

## **U.S. EPA's Initial Review of Jurisdictions' July 2015 Draft BMP Verification Program Plans**

**September 4, 2015**

### **Background**

Rich Batiuk, in his EPA lead for BMP verification role, asked the EPA Region II and Region III source sector experts and state watershed implementation plan leads for their review of the seven jurisdictions' July 2015 draft BMP verification program plans. In addition, Mary Ellen Ley, USGS/Chesapeake Bay Program Office and the Chesapeake Bay Program's Quality Assurance Coordinator, was asked to review the seven draft program plans from a quality assurance plan formatting and completeness perspective. Her reviews, incorporated here, were based on the guidance provided in Appendix Q of the Partnership's 2014 *Chesapeake Bay Basinwide BMP Verification Framework*.

The objective of these early EPA and quality assurance plan reviews of the draft plans was to prevent any surprises or miscommunications of expectations when the jurisdictions submitted their revised BMP verification program plans to EPA by November 16, 2015 to EPA for review and approval. In combination with the parallel distribution of Chesapeake Bay Program (CBP) Partnership's BMP Verification Review Panel and the six CBP sector workgroup coordinators' comments and feedback, the jurisdictions will have in hand extensive feedback from all three perspectives.

### **Overarching Comments**

#### **Agriculture:**

#### **Forestry:**

#### **Stream Restoration:**

#### **Urban Stormwater:**

*Feedback from Liz Ottinger*

None or very limited discussion of:

- Staffing/resources to perform verification
- Follow-up inspection protocols/enforcement

#### **Wastewater:**

*Feedback from Chris Menen:*

The state plans provide great detail as to the type of BMP data collected, and some state plans gave good detail as to how the data is managed internally within the state. From an enforcement

perspective, it would be useful for all of the state plans to specifically discuss data collected that can/will be used to verify NPDES permit compliance where applicable and a plan for providing NPDES BMP data to the ICIS national database. State data for many NPDES sectors, particularly the non-major universe (SW/CAFO) isn't consistently provided in ICIS, and any expansion of the data available in ICIS for those sectors would be valuable. In addition, for the SW and CAFO sectors, NPDES responsibilities are often delegated to more than one state agency and/or locality and most of the plans I looked at didn't discuss intra/inter-Agency management and coordination of the data collected. EPA is currently in the final stage of issuing a federal rule (NPDES Electronic Reporting Rule) that will make electronic reporting of permit compliance-based information (e.g., DMRs) mandatory for most NPDES-regulated entities. EPA is funding some of the states' data management enhancements/capacity building through CBRAP grants and it would be good to see a prospective tie-in to how the state is going to manage NPDES BMP data that might be required through the rulemaking. For the WW sector, MDE did provide their QAPP for ICIS which is something we would like to see from every state, and for every sector.

In terms of BMP data verification, I didn't see much discussion in the plans about how the states could use state NPDES compliance monitoring activities to verify BMPs that might be required as part of a facility's permit. Again, states are required to enter/upload NPDES inspection data into ICIS, so this is an existing system that could be used to verify/track BMP data.

*Feedback from Amanda Pruzinsky:*

Currently, there are a few options for states to incorporate or view BMP data in ICIS. This includes Narrative Conditions, Compliance Action Types, Compliance Schedules, Single Event Violations (SEV), and discharge monitoring report data. For example, SEV data includes violation descriptions such as:

- Management Practice Violations - Best Management Practice Deficiencies
- WW CAFO - Management Practice Violations - Failure to Develop or Update NMP
- WW CAFO - Management Practice Violations - Deficiencies in Implementing the NMP/permit
- WW CAFO - Management Practice Violations - Fail to inform permit authority of significant NMP changes
- WW CAFO - Best Management Practice Deficiencies
- WW CAFO - Management Practice Violations - Fail to Implement Land App BMPs, excluding buffers/setbacks
- WW Storm Water MS4 - Failure to properly install/implement BMPs
- WW Storm Water MS4 - Failure to properly operate and maintain BMPs
- WW Storm Water Non-Construction - Failure to properly install/implement BMPs
- WW Storm Water Non-Construction - Failure to properly operate and maintain BMPs
- WW Storm Water Construction - Failure to properly install/implement BMPs
- WW Storm Water Construction - Failure to properly operate and maintain BMPs

I agree that incorporating more state data into ICIS would be a valuable effort and more discussion should occur on how this could be implemented. I do not believe ICIS could currently support all of the data areas they have provided in their BMP verification plans, but I know in the past EPA Region III, CBP, and the states have discussed opportunities to improve ICIS to incorporate CBP related data needs. With the new Electronic Reporting Rule around the corner, the amount of data in ICIS should increase and as EPA works with the states and plans state database and ICIS improvements, we could also discuss ways of improving for CBP related data as well.

