

RULEMAKING TO TRANSITION TO NARRATIVE NUTRIENT STANDARDS



Water Pollution Control Advisory Council

March 15, 2024

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RULEMAKING TIMELINE

* Dates subject to change

2021 to 2024 - Conceptual review and initial drafting

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November, 2024 – Submit to EPA

NWG	Nutrient Work Group
WPCAC	Water Pollution Control Advisory Council
WPIC	Water Policy Interim Committee
SOS	Secretary of State
MAR	Montana Administrative Record
EPA	US Environmental Protection Agency

PRESENTATION SUMMARY

1. Background

2. Overview of rulemaking package

Share proposed administrative rules with the Water Pollution Control Advisory Council at least 30 days prior to the first publication to comment on the proposed action (75-5-307(1), MCA)

Adopt

Amend

Repeal

3. New Rule I, New Rule II, Circular DEQ-15

4. Rulemaking Timeline

5. Questions, Comments





BACKGROUND

NUTRIENTS

Here, nutrients refers to total nitrogen (TN) and total phosphorus (TP) in state surface waters

Excess nutrients cause undesirable water quality conditions

Controlling nutrients is necessary to protect beneficial uses; aquatic life and recreation uses are the most sensitive to nutrient effects

Excess nutrients are one of the most common causes of impairment in Montana waterbodies



NARRATIVE NUTRIENT STANDARDS

Narrative nutrient standards are at ARM 17.30.637(1)(e):

General Prohibitions

*(1) State surface waters must be free from substances attributable to municipal, industrial, agricultural practices or other discharges that will:
(e) create conditions which produce undesirable aquatic life.*

Apply to all state surface waters since adoption in 1970s



NUMERIC NUTRIENT STANDARDS (Circular DEQ-12A)

In 2014, DEQ adopted numeric standards for TN and TP for:

- Wadeable streams and rivers (grouped by ecoregion)
- Large Rivers: two segments of the lower Yellowstone River
- Nine individual stream reaches (site-specific standards)



TN and TP concentrations were set to:

- Protect beneficial uses
- Prevent exceedances of other water quality standards affected by TN and TP concentrations (e.g., pH and dissolved oxygen)

NUTRIENT STANDARDS VARIANCES (Circular DEQ-12B)

In 2014, DEQ also adopted a general variance available to MPDES permittees:

- To account for high cost of meeting stringent 12A standards
- To allow for compliance with 12A standards over time



Ability to participate in the general variance diminished over time due to:

- Changes in federal regulations related to water quality variances
- Legal challenges and litigation around variances

SENATE BILL 358 (67th Montana Legislature (2021) *now* 75-5-321, MCA)

SB 358 required a transition from numeric to narrative nutrient standards, and a new incremental/adaptive approach for addressing excess nutrients in watersheds



“adopt rules related to narrative nutrient standards in consultation with the nutrient work group.”

“provide for the development of an adaptive management program which provides for an incremental watershed approach for protecting and maintaining water quality,”

“amend rules... to delete all references to department circular DEQ-12A, department circular DEQ-12B, base numeric nutrient standards, and nutrient standards variances.”

NUTRIENT WORK GROUP CONSULTATION

Advisory group convened by the
department; created in 2008

21 interest groups represented

“advise the department on nutrient
standards, the implementation of those
standards, and associated economic
impacts.” 75-5-103(21), MCA

Nutrient Work Group meetings

- 45 since August 2020
- 40 since SB 358 passed and was
signed into law in April 2021

Point Source Discharger: Large Municipal Systems (>1 MGD)
Point Source Discharger: Middle-Sized Mechanical Systems (<1 MGD)
Point Source Discharger: Small Municipal Systems with Lagoons
Point Source Discharger: Non-POTW
Municipalities
Mining
Farming-Oriented Agriculture
Livestock-Oriented Agriculture
Conservation Organization - Local
Conservation Organization – Regional
Conservation Organization – Statewide
Environmental Advocacy Organization
Water or Fishing-Based Recreation
Federal Land Management Agencies
Federal Regulatory Agencies
State Land Management Agencies
Water Quality Districts / County Planning Departments
Soil & Water Conservation Districts – West of the Continental Divide
Soil & Water Conservation Districts – East of the Continental Divide
Wastewater Engineering Firms
Timber Industry

