GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

January 30, 2006

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

Re: GE Pittsfield/Housatonic River Site
Upper ½-Mile Reach Removal Action (GECD800)
2005 Annual Monitoring Report

Dear Mr. Tagliaferro:

The General Electric Company (GE) has completed the 2005 monitoring events in general accordance with the requirements of the *Removal Action Work Plan – Upper ½-Mile Reach of Housatonic River* (Work Plan; Blasland, Bouck & Lee, Inc. [BBL], August 1999). This letter transmits the *2005 Annual Monitoring Report* summarizing the post-construction monitoring activities performed during 2005.

Please call me if you have any questions.

Sincerely,

for

Andrew T. Silfer, P.E.
GE Project Coordinator

ATS/csc
Enclosure

cc: T. Conway, EPA
H. Inglis, EPA (CD-ROM)
R. Howell, EPA (cover letter only)
S. Steenstrup, DEP (2 copies)
A. Symington, DEP (cover letter only)
R. Bell, DEP (cover letter only)
K.C. Mitkevicius, USACE (CD-ROM)
N. Harper, MA AG (cover letter only)
D. Young, MA EOEA
L. Palmieri, Weston (hard copy and CD-ROM)
Mayor J. Ruberto, City of Pittsfield
R. Goff, USACE
J. Bieke, Goodwin Procter
M. Carroll, GE (cover letter only)
R. McLaren, GE (cover letter only)
M. Gravelding, BBL
M. Chelminski, Woodlot Alternatives
Public Information Repositories
GE Internal Repositories

TECHNICAL REPORT

2005 Annual Monitoring Report Upper ½-Mile Reach of the Housatonic River

General Electric Company
Pittsfield, Massachusetts

January 2006

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Table of Contents

Tables

Figures

Appendices

1. Introduction

1.1 Purpose and Scope

This *2005 Annual Monitoring Report* summarizes the results of various post-restoration monitoring activities conducted by the General Electric Company (GE) during 2005 for the Upper ½-Mile Reach of the Housatonic River in Pittsfield, Massachusetts, under the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site. This report was prepared on GE's behalf by Blasland, Bouck & Lee, Inc. (BBL) and AMEC Earth & Environmental (AMEC). These monitoring activities were performed in accordance with the requirements of the *Removal Action Work Plan for the Upper ½-Mile Reach of the Housatonic River* (Work Plan) (BBL, 1999) (Appendix F to the CD).

During 2005, monitoring activities for the Upper ½-Mile Reach were performed for the restored bank and river areas. Specific monitoring requirements associated with these areas are presented in the Work Plan. Monitoring activities performed in 2005 for the restored bank and river areas addressed the following categories:

- Restored bank vegetation;
- Restored bank erosion;
- Aquatic habitat enhancement structures;
- Armor stone layer; and
- Water column.

This report describes the 2005 monitoring activities and associated response actions, where conducted, for the above components.

1.2 Report Organization

Following this introductory section, this report is organized into the following sections.

- Section 2 – Restored Bank Vegetation Monitoring. This section summarizes the restored bank vegetation monitoring and associated response actions conducted during 2005. As detailed in the Work Plan, these activities were performed in those bank areas that were restored as part of the Upper ½-Mile Reach Removal Action – i.e., those areas where bank soils were excavated as part of that Removal Action and areas that were cleared to allow access for the removal activities.

- Section 3 – Restored Bank Erosion Monitoring. This section summarizes the restored bank erosion monitoring conducted during 2005, as well as the evaluation of the need and timing for response actions. These activities do not include the approximately 170-foot-long section previously excavated and restored as part of the Building 68 Area Removal Action.

- Section 4 – Aquatic Habitat Enhancement Structures and Armor Stone Layer Monitoring. This section summarizes the monitoring conducted in 2005 for the aquatic habitat enhancement structures and armor stone layer and presents the results of these monitoring activities.

- Section 5 – Water Column Monitoring. This section summarizes the water column monitoring conducted in 2005 and presents the results of these monitoring activities.

- Section 6 – Summary and Future Activities. This section summarizes the overall activities completed as part of the 2005 monitoring program and describes future monitoring activities as prescribed in the Work Plan.

- Section 7 – References. This section presents references cited throughout this report.

2. Restored Bank Vegetation Monitoring

2.1 General

Vegetative restoration activities were implemented in those areas where bank soils were excavated as part of the Upper ½-Mile Reach Removal Action and in areas cleared to allow access for the removal activities (see Figure 2-1). The restoration techniques outlined in the Work Plan were intended to restore the vegetative community in such disturbed riparian areas to a functional value that exceeds that of the riparian habitat present prior to the Removal Action. All soil removal activities along the riverbank were completed in 2002 and all disturbed riparian areas have been restored. As part of the restoration process, GE, in conjunction with representatives of the Natural Resource Trustees (Trustees), monitors those areas that were restored to verify the success and biological integrity of the intended vegetative community.

An annual summary monitoring report is required to document the results of that year's monitoring visits and the conditions of the restored areas within the Upper ½-Mile Reach. This section fulfills the annual summary monitoring report requirement for the calendar year 2005.

2.2 Monitoring Program

As outlined in the Work Plan, GE and the Trustees agreed to a monitoring methodology that was used in 2001 and revised for implementation in 2002 and beyond. The Standard Operating Procedure currently agreed upon for conducting the restored banks vegetation monitoring is included as Appendix A.

In 2005, GE proposed certain modifications to the existing vegetation monitoring program in response to changing conditions and vegetative growth on the restored banks. The proposed modifications were submitted to the Trustees in a communication dated August 3, 2005. That proposal has been updated since that time, and the updated proposal is provided in Appendix B. The proposed modifications are discussed further in Section 6.1 of this report. If the Trustees approve of the proposed modifications, the revised monitoring program will be implemented in 2006. The remainder of this section summarizes the existing monitoring program and the results of the vegetation monitoring visits performed in 2005.

For each planting area restored following completion of removal activities, the existing vegetative monitoring program consists of two visits per year for the first 3 years after planting, and an annual visit to be conducted during the fifth and seventh years after planting. In each of the first 3 years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August) to assess plant survival. The single visits in the fifth and seventh years after planting are to be conducted in the summer (July/August). In the event of a significant loss of plantings (greater than ¼ acre), the schedule for monitoring must be restarted following actions to replant the lost trees or shrubs (except in the case where a third party is responsible for such losses).

Survival rates, based on stem counts of planted trees and shrubs and the extent of areal coverage for herbaceous cover, are the key components of measuring the success of planted areas. The following performance standards are used to assess the adequacy of the restoration efforts over the Upper ½-Mile Reach:

1. All planted trees, shrubs, and vines must meet an 80% survival rate of the amount originally planted. To confirm this survival rate, supplemental plantings of appropriate species will be made if a monitoring event

indicates a loss greater than 20%. Any dead trees or shrubs in excess of 20% of the original planting will be replaced in the year in which monitoring occurs.

2. Herbaceous coverage of 100% will be maintained outside the foliar extent of the trees. Supplemental seeding or other activities will be used to maintain 100% herbaceous coverage.

3. No greater than 5% of the restoration area of either bank will be allowed to be covered by invasive plant species. Any invasive species in excess of the 5% coverage limit will be removed in accordance with the requirements of the *Invasives Control Plan* (BBL, 2001).

The survivability of the plants is determined by both mortality and apparent vigor. Monitoring also assesses whether supplemental activities, such as stem protection, fertilization, or watering, are necessary.

In accordance with the Work Plan, a certified arborist (selected in consultation with the Trustees) assists in the completion of the monitoring program. The arborist, Chris Frank of C.L. Frank & Company of Northampton, Massachusetts, uses best professional judgment to assess the apparent vigor of the planted specimens. To the extent practicable, Mr. Frank observes any supplemental plantings and is present for the restored bank vegetation monitoring visits.

During each of the monitoring visits, the restoration areas are also inspected for the presence of the following invasive plant species:

- Asiatic Bittersweet *Celastrus orbiculatus*
- Common Buckthorn *Rhamnus cathartica*
- Norway Maple *Acer platanoides*
- Staghorn Sumac *Rhus typhina*
- Morrows Honeysuckle *Lonicera morrowii*
- Amur Honeysuckle *Lonicera maackii*
- Tatarian Honeysuckle *Lonicera tatarica*
- Autumn-olive *Elaeagnus umbellata*
- Russian-olive *Elaeagnus angustifola*
- Black Locust *Robinia pseudoacacia*
- Buckthorn *Rhamnus frangula*
- Japanese Honeysuckle *Lonicera japonica*
- Japanese Barberry *Berberis thunbergii*
- European Barberry *Berberis vulgaris*
- Porcelain Berry *Ampelopsis brevipedunculosa*
- Black Swallow-wort *Vincetoxicum nigrum*
- Garlic Mustard *Allaria petiolata*
- Goutweed *Aegopodium podagraria*
- Japanese Knotweed *Polygonum cuspidatum*
- Multiflora Rose *Rosa multiflora*
- Common Reed *Phragmites australis*
- Purple Loosestrife *Lythrum salicaria*
- Yellow Iris *Iris pseudacorus*
- Winged Euonymus (or Burning Bush) *Euonymus alata*

Each monitoring visit consists of a pedestrian survey of all areas on both banks where restoration activities have occurred. During the field visit, personnel conducting the inspection, supported by the certified arborist, perform a stem count of planted trees and shrubs to determine respective survival rates. The inspection team estimates groundcover by herbaceous species to verify coverage outside the foliar extent of the planted trees, and notes any indications of damage from trespassing or herbivory. The inspection team also makes observations related to the necessary initiation, if any, of actions to address invasive species. The monitoring visits are documented through field notes and photographs. Based on the results of each visit, the inspection team recommends response actions, such as replanting, watering, fertilization, and implementing measures to reduce herbivory.

Full details of each of the restored bank vegetation monitoring visits are reported in trip reports submitted to the United States Environmental Protection Agency (EPA) as prescribed in the Work Plan. Trip reports submitted to EPA in 2005 are included in Appendix C.

2.3 2005 Monitoring Activities

During 2005, the inspection team conducted monitoring visits on May 23 (spring) and August 17 (summer). Planting areas 1, 2, 3, 4A, and 5 (in their fifth year of monitoring) were evaluated in the spring event only. Planting areas 12, 13, 14, 15, 16, and 17 (in their third year of monitoring) were evaluated in each of the 2005 monitoring visits. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A will be monitored next in 2006 (Year 5). Table 2-1 presents a summary of planting activities, if any, completed in 2005 and previous years, and the quantities of materials planted in respective planting areas. All planting areas are shown on Figure 2-1.

Representatives of GE and the Trustees jointly conducted each of the vegetation monitoring visits. Information regarding the results of each monitoring visit was prepared and submitted in two trip reports – the spring report dated July 28, 2005, and the summer report dated October 10, 2005, both of which are included in Appendix C.

The spring and summer 2005 monitoring visits are summarized below. Tables 2-2 through 2-7 tabulate the results of these and past monitoring inspections.

2.3.1 Spring 2005 Monitoring Event

The spring 2005 monitoring visit was conducted on May 23, 2005. Charles Harman of AMEC conducted the monitoring visit for GE, Michael R. Chelminski of Woodlot Alternatives, Inc. (Woodlot) was present for the Trustees, and Chris Frank of C. L. Frank & Associates accompanied the monitoring party as the certified arborist. On the day of the inspection, the dam constructed by EPA as part of the remedial activities in the 1½-Mile Reach of the Housatonic River was not being used. As such, water levels along the banks of the river were normal and did not extend above the red-osier dogwood band.

With one minor exception, canopy species in all areas met the performance standard. The protective screens that were placed around the canopy specimens in the fall of 2001 appear to be continuing to provide good protection from herbivorous animals. During the monitoring visit, Mr. Chelminski recommended that some of the protective screens be loosened to ease restrictions on plant growth that are starting to be seen in some specimens. The results of the canopy monitoring surveys are summarized in Table 2-2.

For understory species, the only planting area that did not meet the performance standard was area 13. The performance standard for understory species in area 13 had a variance of minus 4 (4 below the performance criteria for this planting area). It was considered that the negative variance in the understory count during this inspection was the result of a slow response to the spring thaw by specimens in this planting area. During the inspection, it was agreed that increased focus would be placed on verifying the understory count in this planting area during the August 2005 monitoring event and that additional response actions, if necessary, would be considered at that time. The performance standard for red-osier dogwoods was generally met. Results for the understory and red-osier dogwood monitoring surveys are shown in Tables 2-3 and 2-4, respectively.

For grapevines, all planting areas met the performance standard. Table 2-5 summarizes the results of the grapevine monitoring surveys.

For herbaceous cover, areas 12 and 13 did not meet the performance standard while all other areas were close to the performance standard, with only small bare areas or patches (i.e., areas less than 15 square feet) observed. As with the understory count, it was believed that the low percent of herbaceous coverage was related to the time of year and the late onset of spring. During the inspection it was agreed that this parameter would be examined more closely in the summer monitoring event. Invasive control activities are ongoing along the banks of the entire Upper ½-Mile Reach. Results of the herbaceous ground cover and invasive species monitoring surveys are shown in Tables 2-6 and 2-7, respectively.

2.3.2 Summer 2005 Monitoring Event

The summer 2005 monitoring visit was conducted on August 17, 2005. Charles Harman of AMEC conducted the monitoring visit for GE, Michael Chelminski of Woodlot was present for the Trustees, and Chris Frank of C. L. Frank accompanied the monitoring party as the certified arborist. As in the spring inspection, the dam used by EPA as part of its remedial activities in the 1½-Mile Reach of the Housatonic River was not in place on the date of the visit. As such, water levels in the river were low and below the red-osier dogwood band.

Vegetative conditions in areas 13, 15, and 16 were difficult to verify due to ongoing remedial activities at Newell Street Area II. These three areas will be reexamined in 2006 after the remedial activities and replanting efforts at Newell Street Area II are completed.

For canopy species, most areas met the performance standard. Planting area 3, with a negative variance of 8, is sheltered by surrounding trees left standing during remedial activities. Planting area 4A, with a negative variance of 12, has had difficulty in meeting canopy performance standards. This difficulty could be the result of poor soil quality, herbivorous activity, or both. Planting area 5, with a negative variance of 6, lost canopy species during the implementation of the Newell Street Area I remedial activities and, apparently, these species were not replaced. Canopy species monitoring results are summarized in Table 2-2.

For understory species, most areas met the performance standard. Planting area 4A, with a negative variance of 8, has had difficulty historically in meeting understory performance standards. This could be the result of poor soil quality, herbivorous activity, or both. Planting area 5, with a negative variance of 6, lost understory species during the implementation of the Newell Street Area I remedial activities and, apparently, these species were not replaced. All planting areas met the performance standard for red-osier dogwoods and grapevines. Understory species monitoring results are summarized in Table 2-3. Red-osier dogwoods, and grapevine monitoring results are summarized in Tables 2-4 and 2-5.

Herbaceous cover and invasive species both met the required performance standard in all planting areas. Results of the herbaceous ground cover and invasive species monitoring surveys are shown in Tables 2-6 and 2-7, respectively.

2.4 Response Actions

In November 2005, GE implemented response activities to correct the negative variances that were identified in the planting areas for canopy and understory species. The number of plants to be installed in the required planting areas was provided to EPA and the Trustees for review prior to installation. Canopy plantings were divided equally between boxelder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), and black willow (*Salix nigra*). Understory plantings were divided equally between northern arrowwood (*Viburnum dentatum*), silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), and choke-cherry (*Prunus virginiana*). The number of plantings installed in each planning area is listed below:

Planting area 3: 13 canopy
Planting area 4A: 17 canopy, 16 understory
Planting area 5: 11 canopy, 24 understory

A summary of the planting completed in 2005 and all plantings completed in previous years is presented in Table 2-1.

Basic maintenance activities to address the state of the wire tree cages and the stem protectors will be ongoing in 2006. In the spring of 2006, GE will continue maintenance actions to prune back some of the more rapid growing canopy species, as appropriate. Because of the growth patterns of the young trees, several existing specimens have been broken off part way up their trunks as a result of high winds. C.L. Frank has recommended pruning as a remedy for such breakage, allowing for a more extensive development of the tree trunk, and thereby preventing such loss of trees. The Trustees will be informed of the schedule for such pruning activities.

3. Restored Bank Erosion Monitoring

3.1 General

Restored bank erosion monitoring activities were implemented in those bank areas disturbed and restored as part of the Upper ½-Mile Reach Removal Action. Specifically, the cleared and restored bank areas of the Upper ½-Mile Reach (excluding the approximately 170-foot long section excavated and restored as part of the Building 68 Area Removal Action) are required to be inspected for significant areas of soil erosion or bank failure. In areas where a significant amount of erosion (e.g., ruts, gullies, washouts, or sloughing) is observed within the cleared and restored or riprap protective areas, GE is required to implement measures to replace/restore the eroded soil or riprap to the original restoration design conditions.

3.2 Monitoring Program

The post-restoration monitoring program consists of a visual inspection of the cleared and restored bank areas for signs of erosion on a semi-annual basis during the first year after the herbaceous cover is restored, and annually in years 2 through 5. At the end of the 5-year period, GE will propose a long-term monitoring program that will be implemented upon EPA approval. 2005 was the third year of erosion monitoring for the restored banks.

3.3 2005 Monitoring Activities

To complete the monitoring requirements set forth in the Work Plan, the restored banks in the Upper ½-Mile Reach were inspected to assess cleared and restored areas for evidence of erosion. The restored bank erosion monitoring visit was conducted on May 23, 2005. Todd Cridge of BBL performed the inspection, and was accompanied by Rich Zoppel of Weston, representing EPA. During this visit, two areas of measurable erosion were noted. In accordance with the Work Plan, GE identified, to the extent practicable, the likely cause of the erosion and evaluated the source, dispersal, and quantity, if any, of eroded soil in the River. In addition, GE evaluated the need and timing for response actions. The results of the 2005 restored bank inspection are summarized in Table 3-1, and the two areas where measurable erosion was observed are shown on Figure 3-1. A summary of these two areas is provided below. A trip report dated July 28, 2005, documenting the results of this inspection, including photographs of specific erosion areas, is included in Appendix C.

3.3.1 Area 1

Area 1 is located in a remediated bank area within planting area 13 on the southern bank directly behind the Newell Street Area II parking lot near the former footbridge. Observations indicated that less than 0.5 cubic yard (cy) of soil had eroded. No eroded materials were readily apparent in the river and removal was not necessary. The source of eroded material appeared to be backfill material from the mid-bank area directly around a red-osier species planted as part of the vegetative restoration activities. This erosion appeared to be removing bank materials from around the planting and exposing the roots. The cause of erosion appeared to be related to the sustained high water in the Upper ½-Mile Reach due to the presence of the EPA dam at the Lyman Street Bridge, which was installed as part of EPA's 1½ Mile Reach Removal Action. During the inspection,

EPA and GE representatives discussed that this area could potentially require less than 0.5 cy of backfill around the exposed roots, as well as armor stone placement to protect against further such erosion Following the inspection, GE and EPA representatives agreed that this area would continue to be monitored, and that response actions, if required, would be discussed in 2006.

Following the initial erosion inspection, GE representatives revisited this area on August 17, 2005, and noted that there did not appear to be any further ongoing erosion. Further, exposed roots in this area appeared to have been covered as natural vegetation has become established in depositional materials during the summer months. GE transmitted this development to EPA in a communication dated August 22, 2005 and proposed to continue monitoring this area and that no immediate response actions were necessary. EPA provided verbal approval of that proposal. GE will continue to monitor this area during 2006.

3.3.2 Area 2

Area 2 is located in a remediated bank area within planting area 14 on the northern bank adjacent to the Lyman Street parking lot. Observations indicated that some riprap had shifted such that, in select locations, the tops of a number of sheetpiles were visible. The areas where riprap appeared to have shifted are not all contiguous, but in total, approximately 75 to 100 feet were affected. While other signs of the sustained high water were observed in this area, the cause of such shifting of riprap was not readily apparent during the inspection. There were no signs of a net loss of riprap material or loss of riprap having fallen into the river. Following the inspection, GE and EPA agreed that this area would continue to be monitored, and that response actions, if required, would be discussed in 2006.

On several occasions during 2005, GE representatives revisited this area. During such visits, riprap that appeared to have shifted or been displaced was repositioned, recovering the tops of the exposed sheetpiles discussed above. GE will continue to monitor this area in 2006.

4. Aquatic Habitat Enhancement Structures and Armor Stone Layer Monitoring

4.1 General

Periodic monitoring of the aquatic habitat enhancement structures is required to evaluate structural stability, effect on aquatic habitat, and potential for increased bank-side erosion. The armor stone layer placed over the isolation layer within the riverbed must also be monitored periodically to confirm that it effectively prevents erosion of the underlying sediment cap isolation layer.

4.2 Monitoring Program

The post-restoration monitoring program for both the aquatic habitat enhancement structures and armor stone layer consists of annual visual inspections during low-flow conditions for 5 years following completion of remedial activities in the Upper ½-Mile Reach. 2005 represented the third year of monitoring. At the end of the 5-year period, GE will propose a long-term monitoring program that will be implemented upon EPA approval.

4.3 2005 Monitoring Activities

During 2005, monitoring activities for the armor stone layer were performed in conjunction with the monitoring event for the aquatic habitat enhancement structures. The combined monitoring event was conducted on August 16, 2005, one day prior to the summer vegetative monitoring survey. Charles Harman of AMEC conducted the inspection and Michael Chelminski of Woodlot was present for the Trustees. The results of that monitoring event were included in the October 10, 2005 trip report that outlined the results of the summer 2005 restored bank vegetation monitoring event. That trip report is included in Appendix C to this report.

The inspection consisted of the physical observation of the condition of each of the aquatic habitat structures and the armor stone layer from a canoe. At the time of inspection, the water level of the Upper ½-Mile Reach was low, allowing for visual observations. As recorded by the United States Geological Survey (USGS) flow gauge located in Coltsville, MA (USGS 0119700 East Branch Housatonic River), flow in the river on the day of the inspection was approximately 20 cubic feet per second (cfs).

4.3.1 Aquatic Habitat Enhancement Structures

The aquatic habitat enhancement structures that were monitored during the 2005 survey included:

- Wing deflectors;
- Vortex weirs;
- Modified vortex weirs;
- W-weir; and
- Habitat enhancement boulders and boulder clusters.

As defined by the Work Plan, the general objectives of the placement of the aquatic habitat structures were to:

- Recreate riffle/pool structural variability in the instream habitat;
- Provide instream and bankside cover for aquatic organisms;
- Increase variability in water flow and depth;
- Increase bank stability; and
- Improve substrate conditions.

The approximate location of each habitat enhancement structure is presented on Figure 4-1.

The aquatic habitat enhancement structures that were monitored appeared to be stable with no evidence of bankside erosion, and appear to be creating areas of improved aquatic habitat. Areas of deposition and scouring of recently deposited sediment on top of the armor stone were observed around most of the habitat enhancement structures. Detailed results of the aquatic habitat enhancement structures are included in Appendix D.

4.3.2 Armor Stone Layer

The armor stone layer appeared to be stable with no areas of erosion observed.

5. Water Column Monitoring

5.1 General

The objectives of the post-restoration water column monitoring program are to identify and evaluate water column impacts that may be a result of post-removal and restoration activities in the Upper ½-Mile Reach. Water column monitoring activities use procedures consistent with the monitoring previously performed for the during-construction water column monitoring program, as set forth in the Work Plan.

