



Eastern Research Group, Inc.

January 8, 1999

Environmental Science
and Engineering

FIELD(name)
FIELD(title)
FIELD(organization)
FIELD(address)
FIELD(citystatezip)

Economic and
Regulatory Analysis

Dear FIELD(salutation):

Environmental and
Occupational Health
Services

I am writing to confirm your participation as a peer reviewer for the upcoming U.S. Environmental Protection Agency's (EPA's) "**Peer Review of Hudson River PCBs Reassessment, RI/FS Phase 2 Reports, Volume 2C - Data Evaluation and Interpretation Report and Volume 2C-A Low Resolution Sediment Coring Report.**" The peer review task is organized in two phases: Phase 1 includes an initial briefing and site visit which will be held on Monday, January 11 and Tuesday, January 12, 1999 in Albany, New York; and Phase 2 includes the conduct of the peer review and meeting, which will be held March 16-18, 1999, in either Albany or Saratoga Springs, New York. Eastern Research Group, Inc. (ERG), under contract to EPA, is providing support for coordinating and conducting these meetings.

Software Applications
Development

Pollution Prevention

Technology Evaluation

Please carefully review this letter and enclosures, which describe your responsibilities for both Phase 1 and Phase 2 of the work for this peer review. This package includes the following:

Environmental
Sampling and Analysis

- Preliminary list of peer reviewers
- Logistical fact sheet
- Request for reviewer biography
- Address verification form
- Format guidelines for premeeting comments
- Database for the Hudson River PCB Reassessment RI/FS CD Rom
- RI/FS Phase 2 Reports, Volume 2C - "Data Evaluation and Interpretation Report" and Volume 2C-A "Low Resolution Sediment Coring Report"

Technical Writing and
Editing

Conference
Management

The following items will be faxed to you on Thursday, January 7, 1999:

Graphic Design
and Media Services

- Charge to reviewers
- Agenda
- ERG's Purchase Order Form
- ERG's two invoice forms

Public Relations and
Outreach

Training and Education

When making travel arrangements, please note that the initial briefing will run from approximately 11:30 AM - 5:00 PM on Monday, January 11 and 8:00 AM - 11:30 PM on Tuesday, January 12, 1999, followed by the site visit from 12:30 PM until approximately 3:30 PM. Travel time from the site back to the Albany area is approximately 45 minutes. Please plan your travel so you can participate in the entire meeting and site visit. We anticipate that you will be able to plan on a departure flight anytime after 5:00PM.

EPA Opportunity Employer
Printed on Recycled Paper

Consultant Responsibilities

Phase 1

- Read, sign, and return one copy of the Purchase Order to ERG by January 8, 1999.

Corporate Headquarters:
110 Hartwell Avenue
Lexington, MA 02421-3134
Phone 781-674-7272
Fax 781-674-2906

2200 Wilson Boulevard
Suite 400
Arlington, VA 22201-3324
Phone 703-841-0500
Fax 703-841-1440

14555 Avion Parkway
Suite 200
Chantilly, VA 20151-1102
Phone 703-633-1600
Fax 703-263-7280

900 Perimeter Park (Lab)
P.O. Box 2010
Morrisville, NC 27560-2010
Phone 919-468-7800
Fax 919-468-7803

1600 Perimeter Park (Office)
P.O. Box 2010
Morrisville, NC 27560-2010
Phone 919-468-7800
Fax 919-468-7801

307505

Consultant Responsibilities (continued)

- Familiarize yourself with the technical charge to reviewers and enclosed review documents. If you choose not to bring the review documents to the briefing, please note that ERG will have reference copies of the review documents on site. Please plan to bring the charge with you.
- Attend the initial briefing session and site inspection on January 11 and 12, 1999 in Albany, New York. This session will provide background and history on the site and other information that will be necessary for you to conduct a thorough peer review. In addition, this will provide an opportunity for you to ask questions regarding the review process, format for written comments, logistics, or other procedural details. ERG will provide transportation from the hotel to the site inspection and back to the Albany area.
- Submit invoice #1 for Phase 1 work.