ADDITIONAL STAKEHOLDER OUTREACH

Provided opportunity for informal public comment at each Nutrient Work Group meeting

Met extensively with individuals representing various stakeholder interests, including bill proponents, permittees, conservation interests, EPA, others

Hosted listening sessions, informational meetings, and technical subcommittee meetings

Presented at conferences and meetings

Presented to WPCAC members and the public



GUIDING PILLARS

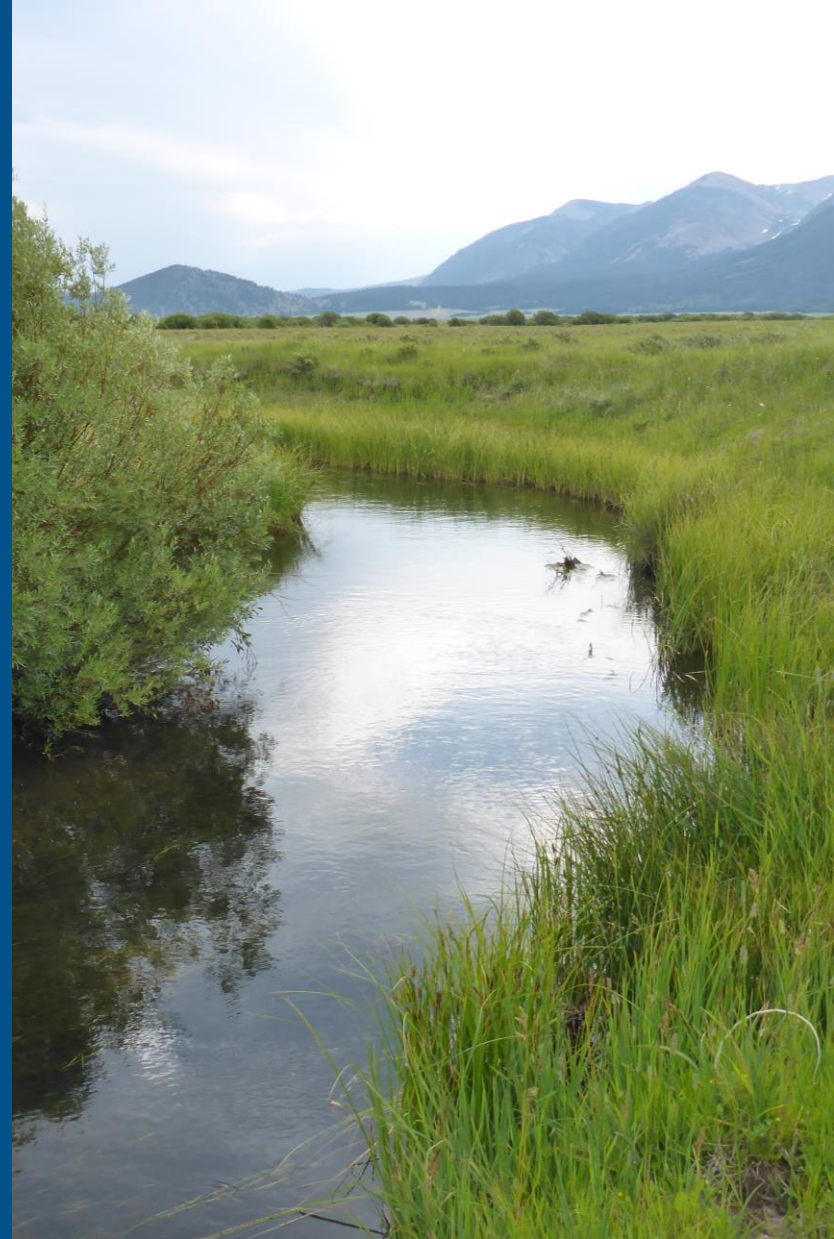
Protect beneficial uses of state waters

Be based on sound science

Fulfill requirements of:

