MONTANA'S POLICY FOR NUTRIENT TRADING

I. INTRODUCTION

Montana is currently proposing the adoption of numeric criteria for nutrients (nitrogen and phosphorous) that will protect the beneficial uses of state surface waters.[1]

Implementation of the criteria is supported by legislation that allows for the adoption of temporary nutrient criteria[2] for a specific point source discharge due to: (1) substantial and widespread economic harm; or (2) the limits of technology.[3]

Obtaining temporary nutrient criteria will allow a point source to commence or continue discharging in compliance with temporary water quality standards for a defined period of time without significant and costly upgrades. Although temporary criteria will provide interim goals and a time frame for point sources to begin reducing nutrient loading, the State's long-term goal is that each point source will reduce nutrient loading in the amount necessary to achieve compliance with the State's nutrient criteria as soon as feasible. This policy provides the framework for allowing point source discharges to use trading as a cost-effective method of achieving the State's numeric criteria for nutrients without delay and avoid the need for temporary water quality standards. Trading under this policy is intended to provide a flexible and voluntary alternative to meeting the numeric nutrient criteria. Although the policy does not provide for DEQ's review and approval of nonpoint to nonpoint source trading, DEQ may consider such trades when needed.

Trading under this policy may take place under a variety of conditions that may arise after or before the adoption of numeric criteria for nutrients, including circumstances where trading is used to: (1) comply with an approved total maximum daily load (TMDL) for nutrients; (2) offset a new or increased discharge of nutrients; (3) comply with water quality-based effluent limits for nutrients; or (4) offset a new or increased discharge of nutrients into "high quality" waters. The policy allows point source to point source trading, point source to nonpoint source trading, and nonpoint to nonpoint source trading. All trades will be monitored and enforced under a Montana Pollutant Discharge Elimination System (MPDES) permit, except those that involve only nonpoint source trading partners. DEQ will not allow the use of credits or trades that would cause an impairment of existing or designated uses, adversely affect water quality at an intake for drinking water supply, or that would exceed a cap established under a TMDL.

[1] The terms "numeric criteria for nutrients" and "numeric nutrient criteria" are used interchangeably and have the same meaning as "base numeric nutrient standards" as defined in § 75-5-103(2), MCA.

[2] Temporary nutrient criteria, if adopted by the Department for a specific point source, provide a variance from complying with the base numeric nutrient standards. A variance may not exceed 20 years.

[3] The term "limits of technology" will be defined in rulemaking.

1. Purpose

The purpose of this policy is to facilitate trading among watershed stakeholders interested in participating in nutrient trading opportunities. Consistent with *EPA Water Quality Trading Policy*, DEQ encourages water quality trading when it does not result in adverse ecological consequences and supports one or more of the following objectives:

* To provide an alternative for achieving compliance with Montana's base numeric nutrient standards that will preclude the need for obtaining temporary water quality standards

* To offset new or increased discharges resulting from growth in order to *maintain and improve* levels of water quality that support all designated uses.

* To establish economic incentives for *reductions* from all sources within a watershed.

* To reduce the cost of implementing nutrient TMDLs or water quality-based effluent limits for nutrients through greater efficiency and flexible approaches.

* To achieve greater environmental benefits than through the existing regulatory framework. For example, DEQ supports the creation of water quality trading credits that achieve ancillary environmental benefits beyond the required reductions of pollutant loads, such as the creation and restoration of wetlands and riparian habitat.

II. DEFINITIONS

1. Baseline: The baseline for generating pollution reduction credits must be consistent with applicable water quality standards. The term pollution reduction credits ("credits"), as used in this policy, means pollutant reductions greater than those required by a regulatory requirement for nonpoint sources or established under a TMDL waste load allocation or water quality-based effluent limit for point sources. Examples of "baseline" for waters where a TMDL has been approved or established and for waters where no TMDL has been established, including "high quality" waters,[4] are as follows:

(a) impaired waters where a TMDL has been approved or established
Where a TMDL has been established or approved, the applicable point source waste load allocation would establish the point source's baseline for generating credits. In distinction, the baseline for nonpoint sources is the level of pollutant load associated with existing land uses and management practices that comply with applicable state, local, or tribal regulations. A nonpoint source may generate credits by achieving greater nutrient load reductions than required by any statute or rule governing its nonpoint source

[4] As used in this policy, a "high quality" water is a water body with water quality that is better than the base numeric nutrient standards adopted by the Board of Environmental Review.

activity. A nonpoint source may not, however, generate credits based upon a Best Management Practice (BMP) that was in place prior to the effective date of this policy or intentionally terminate an existing BMP to reduce the baseline requirement in order to generate credits after the effective date of this policy.

