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Via Electronic Mail

July 12, 2021

Mr. Dean Tagliaferro
EPA Project Coordinator
U.S. Environmental Protection Agency
c/o HDR, Inc.
10 Lyman Street, Suite 2
Pittsfield, MA 01201

Re: GE-Pittsfield/Housatonic River Site
Rest of River (GECD850)
Revised Rest of River Statement of Work

Dear Mr. Tagliaferro:

In accordance with EPA's conditional approval letter dated May 26, 2021, for General Electric Company's (GE's) June 2020 Statement of Work (SOW) for the Rest of River Remedial Action, enclosed for EPA's review and approval is GE's Revised Rest of River SOW. This Revised SOW incorporates changes to take account of the Revised Final Rest of River Permit issued by EPA in December 2020 and to address EPA's comments in the attachments to its May 26, 2021 letter. Given that the Revised Permit has been appealed by other parties to the EPA Environmental Appeals Board, GE has developed this Revised SOW and will submit the deliverables specified in it and implement the investigation and design activities specified in those deliverables as a contractual obligation under the February 2020 Settlement Agreement until the Revised Permit is fully effective.

Please let me know if you have any questions about this Revised SOW.

Very truly yours,

Andrew T. Silfer (MJW)

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

Enclosure

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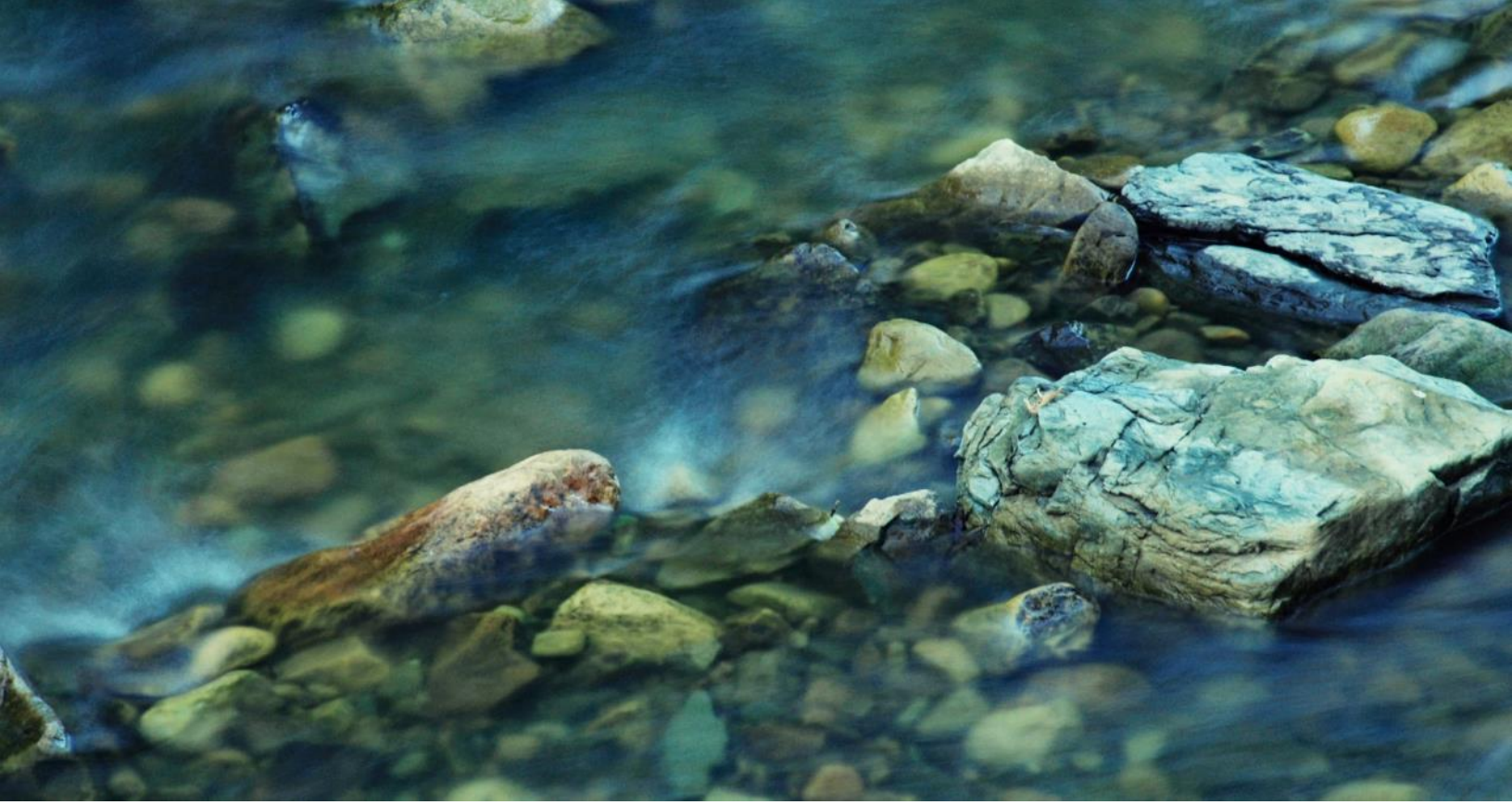

Revised July 2021
GE-Pittsfield/Housatonic River Site

ANCHOR QEA AECOM ARCADIS

Rest of River Statement of Work

Revised July 2021
GE-Pittsfield/Housatonic River Site

Rest of River Statement of Work

Prepared for
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Project Number: **210469-06.01**

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ATTACHMENTS

Attachment A Settlement Agreement (February 2020)

Attachment B Final Revised RCRA Permit (issued December 16, 2020)

ABBREVIATIONS

AAMP	Ambient Air Monitoring Plan
AC	activated carbon
APE	Area of Potential Effects
ARARs	Applicable or Relevant and Appropriate Requirements
BANCS	Bank Assessment for Non-point source Consequences of Sediment
BEHI	Bank Erosion Hazard Index
BMP	Baseline Monitoring Plan
BRA	Baseline Restoration Assessment
CD	Consent Decree
CEPP	Contingency and Emergency Procedures Plan
CFR	Code of Federal Regulations
cfs	cubic feet per second
CMR	Code of Massachusetts Regulations
CQAP	Construction Quality Assurance Plan
CMS Proposal	*Housatonic River – Rest of River, Corrective Measures Study Proposal*
CRA	Cultural Resources Assessment
EA	Exposure Area
EAB	Environmental Appeals Board
EMNR	enhanced monitored natural recovery
EPA	U.S. Environmental Protection Agency
ERE	Grant of Environmental Restriction and Easement
FSP/QAPP	Field Sampling Plan/Quality Assurance Project Plan
GE	General Electric Company
GPR	Ground-Penetrating Radar
HASP	Health and Safety Plan
HI	Hazard Index
IMM Plan	Inspection, Monitoring, and Maintenance Plan
IPaC	Information, Planning, and Consultation System
kg/yr	kilograms per year
M&M	Monitoring and Maintenance
Mass Audubon	Massachusetts Audubon Society
mg/kg	milligrams per kilogram
MNHESP	Massachusetts Natural Heritage and Endangered Species Program
MNR	monitored natural recovery
NBS	Near Bank Stress
NHPA	National Historic Preservation Act

NRHP	National Register of Historic Places
OMM Plan	Operation, Monitoring, and Maintenance Plan
PCB	polychlorinated biphenyl
PDI	pre-design investigation
POP	Project Operations Plan
PSA	Primary Study Area
QA/QC	quality assurance/quality control
QOL	Quality of Life
RCMS Report	*Housatonic River – Rest of River, Revised Corrective Measures Study Report*
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RME	Reasonable Maximum Exposure
ROR	Rest of River
SIP	Supplemental Information Package
SOW	Statement of Work
SRHP	State Register of Historic Places
T&D	Transportation and Disposal
TCP	Traditional Cultural Properties
TSCA	Toxic Substances Control Act
UDF	Upland Disposal Facility
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1 Introduction and Purpose

1.1 Background

The Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site was executed in 1999 by the General Electric Company (GE), the United States, the Commonwealth of Massachusetts, the State of Connecticut, and other entities and was approved by the federal district court in 2000 (EPA/GE 2000). It established performance standards and other requirements relating to the cleanup of GE's facility in Pittsfield, Massachusetts, the portion of the Housatonic River between GE's facility and the confluence of the East and West Branches of the Housatonic River (the Confluence) in Pittsfield, and other adjacent and nearby areas. It also addressed the Rest of River (ROR), defined as that portion of the Housatonic River and its backwaters and floodplain (excluding Actual/Potential Lawns as defined in the CD) located downstream of the Confluence. For the ROR, the CD established a process for the investigation and evaluation of that area and, ultimately, for the U.S. Environmental Protection Agency (EPA) to select a Remedial Action as a modification to a pre-existing Corrective Action Permit under the Resource Conservation and Recovery Act (RCRA), subject to appeal to the EPA Environmental Appeals Board (EAB) and the U.S. Court of Appeals for the First Circuit.

EPA issued such a permit modification on October 20, 2016 (referred to herein as the 2016 Permit), setting forth a selected Remedial Action for the ROR (EPA 2016). GE and several other parties filed petitions for review of the 2016 Permit in the EAB.

Paragraph 22.x of the CD requires GE to submit a Statement of Work (SOW) for the implementation of the Corrective Measures that comprise the ROR Remedial Action in accordance with the applicable permit modification. The requirements for the SOW were provided in Section II.H of the 2016 Permit. However, most of the provisions of the 2016 Permit were stayed due to the appeals to the EAB, either as contested by those appeals or as non-severable from contested provisions. On January 9, 2017, EPA sent a letter to GE identifying the contested and non-severable conditions that were stayed and the uncontested and severable conditions that were not stayed, which became enforceable conditions of the 2016 Permit on January 12, 2017 (EPA 2017a). These included only a limited number of the subsections of Section II.H of the 2016 Permit relating to the SOW requirements.

On May 11, 2017, GE submitted an initial version of the SOW (referred to herein as the Initial SOW) that addressed only the components of the ROR Remedial Action that were described in those subsections of Section II.H of the 2016 Permit listed in EPA's January 9, 2017 letter as uncontested and severable (Anchor QEA 2017). The Initial SOW was conditionally approved by EPA on July 10, 2017 (EPA 2017b).

On January 26, 2018, the EAB issued its decision in the appeals, upholding EPA's remedy in some respects and remanding certain issues to EPA for reconsideration (EAB 2018). Subsequently, EPA, GE, and other parties involved in the appeals negotiated and reached a Settlement Agreement, which became effective on February 10, 2020. A copy of that Settlement Agreement is attached as Attachment A hereto. That Settlement Agreement included several modifications to the remedy specified in the 2016 Permit. However, those modifications were not effective unless and until they were incorporated into a further revision of the 2016 Permit consistent with the Settlement Agreement. Nevertheless, in the Settlement Agreement, GE agreed to commence and perform investigation and design work as contractual obligations thereunder effective upon the date on which all parties signed that agreement (February 10, 2020). In accordance with that commitment, GE submitted a ROR SOW to EPA as a contractual matter on June 9, 2020 (Anchor QEA et al. 2020).

In July 2020, EPA issued a draft of a further revised modified permit for public comment. After receipt of public comments, EPA issued a final Revised Permit on December 16, 2020 (referred to herein as the Revised Permit) incorporating key elements of the Settlement Agreement (EPA 2020). A copy of that Revised Permit is attached as Attachment B hereto and is incorporated by reference herein. Two entities, the Housatonic River Initiative and the Housatonic Environmental Action League, have appealed the Revised Permit to the EAB.

On May 26, 2021, EPA issued a conditional approval letter for the June 2020 SOW and directed GE to submit a revised SOW in accordance with the conditions in that letter (EPA 2021). This document constitutes the Revised SOW.

1.2 Purpose and Scope of Statement of Work

This Revised SOW is a conceptual plan for the implementation of Corrective Measures for the ROR. It covers all components of the Revised Permit. It describes and summarizes the work plans and other investigation and design deliverables that GE will submit and the investigations and design activities that GE will perform to implement the Revised Permit. Each deliverable specified herein will contain more details and will be submitted to EPA for its review and approval, after a reasonable opportunity for review and comment by the Commonwealth of Massachusetts and the State of Connecticut. As provided in Section II.A of the Revised Permit, all activities described in this Revised SOW will be conducted pursuant to the Revised Permit and the CD under the oversight and approval of EPA; and all EPA approvals, disapprovals, or modifications of deliverables will be pursuant to Section XV of the CD. In addition, as also provided in Section II.A of the Revised Permit, EPA has made specific commitments to coordinate and consult with stakeholders throughout the design and implementation of the activities described in the Revised Permit. In these circumstances, this Revised SOW is not intended to contain or summarize all of the details of each work plan or other deliverable submitted hereunder.

This Revised SOW does not modify or terminate any provision of the Revised Permit. In the event that there is any substantive difference between this SOW and the Revised Permit, the Revised Permit will control. Further, given that the Revised Permit has been appealed to the EAB, GE has developed this Revised SOW and will submit the investigation and design deliverables specified herein and implement the investigation and design activities specified in those deliverables (as approved by EPA) as contractual obligations under the Settlement Agreement until such time as the Revised Permit is fully effective.

1.3 Site Description and Identification of Evaluation Areas

The ROR area consists of the portion of the Housatonic River and its backwaters and floodplain (excluding portions of certain residential properties) downstream of the Confluence (located approximately two miles downstream from the GE facility in Pittsfield). The ROR area is shown on Figure 1-1 and identified according to river reach designations established by EPA. Subreaches within Reaches 5 through 8 are shown on Figure 1-2. The ROR reaches and subreaches are as follows (from upstream to downstream):

- Reach 5, from the Confluence downstream to Woods Pond (the first significant impoundment). This reach is further divided into the following subreaches:
  - Reach 5A (Confluence to the Pittsfield Wastewater Treatment Plant)
  - Reach 5B (Pittsfield Wastewater Treatment Plant to Roaring Brook)
  - Reach 5C (Roaring Brook to the start of Woods Pond)

  Reach 5 also contains several backwater areas adjacent to the Housatonic River, particularly in the more downstream portion of the reach (these backwaters are sometimes referred to as Reach 5D in past project documents but not in the Revised Permit)
- Reach 6, Woods Pond
- Reach 7, Woods Pond Dam to Rising Pond (the next significant impoundment). This reach is further divided into the following subreaches:
  - Reach 7A (Woods Pond Dam to the Columbia Mill Dam Impoundment)
  - Reach 7B (Columbia Mill Dam Impoundment)
  - Reach 7C (Former Eagle Mill Dam Impoundment)
  - Reach 7D (Former Eagle Mill Dam to the Willow Mill Dam Impoundment)
  - Reach 7E (Willow Mill Dam Impoundment)
  - Reach 7F (Willow Mill Dam to the Glendale Dam Impoundment)
  - Reach 7G (Glendale Dam Impoundment)

  - Reach 7H (Glendale Dam to Rising Pond)
- Reach 8, Rising Pond
- Reach 9, Rising Pond Dam to the Massachusetts/Connecticut border
- Reach 10, Massachusetts/Connecticut border to Falls Village Dam
- Reach 11, Falls Village Dam to Cornwall Bridge
- Reach 12, Cornwall Bridge to Bulls Bridge Dam
- Reach 13, Bulls Bridge Dam to Bleachery Dam
- Reach 14, Bleachery Dam to Shepaug Dam (Lake Lillinonah)
- Reach 15, Shepaug Dam to Stevenson Dam (Lake Zoar)
- Reach 16, Stevenson Dam to Lake Housatonic Dam (Lake Housatonic)
- Reach 17, Lake Housatonic Dam to Long Island Sound

Section 2 of the *Housatonic River – Rest of River, Corrective Measures Study Proposal* (CMS Proposal; Arcadis et al. 2007) provided a more detailed description of the ROR area, including: (1) characteristics and landmarks associated with the river reaches; and (2) watershed, river, and floodplain characteristics. It also provided a summary of the nature and extent of polychlorinated biphenyls (PCBs) in sediment, surface water, floodplain and riverbank soil, and biota, as well as a conceptual site model indicating that the highest concentrations and greatest mass of PCBs are found in Reaches 5 and 6 – also known as the Primary Study Area (PSA) – with considerably lower concentrations downstream of Woods Pond Dam.

