

Negotiated Rulemaking
Docket No. 58-0102-1802

Revision of Recreation Use and
Criteria and Adoption of Aquatic Life
Criteria for Three Toxics

May 31, 2018



Outline

- Recreation Use and Criteria Revision
- Adoption of Aquatic Life Criteria for Three
Toxics



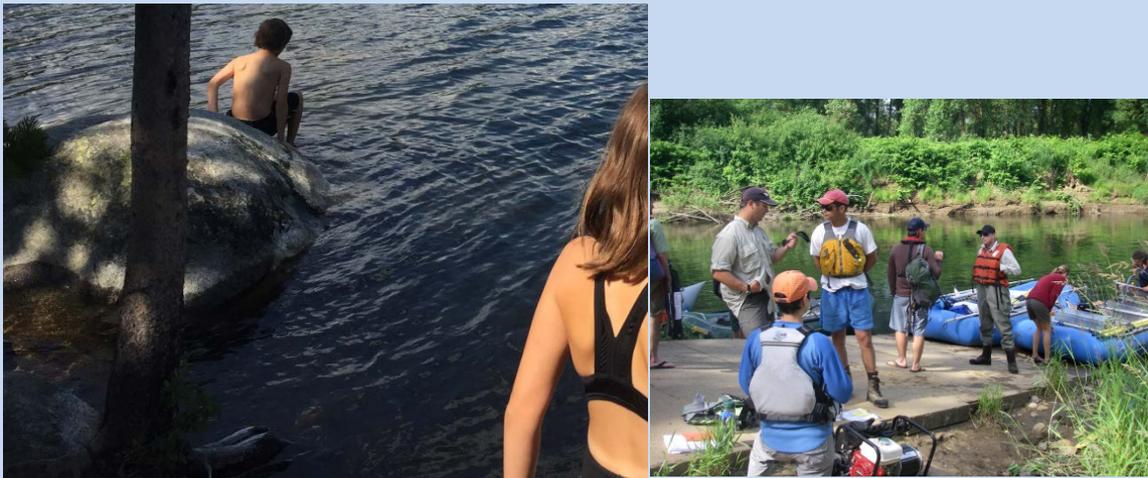
Outline

- Recreation Use and Criteria
 - Why revise?
 - Current Use Designation
 - Removing Subcategories
 - EPA §304(a) criteria
 - Addition of enterococci criteria
 - Use of Statistical Threshold Values
 - Draft Rule Language



Recreation Use and Criteria

- Why Revise?
 - Recreation Use subcategories carry same criteria
 - Consideration of revised EPA §304(a) criteria
 - Identified as high priority in the 2017 Triennial Review of Idaho Water Quality Standards



Recreational Use and Criteria

- Recreational use specific criteria:
 - Bacteria criteria (*E. coli*)
 - *Human health criteria*
- Current Recreational Use Designations (IDAPA 58.01.02.100)
 - Primary Contact Recreation (PCR)
 - Secondary Contact Recreation (SCR)
 - Public Swimming Beach



Current Structure

- Single Sample Maximum (SSM) for bacteria dependent on use subcategory – thresholds for additional monitoring, NOT criteria

| | <i>E. coli</i> (CFU/100 mL) |
|--------------------------|--------------------------------|
| SCR | 576 |
| PCR | 406 |
| Public Swimming Beach | 235 |

Recreational Use and Criteria

- Multiple use categories, same criteria
 - Human Health Toxics Criteria :
 Numeric Criteria for *Fish Only* exposure (210.01.b)

| Compound | ^a CAS Number | Carcinogen? | Water & Fish (µg/L) | | Fish Only (µg/L) | |
|--------------------------|----------------------------|-------------|------------------------|----|---------------------|----|
| Cyanide | 57125 | | 3.9 | b | 140 | b |
| Asbestos | 1332214 | | 7,000,000 Fibers/L | j | | |
| Organic Compounds | | | | | | |
| Acenaphthene | 83329 | | 26 | b | 28 | b |
| Acenaphthylene | 208968 | | | e | | e |
| Acrolein | 107028 | | 3.2 | b | 120 | b |
| Acrylonitrile | 107131 | Y | 0.60 | bf | 22 | bf |
| Aldrin | 309002 | Y | 2.5E-06 | bf | 2.5E-06 | bf |
| Anthracene | 120127 | | 110 | b | 100 | b |

Recreational Use and Criteria

- Multiple use categories, same criteria
 - *E. coli* criterion:
Geometric Mean of 126 CFU/100mL

Removing Subcategories

- Does not change applicable criteria (or level of protection)
- Simplifies monitoring, assessments, TMDLs, and IPDES

Criteria Background

- Recreational criteria are for fecal indicator bacteria (FIB)
- Criteria concentrations are based on rate of gastrointestinal illnesses associated with concentrations of FIB at swimming beaches
- For EPA's 2012 §304(a) criteria recommendation, identified enterococci concentrations related to illnesses, used relationship of enterococci to *E. coli* to derive criteria

