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Corporate Environmental Programs  
General Electric Company  
100 Woodlawn Avenue, Pittsfield, MA 01201

August 31, 2000

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BY: .....

Mr. Dean Tagliaferro  
On-Scene Coordinator  
U.S. Environmental Protection Agency  
c/o Weston Environmental Engineering  
1 Lyman Street  
Pittsfield, Massachusetts 01201

**Re: GE-Pittsfield/Housatonic River Site  
Upper ½ Mile Reach Removal Action (GEC800)  
Response to EPA Recommendations for Additional DNAPL Investigations**

Dear Mr. Tagliaferro:

This letter responds to your letter of July 28, 2000, in which EPA recommends that GE conduct a number of specific investigations for the presence of dense non-aqueous-phase liquid (DNAPL) in the remaining portions of the Upper ½ Mile Reach prior to excavating sediments and bank soils in those areas.

As you know, GE has conducted and is continuing to conduct the extensive source control investigation, design, and implementation activities required by the Consent Decree (CD), as specified in Annex 2 to the *Statement of Work for Removal Actions Outside the River*. The latest round of source control-related investigations began in 1998, in parallel with the development of the *Upper ½ Mile Reach Removal Action Work Plan*, and included the use of geophysics and the installation of 56 additional borings of which 43 have been completed as monitoring wells. This extensive effort addressed both banks of the ½ Mile Reach between Newell Street and Lyman Street. The results of these investigations, coupled with pre-existing information (i.e., ongoing DNAPL and LNAPL monitoring results), indicated the appropriateness of additional source control measures in three distinct areas:

- An area in East Street Area 2 just downstream of the Newell Street Bridge;
- Newell Street Area II; and
- The Lyman Street Area.

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While each of these areas was already the focus of previous source control activities, additional source control activities, approved by EPA, were initiated as a result of this extensive round of investigation. As you know, an approximately 400-foot long barrier composed of sealed Waterloo sheetpiling was designed and installed in East Street Area 2 in the spring of 1999 and in early 2000. The design of an approximately 400-foot long Waterloo sheetpile system adjacent to the Lyman Street Area has been submitted to and approved by EPA and installation should begin this fall. Additional DNAPL recovery systems (with appropriate collection and containment measures) have been installed at Newell Street Area II over the last two years.

Further, when GE has encountered DNAPL during the work on the Upper ½ Mile Reach Removal Action, GE has taken steps, even beyond those required by the DNAPL contingency plan in the approved *Upper ½ Mile Reach Removal Action Work Plan*, to fully investigate and remediate that DNAPL. In doing so, GE has utilized an approach (contemplated in the approved contingency plan) that isolates the DNAPL from the river, thereby minimizing the possibility of releasing DNAPL into the water column.

Notwithstanding the efforts described above, your letter of July 28 contains four recommendations for additional source control investigation within the ½ Mile Reach. EPA's recommendation and GE's response to each of the four items are presented below.

- EPA Recommendation #1: Install lower bank borings and/or piezometers in areas where there may be a DNAPL source to the river emanating from the adjacent riverbanks. These areas include, but may not be limited to, riverbanks abutting the Newell Street II portion of the site and the area from Cell G1 to the Building 68 Area (including the area where the former Oxbow H intersects the river).

GE Response: GE is not aware of any areas where there may be a DNAPL source to the river emanating from the riverbanks. The specific areas identified in EPA's recommendation have been investigated through the installation of a number of soil borings and monitoring wells either along the top of the riverbank or within a short distance from the riverbank, either as part of the source control investigation described above or as part of previous work. These activities have not identified the presence of DNAPL in these areas, as discussed below.

At Newell Street Area II, approximately 15 soil borings and/or monitoring wells have been installed close to the riverbank, and they have not identified the presence of NAPL. Wells N2SC-05 and N2SC-07, which are screened about 20 feet below the bottom of the river above the silt layer, do not have DNAPL present and delineate the area between the river and the DNAPL present to the south. In addition, EPA has separately asked that two additional monitoring wells be installed west of the Newell Street parking lot before October 1, 2000.

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The planning for this work is underway and may provide additional information on the western extent of DNAPL at this site. If these wells identify the presence of DNAPL, GE will evaluate the need for further activities in this area.

In the former Oxbow H area, as part of the above-described source control program, soil boring E2SC-12 was installed at the top of the riverbank down to the till layer directly in the middle of the former oxbow where it historically entered the Housatonic River. No NAPL was identified at this location during installation.

In short, investigations conducted to date in the above areas under EPA and/or Massachusetts Department of Environmental Protection oversight have not identified the presence of DNAPL in those areas. These investigations, supplemented with the additional wells that GE is planning to install in Newell Street Area II, should be adequate, at present, to determine the presence of DNAPL in these areas. Accordingly, GE does not believe that additional investigations in these areas are needed at this time.

- EPA Recommendation #2: Adjacent to the Lyman Street Area of the Site, where the presence of DNAPL very near the riverbank's edge has been documented, install deep borings within the river sediments to look for the presence of DNAPL. Although GE is required to install impermeable, metal sheetpile along the riverbank in this area, the presence of DNAPL within the River channel itself may require additional response actions.

GE Response: As discussed above, the design is complete for the approximately 400-foot long Lyman Street Waterloo sheetpile barrier. Initial installation activities are currently anticipated to occur in the fall of 2000. GE does not believe that it would be prudent to install deep borings in the river in this area for two reasons. First, while GE is not aware of any data indicating that DNAPL is present beneath the bottom of the river in this area, it seems unwise to install deep borings within the flow of the river to investigate the possible presence of DNAPL which may have elevated concentration of PCBs or other constituents. If DNAPL is present in this area, the installation process may allow DNAPL that may currently be at depth to enter the water column of the river and be transported downstream. Second, if DNAPL were to be identified beneath the sediments through the installation of deep borings, it is not apparent how that would change the project sequence approved by EPA in the *Upper 1/2 Mile Reach Removal Action Work Plan*, which calls for a sequential upstream to downstream approach to the remediation. If DNAPL is present in this area, it is best addressed after both the Waterloo sheetpile and the temporary sheetpile have been installed in order to isolate the area from the river and to provide adequate containment of the area during remediation.

