

# Nutrient Management Application

## **Review of MD-PA-VA Approaches**

## **Status of NM Expert 5.3.2 and 6.0 Panels**

An AgWG report to CAC,  
2/19/2015

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## Maryland's NM Program

- Water Quality Improvement Act of 1998 requires all farms grossing \$2,500 or 8000 lbs of animals to have and follow a current NMP.
- Prior to WQIA 80% of farmers had NMP – In 2014 - 97.9% had plans.
- Violators face up to \$2,000/Y fine and loss of cost-share assistance.

# Maryland's NM Program

- From 1998-2005: farmers utilized N-based plans.
- Since 2005 farmers with soil P above 100 FIV are required to run a PMT.
  - Low Score: Allow continued use of a N-based plan.
  - Med Score: Allow P additions based upon the crop needs for 1 out of 3 years.
  - High Score: No additional P fertilization.

# Maryland's NM Program

## ○ **MD revised NM regulations**

- Must incorporate manure and other organic nutrient sources within 48 hrs.
- No fertilizer zones next to streams and requires stream exclusion of all livestock.
- Limit fall N applications for small grains
- In 2016 phase-in a ban on spreading of manure and bio solids in the winter.

# Maryland's NM Program

## ○ **Compliance and inspection**

- Requires producers to submit AIRs annually
  - 98% compliance, 75 violations under enforcement and fines.
- On farm audits and inspections
  - 10% inspections annually, last year 13.5% . MDA has a dedicated inspection and enforcement staff.
- Inspection requires
  - Plan is current, examine fertilizer receipts, and field by field nutrient application records, and consistency with plan.

# Maryland's NM Program

- Inspections not random: Targeted at the highest risk operations.
  - Specifically, based on nutrient source( animal vs. Commercial) geography, prior history of enforcement, AIR assessments, and complaints.
- Those with expired plans, incomplete plans and record keeping issues given a 30 to 60 day window to correct and provided a follow up re inspection.
  - Those with over application and no plan go to top of the list for yearly re inspection.

# Maryland's NM Program

- 2014 inspection results for high risk operations
  - 66% in compliance
  - 15% expired plans
  - 2% incomplete plan
  - 6% poor record keeping
  - 3% over application
  - 8% no plans.

# Animal Operations in PA

## ➤ **All Animal Operations (AOs)**

All operations generating/utilizing manure

*\* Regulated by PA DEP*

## ➤ **Concentrated Animal Operations (CAOs)**

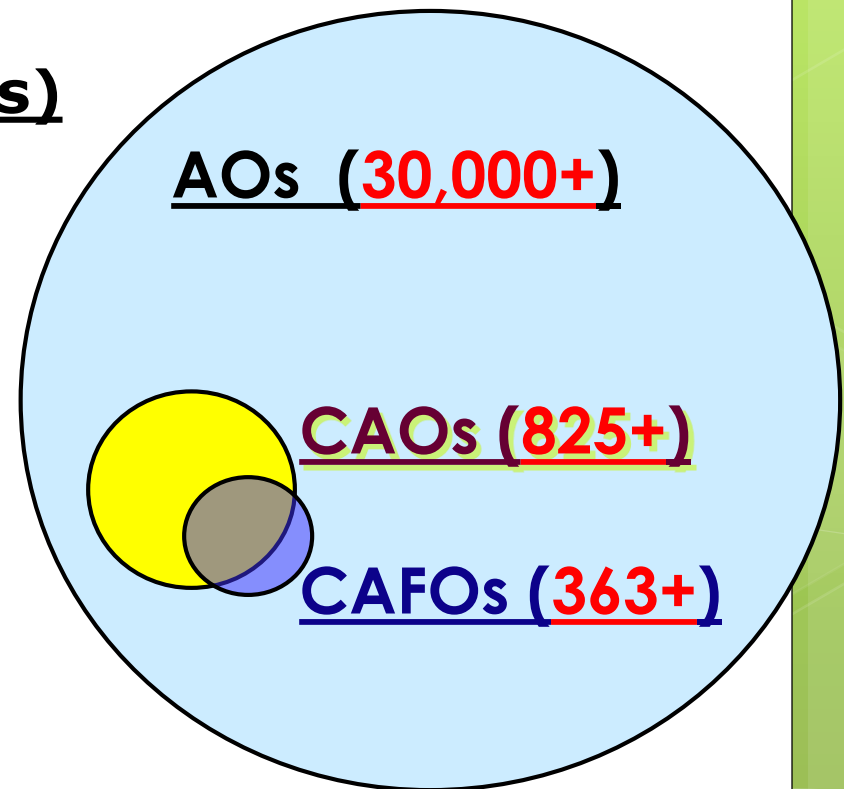
High animal density farms  
farms > 2,000 lbs/acre  
animal density

