

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
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- 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

*All weights used in standards are per day not per meal

Currently used
in WA
Standards



Currently
used for
MTCA
cleanups



Possible WA
Standard



Typical 1/2 lb
serving

Calculating Human Health Criteria

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

Carcinogen

Non-Carcinogen

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

- HHC = Human Health WQC in $\mu\text{g/L}$
- 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 (^a freshwater only)
- RSC = Relative Source Consumption (^b 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

<http://www.ecy.wa.gov/water/standards/index.html>