
Newell Street Parking Lot

Based on the results of DNAPL recovery tests performed between September 22 and September 30, 1998 in three wells (NS-15, NS-30, and NS-32), GE proposed the installation of an automated DNAPL recovery system for these wells in a proposal dated November 24, 1998. That proposal was conditionally approved by the USEPA in a letter dated December 15, 1998. As requested by the USEPA's letter (December 1998), GE initiated recovery tests on four additional wells (N2SC-1I, -2, -3S, and I) and reported these results to the USEPA in a letter dated January 8, 1998. The January 8, 1998 letter proposed to further evaluate the potential recovery volumes from well N2SC-1I with additional recovery testing. Subsequently, between January 15 and February 1, 1999, GE in conjunction with BBL performed DNAPL recovery testing. The results of these tests were presented in a document entitled *Source Control Investigation Report Upper Reach of Housatonic River (First 1/2-Mile)* (HSI GeoTrans, February 1999). Based on the DNAPL recovery test results, GE proposed installation of an automated DNAPL collection system for well N2SC-1I in a letter dated March 10, 1999. This proposed automated DNAPL collection system was in addition to the USEPA-approved automated DNAPL collection system for wells NS-15, NS-30, and NS-32 (which became operational on March 1, 1999). That proposal was conditionally approved by the USEPA in a letter dated March 17, 1999. As requested by the USEPA's letter (March 17, 1999), GE will evaluate extending to automated recovery system to wells N2SC-2, N2SC-3S, and N2SCI within six months of the on-line date for the DNAPL recovery system for well N2SC-1I (which will become operational in July 1999). In addition, as requested in the USEPA's March 17, 1999 letter, GE will submit a report summarizing and evaluating all of the NAPL monitoring and recovery systems at the Newell Street II site every six months. The initial report is due to the USEPA within six months of the on-line date for the DNAPL recovery system for well N2SC-1I.

Additional wells may also be added to the automated recovery system after further evaluation of the source control investigation results.

Source control activities have also been performed related to DNAPL detected in the Building 68 area. GE separately submitted a proposal to the USEPA to address DNAPL at Building 68, which the USEPA conditionally approved by a letter dated July 17, 1998. Pursuant to that approval, approximately 180 linear feet of sheetpile was installed near the base of the riverbank, east of the footbridge, during November and December 1998. GE performed a DNAPL recovery test in two of the wells located in this area over a two-week period between December 28, 1998 and January 11, 1999, to determine an appropriate DNAPL recovery method. The results indicated that there were not significant amounts of DNAPL in the river bank area west of Building 68, and that removal rates for DNAPL (if any) in these wells would be slow. Based on these results, GE proposed to monitor the wells and pump and properly dispose of any recovered DNAPL. The plan was approved by the USEPA in a letter dated February 2, 1999, and GE currently is implementing the plan.

1.3 Summary of Proposed Plan

The Removal Action described in this Work Plan will involve removal and restoration of select sediments and bank soils from portions of the first 1/2-Mile Reach. Descriptions of these activities are provided below.

1.3.1 Sediment-Related Activities

GE proposes to remove and restore (i.e., replace with cap and armor) certain river sediments in the 1/2-Mile Reach. Within this reach, the vertical extent of removal in the majority of those areas where removal will occur will be up to 2 feet, with removal to a depth of 2.5 feet proposed for one area. In areas of low PCB concentrations, no action is planned. For example, a stretch of the River downstream of Newell Street contains sediment with little to no detectable levels of PCBs; thus, no action is required in this section.

The sediment removal areas were developed in conjunction with USEPA and MDEP, based on a detailed review of the relative concentration of PCBs present in both the River sediments and adjacent bank soils. The locations and volumes of sediment to be removed are discussed in Sections 4 and 7 of this Work Plan. It is anticipated that approximately 8,100 cubic yards (cy) of sediment will be removed. The general sediment removal and restoration approach involves diverting the River around established work areas in a phased, area-by-area approach primarily using a water diversion/containment structure such as steel sheetpiling or other appropriate means, dewatering the work cell in which work will be performed, treating the water as required, and performing sediment removal, replacement, and restoration activities. The removed sediment will be permanently consolidated with other GE site-related materials at USEPA-approved locations at the GE facility. Following removal, the sediment removal areas will be capped and armored using a multi-layer cap system. Aquatic enhancement structures will subsequently be installed as part of the ½-Mile Reach restoration activities.

The current spatial average PCB concentration for the top foot of sediment in the ½-Mile Reach is approximately 55 ppm. Following implementation of the sediment removal and replacement activities, the sediment with the highest PCB concentrations will have been removed and the spatial average PCB concentration in the surficial sediment (top foot) will be reduced to less than 1 ppm. Further, the proposed sediment replacement activities will effectively isolate any remaining PCB-containing sediment and minimize the potential for resuspension of sediments, desorption of PCB from the sediments into the water column, and direct contact of humans and biological receptors with PCB-containing sediment.