Comparison to §304(a)

| Indicator | Current Idaho Criteria (cfu/100 mL) | | | EPA 2012 Recommended Criteria (cfu/100 mL) | | | |
|----------------|--|-----------------------|-----|---|--------------------|-----------------------------------|--------------------|
| | | | | Illness Rate of 36/1,000 Users | | Illness Rate of 32/1,000 Users | |
| | Geometric Mean | SSM ^a | | Geometric Mean | STV ^{a,b} | Geometric Mean | STV ^{a,b} |
| <i>E. coli</i> | 126 | Secondary Contact | 576 | 126 | 410 | 100 | 320 |
| | | Primary Contact | 406 | | | | |
| | | Public Swimming Beach | 235 | | | | |
| Enterococci | — | — | | 35 | 130 | 30 | 110 |

^a The single sample maximum values (SSM) and the statistical threshold values (STV) are *not* criteria, and exceedance of an SSM or STV alone is not considered a criterion violation. Rather, these are considered "trigger values" that initiate additional sampling.

^b Greater than 10% frequency of exceedance of the STV in a 30-day period would be a violation even if the geometric mean criterion wasn't violated over the same period.

EPA's 2012 §304(a) Recommendation

- Provides 2 sets of criteria, corresponding to two different illness rates

| Indicator | EPA 2012 Recommended Criteria (cfu/100 mL) | | | |
|-------------|---|-----|----------------------------------|-----|
| | Illness Rate of 36/1000 Users | | Illness Rate of 32/1000 Users | |
| | Geo Mean | STV | Geo Mean | STV |
| E. Coli | 126 | 410 | 100 | 320 |
| enterococci | 35 | 130 | 30 | 110 |

Enterococci

- EPA's 2012 §304(a) guidance provides enterococci in addition to *E. coli*
- Enterococci directly related to illness rates
- New monitoring and analysis techniques may lead to longer sample holding times
- Either *E. coli* or enterococci can be used to demonstrate protection of recreation use

Statistical Threshold Value (STV)

- EPA's 1986 recommendation, and Idaho WQS, use SSM derived from the distribution of results associated with illness from previous studies
- SSMs were different depending on use intensity
- Idaho adopted SSMs as “triggers” for additional monitoring, not as actionable criteria

Statistical Threshold Value (STV)

- 2012 Recommendation includes STV instead of SSM
- STV is based on the 90th percentile of the water quality distribution used to derive the geomean criterion

Statistical Threshold Value (STV)

- Unlike SSM, STV is not intended to be a “not to be exceeded” value (although Idaho did not adopt SSM as such)
- STV is not to be exceeded in more than 10% of valid samples over a thirty-day period

Criteria Summary

| | Enterococci | | <i>E. coli</i> | |
|---------------------------------|--------------------|------------|----------------|------------|
| | Geomean | STV | Geomean | STV |
| Magnitude (CFU/100mL) | 35 | 130 | 126 | 410 |
| Duration | 30 days | 30 days | 30 days | 30 days |
| Frequency | - | 10% | - | 10% |

Draft Rule Language

Summary

- Collapsing PCR and SCR into single REC use simplifies application/implementation, provides same level of protection
- Addition of enterococci provides options and positions Idaho for future updates

Questions?

Outline

- Aquatic Life Criteria for Three Toxics
 - Why consider?
 - Acrolein
 - Carbaryl
 - Diazinon



Why new toxics?

- Federal Regulations require that states consider new 304(a) recommendations as part of the triennial review
- DEQ's 2017 triennial review identified as high priority

Acrolein

- Used for aquatic weed control
- Used primarily in irrigation canal treatment

Acrolein

2009 EPA §304(a) recommended criteria and Idaho WQS comparison

| Criteria Version | CMC ($\mu\text{g/L}$) ^a | CCC ($\mu\text{g/L}$) ^a |
|------------------|--------------------------------------|--------------------------------------|
| Idaho WQS | — | — |
| EPA §304(a) | 3 | 3 |

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

Carbaryl

- Insecticide and molluscicide
- Both agricultural and household use



Carbaryl

2012 EPA §304(a) recommended criteria and Idaho WQS comparison

| Criteria Version | CMC ($\mu\text{g/L}$) ^a | CCC ($\mu\text{g/L}$) ^a |
|------------------|--------------------------------------|--------------------------------------|
| Idaho WQS | — | — |
| EPA §304(a) | 2.1 | 2.1 |

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

Diazinon

- Organophosphorus compound
- Broad spectrum insecticide
- Used as insecticide in agricultural production
 - Residential use has been cancelled since 2004



Diazinon

2005 EPA §304(a) recommended criteria and Idaho WQS comparison

| Criteria Version | CMC ($\mu\text{g/L}$) ^a | CCC ($\mu\text{g/L}$) ^a |
|------------------|--------------------------------------|--------------------------------------|
| Idaho WQS | — | — |
| EPA §304(a) | 0.17 | 0.17 |

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

Summary

- Currently, no individual NPDES permits in Idaho
- Application covered by Pesticide General Permit
 - No specific conditions for Acrolein, Carbaryl, or Diazinon
- Implementation would focus on monitoring and assessment
- Proposing direct adoption of EPA's 304(a) recommendation

Questions?

Next Steps

- Comments due: June 8
- Next meeting (if needed): June 28