- SB 358
- Federal Clean Water Act
- Current state rules and regulations

Implementable across water programs





OVERVIEW OF RULEMAKING PACKAGE

PROPOSED RULEMAKING

ADOPT

2 new rules and 1 new circular

AMEND

17 existing rules

REPEAL

2 existing rules



ADOPT

NEW RULE I TRANSLATION OF NARRATIVE NUTRIENT STANDARDS

17.30.6xx

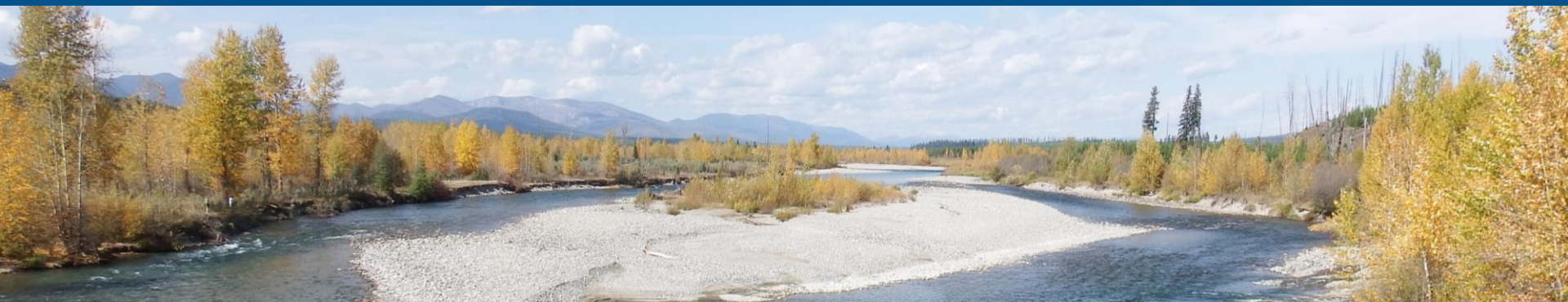
Water Quality, Subchapter 6 - Surface Water Quality Standards and Procedures

NEW RULE II IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM FOR NARRATIVE NUTRIENT STANDARDS

17.30.13xx

Water Quality, Subchapter 13 - Montana Pollutant Discharge Elimination System (MPDES) Permits

DEPARTMENT CIRCULAR DEQ-15



AMEND

ARM 17.30.507	SPECIFIC RESTRICTIONS FOR SURFACE WATER MIXING ZONES
ARM 17.30.602	DEFINITIONS
ARM 17.30.619	INCORPORATIONS BY REFERENCE
ARM 17.30.622	A-1 CLASSIFICATION STANDARDS
ARM 17.30.623	B-1 CLASSIFICATION STANDARDS
ARM 17.30.624	B-2 CLASSIFICATION STANDARDS
ARM 17.30.625	B-3 CLASSIFICATION STANDARDS
ARM 17.30.626	C-1 CLASSIFICATION STANDARDS
ARM 17.30.627	C-2 CLASSIFICATION STANDARDS
ARM 17.30.628	I CLASSIFICATION STANDARDS
ARM 17.30.629	C-3 CLASSIFICATION STANDARDS

Overview of change

- Remove reference to Department Circulars DEQ-12A, DEQ-12B, and/or nutrient standards variances.
- Remove contingent voidness provision pertaining to nutrient standards and nutrient standards variances.

Reason

- To comply with SB 358 requirement to “delete all references to department circular DEQ-12A, department circular DEQ-12B, base numeric nutrient standards, and nutrient standards variances.”

AMEND

ARM 17.30.201 PERMIT APPLICATION, DEGRADATION AUTHORIZATION, AND ANNUAL PERMIT FEES

Overview of change

- Adding fees associated with Adaptive Management Program
 - Application fee (\$5,000) with submission of AMP every 5 years
 - Annual fee (\$3,000 minimum, scaled based on discharge volume)

Reason

- Department received one-time funding in 2021 but no sustained funding to implement Adaptive Management Program.
- Fees are necessary to recover department costs associated with implementation, enforcement, and compliance (e.g., reviewing AMPs, conducting compliance inspections, enforcing permit conditions, staff travel to provide training).



