04-0015

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

November 21, 2002

Mr. Andrew T. Silfer
Corporate Environmental Programs
General Electric Company
100 Woodlawn Ave. Via Electronic and U.S. Mail
Pittsfield, MA 01201

Re: Comments on General Electric's April 2002 Pre-Design Investigation Work Plan for the Silver Lake Area Removal Action, General Electric/Housatonic River Project Site, Pittsfield, Massachusetts.

Dear Mr. Silfer:

This letter contains the Environmental Protection Agency's (EPA) conditional approval of the pre-design investigation activities for the above-referenced *"Pre-Design Investigation Work Plan for the Silver Lake Area Removal Action"* (PDIWP). The PDIWP 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 (MDEP), approves the above-referenced submittal subject to the following conditions:

1. The peninsula that comprises the vicinity of location N02(92) is a delta, where sediment contained in the discharge from Outfall 01A has accumulated. As such, the peninsula has a higher average sedimentation rate and coarser sediment than the remainder of Silver Lake. The peninsula is also located in the area of Silver Lake that likely receives the greatest groundwater recharge. Finally, the existing analytical results from locations N02(92) and SLS-5 indicate that the delta sediments contain the highest concentrations of PCBs recorded to date in Silver Lake.

   As a delta, this portion of Silver Lake should be investigated separately from the rest of Silver Lake, since the chemical, hydrogeologic and geotechnical characteristics of the delta potentially differ from the rest of Silver Lake. Additionally, review of historical aerial photographs suggests that the outflow and sedimentation patterns from Outfall 01A have shifted over the years making it important to investigate the entire shoreline of the delta rather than just the current mouth of the Outfall 01A channel.

   Reflecting its unique nature, the remediation of the peninsula is addressed individually in the CD and Scope of Work (SOW). The following conditions concern General Electric

Company's (GE's) proposal for pre-design investigations in the peninsula.

A. EPA concludes that, when targeting the removal of up to 400 cubic yards of PCB-contaminated sediment in the vicinity of location N02(92), removal over a larger surface area with less depth would be more beneficial than a deeper removal over a smaller surface area. Some additional, focused 0- to 3-ft bgs sediment sampling is appropriate in the vicinity of sample location N02(92) to assist in selecting the removal area. Therefore, GE shall propose three additional sediment sample locations in the vicinity of location N02(92) to assist in selecting the removal area.

B. Regarding the 10 porewater sampling locations proposed by GE in Subsection 4.8 GE shall move at least one location to the Outfall 01A channel area.

C. In Subsection 4.3.1.3.2, GE refers to five proposed seepage meters, the locations of which are depicted in Figure 4-2. GE shall move at least one of their proposed seepage meter locations to the vicinity of locations N02(92) and SLS-5. This will allow for the consideration of suspected maximum groundwater discharge conditions in the vicinity of Outfall 01A in the cap design, as previously noted.

D. In Subsection 4.3.1.3.2, GE refers to ten proposed piezometers, the locations of which are depicted in Figure 4-2. GE shall move at least one of their proposed piezometers to the vicinity of locations N02(92) and SLS-5. This will allow for the use of hydraulic testing data from the vicinity of Outfall 01A in the cap design.

2. Regarding the pre-design investigation activities pore water PCB sampling activities contained in Subsection 4.3.1.2.2 of the PDIWP, EPA has the following comments:

A. In order to be consistent with previous EPA pore water sample collection methodology and to minimize potential oxidation or other factors that could change its composition, sediment cores shall be processed within one (1) working day after collection, not the 72 hours proposed by GE.

B. The SOP for Pore Water Sampling included as Attachment A provides far less detail than other SOPs submitted by GE, and shall be supplemented in order to stand alone as adequate instructions for personnel conducting pore water sampling.

C. GE shall demonstrate that pressure filtering of the supernatant pore water from the sediment will not reduce PCB concentrations due to partitioning of PCBs to the filter. This may be addressed by pressure filtering excess pore water through the filter, allowing the "first flush" to establish equilibrium with the filter media, prior to collecting pore water samples for analysis.