1.4 Summary of Initial Statement of Work

As described in Section 1.1, GE submitted an Initial SOW to EPA on May 11, 2017, that was conditionally approved by EPA on July 10, 2017. The Initial SOW described the content and schedule for the uncontested and severable (non-stayed) deliverables identified in Section II.H of the 2016 Permit in accordance with EPA's January 9, 2017 letter. For completeness, the non-stayed deliverables included in the Initial SOW have been incorporated into this full Revised SOW for the ROR; a summary of those deliverables, including their status as of the date of submittal of this SOW, is included in Section 4.

1.5 Format of Statement of Work

The remainder of this Revised SOW is organized into the following five sections:

- Section 2 presents a summary of the Performance Standards and Corrective Measures for the ROR Remedial Action, as described in Section II.B of the Revised Permit.

- Section 3 presents a conceptual approach to dividing the ROR into separate "Remediation Areas" for the purposes of remedial design and construction and a conceptual sequencing approach to be used for the ROR Remedial Action. The establishment of these areas or segments will support a logical and efficient sequencing of investigation, evaluation, design, and remediation activities. Additional details regarding segmentation and sequencing will be provided in a separate future deliverable – the Overall Strategy and Schedule for Implementation of the Corrective Measures – as required by the Revised Permit.
- Section 4 provides a summary of the anticipated pre-construction deliverables that will be developed and submitted to EPA to describe and support the activities that GE will conduct before construction begins. They are divided into three primary categories of (1) pre-design/design support deliverables, (2) remedial design deliverables, and (3) remedial action deliverables. For the pre-design and design categories, the deliverables have been further grouped into the following three sub-categories: (a) deliverables that are anticipated to be applicable on an overall site-wide basis; (b) deliverables that are specific to design, construction, and operation of the Upland Disposal Facility (UDF); and (c) deliverables that will be developed separately for each of the ROR Remediation Areas (to be proposed in the Overall Strategy and Schedule for Implementation of the Corrective Measures document). This section also includes a description of other required deliverables that are not specifically related to pre-design, remedial design, or remediation activities.
- Section 5 describes the content of required post-construction deliverables.
- Section 6 provides an initial schedule for submittal of the required deliverables described in this Revised SOW. A more detailed schedule will be provided in the Overall Strategy and Schedule submittal.

2 Summary of Performance Standards and Corrective Measures

Section II.H of the Revised Permit requires that the SOW incorporate the Performance Standards and Corrective Measures from that Revised Permit. Therefore, the following sections provide a summary of those Performance Standards and Corrective Measures described in Revised Permit Section II.B. This section constitutes only a summary; more specific details are provided in the Revised Permit. To the extent that there is any substantive difference between this Revised SOW and the Revised Permit, the Revised Permit will control.

2.1 General Performance Standards

2.1.1 Downstream Transport Performance Standard

Section II.B.1.a of the Revised Permit lists the first of three general performance standards—Downstream Transport of PCBs. That standard specifies the future allowable PCB load passing Woods Pond Dam and Rising Pond Dam, as summarized in Table 2-1.

Table 2-1
Downstream Transport Performance Standard

Woods Pond		Rising Pond	
Average Daily Flow at Woods Pond Dam Gage (cfs)[1]	**Average Annual PCB Load (kg/yr)**	**Average Daily Flow at Great Barrington USGS Gage (cfs)[1]**	**Average Annual PCB Load (kg/yr)**
≤ 325	2.2	≤ 485	1.9
> 325 ≤ 395	2.8	> 485 ≤ 600	2.4
> 395 ≤ 1,450	3.3	> 600 ≤ 2,670	4.0
> 1,450	NA	> 2,670	NA

Notes:

1. The calculated arithmetic average of the average daily flows on days when samples are collected will determine the flow bin for a given year.

cfs: cubic feet per second
kg/yr: kilograms per year

An exceedance of this standard will occur if the annual average PCB load exceeds the standard for the corresponding river flow bin at either location in three or more years within any five-year period following completion of remediation activities. It is anticipated that the standards will be achieved through completion of the various Corrective Measures described in Section II.B of the Revised Permit. However, in the event that one or more of these standards are exceeded, GE will evaluate and identify the potential cause(s) of the exceedance and propose (to EPA for review and approval) additional actions necessary to achieve and maintain the subject standard(s), and EPA will determine any such additional actions in accordance with the CD.

Details regarding measurement of compliance with the Downstream Transport Performance Standards are provided in Sections II.B.1.a.(2)(a) through (g) of the Revised Permit. These details, along with any other provisions related to compliance with these standards, will be included in the Performance Standards Compliance Plan described in Section 5.3.

2.1.2 Biota Performance Standards

Section II.B.1.b of the Revised Permit specifies both short-term and long-term biota standards as follows:

- The short-term biota Performance Standard is an average total PCB concentration of 1.5 milligrams per kilogram (mg/kg) wet weight, skin off, in fish fillets in each reach of the river and backwaters.[1] This standard is to be achieved within 15 years of completion of construction-related activities for that reach (or if the reach is subject to monitored natural recovery [MNR], upon completion of the closest upstream reach subject to active remediation). An exceedance of this standard will occur in the event that the standard is exceeded in any two consecutive monitoring periods after the 15-year period. It is anticipated that this standard will be achieved through completion of the various Corrective Measures described in Section II.B of the Revised Permit. However, in the event that this standard is exceeded, GE will evaluate and identify the potential cause(s) of the exceedance and propose (to EPA for review and approval) additional actions necessary to achieve and maintain the standard, and EPA will determine any such additional actions in accordance with the CD.
- The long-term biota monitoring Performance Standard is to continue to monitor (even after the Short-Term Biota Performance Standard has been attained) the expected reduction in biota PCB concentrations and the progress toward achieving average total PCB concentrations of: 0.064 mg/kg, wet weight, skin off, in fish fillets in each reach of the river and associated backwaters in Massachusetts;[2] 0.00018 mg/kg, wet weight, skin off, in fish fillets in each reach of the river in Connecticut;[3] and 0.075 mg/kg in duck breast tissue in all areas along the river.[4]

[1] This standard was based on the estimate, in EPA's probabilistic risk assessment of fish consumption by humans, of the PCB concentration corresponding to a non-cancer Hazard Index (HI) of 1 for the Central Tendency Exposure of adults to PCBs in fish fillets.

[2] This criterion was based on the estimate, in EPA's probabilistic risk assessment of fish consumption by humans, of the PCB concentration associated with an excess cancer risk of 1×10^{-5} for the Reasonable Maximum Exposure (RME) of both young children and adults to PCBs in fish fillets.

[3] This criterion was developed by the State of Connecticut.

[4] This criterion was based on the estimate, in EPA's probabilistic risk assessment of waterfowl consumption by humans, of the PCB concentration associated with an excess cancer risk of 1×10^{-5} for the RME exposure of both young children and adults to PCBs in duck breast consumed.

GE will propose a methodology to evaluate compliance with the Short-Term Biota Performance Standard, as well as a plan for longer-term monitoring of biota after the Short-Term Biota Performance Standard has been achieved, in the Performance Standards Compliance Plan (see Section 5.3).

2.1.3 Restoration of Areas Disturbed by Remediation Activities

As provided in Section II.B.1.c.(1) of the Revised Permit, the Performance Standards for restoration of disturbed areas are to: (1) implement a comprehensive program of restoration measures to address the impacts of the Corrective Measures on affected ecological resources, species, and habitats, including, but not limited to, riverbanks, riverbed, floodplain, wetland habitat, and the occurrence of threatened, endangered, or other state-listed species and their habitats; and (2) return areas disturbed by remediation activities to pre-remediation conditions (e.g., the functions, values, characteristics, vegetation, habitat, species use, and other attributes) to the extent feasible and consistent with the remediation requirements. Under Section II.B.1.c.(2), these Performance Standards will be achieved through a program designed to address the potential impacts of remediation, which will be specified in the following series of documents: (1) a Baseline Restoration Assessment (BRA) Work Plan (see Section 4.2.1.4); (2) a Restoration Performance Objectives and Evaluation Criteria report (see Section 4.2.1.6); (3) Restoration Corrective Measures Coordination Plans (see Section 4.3.3.5); and (4) Restoration Plans (see Section 4.3.3.6).

2.2 River Sediment and Banks

Section II.B.2 of the Revised Permit describes Performance Standards and Corrective Measures for river sediments and banks throughout the ROR. Those Performance Standards and Corrective Measures that relate to specified remedial activities in the designated ROR reaches are summarized in Sections 2.2.1 through 2.2.8 for each reach of the river based on the provisions of Revised Permit Sections II.B.2.a through II.B.2.h. Section II.B.2.i of the Revised Permit describes the Performance Standards for engineered caps that will be included in several reaches; those standards are summarized in Section 2.2.9. Finally, Revised Permit Sections II.B.2.j through I.B.2.l set forth Performance Standards and Corrective Measures for additional response actions that GE will be required to perform to address river sediment and banks under certain future conditions; those requirements are summarized in Sections 2.2.10 through 2.2.12.

The Revised Permit requires that the riverbank and sediment remediation to be performed in all reaches, including the installation of engineered caps where required, result in no net loss of flood storage capacity and no increase of water surface elevation; for the sake of brevity, this requirement has been provided here and is not stated in each of the following subsections.

2.2.1 Reach 5A

Section II.B.2.a of the Revised Permit provides that riverbed sediment throughout Reach 5A will be removed and that an engineered cap (see Section 2.2.9) will be placed over the entire riverbed. Removal and capping activities must generally use engineering methods employed from within the river channel or other methods approved by EPA. Section II.B.2.a requires further that contaminated soil from eroding riverbanks in Reach 5A be removed based on the following conditions:

- A bank is considered contaminated if it contains discrete total PCB concentrations greater than or equal to 5 mg/kg in the surficial one foot of soil. Delineation of bank areas exceeding this criterion will be determined based on data to be collected during pre-design activities pursuant to the sampling requirements in Section II.B.2.a.(2) of the Revised Permit.
- A bank is considered erodible if the Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS) rating is classified as "Moderate-High" or greater using the Bank Assessment for Non-point source Consequences of Sediment (BANCS) model.

Under the Revised Permit, riverbank areas in Reach 5A meeting both of the above conditions are subject to removal. Excavated riverbanks will be reconstructed to minimize erosion considering the principles of Natural Channel Design and to result in a channel that is in dynamic equilibrium, balances flow and sediment loads, and reduces erosive forces.

In addition, Revised Permit Section II.B.2.a.(2)(c) provides that for Reach 5A banks that do not require remediation based on the criteria described above, GE will evaluate the PCB data, erosion potential, adjacent floodplain removal (if any), constructability issues, and likelihood of future downstream transport at such concentrations should such banks erode, and based on these factors, consider supplemental riverbank removal and propose any further action consistent with its evaluation.

2.2.2 Reach 5B

Section II.B.2.b of the Revised Permit states that riverbed sediment in Reach 5B associated with each discrete sample with a total PCB concentration greater or equal to 50 mg/kg in the surficial one foot of sediment will be removed and the excavation backfilled. Subsequent to excavation and backfilling in such areas (if any), enhanced monitored natural recovery (EMNR) will be implemented throughout the remainder of Reach 5B. EMNR methods will include placement of an amendment such as activated carbon (AC) or other comparable materials to be proposed by GE (and approved by EPA) throughout Reach 5B to reduce the bioavailability of the remaining PCBs in the sediment bed.

In addition, riverbank soils in Reach 5B with a total PCB concentration greater than or equal to 50 mg/kg in the surficial one foot of soil will be removed, and disturbed banks will be reconstructed using bioengineering methods to minimize erosion and reduce downstream transport of the residual PCBs in bank soil. Similar to the Performance Standards for Reach 5A, Revised Permit

Section II.B.2.b.(2)(c) requires that for riverbanks in Reach 5B that do not require remediation based on the criteria described above, GE will evaluate the PCB data, erosion potential, adjacent floodplain removal (if any), constructability issues, and likelihood of future downstream transport at such concentrations should such banks erode, and based on these factors, consider supplemental riverbank removal and propose any further action consistent with its evaluation.

Delineation of excavation areas exceeding the 50 mg/kg PCB criterion in sediments and riverbank soils for Reach 5B will be determined based on data to be collected during pre-design activities pursuant to the sampling requirements in Section II.B.2.b.(2) of the Revised Permit.

2.2.3 Reach 5C

Section II.B.2.c of the Revised Permit requires that sediments in Reach 5C, including sediments in any area with a total PCB concentration greater or equal to 50 mg/kg, must be removed as necessary to achieve a spatial average total PCB concentration of 1 mg/kg (or less) in both the top one foot of sediment and in subsurface sediment in each averaging area and depth interval. Such removal will be followed by the placement of a minimum of six inches of backfill in areas of the reach that required removal. Backfill material will have characteristics similar to existing sediment and will be placed such that it results in a final grade that is generally consistent with original grade or modifications as approved by EPA considering the principles of Natural Channel Design.

To implement these Performance Standards, GE will include in the relevant pre-design investigation (PDI) work plan a sediment sampling proposal, proposed averaging areas and depth intervals in Reach 5C, and a proposed method for averaging surface and subsurface PCB concentrations—all in accordance with Section II.B.2.c.(2)(a) of the Revised Permit. Delineation of remediation areas needed to achieve this concentration criterion for Reach 5C will be determined based on data to be collected during pre-design sampling activities.

Sections II.B.2.c.(1)(c) and II.B.2.c.(2)(b) of the Revised Permit require that, for remediation in Reach 5C, GE will implement a dredging or wet excavation technique approved by EPA and, if feasible, a hydraulic pumping approach, with material from these areas pumped directly to the UDF support area. Only those materials that meet the criteria for disposal in the UDF (see Section 2.5 below) will be disposed of in the UDF. Any materials that do not meet those criteria will be dewatered at the UDF support area and transported off site for disposal in accordance with Revised Permit Section II.B.6.a.(1). To the extent that a hydraulic pumping approach is not feasible, GE will transport material from Reach 5C to the UDF via trucks while avoiding driving on public roads to the maximum extent practicable. Any sediments that do not meet the criteria for disposal at the UDF will be transported off site.

2.2.4 Backwaters Adjacent to Reaches 5, 6, and 7

The Performance Standards for backwaters are specified in Section II.B.2.d of the Revised Permit. These Performance Standards have separate requirements for portions of backwaters located within and outside of Core Area 1 Priority Habitat[5] and for surface (top one foot) and subsurface sediments.

- *Portions of Backwaters Located Outside Core Area 1 Priority Habitat*: For surface sediments in areas located outside Core Area 1 priority habitat, sufficient sediment will be removed, including any sediment in areas with total PCB concentrations greater than or equal to 50 mg/kg, and replaced with a contiguous engineered cap to achieve a spatially weighted average concentration of 1 mg/kg total PCBs in each averaging area. When calculating post-remediation spatially weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial PCB concentration will be used as the PCB concentration in capped areas.

  For subsurface sediments, additional sediment will be removed as needed to achieve a spatially weighted average concentration of 1 mg/kg total PCBs in each averaging area and depth interval in areas outside the footprint of the engineered cap necessary to meet the requirements for surface sediments described above. As with surface sediments, when calculating post-remediation spatially weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial PCB concentration will be used as the PCB concentration in capped areas.

  In lieu of engineered capping for the surface and subsurface sediment remediation described above, the Revised Permit allows for the placement of backfill in areas where sediment was removed; however, the backfill cannot be factored into the spatial weighting calculations.

- *Portions of Backwaters Located Within Core Area 1 Priority Habitat*: For areas within Core 1 Habitat where discrete total PCB concentrations in surface sediment are greater than or equal to 50 mg/kg, GE will remove those sediments and then place an engineered cap to original grade. In areas where surface sediment total PCB concentrations are between 1 and 50 mg/kg, an amendment (e.g., AC or other comparable amendments) will be placed to reduce bioavailability.

