Chesapeake Bay Program
Nutrient Management Phase 5.3.2
Crosswalk
Agriculture Workgroup

December 8, 2015

Introduction

In a response to comments from concerned stakeholders regarding the recently approved Phase 5.3.2 Nutrient Management Panel report, the Chesapeake Bay Program partnership agreed to (1) develop a cross walk between the states' nutrient management programs and the adopted Phase 5.3.2 nutrient management tier definitions; (2) identify information/documentation that state programs will use to determine reported acres of nutrient management implementation by the appropriate tiers referenced above; and (3) provide links to the supporting documentation from each of the states. Additionally, in accordance with state Quality Assurance Project Plans, compliance information for each program reporting nutrient management data was specifically requested. In regards to this exercise, compliance was defined as an acre fully meeting the definition and required elements of the nutrient management tier outlined in the nutrient management panel report (definitions can be found on page 13; required elements can be found on pages 61-62). In the absence of state provided compliance information, EPA will use other information (such as the NRCS Conservation Effects Assessment Project studies on Chesapeake cropland, EPA's recent animal agriculture program assessments, etc.) to estimate nutrient management compliance within states lacking their own compliance information. This documentation will supplement BMP data submissions for the recently approved Nutrient Management tiers and will be used to justify the crediting of the reported acres of nutrient management by tier, thereby providing confidence in the acres credited under each tier level.

The information provided by the jurisdictions and represented in this report is reflective of the annual CBP program progress reporting period from July 1, 2014 through June 30, 2015. Consequently, the members of the NM Task Force view this as a "living" document, which can and should change in content over time. The members recognized that as new program verification elements begin to be implemented over the phase-in period, and adjustments to existing programs impact tracking, reporting, and compliance activities, the information representative of federal and jurisdictional nutrient management programs will change. Thus, the following report is current for the above mentioned annual reporting period only, and requests to the jurisdictions should be made at least annually to update the programmatic information it contains.

The information captured in this report constitutes a living document. The Task Force will continue to update the information presented below as discussion and coordination with the jurisdictions progresses.

Phase 5.3.2 Nutrient Management Task Force Membership

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Comments provided by Nutrient Management Phase 5.3.2 Task Force

The crosswalk templates provided to the jurisdictions by the Task Force were completed and submitted by November 6, 2015, with subsequent clarifications and revisions provided by November15, 2015. In its initial review of the submittals, the Task Force was pleased that the information provided by the states did overall address the informational requested, with some exceptions. The following comments from the Task Force were assembled to identify the gaps and potential of additional information that will support the completion of the crosswalk for the 2015 data year.

In conjunction with the Task Force review, each of the contributing jurisdictions were contacted directly by the members to follow up on questions of clarification or completion. The following comments contain references to subsequent clarification responses from the states, or the substitution of revised crosswalks from the documents originally submitted.

Overarching Comments

1. USDA-NRCS CNMPs/590
    a. Clarification is needed on the level of compliance that NRCS 590 plans have with state nutrient management program requirements.
    b. Documentation and justification for defining 590 nutrient management plans under Tier 2 for each state is needed.
    c. Refer to Appendices G and H for Virginia and New York State's responses to comment, respectively.
2. There is inconsistency among states on what information is used to assess compliance levels, resulting in different levels of confidence. For example, some states may rely on farmer or planner surveys without field assessment spot checks. Clarification on whether compliance is being evaluated by paper check only versus field assessment is needed.
    a. Refer to Appendix H for New York State's response to comment.
3. Some programs were defined under a certain tier, but not all critical element boxes were checked as per their approved BMP definition (a requirement for Tier 1 and Tier 2). For Tiers 1 and 2, there is a need to follow up with states to understand why all boxes were not checked, and to ensure that the states will report only those acres that meet all program elements for Tiers 1 and 2.
4. Each of the state crosswalks contained areas of strengths and weaknesses, and they offer an opportunity to share specific examples of successful approaches. (For example: MD Tier 3: MD is using private industry implementation data to characterize Tier 3 acres and spot checked with Annual Implementation (AIR) reports).
    a. Refer to Appendix H for New York State's response to comment.
5. Some states included implementation data sources for near future efforts to expand and improve tracking and reporting. This is helpful to anticipate reporting of additional acres in the

future. (For example: VA's plans for tracking Tier 3 acres through cooperative engagement with private industry).

State Specific Comments

Delaware Comments

1. 11/13/15: Additional documentation is recommended for justifying the program compliance rate (95%), as well as field compliance assessments being performed but currently represented as N/A (Question 4, Section 1.2). Note: DDA withdrew its original submission and sent a new submission on December 4, 2015.
2. Note that as of December 4, 2015, Delaware has submitted a new version of the Crosswalk template, and included supplemental documentation (found in Appendix I) to address Task Force comments listed in point 1.
    a. 12/08/15: In response to this new submission, the Task Force appreciates the effort on the part of Delaware to provide additional information. However, the Task Force has determined that using neighboring states' compliance data as a benchmark to establish Delaware compliance rates is not valid given significant differences in how state programs are run, enforced, and managed in Maryland and Virginia.
    The DE program compliance rates should be predominantly based on DE-specific accounting of compliance rates similar to what was provided by the other Bay states, rather than using compliance data from another state program as a surrogate.
    The Task Force encourages DE to look for additional information to support reported compliance levels. For example, compliance levels from the DE NRCS-funded 590 acres could provide additional data to back up compliance levels for those acres funded through the NRCS 590 program in DE (see VA and NY submissions for how they used state NRCS 590 data to back up their compliance estimates).

Maryland Comments

1. Additional clarification is recommended to describe how the state is integrating private industry implementation information for Tier 3 with their Annual Implementation Reports (AIR). The state neglected to fully describe this process in the crosswalk, but this is a good example for other states to consider similar partnerships.

New York Comments

1. Clarification is requested to identify the context of nutrient management plans being inspected and reported. The level of compliance inspections appears to limit the plans to those associated with permitted and contractual operations.
    a. Refer to Appendix H for state's response to comment.
2. Additional clarification is needed to show the difference in compliance levels for CAFO nutrient management plans (95%) versus the findings of the recent EPA's animal agriculture assessment report findings.
    a. Refer to Appendix H for state's response to comment.

Pennsylvania Comments

1. The Manure Management Program (Program 4), under the compliance check questions, is specified as something that "will be inspected". Because the program is currently being implemented, clarification is recommended on the level of compliance for the reporting period, and how the state plans to include this program in annual progress reporting.
2. The NRCS 590 nutrient management program (Program #5) did not provide information on the level of compliance inspection being conducted by the agency, and instead defers to NRCS. Additional clarification, documentation and justification is recommended to determine the level of compliance identified by NRCS on 590 planned acres that are being recommended for Tier 2 reporting.

Virginia Comments

1. Additional clarification on the state's program compliance "survey" system is recommended to address field verification and spot check elements.
    a. Refer to Appendix G for state's response to comment.

West Virginia Comments

1. The crosswalk did not contain sufficient supplemental information regarding compliance and inspection. A revised crosswalk is recommended.
    a. A revised crosswalk was provided and is included with the report

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: Delaware

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Please note that the Delaware Crosswalk presented in this report contains updated information not presented in the November 13, 2015 version of this report.

Program Information

Program #1:

Program Name: Nutrient Management Law

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):

Delaware Nutrient Management Law: http://delcode.delaware.gov/title3/c022/

University of Delaware Nutrient Management Handbook:
http://ag.udel.edu/dstp/NMHTable%20of%20Contents.html

MidAtlantic Nutrient Management Handbook:

https://pubs.ext.vt.edu/CSES/CSES-122/CSES-122-pdf.pdf

Delaware Nutrient Management Plan Policy Checklist:
http://dda.delaware.gov/nutrients/forms/checklist.pdf

Delaware Nutrient Management Certification Regulations:
http://regulations.delaware.gov/AdminCode/title3/1200/1201.shtml

State of Delaware Technical Standards – NRCS Code 590:
http://www.dda.delaware.gov/nutrients/downloads/590_02_Nutrient_Management.pdf

Brief Description of Program: The Delaware Nutrient Management Law, 3 Del. C. §2200, was established in June 1999. The law seeks to formulate a systematic and economically viable nutrient management program that will both maintain agricultural profitability and improve water quality in Delaware. The scope of the program regulates any animal feeding operation in excess of 8 animal units and/or lands in excess of 10 acres where nutrients are applied. According to §2247 of the Delaware Nutrient Management Law, all nutrient management plans (NMP) shall include, but not be limited to: field maps showing reference points (such as buildings, streams, irrigation equipment, etc.), number of acres and soil types; soil and organic waste analyses; current and planned crop rotations; expected yields based on the best 4 out of 7 year data (in absence thereof, soil productivity charts); and recommended rates, timing and methods of nutrient applications. NMPs shall specify the level of nutrient applications

that are needed to attain crop yields established by producer production history (best 4 out of 7 year data). Fertilizer recommendations are made in part by utilizing soil tests analyses (no older than 3 years) from an agronomic laboratory approved by the Delaware Nutrient Management Commission (DNMC). If organic sources of fertilizer are to be utilized, the NMP shall show the budget of intended manure disposition identifying amounts for land application, exportation from the farm, or other uses. Additionally, the NMP shall incorporate all applicable manure analysis results as well as estimate residual nitrogen credits (organic nutrients, fertilizer, or legume crops from the prior year). Application rates of phosphorus to high phosphorus soils cannot exceed a 3-year crop removal rate in soils with a Fertility Index Value (FIV) of 150 or higher. Optionally, a University of Delaware Phosphorus Site Index (PSI) may be performed and phosphorus may be added as recommended by the PSI value. Nitrogen applications cannot exceed the expected yield as established by the producer's production history for individual crops. Nutrient application rates and timing should follow the University of Delaware's recommendations as detailed in the University of Delaware Nutrient Management Handbook unless there is written justification in the NMP justifying another approach. The NMP can identify Best Management Practices (BMP) that provides recommendations to enhance agronomic and environmental practices. These BMPs are established to better advise and educate farmers and are not to be interpreted as mandatory implementation actions. BMPs that the NMP can identify include but are not limited to; Pre-Sidedress Soil Nitrate Test (PSNT), cover crops, vegetative buffer strips, litter additives, manure incorporation, timing/method, etc. The Delaware Nutrient Management Law addresses manure storage (temporary field staging) for those farms that intend to stage manure in the application area. According to §2247(e) of the Delaware Nutrient Management Law, if a person implementing a NMP intends to store manure, other than in an approved manure storage structure or facility, such outdoor storage shall: be reflected in the person's NMP; be at least 100 feet from any body of water or drainage ditch; be at least 100 feet from any public road; be at least 200 feet from any residence that is not located on the person's property; and be at least 6 feet high and in conical shape. According to §2247(c) of the Delaware Nutrient Management Law, records of implementation shall include: soil test results and recommended nutrient application rates; quantities, analyses and sources of nutrients applied; dates and methods of nutrient applications; crops planted, yields and crop residues removed; and a certification statement signed by the operator to document the intention of nutrient management and/or animal waste management plan implementation. In addition, the amount and type of manure exported from the farm and the name, address, and organization responsible for utilizing exported manure shall be documented as part of the farm's records of implementation. Routine nutrient management audits are conducted with crop land farmers where DDA staff will check for nutrient application compliance with their NMP. Part of the inspection process includes a review of the NMP to ensure that the basic elements required by §2247 of the Delaware Nutrient Management Law are present. The Nutrient Management Plan Policy Checklist document can be used as a reference for the majority of these requirements. Farmer records of implementation are reviewed to determine compliance with the terms of their NMP.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☐Tier 3

Program #2:

Program Name: Nutrient Management Plan Cost Share

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://dda.delaware.gov/nutrients/nm_cs.shtml

Brief Description of Program: A Nutrient Management Plan (NMP) or Animal Waste Management (AWMP) is a strategy to manage the amount, placement, timing and application of nutrients and is required for anyone who manages more than 10 acres of land where nutrients are applied, and/or operates an animal feeding operation in excess of 8,000 lbs. of live animals. A NMP must meet the regulations of the Nutrient Management Law, and can be developed for an individual farm operation at no cost. Payment of cost assistance is contingent upon funding availability. This is a supportive program to the NM Law.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☐Tier 3

Program #3:

Program Name: Manure Relocation

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://dda.delaware.gov/nutrients/nm_reloc.shtml

Brief Description of Program: The Nutrient Management Relocation Program is a cost assistance program designed to assist in transporting nutrients (manure) from areas of excess, to areas in need of nutrients. Many farms are dealing with excess manure, namely poultry litter, and need to export the manure in order to balance crop nutrient demands. The Delaware Nutrient Management Program provides financial assistance for the cost of Delaware manure to alternative use projects or farms in need of nutrients. Any farmer, person or business can apply for assistance as long as they take responsibility for meeting transport standards and follow the Relocation Program Guidelines. To apply for cost assistance, you must submit an application to the Delaware Nutrient Management Program. Once your application has been approved, you will receive a letter of approval and a Claim for Payment form. After completion of the manure transport, you must send in the Claim for Payment form and the weight slips for payment. Payment of cost assistance is contingent upon funding availability. All manure that is relocated through this cost share program must be hauled to individual farm fields where the soil phosphorus level is below 150ppm, Mehlich III. The receiver of the manure, as part of their application process, must submit a manure sample analysis of the manure being relocated as well as a soil sample of the field intended for application.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☐Tier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. Available in electronic or paper format	☒	☒	☒	☐	☐	☐
B. Developed cooperatively by trained professional and farmer	☒	☒	☒	☐	☐	☐
C. Expiration date no longer than 3 years after written	☒	☒	☒	☐	☐	☐
D. Uses soil lab analysis from farm samples to inform nutrient application rates	☒	☒	☒	☐	☐	☐
E. Crop yields estimated based on records or soil productivity estimates for whole farm	☒	☒	☒	☐	☐	☐
F. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	☒	☒	☒	☐	☐	☐
G. P fertilizers applied at a rate consistent with contemporary Land Grant University recommendations	☒	☒	☒	☐	☐	☐
H. Nutrient application timing is considered to further reduce N and P losses	☒	☒	☒	☐	☐	☐

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Nutrient Management Law – approximately 10% of operations focusing on animal based operations.

2) What Tier 1 elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?

Nutrient Management Law – nutrient management plan (NMP) recommendations vs. farmer implementation records. The implementation records include land application records of organic fertilizer (if applicable), inorganic fertilizer applications, and corresponding crop yields on specific farms/fields selected for inspection. If an organic source of fertilizer (manure) is utilized, the department will review the farmer's manure application records to ensure the basic recordkeeping elements are maintained. For example, the date, rate, and acreage of application as well as identification of the specific fields are reviewed. Records of implementation for application of inorganic fertilizers may be farmer maintained if they perform the applications or documented through custom application documents supplied by the commercial fertilizer retailer. The purpose is to determine actual implementation versus the terms detailed in the farmer's NMP.

The NMP is inspected for the basic elements as defined by the Delaware Nutrient Management Law. Firstly, the department inspects to see if the NMP is current and not expired. The duration of the NMP is verified to not exceed a 3 year maximum. The department verifies the existence of aerial field maps with corresponding soil type maps and associated unit map descriptions. Soil sample analyses are verified to be no older than 3 years. The department checks to make sure that soil sample analyses exist for all farms currently being tilled by the farmer.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.

N/A

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?

>85% based on anecdotal accounts from inside the department as estimated by staff with a combined 40 years experience with the law and cost share program. A small watershed study revealed a 99% compliance rate in Bucks Branch, but the results are unlikely to be applicable to an entire state. The estimate the program stands by represents farmers in total compliance with a checklist of inspected reportable items plus those acres for which the items may not be present or complete, but upon further scrutiny and brief discourse are brought to compliance in one visit.

5) Provide relevant documentation supporting the compliance assessment.

The Delaware Department of Agriculture's Nutrient Management Program conducted routine nutrient management plan audits of farmers who till ground within the boundary of the Bucks Branch sub watershed. These inspections were conducted during the winter months of 2013 to determine compliance of nutrient management planning required under the Delaware Nutrient Management Law. Bucks Branch Sub Watershed is part of the Nanticoke River Basin and has been identified as part of EPA's 303(d) list of impaired water bodies.

Approximately 2,455 tillable acres were identified within or partially within the watershed boundary limits. At the time that the inspections were conducted, 16 farmers tilled the ground located within the watershed boundary. 1,319.18 acres were center pivot irrigated with 1,135.57 acres being dryland. Cropping rotations in 2013 included; field corn, sweet corn, wheat, barley, full season soybeans, double crop soybeans, field peas, lima beans and watermelons. 1,841.95 tons of poultry manure was applied on 666.17 acres. The average manure application rate per acre across the watershed was 2.76 tons. The average Mehlich 3 soil test phosphorus level on farms that received manure application was 243.28 ppm. Phosphorus Site Indices (PSI) were utilized on farms where manure application was part of the fertility recommendations and the soil test FIV was greater than 150 ppm for soil test P. The average soil test P level across all acreage in the watershed was 202.28 ppm.

Each of the 16 farmers had current nutrient management plans during the time of the inspections. Of the 16 nutrient management plans audited, 12 plans were written by private consultants and 4 were developed by the Sussex Conservation District. 6 of the 16 farmers are full-time poultry producers with 4 of those 6 farmers growing chickens within the State of Delaware. 2 of those 4 farmers that grow chickens within the State of Delaware have their production areas located within the Bucks Branch sub watershed boundary. Every farm field within the watershed boundary was accounted for under the implementation of nutrient management plans at the time of the inspections with the exception of 1 – 26 acre tract. After a discussion with the farmer, it was determined that this farm had been recently rented and he had not notified the private crop consultant yet. Telephone correspondence in the following weeks with both the farmer and the consultant verified that this issue was addressed. 98.94% of the tillable acreage, other than small horse pastures that did not meet the acreage threshold to warrant nutrient management planning, was implemented into a current nutrient management plan by each of the 16 farmers with controlling interest in the farms.