3. In Subsection 2.2.2.1, GE states that flow data for municipal outfalls to Silver Lake are not

available and collection of these data are not among the proposed pre-design investigations listed in Section 4 of the PDIWP. Flow data for municipal outfalls shall be collected and used both for the development of the water budget for Silver Lake and the design of the armoring layer. Direct measurements shall be made during both dry periods and during storm events in order to accurately identify actual contributions to the lake's water budget (dry sampling event) and to the flow regime along the shore (wet sampling event). This information will facilitate a more complete understanding of the water budget for Silver Lake and will also assist in finalizing the armor stone design.

4. Subsection 4.3.1.3.2 contains calculations regarding the water budget for Silver Lake. The second equation at the bottom of page 4-11 shall be modified to account for input due to groundwater discharge to the northeastern portion of Silver Lake and losses due to groundwater discharge from southwestern portion of Silver Lake to the aquifer, as follows: $Q_{IN} = P + Q_{GWR} + Q_{SO} + Q_{DD} - E - Q_{GWD}$, where Q_{GWR} is groundwater discharge to Silver Lake and Q_{GWD} is groundwater loss due to discharge from Silver Lake. Both of these values will need to be determined separately, and may not be equal, which may affect cap design specifications.

5. In Subsection 4.3.1, GE shall perform limited (e.g., 3-6 samples) sampling for ^{7}Be to provide additional data to support the determination of bioturbation depth.

6. In Section 4.3.1.1.2, GE shall propose either a random design or a random stratified design (stratified by depth) to collect one (1) sample at each of the twelve (12) locations, instead of triplicate sampling at four (4) locations.

7. In Subsection 4.3.1.2.2, GE proposes pore water sample locations. It is unclear whether pore water sample locations are placed to best characterize recharge and discharge areas. A stratified random sampling design shall be used (i.e., place *x* samples in areas of recharge, place *x* samples in areas of discharge, and place *x* samples in neutral areas). GE shall modify the pore water sampling plan to meet these requirements.

8. In Subsection 4.3.1.2.2, GE shall perform three sequential batch tests as a check on the pore water testing proposed which will be useful in determining partitioning coefficients and evaluating the effectiveness of the cap design.

9. In Subsection 4.3.1.3.2, in the revised PDIWP, GE shall propose a method of estimating evaporation at appropriate meteorological conditions during period of collecting the water budget data.

10. In Subsection 4.3.2.1.2, the precision of the fathometer shall be defined.

11. Subsection 4.3.2.2.1 indicates that wind direction/speed data that was used to support the design of the armor layer was twice the wind direction/speed observed during the 1991-1992 study. However, in Subsection 4.3.2.2.2, GE indicates that wind speeds for 5- to 100-year return periods will be developed using computer models. GE does not indicate what

estimated wind speeds, specifically, what return period wind speeds, will be used for the design of the armor layer, as Subsection 4.3.2.2.1 appears to indicate that the armor layer has already been designed. GE shall generate a wind speed/stone size curve that will be used to select the appropriate stone size during the design.

12. In Subsection 4.3.3, GE indicates that sediment samples will be collected and analyzed for, among other things, TOC. The organic content shall be reported both as TOC and fraction organic carbon (foc), as one can easily be derived from the other and foc is required to compute PCB partitioning from the solid to the liquid phase.

13. In Subsection 4.3.3.1.1, GE indicates the need for subsurface profiling to determine the nature and extent of remnant structures on the lake bottom. However, in Subsection 4.3.3.1.2, GE proposes the use of side-scan sonar, which is useful for identifying sediment surface features, but is not applicable to locating subsurface features. GE shall clarify that subaqueous sediment surface profiling is the data objective in this area. Further, GE does not specify the way the side-scan sonar data will be presented. The side-scan sonar data shall be combined to create a mosaic.

14. In Subsection 4.3.3.1.2, GE describes their proposed bathymetric survey layout. GE shall add perpendicular tie-lines across the main survey lines to improve data quality.

15. Future revisions of the PDIWP and subsequent documents shall include all existing data for the Silver Lake Area, including that for the already-remediated residential fill properties, both in the tables and figures, in order to establish boundary conditions for the investigation areas.

16. On the residential properties, GE proposes to advance borings to a maximum depth of 11 feet, presumably based on limited existing sampling data. The SOW requires that borings be advanced to a depth of *X* feet, where *X* is the depth at which PCBs are detected, up to a maximum of 15 feet. It seems appropriate, based on most of the currently existing sampling data, to assume that 11 feet should be an adequate depth to advance initial borings in residential bank soils. However, in case some of the samples from the deepest depth increments are found to have concentrations of contaminants that exceed Massachusetts Contingency Plan Method 1 Soil Standards, EPA reserves the right to require additional sampling of the deeper depth increments below 11 feet.