To implement these Performance Standards, GE will include in the relevant PDI work plan a sediment sampling proposal, proposed averaging areas and depth intervals within these backwaters, and a proposed method for averaging surface and subsurface PCB concentrations—all in accordance with

[5] Core Habitat Areas are described in a letter (and accompanying maps) transmitted from the Massachusetts Division of Fisheries and Wildlife to EPA on July 31, 2012, which is provided in Attachment B to the Revised Permit. In summary, Core Area 1 habitat includes the highest quality habitat for species that are most likely to be adversely impacted by PCB remediation activities (mostly plants), Core Area 2 habitat includes the highest quality habitat for more mobile species that may be less vulnerable to remediation impacts, and Core Area 3 habitat includes those areas with dense concentrations of state-listed species.

Section II.B.2.d.(2)(a) of the Revised Permit. Delineation of remediation areas needed to achieve the concentration criteria for backwaters will be determined based on Thiessen polygons developed using data to be collected during pre-design sampling activities.

2.2.5 Woods Pond (Reach 6)

Section II.B.2.e of the Revised Permit states that sediment will be removed throughout the pond and an engineered cap will be placed over remaining PCB-containing sediment, resulting in a post-capping minimum water depth of six feet (measured from the crest of Woods Pond dam), except in near-shore areas, where the slope from the shore to the six-foot water depth must be as steep as possible, while also being stable and not subject to erosion or sloughing. In areas deeper than six feet prior to remediation, sufficient sediment will be removed to allow for the placement of an engineered cap so that the final grade is equal to or deeper than the original grade.

To achieve the water depth-based Performance Standard for this reach, GE will conduct bathymetric surveys before sediment removal and before and after capping. The post-capping bathymetry survey will also serve as the baseline for determining the amount of future sediment deposition on the engineered cap. If EPA determines during post-construction monitoring that significant concentrations and depths of PCB-impacted sediment have accumulated above the engineered cap in Woods Pond, GE will remove such accumulated sediment while ensuring the integrity of the engineered cap.

Section II.B.2.e.(2) of the Revised Permit states that, in removing sediments from Woods Pond, GE will implement a dredging or wet excavation technique approved by EPA and, if feasible, a hydraulic pumping approach, with material from these areas pumped directly to the UDF support area (see Section 2.5). Only those materials that meet the criteria for disposal in the UDF (see Section 2.5) will be disposed of in the UDF. Any sediments that do not meet those criteria will be dewatered at the UDF support area and transported off site for disposal in accordance with Revised Permit Section II.B.6.a.(1). To the extent that a hydraulic pumping approach is not feasible, GE will transport material from Woods Pond to the UDF via trucks while avoiding driving on public roads to the maximum extent practicable. Any sediments that do not meet the criteria for disposal at the UDF will be transported off site.

2.2.6 Columbia Mill Impoundment (Reach 7B), Eagle Mill Impoundment (Reach 7C), Willow Mill Impoundment (Reach 7E), and Glendale Impoundment (Reach 7G)

The Performance Standards related to these four impoundments located within Reach 7 are described in Section II.B.2.f of the Revised Permit and are summarized below.

- *Columbia Mill Dam and Eagle Mill Dam Impoundments*: Under Section II.B.2.f of the Revised Permit, the Performance Standards for these impoundments (which include the coves/ponds adjacent to Columbia Street in Lee) are to remove sediments as needed to achieve a spatially weighted average total PCB concentration of 1 mg/kg, including the removal of surface sediments in any area with a discrete PCB concentration greater than or equal to 50 mg/kg, followed by the placement of a minimum of six inches of suitable backfill and additional material as necessary to maintain channel stability (no engineered capping is required). GE is further required to remove both the Columbia Mill and the former Eagle Mill Dams (subject to obtaining access to those properties). For any floodplain area created as a result of dam removal (i.e., former impounded areas that become exposed due to removal of a dam), GE will follow the evaluation process outlined in Section II.B.3.a.(2) of the Revised Permit describing Corrective Measures for floodplain soils.
- *Willow Mill Dam and Glendale Dam Impoundments:* The Performance Standards for surface and subsurface sediments in these two impoundments require the following:
  - For surface sediments, sufficient sediment will be removed, including any sediment in areas with discrete total PCB concentrations greater than or equal to 50 mg/kg, and replaced with a contiguous engineered cap to achieve a spatially weighted average PCB concentration of 1 mg/kg in each averaging area, considering the capped areas to have a PCB concentration equal to 1% of the existing average surficial PCB concentration.
  - For subsurface sediments, additional sediment will be removed as needed to achieve a spatially weighted average PCB concentration of 1 mg/kg in each averaging area and depth interval in areas outside the footprint of the engineered cap, considering the capped areas to have a PCB concentration equal to 1% of the existing average surficial PCB concentration.
  - In lieu of engineered capping for the surface and subsurface sediment remediation, GE may place a minimum of six inches of backfill in areas where sediment was removed, but the backfill cannot be factored into the spatial weighting calculations.
  - Under Revised Permit Section II.B.2.f.(1)(c), GE must remove sufficient sediment to allow for a maximum of 3 acres of capping in the Willow Mill impoundment and 6.5 acres of capping in the Glendale impoundment.

- In lieu of the above provisions, as provided in Section II.B.2.f.(1)(f) of the Revised Permit, GE may propose to EPA to coordinate with any entity proposing to remove either the Willow Mill Dam or the Glendale Dam. In the event of removal of either such dam, all sediments with PCB concentrations greater than 1 mg/kg must be removed from the impoundment behind the dam.

To implement these Performance Standards, GE will include in the relevant PDI work plan a sediment sampling proposal, proposed averaging areas and depth intervals within each impoundment, and a method for averaging surface and subsurface PCB concentrations—all in accordance with Section II.B.2.f.(2) of the Revised Permit. Delineation of remediation areas needed to achieve the concentration criteria described above for all four impoundments will be determined based on data to be collected during pre-design sampling activities.

2.2.7 Rising Pond (Reach 8)

The Performance Standards for Rising Pond are described in Section II.B.2.g of the Revised Permit. They require the following:

- For surface sediments, sufficient sediment will be removed, including any sediment in areas with discrete total PCB concentrations greater than or equal to 50 mg/kg, and replaced with a contiguous engineered cap to achieve a spatially weighted average PCB concentration of 1 mg/kg in each averaging area, considering the capped areas to have a PCB concentration equal to 1% of the existing average surficial PCB concentration.
- For subsurface sediments, additional sediment will be removed as needed to achieve a spatially weighted average PCB concentration of 1 mg/kg in each averaging area and depth interval in areas outside the footprint of the engineered cap, considering the capped areas to have a PCB concentration equal to 1% of the existing average surficial PCB concentration.
- In lieu of engineered capping for the surface and subsurface sediment remediation, GE may place a minimum of six inches of backfill in areas where sediment was removed, but the backfill cannot be factored into the spatial weighting calculations.
- Under Revised Permit Section II.B.2.g.(1)(c), GE must remove sufficient sediment to allow for a maximum of 31 acres of capping in Rising Pond.

To implement these Performance Standards, GE will include in the relevant PDI work plan a sediment sampling proposal, proposed averaging areas and depth intervals within Rising Pond, and a method for averaging surface and subsurface PCB concentrations—all in accordance with Section II.B.2.g.(2) of the Revised Permit. Delineation of remediation areas needed to achieve the concentration criteria for Rising Pond will be determined based on data to be collected during pre-design sampling activities.

In addition to the provisions described above, GE is required to conduct bathymetric surveys in Rising Pond before sediment removal and before and after capping. The post-capping bathymetry survey will also serve as the baseline for determining the amount of future sediment deposition. If EPA determines during post-construction monitoring that significant concentrations and depths of PCB-impacted sediment have accumulated, GE will remove such accumulated sediment while ensuring the integrity of the engineered cap, where present.

2.2.8 Flowing Subreaches in Reach 7 and Throughout Reaches 9 Through 16, Including Impoundments

As described in Section II.B.2.h of the Revised Permit, MNR will be implemented in the flowing subreaches in Reach 7 (i.e., Reaches 7A, 7D, 7F, and 7H) and throughout Reaches 9 through 16. The Corrective Measures in these reaches include monitoring of PCB concentrations in affected media (including surface water, sediment, and biota) to evaluate if recovery is occurring at the expected rate, maintaining institutional controls, and performing all other related activities.

2.2.9 Engineered Caps

The Performance Standards for engineered caps are described in Section II.B.2.i of the Revised Permit. That section states that all engineered caps constructed for the ROR (as described in Sections 2.2.1 through 2.2.7) will include the following layers or functions:

- A Mixing Layer to prevent contamination of the overlying chemical isolation layer due to mixing with underlying contaminated sediment during cap placement, taking into account geotechnical considerations, placement techniques, and other factors as appropriate;
- A Chemical Isolation Layer sufficient to minimize (reduce by 99%) the flux of PCB concentrations through the isolation layer;
- A Geotechnical Filter Layer, as needed based on the design evaluation, to prevent mixing between the chemical isolation and erosion protection layers;
- An Erosion Protection Layer to prevent erosion in accordance with federal and state requirements and consistent with pertinent EPA or U.S. Army Corps of Engineers (USACE) guidance;
- A Bioturbation Layer to prevent bioturbation from impacting underlying layers; and
- A Habitat Layer to provide functions and values equivalent to the pre-existing surficial sediment substrate.

Section II.B.2.i.(2) of the Revised Permit provides details related to design and construction requirements for each of the cap layers described above, including that, under some circumstances, a single layer of material may serve more than one of the functions listed above. Engineered caps will

be inspected, monitored, and maintained to ensure long-term protectiveness and to ensure that they continue to function as designed.

2.2.10 Additional Response Actions and Monitoring Requirements for Dams and Impoundments in Reaches 5 through 9

Section II.B.2.j of the Revised Permit sets forth Performance Standards and Corrective Measures for additional response actions relating to the dams and impoundments in Reaches 5 through 9. Sections II.B.2.j.(1)(a) and II.B.2.j.(2)(a) and (b) specify requirements for operation, inspection, monitoring, and maintenance of Woods Pond Dam and Rising Pond Dam and for ensuring the inspection, monitoring, and maintenance of other existing dams in Massachusetts. GE has previously submitted and EPA has approved Operation, Monitoring, and Maintenance Plans for Woods Pond Dam and Rising Pond Dam under the provisions of the Initial SOW. The requirements relating to other non-GE-owned dams in Massachusetts and GE's plan for addressing them are discussed in Section 4.5.3 of this Revised SOW,

The remaining provisions of Section II.B.2.j require GE to conduct appropriate response actions under certain potential future conditions relating to the dams and impoundments in the ROR in Massachusetts. Specifically, they require that if there is a catastrophic failure and/or material breach of any such dam or dam component that results in a PCB release greater than PCB transport under normal flow conditions, or if a third party undertakes any Legally Permissible Future Project or Work (as defined in the Revised Permit) at the dam or impoundment, including dam removal, GE must conduct response actions necessary to maintain the applicable Performance Standards and/or the effectiveness of the ROR Remedial Action.

2.2.11 Other Additional Response Actions for Sediment, Riverbanks, Backwaters, and Impoundments in Reaches 5 through 9

Section II.B.2.k of the Revised Permit sets forth Performance Standards and Corrective Measures for other (i.e., non-dam-related) additional response actions for sediments, riverbanks, backwaters, and impoundments in Reaches 5 through 9. Specifically, it requires that, if a third party conducts a Legally Permissible Future Project or Work in such an area, GE must conduct PCB-related response actions necessary to allow the project or work to be conducted in a manner that maintains the applicable Performance Standards and/or the effectiveness of the ROR Remedial Action.

2.2.12 Other Additional Response Actions for Reaches 10 through 16

Section II.B.2.l of the Revised Permit sets forth Performance Standards and Corrective Measures for additional response actions under certain potential future conditions in Reaches 10 through 16, located in Connecticut. Specifically, it requires that: (a) if a third party conducts a Legally Permissible Future Project or Work in such an area that requires the handling or disturbance of sediment or

riverbank soil with a PCB concentration greater than 1 mg/kg, GE must conduct PCB-related response actions necessary to allow the project or work to be conducted in a manner that maintains the applicable Performance Standards and/or the effectiveness of the ROR Remedial Action; and (b) if there is a catastrophic failure and/or material breach of any such dam or dam component that results in a PCB release greater than PCB transport under normal flow conditions, GE must conduct appropriate response actions to maintain the applicable Performance Standards and/or the effectiveness of the ROR Remedial Action.

2.3 Floodplain and Vernal Pools

2.3.1 Floodplain Soil Within Reaches 5 Through 8

Section II.B.3.a of the Revised Permit describes the Performance Standards associated with floodplain soils within Reaches 5 through 8. For each of the floodplain Exposure Areas (EAs) shown on Figures 3, 3A, and 4 in the Revised Permit,[6] the top one foot of soil will be excavated (and backfilled to grade) to achieve either the Primary or Secondary Floodplain Performance Standards applicable to each EA, as listed in Table 1 of the Revised Permit.[7] In general, this remediation will be designed to meet the Primary Floodplain Performance Standards, except that in certain Core Area habitats, the remediation will achieve, at a minimum, the Secondary Floodplain Performance Standards, as discussed further below. Determination of the extents of excavation needed to meet these Performance Standards will be performed as described in Section II.B.3.a.(2) of the Revised Permit.

In addition, for each of the Frequently Used Subareas within the EAs, as shown on Figure 5 of the Revised Permit,[8] the top three feet of soil will be excavated (and backfilled to grade) to achieve the relevant Performance Standards for those areas, as listed in Table 2 of the Revised Permit.

Excavation in Core Area 1 habitat (other than in Frequently Used Subareas) will be avoided, except in limited areas where necessary to meet the Secondary Floodplain Performance Standards. Further, GE will minimize impacts from remediation to the extent practicable in Core Areas 2 and 3 habitat

[6] These EAs consist of the 90 direct-contact EAs that EPA identified in its Human Health Risk Assessment (EPA 2005), with the modification that, as provided in Section II.O of the Settlement Agreement, EA 10 has been expanded as shown on Figure 3A of the Revised Permit.

[7] Table 1 lists the Primary and Secondary Performance Standards for each EA, based on exposure scenarios determined by EPA. The Primary Performance Standards are floodplain soil PCB concentrations associated with a residual 1×10^{-5} cancer risk or a non-cancer HI of 1 (as calculated by EPA based on assumed direct contact with soil), whichever is lower. The Secondary Performance Standards are floodplain soil PCB concentrations associated with a residual 1×10^{-4} cancer risk or a non-cancer HI of 1 (as calculated by EPA based on assumed direct contact), whichever is lower.

[8] Frequently Used Subareas are portions of the EAs that are more heavily used than other areas. Those subareas were originally defined in GE's RCMS Report and are generally shown on Figure 5 of the Revised Permit, but are subject to modification, with EPA approval, based on current conditions pertaining to potential use.

(shown in Attachment B to the Revised Permit); however, at a minimum, Secondary Floodplain Performance Standards will be attained in those areas.

In addition, Section II.B.3.a.(1)(d) of the Revised Permit requires that soil from 22 floodplain residential properties in Reach 5A (identified in Table 5 of the Revised Permit) be removed and replaced as necessary to meet the Residential Performance Standards set forth in Table 3 of the Revised Permit. GE is also required to remove and replace soil from six additional residential properties in the Town of Lenox (also identified in Table 5 of the Revised Permit) as necessary to achieve the Residential Performance Standards in Table 3 if the Town of Lenox determines that any of those property owners consent to such removal. If this work is performed, costs will be shared with the Town of Lenox.

2.3.2 Vernal Pools Within Reaches 5 Though 8

Section II.B.3.b of the Revised Permit requires that, in addition to any remediation of vernal pools necessary to meet the floodplain Performance Standards discussed above, any such pool that contains sediment/soil exceeding a spatially weighted average PCB concentration of 3.3 mg/kg must be remediated. To implement this requirement, GE must submit a plan for, and upon EPA approval, conduct a pilot study on no more than 10 vernal pools (none in Core Area 1 habitat) using either traditional excavation and restoration techniques or amendments such as AC. Based on the results of the pilot study, after an appropriate monitoring period determined by EPA, EPA will determine, and GE will implement, the appropriate remediation in the remainder of the vernal pools as necessary to meet the Performance Standards for vernal pools specified in Section II.B.3.b.(1) of the Revised Permit. Those Performance Standards require either achievement of a spatially weighted average total PCB concentration in soil of 3.3 mg/kg in the pool through removal and replacement of soil or reduction in the bioavailability of PCBs in the pool to a comparable level through amendments.

