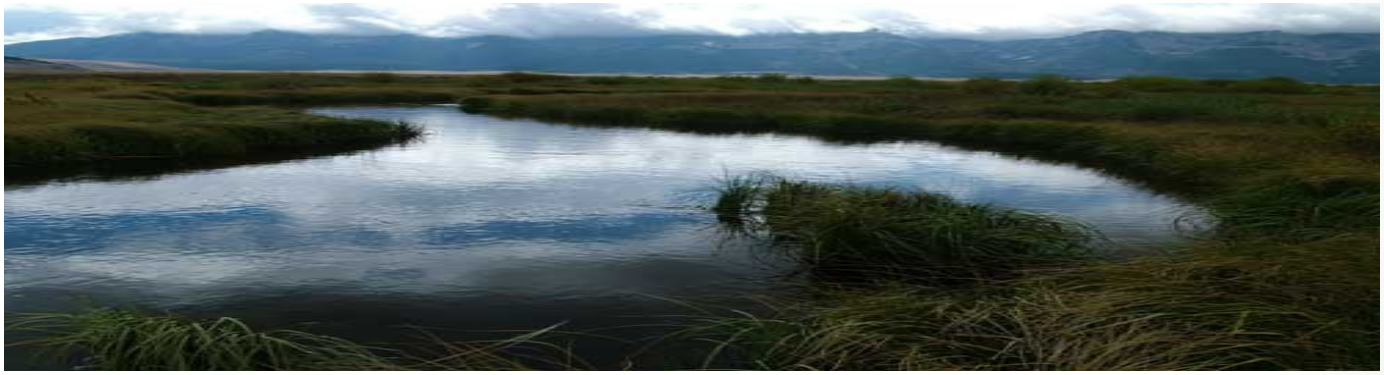
# 2016 Triennial Review and Proposed Amendments to Montana's Water Quality Standards



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# Triennial Review

- Requirement of Montana Code Annotated 75-5-301, "classification and standards for state waters:"
  - "The board shall…(3) review, from time to time at intervals of not more than 3 years and, to the extent permitted by this chapter, revise established classifications of waters and adopted standards of water quality;"
- Montana's last triennial review ended in October 2012

# Rules Open to Comment

- Mixing zone rules at Administrative Rules of Montana (ARM) 17.30 subchapter 5
- Surface water designated uses and water quality criteria at ARM 17.30 subchapter 6
- Nondegradation rules at ARM 17.30 subchapter 7
- Ground water rules at ARM 17.30 subchapter 10
- Compliance schedule authorizing provision at ARM 17.30.1350
- Numeric water quality criteria included in Department Circulars DEQ-7 (“Montana Numeric Water Quality Standards”) and DEQ-12A and B (“Montana Base Numeric Nutrient Standards” and “Nutrient Standards Variance”)

# Timeline

- January 8, 2016—Water Pollution Control Advisory Council (WPCAC) meeting
- February 5, 2016—BER voted to open the triennial review by requesting public comments on Montana's water quality standards
- March 11, 2016—WPCAC briefing on anticipated changes to water quality standards
- June 3, 2016—Public comment period closed and BER held the public hearing
- November 18, 2016—WPCAC meeting
- December 9—Request initiation of rulemaking
- 2017—If adopted, submit to EPA for review and approval

# Comment Categories

- Federally adopted standards
- Public comments
- EPA recommendations

# Federally Adopted Standards

- 2015 update to federal water quality standards regulations requires that states either adopt Federal Clean Water Act §304(a) criteria during their next triennial review or explain their decision not to adopt them.
  - Aluminum
  - Ammonia
  - Methylmercury
  - Selenium

# Aluminum

- Federal aquatic life standards are total recoverable. DEQ adopted the proposed numbers, but the dissolved fraction in 1993.
- February 23, 2006 BER justified keeping the dissolved fraction as the water quality standard.
- EPA has recently stated that they believe using the dissolved fraction as the water quality standard is under protective.
- DEQ is reviewing the science and researching the implications that changing the standard could have for permittees and communities in Montana.

# Ammonia

- EPA adopted new ammonia standards in 2013.
- Protection of sensitive species lowered the ammonia standards.
- There are substantial technical, social, and economic challenges to implementing these very low ammonia standards.
- State has an obligation to implement standards that are protective and possible to achieve.
- DEQ has developed a list of strategy options to accompany the potential future adoption of the ammonia standards.

# Methylmercury

- DEQ currently uses the former mercury Clean Water Act 304(a) human health criterion of 0.05 micrograms/liter.
- The current criterion for the protection of human health in surface water is a fish tissue based standard for methylmercury of 0.3 milligrams/kilogram, adopted in 2001.
- EPA published guidance on how to implement the fish tissue based standard in 2010. Complicated process of translating the fish tissue based standard into a water quality standard.
- DEQ recommends retaining the old mercury water quality standard until DEQ staff is available to tackle the process of developing the water quality standard. The old standard's low level helps protect against accumulation of mercury in fish tissue.

