

Kalamazoo River Ecological Studies Peer Review Process – Summary of Findings

Dr. Ken Dickson, University of North Texas

February 26, 2009



Peer Review Process: Overview

- Task 1 – Spring 2008: Select Panel members
 - Criteria for selection developed jointly by me, USEPA, KRSG
 - Members selected based on areas of technical expertise, experience conducting ecological risk assessments at large sites, and participation in scientific peer reviews
- Task 2 – May 2008: Convened the Panel, received the Charge and supporting materials (MSU studies, 2003 BERA), visited the Site.
- Task 3 – May to August 2008: Conducted individual, independent review of MSU study results, data, publications, and reports.
- Task 4 – September to November 2008: Developed group opinions, drafted Final Report
- Task 5 – December 2008: Turned in Final Consensus Report

The Peer Review Panel

- Dr. Larry Barnthouse, LWB Environmental Services, Inc.
- Dr. Anne Fairbrother, Parametrix Inc.
- Dr. Keith Grasman, Calvin College
- Dr. Mark Harwell, Harwell Gentile & Associates, LC
- Dr. Lyman McDonald, West Inc.
- Dr. Charlie Menzie, Exponent, Inc.
- Dr. William Warren-Hicks, EcoStat, Inc.

Larry Barnthouse, PhD – Risk Assessment



Anne Fairbrother, DVM, PhD – Avian Toxicology



Keith Grasman, PhD – Avian Toxicologist



Mark Harwell, PhD – Ecologist/Risk Assessment



Lyman MacDonald, PhD – Statistics



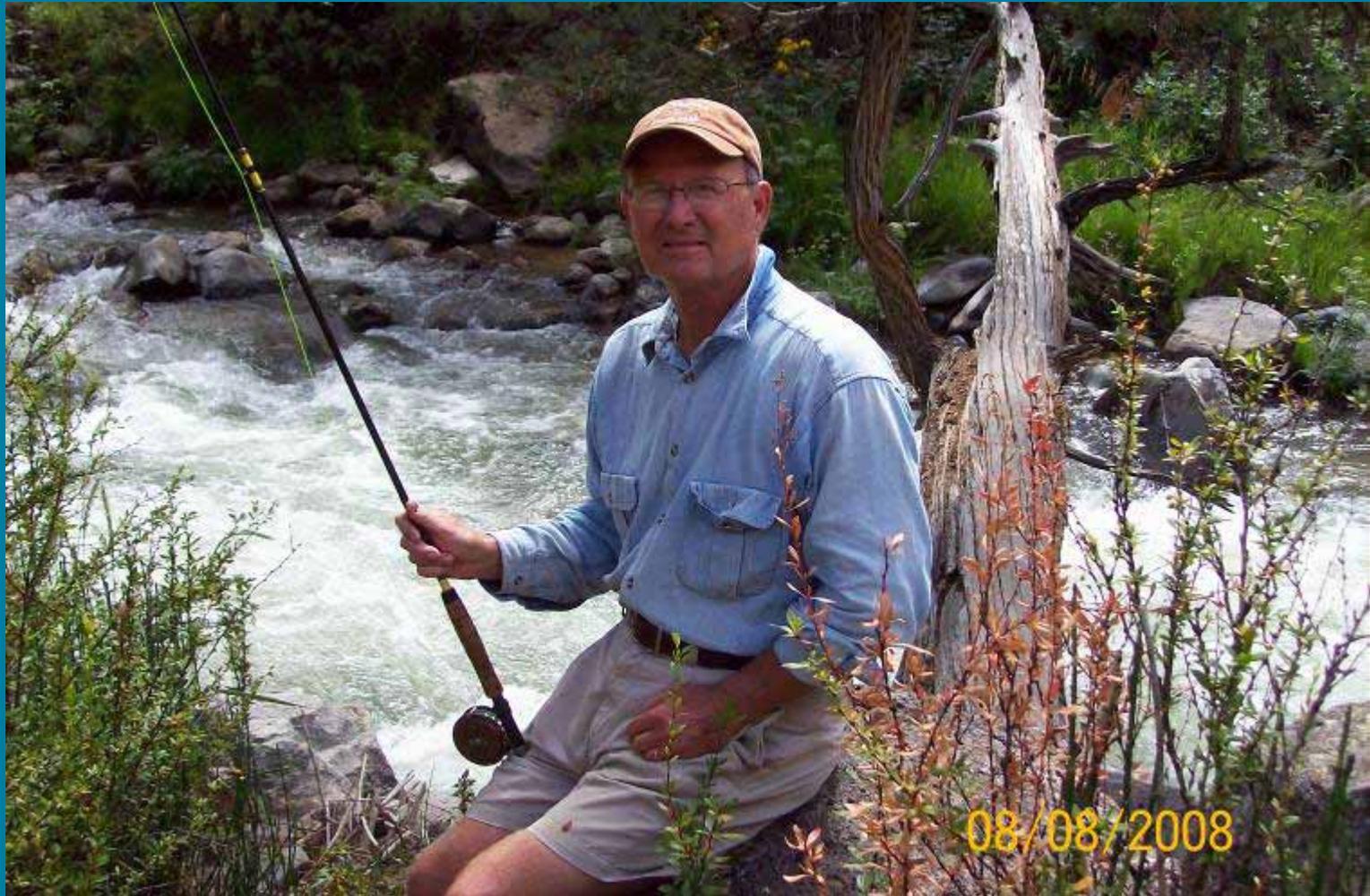
Charlie Menzie, PhD – Eco Risk Assessor



Bill Warren-Hicks, PhD – Statistics



Ken Dickson, PhD – Old Dirty Water Biologist



Charge to the Peer Review Panel

- Provide an independent, technical opinion regarding the extent to which the MSU studies could be:
 - Incorporated into future assessments of ecological risks to terrestrial receptors in the floodplains of the Site
 - Used to inform risk management decisions
- Examine the 2003 BERA for context/supporting information
- Respond independently to the Charge Questions poised to the Peer Review Panel
- Collaborate to develop group decisions and write a final consensus report that identifies the strengths, limitations and uncertainties associated with the MSU studies.

Summary of Final Consensus Report – Panel Response to General Charge Questions

Question 1:

- Are the methods by MSU employed appropriate and consistent with the current state of the science and relevant guidance?

Panel Response:

- *Yes, generally.*
- “The general design and execution of the field studies were comparable in quality to other field assessments of PCBs in riparian habitats in large river systems.”