2.4 Inspection, Monitoring, and Maintenance

Section II.B.4 of the Revised Permit specifies that GE will implement a baseline monitoring program, construction monitoring program, and a post-construction inspection, monitoring, and maintenance program.

The baseline monitoring program will include collection of PCB data in surface water, sediment, and biota (and other data) prior to the commencement of construction activities, to serve as a baseline for the evaluation of the potential impacts of the Corrective Measures and project operations (see Section 4.2.1.1), as well as to inform model parameterization in the model re-evaluation plan in the event that the model re-evaluation plan is deemed necessary by EPA after consultation with GE.

The construction monitoring program will include similar types of data collection and will focus on monitoring for potential adverse impacts due to construction activities (e.g., resuspension). It will

include: (1) measures to assess these impacts (e.g., establishing notification and action levels for PCBs measured in surface water); (2) a monitoring plan to collect these data; and (3) establishment of response actions (e.g., slowdown and evaluation of operations, stop work and modification of operations).

The post-construction inspection, monitoring, and maintenance program will be conducted in phases and will be initiated upon completion of each phase of the ROR Remedial Action, except for areas subject to MNR. For MNR areas, monitoring will begin with baseline monitoring and will continue throughout the Remedial Action and during the post-construction operation and maintenance. This program will be implemented throughout the Remedial Action to evaluate the effectiveness of the Corrective Measures in achieving Performance Standards; to evaluate MNR; to monitor the sediment accumulation above the engineered caps at Woods Pond and Rising Pond; and to conduct maintenance, repair, or other response actions necessary to achieve and maintain compliance with Performance Standards. This program will be designed to be consistent with adaptive management as outlined in Section II.F of the Revised Permit.

2.5 Disposal of Contaminated Sediment and Soil

As described in Sections II.B.5 and II.B.6 of the Revised Permit, the ROR Remedial Action will use a hybrid disposal approach that includes a combination of: (1) disposal at a UDF at a location identified in the Revised Permit and to be designed and constructed as part of the Remedial Action; and (2) off-site disposal. The criteria and methods applicable to disposal of material excavated during the ROR Remedial Action are provided in Attachment E to the Revised Permit (included in Attachment B to this Revised SOW). The removed sediment and soil will be segregated for either on-site disposal in the UDF or off-site disposal consistent with the requirements specified in that Attachment E to the Revised Permit. The requirements related to disposal of materials in the UDF and off-site disposal are summarized in Sections 2.5.1 and 2.5.2, respectively.

2.5.1 Upland Disposal

The requirements for the UDF are specified in Section II.B.5 of the Revised Permit and summarized in this section.[9] GE will construct the UDF at the location identified on Figure 6 of the Revised Permit. The UDF will be designed, constructed, and operated to meet the design Performance Standards set forth in Section II.B.5.a.(2) of the Revised Permit. In summary, the UDF will: (1) be constructed with a double liner that has low permeability (equal or less than 1×10^{-7} centimeters per second) and a minimum thickness of 30 mils and is chemically compatible with PCBs; (2) include a primary leachate collection system above the upper liner and a secondary leachate collection system (including a drainage layer) between the upper and lower liners; and (3) be capped with a low-permeability cap

[9] To the extent that there is any inconsistency between this summary and the provisions of the Revised Permit, the terms of the Revised Permit will control.

to include liner(s), a drainage layer, and a vegetative cover. The maximum design capacity of the UDF will be 1.3 million cubic yards, and the landfill consolidation area will have a maximum footprint of 20 acres and a maximum elevation of 1,099 feet above mean sea level. The bottom liner of the landfill will be installed a minimum of 15 feet above a conservative estimate of the seasonally high groundwater elevation. The maximum elevation of the landfill consolidation area can be adjusted upward depending on the evaluation of groundwater elevation fluctuations.

Inspection, monitoring, and maintenance activities will be conducted during operation of the UDF, and those activities will continue following closure of the UDF to ensure that it functions properly in perpetuity. To that end, a network of groundwater monitoring wells will be installed around the UDF to allow for detection of any groundwater impacts. The UDF design will also include a stormwater management system to control surface runoff, minimizing the potential for surface erosion or stormwater contribution to leachate generation. Also, GE will identify any current non-community and private water supply wells within 500 feet of the UDF consolidation area. If any such wells are identified, GE will pay the installation costs for those users to be connected to a public water supply (unless they do not consent); and if such a well owner consents at a later date or any new water users are identified within 500 feet of the UDF consolidation area, GE will pay the installation cost of a connection to a public water supply. GE will utilize the UDF for disposal only of sediments and soils that were generated as part of the ROR Remedial Action, and only of those sediments and soils that meet certain acceptance criteria specified in Attachment E to the Revised Permit. Those acceptance criteria include a prohibition on the disposal of certain types of waste in the UDF—e.g., free liquids, free product, or wastes that meet the federal criteria for hazardous waste. They also include PCB concentration-based requirements for disposal in that facility, including criteria for the average PCB concentrations of soils and sediments to be placed in the UDF.

GE will be responsible for the proper functioning of the UDF during operations, for closure of the UDF (including installation of a low-permeability cap with a vegetative cover) when the UDF is full or the ROR excavation and dredging activities have been completed, and for proper operation, maintenance, and monitoring of the closed UDF thereafter. No material from the ROR Remedial Action may be disposed of at any other location in Berkshire County, and no material from any portion of the GE-Pittsfield/Housatonic River Site other than the ROR or from other response actions under the CD may be disposed of at the UDF.

Section II.B.5.b.(2) provides that GE will include in its landfill design submissions one or more proposals (based on consultation with officials from the Town of Lee) describing how the UDF site will be prepared for potential re-use once it is capped, if the Town of Lee so desires.

2.5.2 Off-Site Disposal

In accordance with Section II.B.6.a.(1) of the Revised Permit, excavated sediments and soils that do not meet the acceptance criteria for disposal in the UDF under Attachment E to the Revised Permit will be transported to an off-site disposal facility (or facilities) outside of Massachusetts. As required by Revised Permit Section II.B.6.a.(2), a minimum of 100,000 cubic yards of PCB-impacted sediment, riverbank soils, and/or floodplain soils will be sent off site to such an out-of-state facility. Any such facility must be one that is licensed and permitted to accept such waste and that will accept it, including an RCRA Subtitle C Landfill, so long as that facility is in compliance with EPA's Off-Site Rule (40 Code of Federal Regulations [CFR] 300.440). GE will propose the methods and locations for off-site disposal to EPA.

2.6 Institutional Controls and Related Requirements

Section II.B.7 of the Revised Permit sets forth a variety of other Performance Standards and Corrective Measures relating to institutional controls and related requirements for the ROR. In summary, these include the following:

- Section II.B.7.a requires GE to cooperate with and support EPA and the States of Massachusetts and Connecticut in connection with the biota consumption advisories for the ROR area, including appropriate public outreach activities.
- Section II.B.7.b requires that, for all floodplain EAs in Reaches 5 through 8 (shown on Figures 3 and 4 of the Revised Permit) that do not meet the Performance Standard for residential use (as set forth in Table 3 of the Revised Permit), GE must either: (a) record a Grant of Environmental Restriction and Easement (ERE) or Notice ERE (as described in the CD) for the portion of the property within the EA; or (b) implement a Conditional Solution (as also described in the CD) for that portion of the property to achieve and maintain the applicable non-residential Performance Standards (set forth in Tables 3 and/or 4 of the Revised Permit) and ensure the integrity and protectiveness of the response actions performed. In addition, that provision requires that on any property within such an EA that does not have an ERE or Notice ERE (as well as for any non-subordinated property interest in a property with an ERE or Notice ERE), if the property owner or other third party conducts a Legally Permissible Future Project or Work (as defined in the Revised Permit), GE must conduct PCB-related response actions necessary to allow the project or work to be conducted in a manner that maintains the applicable Performance Standards and/or the effectiveness of the ROR Remedial Action.
- Section II.B.7.c specifies requirements for floodplain areas in the ROR (Reaches 5 through 16) that are outside of the designated EAs. Specifically, it requires that, in the event that a property owner or other third party conducts a Legally Permissible Future Project or Work (as defined in the Revised Permit) or changes the land use to another Legally Permissible Future

Use (as also defined in the Revised Permit) in an area with sampling data showing PCBs at a concentration greater than 1 mg/kg in the floodplain, GE must conduct PCB-related response actions necessary to be protective of such project or work and to achieve and maintain the applicable Performance Standards in Tables 3 and/or 4 of the Revised Permit in the floodplain portion of the property.

- Section II.B.7.d requires EPA to record an ERE at the UDF area in accordance with the CD to restrict future uses of the land and groundwater that are inconsistent with the use of the UDF.

2.7 Water Withdrawals and Uses

In accordance with Section II.B.8 of the Revised Permit, GE will minimize and/or mitigate impacts during implementation of the Remedial Action to withdrawals and/or uses of water from the ROR by any entity. GE will achieve this Performance Standard by: (1) identifying all industrial, commercial, private, or other withdrawals and/or uses of water from the ROR; (2) identifying requirements associated with these uses (including water quality and quantity) that may be affected by implementation of the Remedial Action; and (3) proposing methods to minimize/mitigate impacts during implementation of the Remedial Action. Additional details regarding achievement of this Performance Standard will be provided in a Water Withdrawal and Uses Plan (see Section 4.2.1.8).

3 Conceptual Approach to Implementation of Corrective Measures

In accordance with Section II.G of the Revised Permit, this section of the SOW provides a summary of GE's proposed conceptual approach to implementation of the Corrective Measures for the ROR, including project scheduling, coordination, and anticipated sequencing. Additional and more specific details related to the Corrective Measures implementation strategy and approach will be presented in the Overall Strategy and Schedule for Implementation of the Corrective Measures deliverable (hereafter referred to as the Overall Strategy and Schedule document). That deliverable, which is described in Section 4.1, will be prepared and submitted to EPA for approval in accordance with Section II.H.2 of the Revised Permit.

The Corrective Measures required by the Revised Permit include remediation, as necessary, of sediments (including backwaters), riverbank soils, and floodplain soils (including vernal pools) over an area covering approximately 30 river miles. They will include active remediation of: (1) sediments (including backwaters) within Reaches 5 through 8, with the exception of the flowing subreaches in Reach 7 (i.e., Reaches 7A, 7D, 7F, and 7H); (2) riverbank soils within Reaches 5A and 5B; and (3) floodplain soils (including vernal pools) in portions of Reaches 5 through 8. Based on the scale of the required Corrective Measures, the remedial design and remedial action process is anticipated to take a number of years to complete. Given these circumstances, GE is proposing to conduct the remedial design and remedial action process using a phased approach.

To facilitate a phased implementation approach, GE is proposing to segment the ROR into separate "Remediation Areas" to manage the workflow and schedule. Given that Reach 5A is the most upstream reach in the ROR, and given the work completed to date for the Reach 5A floodplain pre-design investigation (i.e., one of the severable items covered under the Initial SOW), GE proposes that the first Remediation Area will be the sediments and associated backwaters, riverbank soils, and floodplain soils (including vernal pools) within Reach 5A. Definition of subsequent Remediation Areas and the sequencing of the remedial design and remedy implementation for these areas will be provided in the Overall Strategy and Schedule document.

For each of the Remediation Areas, implementation of the Corrective Measures will follow a stepwise process that generally includes the following:

1. Pre-design activities, which include pre-design sampling and other investigations, engineering data collection, and treatability studies, where applicable;
2. Remedial design, which includes the preparation of both Conceptual and Final Remedial Design/Remedial Action (RD/RA) Work Plans and various other supporting documents and plans (described in Section 4); and

3. Remedial actions, which comprise the construction activities needed to implement the remedial action.

For scheduling purposes (as shown in Section 6), GE has assumed that the various steps in this process will be staggered by Remediation Area. As stated previously, details regarding the sequencing and schedule for the various activities to be completed for Remediation Areas downstream of Reach 5A will be provided in the Overall Strategy and Schedule document.

4 Pre-Construction Deliverables

This section specifies and summarizes the anticipated pre-construction deliverables that will be developed for the ROR to describe and support the activities that GE will conduct before construction begins.[10] They are divided into three categories: (1) pre-design and design support deliverables (Section 4.2); (2) remedial design deliverables (Section 4.3); and (3) the remediation supplemental implementation package (Section 4.4). The specific deliverables developed under each of the pre-design/design support and design categories have been further grouped into the following three sub-categories:

1. Deliverables that are anticipated to be applicable on an overall site-wide basis;
2. Deliverables that are specific to design, construction, and operation of the UDF; and
3. Deliverables that will be developed separately for each of the ROR Remediation Areas.

The following sections and subsections discuss the deliverables for these categories and subcategories. This section then concludes with a description of other required deliverables that are not directly related to pre-design, remedial design, or remediation activities (Section 4.5).

4.1 Overall Strategy and Schedule for Implementation of the Corrective Measures Document

In accordance with Section II.H.2 of the Revised Permit, GE will prepare an Overall Strategy and Schedule document that will provide a detailed strategy for implementing the Corrective Measures described in the Revised Permit. The Overall Strategy and Schedule document will include the following:

- Definitions of the proposed Remediation Areas into which the ROR will be divided, including rationale for selection of those areas;
- A description of how the sediment, riverbank, and floodplain remediation components will be coordinated within a Remediation Area containing more than one such component;

[10] Although EPA has issued the final Revised Permit, that Revised Permit has been appealed by other entities to the EAB. In this situation, as noted in Section 1.2, GE has developed this Revised SOW and will submit the investigation and design deliverables specified herein and implement the investigation and design activities specified in those deliverables (as approved by EPA) as contractual obligations until such time as the Revised Permit is fully effective. In the event that, in response to the pending appeal and any further remand from the EAB or any subsequent court challenge, EPA changes the Revised Permit so that it is materially inconsistent with the current Revised Permit, GE's contractual commitment in this Revised SOW to submit deliverables and/or conduct activities to meet such inconsistent terms will terminate, and GE reserves its right to challenge that further revised permit in the EAB and in a reviewing court on any grounds presented in GE's challenge to the 2016 Permit in the EAB, as well as on any grounds relating to new provisions of that permit that were not in the 2016 Permit. In such a case, GE may submit a further revised SOW that does not include the challenged requirements.

- A description of how the pre-design and design support investigations, remedial design, and remedial action activities for the Remediation Areas will be sequenced and implemented;
- A description of the project management structure, including a description of GE's project organizational structure, roles, and responsibilities; lines of communication among GE, EPA, and state and local entities; and references to the outreach and public participation requirements specified in the Revised Permit; and
- A project implementation schedule that provides more detail than the schedule presented in Section 6 of this Revised SOW (e.g., a Gantt chart).

The Overall Strategy and Schedule document will be submitted to EPA within three months after EPA approval of this Revised SOW.

4.2 Pre-Design and Design Support Deliverables

4.2.1 Site-Wide Plans and Reports

4.2.1.1 Baseline Monitoring Plan

In accordance with Section II.B.4.b.(1)(a) of the Revised Permit, PCB data for surface water, sediment, and biota will be collected prior to the commencement of construction activities to serve as a baseline for the evaluation of the effectiveness of the Corrective Measures and project operations. The baseline data will also be used for comparison with data collected under future monitoring programs during and after construction, as well as to inform model parameterization in the model re-evaluation plan in the event that the model re-evaluation plan is deemed necessary by EPA after consultation with GE.

