Guidance for Submission of Documentation Needed to Address the Phase 6 Nutrient Management BMP Language Agreed to by the Chesapeake Bay Program Partnership

December 16, 2016

BACKGROUND

During its November 28, 2016 conference call, the Chesapeake Bay Program Partnership's Water Quality Goal Implementation Team (WQGIT) approved the Phase 6 Nutrient Management BMP Expert Panel's un-amended Final Report and recommendations dated October 18, 2016, along with the inclusion of the following language to inserted into a separate Appendix G to the final Panel report:

> *Where book values are used in lieu of site-specific manure or soil analyses, the jurisdiction's program must be sufficiently conservative to ensure that implementation of the standard process is sufficiently restrictive to be protective of water quality.*
>
> *Jurisdictions reporting book value based nutrient management for credit in the Chesapeake Bay Program's modeling system must provide a description and justification documenting how their program, including the methods for calculating the book values, meets this standard as part of their EPA approved BMP verification program plan.*

The EPA Chesapeake Bay Program Office was charged by the WQGIT with the responsibility for developing, in direct consultation with members of the Phase 6 Nutrient Management BMP Expert Panel and other recognized experts, a clear set of guidance on the level, type and scope of data and documentation that a jurisdiction needs to submit to fully address the above adopted language. The below guidance directly reflects detailed input from several Panel members, jurisdictional representatives on the Agriculture Workgroup, the Agriculture Workgroup Coordinator, and the Watershed Technical Workgroup Coordinator.

PLANNED EVALUATIONS AND RECOMMENDED DOCUMENTATION

Default Soil-Test Phosphorus Values and Book Values for Manure Nutrient Analysis

There are two distinct and fundamentally different components of the agricultural nutrient management process that are encompassed by this guidance. The first component is soil testing for assessment of phosphorus (P) availability from the soil to the growing crop. The second component is the nutrient analysis of manure to be applied to cropland. For a given farm operation or portion of a farm operation, site-specific data may be available for only the first component (soil-test P), only the second component (manure nutrient analysis), neither component or both components.

If soil samples are not collected from a field or management unit and analyzed for soil-test P, then an assumed, or default, soil-test P value must be utilized in the nutrient management planning and reporting process.

If a manure nutrient analysis is not conducted for the manure to be applied to the cropland at a specific site, then an assumed, or book value, manure nutrient analysis must be utilized in the nutrient management planning and reporting process.

Use of Soil-Test P Default Values and Manure Nutrient Book Values in Manure Management Plans
To address the question as to whether a jurisdiction's program is sufficiently conservative considering their reliance upon soil-test P default values and manure nutrient book values, the jurisdiction is being asked to provide EPA with an independently[1] derived estimate of the number of total manure management plans, segregated by significant livestock and poultry species, which were developed by utilizing:

1) soil-test P default values,
2) manure nutrient book values,
3) both soil-test P default values and manure nutrient book values,
4) site-specific soil-test P values,
5) site-specific laboratory manure nutrient analysis, or
6) both site-specific soil-test P values and site-specific laboratory manure nutrient analysis.

EPA believes that in order to provide evidence of the conservative nature of its program, a jurisdiction needs to clearly demonstrate that 80 percent or higher of producers' manure management plans which utilized manure nutrient book values also utilized the default soil-test P value option, which programmatically incorporates a presumption of high soil-test P status and restricts phosphorus applications to a crop-specific annual crop removal rate.

The jurisdiction is being asked to provide EPA with detailed documentation of how the percentages of the total population of manure management plans that were developed utilizing the input soil and manure nutrient data sources described above were derived and what independent entity(s) conducted the analyses.

Use of Manure Nutrient Book Values for Manure Management Plans
To address the question as to whether the use of the respective land grant university's average manure nutrient concentration book value is sufficiently conservative considering the potential range of actual manure nutrient concentrations that can exist across operations with manure management plans, jurisdiction is asked to provide the following data to EPA:

> The underlying individual records of manure analysis data, segregated by significant agricultural livestock and poultry species, type of production system within species, and manure management system within production system, which were analyzed as part of the development of the most recently published land grant university manure nutrient analysis book values.