(b) waters where no TMDL has been established

For trades that occur where the quality of water is better than the numeric nutrient standards (i.e., "high quality" waters), or in impaired waters prior to a TMDL being established, the baseline for point sources should be established by the applicable water quality-based effluent limitation, a quantified performance requirement, or a management practice derived from the nutrient water quality standards. In this instance, like the previous instance, the baseline for nonpoint sources is the level of pollutant load associated with existing land uses and management practices that comply with applicable state, local, or tribal regulations. A nonpoint source may generate credits by achieving greater nutrient load reductions than required by any statute or rule governing its nonpoint source activity. A nonpoint source may not, however, generate credits based upon a BMP that was in place prior to the effective date of this policy or terminate an existing BMP in order to generate credits after the effective date of this policy.

2. Credit: In general, a credit is a reduction in nutrient loads beyond baseline conditions. More specifically, it is a measured or estimated unit of pollutant reduction per unit of time adjusted to account for applicable trading ratios. A seller generates excess load reductions by controlling its discharge beyond what is needed to meet its baseline through controlling its flow and/or its discharge concentrations. A buyer compensates a seller for creating the excess load reductions that are then converted into credits by using trading ratios. Where appropriate, the buyer can use the credits to meet a regulatory obligation. Credits are expressed as pounds of nitrogen or phosphorous per applicable period of time that is delivered to surface waters in the watershed. Credits will need to be measured or estimated, verified, and accounted for according to that time period. Credits cannot be banked for a future time period.

(a) Point source credits

A point source may generate credits by achieving measured nutrient reductions greater than the waste load allocation established for the point source under a TMDL or greater than a water quality-based effluent limitation for its discharge derived from the State's numeric nutrient criteria.

(b) Nonpoint source credits

A nonpoint source may generate credits by achieving nutrient reductions greater than required by a regulatory requirement applicable to that source. Nonpoint source credits will be based upon a measured or estimated reduction of nutrients adjusted to account for applicable trading ratios. For example, such loads may be calculated by using watershed model delivery ratios that will be applied to edge-of-fields loads or may be calculated by a model used in a Department-approved TMDL.

3. Eligibility Requirements: Any point source or activity that requires a Section 402 or 404 permit must either have or obtain an appropriate permit to participate in trading. Any nonpoint source that meets the applicable baseline requirements may participate in trading.

4. Nonpoint Source: A "nonpoint source" is any source of diffuse runoff or discharge that is not a "point source," as defined in Montana's water quality laws, § 75-5-103, MCA. Examples of nonpoint sources include, but are not limited to, farming activities, cattle grazing, timber harvesting, unpaved roads, septic systems, and eroding stream banks.

5. Nutrient Trading: Trading is a market-based approach to achieving water quality standards in which a point source purchases pollutant reduction credits from another point source or a nonpoint source in the applicable trading region that are then used to meet the source's pollutant discharge obligations. To be creditable to the source purchaser, the credits must reflect an actual, pollutant load differential below the credit seller's baseline. Under certain circumstances, a point source buyer may have to purchase more than one pound of pollutant reduction to equal a pound discharged at its outfall.

6. Nutrient Reduction: The difference in nutrient discharges to surface waters achieved by activities such as best management practices or technical upgrades, compared to the applicable baseline after meeting eligibility requirements.

7. Total Maximum Daily Loads (TMDL): A TMDL is "...the sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable water quality standards." § 75-5-103(37), MCA. In other words, a TMDL establishes the maximum amount of pollutant load that a waterbody can receive and still meet applicable water quality standards. A TMDL includes an allocation of pollutant loadings to point sources (waste load allocations **WLAs)**, an allocation on pollutant loadings to nonpoint sources or natural sources (load allocations **LAs**), and a margin of safety.

