

INTERIM FINAL POLICY

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF POLICY AND COMMUNICATIONS

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TITLE:	NUTRIENT AND SEDIMENT REDUCTION CREDIT TRADING PROPOSED POLICY AND GUIDELINES
EFFECTIVE DATE:	Upon Publication as Final
AUTHORITY:	33 U.S.C.A. § 1251 et seq, Clean Streams § 691 et seq, Federal Water Quality Trading Policy.
POLICY:	The Department of Environmental Protection (DEP) creates and establishes a nutrient and sediment trading program that can be implemented statewide.
PURPOSE:	The purpose of this document is to provide interim policy and guidelines for the trading of nutrient and sediment reduction credits. Appendix documents defining watershed specific strategies will follow as trading is implemented statewide.
APPLICABILITY:	This document is intended to apply to and support watershed stakeholders interested in participating in nutrient trading opportunities, for reasons such as: <ul style="list-style-type: none">• Achieving early reductions and progress towards meeting water quality standards.• Establishing economic incentives for voluntary reductions from all sources within a watershed.• Reducing the cost of compliance with water quality-based requirements.• Offsetting new or increased discharges resulting from growth in order to maintain levels of water quality that support all designated uses.• Achieving greater environmental benefits than those under existing regulatory programs. DEP supports the creation of trading credits in ways that achieve ancillary environmental benefits beyond the required reductions in specific pollutant loads, such as the creation and restoration of wetlands, floodplains and wildlife and/or waterfowl habitat.

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- Combining ecological services to achieve multiple environmental and economic benefits, such as storm water management, wetland restoration or the implementation of management practices that improve water quality, habitat and community infrastructure.
- Reducing the cost of implementing tributary strategies, TMDLs or other activities resulting from agreements such as the Chesapeake Bay 2000 Agreement.

DISCLAIMER:

The policies and procedures outlined in this guidance document are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework, within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

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INTRODUCTION:

The Nutrient and Sediment Reduction Trading Policy has been created to help the Department reach short term goals related to the Chesapeake Bay and long term goals of:

- Reducing the impairment of existing waterways;
- Producing positive water quality effects locally and downstream; and
- Enhancing aquatic habitats and protecting natural resources.

Much of the content provided in this document is general guidance for how the Department’s trading program will work. The content specifically referenced in this policy is specific to the Chesapeake Bay Model and Chesapeake Bay Watershed to establish an interim trading program for the Chesapeake Bay Watershed.

The policy will also contain appendices that will provide program specific details as the policy is implemented in various watersheds. The first appendix, Appendix A, will outline the initial trading program for the Chesapeake Bay Watershed. Appendix A will supply information on conducting trades, acceptable Best Management Practices (BMPs), and the banking and monitoring of the program. As the trading program expands statewide additional appendices may be created.

DEFINITIONS:

“Buffer” - Small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns. Buffers can include: riparian buffers, filter strips, grassed waterways, shelterbelts, windbreaks, living snow fences, contour grass strips, cross-wind trap strips, shallow water areas for wildlife, field borders, alley cropping, herbaceous wind barriers, and vegetative barriers.

“Credits” – The units of nutrient or sediment reduction exceeding the threshold of eligibility, determined after the calculation of applicable trading ratios.

“Nonpoint Source” – A source of water pollution that is not a point source. Nonpoint source pollution, sometimes referred to as “polluted runoff”, is generally caused by stormwater runoff across the land or infiltration of pollutants into the groundwater. Examples of sources of nonpoint pollution include: agriculture, abandoned mining activities, urban runoff abandoned oil and gas wells, atmospheric deposition, construction activities, on-lot sewage systems, leachate (landfills), hydromodification (stream restoration) and silviculture (forestry).

“Nutrient Trading” –Trading that involves the exchange of nutrient reduction credits.

“Point Source” – Any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, CAFO, landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged.

“Registry” – A system utilized to track and record the generation and exchange of credits.

“Sediment Trading” - Trading that involves the exchange of sediment reduction credits.

“Threshold of eligibility” – Loading or level of pollutant reduction efforts that should be achieved and maintained before credits can be generated.