# Selenium

- DEQ's current acute and chronic selenium standards for aquatic life are 20 and 5 micrograms per liter, respectively.
- EPA adopted new aquatic life standards in June 2016. The new standards include fish tissue and water column components that vary for flowing and still waters. The 30-day chronic water quality standard = 3.1 micrograms per liter for flowing water.
- EPA developed a draft technical support document which is out for public comment until February 10, 2017.

# Public Comments Received

- Montana should use dissolved metals standards rather than the current total recoverable metals standards.
  - Current standards are protective
  - No sediment standards

- Montana should allow for freshwater copper criteria to be calculated using procedures in EPA's 2007 Copper Criteria recommendation using the biotic ligand model.
  - 10 parameters necessary to run the biotic ligand model
  - Dissolved vs total recoverable

# Public Comments Received

- Publicly owned treatment works should not be forced to shoulder the cost burden of cleaning up our lakes, rivers, and streams. Reduction of nitrogen and phosphorus will have little effect on water quality without addressing other sources of contamination.
  - Variances
  - Nutrient trading
  - Total maximum daily load documents and best management practices for nonpoint sources

# Comments Received From EPA

- Retain maximum contaminant levels where they are more stringent than 304(a) criteria.
- Clarify which water quality criteria apply to which designated uses.
- Improve Montana's nondegradation rules
- Consider a broad narrative statement to protect downstream WQS
- Efforts regarding water quality standards and natural conditions must meet EPA's public participation requirements and be submitted to EPA for review/action.

# Proposed Rule Amendments

- Department Circular DEQ-7, “Montana Numeric Water Quality Standards”
- Administrative Rules of Montana

# DEQ-7 Changes

- Housekeeping
  - Grammar, wordsmithing, and technical edits
  - Correction of errors

# Sources of Human Health Standards in DEQ-7

### Clean Water Act

- Surface Water
- National recommended water quality criteria (NRWQC) or 304(a) criteria = priority pollutant (PP) or non priority pollutant (NPP)

### Safe Drinking Water Act

- Drinking water
- Maximum contaminant levels (MCLs)


# Surface Water vs Ground Water

| Pollutant Element / Chemical Compound or Condition §§ - Primary Synonym § - Other Names | CASRN numbers, NIOSH number, SAX Number (25) (26) (27) | Category (1) (2) | Aquatic Life Standards | | Bio-concentration Factor (BCF) (5) | Human Health Standards (17) (16) | | Trigger Value (22) | Required Reporting Value (19) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Acute (3) | Chronic (4) | | Surface Water | Ground Water | | |
| Acenaphthene<br>§§<br>§ 3Acenaphthalene §<br>Naphthyleneethylene § 1,8-<br>Ethylenenaphthalene § 1,8-<br>Ethylene Naphthalene § 1,2-<br>Dihydroacenphthylene §<br>Acenphthylene, 1,2-Dihydro- | 83-32-9<br>AB 1255500<br><br><br>AAE750 | Toxic | | | 242 | 670<br><br><br><br>PP | 670<br><br><br><br>PP | | 10 |

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# Surface Water vs Ground Water

**Surface Water**

1. More restrictive of the MCL or PP or NPP
2. If the PP or NPP and the MCL are the same number, the PP or NPP is listed as the source in DEQ-7.
3. If neither a PP nor an NPP nor an MCL is available, DEQ will use a health advisory (HA) recommended by EPA.

**Ground Water**

1. MCL
2. PP or NPP
3. If neither a PP nor an NPP nor an MCL is available, DEQ will use a health advisory (HA) recommended by EPA.

# Human Health Standards

- EPA adopted 94 new/updated National Recommended Water Quality Criteria in 2015
- Proposing to update 67 human health standards to incorporate EPA's newly recommended human exposure inputs.
  - Daily water intake 2 L → 2.4 L
  - Mean adult body weight 70 kg → 80 kg
  - Fish consumption 17.5 g → 22 g

# New Pesticide Standards

- Montana Agricultural Chemical Groundwater Protection Act
  - Clothianidin
  - Glufosinate
  - Saflufenacil
  - Thiamethoxam
  - Sulfentrazone

# Aquatic Life Standards

- Cadmium (2016)
  - Currently acute/chronic are 0.52/0.097 µg/L @25 mg/L hardness
  - Proposed acute/chronic are 0.49/0.25 µg/L @25 mg/L hardness
- Carbaryl (2012)
  - Proposed acute and chronic are both 2.1 µg/L

# Other DEQ-7 Changes

- Pollutant category updates
- Maintain narrative standards in ARM 17.30 subchapter 6
  - Color
  - pH
  - Temperature
  - Turbidity

# ARM 17.30 Subchapter 6

- Add “most probable number” (mpn) as acceptable units for E. coli measurements
- Modify the surface water-use designation to have defined start and end points (lat/long) and remove tribal waters to honor jurisdictional boundaries
- Reference to compliance schedule authorizing provision in permitting rules

# Questions?