**Wetlands:**

**Format:**

*Feedback from Mary Ellen Ley:*

1. Protocols for validating and verifying point and nonpoint source BMP data are to be incorporated into each jurisdiction's quality assurance project plan (QAPP) for the collection, compilation and submission of BMP data.
2. The accepted format is based on the EPA Requirements for QAPPs and outlined in the CBP Partnership's 2014 Chesapeake Bay Basinwide BMP Verification Framework *Appendix Q: Guidance for Revising the Jurisdictions' Chesapeake Bay Implementation Grant Quality Assurance Project Plans for Tracking, Verifying, and Reporting Nutrient and Sediment Pollutant Load Reducing Practices, Treatments, and Technologies.*
3. Prepare QAPPs by source sector. A jurisdiction may submit one QAPP for each source sector or combine multiple sectors within a single QAPP. Either way, each QAPP should be formatted as outlined in the *Appendix Q Guidance* and cover all functional elements.
4. No more than six documents are needed for the six source-sector QAPPs (agriculture, forestry, stormwater, stream restoration, wetlands and wastewater). Partial QAPPs that cover functional activities are not desired. Instead, please incorporate the BMP verification activities and NEIEN reporting procedures into the respective source-sector QAPP.
5. Data Management and Reporting: If the final data set is transferred to another state agency for reporting to NEIEN, describe the internal data compilation, management and reporting procedures to the point of transfer and reference the applicable QAPP that contains the NEIEN submittal procedures.
6. The content for QAPP *Group D.2, Data Review, Validation and Verification* should include for each source sector:

- Table 8 – *Jurisdiction Verification Program Design Table* on page 34 in the Chesapeake Bay Basinwide BMP Verification Framework and
- Table 1 from *Appendix Q, Guidance for Revising the Jurisdictions' Chesapeake Bay Implementation Grant Quality Assurance Project Plans for Tracking, Verifying, and Reporting Nutrient and Sediment Pollutant Load Reducing Practices, Treatments, and Technologies*.

## **Delaware**

### **Agriculture:**

*Feedback from Mark Zolandz:*

For the BMPs presented in the BMP verification protocols, DE appeared to have a detailed plan for verification.

- Table D1-2 does not contain all of the highest priority BMPs from Appendix P that are detailed in the report, such as Soil and Water Conservation Plans and Nutrient Management Planning.
- Does DE really inspect 100% of cover crop practices annually, including being “inspected for compliance or failure”? That was 30,921 acres in 2014, and projected to be 85,619 acres in 2025. It sounds more like they are conducting a transect survey of a small sample of cover crop acreage, then extrapolating this transect survey data to the larger dataset.
- For Soil and Water Conservation Plans, on page 64, does the Initial Inspection Frequency of “1/year” mean that every soil and water conservation plan is inspected once within the first year of plan development?
- There is some discrepancy between what is presented in this BMP verification document for nutrient management planning and what we heard about the nutrient management planning program from DDA during our animal agriculture program assessment...

1. The BMP verification document states that “Nutrient management practices are regulatory and 100% of all practices are non-visually inspected annually through agencies involved in the nutrient management process – Conservation Districts and NRCS develop the plans” (p.70). However, DDA does not have copies of all NMPs or even know everyone who has an NMP. While some NMPs are developed by the CDs and NRCS, many other NMPs are developed by private nutrient consultants. In DE, farmers are supposed to notify the DE Nutrient Management Commission (DNMC) within 60 of completing an NMP. However, farmers do not need to submit their NMPs to DDA for DDA’s files nor for review/approval.

2. The BMP verification document states that “DDA receives annual reports documenting implementation of plans” (p.70). DDA told us there is a glitch in their data system that deletes any farmer from the database that does not submit an annual report. Therefore, if a farmer did not submit an annual report in 2011, that farmer would be removed from the database and would not be tracked by or receive further communication from DDA. DDA is working to fix this glitch, but in the meantime, DDA is not receiving annual reports from all farmers with NMPs.