“Trading” – A transaction resulting in quantifiable pollution reduction consistent with this policy and other applicable state and federal requirements.

“Trading ratios” – Discount factors applied to pollutant reductions to account for uncertainty, water quality, delivery or special need concerns.

FUNDAMENTALS:

Trading and usage of credits must be consistent with the Clean Water Act, the Clean Streams Law, and other federal, state and local laws and regulations. It is also the intention that trading in Pennsylvania watersheds will generally be consistent with U.S. EPA policies and guidance at the federal and regional level, including the Chesapeake Bay Program, and other regional and local policies and guidances that relate to watershed management, such as the Chesapeake Bay Agreement.

In addition, public participation will be associated with the permitting phase, which encompasses nutrient trading program elements. The program will be implemented in a way that it provides stakeholders and the public with access to information related to the trading program including the trading policy and guidelines, appendixes, credit generation opportunities and other relevant information via the Department’s website, press releases and public outreach opportunities.

I. General

Concepts in this document provide guidance for creating a trading program that will generate nutrient and sediment reduction credits. Initially, DEP will maintain databases of credits generated and traded under this policy. Parties interested in investigating trading opportunities are encouraged to contact DEP for additional guidance and assistance.

II. Water Quality Benefits

Trading has the potential to achieve cost effective water quality and environmental benefits. To ensure that this potential is achieved and that trades do not adversely impact water quality, periodic reviews and monitoring will be conducted.

III. What May be Traded

DEP supports the trading of either nutrient (total phosphorous and total nitrogen) or sediment reduction credits. Such trades must involve comparable credits (e.g. nitrogen must be traded for nitrogen) and can occur between:

- Point sources;
- Nonpoint sources;
- Third parties; and
- any combination of the above.

Credits generated by trading cannot be used to comply with existing technology-based effluent limits except as expressly authorized by federal regulations.

IV. Unit of Trade

The unit of trade should be expressed as mass per unit time (e.g. pounds per year) and be consistent with the time periods that are used to determine compliance with NPDES permit limitations or other applicable requirements.

V. Who May Trade

Point sources, nonpoint sources or third parties can participate in trading. Any entity may create, purchase, retire or otherwise use credits for the purpose of securing long-term improvements in water quality, subject to any applicable state, federal and local laws.

VI. Where Trading May Occur

Pollutant reductions for trading purposes will be calculated within a defined watershed, a defined area for which a TMDL has been approved, or other DEP-approved area resulting from commitments such as the Chesapeake Bay Agreement. Establishing trading areas that coincide with watershed or TMDL boundaries results in trades that affect the same water body or stream segment and helps ensure that water quality standards are maintained or achieved throughout the trading area and contiguous waters.

VII. Thresholds of Eligibility for Credit Generation

General

The DEP will determine thresholds of eligibility, the baseline from which pollution reduction credits are generated. Credits may be created when environmental performance levels are better than those required by state or local regulations.

Starting Date

Best Management Practices (BMPs) or other potential credit-generating activities occurring after January 1, 2005 may be submitted for review to determine credit eligibility. BMPs or other activities that were completed prior to January 1, 2005 may also be submitted for review and determination of credit eligibility if continuing maintenance of the activity shows it is meeting and exceeding the threshold of eligibility on a continuing basis.

If state or federal funds are used to cost-share nutrient controls that generate credits, DEP **will** allow the portion of the credits paid for by state and federal funds to be available for trading, unless restrictions have been placed on the funds by the grantor.

Point Sources Credit Generation Eligibility

For point source discharges, the threshold of eligibility for credit generation is the discharge loading limit expressed in an NPDES permit.

Nonpoint Sources Credit Generation Eligibility

Agricultural nonpoint sources seeking to generate nutrient credits are expected to maintain:

- 1) an approved and implemented nutrient management budget for Nitrogen and Phosphorous; and
- 2) a minimum of a 100 foot set back for manure application or a minimum 35 foot vegetative buffer (or more if required by applicable law or regulation) along streams to be eligible to participate in trading.

Credit generation would be for activities above and beyond what is required to meet nutrient management budgeting and the minimum setback/buffer requirement.

