UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
New England Office
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

May 2, 2006

Mr. Andrew T. Silfer
Corporate Environmental Programs
General Electric Company
159 Plastics Avenue
Pittsfield, MA 01201

Via Electronic and U.S. Mail

Re: EPA Review of General Electric's March 2006 *Bench-Scale Study Report for Silver Lake Sediments,* GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts.

Dear Mr. Silfer:

This letter constitutes the Environmental Protection Agency's (EPA) Conditional Approval of the *Bench-Scale Study Report for Silver Lake Sediments* (Report) dated March 2006. The Report is subject to the terms and conditions specified in the Consent Decree (CD) that was entered in U.S. District Court on October 27, 2000.

Pursuant to Paragraph 73 of the CD, EPA, after consultation with the Massachusetts Department of Environmental Protection (MassDEP), has the following comments on the document.

1) Provide core retention depths versus penetration depths for both Stage 1 and Stage 3 samples.

2) Note if cores were in a horizontal or vertical position when being processed for analyses.

3) Page 3-2, Section 3.1.1 (Table 1). Explain why sample intervals differed among cores and tests. Indicate if sample intervals are depths below sediment surface.

4) Page 3-2, Section 3.1.2. For the purposes of assessing performance across the stages in the Bench-Scale tests, the Pilot Study, and the final cap, it is important to document the geotechnical properties of the isolation layer materials used for the various stages of the project. Analyze residual isolation materials from the Bench-Scale Study, if available, for the geotechnical properties agreed for the Pilot Study.

5) Page 3-3, Section 3.2.1. Note that the test water depths differ from those that will be encountered in implementation in the lake, which may influence the depth of mixing. This should be a factor evaluated during the Pilot Study.

6) Page 3-4, Section 3.2.2. Discuss what techniques were used to determine if mixing had occurred, and discuss observations of mixing.

7) Page 3-6, Section 3.3.1 (Figure 6). Provide a timeline specifying date of sediment collection, initiation and termination of cap placement, and measurement of consolidation rates. Is there an explanation for the stepwise decrease in cores on 3/29-3/30 and 4/21, and a slight expansion in three cores on 4/14; if so explain in the text and/or provide as a footnote to the figure.

8) Section 3.2.2 and Table 2 and 6. It is unfortunate that the analytical results from the samples (0-6") from the cores collected at locations A through F on March 21 did not indicate the range in PCB concentrations (based upon analyses conducted from a 0-36" interval) upon which the study was designed. The maximum sediment PCB concentration in Stage 1 testing was 250 mg/kg (Location D, Table 6), while in the Stage 1 pre-design, Locations C through F had concentrations near to and in excess of 2,000 mg/kg. Provide further discussion on the differing depths for which the cores were analyzed for the different stages. Note in the text that, due to these differences in sample depths, it is unknown if the design objective of testing cap performance for sediment with different PCB concentrations (including very high concentrations) was achieved, because the lower strata of the cores was not included in the samples sent for analysis. This will require that during the Pilot Study, care must be taken to further evaluate various issues (PCB release, gas flux, and cap recontamination) that may not have been fully characterized for circumstances with very high PCB concentrations.

9) Section 4. Include photographs similar to those for Stage 1 showing project set-up and close-ups of each of the cores, specifically showing the isolation materials in-situ, to the extent available.

10) Page 4-5, 4.1.3.1. It is unlikely that the presence of the geotextile influenced the consolidation rates. Possible reasons for the differences in consolidation include the differences in the height of the sediment column between cores, or possible core recovery which included layers with differing in-situ water content. Provide further discussion of this issue.

11) Describe how much, if any of the consolidation occurred in the isolation layer versus the underlying sediment in the text and in Table 7. In addition, discuss the differences in amount of consolidation observed between the Stage 1 and Stage 3 cores, and clarify the meaning of "initial sediment elevation" versus the descriptions of sediment recovery thicknesses provided in the text (there appear to be discrepancies between them).

12) Page 4-5, 4.1.3.1 (Figure 12). As with the previous comment for Stage 1 (Figure 6), provide a timeline of activities and any explanatory notes on changes in the core consolidation rates. Discuss why Core D14 (sediment only) showed marked expansion a week and then again a month after start of the test (was such an expansion noted immediately after removal from

the lake?). Delete any measurements for Core 16 after the time of failure and provide an explanatory footnote on the figure for termination of the test.

13) Page 4-5, 4.1.3.2, 2nd paragraph. Discuss how the observations of mixing could affect the interpretation of the data, and discuss observations of mixing in the text.

14) Page 4-7, 4.1.3.3. Is there an explanation regarding the increase in the PCB concentration (however slight) in the final month of monitoring? Also, while it is noted in the text that "... these values are two orders of magnitude lower than the concentrations noted in the composite baseline sample collected from Stage 1 cores.", it should be clarified that the underlying sediment in 4 of the Stage 1 pre-design cores was approximately an order of magnitude higher in concentration than the concentration measured in the top 6" in Stage 3 cores.

GE shall submit a revised Report addressing the comments noted above within 30 days from receipt of these comments.

I look forward to discussing your plans for the Pilot Study. The Agencies have observations pertinent to the conduct of the Pilot Study that were noted in the review of the Bench-Scale Report that will be more appropriately discussed at that time. GE shall submit the Workplan for the Pilot Study on or before June 15, 2006. If you have any questions, please contact me at (617) 918-1434.

Sincerely,

Susan C. Svirsky

Susan C Svirsky, Project Manager

cc: Mike Carroll, GE
Rod McLaren, GE
Kevin Mooney, GE
James Bieke, Goodwin Procter
James Nuss, BBL
Stuart Messur, BBL
Mark Gravelding, BBL
Susan Steenstrup, MADEP
Anna Symington, MADEP
Dale Young, MAEOEA
Kenneth Munney, USFWS
Holly Inglis, US EPA
Dave Peterson, US EPA
Dean Tagliaferro, US EPA
K.C. Mitkevicius, USACE
Thomas Fredette, USACE
Thomas Hickey, PEDA

Mayor James Ruberto, City of Pittsfield
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Linda Palmeri, Weston Solutions
Mike Palermo, Mike Palermo Consulting
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