

**MERCURY SCIENCE TEAM MEETING
APRIL 3, 2001**

MEETING SUMMARY

This meeting was held at the DEQ, Harrisonburg office. Attendees are included in Attachment 1.

Meeting Purpose. The meeting purpose was outlined by Brenda Kennell and Don Kain.

Recap of Last Meeting. Ralph Stahl and Don provided a recap of the last meeting (February 14, 2001). Details of the meeting can be found in the minutes from that meeting.

Results of Stakeholders Meeting. A briefing of this meeting was made by Lewis Garrett and Don Kain. On March 29, a public meeting was held at the Rockingham County Board of Supervisors room in Harrisonburg to announce a joint press release on the revised advisory for the South River and South Fork Shenandoah River. The presentation was made by Dr. Doug Larsen (welcome and general introduction) and Dr. Khizar Wasti (basis for and details of the advisory). DEQ and DGIF staff (Don Kain and Larry Mohn) and DuPont (Lewis Garrett) assisted VDH in responding to questions from the attendees.

Statistical Analysis. John Green presented a statistical analysis of historic fish tissue data. Several issues emerged, including:

- Sizes of fish sampled have varied over time and between stations.
- Numbers of fish per station have varied over time, often with fewer samples per station from years before 1999.
- There appears to be a linear relationship between fish size (length or weight) and mercury concentration, especially within individual stations.
- Differences in station designations have been used by different investigators. DEQ will redefine each station and provide a cross-reference for past sampling events for this analysis, using designations for river and river mile, rather than sequentially numbered or lettered stations.
- Fish lengths need to be “normalized” to clearly determine trends in mercury concentrations over time for the overall study area and for individual stations.

Although results of several statistical analyses and predicted mercury levels were presented, the team agreed that it would be appropriate to ensure that all station designations are consistent before drawing any conclusions.

Conceptual Model. Nancy Grosso presented the 1st draft of a conceptual model for mercury in the South River. A handout was provided, and included potential primary, secondary, tertiary, etc. sources, along with potential release mechanisms, exposure pathways, and receptors. The complexity of the system is clearly evident, with many receptors also serving as secondary and higher sources. The model takes into account the interchange, transformation and transport of mercury through air, surface and ground water, soil/sediment, and biological vectors. Unknowns include whether there are remaining ongoing sources, environmental “hot pockets,” and major methylation sites. A copy of Nancy’s handout is included as Attachment 2.

Exposure Assessment. Annette Guiseppi-Elie presented information on exposure and risk assessment during a working lunch. General concepts of risk and exposure were outlined. A number of unknowns were noted, including organisms (waterfowl, turtles, etc.) not yet studied, floodplain influences, and other potential pathway and receptor issues.

Sediment Management Options. Dick Jensen discussed options for dealing with contaminated sediments. In some locations, a polymer which binds with sediment material has been used to tie up the mercury in the sediments, preventing contaminated sediments from resuspending, so they can become covered by new, “clean” sediments. An understanding of the methylation process was also seen as a key to “remediation” or exposure reduction. If mercury were to be limited to its elemental form, there would be much less risk to receptors in a system containing problematic levels of methylmercury.

Fishery Enhancement. Dick made note of some creative fishery enhancement options, designed to reduce or remove the reservoir of mercury residing in the biological community. One method discussed involved harvest and disposal of contaminated fish. No decisions were made on proceeding.

Fish Abundance / Bass Biology 101. Steve Reeser and Larry Mohn provided data on fish abundance and biomass, comparing sampling data between the South Fork Shenandoah River and the James River. In general, the South Fork Shenandoah River was found to have higher numbers and higher pounds per acre than the James River by a factor of around 1.5. This information is summarized in attachment 3. Smallmouth bass in the Shenandoah drainage are generally slow-growing, and the river has very high numbers of small fish.

“Bass 101” included an overview of general information regarding smallmouth bass life history, home range, growth rates, preferred habitat, etc. Specific information regarding DGIF’s studies in the Shenandoah River drainage is presented in Attachment 4.

Peer Review. Ralph led a discussion on the “experts” we may want to consider for assistance, support, oversight, and peer review of our past and ongoing work. He will be assembling a draft list of candidates, based on recommendations from members of the science team, then will set up a conference call on May 8 to discuss our specific needs, prioritize the candidates, and establish a protocol for contacting the candidates.

Identification of Data Gaps / Prioritization of Needs. See statistical discussion, above.

Next Steps / Action Items.

- May 8 conference call to discuss “experts” list.
- Ongoing fish collections by DGIF/DEQ
- Next meeting at DuPont, June 5. Kick off peer review / “expert” work?

Attachment 1.

SCIENCE TEAM MEETING

April 3, 2001

ATTENDEES

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