Broiler Mortality Freezers Interim BMP

Questions from the Watershed Technical Workgroup

November 15, 2018 AgWG Call

Answers from State Partners Requesting Interim Status

What is an interim BMP?

Requested by the states/partners for planning purposes

- Can be used in planning scenarios only (milestones and WIPs)
- Cannot be submitted for annual progress in order to judge if states fulfilled milestone and WIP commitments
- Should have scientific justification

Comparability to future approved BMP is important

- EPA and states should have reasonable assurance that the mechanics (model representation, reporting units, load source, etc.) of the interim BMP will be similar/identical to the future approved BMP
- Load reductions and/or efficiency values associated with interim BMPs must lean conservative
  - Because values and assumptions have not been reviewed by an Expert Panel

Often referred to as a "placeholder" BMP

- Creates expectation that there will be a partnership-approved BMP in the future

Partnership-approved BMPs must go through an Expert Panel

- Interim BMPs have not gone through an Expert Panel
- Interim BMP status does not guarantee future approval of the BMP for crediting towards load reductions

What is an interim BMP?

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Requested by Delaware and Maryland in early 2016

- Both states understood that interim status meant the practice would be available for planning purposes only -- not for submission for progress toward milestones or WIPs
- The 2016 request was limited to poultry mortality (for which nutrient data were available).
- The original request was later expanded by others to include other mortality management practices as well as other livestock -- but data for those other practices and other livestock were not available. This inadvertently stalled all work on the original request.
- The expert panel tasked with investigating all the practices and all the livestock was created just last quarter, but its work will not be complete until long after this round of WIP planning.
- This situation is precisely the purpose of interim status -- to allow a state, like Delaware, to include in its next WIP a promising new practice that the state began investing in years ago.

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This practice is more comparable than many other interim BMPs

- The mechanics (model representation, reporting units, load source, etc.) of this interim BMP will be very similar to the final BMP -- because there's nothing new/unknown about it.
- **This practice is simply manure transport, but with different N and P numbers -- that's it.** The data and research upon which the expert panel will rely already exists – and already has been adopted by the Bay Program in two similar contexts:
- **First**, the nutrient content of a broiler carcass already has been determined by the Bay Program as part of a previous expert panel's work. The data -- 2.9% for N and .49% for P -- were taken from the final findings of an expert panel for another mortality management BMP ("Mortality Composting"), which was approved in 2008.

What is an interim BMP?

This practice is more comparable than many other interim BMPs

- **Second**, the concept of transporting nutrient rich material (e.g., manure or mortality) from the farm where it was generated to (i) another farm in the watershed, (ii) another farm outside of the watershed or (iii) to an alternative use facility (e.g., a manure pelletizing plant or rendering plant) also already has been adopted by the Bay Program.

- "Load source input reduction practices," such as manure transport and mortality transport, "directly reduce the amount of nutrients" available for land application.* For example, the total potential "load source could be reduced in a county if a jurisdiction indicated that manure [or mortality] was transported out of that county."

- Moreover, reductions in load source inputs are "taken into account before applying efficiency BMPs or load reduction practices," so the nutrient content of the material being transported is not discounted. The full N and P value is either (i) transferred from the source county to the county where it is land applied or (ii) it's eliminated as having been moved out of the watershed and/or recycled at an alternative use facility.

*See Appendix A: Understanding BMPs in Phase 6. Chesapeake Bay Program Quick Reference Guide for Best Management Practices (BMPs).

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Often referred to as a "placeholder" BMP

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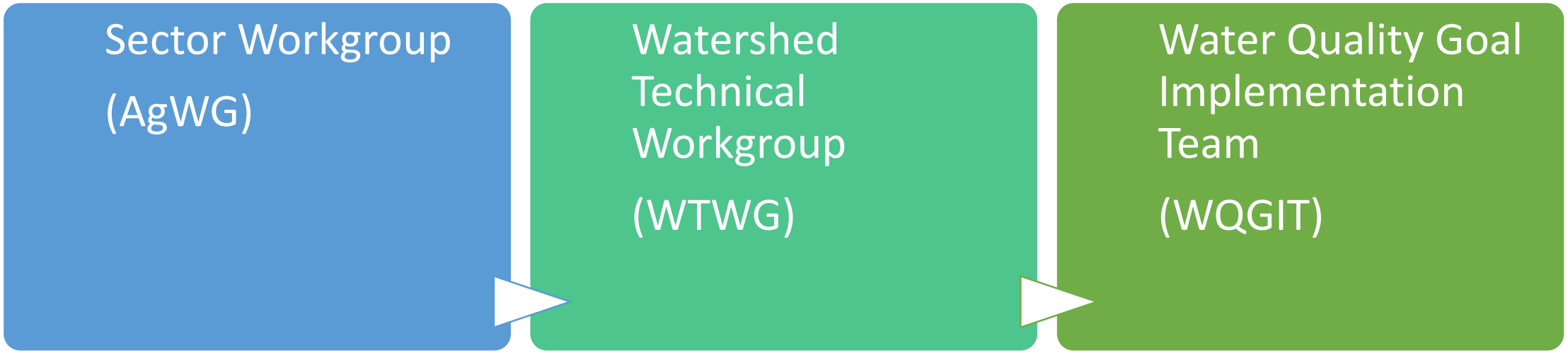
Partnership approval is more likely than with some other interim BMPs

- For the reasons given earlier, the mechanics (model representation, reporting units, load source, etc.) of this practice are largely already known and/or approved.
- The exact N and P numbers that received approval from the 2008 expert panel may be updated some, but it's unlikely they'll be lowered significantly -- and it's possible the numbers actually increase.
- And the overall concept is similar to another approved practice for purposes of model representation, etc., so while there's never any guarantee of anything, this practice is on good footing for final approval in a similar form to the one proposed.