- The Panel raised questions about specific aspects of the study design and methods used to process and interpret the data, which complicate interpretation of the results and compromise some of the conclusions reached by MSU.

Summary of Final Consensus Report – Panel Response to General Charge Questions

Question 2:

- Have uncertainties been clearly identified and discussed?

Panel Response:

- *No, not to the Panel's satisfaction.*
- MSU's supporting documentation did not adequately identify or explain important uncertainties associated with data analysis – the Panel suggested approaches to address these issues
- Additional uncertainties remain related to: evaluating toxicity, applying the results to other species and areas of the Site, and assessing future conditions

Summary of Final Consensus Report – Panel Response to General Questions

Question 3:

- Do the data and analyses presented in the MSU studies constitute reasonable/appropriate lines of evidence to consider in future evaluations of risk and risk management decisions?

Panel Response:

- *Yes, as long as the data are used appropriately.*
- “The results of the MSU studies should be included in a multiple-line-of-evidence approach for risk assessment and risk management decision-making, with caution and appropriate recognition of their uncertainties and limitations.”
- The MSU and BERA data should be used together in future assessments

Punch Lines

- The Panel endorsed the use of MSU's exposure data and food chain modeling in future ecological risk assessments at the Site.
- The Panel did not agree with many of MSU's conclusions regarding effects, either based on productivity measures or calculated risks.
- The Panel recommended that KSRG and the Trustees work together to develop a comprehensive Conceptual Ecological Model that considers current and future conditions at the Site, re-analyze the combined MSU data and BERA data, and quantify associated uncertainties.

Peer Panel Final Report

www.epa.gov/region5/sites/kalproject/

Final Report

Peer Review of Michigan State University's PCB Exposure and Effects
Studies in the Floodplain of the Kalamazoo River

December 1, 2008



Peer Review Panel

Dr. Ken Dickson, University of North Texas, Peer Review Manager

Dr. Larry Barnhouse, LWB Environmental Services, Inc.

Dr. Anne Fairbrother, Parametrix Inc.

Dr. Keith Grasman, Calvin College

Dr. Mark Harwell, Harwell Gentile & Associates, L.C.

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