5.2 Monitoring Program

Water column monitoring is required to be conducted for the first 5 years following completion of restoration activities. 2005 represented the third year of such monitoring. The monitoring program consists of water column sampling performed three times annually – during a high-flow event (flow > 440 cfs), a storm-flow event (i.e., following a rainfall of > 0.25 inch in a 24-hour period), and a low-flow period (flow < 100 cfs). Samples are collected at the Newell and Lyman Street Bridge locations and are analyzed for polychlorinated biphenyls (PCBs) in both unfiltered and filtered form and for total suspended solids (TSS). Field data such as turbidity, temperature, and depth are also collected for each event. Following the performance of 5 years of such monitoring, GE is allowed, if appropriate, to submit to EPA a plan for modification or elimination of water column monitoring.

5.3 2005 Monitoring Activities

The 2005 water column monitoring for the Upper ½-Mile Reach of the river involved the collection of water column samples at two locations (Lyman and Newell Street Bridges) on three occasions: during a high-flow event (i.e., > 440 cfs), following a rainfall event of > 0.25 inch in a 24-hour period (when river conditions are considered to represent storm flow), and during a low-flow period (< 100 cfs), as follows:

- High-flow samples were collected on March 29, 2005, while flow in the river was approximately 855 cfs. (Samples were also collected during a high-flow event on January 14, 2005. That event was used to represent the high-flow event for 2004, and the results were reported in the *2004 Annual Monitoring Report*.)

- Storm-flow samples were collected on September 29, 2005, following a 24-hour period in which the Pittsfield area received 0.35 inch of precipitation. (Although the flow in the river during this event was low [approximately 20 cfs], the event met the applicable criteria for a storm-flow event. In addition, the March 29, 2005 high-flow sampling event discussed above also met the storm-flow event criteria, since the Pittsfield area received 1.3 inches of precipitation during the previous 24 hours.)

- Low-flow samples were collected on December 20, 2005, while flow in the river was approximately 94 cfs.

At each monitoring event, the flow in the river was reported from data collected at the U.S. Geological Survey (USGS) flow gauge located in Coltsville, MA. Precipitation data were compiled from daily National Oceanic and Atmospheric Administration's National Weather Service (NOAA/NWS) data reported for the Pittsfield, MA airport.

The complete results of the 2005 water column monitoring are presented in Table 5-1. PCBs were not detected in any water column samples except one unfiltered storm-flow sample collected at the Lyman Street Bridge. PCBs in this sample were detected at a level of 0.107 parts per billion (ppb). TSS results across the entire water column data set ranged from 3.44 to 26.8 parts per million (ppm).

6. Summary and Future Activities

6.1 Restored Bank Vegetation Monitoring

During 2005, vegetative monitoring was conducted in May and August. During both inspections, losses in both the canopy and understory were noted. In response to vegetative losses, certain corrective actions were implemented in November of that year. Sufficient canopy and shrub specimens were planted to bring the survival rate back up to 90%.

In 2006, vegetation monitoring will be conducted once during the spring and once during the late summer time periods. As per the monitoring schedule, planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A will be quantitatively monitored once during the late summer (July/August) as they are in their fifth year of monitoring. Planting areas 1, 2, 3, 4A, and 5 will be in their sixth year of monitoring and planting areas 12, 13, 14, 15, 16, and 17 will be in their fourth year of monitoring in 2006, and as such are not scheduled to be inspected during 2006. However, as noted in the October 10, 2005 trip report, scheduled monitoring activities were not performed in planting areas 13, 15, and 16 due to disturbances related to Newell Street Area II remedial activities. These areas will be revisited in 2006 and GE proposes that, following this supplemental visit, these planting areas (13, 15, and 16) be monitored in 2007 as part of the Year 5 effort. Results of each monitoring event will be summarized and submitted to EPA in trip reports and in the *2006 Annual Monitoring Report*. A summary of the future restored bank vegetation monitoring activities is included in Table 6-1. Restored bank vegetation monitoring is expected to continue through 2009.

On August 3, 2005, GE requested modification of the means and methods used to measure the conditions and relative success of the restored banks vegetation. In most planting areas, significant growth has made the ability to count individual stems difficult and time-consuming. While it is accepted that stem counts are an appropriate means of determining vegetative success in newly planted areas, it is believed that in areas that are more mature, stem counts do not provide an accurate representation of the development of the vegetative community. For purposes of meeting the overall objective of the stream bank restoration GE requested the opportunity to discuss alternative approaches to the vegetative monitoring that are more appropriate for a maturing planted community as seen in the planting areas of the Upper ½-Mile Reach. The proposed modifications included monitoring in representative monitoring plots in planting areas greater than 2,500 square feet. Since that time, details regarding the proposed modifications have been updated from the August 2005 submittal to include the specific planting areas scheduled to be visited in 2006 where GE proposes to use monitoring plots. The updated proposal on this subject is provided in Appendix B. If these modifications are acceptable to EPA and the Trustees, GE will implement the modified approach in 2006.

GE will coordinate scheduling of 2006 vegetative inspection visits with EPA to avoid potential high-water events in the Upper ½-Mile Reach during the monitoring events. This may require scheduling of monitoring visits during those times when the EPA dam is not in place.

6.2 Restored Bank Erosion Monitoring

Restored bank erosion monitoring was conducted in May 2005. During the monitoring event, some minor erosion was noted in two areas. GE has agreed to continue monitoring these areas, and will discuss response actions, if necessary, in 2006.

2005 represented the third year of monitoring following completion of restoration activities. Monitoring of restored bank areas will be performed annually in 2006 and 2007. A summary of the future monitoring activities is included in Table 6-1. At the end of the 5-year period, GE will propose a long-term monitoring program for EPA approval.

6.3 Monitoring of Aquatic Habitat Enhancement Structures and Armor Stone Layer

Monitoring of the aquatic habitat enhancement structures and armor stone layer was conducted in August 2005. The aquatic habitat enhancement structures appeared to be performing as intended, and no side-bank or armor layer erosion was noted. The armor stone layer appeared to be stable with no areas of erosion noted.

2005 represented the third year of monitoring following completion of restoration activities. Monitoring of the aquatic habitat enhancement structures and armor stone layer will continue annually in 2006 and 2007. For 2006, the aquatic habitat enhancement structures and armor stone layer will be monitored in the late summer/fall in conjunction with the vegetative monitoring survey. The scheduled inspection date will be coordinated with EPA to avoid potential high-water events due to the dam in the 1½-Mile Reach. A summary of the future monitoring activities is included in Table 6-1. At the end of the 5-year period, GE will propose a long-term monitoring program for EPA approval.

6.4 Water Column Monitoring

During 2005, water column monitoring was performed three times (i.e., high-, storm- and low-flow events) at the Newell and Lyman Street Bridge locations. PCBs were detected at low levels in the unfiltered high-flow water samples only.

2005 represented the third year that water column monitoring was completed following restoration of the Upper ½-Mile Reach. Water column monitoring will be performed three times (i.e., following high-, low-, and storm-flow events) annually in 2006 and 2007. A complete summary of the future monitoring activities is included in Table 6-1. Following evaluation of 5 years of water column monitoring data, GE may, if appropriate, submit to EPA a plan for modification or elimination of water column monitoring.

6.5 Sediment Cap Isolation Layer Monitoring

Sediment cap isolation layer monitoring was not performed in 2005. Isolation layer sampling performed in 2003 fulfilled the requirement of 1-year post-cap placement monitoring for all monitoring locations. As stated in the Work Plan, isolation layer monitoring would have been required in 2005 (5-year monitoring requirements for three of the eight locations). However, in the *2003 Annual Monitoring Report*, GE proposed, and EPA subsequently agreed, that the monitoring for all eight locations be consolidated and performed in 2007 (i.e., the 5-to-7-year interval) (BBL, 2004). A summary of the future monitoring activities is included in Table 6-1. Following the 2007 monitoring activities, GE will propose a long-term monitoring program for EPA approval.

In 2002, in response to EPA concerns regarding the levels of total organic carbon (TOC) in some isolation layer materials placed during remedial activities, GE developed and proposed a plan for TOC sampling of those isolation layer materials, the performance of a seepage meter study, and the submission of a report presenting

these results and evaluating the effectiveness of the isolation layer. This plan was conditionally approved by EPA in letters dated September 25 and December 31, 2002. The TOC sampling has been completed; however, due to unfavorable weather conditions and EPA's installation of the dam in the 1½-Mile Reach, sufficient seepage meter data has not been collected. Based on an agreement with EPA, once the EPA dam has been completely removed and appropriate seepage meter data have been collected, GE will propose a revised date for submission of the evaluation report and will then prepare and submit that report to EPA.

6.6 Restored Sediments Monitoring

Three rounds of periodic sampling of the sediments on top of the cap in the Upper ½-Mile Reach are to be performed at 5-year intervals, beginning 5 years after completion of construction on the sediment removal/replacement activities. The restored sediment sampling monitoring program will be conducted in 2007, 2012, and 2017. A summary of the future monitoring activities is included in Table 6-1.

7. References

BBL. 2005. *2004 Annual Monitoring Report – Upper ½-Mile Reach of the Housatonic River*. Prepared for GE, Pittsfield, MA.

BBL. 2004. *2003 Annual Monitoring Report – Upper ½-Mile Reach of the Housatonic River*. Prepared for GE, Pittsfield, MA.

BBL. 2001. *Invasives Control Plan.* Prepared for GE, Pittsfield, MA.

BBL. 1999. *Removal Action Work Plan for Upper ½-Mile Reach of Housatonic River*. Prepared for GE, Pittsfield, MA.

Tables

TABLE 2-1
SUMMARY OF BANK PLANTING AREAS

2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

					Vines	Understory				Dogwood Band	Canopy				
Area	Planting Date	Cell Area	Planting Area (ac)	Toe Planting Length (lf)	Woody Vines *Vitus riparia*	Serviceberry *Amelanchier canadensis Amelanchier arborea*	Northern Arrowwood *Viburnum dentatum*	Silky Dogwood *Cornus amomum*	Winterberry Holly *Ilex verticillata*	Red-Osier Dogwood *Cornus sericea*	Eastern Cottonwood *Populus deltoides*	Boxelder *Acer negundo*	Black Willow *Salix nigra*	Silver Maple *Acer saccharinum*	Total
1	May-00	A,C	0.30	328	0	0	37	37	36	82	79	79	26	26	**402**
1	Oct-00	A,C	--	--	0	36	0	0	0	0	0	0	0	0	**36**
1	Jun-01	A,C	--	--	22	0	1	1	0	0	0	0	0	0	**24**
1	Oct-01	A,C	--	--	0	10 *	10	9	10	8	10	10	24	21	**112**
1	Oct-02	A,C	--	--	0	6 *	5	6	6	6	0	0	0	0	**29**
1	Oct-03	A,C	--	--	0	0	0	36	0	9	0	0	0	0	**45**
2	May-00	D	0.17	NA	0	0	0	0	0	0	44	44	15	15	**118**
2	Oct-01	D	--	--	0	0	0	0	0	0	9	9	14	8	**40**
2	Oct-03	D	--	--	0	0	0	0	0	0	0	30	0	0	**30**
3	May-00	E	0.05	45	0	0	18	18	19	11	13	13	4	4	**100**
3	Oct-00	E	--	--	0	18	0	0	0	0	0	0	0	0	**18**
3	Jun-01	E	--	--	0	0	0	0	1	0	1	1	0	0	**3**
3	Oct-01	E	--	--	0	5 *	4	4	4	0	5	5	4	4	**35**
3	Oct-02	E	--	--	0	6 *	0	6	0	8	3	0	0	2	**25**
3	Oct-03	E	--	--	0	0	0	12	0	0	0	0	0	0	**12**
3	**Nov-05**	**E**	**--**	**--**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**3**	**3**	**3**	**13**
4A	Oct-00	G1,G2	0.16	395	0	19	18	18	18	74	64	63	5	10	**289**
4A	Oct-01	G1,G2	--	--	0	12 *	6	6	6	12	3	4	10	5	**64**
4A	Oct-02	G1,G2	--	--	0	8 *	4	4	10	8	30	10	0	0	**74**
4A	Oct-03	G1,G2	--	--	0	0	0	12	0	0	0	33	0	0	**45**
4A	Nov-05	G1,G2	--	--	0	4	4	4	4	0	5	4	4	4	**33**
4B	Jun-01	G2,G3	0.40	416	22	54	56	56	0	134	95	95	33	33	**578**
4B	Oct-01	G2,G3	--	--	0	0	0	0	53	0	0	0	0	0	**53**
4B	Oct-02	G2,G3	--	--	0	8 *	4	6	2	8	10	0	10	10	**58**
4B	Oct-03	G2,G3	--	--	0	0	0	34	0	0	0	0	0	0	**34**
4B	Oct-04	G2,G3	--	--	0	0	12	12	12	0	0	0	0	0	**36**
5	Oct-00	F1,F2	0.10	NA	0	19	18	18	18	0	25	25	8	8	**139**
5	Oct-03	F1,F2	--	--	0	0 0	0	21	0	0	0	10	0	0	**31**
5	**Nov-05**	**F1,F2**	**--**	**--**	**0**	**6**	**6**	**6**	**6**	**0**	**3**	**3**	**3**	**2**	**35**
6	Jun-01	F3	0.07	226	0	0	0	0	0	57	21	21	7	7	**113**
6A	Jun-01	F3	0.05	NA	0	0	0	0	0	0	8	8	3	3	**22**
7	Jun-01	F3	0.01	NA	0	0	0	0	0	0	3	3	1	1	**8**
8	Oct-01	H1	0.02	32	0	0	0	0	0	6	6	4	2	2	**20**
8	Oct-02	H1	--	--	0	0	0	0	0	2	0	0	0	0	**2**
8A	Oct-01	H1	0.05	104	0	0	0	0	0	29	12	7	4	4	**56**
9	Oct-01	H1	0.01	NA	0	0	0	0	0	0	3	2	1	1	**7**
9A	Oct-01	H1,H2	0.06	187	0	0	0	0	0	31	12	7	4	4	**58**
9A	Oct-02	H1	--	--	0	0	0	0	0	2	0	0	0	0	**2**
10	Oct-01	B68	0.18	NA	0	36 *	36	37	37	0	47	47	16	16	**272**
10	Oct-04	B68	--	NA	0	0	3	3	2	0	0	0	0	0	**8**
11	Oct-01	H2	0.04	88	0	0	0	0	0	20	8	6	3	3	**40**
11	Oct-02	H2	--	--	0	0	0	0	0	2	0	0	0	0	**2**
11	Oct-03	H2	--	--	0	0	0	19	0	0	0	0	0	0	**19**
11A	Oct-01	H2	0.06	83	0	0	0	0	0	28	12	7	4	4	**55**
11A	Oct-02	H2	--	--	0	0	0	0	0	2	0	0	0	0	**2**
12	May-02	J1	0.19	269	0	18 *	0	19	18	67	50	50	0	17	**239**
12	Oct-02	J1	--	--	22	0	18	0	0	0	0	0	17	0	**57**
12	Oct-03	J1	--	--	0	0	0	12	0	13	0	0	0	0	**25**
12	Oct-04	J1	--	--	0	0	3	3	2	0	0	0	0	0	**8**
13	May-02	I1	0.10	234	0	18 *	0	18	19	41	26	26	0	9	**157**
13	Oct-02	I1	--	--	0	0	18	0	0	18	0	0	9	0	**45**
14	Oct-02	J3	0.21	192	22	37 *	37	36	36	48	56	56	19	19	**366**
15	May-02	I2	0.00	40	0	0	0	0	0	10	0	0	0	0	**10**
16	Oct-02	I2	0.01	72	0	0	0	0	0	18	3	3	1	1	**26**
17	Oct-02	I3	0.04	108	0	0	0	0	0	27	10	10	3	3	**53**
Total				--	***88***	***320***	***318***	***473***	***319***	***781***	***680***	***698***	***257***	***249***	***4183***

Notes:
1. Most recent planting activities are shown in bold.
2. Woody vines planted at an approximate density of 40 vines/acre on 4' centers in a 15'x30' patch with a minimum of 150' between patches.
3. Understory planted at an approximate density of 730 shrubs/acre (including red-osier dogwood) on 4' centers in a 30'x50' patch with a minumum of 40' between patches.
4. Canopy planted in varying densities, clumps, or if necessary, sinuous lines.
5. Dogwood band planted on 4' centers in a single row along the toe of the bank.
6. * - In consultation with EPA and Trustees, Chokecherry (*prunus virg* iniana) was planted in substitution of Serviceberry for these areas.

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31/2001	1	May 00	210	168	139	12	151	0	**- 17**
	2	May 00	118	94	79	3	82	0	**- 12**
	3	May 00	34	27	8	1	9	0	**- 18**
	4, Cell G1	Oct 00	142	114	117	12	129	0	+ 15
	5	Oct 00	66	53	55	4	59	0	+ 6
8/23/2001	1	May 00	210	168	71	52	123	1	**- 45**
	2	May 00	118	94	45	22	67	0	**- 27**
	3	May 00	34	27	11	2	13	0	**- 14**
	4, Cell G1	Oct 00	142	114	51	55	106	41	**- 8**
	5	Oct 00	66	53	44	16	60	3	+ 7
5/20/2002	1	May 00	210	168	139	27	166	5	**-2**
	2	May 00	118	94	69	20	89	0	**-5**
	3	May 00	34	27	22	7	29	0	+2
	4A	Oct 00	142	114	53	23	76	3	**-38**
	4B	June 01	256	205	139	58	197	7	**-8**
	10	Oct 01	126	101	120	4	124	1	+23
	5	June 01	66	53	46	8	54	0	+1
	6, 6A, 7, 8A	June/Oct 01	113	90	60	26	86	3	**-4**
	8, 9, 9A, 11, 11A	Oct 01	95	76	108	5	113	2	+37
8/13/2002	1	May 00	210	168	175	3	178	0	+10
	2	May 00	118	94	90	5	95	0	+1
	3	May 00	34	27	25	1	26	0	**-1**
	4A	Oct 00	142	114	86	2	88	0	**-26**
	4B	June 01	256	205	201	1	202	0	**-3**
	10	Oct 01	126	101	141	1	142	0	+41
	5	June 01	66	53	61	3	64	0	+11
	6, 6A, 7, 8A	June/Oct 01	113	90	102	3	105	0	+15
	8, 9, 9A, 11, 11A	Oct 01	95	76	159	1	160	0	+84

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/11/2003	1	May 00	210	168	158	1	159	0	**-9**
	2	May 00	118	94	84	0	84	0	**-10**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	89	1	90	0	**-24**
	4B	June 01	256	205	217	3	220	0	+15
	10	Oct 01	126	101	124	3	127	0	+26
	5	June 01	66	53	52	1	53	0	0
	6, 6A, 7, 8A	June/Oct 01	113	90	112	0	112	0	+22
	8, 9, 9A, 11, 11A	Oct 01	95	76	163	0	163	0	+87
	12	May/Oct 02	134	107	134	0	134	0	+27
	13	May/Oct 02	70	56	76	0	76	0	+20
	14	Oct 02	150	120	163	1	164	0	+44
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	27	0	27	0	+6

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/11/2003	1	May 00	210	168	176	15	191	0	+23
	2	May 00	118	94	76	0	76	0	**-18**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	92	3	95	0	**-19**
	4B	June 01	256	205	243	0	243	0	+38
	10	Oct 01	126	101	115	12	127	0	+26
	5	June 01	66	53	50	1	51	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	113	90	136	0	136	0	+46
	8, 9, 9A, 11, 11A	Oct 01	95	76	103	0	103	0	+27
	12	May/Oct 02	134	107	141	0	141	0	+34
	13	May/Oct 02	70	56	71	0	71	0	+15
	14	Oct 02	150	120	138	6	144	0	+24
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	25	0	25	0	+4

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/2004	4B	June 01	256	205	231	0	231	0	+26
	10	Oct 01	126	101	111	13	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	+1
	8, 9, 9A, 11, 11A	Oct 01	95	76	151	0	151	0	+75
	12	May/Oct 02	134	107	118	4	122	0	+15
	13	May/Oct 02	70	56	72	0	72	0	+16
	14	Oct 02	150	120	134	9	143	0	+23
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	17	0	8	0	+11
	17	Oct 02	26	21	24	0	24	0	+3

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	256	205	231	1	232	0	+27
	10	Oct 01	126	101	112	12	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	89	0	89	0	**-1**
	8, 9, 9A, 11, 11A	Oct 01	95	76	124	2	126	0	+50
	12	May/Oct 02	134	107	131	0	131	0	+24
	13	May/Oct 02	70	56	62	1	63	0	+7
	14	Oct 02	150	120	132	2	134	0	+14
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	24	0	24	0	+3
5/23/2005	12	May/Oct 02	134	107	132	0	132	0	+25
	13	May/Oct 02	70	56	75	1	63	0	+7
	14	Oct 02	150	120	142	0	142	0	+22
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	5	0	5	0	**-1**
	17	Oct 02	26	21	23	0	23	0	+2

TABLE 2-2
CANOPY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2005	1	May 00	210	168	170	0	170	0	+2
	2	May 00	118	94	100	0	100	0	+6
	3	May 00	34	27	19	0	19	0	**-8**
	4A	Oct 00	142	114	102	0	102	0	**-12**
	5	June 01	66	53	47	0	47	0	**-6**
	12	May/Oct 02	134	107	133	0	133	0	+26
	13	May/Oct 02	70	56	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	14	Oct 02	150	120	134	0	134	0	+14
	15	May 02	---	---	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	16	Oct 02	8	6	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	17	Oct 02	26	21	24	0	24	0	+3

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31/2001	1	May 00	146	117	93	4	97	0	**- 20**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	56	1	57	0	**- 1**
	4, Cell G1	Oct 00	73	58	54	8	62	0	+ 4
	5	Oct 00	73	58	68	4	72	0	+ 14
8/23/2001	1	May 00	146	117	59	34	93	0	**- 24**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	47	2	49	2	**- 9**
	4, Cell G1	Oct 00	73	58	19	17	36	33	**- 22**
	5	Oct 00	73	58	44	19	63	7	+ 5
5/20/2002	1	May 00	146	117	83	34	117	10	0
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	26	26	52	0	**-6**
	4A	Oct 00	73	58	24	19	43	4	**-15**
	4B	June 01	219	175	99	74	173	0	**-2**
	10	Oct 01	73	58	54	20	74	0	+16
	5	June 01	73	58	33	26	59	1	+1
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	46	22	68	0	+10
8/13/2002	1	May 00	146	117	92	16	108	0	**-9**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	52	2	54	0	**-4**
	4A	Oct 00	73	58	37	3	40	0	**-18**
	4B	June 01	219	175	167	4	171	0	**-4**
	10	Oct 01	73	58	72	4	76	0	+18
	5	June 01	73	58	62	2	64	0	+6
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	69	1	70	0	+12

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/28/2003	1	May 00	146	117	94	3	97	0	**-20**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	40	1	41	0	**-17**
	4A	Oct 00	73	58	45	6	51	0	**-7**
	4B	June 01	219	175	148	8	156	0	**-19**
	10	Oct 01	73	58	55	4	59	0	+1
	5	June 01	73	58	49	0	49	0	**-9**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	58	0	58	0	0
	12	May/Oct 02	73	58	65	3	68	0	+10
	13	May/Oct 02	73	58	65	1	66	0	+8
	14	Oct 02	146	117	154	3	157	0	+40
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/12/2003	1	May 00	146	117	95	0	95	0	**-22**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	53	1	54	0	**-4**
	4A	Oct 00	73	58	52	2	54	0	**-4**
	4B	June 01	219	175	161	2	163	0	**-12**
	10	Oct 01	73	58	56	3	59	0	+1
	5	June 01	73	58	45	0	45	0	**-13**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	47	0	47	0	**-11**
	12	May/Oct 02	73	58	54	0	54	0	**-4**
	13	May/Oct 02	73	58	67	1	68	0	+10
	14	Oct 02	146	117	148	0	148	0	+31
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/2004	4B	June 01	219	175	166	0	166	0	**-9**
	10	Oct 01	73	58	77	1	78	0	+20
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	62	2	64	0	+6
	12	May/Oct 02	73	58	67	1	68	0	+10
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	152	0	152	0	+35
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	219	175	149	0	149	0	**-26**
	10	Oct 01	73	58	53	3	56	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	64	0	64	0	+6
	12	May/Oct 02	73	58	57	0	57	0	**-1**
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--
5/23/2005	12	May/Oct 02	73	58	67	0	67	0	+9
	13	May/Oct 02	73	58	54	0	54	0	**-4**
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--