AMEND

ARM 17.30.516 STANDARD MIXING ZONES FOR SURFACE WATER

Overview of change

- For total nitrogen, total phosphorus, or nutrient parameters identified in Department Circular DEQ-7, specifies the stream low flow used in calculating the dilution ratio is based on the seasonal 14-day, five-year (14Q5) low flow.

Reason

- Seasonal 14Q5 initially adopted as the low-flow criteria for use with numeric nutrient criteria in DEQ-12A; retained as it remains the appropriate low-flow statistic.
 - Bottom-attached algae can develop in about 15-20 days when nutrient concentrations are elevated.
 - Use of seasonal 14Q5 for design of disposal systems should prevent excess algae levels from occurring, on average, more than once in five years—within acceptable recommendations by US EPA.



AMEND

ARM 17.30.702 DEFINITIONS

Overview of change

- Define “nutrients” to mean inorganic phosphorus and total inorganic nitrogen
- Removed reference to “total inorganic phosphorus”
- Added “Required” to “Reporting Limit” definition

Reason

- Total inorganic nitrogen and inorganic phosphorus are now consistent with the only two parameters categorized as nutrients in Circular DEQ-7.
- Allows for clearer distinction between how nondegradation is implemented for the parameters defined as nutrients as compared to total nitrogen and total phosphorus.
- Updating term “Required Reporting Limit” to be more consistent with DEQ-7.



AMEND

ARM 17.30.635 GENERAL TREATMENT STANDARDS

Overview of change

- Adjusted use of acronym “7Q10” after it is initially defined
- Added the word “nutrients” to specify dilution requirements must be based on seasonal 14Q5

Reason

- Improved clarity by appropriately using and defining the acronym.
- Improve consistency with amendments proposed in ARM 17.30.516 and ARM 17.30.702 –the seasonal 14Q5 low flow is the most appropriate low-flow criteria for nutrients (as defined in amendments proposed to ARM 17.30.702) as well as total nitrogen and total phosphorus.



AMEND

ARM 17.30.715 CRITERIA FOR DETERMINING NONSIGNIFICANT CHANGES IN WATER QUALITY

Overview of change

- Remove “nutrients,” remove references to Circular DEQ-12A, and add “total nitrogen and total phosphorus for reaches of the Clark Fork River” listed at ARM 17.30.631 to from provision 17.30.715(1)(f)
- Add “including those addressed by NEW RULE I” to provision 17.30.715(1)(h).
- Remove contingent voidness provision

Reason

- To comply with SB 358 requirement to “delete all references to department circular DEQ-12A, department circular DEQ-12B, base numeric nutrient standards, and nutrient standards variances.”
- To clarify that total nitrogen and total phosphorus are to be treated as parameters for which there are only narrative water quality standards (17.30.715(1)(h)) when evaluating nonsignificance under nondegradation (*except for reaches of the Clark Fork River which have numeric total nitrogen and total phosphorus standards at 17.30.631*).

17.30.715(1)(h): “changes in the quality of water for any parameter for which there are only narrative water quality standards if the changes will not have a measurable effect on any existing or anticipated use or cause measurable changes in aquatic life or ecological integrity.”

AMEND

ARM 17.30.1304 DEFINITIONS

Overview of change

- Removing a portion of the previously-adopted definition: “An adaptive management plan includes a watershed monitoring plan and, if required, an implementation plan.”

Reason

- Amending the definition to match the definition of Adaptive Management Plan in Circular DEQ-15.
- To be more concise; the components of an Adaptive Management Plan are described in greater detail in Circular DEQ-15 and are not necessary in the definition.