1.3.2 Bank Soil-Related Activities

To the extent practical, the bank soil removal activities will be conducted in coordination with the sediment removal and restoration activities. For the river bank soils, this will involve the removal of bank soils, to a maximum depth of three feet, as necessary to achieve spatial average PCB concentrations less than 10 ppm in the top foot and less than 15 ppm in the 1- to 3-foot depth increment. In accordance with the USEPA's letter of December 1, 1998, the bank soil removal actions will achieve these average PCB concentrations in each of seven river bank averaging areas specified by the USEPA. In addition, GE will remove and/or stabilize bank soil along portions of the bottom or the "toe of banks," as agreed to by GE, USEPA, and MDEP. The locations and volumes to be removed to achieve the specified cleanup levels are discussed in Sections 4 and 8 of this Work Plan. Following removal, the soil removal areas will be backfilled and the bank habitat will be restored using an engineered soil and vegetative cover, except along the lower banks at the toe of the slope, where armor stone will be placed on the bank surface for erosion protection. As with the sediments, the removed soil will be permanently consolidated with other GE site-related materials at USEPA-approved locations at the GE facility.

It is estimated that the bank soil removal activities involve the removal of approximately 4,300 cy of bank soils and the replacement and restoration of approximately 52,000 square feet of bank area. An additional 340 cubic yards of bank soil will be removed between the sheetpiling and the River at East Street Area 2 to help complete source control activities in that area. The current spatial average PCB concentrations for the top foot and 1-to 3-foot depth increment in the ½-Mile Reach are approximately 198 ppm and 87 ppm, respectively. Following implementation of the bank soil removal and restoration activities, the bank soils with the highest PCB concentrations will have been removed and the spatial average PCB concentrations will be reduced to less than 10 ppm in the top foot and less than 15 ppm in the 1- to 3-foot depth increment, both in the overall ½-Mile Reach and in each of the averaging areas specified by the USEPA. Further, any PCBs contained in the subsurface soil underlying the areas subject to these removal/restoration measures will be effectively isolated, thus preventing erosion from these subsurface soils and direct contact of human or biological receptors with these soils.

During the 1998 USEPA sampling effort, GE collected 56 sediment split samples for PCB analysis and 13 split samples for Appendix IX + 3 analysis. The PCB data for the split samples are provided on Figures 4-1 through 4-4 of this Work Plan, while the Appendix IX+3 split sample data are presented in Table 4-1. A comparative analysis of the USEPA's data and GE's split sample data was performed, the results of which are contained in Appendix B. In general, the two data sets are similar, with some outliers noted. For purposes of this Work Plan, the GE/USEPA split data were averaged for use in representing concentrations at split sample locations and calculating spatial averages for PCBs and arithmetic averages for other Appendix IX+3 constituents. The USEPA results for dieldrin, DDT and ketone has reportedly been rejected, and were not used to determine averages.

Sediment sampling was performed in February 1999 as part of source control activities at East Street Area 2. In total, 13 sediment samples were collected from nine locations. Samples were collected in the top foot at all locations, and in 1-foot intervals to a depth of 4 feet at one location. Results from this sampling indicate the presence of PCBs ranging from non-detect to 165 ppm. The PCB results are depicted on Figure 4-1.

4.2.2 Designation of Sediment Removal Areas to Address PCBs

In general, the approximate removal and replacement limits for sediment were developed in conjunction with USEPA and MDEP, based on a detailed review of the relative concentration of PCBs present in both the River sediments and adjacent bank soils.

The initial step in designating sediment removal areas involved generating Thiessen polygons for all locations from which sediment samples were collected in the ½-Mile Reach. Thiessen polygon mapping involves the use of computer software to draw perpendicular bisector lines between adjacent sample locations to create two-dimensional, sample-specific polygon areas. Polygons for the river sediments are provided in Figures 4-1 through 4-4.

To determine the extent and depth of sediment proposed for removal, the analytical data were plotted on a map to better understand the distribution of PCBs in the sediment. During several meetings with USEPA, MDEP and GE representatives, the sediment removal extent and depth were agreed upon for each polygon, based on an evaluation of spatial and vertical trends in PCB concentration. The sediment removal areas and depths proposed to reduce PCB concentrations in the ½-Mile Reach are depicted on Figures 4-1 through 4-4.

As part of the sediment removal determination process, spatial averaging was performed to determine the overall effectiveness of the removal scenario in reducing the concentration of surficial (0-1 foot) PCBs in the ½-Mile Reach. The spatial averaging approach used by GE supports an averaging technique that is area weighted. The basis for the spatial averaging approach is the initial characterization of a given area using Thiessen polygons. This approach has been used by GE to identify removal areas at other PCB sites in Pittsfield requiring response actions, and has been approved by the USEPA and MDEP for use at those sites.

The current calculated spatial average for the surficial river sediments (0- to 1-foot) in the ½-Mile Reach of the Housatonic River is 54.8 ppm (excluding data collected as part of the Source Control activities at East Street Area 2). The surficial sediment PCB concentrations were then assessed following implementation of the sediment removal and replacement activities to determine the post-removal spatial average PCB concentration in the surficial sediments of the ½-Mile Reach. This post-removal surficial spatial average PCB concentration was calculated as less than 1 ppm. Refer to Appendix C for spatial average calculations and assumptions.

United States et al. v. General Electric Company (D. Mass.)

Appendix F to Consent Decree

*Removal Action Work Plan
for Upper 1/2 Mile Reach of
Housatonic River, dated
August 1999, and EPA
approval letter dated
August 5, 1999*

Pittsfield/Housatonic River Site
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October 1999

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