The collection of these baseline data will be described in a Baseline Monitoring Plan (BMP), which describes the objectives of the baseline monitoring program, provides a summary of data collected historically that were used to inform the design of the program, and describes the monitoring activities that will be performed under the program. The BMP will include the following, at a minimum:

- Baseline monitoring program objectives;
- Description of the environmental media to be monitored, including a discussion of previous monitoring of those media and brief summaries of existing PCB data;
- Description of the proposed baseline monitoring activities, locations, procedures, and sampling frequency;
- Description of analytical methods;
- Description of equipment testing, maintenance, and calibration requirements;

- Description of field documentation and data management procedures;
- Description of how the baseline monitoring program data collection activities will be reported;
- Preliminary description of how GE plans to measure the effectiveness of MNR in the river reaches where the Revised Permit prescribes MNR; and
- Schedule for performing the baseline monitoring activities and reporting.

The BMP was one of the non-stayed deliverables included in the Initial SOW, and an initial version of the BMP was developed by GE and submitted to EPA on June 12, 2017. Since that time, EPA and GE have been discussing the scope of the baseline monitoring program and the contents of the BMP. Following the completion of those discussions, GE will revise the BMP. It will submit that revised BMP to EPA within three months after a conceptual agreement is reached between GE and EPA on the scope of the program.

4.2.1.2 Rest of River Field Sampling Plan/Quality Assurance Project Plan

The Revised Permit requires GE to submit an updated Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) to describe the procedures that GE will use in conducting sampling and analysis activities in preparation for and during implementation of the ROR Remedial Action. GE previously prepared and submitted an FSP/QAPP to address sampling and analysis activities under the CD, including, where applicable, the Rest of River.[11] The FSP/QAPP was originally approved by EPA in October 2000 and has been subsequently revised several times, with the latest full revision (Revision 5) in July 2013 (Arcadis 2013a).[12] That approved FSP/QAPP will remain in effect and will be considered to constitute the ROR FSP/QAPP for purposes of complying with the Revised Permit requirements until it is replaced by a new ROR FSP/QAPP approved by EPA.

As discussed throughout this section of the Revised SOW, the Revised Permit requires preparation of individual work plans for various components of the project. These work plans will describe the sampling design, locations, methods, and analytical approach for each program. To support these work plans, a new Rest of River FSP/QAPP will be developed. The Rest of River FSP/QAPP will present detailed procedures for sample collection, field data collection, laboratory analytical methods,

[11] The *Statement of Work for Removal Actions Outside the River* (part of the CD) includes the FSP/QAPP, as well as the Health and Safety Plan (HASP) (discussed in Section 4.2.1.3 below), as part of the Project Operations Plan (POP). However, the FSP/QAPP and HASP have always been considered separate deliverables from the rest of the POP and have been submitted on separate tracks. That will remain the case for the ROR process. The other components of the POP are described in Section 4.3.1.2.

[12] Since that time, a number of specific addenda have been submitted to the FSP/QAPP. These include an addendum relating to air monitoring procedures on June 17, 2017 (approved by EPA on July 2, 2017), an addendum relating to certain biota sampling and analysis procedures on July 21, 2017 (approved by EPA on July 25, 2017), and an addendum relating to surface water reporting and detection limits on August 22, 2017 (approved by EPA on August 28, 2017).

sample handling and documentation, chain of custody, data management, data verification/validation, and field and laboratory quality assurance/quality control (QA/QC).

The Rest of River FSP/QAPP will be based on the existing FSP/QAPP (Revision 5) and will specify the procedures to be followed by GE in performing investigations in preparation for and as part of the ROR Remedial Action. The Rest of River FSP/QAPP will focus solely on the sampling and analysis procedures to be implemented for the ROR activities. As such, it will describe such procedures for soil, sediment, surface water, biota, and air samples that will be collected as part of the ROR project, as well as other relevant procedures that may be needed for that project.[13] It will include activities that involve the acquisition of environmental data generated from direct measurement activities, collected from other sources, or compiled from computerized databases and information systems consistent with EPA requirements, including all datasets used to support design calculations or activities that make use of computational models. The Rest of River FSP/QAPP will be a stand-alone document for the ROR that will have a format and structure similar to the existing FSP/QAPP.

Although the Rest of River FSP/QAPP was covered in the Initial SOW, its submittal was deferred until after approval of the BMP. Consistent with that approach, the Rest of River FSP/QAPP will be submitted to EPA within three months after EPA approval of the BMP. Field sampling activities that rely on the Rest of River FSP/QAPP will not commence until after EPA approval of that document.

4.2.1.3 Updated Site Health and Safety Plan

An updated Site Health and Safety Plan (HASP) was included as a deliverable in the Initial SOW. In accordance with that Initial SOW, a Rest of River HASP was submitted on September 8, 2017. That HASP addressed the non-stayed activities in the ROR, including baseline monitoring and floodplain pre-design activities. It will be updated to include the remaining activities that are part of the ROR Remedial Action. The updated HASP will be submitted concurrently with the Rest of River FSP/QAPP three months after EPA approval of the BMP. It will be submitted to EPA solely for review, because the HASP is not subject to EPA approval.

4.2.1.4 Baseline Restoration Assessment Work Plan

A Baseline Restoration Assessment (BRA) Work Plan will be prepared to present the various site-wide evaluations and data collection activities that will be conducted to prepare the BRA. The BRA is intended to provide a detailed baseline ecological inventory and assessment of pre-remediation conditions and serve as the foundation for meeting the restoration Performance Standards set forth

[13] As requested by EPA, the Standard Operating Procedure for ambient air monitoring in the FSP/QAPP will include a provision for baseline air monitoring for PCBs prior to use of the UDF and UDF support area and prior to any remedial activities in the Remediation Areas. This is discussed further in Section 4.3.1.2 in connection with the Ambient Air Monitoring Plan that is part of the Project Operations Plan.

in Section II.B.1.c.(1) of the Revised Permit and described in Section 2.1.3 of this SOW. The BRA will include a baseline assessment of each Remediation Area, including likely associated support areas.

The BRA Work Plan will describe the procedures to be implemented to perform a baseline assessment of pre-remediation conditions, functions, and values of river bottom, riverbank, backwater, floodplain, impoundment, and vernal pool habitats, as well as the occurrence of federal or state-listed threatened or endangered species or other state-listed rare species present in the Remediation Areas. As discussed in Section 4.2.2, the UDF site and UDF support area will be subject to a separate baseline habitat assessment. As required by Section II.B.1.c.(2)(a) of the Revised Permit, the BRA will include the following for each Remediation Area:

- Identification of the presence and location of specific habitat types, including delineation of existing wetlands;
- Identification of the presence, location, abundance, and condition of federal or state-listed threatened or endangered species or other state-listed species and their habitats, as well as other representative species;
- Identification of the presence, location, abundance, and condition of invasive species;
- Evaluation of vernal pool locations, hydrology, and species use; and
- Characterization of physical/biological attributes of affected habitats (e.g., substrate characteristics, water depth, velocity, temperature, elevation/bathymetry, species composition, density, percent cover, and structural components).

The BRA will generally follow the approach discussed in Section 5 of the *Housatonic River – Rest of River, Revised Corrective Measures Study Report* (RCMS Report; Arcadis et al. 2010). While the specific assessment procedures and protocols listed above will be detailed in the BRA Work Plan, it is anticipated that the following will be included in these assessments for the Remediation Areas:

- *Identification and Delineation of Habitat Types (including Wetlands)*: This effort is anticipated to retain use of the habitat classifications that have been applied to the ROR over the past 20 years, such as those provided in EPA's Ecological Characterization (Woodlot 2002) and carried forward into subsequent work, such as EPA's ecological risk assessment (EPA 2004) However, as documented in GE's 2020 *Final Morphology and Accessibility Survey Report* for Reach 5A (AECOM and Anchor QEA 2020), portions of the floodplain within that reach showed significant changes in habitat boundaries since the 2002 Woodlot survey (resulting from hydrologic changes); therefore, this effort is anticipated to include updates to habitat in other portions of the ROR floodplain using methods similar to those employed in Reach 5A. Wetlands identification and delineation will employ criteria established by the USACE in its "waters of the United States" regulatory program under the Clean Water Act. They will also

consider the criteria for wetlands under the Massachusetts Wetlands Protection Act regulations (310 Code of Massachusetts Regulations [CMR] 10.00). All delineations of both upland and wetland habitats will be conducted using site base mapping and aerial photographs with field checking.

- *Identification of Federal and State-Listed Threatened and Endangered Species and Other State-Listed Species and Their Habitats:* It is anticipated that the occurrence of any federally listed threatened or endangered species or their habitat in the ROR project area will be identified based on the U.S. Fish and Wildlife Service (USFWS) on-line Information, Planning, and Consultation System (IPaC). The occurrence of state-listed species and their priority habitats is anticipated to be based on established records and documentation available from the Massachusetts Natural Heritage and Endangered Species Program (MNHESP). MNHESP has been conducting surveys of state-listed species and their habitats in the ROR for more than 10 years, including consolidating information obtained during the ecological characterization work between 1998 and 2002. MNHESP has defined the limits of Core Habitats based upon these surveys and studies. The BRA Work Plan will describe GE's coordination with MNHESP and will set forth the procedures to be followed for identifying state-listed species and their habitats in the ROR area. This work will include the identification of threatened, endangered, and other state-listed species in the vernal pools in the ROR area, as required by Section II.B.3.b.(2)(b) of the Revised Permit.
- *Identification of the Presence, Location, Abundance, and Condition of Invasive Species*: This task will start with establishing a definition of "invasive species," including the biological species that will be included (plant and animal). It is anticipated that the focus will be on the plant community and will refer to established listings by recognized organizations (e.g., the USACE New England District and the Massachusetts Invasive Plant Advisory Group). As with the habitat inventories described above, it is anticipated that identification and location of invasive species will be conducted using site base mapping and aerial photographs in combination with field verification.
- *Evaluation of Vernal Pool Locations, Hydrology, Species Use, and Other Ecological Characteristics*: With EPA approval, GE conducted an identification and evaluation of vernal pools in the Reach 5A floodplain in 2018 and 2019 in accordance with a protocol approved by EPA (EPA 2018). Those identifications and evaluations were described in reports submitted to EPA on November 18, 2019, and July 16, 2020 (AECOM 2020), and February 4, 2021 (GE 2021), which were conditionally approved by EPA on June 16, 2020, August 10, 2020, and March 9, 2021, respectively. This work included the identification of pools in Reach 5A that met the MNHESP biological and physical criteria for vernal pools, as well as providing information on the hydrology and species observed in those pools. The BRA Work Plan will take into account those prior activities and will provide for a similar approach to be implemented to identify and

evaluate vernal pools in the remaining portions of the ROR floodplain. The BRA Work Plan will also provide for ecological characterization of the vernal pools in the overall ROR floodplain, including obtaining information on factors that may individually or cumulatively affect the results of the vernal pool remediation. Specific information to be obtained as part of this baseline ecological characterization will include vernal pool species composition (flora and fauna), topography, hydrologic regime, bottom sediment/soil composition, in-pool physical structure, general water and soil chemistry (other than PCB concentrations, which will be determined through sampling conducted under the applicable PDI work plans), surrounding land uses, and relationship/proximity to other vernal pools.

- *Characterization of Physical/Biological Attributes of Ecological Resources:* This task will involve the identification of the physical/biological attributes of ecological resources that may be affected by remedial activities, and a description of the means and methods for inventorying each resource as part of the BRA process. This characterization will also include the process to identify and qualify the ecological functions and services of the identified resources. As described in Section 5 of the RCMS Report, the specific methods used to assess the existing functions will be based primarily upon the collection of data on measurable and observable structural parameters that are known to give rise to the functions of the relevant habitats.
- *Survey of EA 10:* This specific task will consist of a survey of the trails, signage, boardwalk, and accessway in the expanded EA 10, owned by the Massachusetts Audubon Society (Mass Audubon).

The BRA Work Plan will be submitted to EPA within three months after EPA approval of this Revised SOW. Following EPA approval of the BRA Work Plan, GE will implement the work as part of the pre-design activities in accordance with the schedule to be outlined in that work plan.

4.2.1.5 Baseline Restoration Assessment Report

Following implementation of the studies outlined in the BRA Work Plan, GE will prepare a Baseline Restoration Assessment Report to present the results. That report will provide a site-wide description and assessment of the pre-remediation conditions, functions, and values of river bottom, riverbank, backwater, floodplain, impoundment, and vernal pool habitats, as well as the identified occurrence of federal or state-listed threatened or endangered species or other state-listed species and any invasive species in the areas affected by the Corrective Measures. The BRA Report will be prepared as a site-wide document; however, it will include a baseline restoration assessment for each Remediation Area, including an assessment of the conditions, functions, and values of the resources within that area. This report may also provide for future updates to the BRA Report for Remediation Areas other than Reach 5A, which would be included in or attached to the PDI Reports(s) for such area(s).

The site-wide BRA Report will be submitted in accordance with the schedule established in the BRA Work Plan as approved by EPA. That schedule will ensure that this submittal will not cause a delay in the otherwise applicable schedule for Reach 5A.

4.2.1.6 Restoration Performance Objectives and Evaluation Criteria Report

As required by Section II.B.1.c.(2)(b) of the Revised Permit, GE will develop a site-wide Restoration Performance Objectives and Evaluation Criteria (Restoration Criteria) report during the pre-design phase of the project to guide the design, remediation, restoration, construction, and implementation of Corrective Measures and the evaluation of restoration success. The Restoration Criteria report will include the following:

- Definition of restoration objectives, including minimization of the impacts on ecological resources and habitats from the implementation of the Corrective Measures and restoration of impacted resources and habitats. Restoration objectives are anticipated to include general goals, such as no net loss of wetland functions, no significant erosion on riverbanks, and maintenance of overall flood storage capacity.
- Identification of measurable evaluation criteria and applicable methods or specifications, including criteria and methods or specifications for evaluating success in achieving restoration objectives. These are anticipated to include measurable, quantifiable, or observable parameters that are amenable to being designed, controlled, and managed as part of a restoration program and are generally structurally based parameters.
- Identification of stakeholder concerns.
- Development of a Preliminary Monitoring Program. This would be intended to develop monitoring protocols geared specifically to the established Performance Standards.
- Development of a Preliminary Maintenance Program.
- Specification of corrective actions and circumstances. It is anticipated that this process will be integrated with the Adaptive Management Plan to be developed for the Remedial Action, as described in Section 4.3.1.4.

The Restoration Criteria report will be submitted to EPA within two months after EPA approval of the BRA Report, provided that this schedule does not cause a delay in the otherwise applicable schedule for Reach 5A. If it could result in such a delay, GE will advance the date for submittal of this report in consultation with EPA.

4.2.1.7 Supplemental Phase IA Cultural Resources Survey Work Plan and Report

In 2008, GE submitted to EPA a report on an *Initial Phase IA Cultural Resources Assessment (CRA) for the Housatonic Rest of River Project* (URS 2008). The Initial Phase IA CRA was conducted to assess the

potential for archaeological and historical resources (jointly referred to as cultural resources) to exist in the portions of the Housatonic River and its floodplain that could potentially be affected by implementation of Corrective Measures selected by EPA—namely, Reaches 5 through 8. This assessment was conducted consistent with Section 106 of the National Historic Preservation Act (NHPA) and federal and state regulations (36 CFR Part 800; 950 CMR 71.00). It preliminarily identified an Archaeological Area of Potential Effects (APE) as the potentially affected river, shoreline, and floodplain areas; and it also noted that a Historic Architectural APE would encompass historic properties that are located within the Archaeological APE or may be impacted by remedial activities. The report included: (1) background information on the environmental setting, pre-history, and history of the project area and region; (2) description of previous cultural resource studies and types of known cultural resources within the Archaeological APE; (3) a preliminary assessment of the potential for each section of the Archaeological APE to contain as-yet unidentified cultural resources; and (4) an outline of future steps under the NHPA to evaluate potential impacts on cultural resources once the scope and extent of remedial action have been determined. On September 9, 2008, EPA provided comments on the Initial Phase IA CRA, and on March 5, 2009, GE provided a response to those comments.

As indicated in the Initial Phase IA CRA (page 71), the next step in the CRA process is the submission of a supplemental work plan for additional Phase IA investigations after the extent of areas subject to remediation is known. Phase IA of the CRA process consists of literature searches and a desktop assessment of the archaeological sensitivity of the project area and the potential for historic structures to be present and affected. Because the extent of remediation was not known at the time of the 2008 Initial Phase IA CRA, it will be necessary to update that assessment now that the general extent of remedial activities is known.

