KSWQS Public Meeting
December 3, 2020
Housekeeping

• Lines are muted to start
  • Chat box will be active throughout for questions and any difficulties
• You have to unmute yourself when made available, we cannot do it for you
• Today’s presentation is placed with the other documents on the KSWQS webpage
Why are we here today?

• To get the triennial review rolling and take input from interested parties
  • The triennial review is a requirement at 40 CFR 131.20 for states running their water quality standards program requiring review of and revision, as appropriate, of these standards every 3 years

• Why not a public hearing instead of this public meeting?
  • We want to know now if there is anything objectionable to stakeholders, general public, etc. instead of after moving proposed changes through the state’s regulation revision process

• Our theme of this triennial review is clean-up
Agenda

1. Regulation updates (K.A.R. 28-16-28b through 28-16-28h)
2. Numeric Criteria Tables
3. Implementation Procedures
4. Surface Water Register
5. Variance Register and associated documents
6. Deferral items
7. What’s next?
The regulations for KSWQS are listed in the K.A.R. where:

- **28-16-28b. Definitions**
  - Minor edits, a few new terms
- **28-16-28c. General Provisions**
- **28-16-28d. Surface Water Classification and Use Designation**
- **28-16-28e. Surface Water Quality Criteria**
  - Remove 28-16-28e.(c)3. as it’s a 303(d) list item, not standards
- **28-16-28f. Administration of Surface Water Quality Standards**
  - 28-16-28f.(c) compliance schedules
- **28-16-28g. Surface Water Register**
- **28-16-28h. Surface Water Variance Register**
28-16-28b. Definitions

- “Base flow” definition states ‘fair weather’ and now will say ‘fair-weather’
- “Highest attainable condition” incorrectly references K.A.R. 28-16-28f(d)(5), will be updated to 28-16-28f(d)(4)
- Adding “Thermally stratified” and its sub-definitions for “epilimnion” and “metalimnion” (more on this later with numeric table updates related to dissolved oxygen)
28-16-28e. Surface Water Quality Criteria

- Removing 28-16-28e.(c)(3):
  - In regards to application of criteria for designated uses ‘Each digression shall be assessed by the secretary for the purposes of section 303(d) of the federal clean water act, with consideration of acceptable duration and frequency of the digression and representation of actual ambient conditions by environmental monitoring data, as specified in the “Kansas implementation procedures: surface water quality standards.”’
  - Removing as it’s a redundancy where 303(d) list is required separate from standards and EPA has questioned its inclusion here as well.
28-16-28f. Administration of Surface Water Quality Standards

• In short, we’re increasing time allowed on compliance schedules in Clean Water Act permits
  • Why? EPA/Federal requirements state “as soon as possible” at 40 CFR § 122.47(a)(1). We have to follow the federal requirements on this, unless our own rules are more stringent.
  • Currently, we restrict permits to 3 years past issuance unless demonstrated as infeasible, then up to 5 years. Almost exclusively, this is more restrictive than “as soon as possible”
28-16-28f. Administration of Surface Water Quality Standards

• What that looks like at 28-16-28f(c)(1) and (2):
  
  28-16-28f(c)(1) states “…compliance schedules contained in any discharge permit or license issued by the department pursuant to the federal clean water act or K.S.A. 65-165, and amendments thereto, shall not extend more than five years beyond the date of permit issuance”

  28-16-28f(c)(2) states “compliance schedules of up to five years in total duration past the permit issuance may be granted if it is demonstrated that the strict application of paragraph (c)(1) is not feasible…”
Questions
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Changes to Table 1a.  
(Aquatic Life, Agriculture, and Public Health Designated Uses Criteria)

- Non-substantive edits
  - Selenium is going to the ‘metals’ section instead of the ‘other inorganic substances section’
  - Underlining that ended up in the table from 2018 are being removed
  - Benzidine spelling corrected from ‘Benzidene’
Changes to Table 1a.
(Aquatic Life, Agriculture, and Public Health Designated Uses Criteria)

- Currently, 5 pollutants for their domestic water supply use were “reserved action” items by EPA in 2017:
  1. Mercury
  2. Endrin
  3. 1,2-dichloropropane
  4. 1,2,4-trichlorobenzene
  5. Barium

- We adopted MCL values from the Safe Drinking Water Act, but the derivation of these values don’t match the use for protecting the waters
Changes to Table 1a.
(Aquatic Life, Agriculture, and Public Health Designated Uses Criteria)

- Proposed solution is adoption of 304(a) human health criteria where:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Current (µg/L)</th>
<th>Proposed (µg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
<td>2</td>
<td>2*</td>
</tr>
<tr>
<td>Endrin</td>
<td>2</td>
<td>0.03</td>
</tr>
<tr>
<td>1,2-dichloropropane</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>1,2,4-trichlorobenzene</td>
<td>70</td>
<td>0.071</td>
</tr>
<tr>
<td>Barium</td>
<td>2,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