TABLE 2-3
UNDERSTORY MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2005	1	May 00	146	117	127	0	127	0	+10
	2	May 00	---	---	--	--	--	--	--
	3	May 00	73	58	60	0	60	0	+2
	4A	Oct 00	73	58	50	0	50	0	**-8**
	5	June 01	73	58	47	0	47	0	**-6**
	12	May/Oct 02	73	58	133	0	133	0	+26
	13	May/Oct 02	73	58	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	14	Oct 02	146	117	134	0	134	0	+14
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center	
5/31/2001	1	May 00	82	66	101 (by count)	---	
	2	May 00	--	--	--	---	
	3	May 00	11	9	13 (by count)	---	
	4, Cell G1	Oct 00	74	59	74 (by count)	---	
	5	Oct 00	--	--	--	---	
8/23/2001	1	May 00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' – 10 foot section Second 100' – 20 foot section Third 100'	
	2	May 00	--	--	---	--	
	3	May 00	11	9	---	100%	
	4, Cell G1	Oct 00	74	59	Partial	Sparse western 50', with no specimens left last 20'	
	5	Oct 00	--	--	---	---	

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/20/2002	1	May 00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 50 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	2	May 00	---	---	---	--	
	3	May 00	11	9	Partial	50% of first 50 feet is sparse	
	4A	Oct 00	74	59		First 100' - 100% Second 100' – 100% Third 100' – 100%	Thin for entire section, water stress in some sections
	4B	June 01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 20 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' – 100%	First 100' – missing first 30 foot section	
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/13/2002	1	May 00	82	66	First 100' – Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' – Gaps at 7' to 10' interval Third 100' – Gap at 60 foot point	Fourth 100'	
	2	May 00	---	---	---	---	---
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---	
	4A	Oct 00	74	59	First 100' – Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections
	4B	June 01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' – Thin at 90' point	Second 100' Third 100'	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	Second 100' – Missing 2 plants Fourth 100' – Missing 1 plant	First 100' Third 100' – Partial	18 dead red-osier dogwoods identified over the length of this stretch

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/28/2003	1	May 00	82	66	First 100'– Gaps at 30' to 40' interval, and 80' to 100' interval Second 100' – gaps at 105' to 119', 120' to 134', 135' to 200' intervals, all were cut back, some new sprouts Third 100' – plants at 201' to 280' had been topped	---	Extensive herbivorous action on the plants.
	2	May 00	---	---	---	---	
	3	May 00	11	9	Thin at the 24' to 50' interval, several gaps	---	
	4A	Oct 00	74	59	First 100' – Plants in 0 to 33' interval had been topped Second 100' – Plants at 170' to 200' interval were weak and stressed Third 100' – Plants at end of planting area were gone.	---	
	4B	June 01	134	107	First 100' – Topped at 60 to 100' interval Second 100' – Plants all present, but indications of herbivory Third 100' – Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'	
	10	Oct 01	---	---	---	---	

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/28/2003	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100' Fourth 100'	
	12	May/Oct 02	67	54	---	First 100' Second 100' – 1 dead plant at 194' and 1 at 198'	
	13	May/Oct 02	59	47	---	Plants all present; though last three were topped	
	14	Oct 02	48	38	---	All present; 26 plants planted in right of way of which 2 were missing	
	15	May 02	10	8	---	Missing 1	
	16	Oct 02	18	14	---	Missing 1	
	17	Oct 02	27	22	---	All present	

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
9/12/2003	1	May 00	82	66	First 100'– Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' – gaps at 117' to 131; Third 100' – Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard
	2	May 00	---	---	---	---	
	3	May 00	11	9	---	All present	
	4A	Oct 00	74	59	First 100' – Gaps at 18' to 33'; Second 100' – Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard
	4B	June 01	134	107	First 100' – Gap at 69' to 75'; Sixth 100' – Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
9/12/2003	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' – Gaps at 0' to 4' and 60' to 65'; Second 100' – Gap at 177' to 181' Third 100' – Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard
	12	May/Oct 02	67	54	First 100' – Gap at 20' to 25'; Second 100' – Gap at 196' to 200' Third 100' – Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing two plants	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	All present	Meets performance standard

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/24/2004	4B	June 01	134	107	Third 100' – Gap at 258'; Fifth 100' – Gap at 580'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard
	13	May/Oct 02	59	47	---	Yes	Meets performance standard
	14	Oct 02	48	38	---	Missing eight plants	Meets performance standard
	15	May 02	10	8	---	Missing five plants	Does not meet performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	Missing three plants	Meets performance standard

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/17/2004	4B	June 01	134	107	One gap at 580 feet		Meets performance standard
	10	Oct 01	---	---	---	--	---
	6, 6A, 7, 8A	June/Oct 01	89	71	---	Missing one plant	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	None missing	Meets performance standard
	12	May/Oct 02	67	54	---	Missing two plants	Meets performance standard
	13	May/Oct 02	59	47	---	None missing	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing one plant	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	None missing	Meets performance standard

TABLE 2-4
RED-OSIER DOGWOOD MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/23/2005	12	May/Oct 02	67	54	---	Missing one plant at 15 foot location	Meets performance criteria
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance criteria
	14	Oct 02	48	38	---	Missing two plants	Meets performance criteria
	15	May 02	10	8	---	Missing two plants	Meets performance criteria
	16	Oct 02	18	14	---	None missing	Meets performance criteria
	17	Oct 02	27	22	---	None missing	Meets performance criteria
8/17/2005	1	May 00	82	66	---	All present	Meets performance criteria
	2	May 00	---	---	---	---	---
	3	May 00	11	9	---	All present	Meets performance criteria
	4A	Oct 00	74	59	---	All present	Meets performance criteria
	5	June 01	---	---	---	---	---
	12	May/Oct 02	67	54	---	All present	Meets performance criteria
	13	May/Oct 02	59	47	Note: No count due to disturbance from Newell Street II Parking Lot Remediation		
	14	Oct 02	48	38	---	All present	Meets performance criteria
	15	May 02	10	8	Note: No count due to disturbance from Newell Street II Parking Lot Remediation		
	16	Oct 02	18	14	Note: No count due to disturbance from Newell Street II Parking Lot Remediation		
	17	Oct 02	27	22	---	None missing	Meets performance criteria

TABLE 2-5
GRAPEVINE MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/2001	1	May 00	22	18	22	0	22	0	0	
8/23/2001	1	May 00	22	18	8	8	16	6	0	
5/20/2002	1	May 00	22	18	0	6	6	0	0	
	4B	June 01	22	18	0	5	5	0	0	
	9A	Oct 01	---	---	---	---	---	---	---	
8/13/2002	1	May 00	22	18	0	0	0	0	6	
	4B	June 01	22	18	0	13	13	0	6	
	9A	Oct 01	---	---	---	---	---	---	>18	
5/28/2003	1	May 00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	June 01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct 02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	Performance criteria met.

TABLE 2-5
GRAPEVINE MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-Stressed	Stressed	Total Vines			
9/12/2003	1	May 00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes and now growing. As such, exceeds performance standard.
	4B	June 01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	12	Oct 02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/2004	4B	June 01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	The number of planted grapes meets the performance criteria.

TABLE 2-5
GRAPEVINE MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/2004	4B	June 01	22	18	10	0	10	0	33	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	0	0	0	0	45	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	3	0	3		19	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
5/23/2005	12	Oct 02	22	18	3	0	3		25	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.

TABLE 2-5
GRAPEVINE MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/2005	1	May 00	22	18	7	0	7	0	23+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	12	Oct 02	22	18	3	0	3		25+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	18	0	18	0	26+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.

Notes on Herbaceous Coverage Surveys:

a. Due to limitations in stock, area 9A has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003, Upper ½ Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines.

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/23/ 2001	1	May 00	100%	First 100' ~50% coverage Second 100' ~80% coverage Third 100' ~85% coverage Final 60' ~50% coverage		
	2	May 00	100%	~75% coverage		
	3	May 00	100%	~85% coverage		
	4, Cell G1	Oct 00	100%	First 100' ~45% coverage Second 100' ~75% coverage Third 100' ~85% coverage		
	5	Oct 00	100%	70% coverage		
5/20/ 2002	1	May 00	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage Final 60' ~80% coverage		
	2	May 00	100%	~85% coverage		
	3	May 00	100%	~85% coverage		
	4A	Oct 00	100%	First 100' ~50% coverage Second 100' ~65% coverage Third 100' ~80% coverage		
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~85% coverage Third 100' ~85% coverage Fourth 100' ~75% coverage Fifth 100' ~75% coverage		
	10	Oct 01	100%	First 100' ~85% coverage Second 100' ~85% coverage		
	5	June 01	100%	~75% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	~70% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~70% coverage Second 100' ~50% coverage Third 100' ~75% coverage Fourth 100' – 30% coverage		

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/13/ 2002	1	May 00	100%	Overall ~90% First 100' Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%; Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%; 80' interval ~95%; Second 100' 0 to 15' interval ~85%; 75' ~95%; Third 100' ~100% coverage Final 60' ~100% coverage		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.
	2	May 00	100%	~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May 00	100%	~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.
	4A	Oct 00	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~93% coverage Third 100' ~100% coverage Fourth 170' ~95% coverage		Response actions are proposed for one segment of this planting area
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' – 65% coverage		Response actions are proposed for 2 segments of this planting area.
	5	June 01	100%	~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris		Response actions are proposed for one segment of this planting area.
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% with the top of slope being thin Second 100' ~85%		Response actions are proposed for one segment of this planting area.

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/13/ 2002	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~65% coverage Third 100' ~90% coverage Fourth 100' ~80% coverage		Response actions are proposed for 2 segments of this planting area.
5/28/ 2003	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100'~95% coverage Final 60' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/28/ 2003	4A	Oct 00	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage		Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage		
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage		
	5	June 01	100%	~95% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~90% coverage		
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage		
	13	May/Oct 02	100%	~95% coverage		
	14	Oct 02	100%	~95% coverage		
	15	May 02	100%	~100% coverage		
	16	Oct 02	100%	~100% coverage		
	17	Oct 02	100%	~100% coverage		

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/ 2003	1	May 00	100%	First 100' ~85% coverage Second 100' ~100% coverage Third 100'~95% coverage Final 60' ~95% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	4A	Oct 00	100%	First 100' ~70% coverage Second 100' ~90% coverage Third 100' ~95% coverage	No	Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~75% coverage Second 100' ~80% coverage Third 100' ~85% coverage Fourth 100' ~85% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions; much of the gaps in coverage were oriented towards the top of the bank
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions
	5	June 01	100%	~90% coverage	No	
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/ 2003	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~90% coverage	No	
	14	Oct 02	100%	~90% coverage	No	
	15	May 02	100%	~85% coverage	No	
	16	Oct 02	100%	~85% coverage	No	
	17	Oct 02	100%	~85% coverage	No	
5/24/ 2004	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage Fourth 100' ~95% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/24/ 2004	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	14	Oct 02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	15	May 02	100%	--	--	
	16	Oct 02	100%	~95% coverage	No	
	17	Oct 02	100%	~90% coverage	No	
8/17/ 2004	4B	June 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~95% coverage Fourth 100' ~100% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For areas of herbaceous cover that are less than 100%, the bare spots were small (less than one square foot)

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/17/ 2004	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. Only significant bare areas appear to be associated with recent construction at first section of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	13	May/Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	100% coverage	Yes	

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/23/ 2005	12	May/Oct 02	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	13	May/Oct 02	100%	~85% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	---	---	---
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
8/17/ 2005	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100'~95% coverage Final 60' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	2	May 00	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	3	May 00	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	4A	Oct 00	100%	First 100' ~100% coverage Second 100' ~100% coverage Third 100' ~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.
	5	June 01	100%	~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~100% coverage Second 100' ~100% coverage Third 100' ~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.

TABLE 2-6
HERBACEOUS GROUNDCOVER MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/17/ 2005	13	May/Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	14	Oct 02	100%	~90% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	---	---	---
	16	Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	17	Oct 02	100%	~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/23/ 2001	1	May 00	< 5%			bittersweet, purple loosestrife, common mullein, bittersweet nightshade, buckthorn
	2	May 00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus
	3	May 00	< 5%			bittersweet, Morrow's honeysuckle, purple loosestrife
	4, Cell G1	Oct 00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn
	5	Oct 00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosestrife
5/20/ 2002	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard
	2	May 00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge
	3	May 00	< 5%	Approximately 10%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~15% Second 100' ~10% Third 100' <5%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn
	4B	June 01	< 5%	First 100' <10% Second 100' <10% Third 100' <10% Fourth 100' 0% Fifth 100' 0%		Norway maple, bittersweet and garlic mustard
	10	Oct 01	< 5%	<5%		None noted
	5	June 01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose
	6, 6A, 7, 8A	June/ Oct 01	< 5%	<5%		burning bush, garlic mustard, buckthorn
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' <5% Fifth 100' <5%		None noted

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/13/ 2002	1	May 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Final 60' ~5%		buckthorn, bittersweet, garlic mustard, purple loosestrife
	2	May 00	< 5%	~10%		cypress spurge
	3	May 00	< 5%	~5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosestrife, cypress spurge
	4B	June 01	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Fourth 170' <5%		Norway maple, purple loosestrife, bittersweet and garlic mustard,
	10	Oct 01	< 5%	~5%		Purple loosestrife
	5	June 01	< 5%	~5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5% Fourth 100' <5%		purple loosestrife, bittersweet, garlic mustard, cypress spurge
5/28/ 2003	1	May 00	< 5%	First 100' ~5% Second 100' ~7% Third 100' ~5% Final 60' <5%		bittersweet, garlic mustard
	2	May 00	< 5%	~10%		cypress spurge, bittersweet, garlic mustard
	3	May 00	< 5%	~10%		bittersweet, cypress spurge, garlic mustard
	4A	Oct 00	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5%		bittersweet, cypress spurge, garlic mustard

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
5/28/ 2003	4B	June 01	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%		bittersweet and garlic mustard
	10	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' ~5%		bittersweet and garlic mustard
	5	June 01	< 5%	~7%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5% Third 100' ~5% Fourth 100' ~5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' >5% Fourth 100' >5%		bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' >5%		garlic mustard, bittersweet
	13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%		garlic mustard, bittersweet
	15	May 02	< 5%	>5%		garlic mustard, bittersweet
	16	Oct 02	< 5%	>5%		garlic mustard, bittersweet
	17	Oct 02	< 5%	>5%		garlic mustard, bittersweet
9/12/ 2003	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard
	2	May 00	< 5%	<5%	Yes	cypress spurge, buckthorn

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
9/12/ 2003	3	May 00	< 5%	~5 - 10%	No	cypress spurge, buckthorn
	4A	Oct 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard
	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard
	5	June 01	< 5%	<5%	Yes	Japanese knotweed, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	15	May 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	17	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
5/24/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge
	13	May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%	Yes	Garlic mustard, bittersweet
	15	May 02	< 5%	--	--	Garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed
	17	Oct 02	< 5%	<5%	Yes	Bittersweet

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/17/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Buckthorn, purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge, multi-flora rose, Norway maple
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge
	13	May/Oct 02	< 5%	<5%	Yes	Purple loosestrife, bittersweet, multiflora rose
	14	Oct 02	< 5%	<5%	Yes	
	15	May 02	< 5%	<5%	Yes	Purple loosestrife
	16	Oct 02	< 5%	<5%	Yes	Purple loosestrife
	17	Oct 02	< 5%	<5%	Yes	Purple loosestrife

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
5/23/ 2005	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Cypress spurge, garlic mustard
	13	May/Oct 02	< 5%	<5%	Yes	Cypress spurge, garlic mustard
	14	Oct 02	< 5%	<10%	No	Cypress spurge
	15	May 02	< 5%	---	---	
	16	Oct 02	< 5%	<5%	Yes	
	17	Oct 02	< 5%	<5%	Yes	
8/17/ 2005	1	May 00	100%	First 100' <5% Second 100' <5% Third 100'<5% Final 60' <5%	Yes	
	2	May 00	100%	<5%	Yes	
	3	May 00	100%	<5%	Yes	
	4A	Oct 00	100%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	
	5	June 01	100%	5%	Yes	Marginally meets performance standard; bittersweet, barberry, Japanese knotweed
	12	May/Oct 02	100%	First 100' <5% Second 100' <5%	Yes	
	13	May/Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	14	Oct 02	100%	<5%	Yes	

TABLE 2-7
INVASIVE SPECIES MONITORING RESULTS

2005 ANNUAL MONITORING REPORT
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/17/ 2005	15	May 02	100%	<5%	Yes	
	16	Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	17	Oct 02	100%	<5%	Yes	

TABLE 3-1
RESTORED BANK EROSION INSPECTION SUMMARY

2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Area	Description	Approximate Size	Action
Areas with Measurable Erosion			
1 - South bank of river, directly behind Newell St. II parking lot	Erosion of soil. Remediated bank area. No evidence of eroded soil in river.	<0.5 CY	Erosion likely caused by high-water due to the USEPA dam at Lyman St. Restoration activities may include placement of backfill around tree roots and installation of armor stone to protect agains further erosion. GE has agreed to continue monitoring these areas and will discuss response actions, if deemed necessary, in 2006.
2 - North bank of river, directly behind Lyman St. parking lot	Shifting of rip rap and exposure of sheeting in select locations. Remediated bank area. No evidence of lost stone in river.	---	Restoration activities may include repositioning current riprap, and installing additional riprap, if necessary, to provide full coverage of sheeting and stabilize existing armoring. GE has repositioned available riprap in this area to cover exposed sheets, and will discuss further response actions, if deemed necessary, in 2006.

Key:
CY = cubic yard

TABLE 5-1
WATER COLUMN MONITORING

2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)

Parameter / Sample ID: / Sample Location: / Date Collected: / Sampling Event:	LOCATION-2 Newell St. Bridge 03/29/05 High Flow	LOCATION-4 Lyman St. Bridge 03/29/05 High Flow	LOCATION-2 Newell St. Bridge 09/29/05 Storm Flow	LOCATION-4 Lyman St. Bridge 09/29/05 Storm Flow	LOCATION-2 Newell St. Bridge 12/20/05 Low Flow	LOCATION-4 Lyman St. Bridge 12/20/05 Low Flow
PCBs-Unfiltered						
Total PCBs	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	0.000107	ND(0.0000220)	ND(0.0000220)
PCBs-Filtered						
Total PCBs	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)
Conventional Parameters						
Particulate Organic Carbon	2.31	2.88	1.42	1.37	0.481	0.465
Total Suspended Solids	25.3	26.8	11.0	12.9	3.44	3.70
Chlorophyll (a)	0.0022	0.0022	0.0040	0.0031	0.00040	0.00040
Field Measurements						
Conductivity (mS/cm)	0.166	0.163	0.554	0.526	0.321	0.297
pH (Standard Units)	8.17	6.82	7.45	7.48	7.27	7.10
Sample Depth (m)	0.90	0.91	0.26	0.52	0.23	0.31
Turbidity (ntu)	24	28	18	24	5	6
Water Temperature (^{o}C)	1.37	1.54	15.5	15.5	0.92	1.00

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. and submitted to Northeast Analytical, Inc. and/or Aquatec Biological Sciences, for analysis of filtered and unfiltered PCBs, total suspended solids (TSS), particulate organic carbon (POC), and chlorophyll (a).
2. Sampling methods involved the collection of composite grab samples at each location, representative of three stations (25, 50, and 75 percent of the total river width at each location) at 50 percent of the total river depth at each station. Reported sample depth is the average of the three depths at the composite sample locations.
3. ND - Analyte was not detected. The number in parentheses is the associated detection limit.

TABLE 6-1
SUMMARY OF FUTURE POST-CONSTRUCTION MONITORING ACTIVITIES[1]

2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

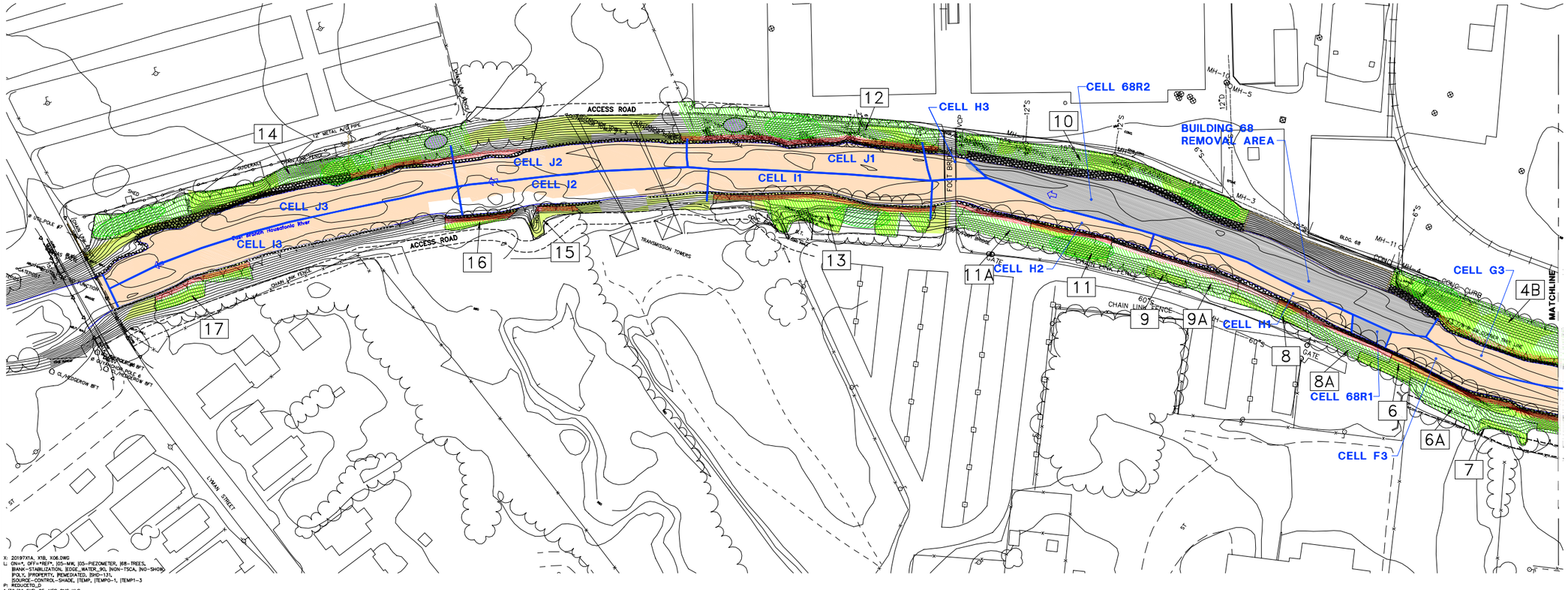
Monitoring Activity[2]	Year to be Performed				Comments
	2006	2007	2008	2009	
Sediment Cap Isolation Layer (CAP-MON-1 through CAP-MON-8)	---	Year 5-7[3]	---	---	Consists of periodic sampling (i.e., one year after cap placement, and at the end of the initial five-year period after cap placement) of the isolation layer at select locations along the Upper 1/2-Mile Reach.
Armor Stone Layer	Year 4	Year 5	---	---	Visual inspection and photographs following first ice-out and high water condition (i.e., a flow of 440 cfs or greater) during low flow conditions (includes inspection of rip rap along toe of slope)
Aquatic Habitat Enhancement Structures	Year 4	Year 5	---	---	Visual inspection to be performed in the summer during a period of low-flow condition on an annual basis for five years.
Restored Sediments[4]	---	Year 5	---	---	Sampling to consist of 39 grab samples, collected at the locations identified in the Upper 1/2-Mile Work Plan. See note 3 for additional information.
Cleared and Restored Bank Soil Areas	Year 4	Year 5	---	---	Visual inspection of the cleared and restored bank areas for signs of erosion on a semi-annual basis during the first year and on an annual basis in years 2 through 5.
Restored Bank Vegetation					
Planting Areas 1, 2, 3, 4A, and 5	---	Year 7	---	---	Consists of 2 visits during each of the first three years after planting, and an annual visit during the fifth and seventh years after planting. In each of the first three years, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August). The single visit in the fifth and seventh year will be conducted in the summer (July/August).
Planting Areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A	Year 5	---	Year 7	---	
Planting Areas 13, 15, and 16[5]	Deferred Year 3	Year 5	---	Year 7	
Planting Areas 12, 14, and 17	---	Year 5	---	Year 7	
Water Column Monitoring	Year 4	Year 5	---	---	Consists of sampling performed three times annually (high flow, storm flow, and low flow) for the first five years at the Newell and Lyman Street sampling locations.

