Septic BMP Review Process

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Wastewater Treatment Workgroup

Conference Call—December 6, 2011

Outline

- Tt Scope of Work
  - Major tasks, workgroup interaction, deliverables
  - Discussion of work plan
- Identified BMPs
  - Brief discussion of BMPs to be researched
- Discussion of expert panel
  - Roles, expectations, & qualifications
  - Identify state and EPA panelists
  - Identify potential expert outside panelists

BMP Efficiency SOW—Initial Phases

- Overall scope
  - Research, evaluate and recommendations for definitions and effectiveness values.
  - Approach/methodology using *Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model.*
- Identify and select panelists
  - Coordinate with Water Quality Goal Implementation Team (WQGIT) and workgroup
  - Final selection by WQGIT and workgroup
  - Enlisted by EPA/CBPO

BMP Efficiency SOW—BMP Research

- Collect technical information and BMP modeling information from EPA
  - Consult with workgroup for information pertaining to each BMP.
  - CBPO modeling staff will be consulted to identify how the BMPs will be handled in the applicable Bay models.
- Literature search
  - Electronic searches, such as *ChemAbstracts*, *Agricola*, *USDA – NIFA Cooperative Research Information System* and specific journal archives will be searched.
  - Articles will be reviewed and screened for applicability, usefulness, and quality.
- Interview/survey
  - Interview lead researchers to help identify project reports, fact sheets or other publications, websites. Lead researcher to identify areas where the BMP is being implemented and programs that have adopted the BMP.

BMP Efficiency SOW—BMP Analysis

- Compile information
  - Compile all available information for each BMP identified by review panel for recommendation, and assist the panel in developing practice definitions and effectiveness values.
  - Assist in determining which data should be used to develop loading and effectiveness estimates.
  - Specific efforts will be made to quantify the life span of each practice's efficiency, the change in efficiency over the practice's life span and any interdependency on rainfall levels.
  - Provide leadership in drafting BMP definitions and effectiveness values using the panel recommendations as a basis.
- Meetings and calls
  - Participate, when invited, in workgroup, Watershed Technical Workgroup (WTWG), and WQGIT meetings and conference calls to provide project status reports and communicate on initial findings.
  - Potential recommendations from review panel will be communicated as soon as they are available to assist in the Phase II WIP development process.

BMP Efficiency SOW—BMP Approvals

- Present expert review panel recommendations
  - Explain definitions and effectiveness values and seek recommendation
  - Includes the technical components of the recommendation, ensuring that all of the known pollutant source loadings or BMP reduction mechanisms have been included.
- Three sequential tasks/meetings dependent on approval of previous meeting
  - Sector workgroup
  - Watershed Technical Workgroup (WTWG)
  - Water Quality Goal Implementation Team (WQGIT)

BMP Efficiency SOW—Final Report

- Fully document completed and approved BMP evaluations in an agreed upon format.
- Report to include the documentation and reporting elements delineated in *BMP Protocol*.

  http://archive.chesapeakebay.net/pubs/Nutrient-Sediment_Control_Review_Protocol.pdf

BMP Efficiency SOW—Report Items

- **Identity and expertise of panel members**
- **Land use or practice name/title**
- **Detailed definition of the land use or practice**
- **Recommended nitrogen, phosphorus, and sediment loading or effectiveness estimates**
  - Discussion may include alternative modeling approaches if appropriate
- **Justification for the selected effectiveness estimates, including**
  - List of references used (peer-reviewed, etc.)
  - Detailed discussion of how each reference was considered.
- **Land uses to which the BMP is applied**
- **Load sources that the BMP will address and potential interactions with other practices**
- **Description of pre-BMP and post-BMP circumstances, including the baseline conditions for individual practices**
- **Conditions under which the BMP works:**
  - Should include conditions where the BMP will not work, or will be less effective. An example is large storms that overwhelm the design.
  - Any variations in BMP effectiveness across the watershed due to climate, hydrogeomorphic region, or other measureable factors.
- **Temporal performance of the BMP including lag times between establishment and full functioning (if applicable)**
- **Unit of measure (e.g., feet, acres)**
- **Locations within the Chesapeake Bay watershed where this practice is applicable**
- **Useful life; effectiveness of practice over time**
- **Cumulative or annual practice**
- **Description of how the BMP will be tracked and reported:**
  - Include a clear indication that this BMP will be used and reported by jurisdictions
- **Identification of any ancillary benefits or unintended consequences beyond impacts on nitrogen, phosphorus and sediment loads. Examples include increased, or reduced, air emissions.**
- **Suggestion for a review timeline; when will additional information be available that may warrant a re-evaluation of the estimate**
- **Outstanding issues that need to be resolved in the future and a list of ongoing studies, if any**
- **Operation and Maintenance requirements and how neglect alters performance**
- **Include negative results**
  - Where studies with negative pollution reduction data are found (i.e. the BMP acted as a source of pollutants), they should be considered the same as all other data.
- **Include results where the practice relocated pollutants to a different location. An example is where a practice eliminates a pollutant from surface transport but moves the pollutant into groundwater.**