REPEAL

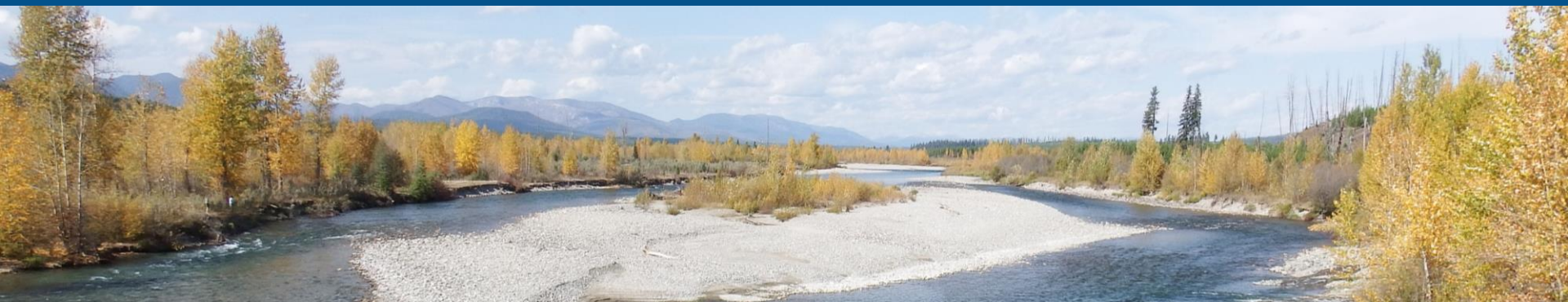
ARM 17.30.1388 DEVELOPMENT OF AN ADAPTIVE MANAGEMENT PROGRAM

Implementing Narrative Nutrient Standards

- “Framework rule” adopted in 2022
- Interim step to meet a statutory deadline between adoption of SB 358 and this current comprehensive rulemaking
- Adoption of new rules will render framework rule unnecessary, redundant

ARM 17.30.660 NUTRIENT STANDARDS VARIANCES

- Administrative update following the direct repeal of this rule by SB 358



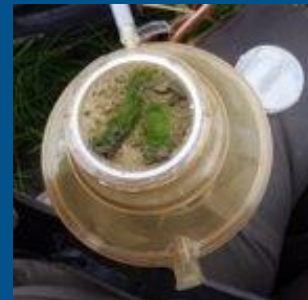


PROPOSED NEW RULE I

NEW RULE I

TRANSLATION OF NARRATIVE NUTRIENT STANDARDS

- Specifies that the narrative standard at ARM 17.30.637(1)(e) is the narrative standard that applies to nutrients
- Adopts and incorporates by reference Department Circular DEQ-15, which provides procedures and requirements for the translation of narrative nutrient standards



NEW RULE I

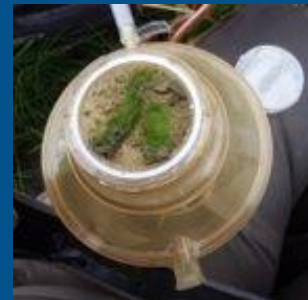
TRANSLATION OF NARRATIVE NUTRIENT STANDARDS

Necessary to fulfill Senate Bill 358 and 75-5-321, MCA

“to adopt rules related to narrative nutrient standards”

“identifies the appropriate response variables affected by nutrients and associated impact thresholds in accordance with the beneficial uses” of state surface waters.

Ensures narrative nutrient standards will be translated consistently across department water programs



CIRCULAR DEQ-15 PART I

TRANSLATION OF NARRATIVE NUTRIENT STANDARDS

Provides narrative nutrient standards translators to determine if narrative nutrient standards are met

Combined criterion approach

- Response variables = direct measures of the biological community or its effects (e.g., benthic algae biomass, macroinvertebrate metrics, dissolved oxygen delta)
- Causal variables = TN and TP concentrations
- Consistent with EPA guidance

Weight-of-evidence procedures give greater weight to the biologically-based response variables



CIRCULAR DEQ-15 PART I

TRANSLATION OF NARRATIVE NUTRIENT STANDARDS

Translators applicable to different:

Waterbodies

- Wadeable streams & medium rivers
- Large rivers

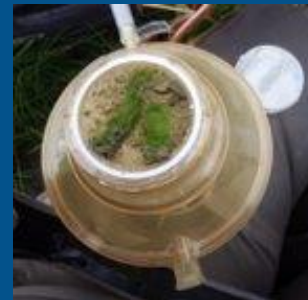
Beneficial uses

- Recreation
- Aquatic Life

Regions

- Western & transitional ecoregions
($\leq 1\%$ or $> 1\%$ water slope)
- Eastern ecoregions

And...acknowledgement that exceptions and special conditions (e.g., dams, spring creeks, drought) may warrant site-specific response and causal criteria



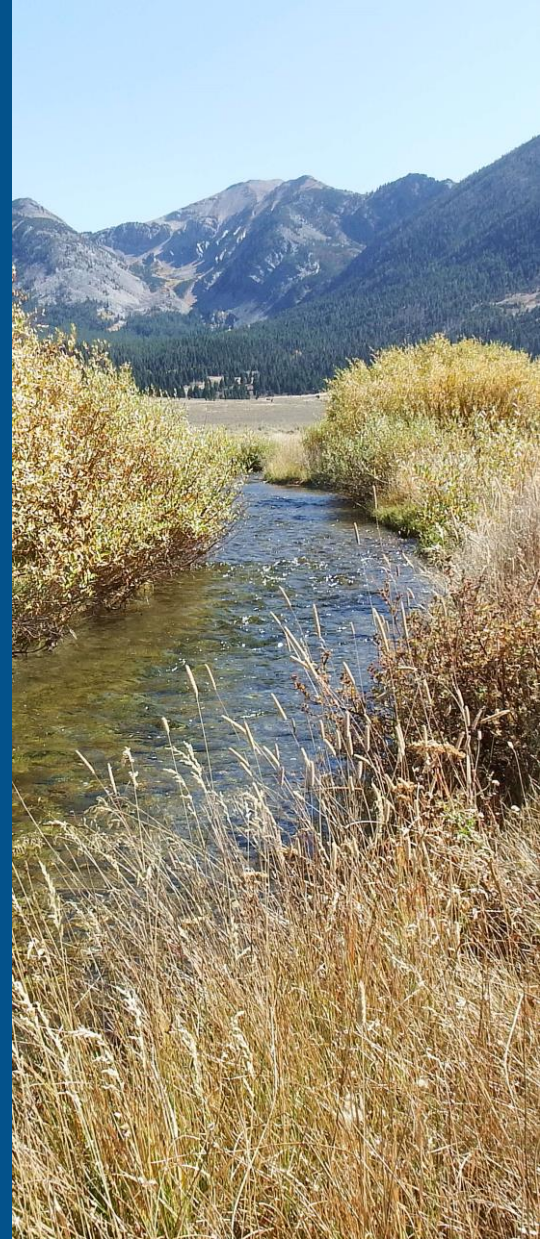


PROPOSED NEW RULE II

NEW RULE II

IMPLEMENTATION OF THE **ADAPTIVE MANAGEMENT PROGRAM**

- Describes implementation within the MPDES permitting program of a new, optional compliance method—the **Adaptive Management Program**—that owners or operators of point sources may choose to achieve narrative nutrient standards and address nutrients in their watershed
- MPDES permits may include limits and conditions consistent with the department-approved **Adaptive Management Plan**
- Adopts and incorporates by reference Department Circular DEQ-15