*Methylmercury fish tissue criterion of 0.3 mg/kg shall be used for the Public Health use protections related to mercury.
Changes to Table 1b.
(Hardness-Dependent Aquatic Life Support Criteria)

- Cadmium chronic criterion update to match EPA’s 2016 update:
  \[ \text{CADMIUM (ug/L):} \]
  \[ \text{acute criterion = WER[EXP[(1.0166(LN(hardness))) - 3.924]]} \]
  \[ \text{chronic criterion = WER[EXP[(0.7977409(LN(hardness))) - 3.9094719]]} \]
Changes to Table 1c and 1d.
(Ammonia Acute and Chronic Criteria)

- Including equation to derive the tables to be used in lieu of interpolation
  - EPA request instead of somebody potentially assuming interpolation
  - Zero change in how we do things internally nor to the criteria’s values

Acute:

$$0.7249 \times \left( \frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}} \right) \times \text{MIN}(51.93, 23.12 \times 10^{0.036 \times (20-T)})$$

Chronic:

$$0.8876 \times \left( \frac{0.0278}{1 + 10^{7.688-pH}} + \frac{1.1994}{1 + 10^{pH-7.688}} \right) \times (2.126 \times 10^{0.028 \times (20-MAX(T,7))})$$
Changes to Table 1g.
(Temperature, Dissolved Oxygen, and pH Numeric Aquatic Life Criteria)

- No alterations to pH or Temperature
- Changes to Dissolved Oxygen (DO) stem from addressing the EPA's 2017 Decision Letter (more info in Position Paper)

Currently there:

![Table 1g. Temperature, Dissolved Oxygen, And pH Numeric Aquatic Life Criteria.]

<table>
<thead>
<tr>
<th>Aquatic Life Use</th>
<th>Dissolved Oxygen (DO)</th>
<th>pH</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>5.0 mg/L(^a)</td>
<td>6.5-8.5(^b)</td>
<td>32°C(^c)</td>
</tr>
<tr>
<td>Expected</td>
<td>5.0 mg/L(^a)</td>
<td>6.5-8.5(^b)</td>
<td>32°C(^c)</td>
</tr>
<tr>
<td>Restricted</td>
<td>5.0 mg/L(^a)</td>
<td>6.5-8.5(^b)</td>
<td>32°C(^c)</td>
</tr>
</tbody>
</table>

\(^a\) The concentration of dissolved oxygen in surface waters shall not be lowered by the influence of artificial sources of pollution.

\(^b\) Dissolved oxygen concentrations can be lower than 5.0 mg/L when caused by documented natural conditions specified in the "Kansas Implementation Procedures: Surface Water Quality Standards".

\(^c\) For lakes or reservoirs experiencing thermal stratification, the dissolved oxygen criterion is only applicable to the top layer or epiplankton of the waterbody.
Crash course in thermal stratification:
Changes to Table 1g.  
(Temperature, Dissolved Oxygen, and pH Numeric Aquatic Life Criteria)

## Table 1g. Temperature, Dissolved Oxygen, And pH Numeric Aquatic Life Criteria.

<table>
<thead>
<tr>
<th>Aquatic Life Use</th>
<th>Dissolved Oxygen (DO)</th>
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<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>5.0 mg/L</td>
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<td>32°C</td>
</tr>
<tr>
<td>Expected</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
<tr>
<td>Restricted</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
</tbody>
</table>

### Non-Thermally Stratified Surface Waters

<table>
<thead>
<tr>
<th>Aquatic Life Use</th>
<th>Dissolved Oxygen (DO)</th>
<th>pH</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
<tr>
<td>Expected</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
<tr>
<td>Restricted</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
</tbody>
</table>

### Thermally Stratified Lakes or Reservoirs

<table>
<thead>
<tr>
<th>Aquatic Life Use</th>
<th>Dissolved Oxygen (DO)</th>
<th>pH</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
<tr>
<td>Expected</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
<tr>
<td>Restricted</td>
<td>5.0 mg/L</td>
<td>6.5-8.5</td>
<td>32°C</td>
</tr>
</tbody>
</table>

- **Revisions:**
  - Thermal stratification criteria vs non-stratified
  - Numeric criteria for epilimnion and metalimnion at 5.0 mg/L and 3.0 mg/L, respectively
  - Note ‘a’ now specifies narrative criteria still apply to all depths and reflects how bottom measurement can be hypoxic naturally

- **Why metalimnion?**
  - Protect coolwater species using the metalimnion as thermal refuge during summer months (when stratification is expected)

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*Addition of thermal stratification, epilimnion, and metalimnion here is why definitions were added to 28-16-28b earlier*
Questions
KSWQS Public Meeting

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Section 3.4 Duration and Frequency to BLM Copper Criteria

• Duration and Frequency removed from Implementation Procedures, kept in 303(d) methodology
• Biotic Ligand Model Procedure for Aquatic Life Use Protections replaces it in Section 3.4
Section 4.2 Variance Request Requirements

Added language clarifying requirements applicable to all variances and multiple-discharger variances (MDVs)

Multiple-discharger Variances: When requesting a variance for greater than one (multiple) dischargers, specific eligibility requirements may be specified in a WQS variance. As an alternative to identifying qualified dischargers at the time of adoption of a WQS variance for multiple dischargers, specific eligibility requirements may be adopted in a WQS variance. The receiving waterbodies must be included in the request.