8. Trading Ratio: Discount factors applied to pollutant reductions to account for uncertainty, water quality, or delivery. The following are examples of trading ratios:

(a) Delivery Ratios

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 to the mainstem of the waterbody). The ratio may vary depending on the location of the source. 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 often referred to as the "location ratio." Delivery ratios will be based upon information from applicable and

accepted data sources as reviewed and approved by DEQ. Delivery ratios may incorporate time-variable credits to account for delays between implementation of a load reduction (e.g. connecting a Wastewater Soil Disposal System (WSDS) to a permitted wastewater treatment plant) and the time that load reduction is actually realized in the receiving water.

(b) Uncertainty Ratios

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 to ensure water quality is improved as a result of the trade, 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. Trades involving nonpoint sources will use uncertainty ratios of greater than 1:1.

(c) Retirement Ratio

A 10% retirement ratio will be used as a discount factor to ensure that there is a net water quality benefit to the watershed.

9. Load Allocation (LA): The portion of the receiving water's loading capacity that is allocated to one of its existing or future nonpoint sources of pollution or natural background sources.

10. Waste Load Allocation (WLA): The portion of a receiving water's loading capacity that is allocated to one or more of its existing or future point sources of pollution. WLAs implemented in discharge permits constitute a type of water-quality based effluent limit.

11. Wastewater Soil Disposal System (WSDS): Any system that disposes of sewage effluent on top or beneath the soil surface such that the wastewater migrates downward below the soil surface.

III. KEY PRINCIPLES

1. All new or expanded point source nutrient loads must be fully offset on streams that are impaired by nutrients.

To participate in trading, new point source dischargers with no allocation in the watershed or point source discharges requesting an increase in a waste load allocation in the watershed must fully offset any increased point source loading and must provide an additional reduction to maintain or improve the water quality in the receiving water. The amount of required additional reduction to improve water quality will be determined on a case-by-case basis.

2. Trading in an impaired waterbody for which a TMDL has been approved or established must be consistent with the assumptions in the TMDL's WLA.

All nutrient trades must comply with the TMDL waste load allocations and must not exceed the total load imposed by the TMDL.

3. All nutrient trades involving point sources will be implemented and enforced via MPDES permits.

When trading involves a point source, the permit limits of the point source discharge will incorporate the nutrient trade. The permit will also provide the vehicle for enforcement of the trade condition. In the event of default by another source generating credits for a MPDES permittee, the MPDES permittee using those credits is responsible for complying with the effluent limitations that would have applied if no trade had occurred. The use of the discharge permit program will ensure that credits are accountable, reliable, and enforceable. The public will have an opportunity to comment on any permit conditions that allow trading during the public comment period on the draft permit. These conditions will be subject to the normal comment process and period for comment, along with all other conditions of the permit.

4. What may be traded.

DEQ supports the concept of trading and through this Policy seeks to specifically facilitate the trading of nutrient (total phosphorous and total nitrogen) credits. Such trades should involve comparable credits (e.g., total nitrogen traded for total nitrogen).

5. Duration of Credits

A point source discharger submitting a trading proposal must demonstrate that it has secured credits for at least the permit cycle (i.e., 5 years).

Other safeguards, as determined by DEQ, may be required. They may include such things as backup plans and alternative options to address failures by nonpoint sources to provide the contracted credits.

IV. FUNDAMENTALS

1. Credit Funding Sources

Water quality credits may be generated from point or nonpoint source discharges funded through a variety of sources such as the State Revolving Fund, local funds, or private funds. The cost of credits is determined by the market.

2. Who May Participate in Trading

(a) Point sources (e.g., sources required by law to obtain a Montana Pollutant Elimination Discharge (MPDES) discharge permit)

(b) Nonpoint sources (e.g., any source that is not required to obtain an MPDES permit, such as logging activities, agricultural activities, or septic systems)

(c) Third parties (e.g., county governments, nonprofits, aggregators, private brokers, etc.)

(d) Any combination of the above

3. Examples of Obtaining Nutrient Credits

Load credits may be obtained through any of the options listed below, as well as other options that may be proposed on a case-by-case basis through the MPDES public participation process.

