay watershed wide Total Maximum Daily Load (TMDL) for nutrients and sediment. By definition, a TMDL is *"a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant."* In its justification for the creation of a TMDL, EPA cited section 303(d) of the Clean Water Act (CWA). The six states comprising the Chesapeake Bay Watershed and the District of Columbia are required to develop specific strategies for meeting load allocations in the draft version of their Phase I Watershed Implementation Plan (WIP) by September 1, 2010. After revising deficiencies identified by EPA in their draft WIPs, the states submit their final plans by November 29, 2010. A month later, EPA establishes the largest TMDL ever created encompassing the entire 64,000 square miles of the Chesapeake Bay drainage on December 29, 2010.

The development of the Chesapeake Bay TMDL and the Commonwealth of Virginia's WIP are merely the latest chapter in the friction between environmental interests and the state's agriculture community. Virginia has a long history of attempting minimize environmental regulation of its agricultural operations. In writing the Virginia Pollution Abatement (VPA) permit regulations in May of 1996, the State Water Control Board declined to regulate the bulk of agricultural operations by excluding nonpoint runoff from all non-CAFO agricultural activities from permit requirements. In defining concentrated confined animal feeding operations (CAFO), the state chose to regulate those in excess of 300 animal units. While this threshold addresses a significant portion of the state's poultry operations, it represents only 78 dairies, or about 12% of the state's 671 dairy farms.

Virginia's Phase I Watershed Implementation Plan perpetuates the trend of limited and self regulation of animal agriculture operations. The agricultural component of the VA WIP outlines strategies for achieving the load reduction for nutrients and sediment allocated by EPA. In order to achieve the desired reduction, the state determined that many of the BMPs identified will need to be implemented at a rate approaching full compliance. For example, the practices of stream protection with fencing and nutrient management will need to be implemented on 95% of farms to achieve the target reduction in nutrient and sediment loading. While I suppose that 5% voluntary is better than none, it means that 95% of farming operations will have to be coerced into BMP compliance. The expectation is that BMP implementation rates will be met gradually with adoption rates being measured every two years with the first milestone occurring in 2013.

Key to meeting these milestones will be accurately documenting the real number of BMPs on the ground. The Virginia WIP accurately noted that the current BMP reporting system has many deficiencies. The primary reporting of BMPs has been handled by local soil and water conservation districts (SWCD) as they input data on cost shared BMPs into their tracking system. This results in under reporting BMPs to the Chesapeake Bay watershed model as voluntary BMPs installed without government cost share are

not credited. In 2010, the Commonwealth passed legislation establishing the Virginia Voluntary Agricultural BMP Assessment program. There are currently 7 SWCDs across the state piloting the assessment program. Failure to accurately portray the environmental landscape of Virginia’s farms has dire consequences for voluntary BMP implementation as outlined by the Virginia WIP.

To provide reasonable assurance to EPA, Virginia provided a list of actions in case load reductions were not met in a given milestone period. The Virginia WIP states that “implementation will be by voluntary means until such time as agricultural load targets are not achieved for a particular milestone period. If the agriculture sector load for a milestone period exceeds the target sector load, authorization to develop and implement mandatory actions or programs will be requested from the legislature, provided costshare funding sufficient to achieve the milestone load reductions had been made available to producers during the same milestone period.” The list of potential legislative actions is summarized in the chart below. The Virginia WIP also proposed that the legislature could consider amending the State Code to require certain best management practices to be used on land enrolled in local use value

Potential Action
<ul style="list-style-type: none"> Legislative request for mandatory Nutrient Management Plans sufficient to ensure achievement of 2017 and 2025 targeted percentage of acreage for NMPs.
<ul style="list-style-type: none"> Legislative request for mandatory Soil Conservation Plans to control soil loss to “T” or less sufficient to ensure achievement of this practice on 2017 and 2025 targeted percentage of acreage for Soil Conservation Plans.
<ul style="list-style-type: none"> Legislative request for mandatory livestock stream exclusion sufficient to ensure achievement of this practice on 2017 and 2025 targeted percentage of treatment.
<ul style="list-style-type: none"> Legislative request for mandatory grass or forest buffers between all cropland, specialty crop, and hay fields sufficient to ensure achievement of this practice on 2017 and 2025 targeted percentage of treatment.

assessment and taxation programs.

The million dollar question remains, will the strategies outlined in the Virginia WIP actually result in improved water quality in 2025? It stands to reason that the BMP implementation based approach promoted by EPA certainly can’t hurt, but will it result in the improvements estimated by the Chesapeake Bay watershed model? Because the computer model can’t tell which BMPs genuinely result in water quality improvements, it is likely that there will be some disparity between predicted and actual water quality improvements. For example, 1,000 feet of stream fencing in a rural llama farmette is not likely to deliver the same water quality benefit as those same 1,000 feet of fencing along a heifer feedlot.

Perhaps the greater fallacy is that the implementation of BMPs will address the issue of nutrient balance. In her 2007 thesis project, than graduate student Beverly Cox studied the impact of precision feeding technology on whole farm nutrient balance. On average, the 15 Virginia dairy herds had nitrogen imports that exceeded exports by a margin of 3:1. In these same herds phosphorus imports were greater than exports at a ratio of 1.9:1. For both nutrients, purchased feed represented a

significant portion of imports registering 66% and 69% for Nitrogen and Phosphorus respectively. Imbalances in whole farm nutrient balance are commonplace in areas of concentrated livestock feeding where operations have compensated for a lack of land resources by importing a substantial portion of animal diets. Such is the case with the Shenandoah Valley of Virginia.

This begs the question, finally, what is the potential impact of the environmental regulation upon the feed industry in Virginia? As it is not likely that we will not be creating additional land resources any time soon, the answer will likely hinge upon reducing the density of AFOs or exporting manure from local watersheds, both of which have significant financial burdens. Virginia ag statistics have indicated for years that animal agriculture in Virginia is not a growth industry anymore. One might even argue that the Commonwealth's livestock industry is entering its sunset years. This does not bode well for agricultural support businesses, the feed industry included. As the largest source of nutrient imports on the state's dairy farms, perhaps it is the time for the feed industry to consider their role. With a shrinking customer base, companies that are able to offer feed strategies for addressing water quality would be better poised for survival.