The nutrient management annual implementation report is very important to the Nutrient Management Program. The data reported by Delaware farmers provides integral nutrient handling information for both the animal and crop production industries. 10 out of 15 annual reports were submitted by farmers who till ground within the Bucks Branch sub watershed boundary for the 2013 cropping season. This equates to a 67% response rate for annual reports. One of the 16 farmers acquired interest on a farm located within the watershed boundary in 2013, however, did not obtain Delaware nutrient management certification until the fall of 2014. This farmer did submit an annual report for the 2014 cropping season to the Nutrient Management Program.

This was the first watershed-wide nutrient management plan compliance assessment conducted by the Delaware Department of Agriculture's Nutrient Management Program. The results of this assessment were presented to the Delaware Nutrient Management Commission in 2014.

The Delaware Nutrient Management Plan Policy Checklist (see link found under Program #1) was utilized and the Nutrient Management Evaluation Report (please see the attached document titled Nutrient Management Evaluation Report) was completed during these inspections.

6) Other information (optional).
[Enter text here].

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	☒	☒	☒	☐	☐	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	☒	☒	☒	☐	☐	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	☒	☒	☒	☐	☐	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	☒	☒	☒	☐	☐	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	☒	☒	☒	☐	☐	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	☒	☒	☒	☐	☐	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?

MD compliance 65-69%. VA plans from DCR and NRCS reporting 65%

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?

Soil sample analyses are reviewed to determine, if any, which individual fields have a soil P FIV greater than 150ppm, as measured by Mehlich III test. High phosphorus soil test levels are cross referenced with the field's associated fertilizer recommendations if additional phosphorus is recommended beyond the 3 year crop removal rate. If phosphorus applications are recommended on fields identified as high P, then the department verifies that a phosphorus site index (PSI) has been conducted for those individual fields. Farmer records of implementation for organic or inorganic sources of fertilizer are reviewed to determine if the actual application of nutrients were applied based on the recommendations detailed in the NMP. Those records could include land application records for manure (if applicable) and/or nutrient application records provided by the custom application fertilizer retailer for inorganic sources of fertilizer. The NMP should be written to follow the provisions found in the Delaware Nutrient Management Law and based on the recommendations detailed by the University of Delaware and NRCS Code 590. The University of Delaware Nutrient Management Handbook, NRCS Code 590, and typically the NMP itself has documented guidelines for applying nutrients (organic and/or inorganic) as close as possible to the time where the crop will utilize the maximum uptake of those applied nutrients. Some of the NMPs inspected will document the type of anticipated tillage/incorporation method on an individual field basis.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.

See section 1.2, item 5

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?

MD compliance 65-69%. VA plans from DCR and NRCS each reporting 65%, independently. This is data from neighboring jurisdictions, but sharing acreage on the Delmarva peninsula, there

is no indication to expect a different compliance rate from our neighbors. Furthermore, an analysis of MD counties on the Delmarva suggested 80% compliance, greater than the state average. Anecdotally, DDA inspections yield between a 10-15% little-to-no compliance return and another 15-20% insufficient compliance from the rest of the inspected farms.

5) Provide relevant documentation supporting the compliance assessment.

Information for the MD and VA preliminary assessments are available in their crosswalks, respectively.

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?

There are several elements of the P index included as part of the inspection and compliance checklist. Phosphorus application is limited to 3-year crop removal rate in soils with a FIV of 150 or higher. Optionally, a University of Delaware PSI may be performed and phosphorus may be added as recommended by the PSI value. Application rates limited to the 3-year crop removal may be exceeded in unforeseen situations and must be justified in writing by a certified nutrient consultant. Crop and nutrient checklist items include: individual field identification and boundaries; copy of soil survey map showing all soil types on each field or the soil texture identification of all pertinent soils; location of all surface waters including drainage ditches, streams, ponds, etc.; irrigation systems where applicable; budget of intended manure disposition identifying amounts for land application, exportation from farm, or other use; soil test (no older than 3 years) from an agronomic laboratory approved by DNMC; manure analysis results or a nutrient value estimate with written justification; and nutrient source(s) selected, rates, and approximate timing of application(s). Implementation records include manure stored or stockpiled in other than an approved storage facility shall be at least 100 feet from any body of water or drainage ditch; at least 100 feet from any public road; at least 200 feet from any residence that is not located on the landowner's property; and at least 6 feet high and in conical shape. Additional implementation record checklist requirements include: soil test results and recommended nutrient application rates or the NMP; quantities, analyses, and sources of nutrients applied to cropland; dates and methods of nutrient application; crops planted, yields, and residues removed from land; and amount and type of manure exported from farm and the name, address, and organization responsible for utilizing exported manure. Applicable BMP checklist items can include, but are not limited to, PSNTs, cover crops, vegetative buffer strips, litter additives, manure incorporation, timing/method, etc.

7) Other information (optional).

[Enter text here].

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: Maryland

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Program Information

Program #1:

Program Name: Nutrient Management on Pasture, Vegetable, or Container Nursery

Type of Program (select one):State Regulatory

Reference information for Program (Links to laws, regulations, program guidance): http://mda.maryland.gov/resource_conservation/Pages/nm_manual.aspx with additional links provided in narrative below

Brief Description of Program: The Maryland Water Quality Improvement Act of 1998 requires farmers with gross annual incomes of $2,500 or more, or livestock operations with 8,000 pounds or more of live animal weight to manage their nutrient applications in accordance with farm-specific Nutrient Management Plans (NMPs) that protect waterways from excess crop fertilizers and animal waste according to MDA's Nutrient Management regulations. NMPs are valid for three years and must be prepared by certified professionals. When an operation becomes subject to MDA's Nutrient Management regulations and an initial NMP is submitted along with a New Plan Reporting Form. These documents are reviewed by regional MDA staff to assure plans are prepared in accordance with appropriate requirements. If the review determines the plan is inadequate, the farmer is notified and must work with the NMP consultant to correct all identified deficiencies. This review constitutes 100% verification of acres subject to Maryland's Nutrient Management regulations. Plans can be prepared by the farmer (with technical assistance from a University of Maryland Extension expert) or consultants, but plans can only be prepared by those that have been certified (farmer or consultant). Consultants who do not prepare the plans properly risk losing their licenses. Subsequent compliance with NMPs are verified by multiple methods and maintained in a separate MDA database for regulatory compliance. Nutrient management implementation in the agricultural sector is tracked to comply with multiple regulatory requirements:
1) Farmers submit an initial NMP to MDA written by a certified nutrient management planner;
2) Farmers must submit an Annual Implementation Report (AIR) to MDA by March 1 for the previous calendar year. The AIR notes any changes to the operation, crops grown, fertilizer use, acreage managed, animal production, etc.; and 3) Farmers are responsible to keep prescribed records of nutrient inputs and outputs. Upon receipt at MDA, all submitted AIRs are reviewed for completion and compliance with Nutrient Management regulations. Errors or concerns with the AIRs can result in an on-site review of the operation by MDA regional staff. Additionally, operations can be randomly selected for review to ensure Nutrient Management compliance. In both instances, the process is known as the Plan Implementation Evaluation (PIE) review. On-site field inspections of NMPs started in 2005 and MDA staff strives to

complete a minimum of 10% plan inspections per year. For the operations selected, farmer's records of crops grown and nutrients applied are compared to the NMP. The farmer is required to maintain records documenting the rate, timing, and method of nutrient applications, as well as crop yields. Farmer requirements are included in the *Maryland Nutrient Management Program Plan Implementation Review Process for Operators,* which is available to all farmers and prepared by the MDA Office of Resource Conservation. A multi-part Nutrient Management Program PIE report is prepared to document the review and serves as the compliance enforcement notification when certain deficiencies are noted in the review. Any problems noted during the review requires notation on the PIE form and a follow-up review. The timing of the follow-up review depends on the deficiency noted. Failure to correct the deficiency within the allotted time warrants further enforcement action, including fines. All information gathered during the PIE review and results are subsequently entered into the Nutrient Management database. MDA demonstrates progress towards WIP Nutrient Management goals through operational information provided in the AIRs and NEIEN submitted acreage is reduced by an amount equal to the compliance rate achieved through the PIE reviews (average of 68%, 2008-2014). The rationale is the AIR should reflect the operation's compliance with Nutrient Management regulations, as detailed by the farmer's NMP, whereby PIE reviews provide on-site inspections to verify compliance. MDA will continue to utilize the AIRs as the primary source of reported acres re-emphasizing that AIRs are a regulatory requirement, not a voluntary survey, subject to legal enforcement. Concurrently, MDA is initiating efforts to improve the data quality of the AIRs and public understanding of Nutrient Management regulations. These efforts include: 1) a revised 2014 AIR form with clarified questions and sections; 2) MDA presentations at Nutrient Management and University of Maryland Extension events as outreach opportunities to increase awareness of AIR importance; 3) additional coordination with NM service providers and other MDA partners to evaluate alternative data sets that may support and/or supplement the AIR; and 4) increased coordination between the MDA WIP staff and the MDA Nutrient Management staff to accomplish program goals.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

xTier 1 ☐Tier 2 ☐Tier 3

Program #2:

Program Name: Nutrient Management on Cropland

Type of Program (select one):State Regulatory

Reference information for Program (Links to laws, regulations, program guidance): http://mda.maryland.gov/resource_conservation/Pages/nm_manual.aspx with additional links provided in the narrative below

Brief Description of Program: The Maryland Water Quality Improvement Act of 1998 requires farmers with gross annual incomes of $2,500 or more, or livestock operations with 8,000 pounds or more of live animal weight to manage their nutrient applications in accordance with farm-specific Nutrient Management Plans (NMPs) that protect waterways from excess crop fertilizers and animal waste according to MDA's Nutrient Management regulations. NMPs are valid for three years and must be prepared by certified professionals. When an operation becomes subject to MDA's Nutrient Management

regulations and an initial NMP is submitted along with a New Plan Reporting Form. These documents are reviewed by regional MDA staff to assure plans are prepared in accordance with appropriate requirements. If the review determines the plan is inadequate, the farmer is notified and must work with the NMP consultant to correct all identified deficiencies. This review constitutes 100% verification of acres subject to Maryland's Nutrient Management regulations. Plans can be prepared by the farmer (with technical assistance from a University of Maryland Extension expert) or consultants, but plans can only be prepared by those that have been certified (farmer or consultant). Consultants who do not prepare the plans properly risk losing their licenses. Subsequent compliance with NMPs are verified by multiple methods and maintained in a separate MDA database for regulatory compliance. Nutrient management implementation in the agricultural sector is tracked to comply with multiple regulatory requirements: 1) Farmers submit an initial NMP to MDA written by a certified nutrient management planner; 2) Farmers must submit an Annual Implementation Report (AIR) to MDA by March 1 for the previous calendar year. The AIR notes any changes to the operation, crops grown, fertilizer use, acreage managed, animal production, etc.; and 3) Farmers are responsible to keep prescribed records of nutrient inputs and outputs. Upon receipt at MDA, all submitted AIRs are reviewed for completion and compliance with Nutrient Management regulations. Errors or concerns with the AIRs can result in an on-site review of the operation by MDA regional staff. Additionally, operations can be randomly selected for review to ensure Nutrient Management compliance. In both instances, the process is known as the Plan Implementation Evaluation (PIE) review. On-site field inspections of NMPs started in 2005 and MDA staff strives to complete a minimum of 10% plan inspections per year. For the operations selected, farmer's records of crops grown and nutrients applied are compared to the NMP. The farmer is required to maintain records documenting the rate, timing, and method of nutrient applications, as well as crop yields. Farmer requirements are included in the *Maryland Nutrient Management Program Plan Implementation Review Process for Operators*, which is available to all farmers and prepared by the MDA Office of Resource Conservation. A multi-part Nutrient Management Program PIE report is prepared to document the review and serves as the compliance enforcement notification when certain deficiencies are noted in the review. Any problems noted during the review requires notation on the PIE form and a follow-up review. The timing of the follow-up review depends on the deficiency noted. Failure to correct the deficiency within the allotted time warrants further enforcement action, including fines. All information gathered during the PIE review and results are subsequently entered into the Nutrient Management database. MDA demonstrates progress towards WIP Nutrient Management goals through operational information provided in the AIRs and NEIEN submitted acreage is reduced by an amount equal to the compliance rate achieved through the PIE reviews (average of 68%, 2008-2014). The rationale is the AIR should reflect the operation's compliance with Nutrient Management regulations, as detailed by the farmer's NMP, whereby PIE reviews provide on-site inspections to verify compliance. MDA will continue to utilize the AIRs as the primary source of reported acres re-emphasizing that AIRs are a regulatory requirement, not a voluntary survey, subject to legal enforcement. Concurrently, MDA is initiating efforts to improve the data quality of the AIRs and public understanding of Nutrient Management regulations. These efforts include: 1) a revised 2014 AIR form with clarified questions and sections; 2) MDA presentations at Nutrient Management and University of Maryland Extension events as outreach opportunities to increase awareness of AIR importance; 3) additional coordination with NM service providers and other MDA partners to evaluate alternative data sets that may support and/or supplement the AIR; and 4) increased coordination between the MDA WIP staff and the MDA Nutrient Management staff to accomplish program goals.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

xTier 1 xTier 2 ☐Tier 3

Program #3:

Program Name: Enhanced Decision Agriculture on Cropland

Type of Program (select one):State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance):
http://mda.maryland.gov/resource_conservation/Pages/air.aspx

Brief Description of Program: Pursuant to Maryland's Nutrient Management regulations, all regulated operators must submit an Annual Implementation Report (AIR) to MDA by March 1 for the previous calendar year. The AIR notes any changes to the operation, crops grown, fertilizer use, acreage managed, animal production, etc. Included within the AIR questionnaire is a section for "Innovative Management Practices" that explicitly asks for the total number of acres that are managed by Enhanced Decision Management (e.g. PSNT, FSNT, Greenseeker or other variable rate application technologies). Upon receipt at MDA, all submitted AIRs are reviewed for completion and compliance with Nutrient Management regulations. Errors or concerns with the AIRs can result in an on-site review of the operation by MDA regional staff. Additionally, operations can be randomly selected for review to ensure Nutrient Management compliance. In both instances, the process is known as the Plan Implementation Evaluation (PIE) review. For the operations selected, farmer's records of crops grown and nutrients applied are compared to the NMP. Additionally, the farmer is required to maintain records documenting the rate, timing, and method of nutrient applications, as well as crop yields. Implementation of Decision Agriculture at the field-level would be corroborated through the PIE review. Record keeping requirements are included in the *Maryland Nutrient Management Program Plan Implementation Review Process for Operators,* which is available to all farmers and prepared by the MDA Office of Resource Conservation. MDA will continue to utilize the AIRs as the primary source of reported acres re-emphasizing that AIRs are a regulatory requirement, not a voluntary survey, subject to legal enforcement. Concurrently, MDA is initiating efforts to improve the data quality of the AIRs and public understanding of Nutrient Management regulations. These efforts include: 1) a revised 2014 AIR form with clarified questions and sections; 2) MDA presentations at Nutrient Management and University of Maryland Extension events as outreach opportunities to increase awareness of AIR importance; 3) additional coordination with NM service providers and other MDA partners to evaluate alternative data sets that may support and/or supplement the AIR; and 4) increased coordination between the MDA WIP staff and the MDA Nutrient Management staff to accomplish program goals.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☐Tier 2 xTier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. Available in electronic or paper format	x	x	x	☐	☐	☐
B. Developed cooperatively by trained professional and farmer	x	x	x	☐	☐	☐
C. Expiration date no longer than 3 years after written	x	x	x	☐	☐	☐
D. Uses soil lab analysis from farm samples to inform nutrient application rates	x	x	x	☐	☐	☐
E. Crop yields estimated based on records or soil productivity estimates for whole farm	x	x	x	☐	☐	☐
F. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	x	x	x	☐	☐	☐
G. P fertilizers applied at a rate consistent with contemporary Land Grant University recommendations	x	x	x	☐	☐	☐
H. Nutrient application timing is considered to further reduce N and P losses	x	x	x	☐	☐	☐

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?

   On-site field inspections of NMPs started in 2005 and MDA staff strives to complete a minimum of 10% plan inspections per year. Below is a summary of most recent year inspections:

State Fiscal Year	No. of Site Inspections	Acreage Reviewed on Site Inspection	Percent Inspections In-Compliance
2008	450	--	65%
2009	400	101,500	69%
2010	412	168,117	62%
2011	450	97,533	70%
2012	647	151,740	69%
2013	738	177,030	73%
2014	733	177,030	66%

2) What Tier 1elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?

For the operations selected for on-site review, farmer's records of crops grown and nutrients applied are compared to the NMP. Additionally, the farmer is required to maintain records (for at least 3 years) documenting the rate, timing, and method of nutrient applications, as well as crop yields. Record keeping requirements are included in the *Maryland Nutrient Management Program Plan Implementation Review Process for Operators,* which is available to all farmers and prepared by the MDA Office of Resource Conservation.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.

Yes. See question #2

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?

See question #1

5) Provide relevant documentation supporting the compliance assessment.
On-site field inspections are completing using the Plan Implementation Evaluation (PIE) review forms. The multi-part Nutrient Management Program PIE report is prepared to document the review and serves as the compliance enforcement notification when certain deficiencies are noted in the review. Any problems noted during the review requires notation on the PIE form and a

follow-up review. All information gathered during the PIE review and results are subsequently entered into the Nutrient Management database at MDA. A publicly available Nutrient Management Annual Report is also issued by MDA to outline our efforts for meeting the Chesapeake Bay water quality goals.

6) Other information (optional).
[Enter text here].