NEW RULE II

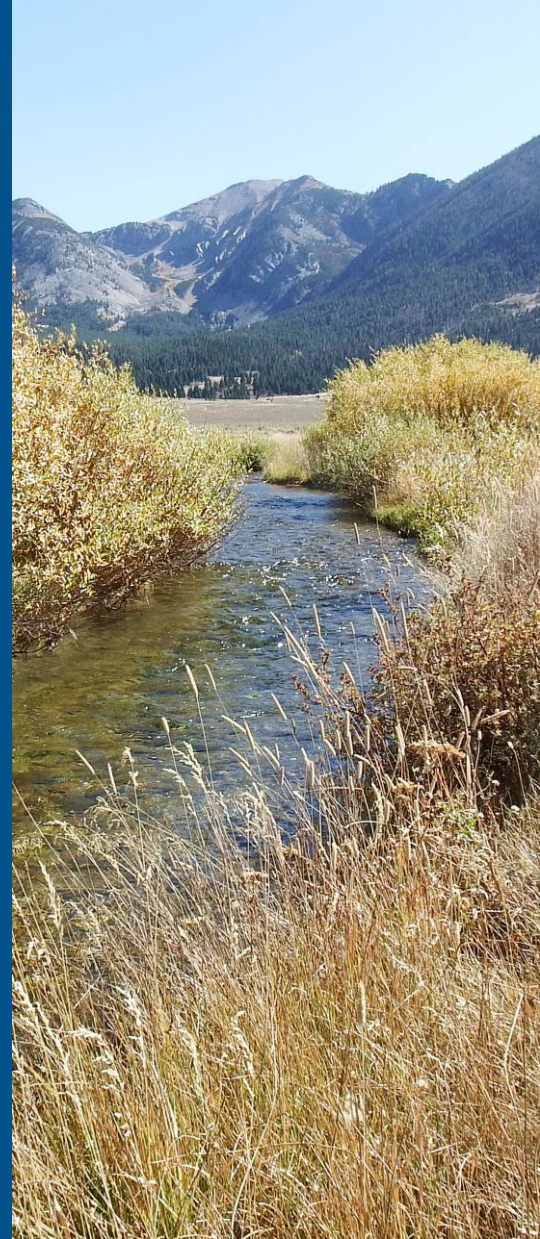
IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM

Necessary to fulfill Senate Bill 358 and 75-5-321, MCA:

Adopt rules related to narrative nutrient standards that “provide for the development of an adaptive management program that provides for an incremental watershed approach for protecting and maintaining water quality”

and that:

- (a) reasonably balances all factors impacting a water body
- (b) prioritizes the minimization of phosphorus, taking into account site-specific conditions



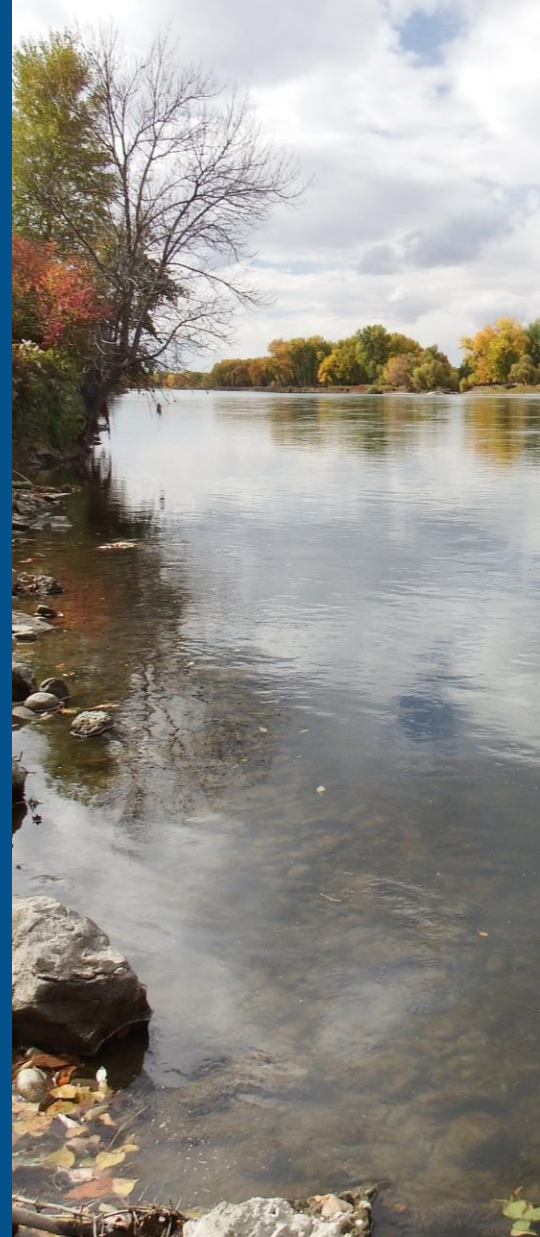
NEW RULE II

IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM

Adaptive Management Program implemented in MPDES permits as long-term compliance schedule