3. The BMP verification document states that “DDA inspects 60 farms annually for compliance” (p. 70). I can’t tell you what percent of the NMP universe that is exactly, because DDA does not know how many NMPs there are in Delaware. DDA’s best estimate is ~1,072 NMPs, which is based on the number of NMP annual report forms that DDA mailed out to AFOs and crop-land farmers in 2014. However, as explained above, there is a glitch in DDA’s data system that deletes any farmer from the database that does not submit an annual report. Therefore, if a farmer did not submit an annual report in 2011, that farmer would be removed from the database and would not be tracked by or receive further communication from DDA. DDA is working to fix this glitch. Based on the estimate of 1,072 NMPs, DDA conducts compliance visits at ~6% of NMP facilities annually. This is lower than DDA’s estimate of 10% in the BMP verification documentation (p.71).

4. DE states that “All (100%) nutrient management plans are inspected upon implementation and recorded with DDA (via annual reports)” (p.72). As described above, this is not what DDA explained to us during the animal agriculture program assessment. In DE, farmers are supposed to notify the DE Nutrient Management Commission (DNMC) within 60 of completing an NMP. However, farmers do not need to submit their NMPs to DDA, neither to be included in DDA’s files nor for DDA to review/approve. Farmers must maintain the NMPs on site, and DDA is supposed to verify the NMP when it conducts its compliance visits. The statement that all NMPs are inspected upon implementation does not correspond to what DDA explained to us.

So in summary, DE claims they are already doing a lot of NMP checks and verifications, but DDA was unable to provide documentation or evidence of these activities.

For Animal Waste Management Systems, the verification procedures focus on cost-shared systems and systems at permitted CAFOs. What procedures is Delaware going to use for non-cost-shared, non-CAFO animal waste management systems?

**Forestry:**

**Stream Restoration:**

**Urban Stormwater:**

*Feedback from Liz Ottinger:*

I’m not sure I understand this submission. For stormwater, there is a large table of BMPs with their definitions and a very brief discussion of where and how data is actually generated. There

is no discussion of MS4s and associated post-construction BMPs, only street sweeping and E&S practices are referenced. Furthermore, they did not answer any of the questions in the list that was provided as part of the “cheat sheet”.

**Wastewater:**

*Feedback from Allison Graham:*

What is the verification methodology and tracking for septic system pumpout? Are septic systems the only wastewater source receiving a WLA? DE makes no mention of WWTPs and the collection system as part of its BMPs. If it is decided that these will be incorporated into the BMPs, there should be a verification tool for tracking any discharges from treatment plants (domestic or industrial), as well as point sources such as CSOs and SSOs that contribute a significant amount of pollution. Last, there could also be a tracking and verification methodology for removal of any ongoing illicit discharges.

**Wetlands:**

**Format:**

*Feedback from Mary Ellen Ley:*

All sectors are included in one QAPP and the format conforms to *Appendix Q Guidance* and Table 8. No changes in format are needed.

**District of Columbia**

**Agriculture:**

**Forestry:**

**Stream Restoration:**

**Urban Stormwater:**

*Feedback from Kaitlyn Bendik:*

I read through the Panel’s comments on DC’s verification protocols, and I agree with all of their findings (they basically mirrored all of my thoughts!). The submitted description of DC’s verification protocol was lacking information on exactly how things were verified and wasn’t clear on QA/QC processes.

I did have a comment to make about the inspection of BMPs being every five (5) years. I know that the District Department of Energy and Environment (DOEE—formerly DDOE) is allowed to and does submit stormwater retention credit (SRC) BMPs to the Bay Program to count towards the CB TMDL progress its making with Urban Stormwater Runoff in particular. However, according to its stormwater regulations, and many conversations EPA has had with DOEE, those BMPs are to be inspected every three (3) years. The reason for this is that the credit life-cycle is to infinity and beyond (we have issues with that, but that’s not the point

here) and so the initial credit has to be re-certified every three years. In order to be re-certified every three years, DOEE inspects those BMPs every three years. Or at least has assured EPA that it would/will/does inspect such BMPs every three years. So for their QA/QC BMP Verification Protocol to say that BMPs are inspected every five years is inaccurate and unacceptable.