Phase 2

Review of Volume 2C "Data Evaluation and Interpretation Report" and Volume 2C-A "Low Resolution Sediment Coring Report"

- Review the documents "Data Evaluation and Interpretation Report" and "Low Resolution Sediment Coring Report," referring to the technical charge to reviewers and ERG's instructions for the review.

Conference Call

- If scheduled, participate in one pre-review conference call to discuss the review, the charge to reviewers, format for premeeting comments, and other procedural details. Please see the enclosed conference call availability form and respond promptly.

Premeeting Comments

- Submit written premeeting comments to ERG in hard copy and on a diskette created in WordPerfect 6.1 or MS Word for IBM compatible computers no later than **Friday, February 26, 1999**. Please see the enclosed format guidelines for additional information.
- ERG will compile all reviewers' premeeting comments and send them to each reviewer at least one week prior to the meeting. Please review the compiled premeeting comments submitted by other reviewers prior to the workshop to prepare for discussions.

Onsite Participation

- Participate in a premeeting onsite discussion with ERG, if scheduled (usually the evening prior to the meeting to review the agenda, discussion format, and logistics). Details will be confirmed at a later date.
- Participate in the entire 2-day meeting. Actively contribute your expertise during discussions.
- In accordance with the agenda, lead discussions of issues in your area of expertise, or as assigned by ERG and the chair. Verbally summarize comments in your area of expertise or as assigned. Please bring a hard copy of any references you cite or background information as appropriate.

Postmeeting

- Participate in the preparation and review of the draft and final meeting summary outlining modifications that the reviewers believe should be implemented in the documents "Data Evaluation and Interpretation Report" and "Low Resolution Sediment Coring Report."

Please make every effort to send us your premeeting comments by the deadline so that we may include your comments in the premeeting comment booklet that will be distributed to other reviewers before the meeting. Your comments will be used by the chair to organize discussion topics. Please note that your purchase order states that reimbursement is contingent upon meeting the required deadlines, ERG and EPA acceptance of your deliverables, and participation in the entire meeting. In a few isolated cases, ERG has not been permitted to pay consultants because of failure to adhere to these conditions or to deliverable deadlines. Please contact us with any questions or concerns.

Consulting Fee

You will be paid a rate of \$xx per hour for a maximum of 100 hours, a total of \$xx plus any incurred travel expenses in accordance with the EPA approved per diem. Airfare is to be billed directly to ERG by American Express Travel in Lexington, Massachusetts. Your hotel room and tax will be paid directly to the hotel by ERG. Receipts **MUST** accompany any travel related billing and must be limited to the allowable government per diem as noted on your invoice. ERG will remit payment within 4 to 6 weeks of receipt of the invoice.

Travel Arrangements

Please make your travel arrangements through ERG's travel agent, American Express Travel, to obtain the lowest priced fully refundable airline ticket. Call **American Express Travel directly at 1-800-322-1013**. They will arrange for you to fly to Albany Airport, Albany, NY, and will send you prepaid tickets via Federal Express. Please refer to **Task #0089-02-012-001** when making travel arrangements and request a paper ticket, **not** an electronic ticket. In accordance with contractual regulations, ERG can authorize payment only for round-trip travel from your city of origin to Albany, NY. If you wish to make additional stops in your itinerary, you will be responsible for paying for that portion of the travel. **Domestic travel arrangements MUST be made through American Express Travel in Lexington, Massachusetts.** International consultants can make reservations through their own travel agent but you must inform ERG of the airfare amount as soon as possible.

Hotel Accommodations

Please note that the following reservations have been made for you at the Holiday Inn Turf on Wolf Road in Albany, NY: **FIELD(10)**. If you need to change your reservations, you may do so by calling the hotel directly at 518-458-7250. You will be responsible for your meals and incidentals at the hotel. ERG will pay the hotel directly for your room and tax (\$99.00 per night plus 11% tax). Details on hotel arrangements for the March peer review will be sent to you as soon as they are available.