Notes:

1. Please refer to the *Removal Action Work Plan - Upper 1/2-Mile Reach of Housatonic River* (Upper 1/2-Mile Work Plan; BBL, August 1999) for additional details.
2. EPA and EOEA shall be notified at least one week prior to conducting monitoring activities.
   EPA contact is Dean Tagliaferro: (413) 236-0969
   EOEA contact is Dale Young: (413) 447-9771
   GE contact is Andy Silfer: (413) 494-3561
3. To consolidate sampling efforts, GE proposed, and EPA concurred, that 5-year monitoring for all isolation layer locations would be performed in 2007.
4. GE will conduct three rounds of periodic sampling of the restored sediments at five-year intervals, beginning five-years after completion of construction on the sediment removal/replacement activities. As indicated in the above table, the first sampling round will occur in 2007. The second and third round of sampling is anticipated to be performed in 2012 and 2017. Sampling shall be performed in accordance with the Upper 1/2-Mile Work Plan.
5. Planting area 13, 15, and 16 will be revisited in 2006 to fulfill Year 3 monitoring requirements, and will return to the regularly scheduled Year 5 and Year 7 inspections in 2007, and 2009, respectively.

Figures

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists



LEGEND:

- SEDIMENT WORK AREA
- BANK SOIL REMOVAL AREA
- TOP OF BANK
- BUILDING 68 REMOVAL AREA
- CLEARING LIMITS/PLANTING AREA
- CONTAINMENT BARRIER LOCATION
- UNDERSTORY SPECIES
- VINE PATCHES
- STONE/RIP-RAP
- RED-OSIER-DOGWOOD
- 4A — APPROXIMATE RESTORED BANKPLANTING AREA

NOTES:

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. AREAS 6A, 8A, 9A, AND 11A WERE ADDED AT THE REQUEST OF THE EOEA.
3. MAPPING IS BEST AVAILABLE INFORMATION AS OF 12/10/98 BASED ON MAPPING PROVIDED BY LOCKWOOD MAPPING, INC. PREPARED FROM 1990 AERIAL PHOTOGRAPHY; DATA PROVIDED BY GENERAL ELECTRIC; AND BLASLAND AND BOUCK, P.C. CONSTRUCTION PLANS. RIVERBANK AND RIVER BED TOPOGRAPHIC INFORMATION PROVIDED BBL FROM OCTOBER12-23, 1998 FIELD SURVEY.
4. COORDINATE GRID BASED ON 1927 STATE PLAN COORDINATES.
5. ELEVATION DATUM REFERENCED TO NGVD 1929.

0 40' 80'
GRAPHIC SCALE

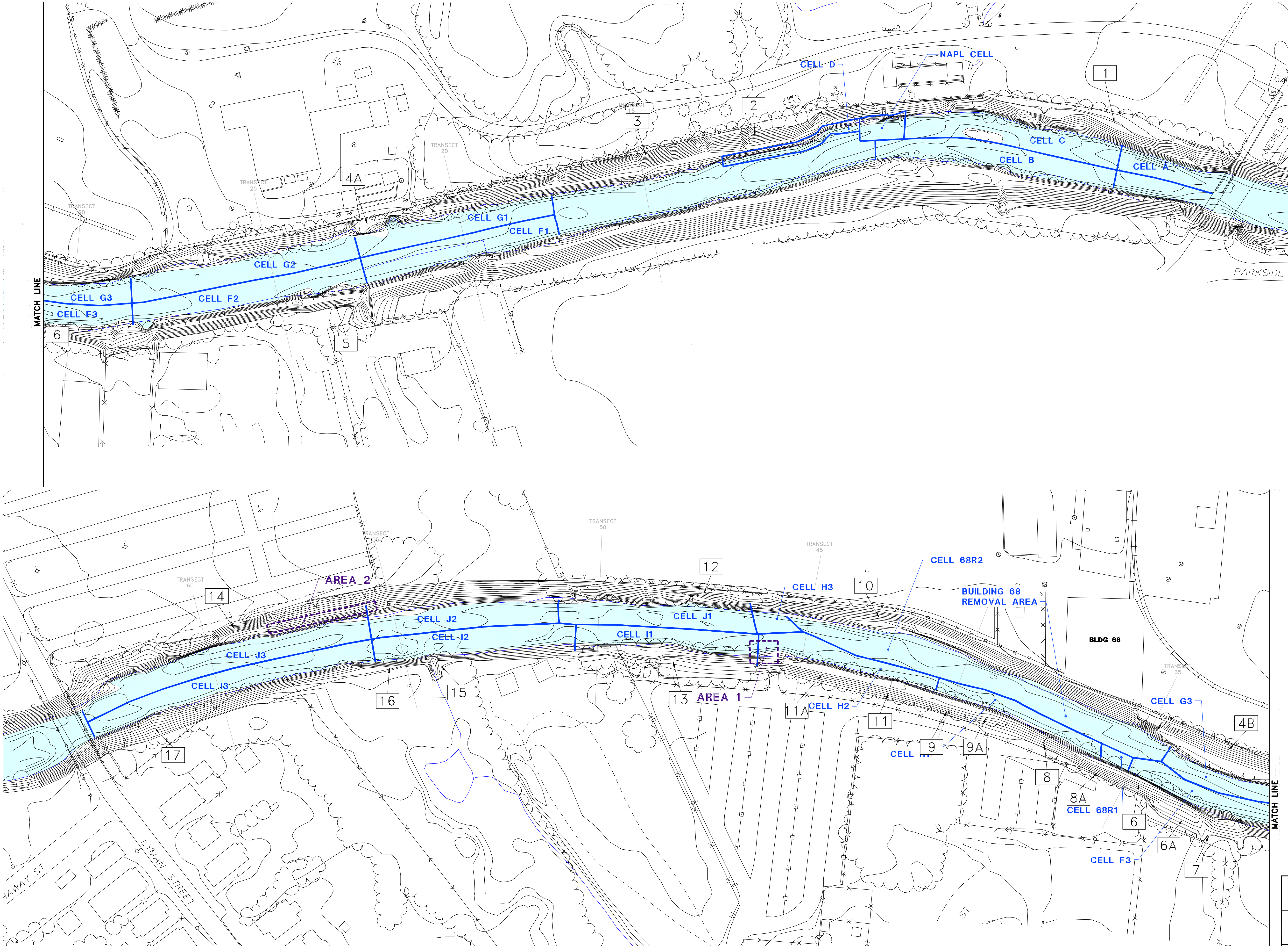
X: 20197XTA, XTB, X06.DWG
L: ON=*, OFF=*REF*, [DS-MW, DS-PIEZOMETER, RB-TREES, BANK-STABILIZATION, EDGE_WATER_90, NON-TSCA, NO-SHOW, POLY, PROPERTY, REMEDIATED, SNO-13], [SOURCE-CONTROL-SHADE, [TEMP, [TEMP0-1, [TEMP1-3
P: REDUCETO_2
1/30/06 SYR-85-NES GMS XLS
N:/20197024/MA/20197002.DWG

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

RESTORED BANK PLANTING AREAS

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE **2-1**



LEGEND:

(line)	TOP OF BANK
(dashed box)	APPROXIMATE LOCATION OF IMPACTED AREA NOTED DURING INSPECTION
CELL J1	APPROXIMATE FORMER REMOVAL CELL
4A	APPROXIMATE RESTORED BANK PLANTING AREA

NOTES:

1. ALL FEATURES AND LOCATIONS SHOWN ARE APPROXIMATE.

0 40' 80'
GRAPHIC SCALE

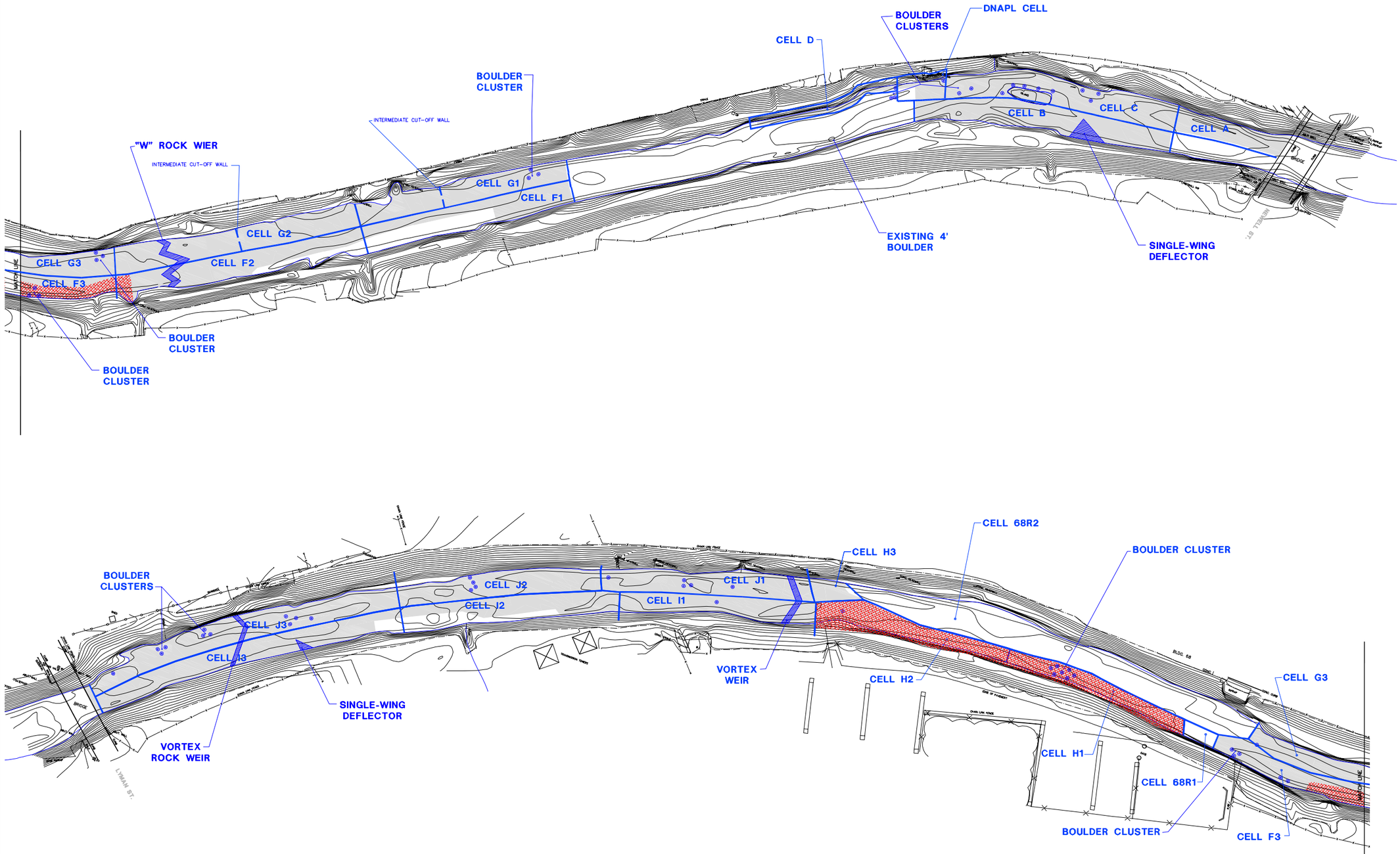
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

2005 RESTORED BANK EROSION INSPECTION

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

FIGURE
3-1

X: 20197X01.DWG
L: ON=* OFF=*REF*
P: REDUCEDTOB
1/30/06 SYR-85-NES GMS KLS
N/20197024/MA/20197G01.DWG



NOTES:

1. ALL LOCATIONS AND DISTANCES ARE APPROXIMATE.
2. FIGURE DEPICTS GENERAL LOCATIONS OF MAJOR COMPONENTS OF THE HABITAT RESTORATION PLAN.
3. BOULDERS ARE PLACED ON TOP OF THE ARMOR LAYER AND ARE NOT KEYED INTO THE ARMOR LAYER.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
2005 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

AQUATIC HABITAT ENHANCEMENT STRUCTURE LOCATIONS

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE **4-1**

X 20197X02.DWG
L: ON=* OFF=DEPOSITION,*REF, ARROW, REST-*,SCOUR
P: REDUCED70_D
1/30/06 SYR-85-NES GHS XLS
N/20197024/MA/20197003.DWG

Appendices

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Appendix A

Standard Operating Procedure for Riverbank Vegetation Monitoring

Standard Operating Procedure for Riverbank Vegetation Monitoring

The General Electric Company (GE) and the Massachusetts NRD Trustees (NRD Trustees) agreed to an approach to the restored bank vegetation monitoring methodology for the Upper ½–Mile Reach of the Housatonic River that was utilized in 2001 and refined in 2002. From these earlier monitoring methodologies a detailed approach to the monitoring program was created and has been utilized since 2003 as described below.

1. The monitoring team is to include representatives of GE and representatives of NRD Trustees. The team will assemble at the onsite construction trailer, or similar central location, on the day of the inspection in order to coordinate activities and cover any issues.

2. The stem count is to be performed; and data recorded, by GE. The representative for the NRD Trustees will observe to ensure the accuracy of the count. Specifically, the NRD's Trustees representative will: ensure agreement over species identification, assist with the determination of stressed species, assist with the identification of invasive plant species, assist with the determination of percent herbaceous and invasive cover, and advise on other technical issues as required. The certified arborist will assist in the assessment of the apparent health and vigor of installed plants. Copies of all data sheets will be provided to the NRD Trustee's representative at the conclusion of the monitoring event. The identification of all parties involved in an inspection event will be made in the results section of the report.

3. In general, the planting areas will be inspected beginning with the furthest upstream on the north side of the Housatonic River (planting area 1) and will proceed downstream. Once the north side of the river has been inspected, the monitoring team will move to the most upstream planting area on the south side of the Housatonic River (planting area 5) and proceed downstream.

4. If the inspection is being held in the spring, only planting areas planted up to the fall of the previous year will be inspected. Similarly, if the inspection is being held in the summer, only the planting areas planted up to the fall of the previous year will be inspected.

5. As a means of streamlining the inspection process, an agreement was made between GE and the NRD Trustee's representative concluding that planting areas 6, 6A, 7, and 8A would be inspected as a single unit and planting areas 8, 9, 9A, 11, and 11A would be inspected as a single unit. An easily identifiable landmark was noted as the boundary between these two composite areas. An easily identifiable landmark was also noted as the boundary between planting areas 4A and 4B.

6. Where the linear distance of the planting area exceeds 100 feet, the planting area will be divided into sections of 100 feet or shorter to increase the accuracy of the count. As of this date, that includes planting areas 1, 4A, 4B, composite planting area 6, 6A, 7, and 8A, and composite planting area 8, 9, 9A, 10, 11, and 11A.

7. Where the riverbank width (slope length) is greater than 25 feet, and/or the density and height of vegetation obscures the observer's vision to clearly see the entire riverbank slope, a line or tape will be used to divide the bank into upper and lower bank areas to increase the accuracy of the count.

8. The areas of planting will be monitored by slowly walking from one end of a specific planting area to the other. As the team walks through an area, the counter will visually note the number of planted trees, shrubs, and vines based on observation of stems, as well as the number of resprouts of species consistent with those planted species. After the woody plants have been inspected in an area, the team will stop and

estimate herbaceous cover and percent coverage of invasive species. The recorder will take down the inspection information as the team proceeds through a given planting area.

9. The recorder will keep the tally of results on a field datasheet developed by GE for the monitoring program. On the tally sheet, woody vegetation will be listed as either live (either stressed or unstressed) or dead. Any additional general observations of the planting area will also be reported on the tally sheet.

10. The decision as to whether some specimens are stressed will be based on visual observation of the plant and the agreed judgment of the two observers (representatives of GE and the NRD Trustees); however, to meet performance criteria, replanting needs are to be based on the number of dead specimens or those missing from the final count for a particular species. Stressed plants are still alive, but physical indicators such as leaf wilt, nutrient deficiency, bug infestation, die back, herbicide injury, and animal damage (e.g., woodchuck) may represent evidence of diminished vigor. Plants are also to be considered stressed if they are reduced in height (less than four feet for trees, though the plant may be a stump sprout following topping of the planted specimen from herbivorous activity or other action). Non-stressed plants show very limited signs of these stress indicators (<5%) and are growing vigorously as determined by the certified arborist based on such characteristic as annual growth, leaf color, stem integrity, and fruit and flower production.

11. For the Red-osier dogwood band, it was determined that the ability to count individual stems was made problematic by the multiple-stem nature of the developing plant. Therefore, it has been decided that performance determination for the band would be made by visually determining, based on best professional judgment of the observers, whether the band in a planting area appears to meet the 4-foot on-center planting scheme. Areas of the band that were noted as not meeting the 4-foot on-center planting scheme were measured, and identified as to location, then noted on the tally sheets.

12. Stump resprouts from trees and shrubs cut during clearing or cut by herbivorous actions are counted in the live-but-stressed column. If the stump has multiple resprouts, it is still counted as a single specimen.

13. Canopy and understory stump resprouts from specimens cut during clearing activities are only to be counted as part of the tally if the stump was one of the species that was listed in the planting plan. However, if the specimen is a different species, it will be noted on the tally sheets for information purposes.

14. Aerial herbaceous cover will be determined by walking through each planting area (or 100-foot section) and visually estimating the total cover to the nearest 5%. For riverbank areas that are predominately covered by vegetation, estimating the percentage of bare ground first, and then subtracting that from 100% most accurately determines herbaceous cover. Litter is considered to be bare ground. Minor gaps between herbaceous plant branches and the bare soil (mulch) beneath trees and shrubs are not counted as bare ground. Determination of the percentage of open/bare ground in a planting area will be made based on visual observation using best professional judgment of the two observers; agreement on the percentage is to be reached before the value is noted on the tally sheet.

15. In addition to herbaceous coverage, an estimation of the percentage of significant areas of bare soil will be included in the tally. This is a qualitative assessment based on best professional judgment of those significant areas of bare soil in which there is no plant growth of any kind. This is not intended to assess bare ground between individual plant stems, but large (>15-20 square feet) areas where herbaceous growth does not occur.

16. A determination of the percentage of invasive species will be made based on visual observation using the best professional judgment of the two observers, with agreement of the percentage to be reached before the value is noted on the tally sheet. Identification of the dominate invasive species in a given area will also be noted on the tally sheets. Areas of invasive species will be flagged if necessary to facilitate remediation.

Appendix B

Proposed Modifications to Restored Bank Vegetation Monitoring Program

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

PROPOSED MODIFICATION TO RIVERBANK VEGETATION MONITORING PROGRAM

Upper ½-Mile Reach Restoration Project, Housatonic River Pittsfield, Massachusetts

As outlined in Section 9.2 of the *Removal Action Work Plan – Upper ½ Mile Reach of Housatonic River* (BBL, 1999), habitat restoration activities were implemented in sections of the riparian area bordering the Housatonic River where bank soils were excavated as part of remedial activities implemented by GE, and in areas that were cleared to allow access for the removal activities. As part of the habitat restoration process and as specified in Section 11.6.2 of the *Removal Action Work Plan – Upper ½ Mile Reach of Housatonic River* (Work Plan; BBL, 1999), GE agreed to monitor those areas that were restored to ensure the success and biological integrity of the intended vegetative community.

Based on the state of vegetative development in planting areas that were planted in 2000 and 2001, GE is requesting approval of a modification to the existing vegetative monitoring program as described in the Work Plan. The proposed alteration in the monitoring methodology would change how the planting areas are monitored in their later years of development, but would not change the monitoring period or frequency, reporting requirements for monitoring, or the performance standards. The following sections summarize the existing monitoring program and outline the proposed changes to the vegetative monitoring program.

1.0 EXISTING VEGETATION MONITORING PROGRAM OVERVIEW

As detailed in the Work Plan, for each planting area, the current vegetative monitoring program consists of two visits per year for the first 3 years after planting, and an annual visit to be conducted during the fifth and seventh years after planting. In each of the first 3 years after planting, visits were scheduled to be conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August), while the single visits in the fifth and seventh years after planting were scheduled to be conducted in the summer (July/August). In the event of a significant loss of plantings (greater than 1/4 acre) being noted in any vegetation monitoring

visit, the existing monitoring plan calls for the timing for monitoring to be restarted following appropriate actions to replant the lost trees or shrubs (except in the case where a third party is responsible for growth failure). Table 1 summarizes the monitoring schedule for the Upper ½ Mile Reach as specified in the Work Plan.

Under the existing monitoring plan, survival rates, based on stem counts of trees and shrubs and percent of herbaceous cover, are the key components of measuring the success of planted areas. The following performance standards are currently used to assess the adequacy of the restoration efforts over the Upper ½-Mile Reach:

1. All planted trees, shrubs, and vines must meet an 80% survival rate of the amount originally planted. To confirm this survival rate, supplemental plantings of appropriate species will be made if a monitoring event indicates a loss greater than 20%. Any dead trees or shrubs in excess of 20% of the original planting will be replaced in the fall of the year in which monitoring occurs.

2. Herbaceous coverage of 100% will be maintained outside the foliar extent of the trees. Supplemental seeding or other activities will be utilized to maintain 100% herbaceous coverage.

3. No greater than 5% of the restoration area of either bank will be allowed to be covered by invasive plant species. Any invasive species in excess of the 5% coverage limit will be removed in accordance with the requirements of the *Invasives Control Plan* (BBL, 2001).

The survivability of the plants is to be determined both by mortality and by apparent vigor. Monitoring also assesses whether supplemental activities, such as additional fertilizing or watering, may be necessary.