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1.These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	x	x	x	☐	☐	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	x	x	x	☐	☐	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	x	x	x	☐	☐	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	x	x	x	☐	☐	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	x	x	x	☐	☐	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	x	x	x	☐	☐	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
See Section 1.2, question #1

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
See Section 1.2, question #2. Additionally, Maryland's newly implemented Phosphorus Management Initiative will also include establishment of a field-level soil test P database including Fertility Index Value (FIV) and field acreage, reportable every 6 years. This data will provide MDA with accurate soil fertility data to monitor trends in soil P levels.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
Yes. See Section 1.2, question #2

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
See Section 1.2, question #1

5) Provide relevant documentation supporting the compliance assessment.
On-site field inspections are completing using the Plan Implementation Evaluation (PIE) review forms. The multi-part Nutrient Management Program PIE report is prepared to document the review and serves as the compliance enforcement notification when certain deficiencies are noted in the review. Any problems noted during the review requires notation on the PIE form and a follow-up review. All information gathered during the PIE review and results are subsequently entered into the Nutrient Management database at MDA. A publicly available Nutrient Management Annual Report is also issued by MDA to outline our efforts for meeting the Chesapeake Bay water quality goals.

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?
Compliance rates with nutrient management reporting remain strong in Maryland. In 2014, 98.6% of farmers had nutrient management plans and 97.9% of farmers had submitted required information on how they manage nutrients during the previous cropping season. In addition to random on-farm audits for compliance, farmers submitting late, incomplete, or inconsistent data were reviewed. Further,, fields with a Fertility Index Value (FIV) >150 were eligible for Plan Implementation Evaluations (PIEs). Below is a summary of evaluations performed on fields with FIV > 150 along with associated compliance rates from those PIE reviews:

State Fiscal Year	No. of Plans Evaluated	Compliance Rate
2012	169	78 %
2013	249	85%
2014	238	89%
2015	267	84%

7) Other information (optional).
[Enter text here].

Section 3: Tier 3 Program and Compliance Information

3.1: Select all elements of a Tier 3 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1.These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Check all that apply.

Tier 3 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 and Tier 2 plan	x	x	x	☐	☐	☐
B. Variable rate applications of N on each field were performed resulting in a net change of N rates for the field	☐	☐	x	☐	☐	☐
C. An ISNT, CSNT, PSNT, or FSNT was performed resulting in a net change in N rates for the field[1]	☐	☐	x	☐	☐	☐

3.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 3 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
See Section 1.2, question #1

[1] Where ISNT refers to the Illinois Soil Nitrogen Test, CSN refers to Corn Stalk Nitrate Test, PSNT refers to Pre-side dress Nitrate test, and FSNT refers to Fall Soil Nitrate test.

2) What Tier 3 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?

Enhanced Decision Agriculture is a primarily voluntary element of Maryland's NM regulations. Assessment for compliance would not be required; however, pursuant to Maryland's Nutrient Management regulations, all regulated operators must submit an Annual Implementation Report (AIR) to MDA by March 1 for the previous calendar year. The AIR notes any changes to the operation, crops grown, fertilizer use, acreage managed, animal production, etc. Included within the AIR questionnaire is a section for "Innovative Management Practices" that explicitly asks for the total number of acres that are managed by Enhanced Decision Management (e.g. GreenSeeker, PSNT, FSNT, or variable rate application). Upon receipt at MDA, all submitted AIRs are reviewed for completion and compliance with Nutrient Management regulations. Errors or concerns with the AIRs can result in an on-site review of the operation by MDA regional staff. Additionally, operations can be randomly selected for review to ensure Nutrient Management compliance. In both instances, the process is known as the Plan Implementation Evaluation (PIE) review. For the operations selected, farmer's records of crops grown and nutrients applied are compared to the NMP. Additionally, the farmer is required to maintain records documenting the rate, timing, and method of nutrient applications, as well as crop yields. Implementation of Enhanced Decision Agriculture at the field-level would be corroborated through the PIE review. Additional evidence for the implementation of soil nitrate tests include Maryland's requirements to conduct Fall Soil Nitrate tests prior to application (see Table 3 Notes) that would also be confirmed during a PIE review and entered into the MDA reporting database.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
Yes. See Section 1.2, question #2

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
MDA demonstrates progress towards Nutrient Management goals through operational information provided in the Annual Implementation Reports (AIRs). Submitted acreage is reduced by an amount equal to the compliance rate achieved through the Plan Implementation Evaluations (PIE) reviews which is estimated at 69% (preliminary) for the FY 15 reporting period.
MDA will continue to utilize the AIRs as the primary source of reported acres re-emphasizing that AIRs are a regulatory requirement, not a voluntary survey, subject to legal enforcement. Concurrently, MDA is initiating efforts to improve the data quality of the AIRs and public understanding of Nutrient Management regulations. These efforts include: 1) a revised 2014 AIR form with clarified questions and sections; 2) MDA presentations at Nutrient Management and University of Maryland Extension events as outreach opportunities to increase awareness of AIR importance; 3) additional coordination with NM service providers and other MDA partners to evaluate alternative data sets that may support and/or supplement the AIR; and 4) increased

coordination between the MDA WIP staff and the MDA Nutrient Management staff to accomplish program goals.

5) Provide relevant documentation supporting the compliance assessment.
On-site field inspections are completing using the Plan Implementation Evaluation (PIE) review forms. The multi-part Nutrient Management Program PIE report is prepared to document the review and serves as the compliance enforcement notification when certain deficiencies are noted in the review. Any problems noted during the review requires notation on the PIE form and a follow-up review. All information gathered during the PIE review and results are subsequently entered into the Nutrient Management database at MDA. A publicly available Nutrient Management Annual Report is also issued by MDA to outline our efforts for meeting the Chesapeake Bay water quality goals.

6) Other information (optional).
[Enter text here].

December 8, 2015
New York

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: New York

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Program Information

Program #1:

Program Name: NYS DEC CAFO General Permits: currently GP-0-14-001 and GP-04-02

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance): http://www.dec.ny.gov/permits/6285.html and see NYS' WIP II for additional description (http://www.dec.ny.gov/lands/33279.html)

Brief Description of Program: General Permit GP-0-14-001 is a general permit issued pursuant to the State Environmental Conservation Law for CAFO operations that do not discharge process wastewater from their production area. General Permit GP-04-02 is a general permit issued pursuant to the state Environmental Conservation Law and the federal Clean Water Act for CAFO operations that may discharge in storms greater than the 25-year/24-hour storm. All CAFO permitted farms must develop and maintain a current Comprehensive Nutrient Management Plan (CNMP) to address any farmstead production area discharges and drive nutrient applications to crop fields and pastures according to NRCS standards and processes. CNMPs must be developed with the farmer by an AEM Certified Planner, a NYS and NRCS-NY operated certification program. As a required component of all CNMPs, farmers must follow the NRCS 590 Nutrient Management Standard for nutrient applications according to both contemporary Land Grant Guidelines and field risk assessments for runoff, soil erosion, and leaching as well as associated management practices. At a minimum, this includes all of 5.3.2 Tiers 1 and 2, and may extend to Tier 3 in some cases (although the Tier 3-type practices are not General Permit requirements). Approximately 525 medium and large sized livestock farms operate with a CAFO General Permit in New York State, including 63 permitted farms in the Chesapeake Bay Watershed portion of NYS.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☒Tier 3

Program #2:

Program Name: Agricultural Environmental Management (AEM)

Type of Program (select one): State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance): http://www.agriculture.ny.gov/SoilWater/aem/ and http://codes.lp.findlaw.com/nycode/AGM/11-A and see NYS' WIP II for additional description (http://www.dec.ny.gov/lands/33279.html)

Brief Description of Program: AEM is a voluntary, incentive-based program that helps farmers make common-sense, cost-effective and science-based decisions to help meet business objectives while protecting and conserving the State's natural resources. Farmers work with local AEM resource professionals from Soil and Water Conservation Districts as well as other partners to develop, implement, and evaluate comprehensive farm plans using a tiered process: •Tier 1 – Inventory current activities, future plans and potential environmental concerns. •Tier 2 – Document current land stewardship; assess and prioritize areas of concern. •Tier 3 – Develop conservation plans addressing concerns and opportunities tailored to farm goals. •Tier 4 – Implement plans utilizing available financial, educational and technical assistance. •Tier 5 – Evaluate to ensure the protection of the environment and farm viability. A farmer implementing an AEM Tier 3A Nutrient Management Plan or an AEM Tier 3B CNMP is implementing a plan according to the NRCS 590 Standard, so at a minimum meets 5.3.2 definitions for Tiers 1 and 2 and where further adaptive nitrogen management is employed, Tier 3. Nutrient management plans and CNMPs must be developed with the farmer by an AEM Certified Planner or an NRCS Planner certified for nutrient management or CNMPs.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☒Tier 3

Program #3:

Program Name: NRCS Environmental Quality Incentive Program (EQIP) and Conservation Stewardship Program (CSP)

Type of Program (select one): State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance): http://www.nrcs.usda.gov/wps/portal/nrcs/main/ny/programs/financial/eqip/ and http://www.nrcs.usda.gov/wps/portal/nrcs/main/ny/programs/financial/csp/

Brief Description of Program: The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program that helps agricultural producers in a manner that promotes agricultural production and environmental quality as compatible goals. Through EQIP, agricultural producers receive financial and technical assistance to plan and then implement structural and management conservation practices that optimize environmental benefits on working agricultural land. The Conservation Stewardship Program (CSP) helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns. Participants earn CSP payments for conservation performance—the higher the performance, the higher the payment. For Phase 5.3.2 Nutrient Management purposes, any farmer implementing an NRCS 590 conservation activity plan or a broader CNMP, would, at a minimum be meeting the requirements of 5.3.2 Tiers 1 and 2. A farmer extending further with 590 to implement adaptive nitrogen methods, either through EQIP or CSP would

meet the requirements of 5.3.2 Tier 3. Nutrient management plans or CNMPs must be developed with the farmer by an AEM Certified Planner or an NRCS Planner certified for nutrient management or CNMPs.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☒Tier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. Available in electronic or paper format	☒	☒	☒	☐	☐	☐
B. Developed cooperatively by trained professional and farmer	☒	☒	☒	☐	☐	☐
C. Expiration date no longer than 3 years after written	☒	☒	☒	☐	☐	☐
D. Uses soil lab analysis from farm samples to inform nutrient application rates	☒	☒	☒	☐	☐	☐
E. Crop yields estimated based on records or soil productivity estimates for whole farm	☒	☒	☒	☐	☐	☐
F. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	☒	☒	☒	☐	☐	☐
G. P fertilizers applied at a rate consistent with contemporary Land Grant University recommendations	☒	☒	☒	☐	☐	☐
H. Nutrient application timing is considered to further reduce N and P losses	☒	☒	☒	☐	☐	☐

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Program #1 (CAFO Permits): 100% by a combination of AEM Certified Planner field walks and record collections for CNMP updates as well as DEC and EPA inspections.
   Program #2 (AEM): 100% by AEM or NRCS Certified Planner field walks and record collections for Tier 3A Nutrient Management Plan or Tier 3B CNMP updates.
   Program #3 (NRCS): 100% by AEM or NRCS Certified Planner field walks and record collections for 590 Nutrient Management or full CNMP conservation activity plan updates.

2) What Tier 1 elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?
   For Programs #1, #2, and #3: nutrient application records; soil and manure analyses; manure application setbacks; any crop yield information if differing from Cornell's soil series based yield database; crop rotation updates; detection/correction of any elements or BMPs needing additional maintenance; and any changes to fields or management from last visit.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   Program #1 (CAFO Permits): Yes, threefold: (1) annual (at a minimum) assessments of field management and application records by the AEM Certified Planner for plan update purposes; (2) annual reporting of compliance by the farmer (permittee) and AEM Certified Planner to NYS DEC via the CAFO Annual Compliance Reports; and (3) 50% of CAFO-permitted farms in the Chesapeake Bay Watershed portion of NYS are inspected by DEC and/or EPA annually.
   Program #2 (AEM): Yes. The AEM or NRCS Certified Planner annually (at a minimum) assesses field management through spreader calibrations, field risk assessment walks, soil sampling, manure sampling, review of field application and management records, plan update reviews, assessments of manure application setbacks and in-field BMPs, and discussion with farmers.
   Program #3 (NRCS): Yes. The AEM or NRCS Certified Planner annually (at a minimum) assesses field management through spreader calibrations, field risk assessment walks, soil sampling, manure sampling, review of field application and management records, plan update reviews, assessments of manure application setbacks and in-field BMPs, and discussion with farmers.
4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
   Program #1 (CAFO Permits): 95% or more, based on CAFO inspections.

Program #2 (AEM): 95% or more, because for these voluntary AEM Tier 3A Nutrient Management acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract year (i.e., scenarios where plans were developed in the past and not updated/checked are not submitted). Based on that interaction with the planner, nutrient management acres are not included in a NEIEN submission unless they are being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in operation, it has been and will be the approach taken until new verification protocols are proven.

Program #3 (NRCS): 95% or more, because for these voluntary EQIP or CSP Nutrient Management Plan acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract years (i.e., scenarios where plans were developed some time ago and not updated/checked are not submitted). Based on that interaction with the planner and through compliance checks by NRCS technical and program staff, nutrient management acres are not included in a NEIEN submission unless they are satisfying being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in operation, it has been and will be the approach taken until new verification protocols are proven.

5) Provide relevant documentation supporting the compliance assessment.
Program #1 (CAFO Permits): DEC CAFO Permit Annual Compliance Reports and annual CNMP update materials for 100% of CAFO permitted farms and CAFO field inspection reports for at least 50% of CAFO permitted farms in the Watershed.
Program #2 (AEM): Nutrient management or CNMP update materials, farm records, AEM program/contract documentation.
Program #3 (NRCS): Nutrient management or CNMP update materials, farm records, NRCS program/contract documentation.

6) Other information (optional).
Currently, NYS has no program or conservation planning/implementation standards for submitting Tier 1-only acres through NEIEN. All formal nutrient management in NYS is performed in accordance with the NRCS 590 Standard, so all acres will instead be at least submitted as Tier 2 Nutrient Management acres, which includes the introductory analyses and implementation requirements of Tier 1.

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	☒	☒	☒	☐	☐	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	☒	☒	☒	☐	☐	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	☒	☒	☒	☐	☐	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	☒	☒	☒	☐	☐	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	☒	☒	☒	☐	☐	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	☒	☒	☒	☐	☐	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Program #1 (CAFO Permits): 100% by a combination of AEM Certified Planner field walks and record collections for CNMP updates as well as DEC and EPA inspections.
   Program #2 (AEM): 100% by AEM or NRCS Certified Planner field walks and record collections for Tier 3A Nutrient Management Plan or Tier 3B CNMP updates.
   Program #3 (NRCS): 100% by AEM or NRCS Certified Planner field walks and record collections for 590 Nutrient Management or full CNMP conservation activity plan updates.

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
For Programs #1, #2, and #3: nutrient application records; soil and manure analyses; manure application setbacks; any crop yield information if differing from Cornell's soil series based yield database; crop rotation updates; detection/correction of any elements or BMPs needing additional maintenance; P Index, RUSLE2, and Nitrate Leaching Index assessments are updated; and any changes to fields or management from last visit.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
Program #1 (CAFO Permits): Yes, threefold: (1) annual (at a minimum) assessments of field management and application records by the AEM Certified Planner for plan update purposes; (2) annual reporting of compliance by the farmer (permittee) and AEM Certified Planner to NYS DEC via the CAFO Annual Compliance Reports; and (3) 50% of CAFO-permitted farms in the Chesapeake Bay Watershed portion of NYS are inspected by DEC and/or EPA annually.
Program #2 (AEM): Yes. The AEM or NRCS Certified Planner annually (at a minimum) assesses field management through spreader calibrations, field risk assessment walks, soil sampling, manure sampling, review of field application and management records, plan update reviews (including risk assessments and resulting nutrient application recommendations), assessments of manure application setbacks and in-field BMPs, and discussion with farmers.
Program #3 (NRCS): Yes. The AEM or NRCS Certified Planner annually (at a minimum) assesses field management through spreader calibrations, field risk assessment walks, soil sampling, manure sampling, review of field application and management records, plan update reviews (including risk assessments and resulting nutrient application recommendations), assessments of manure application setbacks and in-field BMPs, and discussion with farmers.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
Program #1 (CAFO Permits): 95% or more, based on CAFO inspections.
Program #2 (AEM): 95% or more, because for these voluntary AEM Tier 3A Nutrient Management acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract year (i.e., scenarios where plans were developed in the past and not updated/checked are not submitted). Based on that interaction with the planner, nutrient management acres are not included in a NEIEN submission unless they are being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in

operation, it has been and will be the approach taken until new verification protocols are proven.
Program #3 (NRCS): 95% or more, because for these voluntary EQIP or CSP Nutrient Management Plan acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract years (i.e., scenarios where plans were developed some time ago and not updated/checked are not submitted). Based on that interaction with the planner and through compliance checks by NRCS technical and program staff, nutrient management acres are not included in a NEIEN submission unless they are satisfying being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in operation, it has been and will be the approach taken until new verification protocols are proven.

5) Provide relevant documentation supporting the compliance assessment.
Program #1 (CAFO Permits): DEC CAFO Permit Annual Compliance Reports and annual CNMP update materials for 100% of CAFO permitted farms and CAFO field inspection reports for at least 50% of CAFO permitted farms in the Watershed.
Program #2 (AEM): Nutrient management plan or CNMP update materials, farm records, AEM program/contract documentation.
Program #3 (NRCS): Nutrient management plan or CNMP update materials, farm records, NRCS program/contract documentation.