Deliverables and Deadlines

| | |
|----------------------------|--|
| January 8, 1999 | Signed consulting agreement, address verification form, and conference call availability form due to ERG |
| January 11-12, 1999 | Participate in site visit and initial briefing in Albany, NY |
| February 26, 1999 | Premeeting comments due to ERG |
| March 15, 1999 | Premeeting discussion in Albany, NY |
| March 16-18, 1999 | Meeting in Albany, NY |

We look forward to working with you on this task. If you have any questions regarding the meeting, the schedule, or your responsibilities, please contact me at 781-674-7324 or Lauren Lariviere at 781-674-7250, or e-mail us at kschalk@erg.com or llarivie@erg.com.

Sincerely,

Kate Schalk
Conference Manager

Enclosures

307507



Briefing and Site Visit for the Peer Review of Hudson River PCBs Reassessment RI/FS Phase 2 Reports

Holiday Inn Turf on Wolf Road
Albany, New York
January 11-12, 1999

Peer Reviewers

Dr. Reinhard Bierl
Senior Lecturer
University of Trier
FB VI - Hydrology
Universitätsring 15
D-54286 Trier GERMANY
49-651-201-2229
Fax: 49-651-201-3978
E-Mail: bierl@uni-trier.de

Dr. Per Larsson
Assistant Professor
Lund University
Ecotoxicology, Department of Ecology
Ecology Building
Sölvegatan 37
Lund, SWEDEN 223 62
46-46-222-3779
Fax: 46-46-222-3790
E-Mail: Per.Larsson@ecotox.lu.se

Dr. Keith Maruya
Assistant Professor
Skidaway Institute of Oceanography
10 Ocean Science Circle
Savannah, GA 31411
912-598-2315
Fax: 912-598-2310
E-Mail: kam@skio.peachnet.edu

Dr. Ronald Mitchum
President
Data Analysis Technologies, Inc.
6385 Shier Rings Road
Dublin, OH 43016
614-791-8008
Fax: 614-791-8007
E-Mail: datlab@infinet.com

Dr. Ken Reimer
Director, Environmental Group
Royal Military College
Building 62
Kingston, Ontario CANADA K7K 7B4
613-541-6161
Fax: 613-541-6596
E-Mail: reimer-k@rmc.ca

Dr. James Risatti
Senior Organic/Microbial Geochemist
Illinois State Geological Survey
615 East Peabody Drive
Champaign, IL 61820
217-333-5103
Fax: 217-244-2785
E-Mail: risatti@isgs.uiuc.edu





Peer Review of Hudson River PCBs Reassessment RI/FS Phase 2 Reports

Holiday Inn Turf on Wolf Road
Albany, New York
January 11-12, 1999

Logistical Fact Sheet

Registration Information Eastern Research Group, Inc.
110 Hartwell Avenue
Lexington, MA 02421-3136 781-674-7374

Hotel Arrangements Holiday Inn Turf on Wolf Road
205 Wolf Road
Albany, NY 12205 518-458-7250
Fax: 518-458-7377

Rooms have been reserved for consultants at the Holiday Inn Turf on Wolf Road for the dates stated in your consulting letter. Room and tax expenses for the nights reserved will be billed directly to ERG. If you wish to stay additional nights the special room rate is \$99.00 for single or double occupancy, plus 11% tax.

Accessibility by Car *From the New York State Thruway:*
Get off at Exit 24, Albany. After paying toll, follow signs to I-87 North (Adirondack Northway/Albany Airport/Montreal). Proceed to Exit 4 (Albany Airport/Wolf Road). At base of ramp, turn right onto Wolf Road. The hotel entrance is located approximately 200 yards on the left between the Wolf Road Diner (Ulinski Drive) and Pizza Hut.

From Massachusetts on I-90:
Exit at B-1 (Rensselaer I-90 West/Albany/Buffalo). After crossing the Hudson River, follow I-90 West to Exit 1-N. Signs say I-87 North (Adirondack Northway/Montreal). Once on the Northway, continue to Exit 4 (Albany Airport/Wolf Road). At base of ramp, turn right onto Wolf Road. The hotel entrance is located approximately 200 yards on the left between the Wolf Road Diner (Ulinski Drive) and Pizza Hut.