- EPA Recommendation #3: In the unexcavated sediments adjacent to where DNAPL was uncovered during the Building 68 Removal Action, install deep borings within the River sediments to look for the presence of DNAPL.

GE Response: Presumably, the DNAPL area being referred to is near the north bank of the river in the area of the GE footbridge. DNAPL was encountered in this area during the Building 68 Removal Action at a depth approximately 3 to 4 feet below the original river bottom. The DNAPL-impacted sediments were excavated and appropriately disposed of off-site. In addition, a sealed Waterloo sheetpile barrier was installed on the riverbank to prevent any DNAPL on the facility in this area from migrating into the river, and monitoring of the wells in the area is ongoing. Monitoring data collected to date indicate a very small amount of DNAPL present on the facility in this area.

The installation of deep borings in the bottom of the river in this area would involve the same potential risks and drawbacks described in our response to EPA Recommendation #2. In addition, visual observation of the DNAPL that was excavated during the Building 68 Removal Action indicated that the DNAPL-impacted sediments were in a band about 3 feet across, with limited free product. In fact, the DNAPL contingency plan discussed above is based largely on this experience. There is no reason to expect that any DNAPL encountered in this area as part of the current Removal Action could not be excavated and disposed of appropriately, similar to the DNAPL found in this area during the Building 68 Removal Action. For these reasons, GE does not feel that additional sampling in this area is warranted or would provide useful information during the implementation of the Upper ½ Mile Reach Removal Action.

- EPA Recommendation #4: Install deep River borings in other areas of the River channel where the current information indicates that DNAPL may be present. For example, where the former oxbows intersect with the current River channel and adjacent to the Newell Street II portion of the Site.

GE Response: GE's reservations associated with the installation of borings in the bottom of the river are described above. Beyond the practical limitations of the installation process itself, the risk of downstream PCB transport is significant if DNAPL is encountered during such sampling. As such, GE does not believe it is wise or appropriate to perform such sampling. In addition, as noted above, the specific areas described in EPA's comment have been addressed through the installation and monitoring of various monitoring wells. While these wells are not located physically in the river bottom itself, the wells along the top of the riverbank in these areas indicate that NAPL is not present at these locations. Therefore, GE does not believe it is appropriate to install borings in the river bottom in these or any other locations at this time.

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In summary, GE does not believe it is prudent to install deep borings in the river bottom (or on the riverbanks if adjacent wells and borings do not indicate the presence of DNAPL) for the reasons described above. In addition, since the presence of DNAPL in a given area is often limited and spotty in extent, the additional borings recommended by EPA may or may not identify the presence of DNAPL even if it exists. Further, even if those investigations did identify the presence of DNAPL in one or more remaining sections of the Upper ½ Mile Reach, the appropriate actions to address such DNAPL could not be performed until excavations are conducted in such section(s) and the horizontal and vertical extent of the DNAPL can be defined. As a result, GE does not believe that adopting the recommended actions would materially expedite the Upper ½ Mile Reach Removal Action.

For these reasons, GE does not believe that performance of the investigations recommended in your letter is technically appropriate at this time. Nor does GE believe that these investigations are necessary as part of “best efforts to anticipate any potential force majeure event” for purposes of Paragraph 128 of the CD. Such “best efforts” cannot require the conduct of a speculative, and in some cases imprudent, search for possible DNAPL conditions, which, even if identified, could not be adequately remediated until the relevant section of the river is reached for excavation.

Moreover, to the extent that your letter suggests that if such investigations should identify DNAPL in one or more of the remaining sections, GE should accelerate its work in the prior sections, we note that GE is already conducting this Removal Action on an aggressive schedule and will continue to do so. GE does not believe that “best efforts” in Paragraph 128 of the CD require extraordinary acceleration measures which could involve risks to worker health and safety or risks of releases to the river.

In this connection, the completion date set forth in the Upper ½ Mile Reach Removal Action Work Plan reflected an aggressive estimate of the time it would take to complete this Removal Action, barring unforeseen circumstances. However, as with any complex sediment/bank soil removal project such as this (which involves over a half mile of the river adjacent to a 100-year-old industrial facility), and as the CD recognizes, unforeseen events can occur that can potentially delay the work. EPA itself has recognized this in estimating that the 1½ Mile Reach Removal Action will take “approximately 3 to 5 years . . . depending on weather conditions and unanticipated field conditions.” EPA’s Engineering Evaluation/Cost Analysis Fact Sheet (July 2000) at p. 5.

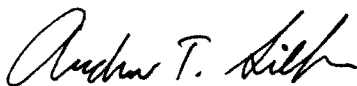
In the course of the Upper ½ Mile Reach project, a number of such unforeseen events have occurred, including findings of DNAPL as well as larger-than-expected flood events. In addressing the DNAPL, as noted above, GE has taken substantial actions, in coordination with EPA and even beyond the steps required by the approved DNAPL contingency plan, to fully

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investigate and remediate the DNAPL. These actions have involved considerable time and resources and have caused some delay in the performance of this Removal Action, but we believe that these measures were appropriate and have resulted in a better cleanup for the Upper ½ Mile. GE urges EPA to take these factors into account in considering the timing issues.

If you have any questions about these matters, please let me know.

Sincerely,



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GE Project Coordinator

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