*\* Regulated by PA SCC*

## ➤ **Concentrated Animal Feeding Operations (CAFOs)**

Based on animal numbers and/or animal density  
Farms > 1,000 AEUs, CAOs > 300 AEUs, EPA head #'s

*\* Regulated by PA DEP (for US EPA)*

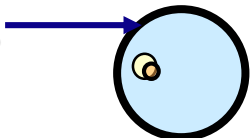




# Pa's Clean Streams Law

- ❖ Requires all farms to have a **manure mgmt plan** (Chapter 91)
  - Protect surface & ground waters while obtaining optimum crop yields
  - Requires **written** plan (including farm map), kept on site
  - Can be written by farmer or other non-certified individual
  - New planning standard (*Land Application Supplement to the Manure Management Manual*) includes:
    - N and P application rates,
    - Application setbacks,
    - Winter application,
    - Pastures
    - Barnyard runoff,
    - Storage and stacking criteria

**AOs**



# PA – 3 Options for developing manure application rates

- Use manure application **charts** (easy, but most restrictive)
  - No certified specialist required
  - Based on crop type and manure type
  - N based if < 200 ppm P; **or** P based if > 200 ppm P or no soil test
- Use Nutrient Balance Sheet **worksheet** (harder but more flexible)
  - No certified specialist required
  - N based if < 200 ppm P; **or** P based is > 200 ppm P or no soil test
- Use the PA **Phosphorus-Index** (most complex but most flexible)
  - Will need to use an authorized planner
  - N or P based dependent on the results of the P-index
  - May allow for N based application on soils with > 200 ppm P

# Act 38 Regulatory Program

High density animal operations are CAOs   
considered CAOs

(Greater than 2,000 lbs/acre, or 2 AEUs per acre)

Examples:

- 100 cows on 200 acres (130,000 lbs/200 acres = 650 lbs per acre)

Not High density therefore **not** a regulated CAO

- 100 cows on 60 acres (130,000 lbs/60 acres = 2,167 lbs per acre)

This is a high density operation, therefore **it is** a CAO

\*Available acres = cropland, hay land, pasture (NOT barnyards, wooded pasture)

# Act 38 Regulatory Program

- What are CAO operations required to have?
  - A written Nutrient Management Plan (NMP)
    - Developed by certified planners
    - Submitted, reviewed and approved by conservation district
    - Public comment opportunity available for these plans
    - Annual inspection performed by program staff

## PA - Additional NM planning requirements for CAOs

- ❖ Restricts manure applications based on
  - Required Phosphorus-Index assessment of every field
- ❖ Fall application restrictions
  - Required 25% cover or incorporation within 5 days
- ❖ Winter application restrictions
  - Only allowed on program approved fields
- ❖ Exported manure documentation
  - Signed agreements required
  - Manure management plans required on importing sites

# EPA's CAFO Program in PA

- ❖ Federal program delegated to PA-DEP to administer
- ❖ Regulates larger animal operations (CAFOs) defined as:
  - More than 1,000 Animal Units (750 cows, 2,500 sows, 1,000 horses),
  - More than 300 Animal units **and** a CAO (Concentrated Animal Op.) (~230 cows), or
  - Meet EPA animal threshold numbers
    - 500 horses
    - 700 mature dairy cows
    - 1,000 beef cattle
    - 2,500 market swine
    - 82,000 layers, dry manure
    - 125,000 broilers, dry manure
    - 10,000 sheep or lambs



# EPA's CAFO Program in PA

- Requires **operation permit** (NPDES) from DEP
  - Individual or general
- Generally, **same NMP** as CAOs:
  - Plan required to be submitted and approved
  - Application rates, setbacks, fall/winter restrictions, as CAOs
  - Exported manure requirements same as CAOs
- **But** several **additional manure management restrictions** on CAFOs:
  - **Manure application setbacks** required on more than just flowing streams,
  - 14 day **in-field stacking** limitation (*unless covered, or on an improved area*)
  - **Winter application** is looked at very closely

# Virginia's Nutrient Management Program

- The Nutrient Management Program in Virginia is a **voluntary** program for both **agricultural** and **urban land**.
- Other Regulatory Programs require a nutrient management plan as a part of their regulations.



