SUMMARY

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) MERCURY ADVISORY COMMITTEE MEETING

APRIL 16, 2004

Welcome and Introductions

Committee Members:

Blackwater/Nottoway Riverkeepers: Jeff Turner*
DEQ: Alan Pollock, Alan Anthony, Alex Barron, Mark Richards, James Sydnor*,CO; Mark Alling, Lou Seivard*, PRO; Roger Everton, TRO
Dominion Virginia Power: Ken Roller
E. I. DuPont Co.: Annette Guiseppi-Elie
Friends of Dragon Run: Rollin Woolley, Teta Kain*
James Madison University: W. Dean Cocking*
Mary Washington University: Michael L. Bass
North Carolina Dept. of Environment and Natural Resources-Water Quality: Mark Hale
University of Virginia-State Climatology Office: Jerry Stenger
U.S. Environmental Protection Agency (EPA): Jeff Bigler*
U.S. Geological Survey (USGS): Ken Hyer
U.S. Fish & Wildlife Service (FWS): Sumalee Hoskin, Lloyd Culp*
Virginia Commonwealth University-Center for Environmental Studies: Greg Garman
Virginia Department of Game and Inland Fisheries (DGIF): Gary F. Martel
Virginia Department of Health (VDH): Khizar Wasti
Virginia Institute of Marine Science (VIMS): Mike Newman

* Not present at the meeting.

Observers:

DEQ: Gerry Seeley, Rodney Sobin, Jean Gregory, Gabriel Darkwah, Rick Browder
Sierra Club: Michael Town
Virginia State Climatology Office: Steve Gawtry
Other: Jim Beamer

Meeting Objectives

In his introductory remarks Alan Pollock said that the intent of the meeting was to:

1. Provide an overview for the committee by having DEQ water, regional and air staff present what they have done and what they currently plan to do, VDH provide their perspective, and North Carolina share their experiences, and

2. Ask the Mercury Advisory Committee for advice on three issues:

   - Investigation of potential land-based sources of mercury within the affected watersheds.
   - Investigation of the potential for airborne mercury to be a source of mercury in these watersheds.
   - Assist in developing a plan to address the related source assessment and cleanup issues.

Handouts:

- Photocopy of DEQ slide presentation
- Spreadsheets with DEQ 1995 -2002 metals fish results
- USEPA National Fish and Wildlife Contamination Program graph of "Average Tissue Mercury Concentrations in Noncommercial Fish"
- USEPA "Mercury Frequent Questions"
- List of "VDH Fish Consumption Advisories" for mercury
- USGS "Mercury contamination of Aquatic Ecosystems"
- DEQ Piedmont Regional Office "Quality Assurance Project Plan for a Special Study of Mercury Source Assessment in the Dragon Swamp/Piankatank River 2004"
- DEQ Piedmont Regional Office "Proposed Action Plan, Special Study of Mercury Source Assessment in the Dragon Swamp/Piankatank River 2004"
- DEQ Piedmont Regional Office "Alternate Action Plan Options to Reduce Costs, Special Study of Mercury Source Assessment in the Dragon Swamp/Piankatank River 2004"

Presentations:

Alex Barron, Water Division, VA DEQ:

Overview of Fish Tissue Monitoring Program

The Virginia Department of Environmental Quality routinely monitors fish in Virginia water bodies for contaminants. Increasing awareness of mercury issues over last several years prompted DEQ to investigate mercury in more detail. The fish contaminant data from 2002 showed elevated levels of mercury in some samples of largemouth bass, chain pickerel, bowfin, and Redear sunfish collected from portions of the Blackwater River (Southampton and Isle of Wythe counties), Dragon Run Swamp/Piankatank River and the Great Dismal Swamp Canal. Based on this information, the Virginia Department of Health has issued three fish consumption advisories in 2003 for the affected portions of these water bodies. These advisories and other previously issued fish consumption advisories can be found at http://www.vdh.state.va.us/HHControl/fishingadvisories.asp

Advisory Group Discussion: There were questions about the number and types of fish collected and analyzed: VA DEQ follows the EPA Health Advisory guidelines of all fish, collects three or more species, and submits - for cost savings purposes - composite edible fillet samples of 5-10 fish of the same species for laboratory analysis. The committee discussed the importance of referring to the state advisories as fish consumption advisories rather than fishing advisories

to make it clear to the public that the advisories are related to possible health effects from consumption and are not restrictions on recreational fishing.

Mercury Concerns and Special Issues

There are no known significant industrial sources of mercury in the three watersheds affected by the recent advisories, and potential sources of the mercury in these watersheds are unknown. This is the first time Virginia has had to deal with fish consumption advisories for mercury where the source of the mercury is not readily attributable to a point source. DEQ has formed a Mercury Advisory Committee to help advise DEQ on how to address waters where mercury contamination is found.

Virginia DEQ Current Plans: Central Water Office

During the summer of 2004, DEQ plans to collect additional fish tissue and sediment samples at nine sites in the Blackwater River, seven sites in the Dragon Run and eight sites in the Great Dismal Swamp. DEQ's 2004 monitoring will target an expanded area within each of the affected water bodies and collect additional samples of fish, focusing on the affected species as well as other popular game fish species in the watersheds. The information collected from these samples will be used to better characterize the extent of the problem and provide additional data for the Virginia Department of Health to review to determine if the current fish consumption advisories should be modified. Also, plans for an investigation for the source of mercury have been prepared for the Dragon Run watershed.