Each monitoring visit is to consist of a pedestrian survey of all areas on both banks where restoration activities have occurred. During the field visit, personnel conducting the inspection, supported by the certified arborist, are to perform a stem count of planted trees and shrubs to

determine survival rates. The inspection team is to estimate groundcover by herbaceous species to verify aerial coverage, and note any indications of damage from trespassing or herbivory. Additionally, the inspection team is to note signs of erosion and initiate any actions to address invasive species. The monitoring visits are to be documented through field notes and photographs. Based on the results of each visit, the inspection team is able to recommend remedial actions, such as replanting, watering, repairing areas impacted by erosion, and implementing measures to reduce herbivory.

2.0 RATIONALE FOR METHODOLOGY CHANGE

In older planting areas, significant growth has made the ability to count individual stems difficult to complete. While it is accepted that stem counts are an appropriate means of determining vegetative success in newly planted areas, in areas that are more mature and established, such as many of those on the Upper ½-Mile Reach, stem counts over the entire planting area are not necessarily the most appropriate means of documenting the development of the vegetative community. For purposes of meeting the overall objective of the stream bank restoration (i.e., a plant community that affords increased habitat function relative to the pre-existing system), GE requests the opportunity to modify the monitoring methodology approach, in those planting areas where it is appropriate and feasible, to one that is more appropriate for a mature planted community.

3.0 PROPOSED METHODOLOGY

GE proposes to modify the vegetative monitoring program to include the integration of quantitative and qualitative activities to evaluate the vegetative success of certain older planting areas. The proposed approach is modeled after the restoration monitoring program used by the U.S. Environmental Protection Agency (EPA) on the 1½-Mile Reach of the Housatonic River.

Instead of conducting stem counts for the entire planting area, GE proposes to conduct stem counts in monitoring plots to be established within those individual planting areas larger than 2,500 ft^2. Planting areas less than 2,500 ft^2 in size will continue to be evaluated as in previous

monitoring visits. The use of such monitoring plots allows for a more focused assessment of select representative portions of the planting areas, under the assumption that environmental conditions and vegetative growth are generally uniform across the planting areas – an assumption that has been shown to be accurate based on monitoring that has occurred at the site to date. Additionally, the use of monitoring plots will allow for the continued use of existing performance standards and the comparison to data from previous monitoring events. Plant survey techniques such as the line intercept method or point-centered-quarter technique that generally provide data more specific to density, frequency, and dominance were initially considered, then discounted in favor of monitoring plots because of the difficulties in correlating that information to existing performance standards and to historical survivability data.

The monitoring plots will be fixed in place at select locations within the planting areas in order to evaluate both canopy and understory species. Each plot will measure approximately 50 feet by 25 feet (1,250 square feet). In each planting area where such monitoring plots are appropriate, at least one plot will be located such that it encompasses approximately ½ (lengthwise) of an understory plot (oval shapes measuring approximately 50 feet long by 30 feet wide, as seen in the attached figure), should one exist in that planting area. Additionally, a sufficient number of plots will be placed in each planting area to cover a minimum of 20% of the planting area.

The Restored Banks Vegetation Monitoring in 2006 is scheduled to include a number of planting areas that are entering their fifth year of monitoring in the monitoring cycle. These include Planting Areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A. The locations of these planting areas are shown on the attached Figure B-1. Each of these planting areas has been evaluated for suitability for the use of monitoring plots (i.e., encompassing an area larger than 2,500 square feet). Based on this evaluation, GE proposes to use monitoring plots in several of these areas as follows:

Planting Area	Nr. of Monitoring Plots	Monitoring Plot Area
4B (0.4 acres or 17,424 sq. feet)	3	3,750 sq. feet (22% of area)
6 (0.07 acres or 3,049.2 sq. feet)	1	1,250 sq. feet (41% of area)
7 (0.01 acres or 435.6 sq. feet)	0	NA
8 (0.02 acres or 871.2 sq. feet)	0	NA
8A (0.05 acres or 2,178 sq. feet)	0	NA
9 (0.01 acres or 435.6 sq. feet)	0	NA
9A (0.06 acres or 2,613.6 sq. feet)	1	1,250 sq. feet (48% of area)
10 (0.18 acres or 7,840.8 sq. feet)	2	2,500 sq. feet (32% of area)
11 (0.04 acres or 1,742.4 sq. feet)	0	NA
11A (0.06 acres or 2,613.6 sq. feet)	1	1,250 sq. feet (48% of area)

Thus, if this modification is approved, GE proposes to implement the monitoring plot approach in planting areas 4B, 6, 9A, 10, and 11A. The proposed plots will be permanently marked with staking to allow for repeat visits in subsequent monitoring years. The remaining planting areas listed above (areas 7, 8, 8A, 9, and 11), which are smaller than 2,500 square feet, will be evaluated using the current procedures.

In addition to the stem counts within the monitoring plots, GE will conduct a random pedestrian survey of each of the planting areas with the objective of providing a qualitative assessment of the overall condition of the plant growth within the planting area. The focus of this survey will be to determine whether there are any large areas of plant loss outside of the planting plots, or any areas outside the plots that might raise some level of concern with vegetative vigor.

GE will continue to monitor the red-osier dogwood band, grape vines, invasive species and herbaceous coverage in the same manner as is currently performed.

4.0 PERFORMANCE STANDARDS

As part of the modified monitoring program, the performance standard for planted trees and shrubs within the monitoring plot will continue to be an 80% survival rate of the amount originally planted. Stem counts of canopy species and understory species within the monitoring plot will be used to confirm that performance standards are being met. Under the assumption that plant growth and development is uniform across the planting areas, stem counts from the monitoring plots will then be extrapolated across the entire planting area to assess area-wide survival.

In the event that the calculated survival rate for trees and shrubs shows a significant negative variance from the performance standard in comparison to the last full monitoring event, GE reserves the right to resurvey the entire planting area to verify the planting results.

5.0 CONCLUSION

GE requests approval of this proposed modification for planting areas 4B, 6, 9A, 10, and 11A prior to the start of the monitoring event scheduled to be performed in 2006.

6.0 REFERENCES

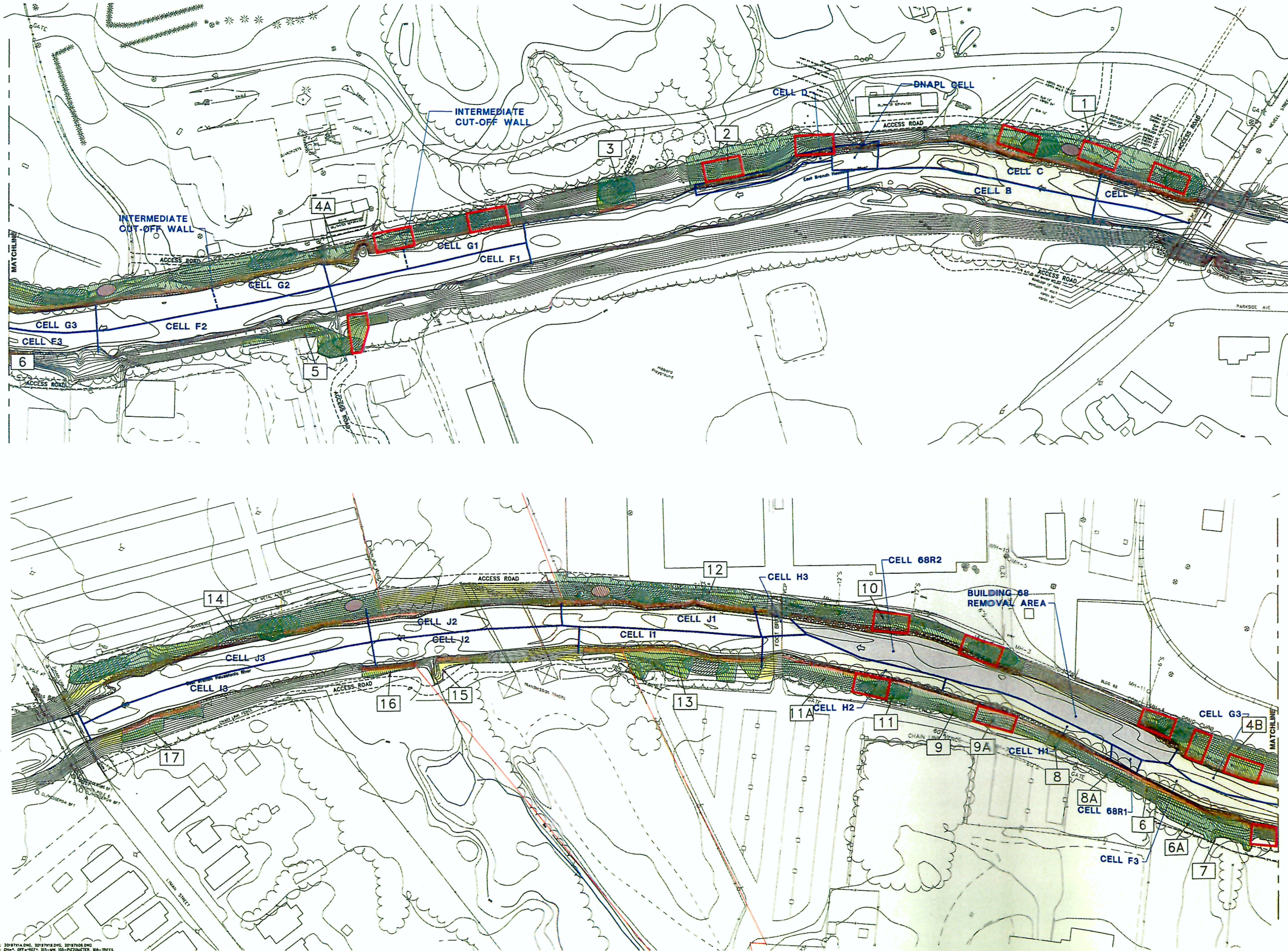
BBL. 1999. Removal Action Work Plan for Upper ½-Mile Reach of Housatonic River. Prepared for GE, Pittsfield, MA.

TABLE 1

UPPER ½-MILE VEGETATIVE MONITORING PROGRAM
MONITORING SCHEDULE

Planting Areas	2001		2002		2003		2004		2005		2006		2007		2008		2009	
	sp	s	sp	s	sp	s	sp	s	sp	s	sp	s	sp	s	sp	s	sp	s
1	X	X	X	X	X	X				X				X				
2	X	X	X	X	X	X				X				X				
3	X	X	X	X	X	X				X				X				
4A	X	X	X	X	X	X				X				X				
4B			X	X	X	X	X	X				X				X		
10			X	X	X	X	X	X				X				X		
5	X	X	X	X	X	X				X				X				
6, 6A, 7, 8A			X	X	X	X	X	X				X				X		
8, 9, 9A, 11, 11A			X	X	X	X	X	X				X				X		
12					X	X	X	X	X	X				X				X
13					X	X	X	X	X	X				X				X
14					X	X	X	X	X	X				X				X
15					X	X	X	X	X	X				X				X
16					X	X	X	X	X	X				X				X
17					X	X	X	X	X	X				X				X

Notes: sp. = spring
s. = summer



LEGEND:

- SEDIMENT WORK AREA
- BANK SOIL REMOVAL AREA
- TOP OF BANK
- BUILDING 68 REMOVAL AREA
- CLEARING LIMITS/PLANTING AREA
- CONTAIMENT BARRIER LOCATION
- UNDERSTORY SPECIES
- VINE PATCHES
- STONE/RIP-RAP
- RED-OSIER-DOGWOOD
- 4A APPROXIMATE RESTORED BANK PLANTING AREA
- PROPOSED MODIFIED MONITORING PLOT

NOTES:

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. AREAS 6A, 8A, 9A, AND 11A WERE ADDED AT THE REQUEST OF THE EOEA.
3. MAPPING IS BEST AVAILABLE INFORMATION AS OF 12/10/98 BASED ON MAPPING PROVIDED BY LOCKWOOD MAPPING, INC. PREPARED FROM 1990 AERIAL PHOTOGRAPHY; DATA PROVIDED BY GENERAL ELECTRIC; AND BLASLAND AND BOUCK, P.C. CONSTRUCTION PLANS. RIVERBANK AND RIVER BED TOPOGRAPHIC INFORMATION PROVIDED BBL FROM OCTOBER12-23, 1998 FIELD SURVEY.
4. COORDINATE GRID BASED ON 1927 STATE PLAN COORDINATES.
5. ELEVATION DATUM REFERENCED TO NGVD 1929.
6. LOCATIONS OF PROPOSED MODIFIED MONITORING PLOTS ARE APPROXIMATE AND MEASURE 1,250 SQUARE FEET.

GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

PROPOSED MODIFICATION TO RIVERBANK VEGETATION MONITORING PROGRAM

BLASLAND, BOUCK & LEE, INC.

FIGURE B-1

Appendix C

Previously Submitted Trip Reports

GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

October 10, 2005

Mr. Dean Tagliaferro
US Environmental Protection Agency
c/o Roy Weston, Inc.
One Lyman Street
Pittsfield, MA 01201

Re: Upper ½-Mile Reach of the Housatonic River, Pittsfield, MA
Trip Report - Summer 2005 Restored Banks Vegetation Monitoring (GECD800)

Dear Mr. Tagliaferro:

Enclosed please find a memorandum representing the trip report for the Summer 2005 Restored Bank Vegetation visit for the restored banks of the Upper ½-Mile Reach of the Housatonic River.

Please call me with any questions.

Yours truly,

for

Andrew T. Silfer, P.E.
GE Project Coordinator

TLC/dmn
Attachment

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
Anna Symington, MDEP (without attachments)
Holly Inglis, USEPA
Tim Conway, USEPA
Rose Howell, USEPA
K.C. Mitkevicius, USACE
R. Goff, USACE
Dale Young MA EOEA
Nancy Harper, MA AG (without attachments)
Linda Palmieri, Roy F. Weston
Mayor James Ruberto, City of Pittsfield
Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
Stuart Messur, BBL
Mark Gravelding, BBL
James Bieke, Goodwin Procter
Public Information Repositories
GE Internal Repositories

MEMORANDUM

TO: Andrew Silfer, P.E.
General Electric

FM: Charles R. Harman, P.W.S.
AMEC Earth & Environmental

CC: Mark Gravelding, P.E.
Blasland, Bouck & Lee, Inc.

SUBJ: Trip Report;
May 2005 Monitoring Visit
Upper ½-Mile Restoration Project, Housatonic River
Pittsfield, Massachusetts

DATE: July 28, 2005

This document reports the results of a recent Restored Banks Vegetation inspection of select areas of the Upper ½-Mile Reach of the Housatonic River. This inspection was performed on May 23, 2005 and included planting areas 12, 13, 14, 15, 16 and 17.

As outlined in Section 9.2 of the *Removal Action Work Plan – Upper-½ Mile Reach of Housatonic River* (Work Plan; BBL, 1999), habitat restoration activities have been implemented in those areas where bank soils were excavated as part of the removal action and in areas that were cleared to allow access for the removal activities. The ecorestoration techniques outlined in the Work Plan were intended to restore the vegetative community in those disturbed riparian areas to a functional value that exceeds that of the riparian habitat prior to the removal action. As part of the habitat restoration process and as specified in Section 11.6.2 of the Work Plan, the General Electric Corporation (GE) agreed to monitor those areas that were restored to ensure the success and biological integrity of the intended vegetative community. Complete details of the monitoring plan can be found in the Work Plan. The monitoring program consists of two visits during each of the first three years after planting, and an annual visit to be conducted during the fifth year and seventh year after planting. In each of the first three years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August) to assess plant survival. The single visit in the fifth year and seventh year after planting is conducted in the summer (July/August).

The following observations were made during the Restored Bank Vegetation monitoring visit that represented the third year of monitoring for planting areas 12, 13, 14, 15, 16 and 17.

1. Charles Harman of AMEC conducted the vegetative monitoring visit for GE and Mike Chelminski was present for the Trustees. Dale Young from the Trustees was

also present. Chris Frank of C. L. Frank & Associates accompanied the streambank monitoring party as the certified arborist.

2. As per the monitoring schedule, planting areas 12, 13, 14, 15, 16 and 17 were inspected during this monitoring event. Planting areas 1, 2, 3, 4A, 5, 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A were not quantitatively monitored during this event. Planting areas 1, 2, 3, 4A, 5 will be monitored in August 2005 (Year 5 of the scheduled monitoring). Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A will next be monitored in 2006 (Year 5).

3. The weather during the monitoring visit was cloudy to partly cloudy with the temperatures approximately 68^{o} at the beginning of the inspection. The dam constructed by USEPA as part of the remedial activities in the mile and a half section of the Housatonic River was not being used. As such, water levels along the banks of the river were normal and did not extend above the red-osier band as was noted in 2003 and 2004 inspection reports.

4. The performance standards for canopy species, understory, red-osier dogwood, grape vine, and invasive species were met for planting area 12. Herbaceous coverage was not met, as the aerial coverage was approximately 75%. It is believed that the low percent of herbaceous coverage is related to the time of year and the late onset of spring. This parameter will be examined more closely in the August monitoring event.

5. The performance standards for canopy species, red-osier dogwood, and invasive species in planting area 13 were met. The performance standard for understory species was not met with a variance of minus 4 (4 below the performance criteria for this planting area). Considering that this planting area has always met or exceeded the performance standard for understory species, it is possible that the negative variance in the understory count during this inspection is the result of a slow response to the spring thaw by specimens in this planting area. During the August monitoring event, increased focus will be placed on verifying the understory count in this planting area and additional remedial measures, if necessary, will be considered at that time. The performance standard for herbaceous coverage was not met. It is believed that the low percent of herbaceous coverage is related to the time of year and the late onset of spring. This parameter will be examined more closely in the August monitoring event.

6. The performance standards for canopy species, understory species, red-osier dogwood, grape vines and invasive species were all met for planting area 14. Herbaceous coverage was close to the performance standard with no significant bare patches noted.

7. The only metric to be evaluated in planting area 15 (the power line corridor) was red-osier dogwood, which met the performance standard.

8. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 16. An understory patch was not planted in this area. Herbaceous coverage was close to the performance standard with only small bare patches noted in this planting area. It is anticipated that this performance standard will eventually be met as spring progresses.

9. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 17. An understory patch was not planted in this area. Herbaceous coverage was close to the performance standard with only small bare noted in this planting area. It is anticipated that this performance standard will eventually be met as spring progresses.

10. Protective screens were placed around the canopy specimens in the fall of 2001. These screens continue to provide good protection from herbivorous animals. During the monitoring visit, it was recommended by Mike Chelminski that some of the protective screens be loosened to ease restrictions on plant growth that are starting to be seen in some specimens.

11. Invasive control activities are on going and being performed along the banks of the entire Upper ½-Mile Reach.

12. The specific results of the monitoring visit are presented in attached tables. A photographic log of the visit is also attached.

The next monitoring visit is tentatively scheduled to begin August 16, 2005.

TABLE 1
CANOPY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31 2001	1	May 00	210	168	139	12	151	0	**- 17**
	2	May 00	118	94	79	3	82	0	**- 12**
	3	May 00	34	27	8	1	9	0	**- 18**
	4, Cell G1	Oct 00	142	114	117	12	129	0	+ 15
	5	Oct 00	66	53	55	4	59	0	+ 6
8/23 2001	1	May 00	210	168	71	52	123	1	**- 45**
	2	May 00	118	94	45	22	67	0	**- 27**
	3	May 00	34	27	11	2	13	0	**- 14**
	4, Cell G1	Oct 00	142	114	51	55	106	41	**- 8**
	5	Oct 00	66	53	44	16	60	3	+ 7
5/20 2002	1	May 00	210	168	139	27	166	5	**-2**
	2	May 00	118	94	69	20	89	0	**-5**
	3	May 00	34	27	22	7	29	0	+2
	4A	Oct 00	142	114	53	23	76	3	**-38**
	4B	June 01	256	205	139	58	197	7	**-8**
	10	Oct 01	126	101	120	4	124	1	+23
	5	June 01	66	53	46	8	54	0	+1
	6, 6A, 7, 8A	June/Oct 01	113	90	60	26	86	3	**-4**
	8, 9, 9A, 11, 11A	Oct 01	95	76	108	5	113	2	+37
8/13 2002	1	May 00	210	168	175	3	178	0	+10
	2	May 00	118	94	90	5	95	0	+1
	3	May 00	34	27	25	1	26	0	**-1**
	4A	Oct 00	142	114	86	2	88	0	**-26**
	4B	June 01	256	205	201	1	202	0	**-3**
	10	Oct 01	126	101	141	1	142	0	+41
	5	June 01	66	53	61	3	64	0	+11
	6, 6A, 7, 8A	June/Oct 01	113	90	102	3	105	0	+15
	8, 9, 9A, 11, 11A	Oct 01	95	76	159	1	160	0	+84
9/11/	1	May 00	210	168	158	1	159	0	**-9**

TABLE 1
CANOPY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
2003	2	May 00	118	94	84	0	84	0	**-10**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	89	1	90	0	**-24**
	4B	June 01	256	205	217	3	220	0	+15
	10	Oct 01	126	101	124	3	127	0	+26
	5	June 01	66	53	52	1	53	0	0
	6, 6A, 7, 8A	June/Oct 01	113	90	112	0	112	0	+22
	8, 9, 9A, 11, 11A	Oct 01	95	76	163	0	163	0	+87
	12	May/Oct 02	134	107	134	0	134	0	+27
	13	May/Oct 02	70	56	76	0	76	0	+20
	14	Oct 02	150	120	163	1	164	0	+44
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	27	0	27	0	+6

TABLE 1
CANOPY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/11/ 2003	1	May 00	210	168	176	15	191	0	+23
	2	May 00	118	94	76	0	76	0	**-18**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	92	3	95	0	**-19**
	4B	June 01	256	205	243	0	243	0	+38
	10	Oct 01	126	101	115	12	127	0	+26
	5	June 01	66	53	50	1	51	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	113	90	136	0	136	0	+46
	8, 9, 9A, 11, 11A	Oct 01	95	76	103	0	103	0	+27
	12	May/Oct 02	134	107	141	0	141	0	+34
	13	May/Oct 02	70	56	71	0	71	0	+15
	14	Oct 02	150	120	138	6	144	0	+24
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	25	0	25	0	+4

TABLE 1
CANOPY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/ 2004	4B	June 01	256	205	231	0	231	0	+26
	10	Oct 01	126	101	111	13	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	+1
	8, 9, 9A, 11, 11A	Oct 01	95	76	151	0	151	0	+75
	12	May/Oct 02	134	107	118	4	122	0	+15
	13	May/Oct 02	70	56	72	0	72	0	+16
	14	Oct 02	150	120	134	9	143	0	+23
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	17	0	8	0	+11
	17	Oct 02	26	21	24	0	24	0	+3

TABLE 1
CANOPY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	256	205	231	1	232	0	+27
	10	Oct 01	126	101	112	12	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	89	0	89	0	**-1**
	8, 9, 9A, 11, 11A	Oct 01	95	76	124	2	126	0	+50
	12	May/Oct 02	134	107	131	0	131	0	+24
	13	May/Oct 02	70	56	62	1	63	0	+7
	14	Oct 02	150	120	132	2	134	0	+14
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	24	0	24	0	+3
5/23/2005	12	May/Oct 02	134	107	132	0	132	0	+25
	13	May/Oct 02	70	56	75	1	63	0	+7
	14	Oct 02	150	120	142	0	142	0	+22
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	5	0	5	0	**-1**
	17	Oct 02	26	21	23	0	23	0	+2