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?
As a note, all nutrient management planning and implementation in NYS is done according to the NRCS 590 Nutrient Management Standard, which requires all fields in the plans to be assessed and managed according to the full NYS Phosphorus Runoff Index (currently no soil test threshold/trigger).
Program #1 (CAFO Permits): 95% or more, based on CAFO Inspections.
Program #2 (AEM): 95% or more, because for these voluntary AEM Tier 3A Nutrient Management acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract year (i.e., scenarios where plans were developed in the past and not updated/checked are not submitted). Based on that interaction with the planner, nutrient management acres are not included in a NEIEN submission unless they are being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in operation, it has been and will be the approach taken until new verification protocols are proven.
Program #3 (NRCS): 95% or more, because for these voluntary EQIP or CSP Nutrient

Management Plan acres or CNMP acres, NYS has only been submitting acres for farms actively involved with their planner during the contract years (i.e., scenarios where plans were developed some time ago and not updated/checked are not submitted). Based on that interaction with the planner and through compliance checks by NRCS technical and program staff, nutrient management acres are not included in a NEIEN submission unless they are satisfying being managed according to the plan. While this likely limits the number of acres of nutrient management submitted to NEIEN relative to those in operation, it has been and will be the approach taken until new verification protocols are proven.

7) Other information (optional).
Currently, NYS has no program or conservation planning/implementation standards for submitting Tier 1 Nutrient Management acres through NEIEN. All formal nutrient management in NYS is performed in accordance with the NRCS 590 Standard, so all acres will instead be at least submitted as Tier 2 Nutrient Management acres, which includes the introductory analyses and implementation requirements of Tier 1.

Section 3: Tier 3 Program and Compliance Information

3.1: Select all elements of a Tier 3 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Check all that apply.

Tier 3 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 and Tier 2 plan	☒	☒	☒	☐	☐	☐
B. Variable rate applications of N on each field were performed resulting in a net change of N rates for the field	☐	☐	☐	☐	☐	☐
C. An ISNT, CSNT, PSNT, or FSNT was performed resulting in a net change in N rates for the field[2]	☒	☒	☒	☐	☐	☐

3.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 3 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

[2] Where ISNT refers to the Illinois Soil Nitrogen Test, CSN refers to Corn Stalk Nitrate Test, PSNT refers to Pre-side dress Nitrate test, and FSNT refers to Fall Soil Nitrate test.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Program #1 (CAFO Permits): 100% by an AEM Certified Planner or a Certified Crop Advisor or Cornell Cooperative Extension Field Crop Specialist working in conjunction with the planner and farmer during field sampling, field walks, farmer discussions, and record collections for CNMP updates on those farms practicing enhanced levels of nitrogen management through adaptive approaches described in Tier 3.
   Program #2 (AEM): 100% by an AEM or NRCS Certified Planner or a Certified Crop Advisor or Cornell Cooperative Extension Field Crop Specialist working in conjunction with the planner and farmer during field sampling, field walks, farmer discussions, and record collections for AEM Tier 3A Nutrient Management Plan or CNMP updates on those farms practicing enhanced levels of nitrogen management through adaptive approaches described in Tier 3.
   Program #3 (NRCS): 100% by an AEM or NRCS Certified Planner (Technical Service Provider) during field sampling, field walks, farmer discussions, and record collections for 590 Nutrient Management or full CNMP conservation activity plan updates on those farms practicing enhanced levels of nitrogen management through adaptive approaches described in Tier 3.

2) What Tier 3 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
   For Programs #1, #2, and #3: nutrient application records; current and prior adaptive nitrogen field tests (ISNT, CSNT, and/or, to a lesser degree, PSNT); crop yields and yield history; soil resources; crop history; farmer observations; etc. in addition to the base Tier 2 (590) Nutrient Management assessments.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   For Programs #1, #2, and #3: Yes, by a planner, Certified Crop Advisor, and/or Cornell Cooperative Extension Field Crop Specialist to perform the assessments, sampling, yield measurements, records review, etc. necessary for adaptive nitrogen plan updates as outlined in the response to Question 2, above.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
   For Programs #1, #2, and #3: 95% or more. Given the management intensity of adaptive nitrogen management and inherent demand for communication among planners and farmers to make it worthwhile, all parties tend to be motivated to more site-specifically

characterize their fields (relative to Tier 2) and implement adaptive nitrogen rates based on the process.

5) Provide relevant documentation supporting the compliance assessment.
   For Programs #1, #2, and #3: Nutrient management plan or CNMP update materials; farm records; AEM or NRCS program/contract documentation.

7) Other information (optional).
   [Enter text here].

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: Pennsylvania

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Program Information

Program #1:

Program Name: DEP Chapter 92a Regulations - CAFO

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://www.pacode.com/secure/data/025/chapter92a/chap92atoc.html

Brief Description of Program: State implementation of Pennsylvania's federally-delegated CAFO permit program requiring implementation of Nutrient Management Plans on certain sized livestock and poultry operations. CAFO Nutrient Management Plans are developed by state certified specialists following Land Grant University recommendations for Nitrogen and Phosphorus, including the completion of a Phosphorus Index assessment for all acres included. These plans are reviewed and approved/disapproved at a public meeting held by the conservation district or State Conservation Commission. Plan implementation is assessed annually through on-site visits by state/local program staff.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☒Tier 2 ☐Tier 3

Program #2:

Program Name: Act 38 of 2005, PA Nutrient Management Act – Concentrated Animal Operations (CAOs)

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://extension.psu.edu/plants/nutrient-management/act-38

Brief Description of Program: State Program regulating Concentrated Animal Operations (CAOs) requiring implementation of an approved Nutrient Management Plan (NMP). CAO Nutrient Management Plans are developed by state certified specialists following Land Grant University recommendations for Nitrogen and Phosphorus, including the completion of a Phosphorus Index assessment for all acres included. These plans are reviewed and approved/disapproved at a public meeting held by the conservation district or State Conservation Commission. Plan implementation is assessed annually through on-site visits by local program staff.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☒Tier 2 ☐Tier 3

Program #3:

Program Name: Comprehensive Nutrient Management Plans (CNMPs)

Type of Program (select one): State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance):
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/md/home/?cid=nrcs142p2_020843

Brief Description of Program: NRCS Comprehensive Nutrient Management Plans (CNMPs) are conservation plans unique to livestock operations developed to federal NRCS specifications. These plans document practices and strategies adopted by livestock operations to address natural resource concerns related to soil erosion, livestock manure and disposal of organic by-products.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☒Tier 2 ☐Tier 3

Program #4:

Program Name: PA DEP Chapter 91 Regulations, Manure Management Plans – Animal Operations (AOs)

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://www.pacode.com/secure/data/025/chapter91/s91.36.html

Brief Description of Program: All agricultural operations that generate or utilize manure in Pennsylvania are required to develop and implement a state mandated Manure Management Plan. These plans only address operations where manure is being used as a nutrient source on crop fields, hayland or pastureland. These plans are developed consistent with state regulations and state technical guidance addressing Nitrogen application consistent with the Land Grant University recommendations. Phosphorus is addressed through limiting manure applications on fields that do not have a current soil test and those fields that have excessive soil test levels. Nutrient management activities reported under this category will be for the implementation of plans developed with the involvement of trained nutrient management professionals in the field. Plans must be updated every three years, or manure applications are restricted to one-year phosphorus removal rates for the crops being grown.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☐Tier 2 ☐Tier 3

Program #5:

Program Name: NRCS 590 – Nutrient Management

Type of Program (select one): State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance):
http://www.nrcs.usda.gov/wps/portal/nrcs/main/pa/technical/ecoscience/nutrient/

Brief Description of Program: Nutrient Management Planning manages the amount, form, placement, timing and application of animal manure, commercial fertilizer, biosolids, and other plant nutrients used in production of agricultural products to maintain soil productivity, achieve optimum yield goals and prevent loss to the environment. These plans are developed consistent with federal NRCS standards.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☒Tier 2 ☐Tier 3

Program #6:

Program Name: Nutrient Balance Sheet (NBS)

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://extension.psu.edu/plants/nutrient-management/act-38

Brief Description of Program: A Nutrient Balance Sheet (NBS) is a crop group based nutrient management plan developed to protect surface and groundwater quality by determining the appropriate rate, method and timing of manure that can be applied to cropland, hayland and pasture, to protect water quality and provide for optimal crop production. All agricultural operations that import manure from a CAO or CAFO in Pennsylvania must apply that manure in compliance with an approved NBS or Nutrient Management Plan developed by a Certified Nutrient Management Specialist. These NBSs are reviewed and approved by the county conservation district or State Conservation Commission at a public meeting. These NBSs only address situations where manure is applied as a nutrient source for the crops being grown including row crops, pastures and haylands. Planned manure application rates are based on Land Grant University recommendations for nitrogen utilization by the crop taking into account all forms of nitrogen provided to the crop including residual nitrogen from past manure and legumes. Phosphorus is addressed through limiting manure applications to phosphorus removal of the crop on fields that do not have a current soil test as well as those fields that have excessive soil test levels. Plans must be updated every three years, or manure applications are restricted to one-year phosphorus removal rates for the crops being grown.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☐Tier 2 ☐Tier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. Available in electronic or paper format	☒	☒	☒	☒	☒	☒
B. Developed cooperatively by trained professional and farmer	☒	☒	☒	☒	☒	☒
C. Expiration date no longer than 3 years after written	☒	☒	☒	☐	☒	☐
D. Uses soil lab analysis from farm samples to inform nutrient application rates	☒	☒	☒	☐	☒	☐
E. Crop yields estimated based on records or soil productivity estimates for whole farm	☒	☒	☒	☒	☒	☒
F. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	☒	☒	☒	☒	☒	☒
G. P fertilizers applied at a rate consistent with contemporary Land Grant University recommendations	☒	☒	☒	☒	☒	☒
H. Nutrient application timing is considered to further reduce N and P losses	☒	☒	☒	☒	☒	☒

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Program 1: Nutrient Management Plans developed for CAFOs are inspected once every year (100%) and plans are valid for a three year period of time.
   Program 2: Nutrient Management Plans developed for CAOs are inspected once every year (100%) and plans are valid for a three year period of time.
   Program 3: CNMPs are inspected by the standards and practices followed by NRCS.

Program 4: Manure Management Plans (MMP) prepared under PA Chapter 91 will be inspected at a rate of 10% annually for those plans reported to the PADEP for crediting to the model. MMPs will be reported for Tier 1 NM crediting only. MMP reporting is planned to begin with 2016 progress reporting once plan data have been collected and verified.
Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
Program 6: All NBSs are assessed annually during the annual CAO or CAFO inspection to assess their continued relevance to addressing the excess manure on the exporting operation, and to determine if any updates to the NBSs are necessary.

2) What Tier 1 elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?
Program 1: Inspections of CAFO operations include review of on-farm nutrient management application records, soil tests, manure tests, crop yield records, maintenance of nutrient related BMPs including barnyards and manure storage facilities, manure application setbacks, manure export records, and any in-field manure stacking practices taking place on the operation or the importing sites.
Program 2: Inspections of CAO operations include review of on-farm nutrient management application records, soil tests, manure tests, crop yield records, maintenance of nutrient related BMPs including barnyards and manure storage facilities, manure application setbacks, manure export records, and any in-field manure stacking practices taking place on the operation or the importing sites.
Program 3: CNMPs are inspected by the standards and practices followed by NRCS.
Program 4: Inspections of MMP operations include review of on-farm nutrient management application records, soil tests if taken, manure tests, crop yield records, maintenance of nutrient related BMPs including barnyards and manure storage facilities, manure application setbacks, and any in-field manure stacking practices taking place on the operation or the importing sites.
Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
Program 6: Annual inspections of CAO/CAFO operations include reviewing the NBS plans associated with the CAO/CAFO, manure test results, and manure export records associated with manure being transferred and applied to the importing site covered under the NBSs.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.

Program 1: Yes. Fields are assessed for crops grown, tillage used, residue remaining, manure type applied (if possible), manure application setbacks used, in-field stacking practices where relevant, and cover crops used.
Program 2: Yes. Fields are assessed for crops grown, tillage used, residue remaining, manure type applied (if possible), manure application setbacks used, in-field stacking practices where relevant, and cover crops used.
Program 3: CNMPs are inspected by the standards and practices followed by NRCS.
Program 4: Yes. Fields are assessed for crops grown, tillage used, residue remaining, manure type applied (if possible), manure application setbacks used, in-field stacking practices where relevant, and cover crops used.
Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
Program 6: In-field assessments take place at the importing sites but not on any set inspection schedule. Generally these in-field assessments on manure importing sites take place when the conservation district or State Conservation Commission has reason for concern that the field application of the manure is not following the approved NBS requirements. This level of concern can be based on the district or Commission's review of the NBSs at the CAO/CAFO site, or manure exporting records at the CAO/CAFO, or review of commercial manure applicator records, or due to local observations of the importing farms or water courses around those farms. Fields are assessed for crops grown, tillage used, crop residue remaining, manure type applied, manure application setbacks used, in-field stacking practices where relevant, and cover crops used.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
Program 1: 95% based on site inspections of CAFOs by DEP and conservation district staff.
Program 2: 99% based on site inspections of CAOs by State Conservation Commission and conservation district staff.
Program 3: Compliance for CNMP implementation is assessed by NRCS.
Program 4: The compliance rate for the implementation of MM plans cannot be assessed at this time since we have yet to begin collecting this information for reporting.
Program 5: Compliance for 590 plan implementation is assessed by NRCS.
Program 6: The compliance rate for the development and maintenance of NBSs is 95% as this is assessed during the annual CAO/CAFO review. The compliance rate based on field level inspections is not able to be determined at this time as there is currently no set inspection frequency for in-field verification of manure application for NBSs.

5) Provide relevant documentation supporting the compliance assessment.
Program 1: Copies of inspection reports are maintained in the CAFO file stored in the DEP regional office.
Program 2: Copies of inspection reports are maintained in the CAO file stored in the county conservation district and/or the State Conservation Commission file.

Program 3: Compliance documentation for CNMP implementation is maintained by NRCS.
Program 4: Copies of inspection reports are maintained at the county conservation district or DEP Regional Office.
Program 5: Compliance documentation for 590 plan implementation is maintained by NRCS.
Program 6: Copies of inspection reports are maintained in the CAO file stored in the county conservation district and/or the State Conservation Commission file or in the CAFO file stored in the DEP regional office.

6) Other information (optional).

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	☒	☒	☒	☒	☒	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	☒	☒	☒	☐	☒	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	☒	☒	☒	☐	☒	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	☒	☒	☒	☒	☒	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	☒	☒	☒	☐	☒	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	☒	☒	☒	☒	☒	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Program 1: Nutrient Management Plans developed for CAFOs are inspected once every year (100%) and plans are valid for a three year period of time.
   Program 2: Nutrient Management Plans developed for CAOs are inspected once every year (100%) and plans are valid for a three year period of time.
   Program 3: CNMPs are inspected by the standards and practices followed by NRCS.
   Program 4: MMPs are not being reported for Tier 2 crediting.
   Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
   Program 6: NBSs are not being reported for Tier 2 crediting.

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
   Program 1: Inspections of CAFO operations include review of on-farm nutrient management application records, soil tests, manure tests, crop yield records, maintenance of nutrient related BMPs including barnyards and manure storage facilities, manure application setbacks, manure export records, and any in-field manure stacking practices taking place on the operation or the importing sites.
   Program 2: Inspections of CAO operations include review of on-farm nutrient management application records, soil tests, manure tests, crop yield records, maintenance of nutrient related BMPs including barnyards and manure storage facilities, manure application setbacks, manure export records, and any in-field manure stacking practices taking place on the operation or the importing sites.
   Program 3: CNMPs are inspected by the standards and practices followed by NRCS.
   Program 4: MMPs are not being reported for Tier 2 crediting.
   Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
   Program 6: NBSs are not being reported for Tier 2 crediting.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   Program 1: Yes. Fields are assessed for crops grown, tillage used, residue remaining, manure type applied (if possible), manure application setbacks used, in-field stacking practices where relevant, and cover crops used.

Program 2: Yes. Fields are assessed for crops grown, tillage used, residue remaining, manure type applied (if possible), manure application setbacks used, in-field stacking practices where relevant, and cover crops used.
Program 3: CNMPs are inspected by the standards and practices followed by NRCS.
Program 4: MMPs are not being reported for Tier 2 crediting.
Program 5: NRCS 590 are inspected by the standards and practices followed by NRCS.
Program 6: NBSs are not being reported for Tier 2 crediting.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
Program 1: 95% based on site inspections of CAFOs by DEP and conservation district staff.
Program 2: 99% based on site inspections of CAOs by State Conservation Commission and conservation district staff.
Program 3: Compliance for CNMP implementation is assessed by NRCS.
Program 4: MMPs are not being reported for Tier 2 crediting.
Program 5: Compliance for 590 plan implementation is assessed by NRCS.
Program 6: NBSs are not being reported for Tier 2 crediting.

5) Provide relevant documentation supporting the compliance assessment.
Program 1: Copies of inspection reports are maintained in the CAFO file stored in the DEP regional office.
Program 2: Copies of inspection reports are maintained in the CAO file stored in the county conservation district and/or the State Conservation Commission file.
Program 3: Compliance documentation for CNMP implementation is maintained by NRCS.
Program 4: MMPs are not being reported for Tier 2 crediting.
Program 5: Compliance documentation for 590 plan implementation is maintained by NRCS.
Program 6: NBSs are not being reported for Tier 2 crediting.

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?
Program 1: 95% based on site inspections of CAFOs by DEP and conservation district staff.
Program 2: 95% based on site inspections of CAOs by State Conservation Commission and conservation district staff.
Program 3: Compliance for CNMP implementation is assessed by NRCS.
Program 4: MMPs are not being reported for Tier 2 crediting.

Program 5: Compliance for 590 plan implementation is assessed by NRCS
Program 6: NBSs are not being reported for Tier 2 crediting.

7) Other information (optional).
[Enter text here].

Section 4: Additional Comments and Information (Optional)

Detailed write ups relating to Pennsylvania's Tier 1 and Tier 2 Nutrient Management Plan approaches are attached. The *On-Site Status Review Report* used for evaluating CAFO and CAO operations' implementation of their Nutrient Management Plan is provided. A copy of Pennsylvania's *Nutrient Management Act Level 2 Plan Approval Data* reporting form (Attachment F) is also attached for reference. The on-site inspection form used for evaluating Agricultural Operations (non-Act 38) is also provided.