Thus, as part of the pre-design deliverables, GE will submit a site-wide Work Plan for a Supplemental Phase IA CRA. That work plan will identify a revised Archaeological APE and Historic Architectural APE, based on the scope and extent of remediation. These APEs will encompass areas that will be subject to active remediation, as well as potential associated support areas (including access roads and staging areas). As discussed in Section 4.2.2, the UDF site and UDF support area will be subject to a separate initial cultural resources assessment, which will be coordinated, to the extent practicable, with the supplemental Phase IA activities for the remediation and associated support areas.

The objective of the supplemental Phase IA CRA is to identify floodplain, riverbank, or river channel areas within the Archaeological APE with known cultural resources or high potential to contain such resources and upland areas within the Historic Architectural APE with known or suspected historic structures. For purposes of this CRA, such cultural resources will include archaeological and historical resources that are subject to the Applicable or Relevant and Appropriate Requirements (ARARs)

relating to such resources, as listed in Attachment C to the Revised Permit—namely, the NHPA and its regulations, the federal Archaeological and Historic Preservation Action, and the Massachusetts Historical Commission Act and its regulations. These resources include resources that are listed or could potentially meet the criteria for listing on the National Register of Historic Places (NRHP), resources that are listed on the Massachusetts State Register of Historic Places (SRHP) and included on the State Inventory of Historic and Archaeological Assets, and potentially significant scientific, prehistorical, historical, or archaeological data subject to the Archaeological and Historic Preservation Act—collectively referred to herein as "potentially significant cultural resources." These resources will include properties of traditional religious and cultural importance that fall into any of the above categories.

The Supplemental Phase IA CRA Work Plan will describe in detail the additional desktop evaluations, literature searches, and consultations to be conducted to update the 2008 Initial Phase IA CRA, including coordination with the Massachusetts Historical Commissions, potential contacts with Native American tribes regarding the locations of Traditional Cultural Properties (TCPs), and other notifications and consultations required by the above-listed ARARs. It will also describe the updated evaluations to be conducted of the remediation and potential support areas to assess their potential to contain unidentified potentially significant cultural resources (i.e., whether they have "no," "low," or "high" potential to contain such resources). In addition, it will describe the activities to be conducted to identify any known or suspected historic structures within the Historic Architectural APE. This work plan will be submitted within four months after EPA approval of this Revised SOW. It will include a proposed schedule for the performance of this supplemental Phase IA assessment and submission of a report.

Following EPA's approval of the Supplemental Phase IA CRA Work Plan, GE will implement the supplemental Phase IA assessment activities called for in the work plan as approved by EPA. At the conclusion of those activities, GE will prepare and submit a site-wide Supplemental Phase IA CRA Report to present the results. The Supplemental Phase IA CRA Work Plan and Report will comply with the above-listed ARARs.[14]

As also discussed in the Initial Phase IA CRA (page 71), any necessary Phase IB cultural resource survey activities (which would include field activities such as terrestrial or underwater investigations and potentially an architectural survey) to determine the extent to which potentially significant cultural resources could be impacted by the remediation or support activities would best be conducted during the remedial design phase so that the survey data can be integrated with

[14] The foregoing description of the supplemental Phase IA CRA constitutes a summary; further details regarding that CRA and compliance with the associated ARARs will be included in the Supplemental Phase IA CRA Work Plan and Report, which will be subject to EPA review and approval.

information from the remedial design. As such, the work plan for a Phase IB cultural resource survey is discussed under the remedial design deliverables in Section 4.3.3.2.

4.2.1.8 Water Withdrawal and Uses Plan

In accordance with Sections II.B.8 and II.H.22 of the Revised Permit, a Water Withdrawal and Uses Plan will be prepared to evaluate and mitigate potential impacts on any industrial, commercial, and private/residential users of river water during implementation of the Corrective Measures. The Water Withdrawal and Uses Plan will describe proposed pre-design activities to identify industrial, commercial, private, or other withdrawals and uses of water along the portions of the Housatonic River that will be subject to remediation activities (i.e., Reaches 5 through 8), as well as to determine requirements associated with these uses (e.g., water quality and quantity) that may be affected by implementation of Corrective Measures.

The results of the pre-design activities to identify the river water uses, if any, will be summarized, for each Remediation Area, in a water withdrawal and uses evaluation that will be included in the Conceptual RD/RA Work Plan for the subject area and will be used to select appropriate methods to minimize and mitigate impacts during implementation of the remediation. The specific mitigative measures that will be considered will depend on the type, size, use, and location of any river water intakes.

The Water Withdrawal and Uses Plan will provide a detailed description of these pre-design and design activities, including the following:

- Objectives of the water withdrawal and uses evaluation;
- Description of the pre-design activities that will be conducted to identify industrial, commercial, and private river water users (e.g., public outreach, coordination with local municipalities, and review of available records);
- Description of information to be gathered for each identified river water user (e.g., location, water usage, withdrawal frequency, estimated withdrawal quantities, water quality requirements, details related to water intakes and any treatment, and related infrastructure details);
- Description of the evaluation to be performed to assess potential impacts that may occur during remedial activities;
- Description of the design process to minimize and mitigate impacts, if any, to identified river water users during implementation of the remedial activities;
- Description of documents to be prepared to summarize the river water usage details and the evaluation and design of any mitigative measures; and
- Schedule for performing the water withdrawal and uses evaluation.

The Water Withdrawal and Uses Plan will be submitted to EPA within 12 months after EPA approval of this Revised SOW. As noted above, the results will be summarized in a water withdrawals and uses evaluation, along with a description of measures to minimize and mitigate impacts related to river water withdrawals during remedial activities, in the Conceptual RD/RA Work Plans discussed in Section 4.3.3.1 of this Revised SOW.

4.2.2 PDI Plan and Report for Upland Disposal Facility

4.2.2.1 Pre-Design Investigation Work Plan

A PDI Work Plan for the UDF and UDF support area will be prepared to describe the proposed investigations necessary to support engineering evaluations and detailed planning and design of the UDF. This work plan will include, but not be limited to, the following:

- Description of UDF site and support area and pertinent site background;
- UDF Performance Standards (summarized in Section 2.5.1);
- Summary of information currently available to support design activities;
- PDI program objectives;
- Description of proposed field activities and investigations to address current data needs for design of the UDF and support area (incorporating existing data determined to be of sufficient quality to be usable), anticipated to include:
  - Surveying of existing site features and topography;
  - Subsurface drilling for geotechnical data and sample acquisition; and
  - Installation of temporary piezometers and/or permanent monitoring wells for baseline groundwater elevation and chemical groundwater quality monitoring;
- Proposal for a baseline assessment of the habitat at the UDF site and UDF support area;
- Proposal for an initial Phase IA cultural resources assessment of the UDF site and UDF support area, consistent with the supplemental Phase IA CRA described in Section 4.2.1.7 and to be coordinated, to the extent practicable, with that supplemental Phase IA CRA;
- Description of data and information that will be obtained during field-based activities;
- Summary of the evaluations to be performed based on the acquired PDI data and information; and
- Description of PDI reporting requirements and anticipated schedule for performing the PDI activities.

The PDI Work Plan for the UDF and UDF support area will be submitted to EPA within six months after EPA's May 26, 2021 conditional approval letter for the 2020 SOW—i.e., by November 26, 2021. Following EPA approval of both the UDF PDI Work Plan and the Rest of River FSP/QAPP (discussed in Section 4.2.1.2), GE will implement the UDF PDI activities in accordance with the schedule outlined in the UDF PDI Work Plan as approved by EPA, subject to obtaining access permission.

If the findings or results of the UDF PDI activities indicate that additional investigations are necessary, a Supplemental UDF PDI Work Plan or an addendum to the UDF PDI Work Plan will be submitted to EPA for review and approval prior to implementing such supplemental investigations.

4.2.2.2 Pre-Design Investigation Summary Report

Following completion of PDI activities for the UDF, GE will prepare a report summarizing the PDI results. The UDF PDI Summary Report will include the following:

- Summary of the activities and investigations conducted previously, as well as those performed as part of the PDI;
- Summary of the data and information obtained, including field and laboratory test results;
- Summary of the results of the baseline habitat assessment of the UDF and UDF support area, including an identification of the affected habitats and their functions;
- Summary of the results of the initial Phase IA CRA of the UDF and UDF support area, including an identification of the presence or likely presence of any potentially significant cultural resources (as defined in Section 4.2.1.7) in those areas and the need for further investigations to evaluate such resources;
- Documentation prepared during the PDI activities (e.g., boring logs, photographs, and water-level measurements); and
- Schedule for submitting a Conceptual Design Plan for the UDF (see Section 4.3.2.1).

The UDF PDI Summary Report will be submitted in accordance with the schedule to be provided in the UDF PDI Work Plan as approved by EPA.

4.2.3 PDI Plans and Reports Specific to Each Remediation Area

4.2.3.1 Pre-Design Investigation Work Plans

Pursuant to Section II.H.3 of the Revised Permit, GE is required to prepare PDI work plan(s) for the collection of any pre-design data to be used to support the remedial activities in the ROR. At this time, it is anticipated that a separate PDI work plan will be developed for each Remediation Area. (Remediation Areas are described conceptually in Section 3, where it is noted that specific Remediation Areas will be defined in the future Overall Strategy and Schedule document [see

Section 4.1].) However, GE may propose to use PDI areas that are larger than individual Remediation Areas or to implement PDI activities for multiple Remediation Areas concurrently for the purposes of pre-design data collection.

PDI work plans will be prepared to present details regarding the scope of any proposed sediment, riverbank, and floodplain investigations. Each such plan will include the following for the subject area(s):

- Description of the subject area(s) and pertinent site background;
- Objectives of the PDI program;
- An evaluation and summary of existing PCB data and identification of data needs;
- Description of the PDI sampling scope for PCBs, including sampling types, locations, rationale, quantities, and depths;
- Proposal for methods of averaging data (e.g., averaging areas and depth intervals) for the purposes of delineating removal areas (as appropriate), as required by the Revised Permit;
- Description of sampling or analytical methods that will be used to differentiate material for disposal in the UDF versus off-site disposal, consistent with Attachment E to the Revised Permit;
- Identification of the analytical method to be used for PCBs (or reference to the appropriate portion of the approved Rest of River FSP/QAPP);
- Description of any proposed non-chemical information to be collected as part of the PDI (e.g., utility surveys, infrastructure surveys, geotechnical sampling, and topography/bathymetry);
- Cross-references to relevant QA/QC requirements set forth in the Rest of River FSP/QAPP;
- Description of PDI reporting requirements; and
- Schedule for performing the PDI activities and reporting.

Two PDI work plans for floodplain soils in Reach 5A have already been submitted pursuant to the Initial SOW. One is a PDI work plan for residential properties within the Reach 5A floodplain, which was originally submitted to EPA on August 15, 2018 and conditionally approval by EPA on June 9, 2020, and was revised and resubmitted on July 9, 2020 and conditionally approved on July 23, 2020, with an addendum submitted on March 31, 2021 and conditionally approved on April 20, 2021. The pre-design sampling and other investigations at those residential properties have largely been completed, with limited additional sampling currently ongoing. The other floodplain PDI work plan is a PDI work plan for non-residential EAs in Reach 5A, which was originally submitted on October 6, 2017, and was conditionally approved by EPA in various parts on January 25, 2018, March 28, 2018, and April 26, 2021. The portions of that work plan relating to the identification of vernal pools in Reach 5A were previously implemented, with reports on the identified vernal pools submitted to EPA

as described in Section 4.2.1.4. A revised work plan for sampling at the non-residential EAs in the Reach 5A floodplain, including sampling for PCBs at the identified vernal pools, was submitted on June 25, 2021, and is under EPA review.

In addition, a PDI work plan or work plans covering PDI activities for sediments and riverbanks in Reach 5A (including associated backwaters) will be submitted to EPA within four months after EPA's May 26, 2021 conditional approval letter for the 2020 SOW—i.e., by September 27, 2021.

The submittal schedule for PDI work plans for subsequent Remediation Areas will be provided in the Overall Strategy and Schedule document.

If the findings or results of the PDI activities indicate that additional sampling is necessary to further supplement the available data, or if additional data needs are identified during development of the Conceptual RD/RA Work Plan, a supplemental PDI work plan or addendum to an existing work plan will be submitted to EPA for review and approval prior to implementing such supplemental investigations.

4.2.3.2 Pre-Design Investigation Summary Reports

Following completion of PDI activities and after receipt and validation of analytical data, GE will prepare a report(s) summarizing the PDI results corresponding to the approved PDI work plan under which the work was performed. Each such PDI summary report will include the following for the subject area(s):

- Summary of the investigations performed;
- Summary of investigation results;
- Summary of validated data, including a discussion of any QA/QC issues with the data and associated data validation and laboratory data reports; and
- Supporting documentation of the PDI activities (e.g., sampling logs and photographs).

Each PDI summary report will be submitted in accordance with the schedule set forth in the approved PDI work plan for the subject area(s) or as required by EPA.[15] Each such report will consider the sufficiency of the available PCB data, in terms of spatial coverage, to delineate the potential area(s) to be remediated and the ability of the data to support subsequent RD/RA activities, as well as assess whether there are any additional or remaining data needs. If necessary, the PDI summary

[15] As required by EPA, a PDI Summary Report on the floodplain residential properties in Reach 5A will be submitted within 90 days after receipt and validation of the sampling data collected under GE's March 31, 2021 Work Plan Addendum, as conditionally approved by EPA on April 20, 2021.

report will also contain a proposal for any further investigation(s) and a schedule for submittal of supplemental investigations summary report(s).

4.2.4 Vernal Pool Pilot Study Deliverables

In accordance with Section II.B.3.b.(2)(d)-(g) of the Revised Permit, GE will conduct a pilot study to evaluate the use of both traditional excavation/restoration techniques and amendments such as AC for the remediation of vernal pools. For this study, GE will first submit to EPA a letter report proposing, for EPA review and approval, the specific vernal pools to be included in the study. This report will include a description of the selected pools (no more than 10 pools and none located in Core Area 1 habitat) and the process used to select those pools. Because GE has already completed the identification and delineation of certifiable vernal pools in Reach 5A (using MNHESP's vernal pool certification criteria), as discussed in Section 4.2.1.4, it is anticipated that these 10 pools will be located in Reach 5A. The selected pools will include only those that have soil PCB concentrations exceeding a spatially weighted average concentration of 3.3 mg/kg based on sampling and characterization of vernal pools conducted during the PDI pursuant to Section II.B.3.b.(2)(b) of the Revised Permit.[16] The proposal will summarize baseline PCB concentrations in the selected pools, and it will discuss which of these 10 pools will be subject to traditional excavation/restoration methods and which pools will be subject to placement of an amendment. This proposal will be submitted to EPA within 30 days following EPA approval of the PDI summary report on floodplain non-residential EAs, which will include the Reach 5A vernal pool soil PCB data.

Following EPA approval of this letter report, GE will prepare and submit a Vernal Pool Pilot Study Work Plan that will contain design information related to pilot study activities to be conducted in each of the 10 selected pools. This work plan will include, but will not be limited to, the following:

- For traditional excavation and restoration methods (where selected):
  - An evaluation of the limits of excavation in each pool needed to meet the PCB Performance Standard for vernal pools;
  - Plans and specifications to support the excavation and restoration activities; and
  - A description of other implementation details concerning performance of the pilot study activities;

[16] As described in Section 4.2.3.1, a revised work plan for soil PCB sampling at the non-residential EAs in the Reach 5A floodplain, including sampling in vernal pools in Reach 5A, was submitted to EPA on June 25, 2021, and is under EPA review.

- For AC or other comparable sediment amendment(s) (where selected):
  - Proposed additional baseline data collection activities to be conducted in the vernal pools selected for placement of amendments; and
  - A description of the type and quantities of AC or other comparable sediment amendment(s) to be used for the selected pools and its application method;
- For both of the above remediation methods, as required by Section II.B.3.b.(2)(b) of the Revised Permit, a description of the proposed methods to be used and the criteria for success both for reduction of bioavailability/concentration of PCBs and for minimization of impacts to ecological receptors;
- An evaluation of the need for a bench-scale study prior to pilot study implementation;
- A detailed description of the activities and schedule for implementing the bench-scale study (if considered necessary) and the pilot study; and
- Proposed procedures and criteria, based on the specific criteria described above, for measuring and evaluating the overall relative success of the two remediation methods.