TABLE 2
UNDERSTORY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31 2001	1	May 00	146	117	93	4	97	0	**- 20**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	56	1	57	0	**- 1**
	4, Cell G1	Oct 00	73	58	54	8	62	0	+ 4
	5	Oct 00	73	58	68	4	72	0	+ 14
8/23 2001	1	May 00	146	117	59	34	93	0	**- 24**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	47	2	49	2	**- 9**
	4, Cell G1	Oct 00	73	58	19	17	36	33	**- 22**
	5	Oct 00	73	58	44	19	63	7	+ 5
5/20 2002	1	May 00	146	117	83	34	117	10	0
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	26	26	52	0	**-6**
	4A	Oct 00	73	58	24	19	43	4	**-15**
	4B	June 01	219	175	99	74	173	0	**-2**
	10	Oct 01	73	58	54	20	74	0	+16
	5	June 01	73	58	33	26	59	1	+1
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	46	22	68	0	+10
8/13 2002	1	May 00	146	117	92	16	108	0	**-9**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	52	2	54	0	**-4**
	4A	Oct 00	73	58	37	3	40	0	**-18**
	4B	June 01	219	175	167	4	171	0	**-4**
	10	Oct 01	73	58	72	4	76	0	+18
	5	June 01	73	58	62	2	64	0	+6
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	69	1	70	0	+12

TABLE 2
UNDERSTORY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/28 2003	1	May 00	146	117	94	3	97	0	**-20**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	40	1	41	0	**-17**
	4A	Oct 00	73	58	45	6	51	0	**-7**
	4B	June 01	219	175	148	8	156	0	**-19**
	10	Oct 01	73	58	55	4	59	0	+1
	5	June 01	73	58	49	0	49	0	**-9**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	58	0	58	0	0
	12	May/Oct 02	73	58	65	3	68	0	+10
	13	May/Oct 02	73	58	65	1	66	0	+8
	14	Oct 02	146	117	154	3	157	0	+40
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/12/ 2003	1	May 00	146	117	95	0	95	0	**-22**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	53	1	54	0	**-4**
	4A	Oct 00	73	58	52	2	54	0	**-4**
	4B	June 01	219	175	161	2	163	0	**-12**
	10	Oct 01	73	58	56	3	59	0	+1
	5	June 01	73	58	45	0	45	0	**-13**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	47	0	47	0	**-11**
	12	May/Oct 02	73	58	54	0	54	0	**-4**
	13	May/Oct 02	73	58	67	1	68	0	+10
	14	Oct 02	146	117	148	0	148	0	+31
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/ 2004	4B	June 01	219	175	166	0	166	0	**-9**
	10	Oct 01	73	58	77	1	78	0	+20
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	62	2	64	0	+6
	12	May/Oct 02	73	58	67	1	68	0	+10
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	152	0	152	0	+35
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	219	175	149	0	149	0	**-26**
	10	Oct 01	73	58	53	3	56	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	64	0	64	0	+6
	12	May/Oct 02	73	58	57	0	57	0	**-1**
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--
5/23/2005	12	May/Oct 02	73	58	67	0	67	0	+9
	13	May/Oct 02	73	58	54	0	54	0	**-4**
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center	
5/31/ 2001	1	May 00	82	66	101 (by count)	---	
	2	May 00	--	--	--	---	
	3	May 00	11	9	13 (by count)	---	
	4, Cell G1	Oct 00	74	59	74 (by count)	---	
	5	Oct 00	--	--	--	---	
8/23/ 2001	1	May 00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' – 10 foot section Second 100' – 20 foot section Third 100'	
	2	May 00	--	--	---	--	
	3	May 00	11	9	---	100%	
	4, Cell G1	Oct 00	74	59	Partial	Sparse western 50', with no specimens left last 20'	
	5	Oct 00	--	--	---	---	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/20/ 2002	1	May 00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 50 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	2	May 00	---	---	---	--	
	3	May 00	11	9	Partial	50% of first 50 feet is sparse	
	4A	Oct 00	74	59		First 100' - 100% Second 100' – 100% Third 100' – 100%	Thin for entire section, water stress in some sections
	4B	June 01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 20 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' – 100%	First 100' – missing first 30 foot section	
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/13/ 2002	1	May 00	82	66	First 100' – Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' – Gaps at 7' to 10' interval Third 100' – Gap at 60 foot point	Fourth 100'	
	2	May 00	---	---	---	---	---
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---	
	4A	Oct 00	74	59	First 100' – Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections
	4B	June 01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' – Thin at 90' point	Second 100' Third 100'	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	Second 100' – Missing 2 plants Fourth 100' – Missing 1 plant	First 100' Third 100' – Partial	18 dead red-osier dogwoods identified over the length of this stretch

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/28/ 2003	1	May 00	82	66	First 100'– Gaps at 30' to 40' interval, and 80' to 100' interval Second 100' – gaps at 105' to 119', 120' to 134', 135' to 200' intervals, all were cut back, some new sprouts Third 100' – plants at 201' to 280' had been topped	---	Extensive herbivorous action on the plants.
	2	May 00	---	---	---	---	
	3	May 00	11	9	Thin at the 24' to 50' interval, several gaps	---	
	4A	Oct 00	74	59	First 100' – Plants in 0 to 33' interval had been topped Second 100' – Plants at 170' to 200' interval were weak and stressed Third 100' – Plants at end of planting area were gone.	---	
	4B	June 01	134	107	First 100' – Topped at 60 to 100' interval Second 100' – Plants all present, but indications of herbivory Third 100' – Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'	
	10	Oct 01	---	---	---	---	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100' Fourth 100'	
	12	May/Oct 02	67	54	---	First 100' Second 100' – 1 dead plant at 194' and 1 at 198'	
	13	May/Oct 02	59	47	---	Plants all present; though last three were topped	
	14	Oct 02	48	38	---	All present; 26 plants planted in right of way of which 2 were missing	
	15	May 02	10	8	---	Missing 1	
	16	Oct 02	18	14	---	Missing 1	
	17	Oct 02	27	22	---	All present	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
9/12/ 2003	1	May 00	82	66	First 100'– Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' – gaps at 117' to 131; Third 100' – Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard
	2	May 00	---	---	---	---	
	3	May 00	11	9	---	All present	
	4A	Oct 00	74	59	First 100' – Gaps at 18' to 33'; Second 100' – Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard
	4B	June 01	134	107	First 100' – Gap at 69' to 75'; Sixth 100' – Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' – Gaps at 0' to 4' and 60' to 65'; Second 100' – Gap at 177' to 181' Third 100' – Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard
	12	May/Oct 02	67	54	First 100' – Gap at 20' to 25'; Second 100' – Gap at 196' to 200' Third 100' – Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing two plants	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	All present	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/24/ 2004	4B	June 01	134	107	Third 100' – Gap at 258'; Fifth 100' – Gap at 580'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard
	13	May/Oct 02	59	47	---	Yes	Meets performance standard
	14	Oct 02	48	38	---	Missing eight plants	Meets performance standard
	15	May 02	10	8	---	Missing five plants	Does not meet performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	Missing three plants	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/17/2004	4B	June 01	134	107	One gap at 580 feet		Meets performance standard
	10	Oct 01	---	---	---	--	---
	6, 6A, 7, 8A	June/Oct 01	89	71	---	Missing one plant	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	None missing	Meets performance standard
	12	May/Oct 02	67	54	---	Missing two plants	Meets performance standard
	13	May/Oct 02	59	47	---	None missing	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing one plant	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	None missing	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/23/2005	12	May/Oct 02	67	54	---	Missing one plant at 15 foot location	Meets performance criteria
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance criteria
	14	Oct 02	48	38	---	Missing two plants	Meets performance criteria
	15	May 02	10	8	---	Missing two plants	Meets performance criteria
	16	Oct 02	18	14	---	None missing	Meets performance criteria
	17	Oct 02	27	22	---	None missing	Meets performance criteria

TABLE 4
GRAPEVINE MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/ 2001	1	May 00	22	18	22	0	22	0	0	
8/23/ 2001	1	May 00	22	18	8	8	16	6	0	
5/20/ 2002	1	May 00	22	18	0	6	6	0	0	
	4B	June 01	22	18	0	5	5	0	0	
	9A	Oct 01	---	---	---	---	---	---	---	
8/13/ 2002	1	May 00	22	18	0	0	0	0	6	
	4B	June 01	22	18	0	13	13	0	6	
	9A	Oct 01	---	---	---	---	---	---	>>18	
5/28/ 2003	1	May 00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	June 01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct 02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	Performance criteria met.

TABLE 4
GRAPEVINE MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-Stressed	Stressed	Total Vines			
9/12/ 2003	1	May 00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes and now growing. As such, exceeds performance standard.
	4B	June 01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	12	Oct 02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/ 2004	4B	June 01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	The number of planted grapes meets the performance criteria.

TABLE 4
GRAPEVINE MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/ 2004	4B	June 01	22	18	10	0	10	0	33	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	0	0	0	0	45	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	3	0	3		19	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
5/23/ 2005	12	Oct 02	22	18	3	0	3		25	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.

Notes on Herbaceous Coverage Surveys:

a. Due to limitations in stock, area 9A has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003, Upper ½ Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines.

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/23 2001	1	May 00	100%	First 100' ~50% coverage Second 100' ~80% coverage Third 100' ~85% coverage Final 60' ~50% coverage		
	2	May 00	100%	~75% coverage		
	3	May 00	100%	~85% coverage		
	4, Cell G1	Oct 00	100%	First 100' ~45% coverage Second 100' ~75% coverage Third 100' ~85% coverage		
	5	Oct 00	100%	70% coverage		
5/20 2002	1	May 00	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage Final 60' ~80% coverage		
	2	May 00	100%	~85% coverage		
	3	May 00	100%	~85% coverage		
	4A	Oct 00	100%	First 100' ~50% coverage Second 100' ~65% coverage Third 100' ~80% coverage		
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~85% coverage Third 100' ~85% coverage Fourth 100' ~75% coverage Fifth 100' ~75% coverage		
	10	Oct 01	100%	First 100' ~85% coverage Second 100' ~85% coverage		
	5	June 01	100%	~75% coverage		

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	6, 6A, 7, 8A	June/ Oct 01	100%	~70% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~70% coverage Second 100' ~50% coverage Third 100' ~75% coverage Fourth 100' – 30% coverage		
8/13/ 2002	1	May 00	100%	Overall ~90% First 100' Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%; Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%; 80' interval ~95%; Second 100' 0 to 15' interval ~85%; 75' ~95%; Third 100' ~100% coverage Final 60' ~100% coverage		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.
	2	May 00	100%	~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May 00	100%	~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	4A	Oct 00	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~93% coverage Third 100' ~100% coverage Fourth 170' ~95% coverage		Response actions are proposed for one segment of this planting area
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' – 65% coverage		Response actions are proposed for 2 segments of this planting area.
	5	June 01	100%	~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris		Response actions are proposed for one segment of this planting area.
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% with the top of slope being thin Second 100' ~85%		Response actions are proposed for one segment of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~65% coverage Third 100' ~90% coverage Fourth 100' ~80% coverage		Response actions are proposed for 2 segments of this planting area.
5/28 2003	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100'~95% coverage Final 60' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	4A	Oct 00	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage		Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage		
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage		
	5	June 01	100%	~95% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~90% coverage		
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage		
	13	May/Oct 02	100%	~95% coverage		
	14	Oct 02	100%	~95% coverage		
	15	May 02	100%	~100% coverage		
	16	Oct 02	100%	~100% coverage		
	17	Oct 02	100%	~100% coverage		

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/ 2003	1	May 00	100%	First 100' ~85% coverage Second 100' ~100% coverage Third 100'~95% coverage Final 60' ~95% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	4A	Oct 00	100%	First 100' ~70% coverage Second 100' ~90% coverage Third 100' ~95% coverage	No	Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~75% coverage Second 100' ~80% coverage Third 100' ~85% coverage Fourth 100' ~85% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions; much of the gaps in coverage were oriented towards the top of the bank
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions
	5	June 01	100%	~90% coverage	No	
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~90% coverage	No	
	14	Oct 02	100%	~90% coverage	No	
	15	May 02	100%	~85% coverage	No	
	16	Oct 02	100%	~85% coverage	No	
	17	Oct 02	100%	~85% coverage	No	
5/24/ 2004	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage Fourth 100' ~95% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	14	Oct 02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	15	May 02	100%	--	--	
	16	Oct 02	100%	~95% coverage	No	
	17	Oct 02	100%	~90% coverage	No	
8/17/ 2004	4B	June 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~95% coverage Fourth 100' ~100% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For areas of herbaceous cover that are less than 100%, the bare spots were small (less than one square foot)

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. Only significant bare areas appear to be associated with recent construction at first section of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	13	May/Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	100% coverage	Yes	

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/23/ 2005	12	May/Oct 02	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	13	May/Oct 02	100%	~85% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	---	---	---
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/23/ 2001	1	May 00	< 5%			bittersweet, purple loosestrife, common mullein, bittersweet nightshade, buckthorn
	2	May 00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus
	3	May 00	< 5%			bittersweet, Morrow's honeysuckle, purple loosestrife
	4, Cell G1	Oct 00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn
	5	Oct 00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosestrife
5/20/ 2002	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard
	2	May 00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge
	3	May 00	< 5%	Approximately 10%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~15% Second 100' ~10% Third 100' <5%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn
	4B	June 01	< 5%	First 100' <10% Second 100' <10% Third 100' <10% Fourth 100' 0% Fifth 100' 0%		Norway maple, bittersweet and garlic mustard
	10	Oct 01	< 5%	<5%		None noted
	5	June 01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose
	6, 6A, 7, 8A	June/ Oct 01	< 5%	<5%		burning bush, garlic mustard, buckthorn
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' <5% Fifth 100' <5%		None noted

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/13/ 2002	1	May 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Final 60' ~5%		buckthorn, bittersweet, garlic mustard, purple loosestrife
	2	May 00	< 5%	~10%		cypress spurge
	3	May 00	< 5%	~5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosestrife, cypress spurge
	4B	June 01	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Fourth 170' <5%		Norway maple, purple loosestrife, bittersweet and garlic mustard,
	10	Oct 01	< 5%	~5%		Purple loosestrife
	5	June 01	< 5%	~5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5% Fourth 100' <5%		purple loosestrife, bittersweet, garlic mustard, cypress spurge
5/28/ 2003	1	May 00	< 5%	First 100' ~5% Second 100' ~7% Third 100' ~5% Final 60' <5%		bittersweet, garlic mustard
	2	May 00	< 5%	~10%		cypress spurge, bittersweet, garlic mustard
	3	May 00	< 5%	~10%		bittersweet, cypress spurge, garlic mustard
	4A	Oct 00	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5%		bittersweet, cypress spurge, garlic mustard

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	4B	June 01	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%		bittersweet and garlic mustard
	10	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' ~5%		bittersweet and garlic mustard
	5	June 01	< 5%	~7%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5% Third 100' ~5% Fourth 100' ~5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' >5% Fourth 100' >5%		bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' >5%		garlic mustard, bittersweet
	13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%		garlic mustard, bittersweet
	15	May 02	< 5%	>5%		garlic mustard, bittersweet
	16	Oct 02	< 5%	>5%		garlic mustard, bittersweet
	17	Oct 02	< 5%	>5%		garlic mustard, bittersweet
9/12/ 2003	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard
	2	May 00	< 5%	<5%	Yes	cypress spurge, buckthorn

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	3	May 00	< 5%	~5 - 10%	No	cypress spurge, buckthorn
	4A	Oct 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard
	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard
	5	June 01	< 5%	<5%	Yes	Japanese knotweed, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	15	May 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	17	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
5/24/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge
	13	May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%	Yes	Garlic mustard, bittersweet
	15	May 02	< 5%	--	--	Garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed
	17	Oct 02	< 5%	<5%	Yes	Bittersweet

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/17/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Buckthorn, purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge, multi-flora rose, Norway maple
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge
	13	May/Oct 02	< 5%	<5%	Yes	Purple loosestrife, bittersweet, multiflora rose
	14	Oct 02	< 5%	<5%	Yes	
	15	May 02	< 5%	<5%	Yes	Purple loosestrife
	16	Oct 02	< 5%	<5%	Yes	Purple loosestrife
	17	Oct 02	< 5%	<5%	Yes	Purple loosestrife
5/23/ 2005	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Cypress spurge, garlic mustard
	13	May/Oct 02	< 5%	<5%	Yes	Cypress spurge, garlic mustard

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SPRING 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	14	Oct 02	< 5%	<10%	No	Cypress spurge
	15	May 02	< 5%	---	---	
	16	Oct 02	< 5%	<5%	Yes	
	17	Oct 02	< 5%	<5%	Yes	

Photograph 1: May 2005, Planting Area 12

Photograph 2: May 2005, Planting Area 14

Photograph 3: May 2005, Planting Area 13

Photograph 4: May 2005, Planting Area 17

GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

July 28, 2005

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

Re: GE Pittsfield/Housatonic River Site
Upper ½-Mile Reach Removal Action (GECD800)
Bank Erosion Inspection (Spring 2005)

Dear Mr. Tagliaferro:

Consistent with requirements set forth in the final *Removal Action Work Plan – Upper ½-Mile Reach of Housatonic River* (Work Plan; Blasland, Bouck & Lee, Inc. [BBL], August 1999), GE has performed monitoring activities for the restored banks of the Upper ½-Mile Reach to assess both the cleared and restored areas for evidence of erosion. This monitoring event occurred on May 23, 2005 with representatives of the U.S. Environmental Protection Agency (EPA) and BBL in attendance. The following people performed the inspection:

- Rich Zoppel, Weston (for EPA); and
- Todd Cridge, BBL.

This trip report has been prepared following the 2005 bank erosion monitoring event to allow for discussion of potential response activities or additional monitoring needs related to areas of erosion of material movement identified during the 2005 bank monitoring event. Figure 1 illustrates the location of the areas at which measurable erosion or material movement was detected.

In addition, in accordance with requirements of the Work Plan, GE has identified, to the extent practicable, the likely cause of erosion and evaluated the source, dispersal, and quantity, of eroded soil in the River. This evaluation, and GE's proposed measures, if any, to restore the eroded identified areas to the previous restoration conditions are provided below for each area, and are summarized in Table 1.

During the May 23, 2005 bank inspection, flow in the river was approximately 92 cubic feet per second (cfs), as measured at U.S. Geological Survey (USGS) River Gauge Station No. 0118700 on the East Branch of the Housatonic River in Coltsville, MA. It should be noted that although the water level in the river at the time of inspection was low, there were signs (e.g., debris, deposition) of sustained high water levels noted within the Upper ½-Mile Reach. This high water is a likely result of the EPA dam at Lyman Street, constructed to control water flow during remediation efforts in the 1½-Mile Reach. During the bank inspection, it was noted, that as an apparent result of the high water, there is depositional material throughout the vegetated and armored sections of the Upper ½-Mile Reach.

At the time of the inspection, two areas were noted with either a measurable loss of bank soil or evident movement of bank armoring. These areas are identified as Areas 1 and 2 on Figure 1. Descriptions of the areas, along with the proposed response action, are presented below.

Areas with Measurable Erosion

Area 1 – Less than 0.5 cubic yards (cy) of soil appears to have eroded into the river from within planting area 13 on the northern bank directly behind the Newell Street II parking lot near the former foot bridge (see Figure 1, Photo 1). Area 1 is within a remediated bank area. The source of eroded material appears to be native material from the mid-bank area directly around a red-osier species planted as part of the vegetative restoration activities. This erosion appears to be removing bank materials from around the planting and exposing the roots. The cause of erosion appears to be related to the sustained high water in the Upper ½-Mile Reach due to the presence of the EPA dam. During the inspection, EPA and BBL discussed that this area would likely require less than 0.5 cy of backfill around the exposed roots as well as armor stone placement to protect against further such erosion GE will complete such activities in conjunction with remedial activities to be completed in the Newell Street Area II before the end of the 2005 construction season.

Area 2 – Less than 0.5 cy of riprap appears to have shifted such that in select locations, within planting area 14 on the northern bank adjacent to the Lyman Street parking lot (see Figure 1, Photos 2 and 3), the tops of a number of sheetpiles are now visible. The areas where riprap appears to have shifted are not all contiguous, but in total, approximately 75 to 100 feet are affected. Though there were other signs of the sustained high water in this area, as discussed above, the cause of such shifting of riprap was not readily apparent during the inspection. There were no signs of a net loss of riprap material or loss of riprap having fallen into the river. During the inspection, EPA and BBL agreed that this area would continue to be monitored, and that GE would reposition select areas of riprap, and install additional riprap, if necessary, to re-cover and protect the tops of the sheetpiles. GE will complete this activity by the end of August 2005, and will notify EPA upon completion.

GE will continue to conduct inspections in accordance with the requirements of the Work Plan. The remaining schedule for bank erosion inspections includes annual inspections to be performed in 2006 and 2007. If signs of erosion are observed during these inspections, GE will propose measures to address those areas and minimize future erosion.

Please contact me if you have any questions.

Sincerely,

Andrew T. Silfer, P.E.
GE Project Coordinator

Attachments

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
Anna Symington, MDEP (without attachments)
Holly Inglis, USEPA
Tim Conway, USEPA
Rose Howell, USEPA
K.C. Mitkevicius, USACE
R. Goff, USACE
Dale Young MA EOEA
Nancy Harper, MA AG (without attachments)
Linda Palmieri, Roy F. Weston
Mayor James Ruberto, City of Pittsfield
Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
Stuart Messur, BBL
Mark Gravelding, BBL
James Bieke, Goodwin Procter
Public Information Repositories
GE Internal Repositories

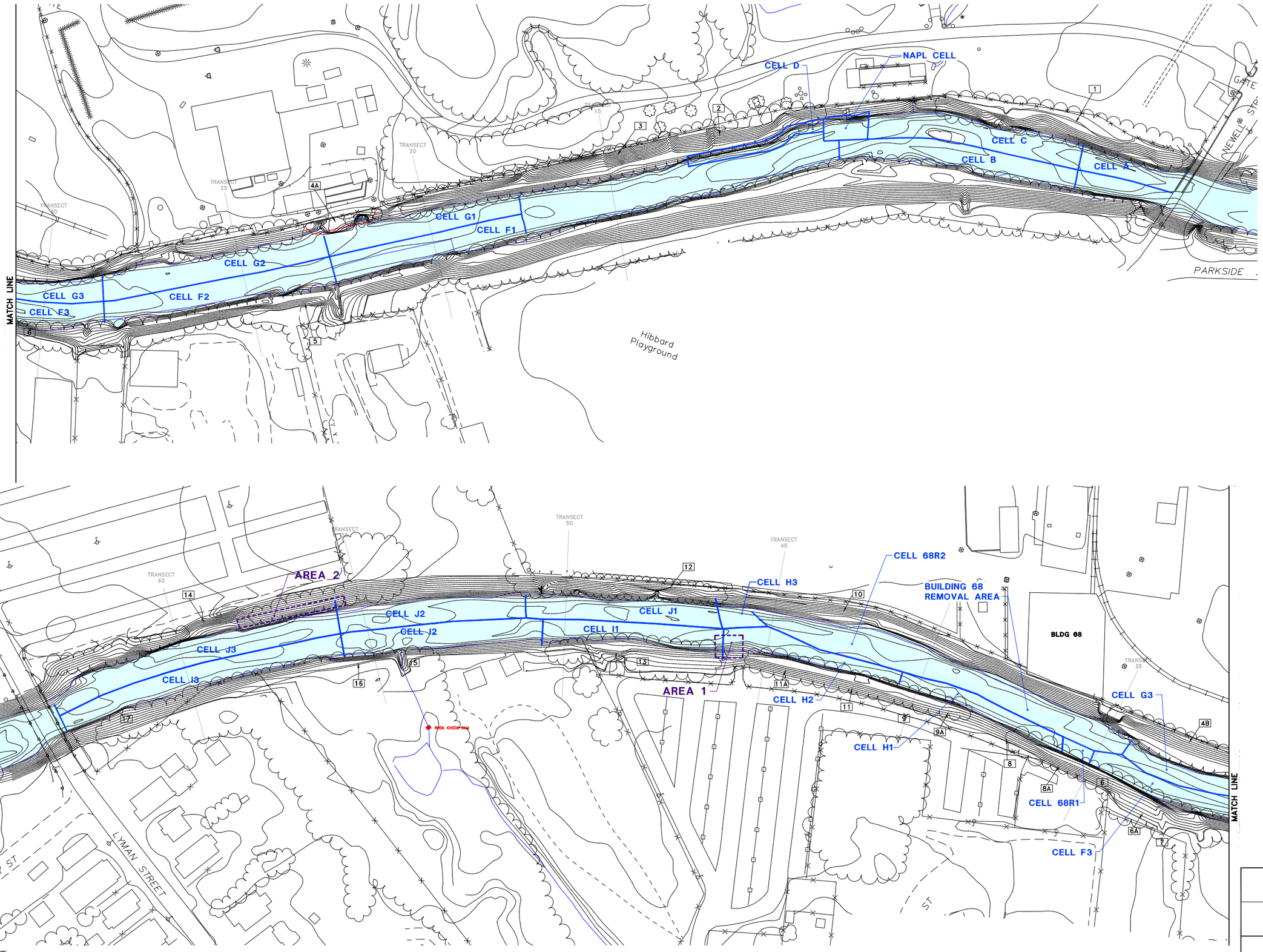
Table 1

General Electric Company - Pittsfield Massachusetts
Upper 1/2-Mile Reach Removal Action Monitoring

Spring 2004 Bank Inspection Summary

Area	Description	Approximate Size	Action
Areas with Measurable Erosion			
1 - North bank of river, directly behind Building 61	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in river.	<1 CY	Place additional rip rap, topsoil, and seed sufficient to cover eroded areas. Reposition hay bales, as appropriate.
2 - South bank of river, adjacent to Newell St. parking lot	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in river.	<0.5 CY	Place additional topsoil and seed sufficient to cover eroded areas. Divert runoff to adjacent paved swale.
3 - South bank of river, adjacent to the Italian American Club property	Erosion of soil. Remediated bank area. No evidence of eroded soil in river.	<0.5 CY	Place additional topsoil and seed sufficient to cover eroded areas.

