APPARENTLY, TIME SPENT FISHING CAN BE DEDUCTED FROM A MAN'S LIFE...

WARNING: Fish may contain all kinds of nasty, toxic crap.
Issues for MeHg Criterion

- Criterion value
- Implementation
EPA MeHg Criterion

- EPA published MeHg criterion January, 2001
  - Based on human health
  - Criterion 0.3 mg/kg (ww) in fish
  - Challenges for applying tissue-based criterion to permit discharges
    - Understand how the criterion implemented before promulgating criterion
Existing Hg Water Criteria

- USEPA Hg criteria:
  - 1.4 µg/l acute (not recommended)
  - 0.77 µg/l chronic

- Utah
  - Human Health Table 2.14.6 references
    - Table 2.14.2 Aquatic Life
      - Acute deleted 2012
      - 0.012 µg/l chronic
Utah Chronic Hg Water Criterion

- Based on a target concentration in fish of 1 mg/kg (FDA value)
- Derived using literature values estimating bioconcentration from water
- Current IR methods declare impairment at concentrations > 1 mg/kg
- Consumption advisory > 0.3 mg/kg
Modification of EPA MeHg Criterion

- EPA recommendations for consumption rates (order of preference)
  1. Use local data when possible
  2. Use data reflecting similar geography or population groups
  3. Use data from national surveys
  4. Use EPA default intakes
Modification of EPA MeHg Criterion

- **Relative Source Contribution (RSC)**
  - Accounts for other exposure sources beside “recreational” fish, e.g., commercial fish
  - 99.9% other sources commercial fish
  - Utah-specific data unavailable and would need to be collected via surveys
  - Potential effect on criterion judged small
Modification of EPA MeHg Criterion

- **Toxicity**
  - Hg in tissue assumed 100 percent MeHg
    - Typically >90% MeHg in tissue but can be lower
    - Likely site- and species- specific
    - Limited utility for statewide criterion
  - Se:Hg antagonism
    - EPA position: antagonism uncertain
Waterfowl?

- Waterfowl consumption advisories for GSL
- Hg > 0.3 mg/kg
- Waterfowl exposures more difficult to relate back to specific waters
- GSL-specific issue
Implementation Issues

- Criterion based on MeHg
- Sources are not MeHg
  - Predominant source can be air deposition
  - Hg converted to MeHg by bacteria
  - Permit limits based on total Hg
  - Conversion rates to MeHg site-specific
  - Food web site-specific
UPDES Implementation

Implementing the Fish Tissue Criterion in NPDES Permits

Is the criterion expressed in terms of fish tissue?
- No
- Yes
  Is a water column translation of the fish tissue criterion available?
  - No
    - Implement using the approaches described in this guidance
  - Yes
    - Implement using the approaches described in section 5.4.4 of the TSD (USEPA 1991)\(^a\)

\(^a\) For Great Lakes states, implement using 40 CFR 132, Appendix F, Procedure 5.
DWQ Proposed Approach

- Initial focus for translators on waters with UDPES municipal or industrial permits and fish advisories
  - Conduct sampling to establish site-specific BAF
  - Sampling Plan under development
    - Multiple sampling events water
    - Fish integrate exposure over time
Determining Reasonable Potential

- Monitoring requirement
- Permit reopener clause to assess reasonable potential after data are collected

Is there a quantifiable mercury discharge?

- Yes
  - Does the fish tissue in the receiving water exceed the criterion or are there other factors that would lead the permitting authority to find reasonable potential?
  - Yes
    - Implementing Antidegradation
      - Conduct tier 2 antidegradation analysis and develop appropriate permit conditions
      - Require permittee to develop and implement MMP tailored to facility
      - Require effluent monitoring
    - No
      - Recommend voluntary MMP
  - No
    - No necessary conditions

- No
  - Special condition to conduct a fish tissue survey
  - Permit reopener clause to assess reasonable potential after fish tissue data are collected
  - Recommend voluntary MMP

Recommended WQBEL Requirements

- Where a TMDL has been developed, the WQBEL must be consistent with the wasteload allocation as required by 40 CFR 122.41(d)(1)(vii)(B)
- Where a TMDL has not been developed but a water column translation of the fish tissue criterion has been developed, include a numeric water quality-based limit
- Where a water column translation is not available and the permit writer determines that a numeric limit is infeasible to calculate:
  - Require the permittee to develop and implement an MMP tailored to the facility’s potential to discharge mercury. Depending on the particular facts, the permitting authority may include in the MMP a trigger level, reduction goal, or enforceable numeric level to further manage mercury discharges
  - Require effluent monitoring using a sufficiently sensitive EPA-approved method to determine whether the MMP is effective (See sections 7.4 and 7.5.1.1 for more information on sufficiently sensitive methods)
  - Include a reopener clause to modify the permit conditions if the MMP is not found to be effective or if a water column translation of the fish tissue criterion is developed
- Where a discharger undertakes an activity that could increase mercury loading to the receiving water, it must be consistent with applicable antidegradation requirements. Additional requirements may also be necessary under the CWA and EPA's NPDES regulations.

Note:

Path Forward

- 2012 Collect samples to define BAF for waters with UDPES discharges and fish advisories
- Adopt MeHg Criterion
  - Modify EPA criterion?
- Follow EPA Implementation Guidance for UDPES permitting when translator unavailable
  - Dischargers will need to characterize Hg in effluent using more rigorous and expensive methods