Examples of Pollutant Reduction Credits

1. Retiring an existing (as of the effective date of this policy) WSDS with a demonstrated hydrologic connection to surface water by connecting to a permitted wastewater treatment facility Where existing WSDS's are connected to DEQ permitted wastewater systems as part of a trading plan the following elements, as a minimum, must be included:
    (i) GIS mapping of septic system locations;
    (ii) Annual nutrient loading at the edge of the WSDS discharge (including septic type if it is a significant factor in loading values); and
    (iii) Nutrient delivery ratio and uncertainty ratio based on site-specific conditions.
2. Land application of wastewater with any applicable treatment and nutrient management controls;
3. Optimizing treatment operations;
4. Animal waste management (i.e., ponds, lagoons, holding tanks)
5. Conservation tillage (e.g., no-till, low-till)
6. Cover crops
7. Retirement of highly erodible land
8. Installation of new runoff or erosion control
9. Installation of new stream protection
10. Installation of new forest conservation or harvesting practices
11. Enhanced storm water management
12. Forested or grass buffers
13. Other protection practices as approved by DEQ

4. Where Trading May Occur (Boundaries)

Geographical boundaries for trading will be based on watershed boundaries. Other boundary conditions may exist in certain instances, such as when the stream passes

through a reservoir, lake, or large wetland complex. Generally credits should be generated upstream in the watershed. Certain site specific conditions may allow for downstream credit generation for downstream trading.

5. Starting Date

BMPs or other activities that were completed prior to the effective date of this policy are not eligible for generating credits.

6. Effect of Policy

The policy and procedures outlined in this document are intended to supplement existing requirements established under Montana's Water Quality Act and rules implementing that Act. Nothing in the policy or procedures reduces or replaces these existing regulatory requirements.

The policy and procedures herein are not legislation or regulation. DEQ's authority to allow MPDES permits to use trading is provided for under Montana's Water Quality Act, and rules implementing the State's MPDES program. This document establishes the framework for DEQ to exercise its administrative discretion when allowing nutrient trading in MPDES permits. Neither the load allocations established for both point and nonpoint sources under TMDLs nor the credits generated or purchased under this policy are a property right. For point sources, waste load allocations and trading baselines will be implemented through MPDES permits.

V. IMPLEMENTATION

This section describes the requirements and process for obtaining DEQ approval of nutrient trades in MPDES permits. DEQ will provide a pre-application process to work with any point source interested in trading to assist in determining the appropriate information needed to incorporate the trade in an MPDES permit and inform the permittee of any new permit conditions that will required to implement the trade.

1. Identifying Trading Partners

Sources seeking to acquire or sell discharge credits are responsible for finding trading partners. For example, trading partners may be identified by contacting individual sources that have been identified as contributors of nutrient loading in an approved TMDL or by contacting third-party stakeholder groups.

2. Application Process and Documentation Procedures

Point sources planning to enter into a trading agreement shall submit an application for approval of the trade. The application shall be composed of three parts: (1) specific

details of the trade; (2) credit buyer documentation; and (3) credit seller documentation. The point source trading partner will be responsible for including the trade application information in any permit application or permit modification request.

3. The Trading Application - Specific Details of the Trade

The applicant proposing the trade shall provide specific information about the proposed trading arrangement. This information shall (at a minimum) include the following:

* time period for the trading arrangement;
* the number of credits to be exchanged each year during this period;
* how the number of credits was determined;
* source of the credits;
* the general contractual arrangements;
* timeline for credit generation and use;
* the need for the trade, including the waste load allocation status, flow and load projections;
* the consistency of the trade with any approved TMDL;
* the eligibility of the facility to trade;
* the location of the facilities and any applicable watershed delivery factor;
* the credit acquisition plan;
* how the discharge credits will be generated;
* inspection and verification requirements; and
* any other relevant information requested by the department.

DEQ will review the application to trade and evaluate it based upon the requirements described in this policy. DEQ may approve the application, approve it with conditions, or deny the application. The approved trade will be included in a draft MPDES permit and public comment on the trade will be accepted during the formal public comment period required for all MPDES permits. DEQ approval is not final until the MPDES permit is issued incorporating the trade.