Interim BMP Approval Process



WTWG Concerns and Response

Does load source (dead bird nutrients) exist in the model?

- We don't know.
- The AMS and Ag Workgroup previously attempted to assess mortality nutrients, but were unable to for the Phase 6 Model.
- It is unknown whether the manure generation and/or nutrient concentrations used in the Phase 6 Model include dead birds or not. AMS and Ag Workgroup were unable to answer this previously.

Without a known load source, what is the "baseline" condition from which to take a nutrient reduction?

- We don't know.
- Typically an expert panel would define this.

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Yes, the load source input for dead bird nutrients exists in the model.

- "In 2012, a DDA/UD study measured litter generation in 702 broiler houses from 2009 to 2012 and reported an average generation of 1.50 tons/1000 birds produced over that period." Poultry Litter Subcommittee Report.
- In response to this query, that underlying data was revisited and it was determined that the litter transported did include dead birds, so mortality does exist in the model as part of the manure load source input.

WTWG Concerns and Response

Without a known load source, what is the "baseline" condition from which to take a nutrient reduction?

- We don't know.
- Typically an expert panel would define this.

The concept of "base condition" is not relevant to this type of practice.

- As discussed earlier, "Load Source **Input** Reduction Practices," such as manure and mortality transport, "directly reduce the amount of nutrients" available for land application.
- Those reductions are "taken into account before applying efficiency BMPs or load reduction practices," so the nutrient reduction is not calculated or discounted vis-a-vis a "baseline" or a "base condition" (e.g., other/earlier practices) -- the full N and P numbers are utilized.

WTWG Concerns and Response cont'd

How much of the rendered animal is discharged through a permit as direct load? Is this captured in the model?

- Any industrial point sources that report discharges are included as a direct load in the model.

Is double-counting an issue related to the animal waste storage BMP?

- We don't know.
- Because we do not know if dead bird nutrients are included in the manure generation and/or nutrient concentrations used in the Phase 6 Model, we cannot know if proper storage of the waste is already accounting for dead birds.

WTWG Concerns and Response cont'd

How much of the rendered animal is discharged through a permit as direct load? Is this captured in the model?

- Any industrial point sources that report discharges are included as a direct load in the model.

Yes. The rendered animal load is permitted and already captured.

- Any discharge to a waterway or air emission from the rendering plant is a measured and permitted point source discharge or emission.
- Moreover, the plant's load is limited by its permit, so adding farm mortality to processing plant offal does not change/increase the plant's permitted load.
- Other practices – composting, incineration, bio-digestion – must rely on land application as a second step. Freezing/rendering removes the material entirely from the Ag sector's load because there's no second step land application.

WTWG Concerns and Response cont'd

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No. Storage (step 1) is independent of ultimate disposition (step 2).

- Consider manure. A farm's chicken houses and manure shed function as the animal waste storage system, but that manure must go somewhere eventually.
- So, while 99% of that manure is no one's load while in storage, once it's moved to a field at that farm, or transported to another farm or alternative use facility -- that load input is then recorded based on destination. No double-counting.
- The same applies to mortality that is frozen and then transported for recycling.

WTWG Concerns and Response cont'd

How would carcass nutrients be replaced in the model if interim BMP is approved?

- Fertilizer N would be brought in to replace lost nutrients, and fertilizer N increases can increase pollution rather than decrease. No fertilizer P would be brought in to replace lost nutrients.

Is there a water quality benefit from this BMP?

- We don't know.
- That would depend upon how carcasses were treated in the past versus how they are treated now. Typically an expert panel would help answer this question.

WTWG Concerns and Response cont'd

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Carcass nutrients would be replaced just as manure nutrients are.

- Again, because this is analogous to manure transport, the concern over replacement nutrients should be no greater than with manure transport.
- Moreover, as with manure transport, the need for replacement nutrients only applies to counties where the overall amount of nitrogen generated is less than the amount needed for crops.
- This is not a concern for counties with surplus nutrients.

WTWG Concerns and Response cont'd

Is there a water quality benefit from this BMP?

- We don't know.
- That would depend upon how carcasses were treated in the past versus how they are treated now. Typically an expert panel would help answer this question.

Yes. There are several water quality benefits from this BMP.

- First, with "load source input reduction" practices the input reduction is direct -- it's not based on other factors (e.g., how carcasses were treated in the past).
- Second, farms can reclaim more than 30% of their manure storage capacity.
- Third, improved biosecurity means reducing mortality -- and carcass disposal.
- Finally, another benefit is that this BMP potentially assists the feed additive phytase achieve its intended result, i.e., this BMP may prevent the P that's tied up in the bird from being introduced into the environment via compost.

Additional WTWG Concerns

Without a known baseline…

- Cannot determine if N and P load reductions are appropriate

Tracking and Reporting

- Clarification needed on how the BMP works in CAST and NEIEN

The concept of "baseline" is not relevant to this type of practice.

- "Load Source **Input** Reduction Practices" directly reduce the amount of nutrients available for land application, so the reduction is not dependent on determining a "base condition." The full N and P numbers are used.

Tracking and reporting are similar to manure transport

- This BMP works in CAST and NEIEN in a similar way to manure transport.