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: Virginia

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Program Information

Program #1:

Program Name: Virginia Agricultural Nutrient Management Program

Type of Program (select one): State/Federal Voluntary While Virginia's Nutrient Management Program is voluntary, other Agencies, and regulations require nutrient management plans as a part of their programs, such as animal feeding operations regulated by the Department of Environmental Quality

Reference information for Program (Links to laws, regulations, program guidance): Training program information: http://www.dcr.virginia.gov/soil-and-water/document/nmtraincertregs.pdf

Standards and Criteria: http://www.dcr.virginia.gov/document/standardsandcriteria.pdf

Brief Description of Program: The Virginia Nutrient Management Program has a robust training and certification process that produces professionals recognized in many neighboring states. The State employs a staff of 12 planners in the Chesapeake Bay Watershed, responsible for planning acreage in the state. The majority (90 percent) of the 185,000 acres under the Program that are current and maintained by DCR staff are on animal operations. Private agricultural and urban planners produce nutrient management plans (NMP) that are required to be submitted to the state in an annual report to provide for plans paid for by state agricultural cost-share and for other voluntary programs. Based upon a combination of our implementation surveys (36) conducted thus far and USDA NRCS nutrient management (590) surveys for the 2014-2015 year, a total of 77,617 agricultural acres were checked for verification, and 55,108 were in compliance with Tier II or 65%. The total acreage was nearly 10% of what was recently reported to the CBP Model for 2014 Progress. This survey was independent of planner origin and was not directed at any particular agricultural subsector. In addition, DCR planned about 10,000 acres that employed in-season testing procedures, like Pre-Sidedress Nitrate Testing (PSNT), or Zone Management in fields and qualify for Tier 3. All DCR planned Tier 3 acreage is verified during the planning year. The Soil and Water Conservation Districts do not verify the implementation of NMPs, only that the crops planted match what is indicated for the planned field. DEQ spot checks have a similar procedure for verification. Urban NMPs cover 58,030 acres. 13,100 acres, representing 121 golf courses, are planned in accordance with the *Code of Virginia* that contains a 2017 compliance date provision,. Forty courses have been inspected for compliance. 11,746 acres were Covered in water quality agreements with Lawn Care Operators, most of which are too small to report to VDACS. About 10% of the operators were inspected in the past (from mo/yr to mo/yr). Also, 300 acres by Virginia Master Gardeners Program were planned for homeowners.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☒Tier 3

Program #2:

Program Name: Southern States Precision Agriculture Program

Type of Program (select one): State/Federal Voluntary

Reference information for Program (Links to laws, regulations, program guidance): [Enter text here]

Brief Description of Program: Although DCR does not have an agreement with Southern States to report acreage that they have in their precision agriculture program, they indicate that they have about 117,000 acres, all field verified, that fall into our Tier III category. Due to the lack of a memorandum of agreement with Southern States, DCR will not be reporting this acreage in 2015

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☐Tier 1 ☐Tier 2 ☒Tier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. Available in electronic or paper format	☒	☒	☐	☐	☐	☐
B. Developed cooperatively by trained professional and farmer	☒	☒	☐	☐	☐	☐
C. Expiration date no longer than 3 years after written	☒	☒	☐	☐	☐	☐
D. Uses soil lab analysis from farm samples to inform nutrient application rates	☒	☒	☐	☐	☐	☐
E. Crop yields estimated based on records or soil productivity estimates for whole farm	☒	☒	☐	☐	☐	☐
F. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	☒	☒	☐	☐	☐	☐
G. P fertilizers applied at a rate consistent with contemporary	☒	☒	☐	☐	☐	☐

Land Grant University recommendations						
H. Nutrient application timing is considered to further reduce N and P losses	☒	☐	☐	☐	☐	☐

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below. DCR does not have an agreement with Southern States to collect and report the acreage under their precision ag program. Although they have indicated that they have these verified practices on approximately 117,000 acres, DCR will not be reporting this progress.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   10%

2) What Tier 1 elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?
   In Virginia, all plans are written for Tier 2. Approximately 20% of those farmers cannot meet all of the criteria for Tier 2 Nutrient Management, and therefore fall into Tier 1. Based upon DCR's survey, approximately 9% of the farms with plans do not fall into any category (i.e. they are not following any nutrient management criteria).

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   Verification of those farmers who are in the Tier 1 category have crops verified that match the plan, and the total nutrients applied annually are close to what is stated in the plan.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
   91% based on DCR's verification surveys (see Program Description)

5) Provide relevant documentation supporting the compliance assessment.
   See above

6) Other information (optional).
   [Enter text here].

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	☒	☐	☐	☐	☐	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	☒	☒	☐	☐	☐	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	☒	☒	☐	☐	☐	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	☒	☒	☐	☐	☐	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	☒	☒	☐	☐	☐	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	☒	☒	☐	☐	☐	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the Nutrient Management program, what percentage is inspected annually to assess compliance?
   DCR staff began a compliance audit in July 2015, which at the time of this report had covered about 8,900 acres. Compliance with Tier II was 65%. DCR obtained additional compliance information from USDA-NRCS for the same time frame, and found

compliance to be roughly the same. The total acres surveyed was 77,617 acres, with 58,102 acres meeting Tier II criteria or 65%.
As the verification surveys continue, DCR expects to survey (audit) approximately 75,000 acres annually.

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?

Virginia Nutrient Management Verification Form

Farmer Name or Tracking Number

_____

Number of acres covered by the plan: _____

Instructions: In this initial evaluation the verification will cover the most recent 12 month period.
Answer all of the questions below to evaluate your client's implementation of their Nutrient Management Plan (NMP) and to help us better evaluate the Department of Conservation and Recreation's (DCR's) nutrient management program. Many of the questions below address the specific activities that the farmer must carry out to implement the NMP. Base your answers on an interview with the farmer and review of the farmer's nutrient management records. Attaching copies of farmer nutrient records is not required.

Use the "notes" sections (where provided) to explain any "justifiable deviations*" by the farmer from the NMP or other discrepancies between the plan and the farmer's records.

*A "justifiable deviation" would be a situation where the farmer takes action that is not exactly as specified in the NMP, but which would follow the intent and standards and specifications of the Virginia Nutrient Management Program. Examples would include: applying lower N and P rates than called for in the plan (as long as there is no yield loss as a result), spreading on snow covered fields only after contacting and working with the Department of Environmental Quality (DEQ) to best identify the least risk sites that should be used to prevent a waste storage facility from overtopping, adjusting the nutrients applied to reflect changes in the crops actually planted if different from what was written in the NMP, etc.

If a Certified Nutrient Management Specialist verifies that there is a "justifiable deviation", they must fully document why the deviation is justifiable.

1. Does the NMP cover sheet include a DCR-certified NMP writer's name, certification number, and signature?

a. Yes _____ **No** _____

b. *Notes:*

2. Time period covered by the NMP: Does the farmer have a current NM plan? ***(Based on NMP****; 5 years or less for pasture/hayland; 3 years or less for other cases, one year if the plan was written as an annual plan****.)***

a. **Yes** _____ **No** _____ **1Yr** _____ **3Yr** _____ **5Yr** _____ *b. Notes:*

3. Is the NMP based on up-to-date soil and manure tests for soil & solid/semi-solid manure, not more than three years old?

a. **Yes** _____ **acres** **No** _____ **acres**

b. *Notes:*

4. Are all fields in the NMP receiving nutrient applications under the operational control of the farmer?

a. **Yes** _____ **acres** **No** _____ **acres**

b. *Notes:*

5. If the NMP includes plans for manure applications on fields with Very High soil test P levels *(VA Tech Soil Testing Lab result of 55 ppm or greater),* **are the manure application rates consistent with the phosphorous management provisions contained in the Virginia Nutrient Management Standards and Criteria revised July, 2014)**? (You may answer "YES" if P application rates are at least as stringent as rates based on the P-Index.)

a. **Yes** _____ **acres** **No** _____ **acres** **NA** _____ **acres** *b. Notes:*

6. Are livestock numbers and manure production & and usage numbers in the NMP consistent with client's current operation? (*If the number of animals has changed by 10% or more the plan must have been updated to answer this question affirmatively.)*

a. **Yes** _____ **No**_____

If no, actual = more livestock / manure _____ **or less livestock / manure** _____ **than plan?** *b. Notes:*

7. Does the farmer have records showing they have implemented the NMP? *(No specific format or form is required. Nutrient application rates, dates, methods, etc. should be documented in sufficient detail to reasonably demonstrate that the plan has been followed.)*

a. **Yes** _____ **acres** **No** _____ **acres**

b. *Notes: For the purpose of determining the baseline, farmers who do not have any records, obtain as much information as possible and encourage him to keep records from this point forward.*

8. Do crop rotations match the NMP? (*If the crop rotation does not match the NMP did the farmer adjust his nutrient applications to fit the crop in the field while not over applying nutrients? To accept this deviation, there must be records on the farm which document the changes made.)*

a. Yes _____ acres No _____ acres Justifiable Deviation _____acres (subset of No)

i. Example: Acceptable Corn in plan. Sorghum planted, but nutrients applied at Sorghum rate.

ii. Example NOT acceptable: Corn in plan, nutrients applied at corn rate, sorghum planted or field left fallow.

b. *Notes:*

9. Does the farmer follow all application rate recommendations for nitrogen (N), phosphorous (P), potassium (K), and lime in the NMP for ~~all~~ every area covered by the NMP? (*Note, if the farmer applies nutrients at a rate lower than indicated in the NMP the farmer is still considered to be following the NMP, as long as crop yields do not suffer as a result)* This includes any P-based restrictions or prohibitions on application of manure.

a. Yes _____ acres No _____ acres Justifiable Deviation _____acres (subset of No)

i. Example: Acceptable P Index indicates 1.5 times P on crop. Farmer applies to meet crop removal.

ii. Example: Acceptable Farmer only applies enough K2O to meet crop needs.

iii. Example Not acceptable: No P or K added and crop production is less than productivity ratings. (Plan will have to be modified at lower production rates) *b. Notes:*

10. Does the farmer follow recommendations in the NMP related to timing of inorganic nitrogen (N) fertilizer applications to every field? Specifically, apply no inorganic N fertilizer applications in the absence of an actively growing crop or more than 30 days ahead of planting.

a. Yes _____ acres No _____ acres

b. *Notes:*

11. Does the farmer follow the spreading schedule in the NMP for applied manure? *Less restrictive application timing may be allowed to manage storage constraints on sites that are not environmentally sensitive – see the NMP for details.*

a. Yes _____ acres No _____ acres NA _____ acres *b. Notes:*

12. Does the farmer follow all restrictions in the NMP regarding nutrient applications to frozen or snowcovered ground as stipulated in the approved NMP?

a. Yes _____ No _____

b. *Notes:*

13. On fields listed in the NMP as environmentally sensitive sites, does the farmer follow the more intensive guidelines listed in the NMP for timing of nutrient applications? *(In particular, split all inorganic nitrogen (N) applications to row crops and small grains between at least two applications. Also, follow more restrictive guidelines on timing of any manure spreading i.e., not spread more than 30 days before planting or in absence of a growing crop).If the farm has no environmentally sensitive sites, skip.*

a. Yes _____ acres No _____ acres

b. *Notes:*

14. Does the farmer follow all NMP recommendations for not spreading manure in designated setback areas (near wells, springs, surface water, etc.)?

a. Yes _____ No _____

b. *Notes:*

I confirm that to the best of my knowledge the above information is correct.

Based upon the information collected, I believe that the farmer is implementing the Nutrient Management Plan in accordance with the Virginia NMP standards and criteria to the degree depicted below. DCR will track and report all three categories.

Yes _____ acres No _____ acres Justifiable Deviation _____ acres (a subset of no). Acres reported under justifiable deviation means the farmer has demonstrated the intent of following the nutrient management plan, but is not yet in total compliance with the plan on these acres.

Choose one of the following to reflect the level of nutrient management plan implementation for this operation: (Only acres with yes answers for all the above questions are implemented acres for this calculation)

Fully Implemented (95%+ planned acres implemented) _____

Frequently Implemented (94 – 70% planned acres implemented) _____

Moderately implemented (69 - 50% planned acres implemented) _____

Seldom implemented (49% or less planned acres implemented) _____

Specialist's signature _____ Date _____

DCR Central Office Staff will be providing quality control of the surveys and assessments. Nutrient Management Staff will be asked to meet with selected farmers and Central Office DCR Staff to review a portion (10% minimum) of their surveys.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.

See above

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
Estimate is 65% or 58,106 acres of the 77,000 acres assessed. As the Verification program progresses, DCR anticipates covering about 75,000 acres annually

5) Provide relevant documentation supporting the compliance assessment.
See above

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?
   a. At the time of this report, DCR believes the level of compliance is about 65 percent

7) Other information (optional).
[Enter text here].

Section 3: Tier 3 Program and Compliance Information

3.1: Select all elements of a Tier 3 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Check all that apply.

Tier 3 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 and Tier 2 plan	☒	☐	☐	☐	☐	☐
B. Variable rate applications of N on each field were performed resulting in a net change of N rates for the field	☐	☒	☐	☐	☐	☐
C. An ISNT, CSNT, PSNT, or FSNT was performed resulting in a net change in N rates for the field[3]	☒	☐	☐	☐	☐	☐

[3] Where ISNT refers to the Illinois Soil Nitrogen Test, CSN refers to Corn Stalk Nitrate Test, PSNT refers to Pre-side dress Nitrate test, and FSNT refers to Fall Soil Nitrate test.

3.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 3 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   100% is inspected by DCR Staff As of the time of this report, DCR has about 10,017 acres of Tier III nutrient management to report for 2015. Through the Precision section of the program 100 percent of these acres have been personally verified by DCR staff

2) What Tier 3 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
   Assessment of Fertilizer applications and invoices, PSNT, CSNT results. Farmer records.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   Nutrient Management specialists involved in this part of the program work closely with the farmers participating conducting field assessments of their performance and progress.

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
   100% of the farmers participating in Tier III nutrient management practices (10,017 acres reported) have enough documentation to support same.

5) Provide relevant documentation supporting the compliance assessment.
   See above.

6) Other information (optional).
   [Enter text here].

Section 4: Additional Comments and Information (Optional)

DCR will continue to collect implementation of nutrient management data and track it accordingly. DCR will work with staff and contractors to further educate farmers and work to develop plans that they find easier to follow. DCR believes that one of the major issues with farmers at this time is their lack of understanding on implementing their plan and in record

keeping of practices performed on the farm. DCR has already initiated an effort to assist farmers in record keeping so that the planners and specialists can make further assessment on how to assist them in doing a better job.

December 8, 2015
West Virginia

Chesapeake Bay Program Nutrient Management Phase 5.3.2 Crosswalk: West Virginia

The information provided by jurisdictions in this document should reflect the annual progress reporting time period from July 1, 2014 through June 30, 2015.

Program Information

Program #1:

Program Name: ***West Virginia Department of Agriculture Certified Nutrient Management Planning Program***

Type of Program (select one): **State/Federal Voluntary**

Reference information for Program (Links to laws, regulations, program guidance):
http://apps.sos.wv.gov/adlaw/csr/ruleview.aspx?document=301

http://www.agriculture.wv.gov/divisions/regulatoryandenvironmental/Moorefield/Pages/Nutrient-Management.aspx

Brief Description of Program: The West Virginia Department of Agriculture voluntarily assists landowners and agricultural producers in managing the valuable nutrients found in chemical fertilizers, manures and other additional sources to maintain efficiency and protect West Virginia's valuable water sources. The WVDA has developed a strong certified nutrient management program with proficient planners throughout the state since the adoption of TITLE 61, LEGISLATIVE RULE, WEST VIRGINIA DEPARTMENT OF AGRICULTURE, SERIES 6D, NUTRIENT MANAGEMENT CERTIFICATION in 2012. Planners are held to a strict certification process that can be outlined at the following: http://www.agriculture.wv.gov/divisions/regulatoryandenvironmental/Moorefield/Pages/Nutrient-Management.aspx Certified planners offer direct, voluntary technical assistance to landowners and farmers to encourage proper land application of fertilizers, manures and other amendments for the development of site specific plans. This includes manure sampling for nutrient levels, calibration of manure spreaders, coordination of soil nitrate testing for agricultural crop fields, assessments of potential on-farm risks and best management practice recommendations for the protection of water quality. WVDA supports the agricultural community through a variety of innovative and educational opportunities by partnering with other agricultural resource agencies including: WVU Extension Service, Conservation Districts, West Virginia Conservation Agency, USDA Natural Resources Conservation Services and others. These occur through educational meetings, field days, demonstrations and resource documentation. Currently the program is involved in the promotion of precision agriculture, a strong campaign for the adoption of cover crops including inter-seeding and pre-sidedress nitrate and fall cornstalk nitrate testing. Planners typically are utilizing Nut Man or Manure Manager Software to develop plans. Once plans are developed, they are reviewed field by field with the producer to substantiate end yield goals.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☐Tier 3

Program #2:

Program Name: WV CAFO Program

Type of Program (select one): State Regulatory

Reference information for Program (Links to laws, regulations, program guidance):
http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=23653&Format=PDF

Brief Description of Program: The West Virginia CAFO Program which is a regulatory program administered by WVDEP requires permitted animal feeding operations and unpermitted large animal feeding operations to prepare and maintain a Nutrient Management that meets the specifications detailed in Title 47CSR10. Annual reports are sent to WVDEP annually detailing all nutrient management related activities for the permitted facilities.

What Nutrient Management Tier(s) does this apply to? Select all that apply.

☒Tier 1 ☒Tier 2 ☐Tier 3

Section 1: Tier 1 Program and Compliance Information

1.1: Select all elements of a Tier 1 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 2 acres will be reported, this section must be completed since all elements of Tier 1 must be met in order to move to Tier 2. Check all that apply.