This might be more of a permitting issue than a CB TMDL reporting/verification issue, but I'm not okay with the report being finalized and approved by EPA (or the Panel) with a 5-year inspection schedule for BMPs in it. R3 Philadelphia and DOEE have many issues that arise because of permitting requirements and reporting requirements for CB TMDL purposes, and I do not want this to be yet another one.

#### **Wastewater:**

*Feedback from Allison Graham:*

What parameters are being monitored at each combined sewer outfall? Typically, it is just flow, so how often will they be monitoring and sampling for bacteria, N, P, etc., at each CSO? Only point source discharges from treatment plants are included in the verification process. Nothing is mentioned regarding SSOs or the processes in place to remove illicit discharges. There is also no mention of septic, but I am not sure if there are septic systems in DC.

#### **Wetlands:**

#### **Format:**

*Feedback from Mary Ellen Ley:*

The DC *QAPP for Urban Best Management Practices Database* addresses urban stormwater and forestry BMPs. Wastewater data are discussed briefly; this information is reported to NEIEN by MWCOG.

- The Urban BMP QAPP includes many elements and activities that fall under *Group A. Project Management* and *Group B. Data Management*. The QAPP is weak in *Group C. Assessments*, and *Group D. Data Validation and Usability* elements.
  - Create new sections for *C. Assessments* and *D. Data Validation and Usability* and cover the elements listed in the *Appendix Q Guidance* document.
  - Move text from QAPP page 6 under “BMP Verification and Validation” to Group D.2.
  - Add Table 8 - *Verification Program Design* for stormwater
- A stand-alone QAPP for wastewater data is recommended.

### **Maryland**

#### **Agriculture:**

#### **Forestry:**

**Stream Restoration:****Urban Stormwater:**

*Feedback from Liz Ottinger:*

References a lot of SOPs, and the number of different documents to review was overwhelming.

**Wastewater:**

*Feedback from Allison Graham:*

In the WWTP QAPP, is there anything besides DMRs, inspections and SEVs as BMPs? Again, there is no mention of verifying that CSOs, SSOs, or other illicit discharges are being reduced. There is also no verification for septic systems.

**Wetlands:****Format:**

*Feedback from Mary Ellen Ley:*

1. Submitted 8 documents for 4 sectors (Ag, forestry, stormwater, and wastewater). Major reorganization of the information is needed:
  - **Ag BMP data - Need a comprehensive, stand-alone QAPP.** The document “Maryland Agriculture BMP Implementation Reporting Procedures” mainly addresses verification. MDA has an approved QAPP for Cost-share BMPs (dated 3/30/12) that may provide missing information.
  - **Forestry – Need a comprehensive, stand-alone QAPP** for forestry BMPs. Add verification methods from “QAPP for Reporting Maryland NPS BMP Data via NEIEN” to “Procedures for Reporting Forest-related Practices”.
  - **Urban BMPs – Create a new, stand-alone QAPP for Stormwater and Sediment & Erosion Control BMPs.** Consolidate information from numerous documents below, using format in Appendix Q Guidance:
    - BMP Verification Protocols/SOP for Sediment and Stormwater Program Review Division;
    - Attachment A – Urban BMP Database; MS4 Annual Report SOP; and Geodatabase QAPP;
    - QAPP for Reporting Maryland NPS BMP Data via NEIEN;
    - Erosion and Sediment Control SOP; and MDE SSA, etc.; and
    - Stormwater SOP; and Restoration Plans and Total Maximum Daily Loads SOP



- **Wastewater – Need a comprehensive, stand-alone QAPP** for submitting point source data to the CBPO. Combine and update information from two documents: “QAPP for Technical Support for the ENR Program” and “Quality Assurance and Quality Control Plan for ICIS Data Management”.
- **Wetland and Stream Restoration – Create one or two QAPPs for these sectors.** Alternatively, insert the procedures for wetland and stream BMPs into the Forestry QAPP since all of these are managed within Maryland DNR. This combined QAPP would then cover 3 sectors.