GE will submit the Vernal Pool Pilot Study Work Plan within four months after EPA approval of the vernal pool selection proposal.

To the extent possible, implementation of the pilot study within the selected vernal pools will be conducted during the initial year or years of the overall remediation work in Reach 5A (which is anticipated to take several years). This will allow for sufficient time to complete the pilot study and develop recommendations regarding remediation of the remaining vernal pools within the ROR floodplain, including the remainder of the pools within Reach 5A. Following completion of the pilot study, a Vernal Pool Pilot Study Summary Report will be prepared to summarize the results of that study and provide those recommendations. This summary report will be submitted in accordance with a schedule to be provided in the approved Vernal Pool Pilot Study Work Plan.

As described in Section II.B.3.b.(2)(h) of the Revised Permit, EPA will provide an informal opportunity for public input on each of the above-described deliverables relating to the vernal pool pilot study prior to its approval of the deliverable.

Following EPA approval of the Vernal Pool Pilot Study Summary Report, a separate addendum to the RD/RA Work Plans for Reach 5A will be developed to address remediation of the remaining vernal pools in Reach 5A. The remediation of the other vernal pools in the ROR floodplain will be addressed in the Conceptual and Final RD/RA Work Plans for the pertinent Remediation Areas.

4.3 Remedial Design Deliverables

4.3.1 Site-Wide Plans and Reports

4.3.1.1 Transportation and Disposal Plans

Section II.H.10 of the Revised Permit requires GE to submit an Off-Site Transportation Plan. Given the hybrid disposal approach set forth in the Revised Permit (as described in Section 2.5), GE will submit two separate Transportation and Disposal Plans, after consultation with affected towns and landowners, to describe the procedures that will be used to transport and dispose of material removed during implementation of the ROR Remedial Action (i.e., sediment, soil, and debris), including transport to dewatering/processing/transfer facilities. The Off-Site Transportation and Disposal Plan will describe such procedures for an off-site disposal facility or facilities, and an On-Site Transportation and Disposal Plan will be developed to describe such procedures for on-site disposal at the UDF to be constructed for this project. Determination of whether material will be transported and disposed of off-site or on-site will be based primarily on characterization of the waste (taking into account the acceptance criteria in Attachment E to the Revised Permit for disposal at the UDF), with a minimum of 100,000 cubic yards of PCB-containing material to be sent off-site. The remainder of this section describes the proposed contents of each plan.

Off-Site Transportation and Disposal Plan

This plan will identify and evaluate transportation methods and disposal options for the material to be disposed of off-site, including identification of potential candidate off-site disposal facilities and description of any supplemental waste characterization for the anticipated waste streams to be generated. The Off-Site Transportation and Disposal Plan will include the following elements:

- The plan will identify off-site disposal facilities that could potentially be used in this project (e.g., Toxic Substances Control Act (TSCA) landfills and RCRA Subtitle D and C facilities); and for those facilities, it will provide information on their permits/approvals, general material properties requirements, waste characterization criteria, and facility capacity limitations. The plan will also discuss the criteria that will be applied to select the appropriate off-site disposal facility(ies) that will be used. The actual selection of the off-site disposal facility(ies) to be used for the waste generated in a specific Remediation Area will be identified at a later time, anticipated to be in the Final RD/RA Work Plan or Supplemental Information Package (SIP) for the subject Remediation Area (see Sections 4.3.3.4 and 4.4 below). As the Off-Site Transportation and Disposal Plan will discuss, the criteria for selection of such facilities are anticipated to include consideration of such factors as the type and characterization of the material to be disposed of, the locations of temporary processing/transfer areas, implementation/operation schedule, potential community impacts, and distance.

- The plan will identify and evaluate the anticipated transportation methods to be used for transport to the selected off-site disposal facilities (e.g., truck, rail, intermodal transportation). It will note that the method(s) for transport to a specific disposal facility will take into account the location of that facility, the type and characterization of the material to be transported, the locations of temporary material dewatering/processing/transfer area(s), implementation/operation schedule, available loading options at the material dewatering/processing/transfer area(s), transportation equipment availability, and potential community impacts. The final methods of transport and the transportation routes to the selected off-site disposal facility(ies) will be identified on a Remediation Area-specific basis at a later time, likely in the Final RD/RA Work Plan or SIP for the Remediation Area.
- The plan will include an identification of anticipated methods of transport from the locations of excavation/dredging to the temporary material dewatering/processing/transfer area(s) prior to off-site transport for disposal.
- The plan will present a preliminary evaluation of the results of pre-design waste characterization samples to determine compliance with the waste acceptance criteria of the candidate off-site disposal facilities. A final evaluation of compliance with the waste acceptance criteria of the off-site-disposal facilities will be provided once the off-site disposal facility(ies) have been selected for disposal of waste from a given Remediation Area, likely in the Final RD/RA Work Plan or SIP for the subject Remediation Area.
- The plan will include a description of the waste monitoring, tracking, and recordkeeping procedures in accordance with federal, state, and local waste management regulations (where applicable), including documentation of waste generation, waste characterization and approvals (where necessary), and record of off-site disposal.

On-Site Transportation and Disposal Plan

This plan will identify and evaluate transportation methods for the on-site UDF. The On-Site Transportation and Disposal Plan will include the following elements:

- The plan will identify and evaluate the potential transportation methods to be used for transport to the UDF. These will include transport by truck, barge, and hydraulic conveyance. In addition, the plan will include an evaluation of the potential use of rail and the potential rail routes to the UDF, including feasibility of rail for on-site transport of waste material. The plan will note that the methods for transport to the UDF will take into account the type and characterization of the material to be transported, the means and methods of material removal (e.g., mechanical versus hydraulic), the locations of temporary material dewatering/processing/transfer area(s), implementation/operation schedule, available loading options at the material dewatering/processing/transfer area(s), and potential community impacts. The final methods of transport and the transportation routes to the UDF will be

identified on a Remediation Area-specific basis at a later time, likely in the Final RD/RA Work Plan or SIP for the subject Remediation Area.

- The plan will include an identification of anticipated methods of transport from the locations of excavation/dredging to the temporary material dewatering/processing/transfer area(s) prior to transport to the UDF (where such temporary areas will be used).
- The plan will include a description of the waste monitoring, tracking, and recordkeeping procedures in accordance with federal, state, and local waste management regulations (where applicable), including documentation of waste generation, waste characterization and approvals (where necessary), and record of on-site disposal.

Schedule

Both Transportation and Disposal Plans will be submitted to EPA concurrently with the Conceptual RD/RA Work Plan to be submitted for Reach 5A, the first Remediation Area to undergo remedial design (see Section 4.3.3.1). EPA and GE will solicit input on both Transportation and Disposal Plans from local governments, affected residents/landowners, neighborhoods in the vicinity of the cleanup, and other interested stakeholders as soon as practicable.

4.3.1.2 Updated Project Operations Plan

Following execution of the CD, GE prepared a Project Operations Plan (POP) to address common or similar activities associated with the different response actions being implemented under the CD. The POP comprises a series of topic-specific plans (identified below) that address several common aspects of the response actions and apply to various activities to be conducted as part of those response actions. Collectively, these plans describe the minimum requirements, general activities, protocols, and methodologies that are applicable to response actions under the CD. The POP has been revised periodically since 2002, with the most recent version submitted in July 2013 (Arcadis 2013b). It comprises the following plans:

- Waste Characterization Plan;
- Soil Cover/Backfill Characterization Plan;
- Site Management Plan;
- Ambient Air Monitoring Plan (AAMP);
- Construction Quality Assurance Plan (CQAP); and
- Contingency and Emergency Procedures Plan (CEPP).

The current POP will remain in effect and will be considered to constitute the ROR POP for purposes of complying with the Revised Permit requirements until it is replaced by an updated ROR POP approved by EPA. The plans that comprise the current POP will be reviewed and updated to

incorporate requirements associated with the ROR Remedial Action, as well as any other necessary updates. In addition, a separate Construction Monitoring Plan (as required by Section II.H.9 of the Revised Permit) will be prepared and added to the POP to describe other aspects of construction monitoring not already covered by the existing FSP/QAPP.

It should be noted that the updated AAMP will include a generic plan for ambient air monitoring in the UDF and UDF support area and in each reach subject to remediation, including provisions for baseline PCB air monitoring prior to use of the UDF and UDF support area and prior to any remedial activities in the Remediation Areas, as well as provisions for background air monitoring and action levels during active on-site construction activities. The specific air monitoring locations for baseline, background, and on-site during-construction air monitoring will be identified for the UDF and UDF support area in the final OMM Plan for the UDF and for the Remediation Areas in the Final RD/RA Work Plans for those areas.

The updated POP will be submitted to EPA within 15 months after EPA approval of the Overall Strategy and Schedule document.

4.3.1.3 Quality of Life Compliance Plan

In accordance with Section II.H.11 of the Revised Permit, GE will prepare a Quality of Life (QOL) Compliance Plan that will discuss how the following five topics will be addressed during remediation:

1. Potential noise, air, odor, and light impacts;
2. Potential impacts on recreational activities;
3. Road use, including restrictions on transportation of waste material through residential areas and methods to minimize and mitigate transportation-related impacts to neighborhoods, infrastructure, and the general public;
4. Coordination with local governments and affected residents/landowners at or near areas impacted by remediation; and
5. Community health and safety.

Each of these topics is discussed further below.

First, the QOL Compliance Plan will describe GE's proposed noise, air, odor, and light standards to be applied during remediation. The final QOL standards will be incorporated into the remedial design and used to monitor the performance of the remedial activities. The QOL Compliance Plan will also describe general measures planned for assessing achievement of these QOL standards. However, it is anticipated that specific measures for complying with the noise, air, odor, and light standards at the individual Remediation Areas will be developed during remedial design and provided in the Conceptual RD/RA Work Plans and/or Final RD/RA Work Plans as described in Section 4.3.3. It is

anticipated that an adaptive management approach will be implemented with respect to compliance with these QOL standards, such that modifications to control measures and remedial construction activities may be identified as the project proceeds.

Second, the QOL Compliance Plan will describe generally the impacts of remediation on recreational activities in the river and floodplain in the ROR area and methods to minimize or mitigate such impacts where practicable. In accordance with Section II.H.11.b of the Revised Permit, the plan will include a provision that GE will work cooperatively with the City of Pittsfield; the Towns of Great Barrington, Lee, Lenox, and Stockbridge; and the Commonwealth of Massachusetts to facilitate their enhancement of recreational activities, such as canoeing and other water activities, hiking, and bike trails in the ROR corridor, on properties where remediation will occur, and/or where temporary access roads are constructed. Again, the discussion in this plan will be general; more specifics regarding the impacts of remediation on recreational activities and methods to minimize or mitigate such impacts will be provided on a Remediation Area-specific basis in the Conceptual and/or Final RD/RA Work Plans.

Third, in addressing road use, the QOL Compliance Plan will include consideration of methods to reduce residential impacts where practicable, including remediation techniques that further restrict transport of waste material through residential areas, in accordance with Section II.H.11.c of the Revised Permit. In this connection, the QOL Compliance Plan will include a description of the requirements for activities that will be undertaken to document the existing condition of municipal roads and associated infrastructure (e.g., bridges and culverts) to be used for the transportation of materials required for remediation in the City of Pittsfield or in the Towns of Great Barrington, Lee, Lenox, or Stockbridge. At a minimum, the requirements for the documentation will include the following:

- 360-degree road imaging technology plus three-dimensional road surface imaging technology to document pre-existing condition of municipal roads to be used during remediation; and
- Photo documentation of the condition of infrastructure associated with such roads, including bridges, culverts, or other exposed infrastructure that is not captured in the road scanning process outlined in the preceding bullet.

The QOL Compliance Plan will also describe how roads damaged due to project activities (beyond normal wear and tear) will be repaired in order to allow safe public access. Further, the plan will describe the activities to be undertaken to document the condition of the roads and associated infrastructure following their use for remediation, using the same technology used prior to remediation. The plan will also describe discussions with the affected communities regarding the

potential use of Ground-Penetrating Radar (GPR) technology to assess subsurface conditions in certain areas before and after use.

Fourth, the QOL Compliance Plan will describe how GE plans to coordinate with affected residents or landowners at or near areas impacted by remediation.

Fifth, the plan will present a proposed community health and safety program. That program will include establishment and maintenance of a GE website to provide community access to information such as data, technical reports, work plans, and project fact sheets, as well as updates on current and future project activities. It will also include a system to identify and address community complaints and concerns during remediation activities.

The QOL Compliance Plan will be submitted to EPA within 24 months after EPA approval of this Revised SOW, but no later than the due date for submission of the Conceptual RD/RA Work Plan for Reach 5A (see Section 4.3.3.1), which the same as the due date for submission of the Transportation and Disposal Plans (see Section 4.3.1.1). EPA and GE will solicit input on the QOL Compliance Plan from local governments, affected residents/landowners, neighborhoods in the vicinity of the cleanup, and other interested stakeholders as soon as practicable.

4.3.1.4 Adaptive Management Plan

In accordance with Section II.F of the Revised Permit, an adaptive management approach will be incorporated into the design and implementation of the Corrective Measures to adapt requirements or activities based on new information and make changes as needed to achieve the expected benefits of the project. The overall objective of the adaptive management approach will be to maintain or improve the efficiency of the project, mitigate short-term impacts as needed, and help ensure that the Corrective Measures are successfully completed, that the work remains consistent with the Revised Permit, and that the targets and objectives set forth in the Revised Permit are met.

The adaptive management process will be implemented to adapt and optimize project activities (i.e., design and construction) to account for lessons learned from work conducted at early stages of the project, new information, changing conditions, evaluations of the use of new or innovative technologies (if any), results from any pilot studies, and additional opportunities that may present themselves over the duration of the project, including during periodic reviews. If warranted, GE will modify the implementation of the Corrective Measures (with EPA approval) through this process to minimize any adverse impacts of response actions, expedite response actions, improve the Corrective Measures, and/or to ensure compliance with, or continued progress towards, achieving Performance Standards.

The adaptive management approach will include ongoing reassessment of the design of the remediation and restoration activities, construction methods, and best management practices. The

proposed segmentation of the ROR into separate Remediation Areas (as described in Section 3) allows for adaptive management, so that lessons learned during work performed in earlier Remediation Areas can be carried forward into future work performed in subsequent Remediation Areas. The adaptive management process will be iterative in that successful design elements or remediation and restoration activities and processes can be identified early in the construction process and built upon, while those that are less successful can be identified and then refined, modified, or eliminated, as appropriate, to achieve the remedial objectives more efficiently and effectively.

An Adaptive Management Plan will be prepared in accordance with Section II.H.13 of the Revised Permit to provide additional detail on the adaptive management process to be implemented for the ROR project. The Adaptive Management Plan will include the following:

- Objectives for the adaptive management process;
- Identification of the project components that will be subject to adaptive management;
- A description of information and data that will be considered during adaptive management;
- A description of the adaptive management assessment and decision-making process; and
- A provision to consider a review of innovative technologies if requested by EPA for consideration during its required periodic (i.e., five-year) reviews.

The Adaptive Management Plan will be submitted to EPA within 18 months after EPA approval of the Overall Strategy and Schedule document.

4.3.2 Design Plans for Upland Disposal Facility

GE will develop engineering designs, drawings, and technical specifications for the construction of the UDF and UDF support area. To facilitate EPA's review of the UDF layout and components, a Conceptual Design Plan will be developed; and following EPA approval, a Final Design Plan for the UDF will be prepared. In addition, GE will develop plans for the operation, monitoring, and maintenance of the UDF and for the final cover/closure of the UDF. Descriptions of all these plans are provided in the following sections.

4.3.2.1 Conceptual Design Plan for the Upland Disposal Facility

Following EPA approval of the UDF PDI Summary Report (and any supplemental report[s]), GE will submit conceptual design information for the UDF and UDF support area. This information will be submitted in a Conceptual Design Plan following completion of pre-design activities and related reporting and when design activities are approximately 30% complete.