Tier 1 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
I. Available in electronic or paper format	☒	☒	☐	☐	☐	☐
J. Developed cooperatively by trained professional and farmer	☒	☒	☐	☐	☐	☐
K. Expiration date no longer than 3 years after written	☒	☒	☐	☐	☐	☐
L. Uses soil lab analysis from farm samples to inform nutrient application rates	☒	☒	☐	☐	☐	☐
M. Crop yields estimated based on records or soil productivity estimates for whole farm	☒	☒	☐	☐	☐	☐
N. Nutrient applications adhere to contemporary Land Grant University specifications for N rate	☒	☒	☐	☐	☐	☐

O. P fertilizers applied at a rate consistent with contemporary Land Grant University recommendations	☒	☒	☐	☐	☐	☐
P. Nutrient application timing is considered to further reduce N and P losses	☒	☒	☐	☐	☐	☐

1.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under Tier 1 program listed in Section 1. If the state and/or federal program does not have a compliance program or compliance documentation, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   Not available

2) What Tier 1 elements are assessed during the inspection to ensure compliance (For example, on-farm records, soil and manure analyses, land application records, etc.)?
   Not available

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
   Not available

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
   Not available

5) Provide relevant documentation supporting the compliance assessment.
   Not available

6) Other information (optional).
   Not available

Section 2: Tier 2 Program and Compliance Information

2.1: Select all elements of a Tier 2 Nutrient Management Plan that are captured by each Nutrient Management Program listed in Section 1. These represent the required elements outlined in Section 6.1 in the CBP-approved Nutrient Management Panel report. Note: if Tier 3 acres will be reported, this section must be completed since all elements of Tier 2 must be met in order to move to Tier 3. Check all that apply.

Tier 2 Elements of Plan	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6
A. All elements of a Tier 1 plan	☒	☒	☐	☐	☐	☐
B. Uses soil lab analysis from farm samples to inform application rates of nutrients	☒	☒	☐	☐	☐	☐
C. If soil test levels of P warrant P risk assessment (or P-index), one is performed and recommendations to reduce losses are followed for entirety of plan	☒	☒	☐	☐	☐	☐
D. Crop yields estimated based on records or soil productivity estimates for each field using contemporary guidelines from state programs	☒	☒	☐	☐	☐	☐
E. Nutrient applications do not exceed contemporary Land Grant University specifications for N and P (including manure)	☒	☒	☐	☐	☐	☐
F. Fertilizer and manure applications are timed and placed to reduce risk of N and P loss	☒	☒	☐	☐	☐	☐

2.2: Please provide the following information related to compliance assessments for each Nutrient Management Program operating under a Tier 2 program listed in Section 1. If the state does not have a compliance program, enter "not available" for questions below.

1) For the acres covered under the program, what percentage is inspected annually to assess compliance?
   100% of CAFO records are inspected annually

2) What Tier 2 elements are assessed during the inspection to ensure compliance (For example, farm records, soil and manure analyses, land application records, etc.)?
   Farm Records including phosphorus application, soil and manure analyses, land application records and crop yields.

3) Are field assessments conducted to assess whether the nutrient management plan is being followed and fully implemented? If so, describe the scope of these assessments.
Periodically

4) What is your estimated compliance level for this Tier of nutrient management and how did you estimate it (for time period from July 1, 2014 through June 30, 2015)?
100% compliance

5) Provide relevant documentation supporting the compliance assessment.
Available by request from WVDEP

6) What is the level of compliance for acres where soil test levels of P warrant a P risk assessment (or P-index), one is performed, and the recommendations to reduce losses are followed for the entirety of the plan?
100% Compliance

7) Other information (optional).

Not available

Supplemental Information

Appendix A: Letter from Maryland Dept. of Agriculture to Phase 5.3.2 Nutrient Management Panel (July, 2015)

Maryland
Department of Agriculture
Office of Resource Conservation

Agriculture | Maryland's Leading Industry

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Joseph Bartenfelder, Secretary
Mary Ellen Setting, Deputy Secretary

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July 30, 2015

To: Chris Brosch
From: Royden N. Powell, III
Subject: Nutrient Management Panel recommendations

I understand the CBP, Nutrient Management Panel is reviewing nutrient reduction efficiency policies and the discount rate for application to farm operation acreage implementing nutrient management. I am clarifying Maryland's current reporting and how this may be adjusted in the future in accordance with any CBP policy adjustments.

We believe that a default discount rate should not apply when other means are available to determine performance. This is particularly valid in regulatory programs where compliance evaluation is an integral component of the program.

Currently Maryland mandates nutrient management of all agricultural land, however we do not claim a reduction on 100% of acreage subject to the law. Instead, we have voluntarily discounted the acreage by a percent consistent with the outcome of compliance inspections. While attempting to present realistic data related to practice implementation, this discount or reduction is still not the most accurate statistical representation of compliance in Maryland for the following reasons:

- Maryland targets compliance inspections to those individuals with the most risk of problems through complaints, discrepancies in reporting and other operations thought to be high risk. For this reason we are more likely to find compliance issues on a greater percent of these operations.
- Operations are considered out of compliance if their nutrient management plan is not up to date, regardless of whether otherwise following nutrient management requirements. Out-of –date NMPs account for the largest percent of noncompliance issues.
- Actual operations that are out of compliance by virtue of over-applying or misapplying nutrients represent less than 10% of those sited for noncompliance since we have been keeping these records (9 years).

We have concerns that a discount rate will be set using faulty criteria. For the above reasons, we are concerned that Maryland's compliance rate which includes an inherent bias, would be used for the region. Alternatively, we do not believe it is reasonable to consider use of CEAP report outcomes of 30% adhering to NMP, because the CEAP report does reflect performance or outcomes at the State scale.

Practice or program performance should be reportable in a construct that allows for or considers respective jurisdictional variations. Respective states have widely ranging set of protocols for tracking program and practice performance. To the extent a jurisdiction has capacity to track and report more refined information, such accuracy should be provided for in modeled calculations.

Finally, if the Chesapeake Bay Model begins applying a percent reduction to reported nutrient management acres by default, Maryland will report 100% of its acres. Otherwise. we would be subject to the model reduction on top of the discount we already voluntarily apply prior to reporting acreage.

If you would like to discuss any of these points, I am available by email or phone: Royden.Powell @maryland.gov or 410-841-5865.

c: Mark Dubin, Emma Giese , John Rhoderick, Jason Keppler

Appendix B: Tier 1 Nutrient Management Plans for Pennsylvania

Tier 1 Nutrient Management Plans for PA:

Tier 1 definition:
Crop Group Nutrient Application Management (CGNAM): *Documentation exists for manure and/or fertilizer application management activities in accordance with basic LGU recommendations. This documentation supports farm-specific efforts to maximize growth by application of N and P with respect to proper nutrient source, rate, timing and placement for optimum crop growth consistent with LGU recommendations. Crop group nutrient application management is defined operationally by the documentation of and adherence to the following four planning components: (1) standard, realistic farm-wide yield goals; (2) credit for N sources (soil, sod, past manure and current-year applications); (3) P application rates consistent with LGU recommendations based on soil tests for fields without manure; and (4) N-based application rates consistent with LGU recommendations for fields receiving manure.*

Manure Management Plans

Overview

Pennsylvania's water-quality management regulations (25 Pa. Code § 91.36) require the development and implementation of Manure Management Plans (MMPs) for all farms that generate or use manure in Pennsylvania. Farms implementing MMPs are those that are using manure as one of their nutrient sources for crop production. In addition to addressing the land application of manure, process waste water and commercial fertilizers, these MMPs also address animal manure storage facilities, barnyards, and pastures.

Land Application of Nutrients

Land application practices outlined in MMPs address the source, rate, timing and placement of nutrients for crop production and environmental protection. State standards for MMPs are guided by DEP regulations in Chapter 91 http://www.pacode.com/secure/data/025/chapter91/chap91toc.html and the DEP Manure Management Manual (MMM). The MMM contains current PA standards for development and implementation of a MMP to manage nutrients for water quality protection and optimum realistic crop growth.

MMPs are written to provide crop-group based direction for the application of all nutrient sources. These plans provide manure and fertilizer application requirements that ensure the optimum use of nutrients (N and P) and minimize loss of these nutrients while maintaining realistic yields for the given farm, consistent with Land Grant University (LGU) recommendations.

All nutrient sources used on the crop fields covered under the MMP are included in the plan including residual nitrogen, commercial fertilizers and manure. Nutrient application rates in these plans are based on realistic crop yields for the planned farm as well as PA average manure analysis for the given manure type based on LGU guidance. The manure application rates are based on nitrogen need for the crop, with a limitation to the rate based on phosphorus utilization by the crop type and actual or assumed phosphorus reserves in the soil.

Timing of manure application is factored into the application rates consistent with LGU recommendations, and winter and fall spreading restrictions are included in these plans in order to reduce nutrient runoff to nearby water bodies. Manure application placement is addressed with required manure application setbacks as well as manure incorporation factored into the plan consistent with LGU recommendations.

In the development of MMPs, farmers use their farm specific data to direct the management practices included in the plan. On-farm crop yield data is used to determine nutrient needs of the planned crops. Soil tests are taken to determine manure application setback distances and to determine planned manure application rates. If soil tests taken within the past three years are not available for the farm, the plan is written to require the maximum manure application setbacks and manure application rates are reduced to single-year phosphorus crop removal rates.

All fields addressed under these MMPs receive manure as a nutrient source so application rates are primarily based on nitrogen need for the crop based on a realistic yield for the given fields, consistent with LGU recommendations. These plans also include a phosphorus assessment based on soil test results, and where those are not available within the past 3 years, then manure application rates are limited to a single-year phosphorus crop removal. Any supplemental nitrogen needs after the manure is applied are met with chemical fertilizer consistent with LGU recommendations.

MMPs can be developed by a trained agricultural consultant or they can be developed by the farmer alone. Only those plans developed by a trained agricultural consultant, those plans that were developed by the farmer with the oversight of the trained agricultural consultant, or those plans verified and confirmed as accurate by a trained agricultural consultant, will be supplied for inclusion in the Chesapeake Bay model.

In addition to developing a written plan, the farmer must also complete and maintain records to demonstrate compliance with the MMP. Written records must be maintained on-site as part of the MMP to demonstrate that plan requirements are being met. Records relating to land application of nutrients include date applied, field identification, field acreage, manure group, crop group, application rates, crop yield goals, and actual yield harvested.

Nutrient Balance Sheets

Overview

Pennsylvania's Nutrient Management Act regulations require the development and implementation of a Nutrient Balance Sheet (NBS) or approved Nutrient Management Plan (NMP) for all farm fields receiving manure from a NMA regulated Concentrated Animal Operation (CAO). The Pennsylvania NPDES program regulating Concentrated Animal Feeding Operations (CAFOs) also requires NBS or NMPs to be developed and implemented to direct the utilization of manure exported from CAFOs. NMPs are listed under the Tier 2 justification document, NBSs are listed here to be included as plans meeting the Tier 1 criteria.

NBSs are crop group plans developed by trained and certified Nutrient Management Specialists (NMSs) and approved through the State Conservation Commission's (SCC's) plan approval process.

A NBS, as defined within the NMA regulations is "*A crop management BMP developed to protect surface and groundwater quality by providing the calculations for determining the appropriate rate, method and timing of manure that can be applied to cropland, hayland and pasture, to meet the purposes of this subchapter.*"

Land Application of Nutrients

Land application practices outlined in NBSs address the source, rate, timing and placement of nutrients for crop production and environmental protection. State standards for NBSs are guided by Pennsylvania's Nutrient Management Act regulations and the SCC's *Pennsylvania Act 38 Nutrient Management Program Technical Manual*. These regulations and the associated technical manual contain current PA requirements for development and implementation of a NBS to manage nutrients for water quality protection and optimum realistic crop growth.

NBSs are written to provide crop-group based management requirements for the application of all nutrient sources covered under the plan. These plans provide manure and fertilizer application requirements that ensure the optimum use of nutrients (N, P, and K) and minimize loss of these nutrients while maintaining realistic yields for the given farm, consistent with Land Grant University (LGU) recommendations.

All nutrient sources used on the crop fields covered under the NBSs are included in the plan including residual nitrogen, fertilizers and manure. Nutrient application rates in these plans are developed considering realistic crop yields for the planned farm as well as actual manure nutrient content levels based on farm specific manure analysis for the manure applied. The nutrient application rates are based on the nitrogen or phosphorus need for the crop. For fields that have soil tests within the past three years, and those with soil tests showing P soil levels less than 200 ppm, the manure application rates can be N balanced. For fields with no recent soil test, or

where the soil test results are greater than 200 ppm, the manure application rates are P removal or Phosphorus-Index (P-Index) based.

Timing of manure application is factored into the application rates consistent with LGU recommendations. A winter application matrix is required to be developed for fields proposed to receive manure in the winter. Fields that have a poor winter application matrix rating are not authorized for manure application at that time of year.

Manure application placement is addressed with required manure application setbacks as well as manure incorporation factored into the application rates included in the plan consistent with LGU recommendations.

In the development of NBSs, farmers use their farm specific data to direct the management practices included in the plan. On-farm crop yield data is used to determine nutrient needs of the planned crops. Soil tests are taken to determine manure application setback distances and to determine planned manure application rates. If soil tests taken within the past three years are not available for the farm, the plan is written to require either manure application rates reduced to single-year phosphorus crop removal rates or a P-Index is run on the relevant fields to determine application rates consistent with LGU recommendations.

All fields addressed under these NBSs receive manure as a nutrient source so application rates are primarily based on nitrogen need for the crop based on a realistic yield for the given fields, consistent with LGU recommendations. These plans also include a phosphorus assessment based on soil test results, and where those are not available within the past 3 years, then manure application rates are limited to a single-year phosphorus crop removal or rates are based on a completed P-Index. Any supplementary nitrogen needs after the manure is applied, are met with chemical fertilizer consistent with LGU recommendations.

All NBSs are developed by trained and certified NMSs and are approved through the SCC's NMP approval process requiring public access and public action on the plan.

NBS implementation is assessed annually as part of the CAO or CAFO farm inspection. These NBS implementation inspections can be on-site at the manure importing farm, or can be a review of manure export records done at the exporting CAO or CAFO site.

Appendix C: Tier 2 Nutrient Management Plans for Pennsylvania

Tier 2 Nutrient Management Plans for PA:

Tier 2 definition:

Field Level Nutrient Application Management (FLNAM): *Implementation of formal NM planning is documented and supported with records demonstrating efficient use of nutrients for both crop production and environmental management. Field level nutrient application management is defined operationally as the presence of plan documentation that nutrient applications are based on a combination of: (1) standard yield goals per soil type, or historic yields within field management units; (2) credit for N sources (soil, sod, past manure, and current-year applications); (3) fields assessed for P loss risk with a LGU P risk assessment tool (Phosphorus Site Index [PSI]) and P applications are consistent with the PSI; and (4) other conservation tools necessary for proper nutrient source, rate, timing and placement to improve nutrient use efficiency.*

Indicators demonstrating implementation of this practice includes the presence of a plan that addresses the four elements described above, plus practices such as but not limited to best N application timing, manure incorporation where appropriate, PSI application, and manure application setbacks. Credit for this practice is based on how the plan integrates such practices to provide an overall reduction in N and P losses, whereas elements of N loss reduction can be implemented and credited separately and distinctly from P in the Chesapeake Bay Program's Watershed Model. Therefore three reporting classes are recommended: Tier 2 N, Tier 2 P, and Tier 2 N&P.

Nutrient Management Plans

Overview

Pennsylvania's Nutrient Management Act regulations require the development and implementation of an approved Nutrient Management Plan (NMP) for all farms that fall under the Concentrated Animal Operation (CAO) definition. In addition, Pennsylvania's NPDES program regulating Concentrated Animal Feeding Operations (CAFOs) also requires NMPs to be developed and implemented addressing all acres under the CAFO operator's control.

Pennsylvania's NMP format and requirements were developed through a public process to ensure that the criteria included in this planning standard provides for the protection of surface and groundwater quality, while allowing the farmer to obtain their optimum crop yield. The criteria included in the NMPs were developed in consultation with The Pennsylvania State University to be consistent with Land Grant University (LGU) recommendations.

NMPs are field level plans developed by trained and certified Nutrient Management Specialists (NMSs) and approved through the State Conservation Commission's (SCC's) rigorous and

public plan approval process. NMPs are publicly available documents available to anyone with an interest in seeing the plan. NMPs address the land application of manure, process waste water and commercial fertilizers, as well as ensuring proper management of animal manure storage facilities, barnyards, pastures, and manure exported from the site.

Land Application of Nutrients

Land application practices outlined in NMPs address the source, rate, timing and placement of nutrients for crop production and environmental protection. State standards for NMPs are guided by Pennsylvania's Nutrient Management Act regulations and the SCC's *Pennsylvania Act 38 Nutrient Management Program Technical Manual*. These regulations and the associated technical manual contain current PA requirements for development and implementation of a NMP to manage nutrients for water quality protection and optimum realistic crop growth.

NMPs are written to provide field level management for the application of all nutrient sources used on the farming operation. These plans outline manure and fertilizer application requirements that ensure the optimum use of nutrients (N, P, and K) and minimize loss of N and P while maintaining realistic yields for the given farm, consistent with LGU recommendations.

All nutrient sources used on the crop fields covered under the NMP are included in the plan including residual nitrogen, fertilizers, biosolids, compost, and manure. Nutrient application rates in these plans are developed considering realistic crop yields for the planned farm as well as actual manure nutrient content levels based on farm specific manure analysis for the manure applied.

The nutrient application rates take into consideration both nitrogen and phosphorus. In no instances can manure and other nutrient sources be applied in excess of the planned crop's nitrogen need, consistent with LGU recommendations. Phosphorus is assessed and managed using the LGU developed Phosphorus-Index (P-Index) and all phosphorus applications are made consistent with the P-Index. All fields planned under this planning standard are required to address both the N and P planning elements.