## **New York**

*Feedback from Ruth Izraeli:*

### **Comments on the Upper Susquehanna Coalition Quality Assurance (QA/QC) Plan for the New York Work Plan for the Chesapeake Bay Program 2015:**

While this plan was submitted at the time verification plans were submitted by the States, this QA/QC plan focuses almost entirely on the QA/QC of data collection and tracking. The plan only discusses data verification in one paragraph describing the work that will eventually be completed by the USC Agriculture Committee and Tetra Tech. EPA is currently reviewing the revised CBRAP work Plan that includes the USC and Tetra Tech verification work as Objective 9

The final verification plan is due November 16. I recommend working with the USC and DEC to get a draft verification plan earlier, so we can give them input before the final is due. I hope that the Expert Panel will be able to review both the complete draft Plan in October and the final plan in November.

Page 5, A7, 1 – The ability to generate a report from the AEM Data Management System by county would be very helpful. However, the report will only be valuable to Bay tracking if it will be able to distinguish between farms inside and outside the watershed.

Page 5, A8 – This indicates that each Soil and Water Conservation District is designated as the lead for water quality issues in their respective counties. Since each District has at least several employees, would it make sense to designate one individual and an alternate?

Page 6 – Please clarify what is meant by “days of concurrent training”.

Page 7 – Please indicate how many certified agricultural professionals of each type (e.g., Erosion and Sediment Control) there are in the watershed and if these numbers are expected to stay the same or change in the next few years.

Page 9 – Please provide a link to the “User Guide for Agricultural Environmental Management Web Application” listed in the first paragraph.

Page 9, paragraph 3 – Indicates that “All BMP data is collected using the latitude and longitude coordinates of the farm where the BMPs are applied.” Since the location of the BMP is on some part of the farm, wouldn’t additional GPS data be necessary to accurately identify the location of a BMP?

EPA understands that the identifying information about individual farms must be kept confidential. However, would it be possible to develop a farm database that includes BMPs but does not include the identifying information for individual farms?

Page 11, 4) - The word “picture” in the first sentence appears to be misplaced.

Page 13, Data Validation and Usability – Please provide a link to the “New York verification protocols”. As indicated in the general comments, this section appears to be a partial plan for verification protocols and statistical methods that will be developed in the future.

*Feedback from Ruth Izraeli:*

**Comments on the NYSDEC Quality Assurance Project Plan (QAPP); Procedures for Collecting, Reporting and Verifying Point Source Data in the Chesapeake Bay watershed:**

This QAPP includes verifying point source data in the title but does not explicitly address verification in the Plan.

Page 7 Indicates that this QAPP plan is updated in support of the CBRAP plan and does not mention being part of the verification plan.

Pages 8-9 - Inclusion of key staff names are preferable to job descriptions alone. If the staff change, the names can be updated.

Page 10, Collecting Significant Wastewater Data – This section refers to spreadsheets that permittees use to calculate DMRs and are available on DEC’s internal website. Please provide an example spreadsheet as an attachment to this plan.

Page 10, Non-significant Wastewater Treatment Plants – The draft plan for monitoring these plants just needs to be finalized by submitting the revised plan with the supporting spreadsheet as an appendix.

Page 10, Collecting Stormwater BMP data – There is no discussion of how Erosion and Sediment Control practices are verified using for example, inspection data to reduce the assumption of 100% compliance with these controls.

Pages 14-15, Reporting construction stormwater BMP data – This provides a plan for how the data would be collected if the Stormwater Practice Reporting Tool (SPRT) were fully functional. EPA understands that this tool is not functional. It is not clear why CBRAP funding was not used to restore the tool’s functionality to allow these BMPs to be tracked. Can this task be added to the workplan revision?

Pages 18-19- Currently it is not possible for EPA to use a database and determine what actions have taken to return a facility receiving a marginal or unsatisfactory inspection rating back to

satisfactory. EPA understands that NYSDEC is working on a compliance verification form that might be able to address this need. What is the status of implementing this form/system?

Page 24, Appendix B: Discharge Monitoring Report Submittal Process – The main body of the report describes the spreadsheets that permittees use to develop DMRs, yet these are not included in the diagram. The spreadsheets are also not mentioned on pages 24-25. The text and workflow diagram should be consistent.

Page 27, Appendix E, Reporting Construction Stormwater BMPs for Annual Progress Runs - EPA understands that the SPRT is not fully functional. Therefore, this Appendix is not currently applicable.

**Agriculture:**

**Forestry:**

**Stream Restoration:**

**Urban Stormwater:**

**Wastewater:**

**Wetlands:**

**Format:**

*Feedback from Mary Ellen Ley:*

Agriculture BMPs (including Wetland and Stream Restorations on Ag Lands)

Format very good.