Manure samples used in derivation of the published land grant university book values should be analyzed by an independent entity to determine the percentage of all samples which are less than or equal to the published book value. To ensure that manure/nutrient management plans which utilize book values are conservative enough to protect water quality, EPA expects that 80 percent or more

[1] Independent here is defined as "a review carried out by someone within the same organization having technical expertise in the subject matter to a degree at least equivalent to that needed for the original work, but who was not involved as a participant, supervisor, technical reviewer, or advisor in the development or operations of the program/practice under review" based on the definition within the Partnership's Basinwide BMP Verification Framework (Appendix A, page 5).

of the manure samples used in deriving the book values will be less than or equal to the published book value.

EPA also requests existing documentation describing how the existing land grant university manure nutrient concentration book values were originally derived and the sources of the data used in their derivation.

CREDITING N AND P NUTRIENT MANAGEMENT

This guidance is directed towards determining is use of book values supports crediting of core nitrogen (N) and P nutrient management based on the language in Appendix G. Supplemental nutrient management BMPs for both N and P have been defined by the Phase 6 Nutrient Management Expert BMP Panel as representing advanced site-specific assessments and applications of N and P management tools that result in a verifiable implementation of a change in planned N and/or P application rates, N and/or P application timing, or N and/or P application placement which may result in a N and/or P Supplemental Nutrient Management BMP loss reduction credit(s). Jurisdictions will need to provide separate documentation through their BMP verification programs demonstrating such changes in application rates, timing, and placement.

SCHEDULE FOR CREDITING [SPECIFIC TO PENNSYLVANIA]

If Pennsylvania submits the above documentation in a timely manner, EPA has the time necessary to carry out its respective reviews, and EPA approves the document for incorporation into Pennsylvania's BMP verification program plan prior to or on December 31, 2016, Pennsylvania's submitted manure management plan acres will be incorporated into the calibration of the Partnership's Phase 6 Chesapeake Bay Watershed Model following the Partnership approved verification guidelines currently in place for Progress scenario reported acres and applicable to all jurisdictions. Pennsylvania's submitted manure management plan acres will also be credited in management watershed model scenarios used in the development of Pennsylvania's Phase III Watershed Implementation Plan, credited in future progress scenarios using the Phase 6 Watershed Model, and incorporated into Pennsylvania's historical record of BMP implementation when next updated in advance of development the 2018-2019 milestones consistent with CBP partnership approved milestone protocols and procedures.

If EPA approves the documentation for incorporation into Pennsylvania's BMP verification program plan at some date after December 31, 2016, Pennsylvania's submitted manure management plan acres will be credited in management watershed model scenarios used in the development of Pennsylvania's Phase III Watershed Implementation Plan, credited in future progress scenarios using the Phase 6 Watershed Model, and incorporated into Pennsylvania's historical record of BMP implementation when next updated in advance of development the 2018-2019 milestones consistent with CBP partnership approved milestone protocols and procedures.

If EPA disapproves the submitted documentation, EPA will clearly spell out in writing those specific areas of Pennsylvania's program that fall short of achieving the test of being "sufficiently conservative to ensure that implementation of the standard process is sufficiently restrictive to be protective of water quality." EPA will also clearly document where within the statistical analyses of the manure analysis data the findings fell short of indicating the Penn State University's book values were representative of the range of Pennsylvania livestock and poultry manure analyses and, therefore, not conservative enough to protect water quality.

FOLLOW THROUGH EVALUATION

In parallel and at the request of the WQGIT, EPA is initiating a process for working through the Partnership's Agriculture Workgroup to design and support a much larger scale evaluation of manure nutrient concentration book values and the methodologies used in the collection and laboratory analysis of manure samples across the six watershed states. This work will be directly funded and supported through the existing Virginia Tech cooperative agreement with EPA which is currently supporting many of the Partnership's BMP expert panels across multiple source sectors, as the means for reaching out to and directly involving the watershed's other five land grant universities and other recognized experts. By using this existing cooperative agreement, the Partnership can set up contractual relationships with any of the six land grant universities and their recognized experts with Virginia Tech as the contracting mechanism.

The objective of this more comprehensive evaluation will be to independently collect and process livestock and poultry manure analysis and generation data using a standardized and recognized methodology across all population significant species within the six-state Bay watershed. The resulting verified manure nutrient concentration and generation data will be utilized to review existing regional land-grant university species specific manure nutrient book values and manure sample collection procedures, and provide recommendations on potential improvements where identified across all six states.

Details on this follow through evaluation will be worked out through the Partnership's Agriculture Workgroup. And like the work of the agricultural BMP expert panels, this follow-through evaluation will be overseen and directed by the Partnership's Agriculture Workgroup with funding provided by EPA through the Virginia Tech cooperative agreement.