Key:
CY = cubic yard
SY = square yard



X: 20197X01.DWG
L: Old=* QT/*REF*
P: PAGESET/REDUCEDTO_D
10/13/05 SYR-54-NES SDL LAF
C:/20197X24/MA/20197X01.DWG

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
UPPER 1/2-MILE REACH REMOVAL ACTION

2005 BANK EROSION INSPECTION

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE 1

Photo 1 – Area 1: Soil Erosion and Root Exposure. Note the depositional materials, a likely result of the high water caused by the EPA dam at Lyman St.

Photo 2 – Area 2: An example of exposed sheeting due to shifted rip rap.

Photo 3 – Area 2: Exposed sheetpile tops.

GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

July 28, 2005

Mr. Dean Tagliaferro
US Environmental Protection Agency
c/o Roy Weston, Inc.
One Lyman Street
Pittsfield, MA 01201

Re: Trip Report - May 2005 Vegetation Monitoring (GECD800)

Dear Mr. Tagliaferro:

Enclosed please find a memorandum representing the trip report for the May 2005 Vegetation Monitoring visit for the restored banks of the Upper ½-Mile Reach of the Housatonic River.

Please call me with any questions.

Yours truly,

Andrew T. Silfer, P.E.
GE Project Coordinator

TLC/amm
Attachment

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
Anna Symington, MDEP (without attachments)
Holly Inglis, USEPA
Tim Conway, USEPA
Rose Howell, USEPA
K.C. Mitkevicius, USACE
R. Goff, USACE
Dale Young MA EOEA
Nancy Harper, MA AG (without attachments)
Linda Palmieri, Roy F. Weston
Mayor James Ruberto, City of Pittsfield
Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
Stuart Messur, BBL
Mark Gravelding, BBL
James Bieke, Goodwin Procter
Public Information Repositories
GE Internal Repositories

MEMORANDUM

TO: Andrew Silfer, P.E.
General Electric

FM: Charles R. Harman, P.W.S.
AMEC Earth & Environmental

CC: Mark Gravelding, P.E.
Blasland, Bouck & Lee, Inc.

SUBJ: Trip Report;
Summer 2005 Monitoring Visit
Upper ½-Mile Reach of the Housatonic River
Pittsfield, Massachusetts

DATE: October 10, 2005

This document reports the results of the Summer 2005 Restored Banks Vegetation inspection of select areas of the Upper ½-Mile Reach of the Housatonic River. The inspection was performed on August 17, 2005 and included planting areas 1, 2, 3, 4A, 5, 12, 13, 14, 15, 16 and 17. Additionally, this document reports the results of the 2005 Aquatic Habitat Enhancement Structures monitoring visit performed on August 16, 2005.

As outlined in Section 9.2 of the *Removal Action Work Plan – Upper ½-Mile Reach of Housatonic River* (Work Plan; BBL, 1999), habitat restoration activities were implemented in those areas where bank soils were excavated as part of the removal action and in areas that were cleared to allow access for the removal activities.

As part of the habitat restoration process and specified in Section 11.6.2 of the Work Plan, GE agreed to monitor those areas of the Upper ½-Mile Reach that were restored to ensure the success and biological integrity of the intended vegetative community. For each specific planting area, the monitoring program consists of two visits during each of the first three years after planting, and an annual visit to be conducted during the fifth and seventh years after planting. In each of the first three years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August). The single visit in the fifth and seventh years after planting will be conducted in the summer (July/August). Complete details of the monitoring plan can be found in the Work Plan.

RESPONSE TO COMMENTS ON MAY 23 TRIP REPORT

A trip report was submitted to the Trustees for the May 23, 2005 Monitoring Visit. Comments were made on the trip report by Woodlot Alternatives, Inc., on behalf of the Trustees, in correspondence dated August 3, 2005. In that correspondence, Woodlot indicated there were

three performance standard metrics that were not met in the May visit that should be addressed. Those metrics were (1) failure to meet the canopy performance standard in planting area 16; (2) failure to meet the shrub performance standard in planting area 13; and (3) failure to meet the performance standard for herbaceous species in all areas.

Woodlot indicated that they did not have significant concerns with the canopy or shrub numbers, and GE will propose to add sufficient plants to exceed performance standards in those planting areas where deficiencies were noted. Woodlot did indicate concerns with the herbaceous coverage, indicating that it could be the result of poor soil conditions and that the lack of robust plant growth could lead to soil erosion. Woodlot suggested the use of mitigation measures such as amending the soil to foster vegetative growth and controlling stormwater runoff to minimize erosion might be considered.

As will be noted in the following presentation of results, the herbaceous coverage was almost at, or at, the performance standard for every planting area. Woodlot noted that the herbaceous coverage was consistent with previous values. In fact, historical observations of the herbaceous communities within the planting areas have shown that coverage in May has generally been fairly low, while coverage in August has been much closer to the performance standard. That pattern has been noted during the five years that the monitoring program has been inplace.

The reason for that has been the response of the vegetative community to climatic conditions and the speed with which it develops during the beginning of the growing season. After particularly hard and long winters, it simply takes that much longer for the herbaceous community to develop. Noting the extreme vegetative growth that was observed in the August 2005 monitoring visit, concerns with the inability of the soil to support an herbaceous community should be set aside. Additionally, no indications of streambank erosion in any of the planting areas are apparent.

2005 AQUATIC HABITAT ENHANCEMENT STRUCTURES MONITORING VISIT RESULTS

The following observations were made from the aquatic monitoring visit conducted on August 16, 2005.

1. Charles Harman of AMEC conducted the aquatic monitoring visit for GE and Mike Chelminski was present for the NRD Trustees.

2. The inspection of the aquatic habitat structures consisted of the physical observation of the condition of each of the structures from a canoe. The monitoring also included the inspection of the armor stone layer consisted of visual observations for evidence of erosion

3. Water in the bank was at a very low level, allowing for observations of the aquatic habitat structures. As recorded by the United States Geological Survey (USGS) flow gauge located in Coltsville, MA (USGS 0119700 East Branch Housatonic River), flow in the river on the day of the inspection was approximately 20 cubic feet per second (cfs). In general, those aquatic structures that were visible appeared to be

providing good cover and habitat. The aquatic structures were structurally stable and appeared to be creating variations in water velocity and flow as evidenced by the presence of scour zones and depositional areas in the sediment surrounding the structures. The development of these variations in sediment elevation and the creation of flow changes in the water column appear to be providing good habitat for fish and aquatic invertebrates.

4. There was no evidence of erosion of the armor stone layer.

5. Photographs of the aquatic structures and notes regarding the condition of such structures are presented Attachment A.

The following observations were made from the streambank vegetative monitoring visit conducted on August 17, 2005.

1. Charles Harman of AMEC conducted the vegetative monitoring visit for GE. Mike Chelminski was present for the NRD Trustees. Chris Frank of C. L. Frank & Associates accompanied the streambank monitoring party as the certified arborist.

2. As per the monitoring schedule, planting areas 1, 2, 3, 4A, 5, 12, 13, 14, 15, 16 and 17 were evaluated during this monitoring event. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A were not quantitatively monitored during this event.

3. The weather during the monitoring visit was clear and warm with the temperature at approximately 72^{o} at the beginning of the inspection. The dam used by USEPA during their remedial activities in the 1 ½-Mile Reach of the Housatonic River was not in place on the date of the monitoring visit. Water levels in the river were at a very low level and were significantly below the red-osier band as was noted in 2003 and 2004.

4. This was the first monitoring visit in planting area 1 since August 2003, fulfilling the Year 5 monitoring requirement. In general, the area demonstrates tremendous vegetative growth for all vegetative components of the restoration. Both canopy and understory species met performance standards. Canopy specimens are 20 to 30 feet in height and some box elders were greater than 4 inches in diameter at breast height (DBH). Silky dogwood and northern arrowwood, in particular, demonstrate excellent growth and spread. All other components of the vegetative community; red-osier dogwood, grape vine, herbaceous coverage, and invasive species met the respective performance standards.

5. This was the first monitoring visit in planting area 2 since August 2003, fulfilling the Year 5 monitoring requirement. This area also demonstrated tremendous growth in all components of the vegetative community. Canopy species met their performance standard. No shrub plot or red-osier dogwoods were placed in this planting area. All other components of the vegetative community; grape vine, herbaceous coverage, and invasive species met the respective performance standards.

6. This was the first monitoring visit in planting area 3 since August 2003, fulfilling the Year 5 monitoring requirement. While the plants in this area showed strong growth, it did not appear to be same significant growth observed in planting areas 1 and 2. It is possible that this is because planting area 3 is sheltered to a great extent by surrounding trees left standing during the remedial activity. The canopy species did not meet the performance standard, with a negative variance of 8. Shrub species met the performance standard. All other components of the vegetative community; red-osier dogwood, herbaceous coverage, and invasive species met the respective performance standards.

7. This was the first monitoring visit in planting area 4A since August 2003, fulfilling the Year 5 monitoring requirement. This area also exhibited tremendous growth for all vegetative components of the restoration. While growth was excellent, it was observed that both canopy (negative variance of 12) and shrub species (negative variance of 8) did not meet the performance standards. It is noted that this planting area has historically had difficulty in meeting the canopy and understory performance. It is not known whether the reason has been poor soil or herbivorous activity, though both could be considered a factor. All other components of the vegetative community; red-osier dogwood, herbaceous coverage, and invasive species met the respective performance standards.

8. This was the first monitoring visit in planting area 5 since August 2003, fulfilling the Year 5 monitoring requirement. It was observed during the course of this monitoring visit that at some point in time since that 2003 visit, changes in the top of bank topography appear to have been made. The result was that both canopy species and understory species were lost during the implementation of the Newell Street Area I remediation and were apparently not replaced. The canopy had a negative variance of 6, while the understory had a negative variance of 6. All other components of the vegetative community; herbaceous coverage, and invasive species met the respective performance standards.

9. This was the second visit in 2005 to planting area 12, fulfilling the Year 3 monitoring requirement. The canopy species performance standard was met for planting area 12. All other components of the vegetative community; understory species, red-osier dogwood, grape vine, herbaceous coverage, and invasive species met the respective performance standards.

10. This was the second visit in 2005 to planting area 13, fulfilling the Year 3 monitoring requirement. During this monitoring visit, there were difficulties in verifying the condition of the vegetative community in this planting area due to clearing and other disturbances; an apparent result of the on going Newell Street Area II remedial activities. This area will be reexamined in 2006 after the remedial activities and replanting efforts are completed.

11. This was the second visit in 2005 to planting area 14, fulfilling the Year 3 monitoring requirement. The performance standards for canopy species, understory species, red-osier dogwood, herbaceous coverage, grape vines and invasive species were all met for planting area 14.

12. This was the second visit in 2005 to planting area 15, fulfilling the Year 3 monitoring requirement. The only metric that is required to be evaluated in planting area 15 (the power line corridor) is red-osier dogwood. During this monitoring visit, there were difficulties in verifying the condition of the vegetative community in this planting area due to clearing and other disturbances; an apparent result of the on going Newell Street Area II remedial activities. This area will be reexamined in 2006 after the remedial activities and replanting efforts are completed.

13. This was the second visit in 2005 to planting area 16, fulfilling the Year 3 monitoring requirement. During this monitoring visit, there were difficulties in verifying the condition of the vegetative community in this planting area due to clearing and other disturbances; an apparent result of the on going Newell Street Area II remedial activities. This area will be reexamined in 2006 after the remedial activities and replanting efforts are completed.

14. This was the second visit in 2005 to planting area 17, fulfilling the Year 3 monitoring requirement. Canopy species, red-osier dogwood, herbaceous coverage, and invasive species performance standards were met for this planting area. An understory patch was not planted in this area.

15. Protective screens were placed around the canopy specimens in the fall of 2001. These screens appear to be continuing to provide good protection from herbivorous animals.

16. Invasive control activities are on going and continue to be performed along the banks of the entire Upper ½-Mile Reach.

17. The specific results of the monitoring visit are presented in Tables 1 through 6. Photographs of the vegetative communities observed during the monitoring visit can be found in Attachment B.

18. The next monitoring visit is tentatively scheduled for May 2006

REMEDIAL ACTIONS

The results of the monitoring visit indicated that there are three planting areas that did not meet the performance standards, and as such, may require remedial action to achieve prescribed performance standards. The following is a list of the deficiencies noted during the monitoring visit, and the proposed replacement quantity:

Planting Area	Negative Specimen Variance	Replacement Number
3	8 canopy,	13 canopy
4A	12 canopy, 8 shrub	17 canopy, 16 shrub
5	6 canopy, 16 shrub	11 canopy, 24 shrub

Canopy plantings will be divided equally between four species used previously for the Upper ½-Mile; boxelder ((*Acer* negundo), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), and black willow (*Salix nigra*), depending upon species availability. Shrub plantings will be divided equally between the four shrub species used previously for the Upper ½-Mile; northern arrowwood (*Viburnum dentatum*), silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), and choke-cherry (*Prunus virginiana*), depending upon species availability.

Canopy species will be installed in open spaces in each respective planting area, while understory species will be planted in open areas within the respective shrub plots in the effected planting areas. Replanting is tentatively scheduled to occur in October or November. Plantings will be conducted in accordance with the Work Plan.

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31 2001	1	May 00	210	168	139	12	151	0	**- 17**
	2	May 00	118	94	79	3	82	0	**- 12**
	3	May 00	34	27	8	1	9	0	**- 18**
	4, Cell G1	Oct 00	142	114	117	12	129	0	+ 15
	5	Oct 00	66	53	55	4	59	0	+ 6
8/23 2001	1	May 00	210	168	71	52	123	1	**- 45**
	2	May 00	118	94	45	22	67	0	**- 27**
	3	May 00	34	27	11	2	13	0	**- 14**
	4, Cell G1	Oct 00	142	114	51	55	106	41	**- 8**
	5	Oct 00	66	53	44	16	60	3	+ 7
5/20 2002	1	May 00	210	168	139	27	166	5	**-2**
	2	May 00	118	94	69	20	89	0	**-5**
	3	May 00	34	27	22	7	29	0	+2
	4A	Oct 00	142	114	53	23	76	3	**-38**
	4B	June 01	256	205	139	58	197	7	**-8**
	10	Oct 01	126	101	120	4	124	1	+23
	5	June 01	66	53	46	8	54	0	+1
	6, 6A, 7, 8A	June/Oct 01	113	90	60	26	86	3	**-4**
	8, 9, 9A, 11, 11A	Oct 01	95	76	108	5	113	2	+37
8/13/ 2002	1	May 00	210	168	175	3	178	0	+10
	2	May 00	118	94	90	5	95	0	+1
	3	May 00	34	27	25	1	26	0	**-1**
	4A	Oct 00	142	114	86	2	88	0	**-26**
	4B	June 01	256	205	201	1	202	0	**-3**
	10	Oct 01	126	101	141	1	142	0	+41
	5	June 01	66	53	61	3	64	0	+11
	6, 6A, 7, 8A	June/Oct 01	113	90	102	3	105	0	+15
	8, 9, 9A, 11, 11A	Oct 01	95	76	159	1	160	0	+84
9/11/	1	May 00	210	168	158	1	159	0	**-9**

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
2003	2	May 00	118	94	84	0	84	0	**-10**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	89	1	90	0	**-24**
	4B	June 01	256	205	217	3	220	0	+15
	10	Oct 01	126	101	124	3	127	0	+26
	5	June 01	66	53	52	1	53	0	0
	6, 6A, 7, 8A	June/Oct 01	113	90	112	0	112	0	+22
	8, 9, 9A, 11, 11A	Oct 01	95	76	163	0	163	0	+87
	12	May/Oct 02	134	107	134	0	134	0	+27
	13	May/Oct 02	70	56	76	0	76	0	+20
	14	Oct 02	150	120	163	1	164	0	+44
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	27	0	27	0	+6

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/11/ 2003	1	May 00	210	168	176	15	191	0	+23
	2	May 00	118	94	76	0	76	0	**-18**
	3	May 00	34	27	27	0	27	0	0
	4A	Oct 00	142	114	92	3	95	0	**-19**
	4B	June 01	256	205	243	0	243	0	+38
	10	Oct 01	126	101	115	12	127	0	+26
	5	June 01	66	53	50	1	51	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	113	90	136	0	136	0	+46
	8, 9, 9A, 11, 11A	Oct 01	95	76	103	0	103	0	+27
	12	May/Oct 02	134	107	141	0	141	0	+34
	13	May/Oct 02	70	56	71	0	71	0	+15
	14	Oct 02	150	120	138	6	144	0	+24
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	25	0	25	0	+4

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/ 2004	4B	June 01	256	205	231	0	231	0	+26
	10	Oct 01	126	101	111	13	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	+1
	8, 9, 9A, 11, 11A	Oct 01	95	76	151	0	151	0	+75
	12	May/Oct 02	134	107	118	4	122	0	+15
	13	May/Oct 02	70	56	72	0	72	0	+16
	14	Oct 02	150	120	134	9	143	0	+23
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	17	0	8	0	+11
	17	Oct 02	26	21	24	0	24	0	+3

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	256	205	231	1	232	0	+27
	10	Oct 01	126	101	112	12	124	0	+23
	6, 6A, 7, 8A	June/Oct 01	113	90	89	0	89	0	**-1**
	8, 9, 9A, 11, 11A	Oct 01	95	76	124	2	126	0	+50
	12	May/Oct 02	134	107	131	0	131	0	+24
	13	May/Oct 02	70	56	62	1	63	0	+7
	14	Oct 02	150	120	132	2	134	0	+14
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2
	17	Oct 02	26	21	24	0	24	0	+3
5/23/2005	12	May/Oct 02	134	107	132	0	132	0	+25
	13	May/Oct 02	70	56	75	1	63	0	+7
	14	Oct 02	150	120	142	0	142	0	+22
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	8	6	5	0	5	0	**-1**
	17	Oct 02	26	21	23	0	23	0	+2

TABLE 1
CANOPY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2005	1	May 00	210	168	170	0	170	0	+2
	2	May 00	118	94	100	0	100	0	+6
	3	May 00	34	27	19	0	19	0	**-8**
	4A	Oct 00	142	114	102	0	102	0	**-12**
	5	June 01	66	53	47	0	47	0	**-6**
	12	May/Oct 02	134	107	133	0	133	0	+26
	13	May/Oct 02	70	56	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	14	Oct 02	150	120	134	0	134	0	+14
	15	May 02	---	---	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	16	Oct 02	8	6	Note: No count due to disturbance from Newell Street II Parking Lot Remediation				
	17	Oct 02	26	21	24	0	24	0	+3

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/31 2001	1	May 00	146	117	93	4	97	0	**- 20**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	56	1	57	0	**- 1**
	4, Cell G1	Oct 00	73	58	54	8	62	0	+ 4
	5	Oct 00	73	58	68	4	72	0	+ 14
8/23 2001	1	May 00	146	117	59	34	93	0	**- 24**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	47	2	49	2	**- 9**
	4, Cell G1	Oct 00	73	58	19	17	36	33	**- 22**
	5	Oct 00	73	58	44	19	63	7	+ 5
5/20 2002	1	May 00	146	117	83	34	117	10	0
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	26	26	52	0	**-6**
	4A	Oct 00	73	58	24	19	43	4	**-15**
	4B	June 01	219	175	99	74	173	0	**-2**
	10	Oct 01	73	58	54	20	74	0	+16
	5	June 01	73	58	33	26	59	1	+1
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	46	22	68	0	+10
8/13 2002	1	May 00	146	117	92	16	108	0	**-9**
	2	May 00	---	---	---	---	---	---	---
	3	May 00	73	58	52	2	54	0	**-4**
	4A	Oct 00	73	58	37	3	40	0	**-18**
	4B	June 01	219	175	167	4	171	0	**-4**
	10	Oct 01	73	58	72	4	76	0	+18
	5	June 01	73	58	62	2	64	0	+6
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---
	8, 9, 9A, 11, 11A	Oct 01	73	58	69	1	70	0	+12

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/28 2003	1	May 00	146	117	94	3	97	0	**-20**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	40	1	41	0	**-17**
	4A	Oct 00	73	58	45	6	51	0	**-7**
	4B	June 01	219	175	148	8	156	0	**-19**
	10	Oct 01	73	58	55	4	59	0	+1
	5	June 01	73	58	49	0	49	0	**-9**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	58	0	58	0	0
	12	May/Oct 02	73	58	65	3	68	0	+10
	13	May/Oct 02	73	58	65	1	66	0	+8
	14	Oct 02	146	117	154	3	157	0	+40
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
9/12/ 2003	1	May 00	146	117	95	0	95	0	**-22**
	2	May 00	---	--	---	---	---	---	---
	3	May 00	73	58	53	1	54	0	**-4**
	4A	Oct 00	73	58	52	2	54	0	**-4**
	4B	June 01	219	175	161	2	163	0	**-12**
	10	Oct 01	73	58	56	3	59	0	+1
	5	June 01	73	58	45	0	45	0	**-13**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	47	0	47	0	**-11**
	12	May/Oct 02	73	58	54	0	54	0	**-4**
	13	May/Oct 02	73	58	67	1	68	0	+10
	14	Oct 02	146	117	148	0	148	0	+31
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
5/24/ 2004	4B	June 01	219	175	166	0	166	0	**-9**
	10	Oct 01	73	58	77	1	78	0	+20
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	62	2	64	0	+6
	12	May/Oct 02	73	58	67	1	68	0	+10
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	152	0	152	0	+35
	15	May 02	---	---	---	---	---	---	---
	16	Oct 02	---	---	---	---	---	---	---
	17	Oct 02	---	---	---	---	---	--	---