For nonagricultural nonpoint sources without NPDES requirements, allocations resulting from a TMDL or other specified performance requirements, the threshold of eligibility is the level of pollutant load associated with existing land uses and management practices that comply with applicable state and local regulations.

Although credit and trade proposals involving nonpoint sources will not be limited to the following, DEP is particularly interested in initial nonpoint source trades involving:

- Forested Riparian buffers;
- Cover crops; and
- Advanced Nutrient Management.

Additional BMPs will be accepted where efficiencies in the Chesapeake Bay Model or other reports are identified and defined.

VIII. Quantification and Application of Credits

Quantification of Credits

Appendices to this policy contain detailed steps on quantifying credits.

For nonpoint sources, the preferred method for quantifying credits is the employment of mass balance methods. Other options are allowed for quantifying nonpoint source reductions. If Best Management Practices (BMPs) are used to generate credits, information on BMP efficiencies from accepted scientific sources such as the Chesapeake

Bay Watershed Model can be employed. Entities can also quantify nonpoint source reductions through other measurement methods acceptable to DEP including monitoring.

Where trading involves nonpoint sources and mass balance quantification methods cannot be developed, DEP will adopt methods to account for the greater uncertainty in estimates of nonpoint source loads and reductions. Methods will include options such as: monitoring to verify load reductions, the use of greater than 1:1 trading ratios between nonpoint and point sources, using demonstrated performance values or conservative assumptions in estimating the effectiveness of nonpoint source management practices, using site- or trade-specific discount factors, and retiring a percentage of nonpoint source reductions for each transaction or a predetermined number of credits.

For point source discharges, credits should be calculated through the employment of monitoring methods listed in the source's NPDES permit. If the permit does not list a method, sources need to contact DEP for information on acceptable monitoring or sampling methods.

Trading Ratios

When calculating credits, trading ratios need to be considered and used as appropriate to help ensure that trading provides the desired level of pollutant reductions or other water quality benefits. There are four types of trading ratios.

- a) **Uncertainty Ratios** are intended to account for variation in the expected reliability and efficiency of the source or type of reduction being applied toward credit for another. They are calibrated to create a margin of safety or otherwise attempt to ensure that the credited practice provides a minimum level of reductions, even if actual reduction efficiencies and units removed are on the low end of an expected range.

In some instances uncertainty ratios will not be employed because they are already accounted for in quantification methods such as in the Chesapeake Bay Watershed Model. Trades involving nonpoint sources, not included in the Chesapeake Bay Watershed Model, will use uncertainty ratios of greater than 1:1.

- b) **Delivery Ratios** apply discount factors to compensate for a pollutant's travel over land or in water (or both) and may be applied to point, as well as, nonpoint sources. Delivery ratios generally account for attenuation (i.e., the rate at which nutrients are reduced through natural processes, such as hydrolysis, oxidation, and biodegradation, on their way through tributaries to the mainstem of the water body). The ratio varies depending on the location of the source from the mainstem. Generally, the greater the distance the pollutant has to travel, the greater the pollutant loss will be. This ratio would work to equalize a trade between a source in the headwaters and one near the mainstem. This ratio is also often termed a "location ratio."

Delivery ratios will be based on information from applicable and accepted data sources, such as the Chesapeake Bay Watershed Model.

- c) **Retirement Ratios** are applied to implement policy-driven or programmatic decisions to require that buyers or sellers donate part of all credit purchases or sales to the state or some other entity that will not apply the credits to offset loadings above its cap. For example, a 5% credit retirement requirement results in a 1.05 to 1 retirement ratio.

Retirement ratios will be a five percent multiplication factor applied to the generated credit. This percentage applied may increase over the life of the trading program.

- d) **Special Needs Ratios** would account for issues not addressed in other trading ratios; for example, sensitive waters or areas needing additional protection.

Special needs ratios will be developed and utilized on an as-needed basis.

Application of Credits

Credits may be applied toward a regulatory requirement except for technology based effluent limits. Alternatively credits may be applied toward a voluntary commitment such as pollution prevention programs or may be permanently retired. Credits may be bought or sold, or exchanged under a non-monetary arrangement, including donations to a source or third party.