All fields included under this planning standard are required to soil test for phosphorus, potassium and pH at least once every 3 years. These soil test phosphorus results are used within the P-Index tool to help determine manure and inorganic fertilizer application rates for all fields planned. The pH and potassium results are used to inform the planner and farmer in necessary management efforts to allow for maximum crop yield on the planned acres.

Timing of manure application is factored into the application rates consistent with LGU recommendations. In addition, a winter application matrix, developed in consultation with the LGU, is required to be developed for any fields covered under a NMP that are proposed to

receive manure in the winter. Only manure applications on fields that are determined to be acceptable for winter application through the winter application matrix are authorized for winter application. Any authorized winter applications of manure on fields covered under a NMP also need to adhere to additional winter manure application rate limitations established under the state's nutrient management act, further restricting the amount of manure that is authorized to be applied in the winter, below the amount allowed for in the LGU recommendations. Also fields proposed for fall manure application are required to meet certain manure incorporation, soil cover or cover crop requirements in order to be authorized for fall manure application.

Manure application placement is addressed with required manure application setbacks as well as manure incorporation factored into the application rates included in the plan consistent with LGU recommendations. The P-Index tool directs farmers to address proper placement criteria for manure application or these application rates could be reduced or eliminated.

In the development of NMPs, farmers use their farm specific data to direct the management practices included in the plan. On-farm crop yield data is used to determine nutrient needs of the planned crops. Crop yield data is reassessed every 3 years for the farm and yield goals are revised where actual yields consistently fall short of prior goals. Soil tests are taken every 3 years for phosphorus, potassium and pH and that data is used to determine planned nutrient application rates.

In order to have an acceptable NMP, the planner must demonstrate that the farmer is implementing a conservation plan meeting NRCS standards, or an Agricultural Erosion and Sediment Control plan meeting DEP standards. These additional required plan components ensure that runoff controls are being implemented on all fields where the NMP will be implemented.

All NMPs are developed by trained and certified NMSs and are approved through the SCC's NMP approval process requiring public access and public action on the plan.

NMP implementation is assessed annually as part of the CAO or CAFO annual farm inspection. These NMP implementation inspections include written record reviews and in the field assessments.

NRCS 590 and CNMP plans

Overview

The USDA Natural Resources Conservation Service (NRCS) supports the development and implementation of 590 standard Nutrient Management Plans (590NMPs) and Comprehensive Nutrient Management Plans (CNMPs). These two planning standards in Pennsylvania meet the

NRCS national standard for these practices, but are formatted in a way that makes them compatible with the state's Nutrient Management Act requirements.

590 NMPs are developed with a focus on providing direction relating to the land application of manure and other nutrient sources on lands covered under this planning standard. The definition of a 590 plan in the planning standard states: *Managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments*.

The CNMPs have a more inclusive planning requirement which includes not only the 590 NMP criteria, but also includes barnyard runoff concerns and in-field erosion control planning. The development of a CNMP requires a comprehensive engineering and conservation planning resource assessment of current site conditions. Management options and structural alternatives are developed to address resource concerns identified during the CNMP assessment.

Land Application of Nutrients

The 590NMP is developed to be consistent with the state's nutrient management planning process which includes the criteria established under Pennsylvania's Nutrient Management Act and the technical manual developed under that program, which are all consistent with the LGU recommendations. This consistency relates to the application rates of nutrients and nutrient sources included in these plans, as well as the application setbacks and other application restrictions include in the state's regulatory program. NRCS directs certified planners developing 590NMPs to use the state's NMP planning forms and guidance when developing 590NMPs.

The CNMP follows the exact same nutrient management planning criteria as the 590NMP above.

NRCS requires review of CNMP/NMP plans. This review activity requires the submission of all relevant data and information so that the plan reviewer can determine if all criteria are met. A copy of the most recent reviewed 590NMP or CNMP plan is required to be maintained at the farm.

Appendix D: Pennsylvania Agricultural Operation Inspection Report

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CONSERVATION AND RESTORATION

AGRICULTURAL OPERATION INSPECTION REPORT

TYPE OF INSPECTION:	OPERATION NAME:	COUNTY: MUNCIPALITY:	eFACTS INSP. ID:

ADDRESS OR LOCATION OF OPERATION OR POLLUTION INCIDENT:	ENTRY DATE/TIME: EXIT DATE/TIME:
NAME AND ADDRESS OF RESPONSIBLE PARTY:	HOME PHONE: CELL:
NAME AND ADDRESS OF LANDOWNER IF DIFFERENT THAN ABOVE:	
PERSONS PRESENT DURING THE INSPECTION:	
WEATHER CONDITIONS:	

OBSERVATIONS AND INSPECTION NARRATIVE

VIOLATIONS: ☐ **Yes** ☐ **No** (See Page _____) **REQUESTED CORRECTIVE ACTIONS:** ☐ **Yes** ☐ **No** (See Page _____)

COMPLIANCE ASSISTANCE PROVIDED: ☐ Yes ☐ No	PHOTOS TAKEN: ☐ Yes ☐ No	SAMPLES TAKEN: ☐ Yes ☐ No

SAMPLE NUMBER	LOCATION	FIELD MEASUREMENTS

INSPECTOR'S NAME:	INSPECTOR'S SIGNATURE:	TITLE:	DATE: TELEPHONE:
NAME OF PERSON INTERVIEWED:	SIGNATURE OF PERSON INTERVIEWED:		DATE: TELEPHONE:

This document is official notification that a representative of the Department of Environmental Protection inspected the above operation or incident. The findings are shown above and on any attached pages. Any violations identified during the inspection are indicated. Violations may also be identified after the examination of sample results or after further review of the inspection details. If this is the case, notification will be forthcoming.

☐ White - Regional ☐ Yellow - Responsible Party ☐ Pink - Inspector

OPERATION NAME:	COUNTY:	MUNICIPALITY:	DATE:

OPERATIONAL INFORMATION

1. **Animal Type (check):** ☐ None ☐ Swine ☐ Dairy ☐ Poultry ☐ Beef ☐ Horses ☐ Other (describe)

2. **Operation Acreage:** **Acreage available for manure application:** ☐ Owned _____ ☐ Rented _____

3. **AEUs:** **AEUs/ACRE:** ☐ Not Determined

4. **Are there reported or observed Environmentally Sensitive Areas (ESA):**
   Drinking water wells on the farm or adjacent property? ☐ Yes ☐ No
   Open sinkholes on the operation? ☐ Yes ☐ No
   Are there other ESAs such as streams, ponds, wetlands, agricultural drainage system inlets, non-vegetated Concentrated Flow Areas or others? ☐ Yes ☐ No ☐ Not Fully Observed
   Describe:

5. **Is manure mechanically applied?** ☐ Yes ☐ No
   Are proper setbacks being employed from surface waters or ESAs?
   ☐ Yes ☐ No ☐ Not Determined

6. **Do animals have unrestricted access to surface waters?**
   ☐ Yes ☐ No **If yes, where?**

7. **Are there any Animal Heavy Use Areas (AHUAs)/Animal Concentration Areas (ACAs) on the operation?** ☐ Yes ☐ No
   If yes, where?

8. **Is there polluted runoff or the potential of runoff from the AHUA/ACAs to waters of the Commonwealth?**
   ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined
   If yes, where?

9. **Is there Manure Storage?** ☐ None
   a. ☐ Earthen Pond **b.** ☐ HDPE Lined Pond **c.** ☐ Outdoor Concrete Tank **d.** ☐ Aboveground Steel Tank
   e. ☐ Under Barn Liquid/Solid (circle one) **f.** ☐ Field Stacking **g.** ☐ Storage Pad **h.** ☐ Other _____

10. **Are there any observed structural, operational, or maintenance deficiencies with the manure storage or transfer facilities that should be addressed?** ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined
    Describe:

11. **If a liquid or semi-solid manure storage facility on the operation was constructed on or after January 29, 2000, is there a copy of the PE Certification at the operation?** ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined
    Describe:

12. **Is there adequate Liquid/Semisolid Manure Storage Freeboard Observed?** ☐ Yes ☐ No
    Describe:

13. **Are silage and feedstock adequately stored to prevent a discharge or danger of pollution?** ☐ Yes ☐ No ☐ Not Determined
    Describe:

14. **Is milk house waste or other agricultural process wastewater adequately managed to prevent a danger of pollution?**
    ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined **Describe:**

15. **If manure is applied, does the operation have a written Manure Management Plan (MMP) or other DEP-approved alternative plan format, Nutrient Management Plan (NMP) or Comprehensive Nutrient Management Plan (CNMP), or a permit or approval for manure application from DEP?**
    ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined **Plan Date:** _____
    Does the plan need to be updated? ☐ Yes ☐ No ☐ Not Determined
    Are additional Best Management Practices needed at this time? ☐ Yes ☐ No ☐ Not Determined

16. **What type of tillage is used at the operation? (check all that apply)**
    ☐ None ☐ Deep Tillage (chisel plow, mold board, etc.) ☐ Minimal Till (Mulch till, Strip till) ☐ No-Till ☐ Unknown

17. **Does the operation have an Agricultural Erosion and Sediment Control Plan (Ag E&S Plan) or Conservation Plan?**
    ☐ Yes ☐ No ☐ Not Applicable ☐ Not Determined **Plan Date:** _____
    Does the plan need to be updated? ☐ Yes ☐ No ☐ Not Determined
    Are additional Best Management Practices needed at this time? ☐ Yes ☐ No ☐ Not Determined

☐ White - Regional ☐ Yellow - Responsible Party ☐ Pink - Inspector

OPERATION NAME:	COUNTY:	MUNICIPALITY:	DATE:

VIOLATIONS NOTED

1. ☐ **UNAUTHORIZED DISCHARGE: (Check all that apply)**
   a. ☐ **AG OPERATION**: Failure to prevent a discharge of pollutants to waters of the Commonwealth without a permit or as permitted by regulation in accordance with 25 Pa. Code §91.36(c)(1).
   b. ☐ **MANURE OR IW**: The unauthorized discharge of manure or industrial waste into the waters of the Commonwealth in accordance with Section 201 of The Clean Streams Law 35 P.S. §691.201, or Section 301 of the Clean Streams Law 25 P.S. §691.301, respectively (circle Section 201 or 301, or both).
   c. ☐ **POLLUTION**: The unlawful discharge of pollutants to waters of the Commonwealth resulting in pollution in accordance with Section 401 of The Clean Stream Law 35 P.S. §691.401.
2. ☐ **NOTIFICATION:** Failure to immediately notify the Department by telephone of the location and nature of the danger of an accident, activity, or incident that results in or creates a danger of pollution of waters of the Commonwealth or damage to property and, if reasonably possible to do so, to notify downstream users of the water in accordance with 25 Pa. Code §91.33 (a).
3. ☐ **IMMEDIATE ACTION:** Failure to take immediate steps to prevent injury to property and downstream users of the waters of the Commonwealth from pollution or danger of pollution and, within 15 days from the incident, remove from the ground and from the affected waters, to the extent required by Title 25 of the Pa. Code, the residual substance in accordance with 25 Pa. Code §91.33(b).
4. ☐ **PREVENTION:** Failure to take necessary measures to prevent pollutants from directly or indirectly reaching waters of the Commonwealth in accordance with 25 Pa. Code §91.34(a).
5. ☐ **POTENTIAL POLLUTION:** Site conditions present a danger of pollution to the waters of the Commonwealth in accordance with Section 402 of The Clean Stream Law 35 P.S. §691.402(b).
6. ☐ **MANURE STORAGE FACILITY: (Check all that apply)**
   a. ☐ **DESIGN:** Failure to design, construct, operate, and maintain a manure storage facility (MSF) in accordance with current engineering and agronomic practices to ensure that the facility is structurally sound, watertight, and located and sized to prevent pollution of surface and groundwater or to obtain a Water Quality Management Permit or approval from the Department for the manure storage facility in accordance with 25 Pa. Code §91.36(a)(1).
   b. ☐ **CERTIFICATION/PERMIT:** Failure to obtain a professional engineer's certification or a Water Quality Management Permit for a liquid or semisolid manure storage facility constructed after January 29, 2000 in accordance with 25 Pa. Code 25 §91.36(a)(2).
   c. ☐ **FREEBOARD:** Failure to maintain the freeboard for a liquid or semi-solid manure storage facility in accordance with the requirements of a permit or 25 Pa. Code §91.36(a)(6).
7. ☐ **MANURE MANAGEMENT PLAN AND/OR BMPS:** Failure to have, develop and/or implement a plan to manage nutrients (Manure Management Plan, Nutrient Management Plan or CNMP) for water quality protection according to current standards such as those found in the Manure Management Manual or to obtain approval or permit from the Department for the land application of animal manure or process waste water in accordance with 25 Pa. Code §91.36(b)(1)(i).
8. ☐ **AG EROSION AND SEDIMENT CONTROL**
   a. ☐ **PLAN:** Failure to develop a written Erosion and Sediment Control Plan for agricultural plowing or tilling activities or animal heavy use areas in accordance with 25 Pa. Code §102.4(a)(2).
   b. ☐ **AVAILABLE:** Failure to have available for review a written Erosion and Sediment Control Plan for agricultural plowing or tilling activities or animal heavy use areas in accordance with 25 Pa. Code §102.4(a)(8).
   c. ☐ **BMPS:** Failure to implement or maintain erosion and sediment control Best Management Practices to minimize the potential for accelerated erosion and sedimentation in accordance with 25 Pa. Code §102.4(a)(1).
9. ☐ **OTHER:**

_____

_____

_____

_____

☐ White - Regional ☐ Yellow - Responsible Party ☐ Pink - Inspector

OPERATION NAME:	COUNTY:	MUNICIPALITY:	DATE:

CORRECTIVE ACTIONS REQUESTED

A. ☐ **UNAUTHORIZED DISCHARGE:** Take action to abate any unauthorized discharge to waters of the Commonwealth.

B. ☐ **PREVENT POLLUTION:** Take action to prevent pollution or a danger of pollution to downstream users or waters of the Commonwealth.

C. ☐ **IMPLEMENT BMPS:** Implement interim and/or permanent Best Management Practices by _____, to prevent pollution in accordance with 25 Pa. Code Section ☐ 91.34(a), ☐ 91.36(a), ☐ 91.36(b), ☐ 102.4(a). Notify the inspector when the BMP(s) are implemented.

This request applies to: _____

_____

_____

_____

D. ☐ **MANURE STORAGE FACILITY - CERTIFICATION:** Obtain a Professional Engineer Certification under 25 Pa. Code 91.36(a) for the farm Manure Storage Facility by _____. If the facility cannot be certified to meet current PA Technical Guide standards, then notify the inspector on or before this date.

E. ☐ **MANURE STORAGE FACILITY - FREEBOARD:** At a minimum, restore ☐ 6 inches or ☐ 12 inches of freeboard to the following facility _____.

F. ☐ **MANURE MANAGEMENT PLAN:** Within _____ months of this inspection, update/develop (circle one) a written Manure Management Plan, Nutrient Management Plan or CNMP in accordance with 25 Pa. Code, Section 91.36(b). The plan must be maintained and implemented at the operation and made available upon request by the Department. Notify the inspector when the plan is complete.

G. ☐ **MANURE MANAGEMENT PLAN & BMP SCHEDULE:** Update/develop (circle one) and **SUBMIT** a written Manure Management Plan, Nutrient Management Plan or CNMP in accordance with 25 Pa. Code, Section 91.36(b), by _____, unless the Department otherwise extends the time frame in writing. In order to be considered adequate, the plan must include appropriate Best Management Practices and an Implementation Schedule to provide permanent solutions to abate the water quality concerns identified on page(s) _____ of this report. The plan must be maintained and implemented at the operation and made available upon request by the Department.

H. ☐ **AG EROSION AND SEDIMENT CONTROL PLAN:** Within _____ months of this inspection update/develop (circle one) a written Agricultural Erosion and Sediment Control Plan (Ag E&S Plan) for agricultural plowing and tilling and/or operation of an animal heavy use area including an implementation schedule in accordance with 25 Pa. Code, Section 102.4(a). The plan must be maintained at the operation and made available upon request by the Department. Notify the inspector when the plan is complete.

I. ☐ **AG EROSION AND SEDIMENT CONTROL PLAN & BMP SCHEDULE:** Update/develop (circle one) and **SUBMIT** a written Agricultural Erosion and Sediment Control Plan for agricultural plowing and tilling and/or operation of an animal heavy use area in accordance with 25 Pa. Code, Section 102.4(a), by _____, unless the Department otherwise extends the time frame in writing. In order to be considered adequate, the plan must include appropriate Best Management Practices and an implementation schedule to provide permanent solutions to abate the water quality concerns identified on page(s) _____ of this report. The plan must be maintained and implemented at the operation and made available upon request by the Department.