TWO-PARAGRAPH PANEL MEMBER BIOGRAPHY GUIDELINES

Peer Review of Hudson River PCBs Reassessment, RI/FS Phase 2 Reports, Volume 2C - Data Evaluation and Interpretation Report and Volume 2C-A Low Resolution Sediment Coring Report

Due Date: Friday, February 26, 1999

The following are guidelines and a sample for your two-paragraph biography. Please include the following information:

- Name
- Degrees
- Work Experience
- Current Work
- Committees, Papers, etc.

Submit a hard copy of your biography to us along with a diskette, or e-mail an electronic version of your biography as an attachment. Your biography will be included in the meeting materials provided to all attendees on site. The printed copy should be ready to be reproduced and on 8½ x 11-inch paper, with a 1½-inch left-hand margin to allow for hole-punching. Electronic files can be submitted on diskette, or as an e-mail attachment, in Word Perfect 6.1, MS Word, or in ASCII format. We will primarily use the electronic files in preparing the meeting handouts, but we also request a printed copy for the sake of comparison in the event that file conversion discrepancies occur.

SAMPLE BIOGRAPHY

[NAME]

[NAME] has a B.S. in Chemical Engineering from the University of Massachusetts and an M.S. in Chemical Engineering from the University of Cincinnati **[DEGREES]**. He/she has worked as a chemical engineer and Commissioned Officer in the U.S. Public Health Service. He/she has 27 years of research experience in wastewater treatment in the U.S. Environmental Protection Agency (EPA) and its predecessor organization **[WORK EXPERIENCE]**.

[NAME] is currently employed by **[ORGANIZATION]** as a **[TITLE]**. He/she is working on the control of specific toxicants and toxicity in wastewater treatment. His/her branch is responsible for the development of the TRE methods for municipal treatment plants and for toxicant and toxicant treatability research **[CURRENT WORK]**. He/she has served on the New Jersey Task Force on Acid Rain and on committees for Standard Methods for the Examination of Water and Wastewater as well as being a National Science Foundation panelist **[COMMITTEES, PAPERS, ETC.]**

Please mail the printed copy and diskette of your two-paragraph biography by February 26 to Lauren Lariviere, Eastern Research Group, 110 Hartwell Avenue, Lexington, MA 02421-3136. If you have any questions, please contact Lauren at 781-674-7250 or e-mail to llarivie@erg.com

U.S. Environmental Protection Agency

**Peer Review of Hudson River PCBs Reassessment
RI/FS Phase 2 Reports, Volume 2C - Data Evaluation and Interpretation Report
and Volume 2C-A Low Resolution Sediment Coring Report**

ADDRESS VERIFICATION FORM

Please take a moment to verify that the following information is correct. Indicate any changes that should be made and complete any blank lines. This information will be used to confirm the information we have at present and to create the final list of peer reviewers, which will be distributed to all who attend the meeting.

Please circle one: Dr./Mr./Ms.

Name: FIELD(1)

Title: FIELD(2)

Organization/Affiliation: FIELD(3)

Address: FIELD(4)

City/State/Zip: FIELD(5)

Telephone Number: FIELD(6)

Fax Number: FIELD(7)

E-mail Address: FIELD(8)

Fax this form by Thursday, January 7, to Lauren Lariviere at 781-674-2906.

DUE DATE and FORMAT GUIDELINES for PREMEETING COMMENTS

Peer Review of Hudson River PCBs Reassessment, RI/FS Phase 2 Reports, Volume 2C - Data Evaluation and Interpretation Report and Volume 2C-A Low Resolution Sediment Coring Report

Due Date: Friday, February 26, 1999

Approximately ten days before the meeting, ERG will mail peer reviewers a premeeting comment booklet for their review. For this booklet to be complete, ERG must receive your comments in advance. Additionally, the meeting chair and ERG need your comments to prepare for opening presentations and to organize issues for discussion. If you send a fax to meet the deadline, you must also express mail a hard copy and a copy on diskette to ERG.