Schedule

- **December:** Tt start literature search. Panel nominations.
- **Early January:** Panel selection. Tt start transferring available data.
- **Late January:** First panel call/meeting.
- **Late February:** Panel gives initial findings to Tt/workgroup.
- **Early March:** Preliminary information for use Phase II WIPs.
- **March–June:** Panel continues research on BMPs.
- **Late June:** Final recommendations from panel.
- **Early July:** Approval meeting for workgroup.
- **Late July:** Approval meeting for WTWG.
- **August:** Approval meeting for WQGIT.
- **Late September:** Final report

BMPs for Research

- Five water quality goals from Delaware, broken into 3 categories.
- Three BMPs from Virginia
- One practice from West Virginia
- From 6/29/11 meeting notes:
  - "We want definitions that can apply across types of technologies. We would not take one practice and build out a definition on it unless it is very unique. We are looking to make it general but not generic."

Delaware: Performance Standard Level 1

- Achieve either:
  - Average annual concentration of 5 mg/L TN & 3.9 mg/L TP in effluent sampled at the pretreatment unit end-of-pipe.
  - A 90% TN & 75% TP reduction in effluent concentration when compared to influent concentration.
  - Average annual concentration of 5 mg/L TN & 3.9 mg/L TP beneath any permitted wastewater spray irrigation field as verified by monitoring in-field lysimeters, providing that the design percolate concentration does not exceed 5 mg/L TN & 3.9 mg/L TP on an average annual basis.

Delaware: Performance Standard Level 2

- Achieve either:
  - Average annual concentration of 10 mg/L TN & 7.85 mg/L TP in effluent sampled at the pretreatment unit end-of-pipe.
  - An 80% TN & 50% TP reduction in effluent concentration when compared to influent concentration.
  - Average annual concentration of 10 mg/L TN beneath any permitted wastewater spray irrigation field as verified by monitoring in-field lysimeters, providing that the design percolate concentration does not exceed 10 mg/L TN on an average annual basis.

Delaware: Performance Standard Level 3

- Achieve either:
  - Average annual concentration of 20 mg/L TN in effluent sampled at the pretreatment unit end-of-pipe.
  - A 50% TN reduction in effluent concentration when compared to the influent concentration.

Other State BMP Requests

- Virginia
  - Shallow placed dispersal systems using gravity flow
    - Anticipated 25% nitrogen reduction
  - Secondary treated effluent to a shallow placed, pressure dosed dispersal system
    - Anticipated 50% nitrogen removal
  - Denitrification system (50% removal) coupled with a shallow placed, pressure dosed dispersal system
    - Anticipated 75% nitrogen removal
- West Virginia
  - Credit for repaired/replaced septic systems

The Panel: Roles, Expectations, & Qualifications

- Roles:
  - Suggest sources and documents for Tetra Tech to search
  - Review documentation found by Tetra Tech and others
  - Determine BMP definitions and loading/effectiveness estimates
  - Meet with workgroup, WTWG, WQGIT during final review
- Expectations:
  - Report progress to workgroup, when requested.
  - The panel will develop definitions and loading/ effectiveness estimates.
  - The panel will work with the sector workgroup and WTWG to develop a report that addresses all items identified in *Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model.*
- The panel must include at least 6 individuals
  - 3 recognized topic experts & 3 individuals with expertise in environmental and water quality-related issues.
  - It is also important that the review panel has appropriate geographic representation.

Panelists from States and EPA

- Delaware: ?
- Maryland: ?
- New York: ?
- Pennsylvania: ?
- Virginia: ?
- West Virginia: ?
- Wastewater Treatment Workgroup Representative: ?

Suggestions for Expert Panel

- No panelists have been approached
- List of potential panelists identified by Tetra Tech
- Suggestions from workgroup

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