Credits will have a 'shelf-life' of one year, renewable annually up to the life span of the practice and/or assured life of the Best Management Practice (BMP) or control invested in as long as the practice is functioning as expected and operation and maintenance is maintained. Credits may only be traded/applied within the timeframe that they are generated. Credits should be generated before or during the same period they are used to comply with monthly, seasonal or annual limitations or a requirement specified in an NPDES permit.

DEP may elect to establish a reserve pool of credits that would be available to compensate for unanticipated shortfalls in the quantity of credits that are actually maintained.

IX. Documenting Credits and Trades

A nutrient reduction credit registry will be used for the purpose of tracking the generation and trading of nutrient credits. Initially, however, DEP will maintain databases of credits generated and traded under this policy.

Point Source Participants

The NPDES program administered by the Pennsylvania DEP will be the mechanism that provides accountability for point sources participating in trades. This program includes adequate monitoring, record-keeping, reporting, inspection and audit provisions, public comment opportunity, and oversight responsibilities to support trading.

DEP plans to combine the usage of a watershed permit and individual NPDES permits for documenting point source trading.

Nonpoint Source Participants and Third Party Participants

For cases where permits do not apply, contracts will be the mechanism that provides accountability for nonpoint sources participating in trades. DEP may need to develop additional supporting documents to ensure adequate monitoring, record-keeping, reporting, inspection and audit provisions, and oversight to support trading.

Additional Considerations

A combination of record keeping, monitoring, reporting and inspections, and compliance audits will be conducted frequently enough to ensure that a high level of compliance is maintained. Failure to generate the quantity of credits that are traded may result in contractual or other sanctions.

DEP will develop provisions to address situations where nonpoint source controls and management practices that are implemented to generate credits fail due to extreme weather conditions or other circumstances.

At a minimum, the following will be expected for all land-based credits:

- Controls must be inspected to ensure the control is properly sited, the materials and plans satisfy established quality specifications, and the installation job meets performance standards.
- Controls must undergo an annual on-site assessment by a qualified inspector to ensure proper functionality (e.g., look for signs of sedimentation and erosion to identify inefficient BMPs). In addition, the owner must allow right of entry DEP or its designated agent. DEP may use scheduled spot check inspections to supplement scheduled random inspections.
- Annual account balancing periods will be used based upon seasonal monitoring, to the extent that seasonal differences are a factor in credit performance.
- A developed and implemented maintenance plan to assure performance of pollutant reduction control.

X. Institutional Framework and Structure

DEP will be responsible for oversight and management of the Pennsylvania nutrient and sediment reduction trading program, including responsibility for policy decisions on

issues such as eligibility, credit certification, verification, compliance monitoring and enforcement. DEP may elect to delegate some activities to third parties, such as credit verification or third party audits of transactions.

XI. Stakeholder Involvement and Public Information Access

Pennsylvania has been working with, and will continue to work with, a broad set of stakeholders in the development and implementation of this trading policy. Continuing program development will provide opportunities for both the public and stakeholders to provide input and comment on the development and implementation of the trading program. Program elements, such as the nutrient reduction registry, will provide timely information about credit generation and use, credit certifications and verifications, and results of credit inspections and water quality monitoring.

Pennsylvania believes that a clear and transparent process and presentation of results is key to establishing and maintaining credibility for any trading program. The state will use an electronic nutrient reduction registry and web-based systems to support tracking and publicizing trading opportunities such as offer to buy and sell, trade transactions, and program progress and performance.

An opportunity for public notice and comment is included in the NPDES permit process. If an NPDES permit generally or conditionally authorizes trading and the public has had an opportunity to comment on the general trading process during the permit process, there will not be an opportunity to comment on individual trades.

DEP (or a delegated authority) will track the actions of trading partners, compliance with trade agreements, and any enforcement action taken. The results of such individual and statewide program evaluations will be made available to the public, possibly in the form of an annual report.

DEP may perform ambient monitoring and modeling to assess the effect of trading activities in achieving pollutant reduction goals and evaluating the trading program.