17. Subsection 4.4.2.1, last paragraph, GE states "if the data...indicate that PCBs greater than 2 ppm extend or may extend into the non-bank portion at a given property, GE may elect to address the entire property under the CD." The CD actually specifies that GE "may elect to address the entire property *provided that exposure to soils is equally likely throughout the property...*" GE shall modify the text in this subsection to reflect this language.

18. GE's proposed approach for investigating bank soils on residential, recreational and commercial properties, as described in Section 4.4 of the text and on Figures 4-7 through 4-11, is in compliance with CD requirements. However, existing data for Parcels I9-9-26 through I9-9-29 (residential parcels that were remediated under the MDEP's residential fill program), commercial parcel I9-9-30, and Parcel I9-10-8 (a residential property that was

investigated by EPA), indicates that both PCB and Appendix IX+3 contamination may exist on other Silver Lake parcels to depths greater than the depths being required for bank soils investigations (i.e., to depths ranging from 4 to 16 feet, or more) and at lateral distances from the lake that are not contained within the mapped areas of "bank soils subject to pre-design investigations." For at least some of the other commercial and residential parcels under investigation, it appears that contamination may be present from more than one source, i.e., as a result of the flooding of Silver Lake or because of the emplacement of contaminated fill in low-lying areas.

- GE shall collect the sampling data, as proposed in the PDIWP, and shall evaluate all of the available information for each parcel (including boring logs) to determine which parcels, if any, may have contamination (PCB or Appendix IX+3) that extends beyond the mapped bank areas and/or to depths exceeding 3 feet (for commercial parcels), or depths exceeding 11 feet (for residential parcels). If additional soil investigations are needed, GE shall submit a PDIWP Addendum containing all data for the bank investigations. The Addendum shall also present proposals for additional investigations for addressing these non-bank areas on residential and commercial properties.

- Considering that investigation and cleanup efforts for separate and simultaneous investigations under both the Silver Lake PDIWP and MDEP's commercial and residential fill programs (under MDEP's November 13, 2000 Administrative Consent Order) would have to be closely coordinated, it may make the most sense to investigate individual properties with non-bank contamination under a single program, either the CD's Silver Lake investigation (for floodplain properties) or MDEP's residential and commercial fill program (under its ACO). If additional soil investigations are needed, the PDIWP Addendum shall propose how GE intends to proceed with these investigations on each of the properties where contamination does not appear to be restricted to the bank areas.

- In addition, residential Parcel I9-9-24 was previously sampled as part of past floodplain sampling activities under the direction of EPA and MDEP in 1997; all sampling results were less than 2 ppm. This property had been investigated because EPA and MDEP learned that the property had been flooded a number of years ago. However, MDEP has recently learned that, soon after the property had flooded, 1 to 2 feet of fill (from an October Mountain source) was brought in. Therefore, any contamination related to the flooding of Silver Lake might not have been sampled, if the maximum sampling depth was only 1 foot. After consulting with the property owners concerning the locations of the areas that flooded and those that were subsequently covered with fill, GE shall propose this additional sampling as part of the Silver Lake investigation on that parcel and upon approval, shall perform such sampling.

19. EPA's review of GE's proposed bank soil sampling plan indicates that modifications to the sampling plan are needed in certain areas to comply with the CD and SOW requirements. These samples are described below.

Parcel I9-10-8: To reduce the clustering of sampling points in GE's proposed sampling plan

(depicted in Figure 4-10), GE shall:

a. Move sample location I9-10-8-SB-4 westward to the top of the bank area,
b. Move sample location I9-10-8-SB-6 southward approximately 10 ft, and
c. Move sample location I9-10-8-SB-8 north northeastward approximately 40 ft (halfway between the proposed location and location I9-10-8-SB-9).

EPA reserves its right to perform additional sampling in the areas subject to PDIWP and/or require additional sampling or Response Actions, if necessary, to meet the requirements of the Consent Decree.

Within 60 days of receipt of this letter, GE shall submit a revised PDIWP which addresses the above conditions for EPA's review and approval.

If you have any questions, please contact me at (617) 918-1268.

Sincerely,

M. J. Nalipinski

Michael J. Nalipinski
GE Facility Project Manager

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