Section D is incomplete - need to describe the verification procedures. Be sure to include *Table 8, Verification Program Design*, for all three sectors.

What responsibilities does USC have for CAFO data collection and inspection activities? CAFOs are also mentioned in NYSDEC QAPP.

Add definition(s) for stream restoration to Appendix 3.

Wastewater and Urban Stormwater QAPP

One QAPP for both sectors; some CAFO info.

Format is OK, some deviations. The QAPP has separate sections for WW & SW sectors that describe procedures for data sources, data reporting and validation. The description of WW data processing in § 4.1.2 is very brief; additional information is needed such as: a) parameters downloaded from ICIS, b) conversions made and c) parameters not available from ICIS and the source(s) of those data.

In Section 4.2: a) Describe how it is estimated that 85% of nutrient loads from non-significant plants comes from 37 plants, and b) attach a list of names for these 37 plants.

In Section 7, describes in detail the WWTP compliance inspections. Additional detail for the CAFO and stormwater inspections is needed.

## **Pennsylvania**

### **Agriculture:**

### **Forestry:**

### **Stream Restoration:**

### **Urban Stormwater:**

*Feedback from Liz Ottinger:*

The document states that BMPs implemented or retrofitted as part of an MS4 program or 319 and Growing Greener grant programs are not included in the document. That's not acceptable. MS4 BMPs (considering that PA has almost 1000 permittees) could constitute a major portion of the BMPs throughout the state that require verification.

### **Wastewater:**

*Feedback from Allison Graham:*

Same comments as MD, DC, and DE. They discuss point sources from treatment plants and tracking DMRs in databases such as ICIS, but how are other wastewater pollutant sources generally identified, tracked, and monitored for pollution reduction?

### **Wetlands:**

### **Format:**

*Feedback from Mary Ellen Ley:*

Ag, Forestry, Urban Stormwater, Stream QAPP

Format doesn't follow Appendix Q Guidance.

The QAPP "Procedures for Reporting BMP Implementation Data to the CBPO" describes sources of data from four sectors. Need to add the missing elements for *Group A. Project*

*Management* (i.e., BMP definitions, Data Quality Objectives, Training, Records, etc.). Put the existing content under the heading *Group B. Data Generation and Acquisition*. Add *Group C & D* elements.

In Sections *D.1* and *D.2 - Review, Validation and Verification*:

- Move text from the PADEP QAPP Addendum for the Ag BMP and Stormwater verification methods; and
- Add missing review, validation and verification protocols for forestry and stream restoration BMPs.

#### Wastewater QAPP

Format doesn't follow *Appendix Q, CBP Guidance for BMP QAPPs*.

#### Wetlands

Are wetland BMPs reported?

#### **Virginia**

##### **Agriculture:**

*Feedback from Mark Zolandz:*

Not as much detail as Delaware's plan, and much lower levels of verification for many BMPs due to proposed statistical sampling. For example, Virginia proposes to inspect 1% of cost-share BMPs annually, 2% of out-of-contract cost share BMPs annually, 4% of out-of-contract cost-share stream exclusion systems, 5% of voluntary BMPs annually, and 10% of voluntary stream exclusion systems annually. In contrast, for cost-share BMPs, DE proposed once every 10-15 years for cost-share animal waste management systems [~7-10% annually]. Other BMPs are comparable to Delaware (ex. 100% of cover crops checked annually).

It is unclear how Virginia's proposed low percentages will mesh with the other proposed follow-up checks of 10% re-inspection of structural practices one year prior to end of credit duration. For example, cost-share programs often have 10-15 year contract periods, which would translate into ~7-10% annual re-inspection rate. Virginia may need to increase its proposed statistical sample sizes.

##### **Forestry:**

##### **Stream Restoration:**

##### **Urban Stormwater:**

*Feedback from Katherine Antos:*

Is the existing MS4 permit inspection and maintenance framework the foundation of the jurisdiction's program?

- Seems to be. Relies on MS4, VSMP, CBPA, Industrial Stormwater permitting programs (including reporting requirements) to collect data.
- Appendix 3 Table 2 provides some detail on initial and follow-up inspections, etc.
- Pp 17-18 lack and Appendix 3 Table 2 lack detail on some of these reporting requirements and how verified, however (eg, How does data flow from annual report to DEQ NPS Specialist to NEIEN, esp given some of these permitting programs lack reporting templates?).