Please send an electronic copy and reproducible hard copy to:

Eastern Research Group, Inc. (ERG)
110 Hartwell Avenue
Lexington, MA 02421-3136
Attn: Lauren Lariviere
E-mail: llarivie@erg.com

Thank you for your cooperation. Please feel free to contact Lauren Lariviere at 781-674-7250 with any questions or concerns.

Format Guidelines:

Your comments will be included in the comment booklet as received. Please prepare your comments referring to the charge to reviewers prepared by EPA and format them as follows:

TYPE SIZE: 11 point
PAPER SIZE: 8 ½" x 11"
SPACING: 1.5 line spacing
MARGINS: 1 ½" left-hand margin (for binding purposes)
1" right-hand, top, and bottom margins

- Please use a header with your name in the upper right-hand corner of each page of your comments.
- Organize your comments by section as outlined in EPA's charge questions.
- Remember to spell out acronyms when first used.
- Avoid incomplete sentences, abbreviations, and terms that might confuse the reader.
- If illustrations or tables are included, be sure that they are suitable for reproduction.
- Submit comments on diskette, or as an e-mail attachment, created in WordPerfect 6.1 or MS Word for IBM compatible computers.
- Attach any relevant articles or research results you feel should be considered in revising the report.



Peer Review of Hudson River PCBs Reassessment RI/FS Phase 2 Reports

Data Evaluation and Interpretation Report Low Resolution Sediment Coring Report

Albany Marriott
Albany, New York
March 16 - 18, 1999

Charge

Members of this peer review will be tasked to determine whether the scientific analyses conducted for U.S. EPA's Data Evaluation and Interpretation Report (DEIR) and the Low Resolution Sediment Coring Report (LRC) are credible, the conclusions valid, and whether the findings are appropriate to use to support the decision-making process for the Hudson River PCBs Site Reassessment study. The peer reviewers will base their assessment on the review of the DEIR and LRC, as well as additional information found in the Responsiveness Summary issued in December 1998 (responding to several documents including the DEIR) and the Responsiveness Summary for the LRC (which will be released in February 1999). The peer reviewers will also have available for their review the Hudson River Reassessment database, which contains all of the data used in the preparation of the above documents, along with other data.

The DEIR and LRC present the results of the geochemical analyses conducted on the water-column and sediment data collected for the Reassessment, as well as data collected by a number of other agencies and General Electric. It should be noted that there have been several changes in the available data since the time of the release of the DEIR in February 1997. These changes include a better estimate of flow for several reaches of the river, a recalculation of GE's PCB data due to an analytical bias, and the discovery of a sampling bias at the Thompson Island Dam monitoring station. These changes are discussed in the Responsiveness Summaries, and the analyses in the Responsiveness Summaries should supersede those conducted in the reports, as appropriate.

It is important to realize that the geochemical analysis conducted in the DEIR and LRC will be complemented by mass balance modeling and human health and ecological risk assessments to provide a thorough understanding of the fate and transport and impacts of PCBs in the Upper Hudson River. These other reports will address questions regarding the mechanisms that release PCBs from the sediment, toxicity, and bioavailability/biouptake. A peer review was previously conducted for the approach proposed to conduct the modeling for the Reassessment. After the modeling and the risk assessment reports are released, the Agency will also have those documents peer reviewed.

