A discussion of the proposed human health criteria for WA local governments

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MWPAAC
Background Authority

• Clean Water Act requires states to adopt
  • Technology based pollution control programs (i.e. secondary treatment)
    AND
  • Water quality-based numeric criteria for waters of the state

• Combined, these programs are intended to protect/restore designated uses of State/Federal waters.
Types of Water Quality Criteria

• Protect aquatic life designated uses
  • Not part of this talk

• Protect human health designated uses
  • Consumption of both fish/shellfish and water
    • almost all fresh waters
  • Fish/shellfish consumption only
    • marine and brackish waters
Existing Human Health Based Criteria

- Clean Water Act obligates states to adopt Human Health Criteria (HHC)
- 1992 Federal Rule – “National Toxic Rule” (NTR)
- Washington uses NTR (adopted by reference in WAC 173-201A-240)
- EPA requiring all states to adopt their own HHC.
- EPA is expecting WA to have a rule adopted by end of 2014.
- Washington has been working on a new criteria for many years.
Local Governments

• Protect and improve health of our residents and environment
• Support strong and healthy economic and business climate
• Operate municipal wastewater treatment plants regulated as a discharger by the State and required to meet state water quality standards
• 280 publicly owned treatment plants in WA.
• The types and amounts of contaminants presenting problems today are more complex than just addressing human waste.
Conundrum

- Changes to the water quality standards only apply to permitted discharges – point sources.
- Without investments for other pollution sources, this effort may do little to achieve improvements in water quality and human health
- Spokane River example:
  - Analysis from Spokane County shows that less than 20% of PCBs come from point sources - industrial and municipal wastewater plants
  - Spokane County just built a state of the art treatment facility which will reduce their pollutant loading
  - Concern is new standards will continue to focus on driving down the criteria for point sources with little focus on the 80% of the pollutant loading from other sources
Process for Rulemaking

- Washington Department of Ecology has hosted numerous public processes for input into establishing new human health criteria.

- In July 2013 – Governor Inslee announced his path forward. Which includes:
  - Preliminary draft rule Sept 30, 2014
  - CR 102 draft rule in early 2015
  - Toxic reduction legislation – 2015
  - Additional programs for toxic reduction
Human Health Criteria versus Fish Consumption Rate

- A fish consumption rate is necessary to calculate a new water quality standard
- Current rate used is 6.5 g/day (based on NTR standard)
- Most people agree 6.5 g/day is too low
Example Consumption Levels

Currently used in WA Standards

<table>
<thead>
<tr>
<th>Weight</th>
<th>Image Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5g</td>
<td>175g</td>
</tr>
<tr>
<td>54g</td>
<td>243g/8 oz</td>
</tr>
</tbody>
</table>

*All weights used in standards are per day not per meal.
Calculating Human Health Criteria

\[ \text{HHC} = \frac{RL \times BW}{CSF \times [WC + (FCR \times BCF)]} \]

- **Carcinogen**
  \[ \text{HHC} = \frac{RfD \times RSC \times BW}{WC + (FCR \times BCF)} \]

- **Non-Carcinogen**

- \( \text{HHC} = \) Human Health WQC in µg/L
- \( RL = \) Risk Level \( 10^{-6} \)
- \( BW = \) Body weight
- \( FCR = \) Fish consumption rate
- \( BCF = \) Bioconcentration factor
- \( CSF = \) Cancer Slope Factor (carcinogenic toxicity)
- \( RfD = \) Reference Dose (non-carcinogen toxicity)
- \( WC = \) Water consumption \( ^{\text{a}} \text{freshwater only} \)
- \( RSC = \) Relative Source Consumption \( ^{\text{b}} \text{some non-carcinogens} \)
Expected Draft Rule Elements

- Establish the FCR at 175 grams/day
- Establish a cancer risk rate of $10^{-5}$ except where this standard would lessen the current standard. For those chemicals the current standard stays. No Backsliding
- Arsenic would match drinking water standards.
- PCB and Mercury would stay what they are today.
- Bodyweight would increase to 80kg
- State would offer compliance schedules and variances with variable time limits.
• Criteria will remain as protective or become more protective than current standards
• Pollutants of primary concern for POTWs are e.g. mercury, arsenic, PCBs
• PCB example
  • Current water quality standard = 170 picograms/liter
  • Two alternatives considered under new rule:
    • 64 picograms/liter (175g/d at 10-5)
    • 6.4 picograms/liter (175g/d at 10-6)
• Lake Washington ~ avg 92 picograms/liter
• Cleanest water lab blanks ~ approx 30 picograms/liter
Implementation Tools

- State proposing compliance schedules and variances with variable lengths of time dependent on discharger.
  - Variances - temporary changes to the standards for specific discharger.
  - complex/costly and require a very high bar to meet including demonstration of substantial economic and societal impact
  - Require state rule making, public process, and EPA approval
  - Currently only for five years but state asking for more
  - Require demonstrated actions toward compliance – such as pollution prevention activities and other investments
A successful approach will...

- Improve water quality and human health
- Address both nonpoint and point sources of pollution
- Commit resources for statewide toxic reduction strategy
- Achieve improvements but does not create a negative effect on our state economy
- Be administratively practical to implement
- Provide permittees a clear path to operate in compliance with the Clean Water Act.
Governor’s Package Includes:

- Toxic reduction bill this legislative session.
  - Focus on implementation of chemical action plans
  - Provide authority to require alternative assessments
  - Provide authority to ban chemicals where safer alternative exists.
- Support green chemistry
- Provide tech support to businesses
- Increase local source control
Reactions and Next Steps
Considerations for rule development:

• Avoid administrative gridlock
• Use variable risk levels
• Get it right the first time – regarding pervasive chem.
• Create programmatic solutions
• Utilize the full suite of implementation tools
• Obtain pollution reduction commitments from State
• Ensure EPA support for the tools the State advances
• Revise 303d listing process
• Address affects of changes in testing methodology
Resources

WDOE website