Is field performance verification scheduled for every other MS4 permit cycle? How often?

- Yes. Seems to be more frequent than minimum requirements.
- MS4-owned BMPs have annual maintenance inspections; permittee conducts maintenance inspections every 5 years for privately-owned BMPs, per maintenance agreements. DEQ does sub-sample inspections (though App 3 Table 2 doesn't provide info on sub-sample frequency; App provides sub-sample info for UNM only)

**Commented [AK1]:** Note most MS4 permits require BMP inspections at least 1x/permit cycle (if not more)

Does the program link the timing of visual inspections to the length of credit durations for urban stormwater practices?

- Yes for regulated BMPs: appears inspections are happening more frequently than credit durations (at least 1x/5 years, vs 10-year credit duration)
- For urban nutrient management, App 3 Table 2 seems to indicate that plans can be written for 3-5 years but I thought credit only good for 3 years w/o verification. App 3 makes no mention of add'l documentation of decrease in non-ag fertilizer sales to justify ongoing credit, which is part of BMP panel recommendations. P27 says such documentation will be done "eventually"; concerned w/ use of eventually as it needs to be done w/in 3 years of first reporting credit (which I think happened 2-3 years ago)

Will MS4 communities be assessing their entire BMP populations within two permit cycles? If so, will they address pre-2000 BMPs prior to pre-1990 BMPs?

- Yes - Per App 3 Table 2, getting to all MS4 BMPs at least 1x/permit cycle

**Commented [AK2]:** Note most MS4 permits require BMP inspections at least 1x/permit cycle (if not more)

What is the defined amount of time a locality/federal facility has to take corrective maintenance or rehabilitation to bring a sub-standard BMP back into compliance?

- No mention of this

Does the program address proper installation, whether or not the practice meets the design standards, and whether it functions in the hydrologic manner in which it was designed prior to submitting the BMP for credit?

- Not really, other than discussing BMPs that require an initial inspection (in most cases by locality).
- Assuming this question is also asking if BMPs meet CBP names/definitions/effectiveness values, p12 states that reported BMPs consistent w/ CBP definitions. While this is good, unclear how this could be given that understanding of CB TMDL Action Plan Guidance is that reported BMPs don't need to follow CBP names, definitions. Can instead follow VA Stormwater Management BMP Clearinghouse, which I don't believe is fully consistent w/ CBP definitions, values
  - o P24: Unclear why some BMPs have links to additional documentation and others don't. Also UNM link doesn't work
- P17: Urban nutrient management section lacks detail. Only says relies on cooperative agreements w/ companies to follow UNM standards for contracted acreage w/o having formal UNM plans in place. No detail on content of cooperative agreement, how DEQ verifies it, consequences for companies if not complying w/ UNM standards

Is the program consistent with the Bay Program-approved reporting standards? Do they allow appropriate flexibility for practices that don't lend themselves to the NEIEN geographic reporting requirements?

- According to App 3 Table 2, street sweeping does reporting by weight but appears new panel will require reporting by lane miles and type of sweeping/frequency/etc. DEQ will need to update street sweeping method to comply with new panel methods if panel approved

Are verification efforts prioritized according to a practice's contribution to the overall TMDL pollutant reduction in a state's urban source sector?

- No; no mention of this

Will the jurisdiction provide spot checks on a subset of local and federal facility BMP project files to validate the reported BMP data?

- App 3 Table 2: No mention BMPs on federal lands, and no mention of state agency spot checks on unregulated BMPs
- App 5 includes info on UNM spot checks. However, if "allowable error" of "assumed 50/50 pass/fail", then shouldn't this mean that DEQ only reports to CBP half the UNM ac that are reported to DCR/DEQ?

- Note I don't know enough about sub-sampling to know if what DEQ provided in App 5 is sufficient

Does the program address semi-regulated communities by following one of the three options provided in the sector guidance?

- Unclear what 3 options are, but App 3 Table 2 outlines process for reporting than removing unregulated BMPs that aren't verified by time credit duration expires.

Are the fastest-growing semi-regulated communities prioritized?