- Interim performance milestones evaluated annually and at each 5-year permit cycle
- Permit limits and conditions derived to achieve narrative nutrient standards as provided in NEW RULE I.
- Attain water quality goals as soon as possible

Adaptive Management Program is optional; permittee not precluded from pursuing, at any time, other regulatory compliance options (e.g., water quality standards variances)



NEW RULE II

IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM

Flexible

- Facility and/or watershed focus (optimization, capital improvements; point and/or nonpoint source reductions)
- Incorporates site-specific data

Adaptive

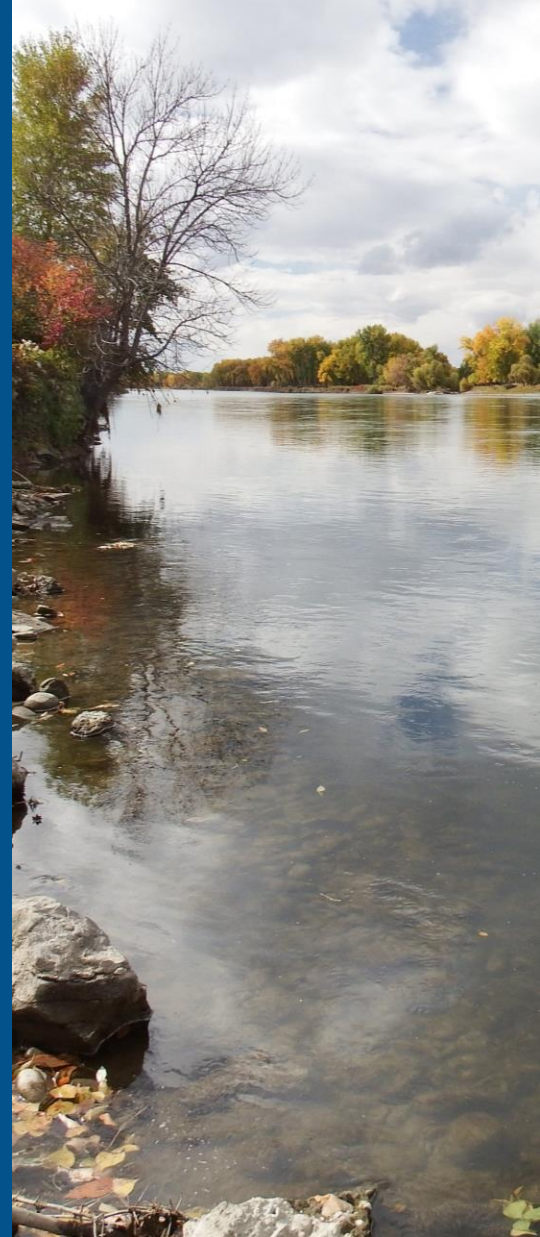
- Plan, implement, monitor, evaluate, adjust

Incremental

- Compliance schedules with interim and final effluent limits

Addresses both TN and TP, where necessary;

Allows for phosphorus prioritization, where appropriate



NEW RULE II

IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM

Adaptive Management Plan

- Department approval
- Monitoring (effluent and instream)
- Watershed implementation
(e.g., facility optimization, nutrient source identification, pollutant reduction activities, load reduction estimates, partner commitments)
- Annual reporting
- May involve the use of mechanistic water quality models, especially for large rivers



CIRCULAR DEQ-15 PART II

IMPLEMENTATION OF THE ADAPTIVE MANAGEMENT PROGRAM

Includes details and procedures related to implementing the Adaptive Management Program, including:

- Program eligibility
- Phosphorus prioritization
- Lake, reservoir, downstream protections
- Identifying nutrients for permit limits
- Field audits
- Adaptive Management Plan requirements (including pollutant minimization activities and watershed-scale plan)
- Large rivers and water quality models
- Integration with Total Maximum Daily Load





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THANK YOU!

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