Mark Alling, Piedmont Regional Office, VA DEQ:

Mark Alling presented three options for the regional office's proposed action plan for a special study of mercury source assessment in the Dragon Swamp/Piankatank River to be conducted this year if funding is available from the state VEERF and he asked for feed back from the committee on which option he should pursue.

Advisory Group Discussion: There was discussion on the merits of sediment over water analysis for assistance in source identification for mercury but a suggestion was made that water analysis be done at least once if possible. There was general agreement that there is a higher methylization rate in low pH, swampy waters such as Dragon Run so that part of the proposed survey is unnecessary. Acceptable to analyze for more cost effective total rather than methyl mercury. Roger Everton from the Tidewater Regional Office of VA DEQ mentioned that a NOAA studies in the Elizabeth River had utilized a laser analysis technique in depositional areas.

Lunch

Dr. Khizar Wasti, Virginia Department of Health:

Derivation of the mercury level of concern

The major risk of adverse effects of mercury is for fetuses and young children. Most at risk are pregnant women, women who may become pregnant, nursing mothers, and young children. The reference dose for mercury has been derived at 0.0001 mg/kg/day.

VDH Levels of Fish Consumption

Unlimited Consumption	Below 0.5 ppm
Two meals/month	>0.5 to < 1ppm
One meal/month	>1 to < 2.0 ppm
No consumption	>2.0 ppm

Issuing of new fish consumption advisories

VDH has the responsibility for issuance of fish consumption advisories or bans. A listing of the fish consumption advisories and bans in Virginia for mercury was distributed:

North Fork Holston River from Saltville to the Virginia-Tennessee state line

South River from the footbridge at E. I. Dupont Co. in Waynesboro to the confluence with the North River at Port Republic

South Fork Shenandoah River from Port Republic to the confluence with North Fork Shenandoah River, North Fork Shenandoah River from mouth of river upstream to Riverton Dam, Shenandoah River from confluence of North Fork and South Fork to Warren Power Dam just north of Front Royal

Dragon Run Swamp/ Piankatank River (Counties of Middlesex, King and Queen, and Gloucester) from State Route 603 near Mascot downstream (~19 miles) to Deep Point Boat Landing (State Route 606) on the Piankatank River, across from Piankatank Shores

Blackwater River (Counties of Southampton and Isle of Wight and Cities of Franklin and Suffolk) from State Route 460 in Zuni downstream (~40 miles) to the Virginia-North Carolina state line

Great Dismal Swamp Canal (Chesapeake) from Deep Creek Locks south to the Virginia-North Carolina state line including the feeder ditch to Lake Drummond

Mark Hale, NC DENR, Environmental Sciences Branch:

Their DWQ focused their efforts from 1995 to 1999 on monitoring for mercury and other contaminants continues under basinwide assessments, sampling statewide, further confirmation of high levels in eastern piscivores, and a King mackerel survey with DMF.

They found what they call "mercury sensitive waters" to be roughly east of I-95 and to waters of low pH, low productivity, high dissolved organic carbon, anoxic waters, and coastal "black waters." In their 1998-1999 survey of king mackerel and Spanish mackerel samples obtained from recreational and commercial sources that Spanish mackerel contained lower Hg levels and for King mackerel there was a strong relationship between mackerel size and Hg with Hg concentrations over 1 ppm predicted for fish > 13 lbs. and 37 inches.

These Hg results were forwarded to DHHS, which has responsibility for setting fish eating advisories. Prior to 2002, site or basin specific advisories were based on 1.0 ppm, but in 2002, statewide fish eating guidelines were based on a new level of concern of 0.4 ppm.

Fish tissue mercury surveys were removed from the basinwide assessments in 1999, and the present surveys target Hg trouble spots (coastal plain), requests by regions, agencies, and sites where data absent or suspect.

Central Office Air Division, VA DEQ:

The Air Division anticipated that they would the following week be paying for and receiving the final report from the University of Virginia Office of the State Climatologist for contract work done for VA DEQ on projections for potential deposition.

Plans for Follow-Up and Future Meetings

Alan Pollock concluded the meeting by saying that a summary of the meeting would be sent to committee members. He also summarized items for the future:

1. Hope to contact individual members for their expertise and background,

2. Pull full TAC together again once have more data after additional monitoring
3. Evaluate basinwide approach used in North Carolina which focuses on coastal exposure rather than source.

Mark Alling reminded the committee that he would appreciate their sending him comments on his proposed source identification study.

Alex Barron received permission from the advisory committee to mail to them the e-mail and telephone numbers of the committee members.

Follow-Up Actions Subsequent to the Meeting:

- PDF versions of presentations by Alex Barron, DEQ; Khizar Wasti, VDH and Mark Hale, NCDENR can be found at www.deq.virginia.gov/fishtissue/hgcommittee.html.

- Advisory committee member Jeff Bigler, National Program Manager for USEPA Fish and Wildlife Contamination Program, had been unable to attend the meeting but he reviewed the presentations placed on the VA DEQ web page and e-mailed some suggestions to the advisory committee for future discussion.

- The VA DEQ agency director approved approximately $88,000 for the regional office study of Dragon Swamp/Piankatank River; the state lab can not analyze for methyl mercury so the samples will be analyzed for total mercury.