- No. No mention of this

Other:

- Note no info on stream restoration other than listing as BMP type and credit duration. Seems insufficient
- QAPP references CGP Database, but I don't think this is fully operational yet and therefore can't support all aspects of verification program for all urban BMPs

#### **Wastewater:**

*Feedback from Allison Graham:*

Same comments as MD, DC, and DE. They discuss point sources from treatment plants and tracking DMRs in databases such as ICIS, but how are other wastewater pollutant sources generally identified, tacked, and monitored for pollution reduction?

#### **Wetlands:**

#### **Format:**

*Feedback from Mary Ellen Ley:*

#### Wastewater, Urban Stormwater, Erosion & Sediment Control QAPP

One QAPP for practices implemented under VDEQ regulatory and §319 grant programs.

The QAPP format follows the Appendix Q Guidance. The document titled *QAPP for Managing and Reporting Data on Practices, Treatments and Technologies* is particularly strong in elements under *Group A. Project Management*, and *Group D. Validation and Usability*.

*Group B. Data Management*, Section B10.1, fails to describe internal databases and data management procedures for wastewater data (DMRs, ICIS, etc.), urban stormwater and manure transport. DEQ needs add much more detail regarding data entry, QC checks and software, hardware and backup systems, similar to other jurisdiction's QAPPs. Describe and reference Appendix 2, Internal and External Data Flow.



### Agricultural BMP QAPP

The Agriculture BMP Verification Protocols from DEQ's *QAPP for Managing and Reporting Data on Practices, Treatments and Technologies* need to be added to the DCR QAPP for Agriculture BMPs. For the 2015 QAPP, DCR should copy: a) The text from *Section D.2 Validation and Verification Methods*, under the heading "Agriculture", and b) Table 1 (Ag BMPs) within Appendix 3 - Verification Protocol Design.

### Forestry

Need a comprehensive, stand-alone QAPP for forestry BMPs.

### Wetlands

Are wetland BMPs reported?

## **West Virginia**

### **Agriculture:**

*Feedback from Mark Zolandz:*

Again, not as much detail as Delaware, but still looks okay. West Virginia proposes 5% verification rates for structural BMPs, 100% for NMPs annually by NRCS and triennially by WV, and 100% for annual BMPs (cover crops, conservation tillage, and manure transport).

### **Forestry:**

### **Stream Restoration:**

### **Urban Stormwater:**

*Feedback from Liz Ottinger:*

Until WV decides to adopt state-wide stormwater regulations and/or include post-construction requirements in their CGP, this submission will be lacking. The only thing that they talk about are BMPs in the MS4 areas and E&S practices, because there are no SW requirements anywhere else in the state. Having said that, they did do a thorough job with their discussion of MS4 and E&S verification.

### **Wastewater:**

*Feedback from Allison Graham:*

Same comments as MD, DC, and DE. They discuss point sources from treatment plants and tracking DMRs in databases such as ICIS, but how are other wastewater pollutant sources generally identified, tracked, and monitored for pollution reduction?

### **Wetlands:**

### **Format:**

*Feedback from Mary Ellen Ley:*

All sectors are included in one QAPP titled *West Virginia Plan for Verification and Validation of Nutrient Reduction Strategies* (Draft). The following format changes are recommended:

- Create two QAPPs – one for Point Source data and another for Nonpoint Source BMP data. Format each one according to the CBP Appendix Q Guidance for each.
- Point Source QAPP: Create a stand-alone QAPP for submitting WV point source data and insert the content related to wastewater data from the WV Draft Verification Plan.
  - Attachments N, O, P & Q;
  - Section 6 - Wastewater Compliance Verification/Data Validation; and
  - Table 8. Wastewater sector verification strategy.
- Nonpoint Source QAPP: Start with *Attachment A, SOP for NPS Data Management* and follow the Appendix Q format for QAPPs. Add the verification protocols for all NPS sectors towards the end, under *Group D. Data Validation and Usability*. (See Delaware's QAPP for example.)
  - Group A. Project Management – Use text from the WV Data Management SOP.
  - Group B. Data Generation and Acquisition - Use information from Attachment A.
  - Group C. Assessments
  - Group D. Data Validation and Usability – Copy content from Sections 1 – 5 and 7 of the draft document *WV Plan for Verification and Validation of Nutrient Reduction Strategies*.
  - Omit *Attachment C, Title 180 – National Planning Procedures Handbook*. Instead, reference and provide URL.