Specific Questions

Data Evaluation and Interpretation Report (DEIR)

1. Is the documented PCB load, which originated from the TI Pool, consistent with a source consisting of historically deposited PCB-contaminated sediments?
2. Are the two-phase and three-phase partitioning coefficients, derived in the DEIR, appropriate and do they properly address the physical parameters of the system (e.g., temperature).
3. Are the conceptual models based on the transect sampling consistent with the data?
4. Does the sampling at the TI Dam-West location impact EPA's conclusion that the sediments of the TI Pool are the major source of PCBs to the freshwater Hudson during low flow conditions considering the analytical corrections made to GE's PCB data? What are the other implications of finding higher concentrations along the shoreline than in the center channel?
5. Are the geostatistical techniques (polygonal declustering and kriging) correctly applied?
6. Are the methods applied in the DEIR (change in molecular weight (MW) and evaluating concentrations of BZ#s 1, 4, 8, 10 and 19 (MDPR)) appropriate standards for determining extent of dechlorination? Are there any significant problems with this approach, or more appropriate approaches?
7. The DEIR finds that the degree of anaerobic dechlorination is primarily a function of original concentration rather than time, and accordingly that there is not significant predictable dechlorination in sediments containing less than approximately 30 mg/kg PCB. Is this reasonable?

Low Resolution Sediment Coring Report (LRC)

1. In the LRC, EPA compared sediment data from cores taken in 1977, 1984 and 1994, which had the PCB analysis conducted by different laboratory methods. How valid are the methods used to establish a consistent basis for comparison?
2. In the upper Hudson River system, it has been well established that there is significant lateral heterogeneity in sediment concentrations. While it was attempted to reoccupy previous locations, some uncertainty is added with respect to the actual sampling location. While the statistical techniques help compensate for this, how does the sediment heterogeneity affect the comparison of cores from two different years? Given the spatial variability, is the finding that there is loss from most of the locations supported by the data?

3. What is the impact of the difference between replicate samples in the 1994 sampling effort (36 percent average variability) on the finding that there was a 40 percent loss of PCB inventory from the highly contaminated sediments in the TI Pool?
4. In the LRC, it was found that Hot Spot 28 contained much more mass than previous estimates. Is the conclusion that this "gain" is primarily due to incomplete characterization in 1977 valid?
5. Does the data set and its interpretation support the conclusion that significant losses have occurred from hot spots below TI Dam?
6. The LRC found that the historically contaminated sediments in the TI Pool were not universally being buried and sequestered from the environment. How much confidence would you place in the LRC evidence against widespread burial?
7. Is the interpretation of the sidescan sonar data appropriate and supported by the analysis of the associated sediment properties?

General Questions

1. Is the data set utilized to prepare the DEIR, LRC and Responsiveness Summaries sufficient to understand the fate and transport of PCBs in the Upper Hudson?
2. Are there any additional analyses that should be done to verify certain findings of the DEIR and LRC?

Recommendations

Based on your review of the information provided, please identify and submit an explanation of your overall recommendation for both the DEIR and LRC.

1. Acceptable as is
2. Acceptable with minor revision (as indicated)
3. Acceptable with major revision (as outlined)
4. Not acceptable (under any circumstance)



Briefing and Site Visit for the Peer Review of Hudson River PCBs Reassessment RI/FS Phase 2 Reports

Holiday Inn Turf on Wolf Road
Albany, New York
January 11-12, 1999

Agenda

MONDAY, JANUARY 11, 1999

- 11:00AM Lunch (on own)
- 12:00N **Registration/Check-In**
- 12:30PM **Welcome Remarks and Introduction**
Jan Connery, Eastern Research Group, Inc. (ERG)
- 12:45PM **Overview Presentation**
Doug Tomchuk, U.S. Environmental Protection Agency (EPA)
- 1:45PM **Presentation on Data Evaluation and Interpretation Report (DEIR) and the
Low Resolution Coring Report (LRC)**
Ed Garvey, TAMS Consultants, Inc.
- 3:00PM Break
- 3:15PM **Presentation Continues**
- 4:30PM Adjourn

TUESDAY, JANUARY 12, 1999

- 8:30AM **Presentation on Responsiveness Summaries: DEIR and LRC**
Ed Garvey
- 11:30AM Adjourn
- 11:35AM Lunch (on own)
- 12:30PM **Site Tour and Briefing (Albany to Hudson Falls to Albany)**
- 4:30PM **End of Site Tour at Holiday Inn Turf, Albany**