# Virginia Programs Requiring Nutrient Management Plans

- DEQ Virginia Pollution Abatement (VPA) permits
- DEQ Poultry Waste Management permits
- DEQ VPDES permits
- DEQ Biosolids Regulations
- DEQ Municipal Waste and Industrial Waste permits
- DEQ Water Reclamation and Reuse Regulations

## Virginia Programs Requiring Nutrient Management Plans

- Chesapeake Bay Preservation Act
- DCR Ag BMP Cost-Share Program
  - Animal waste storage structures
  - Nutrient management practices
- VA Ag BMP Income Tax Credit
- VA Precision Nutrient & Pesticide Application Equipment Income Tax Credit

## VA Pollution Abatement (VPA) permits



- Required for farms having 300 or more animal units (A.U.) of livestock in confinement
- 300 A.U. = 300 beef cattle  
= 200 dairy cattle  
= 750 swine over 55 lbs. each
- DEQ issues and enforces permit
- DCR approved NMP required for each permitted farm

## VPA Permit Requirements

- ◉ NMP is enforceable part of permit
- ◉ DEQ personnel inspect farms
- ◉ Manure storage requirements to address:
  - ◉ no discharge unless greater than a 24 hour - 25 year storm event
  - ◉ times when application won't occur when crop uptake is limited, saturated ground, or frozen ground
- ◉ Manure spreading setbacks from rock outcrops, streams, wells, etc. (see NMP Special Conditions for VPA Permit Plans)
- ◉ Farmer record keeping required for manure application fields (when, how much, crops)
- ◉ DCR plan approval letter must be filed with DEQ
- ◉ Nitrogen and Phosphorus based NMP's are required as of 1/1/2006.

## Poultry Waste Management VPA Permits

- Became effective 10/1/2001
- Impacts all poultry farms at least 200 animal units
  - 20,000 broilers
  - 11,000 turkeys
- Similar requirements as VPA permits
- DCR approved NMP required
- Poultry litter storage requirements in NMP
- Growers had to have P based NMP's beginning 10/1/2001



## VPDES (Virginia Pollutant Discharge Elimination System) Permits for Concentrated Animal Feeding Operations

- Required for confined animal feeding operations that have had a discharge violation or other serious violation of a VPA permit.
- Operations with more than 1000 animal units
- Similar requirements as VPA permits, but can be enforced by either the state DEQ or U.S. E.P.A.
- More detailed farmer record keeping requirements

## NMP Special Conditions for VPA & VPDES Animal Waste and Poultry Permits

- Address nutrient management issues relevant to all animal waste permits.
- More specifically explains requirements of animal waste laws and regulations as part of the NMP narrative, 4 VAC50-85-140-C. d
- Contains enforceable language, 4 VAC 50-85-150-4. e
- Special conditions must be inserted as worded for NMP's written for VPA animal waste and poultry waste permits to be approved.
- DCR reserves right to amend special conditions for future plans or for specific NMP's based on site conditions or farm compliance problems.

# AgWGG – Update

- Launched Expert Panel Establishment Groups
  - Develop charge
  - Identify needed expertise
  - Definition of the practice (scope)
  - Timeline
- NM Panels
  - Status of 5.3.2 Expert Panel for NM
  - Expectations for 6.0 Expert Panel for NM



## Renewed charge to 5.3.2 Nutrient Management Application Expert Panel

- *Conduct a short-term re-evaluation that will separate the N and P benefits for Tier 2 and Tier 3 levels of nutrient management effort*
- *Re-consider the agricultural land uses for which the benefits will be realized.*
- *Develop a checklist of the data needed for assessing the presence/absence of the level of nutrient management necessary to qualify for each Tier as guidance to the jurisdictions.*

## Status of NM 5.3.2 Expert Panel

- Convened frequent conference calls
- Separation of N and P benefits in Tiers 2 and 3
  - Tier 1 N and P (existing, approved)
  - Tier 2 N (new)
  - Tier 2 P (new)
  - Tier 3 N (new)
  - Tier 3 N (new)
- Specification of management practices required under each of the four new tiers.
- Re-evaluating literature for specific management practices for reduction efficiencies.

## Public briefings by 5.3.2 NM Panel and NM info/engagement opps

- AgWG – monthly conference calls and quarterly face-to-face
- WQGIT – biweekly calls
- March/April release of report
- Additional Opportunities for Partnership Engagement on NM:
  - Development of a background white paper on NM (Karl Blankenship et al)
  - Webinar briefing(s) ahead of final Expert Panel report to support informed evaluations of content.

## 5.3.2 NM Expert Panel will:

- Bring the latest science and technical data to bear on how to simulate and credit nutrient management practices within the Partnership's existing Model.
- Provide checklist of things that could be used to identify that the component practices are in place.
  - Jurisdictional partners will be encouraged to factor checklist into their existing verification procedures
- Verification of nutrient management practices will continue as currently documented and conducted by the jurisdictions and other federal and local agencies and partners.

## Expert Panel NM 6.0 will:

- Provide best recommendations for how verification of the component practices in the Panel's recommended set of tiered nutrient management practices could be conducted by the partners.

### **NOTE:**

- Because the Jurisdictions will be developing and documenting their enhanced/ expanded BMP verification programs and the Partnership's BMP Verification Review Panel will be reviewing the plans CONCURRENT to the Expert Panel's work.....
- EPA will work with the jurisdiction to factor in the Phase 6 Panel's recommendations into their verification programs.