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2004	4B	June 01	219	175	149	0	149	0	**-26**
	10	Oct 01	73	58	53	3	56	0	**-2**
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--
	8, 9, 9A, 11, 11A	Oct 01	73	58	64	0	64	0	+6
	12	May/Oct 02	73	58	57	0	57	0	**-1**
	13	May/Oct 02	73	58	62	0	62	0	+4
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--
5/23/2005	12	May/Oct 02	73	58	67	0	67	0	+9
	13	May/Oct 02	73	58	54	0	54	0	**-4**
	14	Oct 02	146	117	157	0	157	0	+40
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--

TABLE 2
UNDERSTORY MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance
					Non-stressed	Stressed	Total		
8/17/2005	1	May 00	146	117	127	0	127	0	+10
	2	May 00	---	---	--	--	--	--	--
	3	May 00	73	58	60	0	60	0	+2
	4A	Oct 00	73	58	50	0	50	0	**-8**
	5	June 01	73	58	47	0	47	0	**-6**
	12	May/Oct 02	73	58	133	0	133	0	+26
	13	May/Oct 02	73	58	Note: No count due to disturbance from Newell Street Parking Lot Remediation				
	14	Oct 02	146	117	134	0	134	0	+14
	15	May 02	---	---	--	--	--	--	--
	16	Oct 02	---	---	--	--	--	--	--
	17	Oct 02	---	---	--	--	--	--	--

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center	
5/31/ 2001	1	May 00	82	66	101 (by count)	---	
	2	May 00	--	--	--	---	
	3	May 00	11	9	13 (by count)	---	
	4, Cell G1	Oct 00	74	59	74 (by count)	---	
	5	Oct 00	--	--	--	---	
8/23/ 2001	1	May 00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' – 10 foot section Second 100' – 20 foot section Third 100'	
	2	May 00	--	--	---	--	
	3	May 00	11	9	---	100%	
	4, Cell G1	Oct 00	74	59	Partial	Sparse western 50', with no specimens left last 20'	
	5	Oct 00	--	--	---	---	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/20/ 2002	1	May 00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 50 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	2	May 00	---	---	---	--	
	3	May 00	11	9	Partial	50% of first 50 feet is sparse	
	4A	Oct 00	74	59		First 100' - 100% Second 100' – 100% Third 100' – 100%	Thin for entire section, water stress in some sections
	4B	June 01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 20 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' – 100%	First 100' – missing first 30 foot section	
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/13/ 2002	1	May 00	82	66	First 100' – Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' – Gaps at 7' to 10' interval Third 100' – Gap at 60 foot point	Fourth 100'	
	2	May 00	---	---	---	---	---
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---	
	4A	Oct 00	74	59	First 100' – Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections
	4B	June 01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' – Thin at 90' point	Second 100' Third 100'	
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	Second 100' – Missing 2 plants Fourth 100' – Missing 1 plant	First 100' Third 100' – Partial	18 dead red-osier dogwoods identified over the length of this stretch

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/28/ 2003	1	May 00	82	66	First 100'– Gaps at 30' to 40' interval, and 80' to 100' interval Second 100' – gaps at 105' to 119', 120' to 134', 135' to 200' intervals, all were cut back, some new sprouts Third 100' – plants at 201' to 280' had been topped	---	Extensive herbivorous action on the plants.
	2	May 00	---	---	---	---	
	3	May 00	11	9	Thin at the 24' to 50' interval, several gaps	---	
	4A	Oct 00	74	59	First 100' – Plants in 0 to 33' interval had been topped Second 100' – Plants at 170' to 200' interval were weak and stressed Third 100' – Plants at end of planting area were gone.	---	
	4B	June 01	134	107	First 100' – Topped at 60 to 100' interval Second 100' – Plants all present, but indications of herbivory Third 100' – Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'	
	10	Oct 01	---	---	---	---	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'	
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100' Fourth 100'	
	12	May/Oct 02	67	54	---	First 100' Second 100' – 1 dead plant at 194' and 1 at 198'	
	13	May/Oct 02	59	47	---	Plants all present; though last three were topped	
	14	Oct 02	48	38	---	All present; 26 plants planted in right of way of which 2 were missing	
	15	May 02	10	8	---	Missing 1	
	16	Oct 02	18	14	---	Missing 1	
	17	Oct 02	27	22	---	All present	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
9/12/ 2003	1	May 00	82	66	First 100'– Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' – gaps at 117' to 131; Third 100' – Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard
	2	May 00	---	---	---	---	
	3	May 00	11	9	---	All present	
	4A	Oct 00	74	59	First 100' – Gaps at 18' to 33'; Second 100' – Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard
	4B	June 01	134	107	First 100' – Gap at 69' to 75'; Sixth 100' – Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	5	June 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
9/12/ 2003	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' – Gaps at 0' to 4' and 60' to 65'; Second 100' – Gap at 177' to 181' Third 100' – Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard
	12	May/Oct 02	67	54	First 100' – Gap at 20' to 25'; Second 100' – Gap at 196' to 200' Third 100' – Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing two plants	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	All present	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/24/ 2004	4B	June 01	134	107	Third 100' – Gap at 258'; Fifth 100' – Gap at 580'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard
	10	Oct 01	---	---	---	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard
	13	May/Oct 02	59	47	---	Yes	Meets performance standard
	14	Oct 02	48	38	---	Missing eight plants	Meets performance standard
	15	May 02	10	8	---	Missing five plants	Does not meet performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	Missing three plants	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
8/17/ 2004	4B	June 01	134	107	One gap at 580 feet		Meets performance standard
	10	Oct 01	---	---	---	--	---
	6, 6A, 7, 8A	June/Oct 01	89	71	---	Missing one plant	Meets performance standard
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	None missing	Meets performance standard
	12	May/Oct 02	67	54	---	Missing two plants	Meets performance standard
	13	May/Oct 02	59	47	---	None missing	Meets performance standard
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard
	15	May 02	10	8	---	Missing one plant	Meets performance standard
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard
	17	Oct 02	27	22	---	None missing	Meets performance standard

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center	
5/23/ 2005	12	May/Oct 02	67	54	---	Missing one plant at 15 foot location	Meets performance criteria
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance criteria
	14	Oct 02	48	38	---	Missing two plants	Meets performance criteria
	15	May 02	10	8	---	Missing two plants	Meets performance criteria
	16	Oct 02	18	14	---	None missing	Meets performance criteria
	17	Oct 02	27	22	---	None missing	Meets performance criteria
8/17/ 2005	1	May 00	82	66	---	All present	Meets performance criteria
	2	May 00	---	---	---	---	---
	3	May 00	11	9	---	All present	Meets performance criteria
	4A	Oct 00	74	59	---	All present	Meets performance criteria
	5	June 01	---	---	---	---	---
	12	May/Oct 02	67	54	---	All present	Meets performance criteria
	13	May/Oct 02	59	47	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	14	Oct 02	48	38	---	All present	Meets performance criteria
	15	May 02	10	8	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	16	Oct 02	18	14	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	17	Oct 02	27	22	---	None missing	Meets performance criteria

TABLE 4
GRAPEVINE MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/ 2001	1	May 00	22	18	22	0	22	0	0	
8/23/ 2001	1	May 00	22	18	8	8	16	6	0	
5/20/ 2002	1	May 00	22	18	0	6	6	0	0	
	4B	June 01	22	18	0	5	5	0	0	
	9A	Oct 01	---	---	---	---	---	---	---	
8/13/ 2002	1	May 00	22	18	0	0	0	0	6	
	4B	June 01	22	18	0	13	13	0	6	
	9A	Oct 01	---	---	---	---	---	---	>>18	
5/28/ 2003	1	May 00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	June 01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct 02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	Performance criteria met.

TABLE 4
GRAPEVINE MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-Stressed	Stressed	Total Vines			
9/12/ 2003	1	May 00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes and now growing. As such, exceeds performance standard.
	4B	June 01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	12	Oct 02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/ 2004	4B	June 01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	The number of planted grapes meets the performance criteria.

TABLE 4
GRAPEVINE MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/ 2004	4B	June 01	22	18	10	0	10	0	33	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A, 11, 11A	--	22	18	0	0	0	0	45	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	3	0	3		19	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
5/23/ 2005	12	Oct 02	22	18	3	0	3		25	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
8/17/ 2005	1	May 00	22	18	7	0	7	0	23+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	12	Oct 02	22	18	3	0	3		25+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	18	0	18	0	26+	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.

TABLE 4
GRAPEVINE MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Notes on Herbaceous Coverage Surveys:

a. Due to limitations in stock, area 9A has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003, Upper ½ Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines.

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/23 2001	1	May 00	100%	First 100' ~50% coverage Second 100' ~80% coverage Third 100' ~85% coverage Final 60' ~50% coverage		
	2	May 00	100%	~75% coverage		
	3	May 00	100%	~85% coverage		
	4, Cell G1	Oct 00	100%	First 100' ~45% coverage Second 100' ~75% coverage Third 100' ~85% coverage		
	5	Oct 00	100%	70% coverage		
5/20 2002	1	May 00	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage Final 60' ~80% coverage		
	2	May 00	100%	~85% coverage		
	3	May 00	100%	~85% coverage		
	4A	Oct 00	100%	First 100' ~50% coverage Second 100' ~65% coverage Third 100' ~80% coverage		
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~85% coverage Third 100' ~85% coverage Fourth 100' ~75% coverage Fifth 100' ~75% coverage		
	10	Oct 01	100%	First 100' ~85% coverage Second 100' ~85% coverage		
	5	June 01	100%	~75% coverage		

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/20 2002	6, 6A, 7, 8A	June/ Oct 01	100%	~70% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~70% coverage Second 100' ~50% coverage Third 100' ~75% coverage Fourth 100' – 30% coverage		
8/13/ 2002	1	May 00	100%	Overall ~90% First 100' Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%; Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%; 80' interval ~95%; Second 100' 0 to 15' interval ~85%; 75' ~95%; Third 100' ~100% coverage Final 60' ~100% coverage		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.
	2	May 00	100%	~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May 00	100%	~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/13/ 2002	4A	Oct 00	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~93% coverage Third 100' ~100% coverage Fourth 170' ~95% coverage		Response actions are proposed for one segment of this planting area
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' – 65% coverage		Response actions are proposed for 2 segments of this planting area.
	5	June 01	100%	~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris		Response actions are proposed for one segment of this planting area.
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% with the top of slope being thin Second 100' ~85%		Response actions are proposed for one segment of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~65% coverage Third 100' ~90% coverage Fourth 100' ~80% coverage		Response actions are proposed for 2 segments of this planting area.
5/28 2003	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100'~95% coverage Final 60' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/28 2003	4A	Oct 00	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage		Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage		
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage		
	5	June 01	100%	~95% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~90% coverage		
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage		
	13	May/Oct 02	100%	~95% coverage		
	14	Oct 02	100%	~95% coverage		
	15	May 02	100%	~100% coverage		
	16	Oct 02	100%	~100% coverage		
	17	Oct 02	100%	~100% coverage		

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/ 2003	1	May 00	100%	First 100' ~85% coverage Second 100' ~100% coverage Third 100'~95% coverage Final 60' ~95% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	4A	Oct 00	100%	First 100' ~70% coverage Second 100' ~90% coverage Third 100' ~95% coverage	No	Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~75% coverage Second 100' ~80% coverage Third 100' ~85% coverage Fourth 100' ~85% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions; much of the gaps in coverage were oriented towards the top of the bank
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions
	5	June 01	100%	~90% coverage	No	
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~90% coverage	No	
	14	Oct 02	100%	~90% coverage	No	
	15	May 02	100%	~85% coverage	No	
	16	Oct 02	100%	~85% coverage	No	
	17	Oct 02	100%	~85% coverage	No	
5/24/ 2004	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage Fourth 100' ~95% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	14	Oct 02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	15	May 02	100%	--	--	
	16	Oct 02	100%	~95% coverage	No	
	17	Oct 02	100%	~90% coverage	No	
8/17/ 2004	4B	June 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~95% coverage Fourth 100' ~100% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For areas of herbaceous cover that are less than 100%, the bare spots were small (less than one square foot)

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/17/ 2004	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. Only significant bare areas appear to be associated with recent construction at first section of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	13	May/Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	100% coverage	Yes	

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/23/ 2005	12	May/Oct 02	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	13	May/Oct 02	100%	~85% coverage	No	Herbaceous coverage does not meet performance standard, cause is possibly the time of year and the state of vegetative growth in the area, will reexamine in August monitoring visit
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	---	---	---
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
8/17/ 2005	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100'~95% coverage Final 60' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	2	May 00	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	3	May 00	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	4A	Oct 00	100%	First 100' ~100% coverage Second 100' ~100% coverage Third 100' ~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.
	5	June 01	100%	~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~100% coverage Second 100' ~100% coverage Third 100' ~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.

TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/17/ 2005	13	May/Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	14	Oct 02	100%	~90% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	---	---	---
	16	Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	17	Oct 02	100%	~100% coverage	Yes	Herbaceous cover meets the performance standard. No significant bare areas.

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/23/ 2001	1	May 00	< 5%			bittersweet, purple loosestrife, common mullein, bittersweet nightshade, buckthorn
	2	May 00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus
	3	May 00	< 5%			bittersweet, Morrow's honeysuckle, purple loosestrife
	4, Cell G1	Oct 00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn
	5	Oct 00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosestrife
5/20/ 2002	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard
	2	May 00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge
	3	May 00	< 5%	Approximately 10%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~15% Second 100' ~10% Third 100' <5%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn
	4B	June 01	< 5%	First 100' <10% Second 100' <10% Third 100' <10% Fourth 100' 0% Fifth 100' 0%		Norway maple, bittersweet and garlic mustard
	10	Oct 01	< 5%	<5%		None noted
	5	June 01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose
	6, 6A, 7, 8A	June/ Oct 01	< 5%	<5%		burning bush, garlic mustard, buckthorn
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' <5% Fifth 100' <5%		None noted

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
8/13/ 2002	1	May 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Final 60' ~5%		buckthorn, bittersweet, garlic mustard, purple loosestrife
	2	May 00	< 5%	~10%		cypress spurge
	3	May 00	< 5%	~5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge
	4A	Oct 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosestrife, cypress spurge
	4B	June 01	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Fourth 170' <5%		Norway maple, purple loosestrife, bittersweet and garlic mustard,
	10	Oct 01	< 5%	~5%		Purple loosestrife
	5	June 01	< 5%	~5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5% Fourth 100' <5%		purple loosestrife, bittersweet, garlic mustard, cypress spurge
5/28/ 2003	1	May 00	< 5%	First 100' ~5% Second 100' ~7% Third 100' ~5% Final 60' <5%		bittersweet, garlic mustard
	2	May 00	< 5%	~10%		cypress spurge, bittersweet, garlic mustard
	3	May 00	< 5%	~10%		bittersweet, cypress spurge, garlic mustard

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	4A	Oct 00	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5%		bittersweet, cypress spurge, garlic mustard
	4B	June 01	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%		bittersweet and garlic mustard
	10	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' ~5%		bittersweet and garlic mustard
	5	June 01	< 5%	~7%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5% Third 100' ~5% Fourth 100' ~5%		garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' >5% Fourth 100' >5%		bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' >5%		garlic mustard, bittersweet
	13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%		garlic mustard, bittersweet
	15	May 02	< 5%	>5%		garlic mustard, bittersweet
	16	Oct 02	< 5%	>5%		garlic mustard, bittersweet
	17	Oct 02	< 5%	>5%		garlic mustard, bittersweet

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
9/12/ 2003	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard
	2	May 00	< 5%	<5%	Yes	cypress spurge, buckthorn
	3	May 00	< 5%	~5 - 10%	No	cypress spurge, buckthorn
	4A	Oct 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard
	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard
	5	June 01	< 5%	<5%	Yes	Japanese knotweed, bittersweet
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	14	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	15	May 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
	17	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet
5/24/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge
	12	May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge
	13	May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet
	14	Oct 02	< 5%	<5%	Yes	Garlic mustard, bittersweet

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	15	May 02	< 5%	--	--	Garlic mustard, bittersweet
	16	Oct 02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed
	17	Oct 02	< 5%	<5%	Yes	Bittersweet
8/17/ 2004	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Buckthorn, purple loosestrife
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, bittersweet
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge, multi-flora rose, Norway maple
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge
	13	May/Oct 02	< 5%	<5%	Yes	Purple loosestrife, bittersweet, multiflora rose
	14	Oct 02	< 5%	<5%	Yes	
	15	May 02	< 5%	<5%	Yes	Purple loosestrife
	16	Oct 02	< 5%	<5%	Yes	Purple loosestrife

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	17	Oct 02	< 5%	<5%	Yes	Purple loosestrife
5/23/ 2005	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Cypress spurge, garlic mustard
	13	May/Oct 02	< 5%	<5%	Yes	Cypress spurge, garlic mustard
	14	Oct 02	< 5%	<10%	No	Cypress spurge
	15	May 02	< 5%	---	---	
	16	Oct 02	< 5%	<5%	Yes	
	17	Oct 02	< 5%	<5%	Yes	
8/17/ 2005	1	May 00	100%	First 100' <5% Second 100' <5% Third 100'<5% Final 60' <5%	Yes	
	2	May 00	100%	<5%	Yes	
	3	May 00	100%	<5%	Yes	
	4A	Oct 00	100%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	
	5	June 01	100%	5%	Yes	Marginally meets performance standard; bittersweet, barberry, Japanese knotweed
	12	May/Oct 02	100%	First 100' <5% Second 100' <5%	Yes	

TABLE 6
INVASIVE SPECIES MONITORING RESULTS

SUMMER 2005 RESTORED BANK VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species
	13	May/Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	14	Oct 02	100%	<5%	Yes	
	15	May 02	100%	<5%	Yes	
	16	Oct 02	100%	Note: No count due to disturbance from Newell Street Parking Lot Remediation		
	17	Oct 02	100%	<5%	Yes	

AQUATIC STRUCTURES/ARMOR STONE MONITORING DATA SHEETS

Monitoring Date: 8/16/2005

Persons Conducting the Monitoring: Chuck Harman and Mike Chelminski

Daily Stream Flow at Time of Monitoring (Based on USGS Station Coltsville, MA):

General River Stage/Depth Observations: River stage was low, the majority of the structures were exposed for obersvation

General Weather Observations: Weather partly cloudy with temps in the 80's

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
B	1. Single wing deflector	 1. Structures appear stable 2. Structure induced variations observed in areas immediately downstream of the deflector

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
C	1. Boulders 2. Island	 1. Structures appear stable 2. Structure induced variations observed in areas immediately downstream of the island 3. The island is become well vegetated with wetland herbaceous species and cottonwood seedlings 4. Boulders near island are causing scouring in the
D	1. Boulders	1. Structure appeared stable, no issue or concern 2. Structure was function and providing variation in habitat
G2/F2	1. W-weir	 1. Much of the weir is buried in soft silt/sand; portion that is present appears to offer good cover for aquatic organisms 2. Several small fish seen in the vicinity of the weir

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
G3	1. Three-boulder cluster	1. Structure appeared stable, no issue or concern 2. Structure was function and providing variation in habitat
F3	1. Three-boulder cluster 2. Two-boulder cluster 3. Three-boulder cluster	  1. All structures in this cell appear stable. 2. Structures appear to be providing diversity in habitat 3. Some small fish seen in the vicinity of the three boulder cluster (seen in top photo) 4. Freshwater mussel (seen in center of the lower photo) was observed in cell F3 towards the centerline of the river

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
H1	1. Boulder cluster	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
I1/J1	1. Rock weir	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography 3. Some small fish observed in the vicinity of this structure
H2	1. Single boulder	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
J1	1. Two-boulder cluster 2. Three-boulder cluster 3. Single-boulder	1. Structures appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structures producing variations in stream bottom topography

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
J2	1. "J"- boulder formation	 1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
I3	1. Single-wing deflector	 1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
I3/J3	1. Vortex rock weir	 1. Structure appears stable and is providing diversity in habitat 2. In the photo, note the break in the stream flow resulting from the weir presence 3. Good habitat, variations in velocity around structure producing variations in stream bottom topography
J3	1. Boulder cluster 2. Three-boulder cluster 3. Three-boulder cluster	1. Structures appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structures producing variations in stream bottom topography

Photograph 1: August 2005; Planting Areas 1 and 2

Photograph 2: August 2005; Planting Area 3

Photograph 3: August 2005; Planting area 4A

Photograph 4: August 2005; Planting Area 12

Photograph 5: August 2005; Planting Area 14

Photograph 6: August 2005; Planting Area 16 showing impacts of ongoing remedial action work

Photograph 7: August 2005; Planting Area 17

Appendix D

Results of Aquatic Habitat Enhancement Structures Monitoring

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

AQUATIC STRUCTURES/ARMOR STONE MONITORING DATA SHEETS

Monitoring Date: 8/16/2005

Persons Conducting the Monitoring: Chuck Harman and Mike Chelminski

Daily Stream Flow at Time of Monitoring (Based on USGS Station Coltsville, MA): 16 cfs

General River Stage/Depth Observations: River stage was low, the majority of the structures were exposed for observation

General Weather Observations: Weather partly cloudy with temps in the 80's

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
B	1. Single wing deflector	 1. Structures appear stable 2. Structure induced variations observed in areas immediately downstream of the deflector

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
C	1. Boulders 2. Island	 1. Structures appear stable 2. Structure induced variations observed in areas immediately downstream of the island 3. The island has become well vegetated with wetland herbaceous species and cottonwood seedlings 4. Boulders near island are causing scouring in the immediate area; and appear to be providing good cover
D	1. Boulders	1. Structure appeared stable, no issue or concern 2. Structure was function and providing variation in habitat
G2/F2	1. W-weir	 1. Much of the weir is buried in soft silt/sand; portion that is present appears to offer good cover for aquatic organisms 2. Several small fish seen in the vicinity of the weir

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
G3	1. Three-boulder cluster	1. Structure appeared stable, no issue or concern 2. Structure was function and providing variation in habitat
F3	1. Three-boulder cluster 2. Two-boulder cluster 3. Three-boulder cluster	  1. All structures in this cell appear stable. 2. Structures appear to be providing diversity in habitat 3. Some small fish seen in the vicinity of the three boulder cluster (seen in top photo) 4. Freshwater mussel (seen in center of the lower photo) was observed in cell F3 towards the centerline of the river

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
H1	1. Boulder cluster	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
I1/J1	1. Rock weir	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography 3. Some small fish observed in the vicinity of this structure
H2	1. Single boulder	1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
J1	1. Two-boulder cluster 2. Three-boulder cluster 3. Single-boulder	1. Structures appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structures producing variations in stream bottom topography

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
J2	1. "J"- boulder formation	 1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography
I3	1. Single-wing deflector	 1. Structure appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structure producing variations in stream bottom topography

Cell	Aquatic Structures	Armor Stone Condition/General Biological Observations
I3/J3	1. Vortex rock weir	 1. Structure appears stable and is providing diversity in habitat 2. In the photo, note the break in the stream flow resulting from the weir presence 3. Good habitat, variations in velocity around structure producing variations in stream bottom topography
J3	1. Boulder cluster 2. Three-boulder cluster 3. Three-boulder cluster	1. Structures appears stable and is providing diversity in habitat 2. Good habitat, variations in velocity around structures producing variations in stream bottom topography