J. ☐ **OTHER:**

_____

_____

_____

_____

The requested plan(s) or response should be submitted to _____

at the following address: _____

If you would like a list of private consultants working in your area, or to inquire about their capacity to assist you with plans, please contact the _____ County Conservation District at _____

☐ White - Regional ☐ Yellow - Responsible Party ☐ Pink - Inspector

OPERATION NAME:	COUNTY:	MUNICIPALITY:	DATE:

ADDITIONAL OBSERVATIONS AND INSPECTION NARRATIVE

☐ White - Regional ☐ Yellow - Responsible Party ☐ Pink - Inspector

Appendix E: Pennsylvania Nutrient Management Act Level 2 Plan Approval Data

Mail To: Michael Thomas
Bureau of Conservation and Restoration
P.O. Box 8555
Harrisburg, Pa 17105-8555

Attachment F

NUTRIENT MANAGEMENT ACT
LEVEL 2 PLAN APPROVAL DATA

(Complete a separate page for each approved plan)

I. **Operation Name** _____ County Code _____

Approval Date _____ Date Plan Withdrawn from Program (If applicable)_____

Original Plan or Revision (P/R) _____

CAFO Site Name (If applicable) _____ CAO (Yes/No) _____

Watershed Code (No. & Letter) _____ Special Prot. Waters (**HQ/EV/None**) _____

Plan Author _____ Author's NMS Cert. Number _____
Plan Reviewer _____ Reviewer's Cert. Number_____

II. **Acreage Table**

Acreage	Owned	Rented
Total Plan Acres		
Nutrient Application Acres		

III. **Animal Manure Table**

Animal Type	AEUs	Annual Manure Generated (Tons / Gallons)	Manure Test Date	Percent Solids	Percent Moisture	Total N	Ammonia N	Total P	Water soluble P (if available)	Total K

Mail To: Michael Thomas
Bureau of Conservation and Restoration
P.O. Box 8555
Harrisburg, Pa 17105-8555

IV. Imported Manure:

Animal Type	Tons or Gallons /Yr. Imported

V. Exported Manure:

NBS Operation or Broker Name	Acres	Manure Type	Tons to Operation or Broker.	Gallons to Operation or Broker.	Receiving County	Receiving State	Out of CB watershed (yes / no)

VI. Manure Storage Volume Unit 1: _____ cu. ft. or _____ gallons Unit 2: _____ cu. ft. or _____ gallons

VII. BMP Implementation Table

Practice Code	Units	Estimate Acres	Impl. Quarter	Impl. Year

Mail To: Michael Thomas
Bureau of Conservation and Restoration
P.O. Box 8555
Harrisburg, Pa 17105-8555

PLAN APPROVAL DATA DIRECTIONS

I. Plan Approval Data (for each approved plan) Complete a separate Level 2 Plan Approval Data sheet for each operation that receives plan approval or withdraws from the program. Plan withdrawals would include when the operator officially notifies the district that they no longer wish to participate or whenever the district has provided notice to the operator that the plan has expired and that they are official no longer participants in the program, Provide a full formal name for the operation (e.g. full first names for people and include a middle initial, or the business name if that is the case, and the date the plan received official approval. For when a plan is withdrawn, i.e. it is not revised, fill in the "Date Plan Withdrawn" on to a copy of the original and return a sheet with the withdrawn date with your quarterly report packet. Provide the county code for the operation (i.e. Adams = 01 ... York = 67). Include the CAFO Site Name, if that is applicable. State whether the operation is a CAO, and whether the operation is under an agreement with the Chesapeake Bay Program. Fill in the Watershed Code including the number and letter (see the coded state map in Administrative Manual Appendix), and whether the operation is in a special protection watershed. Fill in the plan author and certification number and plan reviewer and certification number.

II. List the owned and rented acres that are included in the plan. Nutrient Application Acres includes pasture and crop acres. Total Plan Acres would also include farm buildings, manure storage facilities, and animal concentration areas along with the Nutrient Application Acres.

III. Fill in the animal manure information that includes general animal type, AEUs, total manure generated per year and the results from the manure analysis tests, which are part of the approved NMP or amendment. This information will be taken from Appendix 3 of the approved NMP or amendment.

IV. List imported manure by animal type and tons per year imported.

V. List exported manure by NBS or broker name, acres applied to (if known), manure type, tons or gallons exported, receiving county (in or out of state, if known), receiving state, and if it is sent out of the Chesapeake Bay Watershed (yes or no).

VI. Provide the designed manure storage capacity in cubic feet or gallons.

VII. Provide BMP implementation information using the practice codes listed in NRCS Soil and Water Conservation Technical Guide. Provide the number of units planned to be installed and make an estimate of the number of acres to be treated by the installed practice. Fill in the planned quarter and year of implementation.

revised on June 24, 2013

Appendix F: Pennsylvania Nutrient Management Program On-Site Status Review Report

COMMONWEALTH OF PENNSYLVANIA
NUTRIENT MANAGEMENT PROGRAM
ON-SITE STATUS REVIEW REPORT

Date:_____
Operation Name:_____
Person (s) Interviewed (Operator):_____
Report Completed By (Inspector):_____
Others Present:_____
Date of Plan Approval:_____
Operation Type (CAO, VAO or CAFO):_____
Date of next 3 year Plan review:_____

	Program Compliance (* = Potential Act 38 Violations)		
1. Nutrient Management Plan Implementation	Yes	No	N/A
a. Is the operation current with its required plan review deadline?	□	□*	□
b. Are actual animal numbers consistent with the plan?	□	□*	□
c. Acreage receiving manure application _____			
d. Does plan information and mapping represent operation?	□	□*	□
e. Are all sources of nutrient pollution addressed in the plan?	□	□*	□
f. Is plan implementation on schedule?	□	□*	□
g. Are installed BMPs being maintained?	□	□*	□
h. Are manure application rates being followed?	□	□*	□
If no, explain: _____			
i. Is a certified manure hauler or broker being utilized?	□	□	□
Hauler/Broker name and certification number:_____			
j. Is a "current" Conservation Plan or Ag E & S Plan in effect?	□	□*	□
k. Are all Critical Runoff Problem Areas (CRPAs) addressed?	□	□*	□
l. Is excess manure handled according to the plan?	□	□*	□
m. Is the manure spreader calibrated to apply planned rates?	□	□*	□
n. Is emergency stacking required in the plan?	□	□	□
If yes, is the site identified on plan maps?	□	□*	□
o. Are required in-field stacking procedures implemented?	□	□	□
If yes, are site(s) identified on plan maps?	□	□*	□
If yes, are site(s) appropriate?	□	□*	□
Is manure applied within 120 days (CAFOs 15 days) or covered?	□	□*	□
p. Are fall/winter manure applications according to plan?	□	□*	□
q. Are the required setbacks being observed?	□	□*	□
r. Are pastured animals being managed as outlined in the plan?	□	□*	□

2. Record Keeping; Are the following records maintained at the operation?			
a. Crop yields:	□	□*	□
b. Manure/fertilizer application rates (includes comm. hauler):	□	□*	□
c. Soil test results current:	□	□*	□
d. Manure analysis results:	□	□*	□

	Yes	No	N/A
e. Manure export sheets:	☐	☐*	☐
f. Nutrient balance sheets:	☐	☐*	☐
g. Rerun of the P-Index every 3 years:	☐	☐*	☐

3. Manure Storage Information (where applicable)

Note: Although they may not be Act 38 violations, "No" answers in this section require remedial action.

a. Storage type and size: _____

b. Is perimeter fence and warning signage in place/maintained?	☐	☐	☐
c. Is the structure free of significant cracks or structural damage?	☐	☐	☐
d. Are embankments free of manure saturated areas (seepage)?	☐	☐	☐
e. Are interior/exterior slopes free of holes, trees or erosion?	☐	☐	☐
f. Has storage been certified by a Professional Engineer?	☐	☐*	☐
g. Is Emergency Response Plan available on the operation?	☐	☐*	☐

4. Animal Concentration Areas (ACAs)

a. Are there ACAs on the operation (farmstead or pasture)?	☐	☐	☐
b. Is surface water adequately protected from runoff?	☐	☐*	☐
c. Is erosion properly controlled at stream access point?	☐	☐*	☐
d. Is manure collected and handled appropriately?	☐	☐*	☐
e. Is animal access to stream properly controlled?	☐	☐*	☐
f. Are pastures free of ACAs where runoff is reaching a stream?	☐	☐*	☐

Inspector Notes:	Yes	No
Are there violations of Act 38 regulations?	☐	☐

If yes, specific violations (indicate section number and letter above):

_____

_____

_____

Are corrective actions needed?	☐	☐

If yes, set approximate re-inspection date: _____

Further action required (indicate section number and letter above):

_____

_____

_____

_____

Additional Comments:

_____

_____

_____

_____

Signature of Inspector: _____

Signature of Operator: _____

(Operator signature does not signify guilt or agreement)

Appendix G: Virginia Phase 5.3.2 Nutrient Management Crosswalk Supplemental Information

November 12, 2015

For Virginia's Nutrient Management Verification, we are using the term "Survey" verses Audit as we think it is a lot more farmer friendly. DCR Staff have begun documenting implementation using the form included in the cross walk each time they meet their farmer/client. They verify the crops planted, the record keeping the farmer has, the manure application rates etc., in the terms of tier II nutrient management and discuss things that can be done to improve on a field by field basis. Bobby Long, Animal Waste Coordinator, is notifying staff and going back to farmers with the specialist to verify that they are doing same and using the form as a part of the verification of staff reviews on implementation. We do not rely upon paper surveys for any verification of implementation through planners or farmers. All of our proposed verification will be conducted with DCR staff or contractors directly with farmers on a one to one basis where records and other necessary things can be visually verified. Over the next 12 months, DCR will be establishing a baseline of implementation and then developing a "Strike Plan" to assist farmers in doing a better job of implementation, into the latter half of 2016 and onward.

In Virginia the NRCS 590 Standard indicates that all nutrient management plans written for their program must be written according to Virginia DCR Nutrient Management Training and Certification Regulations and Standards and Criteria. By meeting these requirements the justification of Tier II nutrient management should be clear. In Virginia, NRCS staff do not write nutrient management plans at all. They rely upon planners certified through the DCR program to write those plans and submit to NRCS. Based upon my observation of the NRCS verification of 590, I believe that those who are in compliance (about 65%) meet all conditions of Tier II nutrient management.

In the future, DCR hopes to be able to report many acres of Tier III nutrient management activities by developing agreements with fertilizer industries and contract applicators. This is in the works with several industry leaders in the Commonwealth and will continue over the course of 2-3 years. As of this date, DCR does not have any agreements with industry for this type of reporting, and have not reported any acreage that would rely on this private sector.

Tim P. Sexton

Nutrient Management Program Manager

Soil and Water Conservation Division

Virginia Department of Conservation and Recreation

Appendix H: New York State Phase 5.3.2 Nutrient Management Crosswalk Supplemental Information

November 12, 2015

1. Review Comment: Clarification is recommended to identify the context of nutrient management plans being inspected and reported. The level of compliance inspections appears to limit the plans to those associated with permitted and contractual operations.

   State Response: The panel will find the context and actual on-farm activities of verification described in Sections 1.2 for Tier 1, 2.2 for Tier 2, and 3.2 for Tier 3. We also state and acknowledge that our current compliance inspections and reporting via NEIEN are limited to only those acres meeting the nutrient management requirements, whether under a CAFO permit or within an active AEM or NRCS contract (please see 1.2(4); 2.2(4); 2.2(6); 3.2(4); 3.2(5)).

2. Review Comment: Additional clarification is recommended to clarify the difference in compliance levels for CAFO nutrient management plans (95%) versus the findings of the recent EPA's animal agriculture assessment report findings.

   State Response: The assessment for NYS and the NM crosswalk document are consistent. For additional supporting data, during this year's CAFO inspections of the CAFO-permitted farms in the Chesapeake Watershed portion of NYS, 34 out of 36 farms were operating in compliance with their CNMP and the other CAFO Permit requirements (at least 50% of the 63 CAFO-permitted farms are inspected per year).

3. Review Comment: USDA-NRCS CNMPs/590: Clarification needed on the level of compliance with state nutrient management program requirements, and the documentation and justification for defining 590 nutrient management plans under Tier 2 for each state.

   State Response: Please find this information in each of the program descriptions for CAFO, AEM, and NRCS, as well as in the following sections: 1.2(6), 2.2(6), 2.2(7), 3.2(2). The bottom line is all field nutrient management that's been reported and that will be reported for this year has been done in accordance with the NRCS 590 Standard in NYS, regardless of whether as a part of a broader CNMP per the CAFO permit; via NRCS programs; or by a District under AEM. 590 nutrient management is 590 nutrient management in NYS, as we don't have any alternative NM program definitions or standards…..we even lack a standard for stand-alone 5.3.2 Tier 1 NM, but were thinking about developing that sub-590 level standard for the future until we heard the version 6 NM Panel is moving away from the NM Tier definitions. Implementation of 590 in NYS at least meets the 5.3.2 Tier 2 NM definition (e.g., management to satisfy the Nitrate Leaching

Index, P Index, RUSLE2, Cornell Nutrient Guidelines, any special hydrologically critical areas, etc. as assessed and planned for all fields).

4. Review Comment: Inconsistency among states on what information is used to assess compliance levels results in different levels of confidence. For example, some states may rely on farmer or planner surveys without field assessment spot checks.

   State Response: All nutrient management reported via NEIEN is based on field and record assessments (on-farm) by trained Ag conservation professionals (AEM Certified Planners; staff from Districts, NRCS, NYSDEC, and/or Cornell Cooperative Extension).

5. Review Comment: Each of the state crosswalks contained areas of strengths and weaknesses, and they offer an opportunity to share specific examples of successful approaches. (For example: MD Tier 3: MD is using private industry implementation data to characterize Tier 3 acres and spot checked with Annual Implementation (AIR) reports).

   State Response: We realize our approach has likely limited the number of acres of nutrient management submitted to NEIEN relative to those in actual operation, but it has been and will be the approach taken until new verification protocols are proven. Our goal is to be able to verify and report those additional acres (e.g., being operated by farmers outside of CAFO, NRCS, and AEM) in the future (not for the submittal in the coming weeks) via the new verification protocols.

Appendix I: Delaware Nutrient Management Program, Nutrient Management Evaluation Report

Delaware Nutrient Management Program

Farm Name: _____
Mailing Address: _____
_____
Telephone No: _____
Nutrient Consultant: _____
Evaluator: _____ Date: _____

Nutrient Management Evaluation Report

A=Adequate I=Inadequate N/A=Non-Applicable

A. Nutrient Management Certification
1. Operator name_____
2. Nutrient Management Certification ___Nutrient Generator ___Private Handler ___Commercial Handler ___Nutrient Consultant
3. Certification Holder Name_____ Number_____

B. Nutrient Management Record Keeping Log
1. Crop Year _____
2. Amount and dates of manure applied to land ___ A ___ I ___ N/A
3. Amount and dates of commercial fertilizer applied ___ A ___ I ___ N/A
4. Acreage of application ___ A ___ I ___ N/A
5. Amount and dates of manure exportation and contact information ___ A ___ I ___ N/A
6. Nutrient management plan, crops planted and crop yields ___ A ___ I ___ N/A
7. If commercial applicator utilized name of contractor _____

C. Nutrient Management Plan Evaluation
1. Plan Id
   a. Nutrient consultant's name and company ___ A ___ I ___ N/A
      Address and telephone number ___ A ___ I ___ N/A
      Nutrient Management Consultant Certification Number ___ A ___ I ___ N/A
      Date of plan and duration of plan (not to exceed 3 years) ___ A ___ I ___ N/A
   b. Description of agricultural commodities produced within the operation ___ A ___ I ___ N/A
   c. Certification statement, signed by the operator, documenting the intention of nutrient management plan (NMP) or animal waste management plan implementation ___ A ___ I ___ N/A
2. Field maps and aerial photographs that include
   a. Individual field identification and boundaries ___ A ___ I ___ N/A
   b. Copy of soil survey map showing all soil types on each field or the soil texture identification of all pertinent soils ___ A ___ I ___ N/A
   c. Location of all surface waters including drainage ditches, streams, ponds, etc. ___ A ___ I ___ N/A
   d. Irrigation systems where applicable___ A ___ I ___ N/A
3. Crop and Nutrient Information
   a. Total number and type of animals and annual waste generation estimation and handling methods ___ A ___ I ___ N/A
   b. Budget of intended manure disposition identifying amounts for land application, exportation from farm, or other use ___ A ___ I ___ N/A
   c. Total acres represented by this nutrient management plan and summary of needed nutrients ___ A ___ I ___ N/A
   d. Realistic yield goal determined (average yield for the best 4 of the last 7 years) ___ A ___ I ___ N/A
   e. Without yield records or with yield goals higher than average, use soil productivity classes with written justification ___ A ___ I ___ N/A
   f. Soil test (no older than 3 years) from an agronomic laboratory approved by DNMC ___ A ___ I ___ N/A
   g. Current and planned crop rotation ___ A ___ I ___ N/A
   h. Determine nitrogen rate based on expected crop yield of crop(s) to be grown ___ A ___ I ___ N/A
   i. Phosphorus application is limited to 3-year crop removal rate in soils with a Fertility Index Value (FIV) of 150 or higher. Optionally, a University of Delaware Phosphorus Site Index (PSI) may be performed and Phosphorus may be added as recommended by the PSI value. Application rates limited to a 3-year crop removal may be exceeded in unforeseen situations and must be justified in writing by a certified nutrient consultant. ___ A ___ I ___ N/A
   j. Manure analysis results or a nutrient value estimate with written justification ___ A ___ I ___ N/A
   k. Estimate residual nitrogen (organic nutrients, fertilizer, or legume crops from prior year) ___ A ___ I ___ N/A
   l. Nutrient source(s) selected, rates, and approximate timing of applications(s) ___ A ___ I ___ N/A

D. Best Management Practices and On Farm Assessment
1. Are animal mortalities properly managed ___ A ___ I ___ N/A
2. Animal mortality disposal method ___composter ___renderer ___incinerator ___Other(see comments)
3. Storage for manure
   Covered structure ___ A ___ I ___ N/A
   Tanks ___ A ___ I ___ N/A
   Other ___ A ___ I ___ N/A
   Temporary Storage ___ A ___ I ___ N/A
4. Commercial Fertilizer Storage ___ A ___ I ___ N/A
5. Feed storage ___ A ___ I ___ N/A

E. Assessment and Recommendations
1. Utilization of Nutrient Management Plan ___ A ___ I
2. Best Management Practices Implementation ___ A ___ I
3. Record Keeping ___ A ___ I
4. Certification ___ A ___ I
5. In general is the nutrient management adequate in preventing the over application of nutrients ___ A ___ I
6. Practices to prevent runoff and erosion (recommendations noted below) Roof runoff ___ stormwater control___ pasture stream fencing___ cover crops___ grass waterways___ timely manure incorporation___ windbreaks for erosion/odor___ Other _____

Comments:

_____
_____
_____
_____
_____
_____
_____