Section 4.6 Implementing WQS Variances in NPDES Permits

Revisions to reference of the appendix from future to past tense
Section 4 Appendix A: Determining Highest Attainable Effluent Condition

In short: We know more about the working process now with experience than we did 3 years ago in theory.

- 10 data points as a threshold for enough to characterize the effluent; 5 was far too few
- Accounts for outliers and the procedure for handling them
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Register changes

- Process description cites the Implementation Procedures and Eligibility Determination documents instead of the language they use
  - Easier to keep instructions in one place and avoid any discrepancies
- The table of variance recipients now reflects recipients instead of potential recipients
  - Reflects what is presented and quarterly updated at [https://www.kdheks.gov/tmdl/WQSV.htm](https://www.kdheks.gov/tmdl/WQSV.htm) except the register is static until triennial reviews

<table>
<thead>
<tr>
<th>Discharger</th>
<th>NPDES Permit Number</th>
<th>KS Permit Number</th>
<th>HUC8</th>
<th>Segment or Lake Project Name Code</th>
<th>Text Name of Receiving Water Body</th>
<th>Highest Allowable Effluent Limit - Unit (mg/l, may be seasonal)</th>
<th>Economic Eligibility Assessment Score - Preliminary Screener</th>
<th>Economic Eligibility Assessment Score - Secondary Screener</th>
<th>Date Variance Went into Effect for the Permit</th>
<th>Multiple-discharger Variance Reevaluation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altamont, City of</td>
<td>KS00456916</td>
<td>M-NE01-0001</td>
<td>27</td>
<td>Deer Creek via Unnamed Tributary</td>
<td></td>
<td>4.5</td>
<td>2.05</td>
<td>2.50</td>
<td>1-Jul-18</td>
<td>1-Jul-23</td>
</tr>
<tr>
<td>Amanus, City of</td>
<td>KS0047406</td>
<td>M-NE02-0001</td>
<td>5</td>
<td>Allen Creek via Troublesome Creek</td>
<td>via Pester Creek</td>
<td>7.5</td>
<td>2.93</td>
<td>2.20</td>
<td>1-Jul-18</td>
<td>1-Jul-23</td>
</tr>
</tbody>
</table>
Economic Eligibility Determination

- A few significant changes:
  1. More options than decennial census for population estimate allowed; applies to the preliminary screener
  2. Assessment of Substantial Impacts Matrix – ‘Uncertain’ results procedure
Economic Eligibility Determination

- ‘Uncertain’ result procedure before:
  - Temporary Variance
- ‘Uncertain’ now:
  - Monitor with a schedule of compliance to determine compliance with limits of ammonia criteria including an economic study and summary providing additional evidence of affordability with modifications
  - Pollutant Minimization Plan also issued with it
  - Next issuance, the permit will either qualify for the MDV or be issued with the ammonia limits as applicable

### Assessment of Substantial Impacts Matrix

<table>
<thead>
<tr>
<th>Secondary Score</th>
<th>Municipal Preliminary Screener</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 1.0 Percent</td>
</tr>
<tr>
<td>Less than 1.5</td>
<td>✓</td>
</tr>
<tr>
<td>Between 1.5 and 2.5</td>
<td>✓</td>
</tr>
<tr>
<td>Greater than 2.5</td>
<td>✓</td>
</tr>
</tbody>
</table>

![Matrix Image](image-url)
Economic Eligibility Determination

- What if they get ‘Uncertain’ again?
- If still ‘Uncertain’ result, a line is drawn down the middle and they fall to the category closest to the side of the line they fell on
  - Example 1: Preliminary score of 1.8 and secondary score of 1.6, they’d move to the ‘X’ unaffordable category
  - Example 2: Preliminary score of 1.8 and secondary score of 2.4, they’d move to the ‘✓’ affordable category
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• Aluminum
• Bacteria – position paper provided
• Cyanotoxins
• Human Health Criteria 304(a) recommendations
• Nutrients
• Selenium – position paper provided
Questions
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1. Internal: Division of Environment Reg Writers & Susan Vogel for review
2. Outside Department: Director of the Budget, Secretary of Administration, Attorney General
3. Hearing: Notice of hearing, Review the proposed regs with the Joint Committee on Administrative Rules and Regulations, Public Hearing
   - Revise as needed and circle back on the flowchart (why we’re having this meeting now)
4. Adopt the Regs, File the Regs and associated documents with the Sec of State
5. Submit the triennial review package to EPA for their review and approval
Thank you/Questions
Step 1: Internal Review Target Date December 18, 2020
Please submit your comments in time for consideration.

Email to dane.boring@ks.gov
Include “KSWQS 2021 Triennial Review” in the header
You can also call 785-296-5508 to reach me with any questions