



Draft Nutrient Trading Guidance for the WV Potomac River Basin Program **OVERVIEW**

Point Source Sector Meeting
May 14, 2008

*Project Funded by a Natural Resources Conservation Service
Conservation Innovation Grant & an EPA Targeted Watershed Grant*

Presentation Overview

- Program basics
- Suppliers: Generating and calculating
- Buyers: Applying to permits
- Regulators: Ensuring water quality goals

About the Guidance

*The 5/1/08 Draft Guidance language is **not** approved by WVDEP or Trading Program steering committee.*

- CWA provides authority to use trading,
- Guidance provides flexibility (relative to regulations),
- Structured in part on guidance approach of PA and OH,
- Statewide guidance **and** Appendix for Potomac program specifically.

Program Principles

- Credits based on real, verifiable nutrient reduction activities,
- Reduction estimates based on best available science,
- Transparency & fairness in the marketplace,
- Adaptive management based on changing science, legal, and market conditions.

Trading Fundamentals

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- Nitrogen & Phosphorus credits only,
- Units = delivered pounds/year,
- Credits must be used in year generated,
- Credits verified annually,
- Within WV Potomac basin (for now).

Credit Generation Basics

1. Credit generator meets baseline,
2. Credit generator proposes reductions beyond baseline,
3. Credits are calculated based on resulting reduced load to the Bay.

Calculations account for: efficiency of practice, watershed factors, nutrient attenuation factors from source to Bay, etc.

Credit Generation -1

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1. Baseline: The credit generation starting line

- Regulated PS must meet NPDES nutrient allocation & management requirements,
- Non-regulated PS baseline is to be determined,
- Ag NPS entities must follow 1) property-wide nutrient management plan **and** 2) meet the land use specific Tributary Strategy loading goal (lbs per acre) on credit producing field,
- Non-Ag NPS must meet 2) meet the land use specific Tributary Strategy loading goal (lbs per acre).

Credit Generation - 2

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2. Load Reductions/Generating Credits

- *Pt Sources*: treat/discharge at levels below annual average load limit in permit (5/.5).
- *NPS*: install practices/structures to reduce estimated annual load below Trib Strategy baseline.

Use **NutrientNet** to calculate eligible reductions from various approved practices.

Credit Generation - 3

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3. Calculation of Credits

NutrientNet calculates eligible reductions from various approved practices.

- BMP Efficiencies: harmonized with those used Bay-wide and approved by EPA.
- Segment Factor: watershed factors like land use, topography, soil types, hydrology, etc.
- Delivery Factor: attenuation between watershed segment of practice and fall line of the Bay.

http://wwri.nrcce.wvu.edu/programs/pwqb/docs/WV_Nitrogen_Credit_Calculations3-26.xls

Using Credits for Permits

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Approved **methodologies** to calculate credits and application of **trading ratios**.

1. Calculation - NutrientNet calculation methodology
2. Reserve (risk) ratio - portion of each credit held in credit reserve available to cover cases of uncontrollable BMP failure (weather, pest, fire, etc)
3. Uncertainty ratio - portion of each credit that accounts for uncertainty in organizational, implementation, measurement, and model uncertainty.



Using Credits for Permits: NNet

- **Step 1:** The Farmer enters **site-specific information** about their farm (e.g., crop type, amount and type of manure applied, manure application method, etc.)
- **Step 2:** NutrientNet automatically generates a “**Nitrogen Balance**” on the field depending on information the farmer has entered about their farm. A “Nitrogen Balance” subtracts the nitrogen outputs of the cropping system (i.e. crop uptake of N) from the nitrogen inputs to the cropping system (i.e. amount of fertilizer applied).
- **Step 3:** The “Nitrogen Balance” is multiplied by the Chesapeake Bay Model’s **Segment Factor** to determine the amount of nitrogen that travels to the edge of the watershed model segment from the farming field based on the watershed’s soil, topography, and landuse characteristics.
- **Step 4:** The “Segment Nitrogen Factor” calculated in Step 3 is multiplied by a Chesapeake Bay **Model BMP Efficiency** percentage depending on the type of BMPs implemented on the farm. This determines the nitrogen load reductions realized from implementing the BMPs.
- **Step 5:** The Nitrogen Reduction calculated in Step 4 is multiplied by the Chesapeake Bay Model’s **Delivery Factor (DF)** to determine the amount the remaining nitrogen load that is delivered to the Chesapeake Bay.
- **Step 6:** Apply **Risk and Uncertainty Ratio of 2:1** that accounts for 1) uncertainty associated with BMP efficiencies due to errors in estimation, quality of implementation, completeness of verification and enforcement and 2) risks associated with BMP failure due to natural disaster or other unpreventable failures of credited practices.

Using Credits for Permits: Applying Trading Ratios

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LOAD SOURCE	Point Sources			Non-Point Sources			Other
	MS4s	>50K gpd	<50K gpd	Agriculture	Urban/Mix	Septic	
TRADING RATIOS							e.g. Algal Scrubber
<i>Uncertainty</i>	.7	n/a	TBD	.7	.7	.7	Project by Project
<i>Reserve</i>	.3	.1	TBD	.3	.3	.3	
TOTAL	1:2	1:1.1	1:TBD	1:2	1:2	1:2	1:TBD

Point Source Incentive

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Reduced trading ratio for early “buy-in” (1.5:1)
before TMDL is developed

- \$15,000 for significant dischargers
- \$4,250 for non-significant dischargers

Funds to install BMP projects now that will
generate credits by permit compliance period



WVDEP: Ensuring Confidence in the Trading Program

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DEP ensures the effectiveness and validity of credits used in NPDES permits by pre-approving:

- 1) *Methodologies to calculate* credits and application of trading ratios,
- 2) *Credit verification and monitoring* processes and requirements,
- 3) *Credit Reserve* management,
- 4) *Public record keeping*, monitoring and credit tracking documented in DMRs and posted on Dept Trading website.



WVDEP: Ensuring Confidence in the Trading Program

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- WVDEP is responsible for enforcing permit compliance,
- Permittees must ensure that Credits purchased are certified/registered with WVDEP (website),
- Permittees must ensure terms of credit purchase agreements are fulfilled,
- A “True-up” period and the Credit Reserve reflect WVDEP’s programmatic flexibility in enforcement.



Questions/Comments?

Thank you:

<http://wwwri.nrcce.wvu.edu/programs/pwqb/index.cfm>