The Conceptual Design Plan for the UDF will present the site layout and primary components of the UDF and UDF support area. In general, the Conceptual Design Plan for the UDF will include the following elements:

- Summary of the Basis of Design used in preparation of the UDF design;
- An evaluation of how the UDF will meet the Performance Standards in Section II.B.5.a of the Revised Permit and summarized in Section 2.5.1 of this Revised SOW;
- Description of the potential construction phases for development of the UDF and UDF support area;
- Description of the preliminary design, including estimated disposal capacity, peak final cover elevation and slopes, and groundwater-baseliner separation distance;
- Estimates of the primary site earthwork quantities (i.e., cut and fill amounts) associated with construction of the UDF and UDF support area;
- Preliminary design drawings depicting primary elements of the UDF, including waste consolidation area base liner and final cover grading, access roads, stormwater management and leachate storage facilities, and operational areas;
- Description of or reference to the baseline air monitoring to be conducted in the UDF area in accordance with the AAMP prior to use of the UDF and UDF support area (see Section 4.3.1.2) and the baseline groundwater monitoring conducted in that area during pre-design investigations (see Section 4.2.2.1) or to be conducted in that area prior to such use;
- Reference(s) to the anticipated air, groundwater, and stormwater monitoring to be implemented during construction and operation of the UDF, to be specified in the UDF Operation, Monitoring, and Maintenance (OMM) Plan described in Section 4.3.2.3;
- Identification of the habitat impacts of the UDF and support area and preliminary identification of measures to address such impacts, both during construction and operation and at closure of the UDF;
- In the event that the UDF PDI Summary Report identifies the presence or likely presence of any potentially significant cultural resources at the UDF site or the UDF support area and the need for field investigations for such resources, a plan for conducting the necessary Phase IB field investigations to determine whether the construction or operation of the UDF or UDF support area will impact any potentially significant cultural resources (as defined in Section 4.2.1.7), consistent with the Phase IB CRA activities described in Section 4.3.3.2, together with a schedule for conducting and reporting on such investigations; and
- An identification of ARARs relevant to the UDF.

The Conceptual Design Plan for the UDF will be submitted to EPA in accordance with a schedule to be provided in the UDF PDI Summary Report.

4.3.2.2 Final Design Plan for the Upland Disposal Facility

The Final Design Plan for the UDF will be prepared based on the conditions developed in the Conceptual Design Plan and in consideration of comments received from EPA on that plan. The Final Design Plan will be prepared for construction purposes and will therefore include the necessary detailed evaluations and technical information to support EPA approval and development of the UDF and UDF support area. In general, the Final Design Plan for the UDF will include the same information listed in Section 4.3.2.1 concerning the conceptual design information (with updates and additional details as appropriate based on further design activities and/or EPA comments), plus the following additional information:

- Detailed design of the UDF and UDF support area, including construction-level design drawings and materials and performance specifications;
- Final engineering calculations (e.g., geotechnical, stormwater, and disposal capacity);
- Cross-reference to the baseline air and groundwater monitoring conducted or to be conducted in the UDF area prior to operations and to the air, groundwater, and stormwater monitoring activities to be conducted during UDF operations, as specified in the UDF OMM Plan described in Section 4.3.2.3;
- Identification of any potentially significant cultural resources that would be adversely affected by the construction or operation of the UDF or support area; an assessment of whether any such adverse effects can be avoided; if not, an evaluation of whether the affected cultural resources are in fact significant (as defined in Section 4.3.3.2) or a Phase II CRA work plan to evaluate that issue; and if necessary, proposed activities to protect any significant cultural resources identified and/or mitigation activities for unavoidable adverse impacts (if any) on significant cultural resources;
- Identification of UDF construction team, including key personnel, their roles and responsibilities, and lines of authority;
- Process for selection of a contractor(s) for UDF construction and operation, if not already selected;
- Schedule for construction;
- CQAP;
- Stormwater Pollution Prevention Plan;
- A conceptual proposal or proposals, based on consultation with officials from the Town of Lee, describing how the UDF site would be prepared for potential re-use once it is capped if

the Town of Lee so desires (as required by Section II.B.5.b.(2) of the Revised Permit), and a reference to the closure plan and plan for restoring the UDF support area, to be presented in the UDF Final Cover/Closure Plan described in Section 4.3.2.5, where the plans for closure and re-use of the UDF site will be described in more detail;

- Project closeout requirements; and
- Summary of anticipated Post-Construction Site Control activities following completion of the final cover and closure.

The Final Design Plan will be submitted to EPA in accordance with a schedule to be provided in the Conceptual Design Plan.

4.3.2.3 Operation, Monitoring, and Maintenance Plan for the Upland Disposal Facility

GE will also prepare an OMM Plan for the UDF. That plan will detail OMM activities that will be implemented during the facility construction and operation phases. This OMM Plan will include the provisions for the following:

- Construction-phase monitoring for the facility components, including construction oversight, daily work inspections, air and groundwater monitoring, QA/QC measures and activities, and reporting;
- Waste filling and management operations, including waste placement tracking and monitoring, fill progression and capacity monitoring, daily and temporary waste covering and inspections, stormwater management inspections, and reporting;
- Monitoring during UDF operations, including the final procedures and locations for air, groundwater, and stormwater monitoring; and
- Facility operations, including leachate generation tracking, routine site and facility component inspections, routine and event-based stormwater management system inspections, and reporting.

The UDF OMM Plan will be prepared and submitted to EPA concurrently with GE's submittal of the Final Design Plan for the UDF.

4.3.2.4 Supplemental Information Package for Upland Disposal Facility

Following selection of a contractor(s) for UDF construction and operation, GE will submit a SIP for construction and operation of the UDF and UDF support area. That SIP will be submitted on a

schedule to be specified in the Final Design Plan for the UDF and will include, but will not be limited to, the following:

- Contractor's Operations Plan, which will provide a detailed description of the contractor's means and methods, control measures, and best management practices to be implemented as part of the UDF construction activities;
- Contractor's HASP, which will describe the project-specific safety and health requirements and procedures to be followed during the construction activities;
- Contractor's Work Schedule, which will identify primary construction elements and progress milestones anticipated by the construction contractor(s); and
- Information on imported soil and aggregate materials, liner system geosynthetics, and leachate collection system components, and results of laboratory testing of such materials.

4.3.2.5 Final Cover/Closure Plan for the Upland Disposal Facility

GE will prepare a Final Cover/Closure Plan for the UDF and UDF support area. That plan will first demonstrate compliance with the Performance Standards for construction, operation, and monitoring of the UDF through the date of this plan. It will then describe GE's plan for the closure of the UDF, including installation of the final impermeable cap and vegetative cover and preparation of the site for re-use, and for restoration of the UDF support area. That closure/restoration plan will be developed in coordination with EPA and local municipal officials, including consultation with officials from the Town of Lee in follow-up to the proposal(s) for re-use included in the Final Design Plan, as required by Revised Permit Section II.B.5.b.(2). The Final Cover/Closure Plan will also include provisions for monitoring during closure construction activities (e.g., construction oversight; daily work inspections; air, groundwater, and stormwater monitoring; QA/QC measures and activities; and reporting).

In addition, Section II.B.7.d.(2) of the Revised Permit requires GE to prepare and record an ERE in accordance with the CD to prohibit excavation of the UDF, prohibit extraction, consumption, or utilization of groundwater underneath the UDF, including a 500-foot zone around the waste consolidation area, and restrict the future use of and access to the UDF. The Final Cover/Closure Plan for the UDF will describe GE's plans for preparing and recording this ERE and for conducting subsequent inspections to evaluate compliance with the ERE.

Section III.B.5.a.(4) requires final closure of the UDF when either: (1) the UDF is full; or (2) excavation and dredging activities conducted as part of the ROR Remedial Action are complete. Given these requirements, GE will submit the Final Cover/Closure Plan for the UDF at least one year in advance of the anticipated occurrence of the earlier of those conditions (or of the anticipated closure of a

discrete cell within the UDF), on a schedule to be agreed upon with EPA. The Post-Closure Monitoring and Maintenance Plan for the UDF is described in Section 5.2.

4.3.3 Plans and Reports Specific to Each Remediation Area

4.3.3.1 Conceptual RD/RA Work Plans

Following EPA approval of the PDI summary report(s) for each Remediation Area, GE will submit conceptual design information related to remediation of in-river sediment, riverbanks, and/or floodplain soil/vernal pools (as applicable) for that Remediation Area. This information will be submitted in a Conceptual RD/RA Work Plan following completion of PDI activities and related reporting and when design activities are approximately 30% complete.

The Conceptual RD/RA Work Plan for each Remediation Area will include, but may not be limited to, the following:

- Results of pre-design studies/investigations;
- An evaluation of the areas and depths subject to remediation to meet the applicable PCB-related Performance Standards (summarized in Section 2 of this Revised SOW);
- An evaluation of issues that may affect the type and extent of remediation activities;
- Preliminary plans and specifications to support the remediation activities;
- A summary of preliminary remediation quantities, including estimated sediment/soil removal volumes and capping areas/backfill volumes;
- Design assumptions and parameters, including preliminary cap design evaluations (where applicable);
- A description of supplemental engineering data collection activities to be conducted prior to final design;
- If necessary, a Treatability Study Work Plan to describe any necessary treatability testing to support the final design;
- Preliminary area-specific measures to address the QOL standards and potential impacts on the public;
- A summary of the water withdrawals and uses evaluation, including preliminary measures to be implemented to minimize and mitigate impacts related to river water withdrawals during implementation of response actions (see also Section 4.2.1.8);
- Results of an in-river hydraulic analysis conducted in support of design, where necessary;

- A preliminary evaluation of where the dredged/excavated materials from the subject Remediation Area will be disposed of (i.e., in the UDF vs. in off-site disposal facilities); and
- An identification of ARARs for the remediation and restoration work in the subject Remediation Area.

The Conceptual RD/RA Work Plan for Reach 5A, the first Remediation Area, will be submitted to EPA within six months after approval of the last PDI summary report for that area.[17]

The submittal schedule for Conceptual RD/RA Work Plans for subsequent Remediation Areas will be outlined in the Overall Strategy and Schedule document and will likely be linked to EPA approval of the PDI summary report(s) for each Remediation Area.

4.3.3.2 Cultural Resource Survey Deliverables

During the remedial design phase, GE will submit, for each Remediation Area, a Work Plan for a Phase IB Cultural Resource Survey. Using information in the Supplemental Phase IA CRA Report (see Section 4.2.1.7) and design information in the Conceptual RD/RA Work Plan for the subject area, this work plan will propose field investigations to determine whether the remediation and support activities for that area, as designed, will impact any potentially significant cultural (i.e., archaeological or historical) resources (as defined in Section 4.2.1.7).[18] The proposed investigations will include visual reconnaissance, terrestrial surveys, underwater investigations, and architectural surveys, as appropriate.

The Work Plan will first describe and map the archaeological sensitivity of each pertinent segment of the subject area (i.e., whether it contains known cultural resources and its potential to contain unidentified potentially significant cultural resources). These sensitivity maps will be compared with the areas targeted for remediation and support areas (including access roads and staging areas), as described in the Conceptual RD/RA Work Plan. The objective of this comparison will be to determine whether any areas identified as containing known potentially significant cultural resources or having a "high potential" to contain such resources are situated within or immediately adjacent to the areas subject to remediation or with remediation support facilities. This comparison will also include identification of areas within the Historic Architectural APE where known or suspected historic structures could be affected. The Work Plan will identify additional information needed to determine whether the remediation and supporting activities will impact any potentially significant cultural resources (as defined in Section 4.2.1.7), including areas that need field investigations to make that

[17] The Conceptual and Final RD/RA Work Plans for Reach 5A will reference the access agreement with Mass Audubon for a staging area, which is provided for in Section V.E of the Settlement Agreement.

[18] As discussed in Section 4.3.2, any further evaluations of potentially significant cultural resources at the UDF site and UDF support area, including any Phase IB or Phase II CRA activities in those areas, will be conducted separately, as provided in the UDF-specific work plan and reported in the UDF-specific reports.

determination. The Work Plan will describe the proposed field investigations to satisfy those information needs. These may include field reconnaissance to ground-truth the sensitivity maps, refine the sensitivity classifications, and determine where systematic field surveys will be needed. They may also include specific detailed terrestrial, underwater, and potentially architectural survey activities in particular areas. The Work Plan will identify those specific areas, if any, and describe the proposed methods for conducting such surveys and documenting the results. It will also include a proposed schedule for performing the Phase IB investigations and submitting a report.

The Phase IB Cultural Resource Survey Work Plan for Reach 5A will be submitted concurrently with the Conceptual RD/RA Work Plan for that Remediation Area. It is anticipated that the Phase IB Cultural Resource Survey Work Plans for each subsequent Remediation Area (as described in the Overall Strategy and Schedule document) will likewise be submitted concurrently with the Conceptual RD/RA Work Plan for the subject Remediation Area.

Following EPA approval of the Phase IB Cultural Resource Survey Work Plan for a given Remediation Area, GE will conduct the Phase IB field investigations called for in that work plan as approved by EPA. Those activities will be documented in a Phase IB Cultural Resources Survey Report, which will follow federal and state guidelines for such a report and will be submitted in accordance with a schedule in the approved Phase IB work plan. That report will evaluate, based on the data collected, whether the remediation and/or supporting activities would result in an adverse effect on any potentially significant cultural resources in the subject Remediation Area, including support areas. It will also evaluate whether locations containing potentially significant cultural resources can be avoided in the remediation program, consistent with the goal of that program. If the resources cannot be avoided, the report will evaluate, to the extent possible with the available data, whether the resources in question are in fact significant—i.e., are listed on the NRHP or meet the criteria for eligibility for inclusion in the NRHP, or are listed on the Massachusetts SRHP and included on the State Inventory of Historic and Archaeological Assets, or constitute significant scientific, prehistorical, historical, or archaeological data under the Archaeological and Historic Preservation Act. In addition, the report will evaluate the need for any additional Phase IB field investigations to further assess impacts on potentially significant cultural resources, and if appropriate, will propose such investigations.

In the event that the Phase IB investigations indicate that the remediation and/or supporting activities would result in adverse effects on potentially significant cultural resources, that such effects cannot be avoided, and that additional information is necessary to determine whether the resources to be affected are in fact significant as defined above, GE will prepare and submit a Phase II CRA Work Plan to evaluate the latter issue. Phase II of the CRA process can consist of both additional background research and additional field investigations. The Phase II CRA Work Plan will be submitted on a schedule specified in the Phase IB Cultural Resources Survey Report and will describe

the additional activities proposed to determine whether the resources identified are in fact significant. Following EPA approval, the proposed activities will be conducted and the results will be presented in a Phase II CRA Report.

If it is determined that remediation or support activities would affect significant cultural resources (as defined above), GE will evaluate whether those resources can be protected during such activities. In the event that the remediation and/or supporting activities would result in unavoidable adverse effects on significant cultural resources, mitigation activities may be necessary. If necessary, proposed mitigation activities will be included in the Final RD/RA Work Plan for the subject Remediation Area.

During the course of this process, GE will make the notifications and conduct the consultations required by the ARARs relating to cultural resources, as listed in Attachment C to the Revised Permit and specified in Section 4.2.1.7. All work plans and reports submitted during this process will comply with those ARARs, as pertinent.[19]

4.3.3.3 Plan(s) for Removal of Columbia Mill and Former Eagle Mill Dams

As provided in Section II.B.2.f.(1)(d) of the Revised Permit, as part of the ROR Remedial Action, GE will remove the Columbia Mill Dam (in Reach 7B) and the former Eagle Mill Dam (in Reach 7C). Section II.H.17 of the Revised Permit states that GE will submit a Dam Removal-Related Activities Plan to support the removal of these dams. However, GE proposes that data collection activities, regulatory requirements, and design considerations related to removal of these dams, including methods to minimize downstream transport of PCBs during removal activities, be incorporated into the PDI Work Plans and Conceptual and Final RD/RA Work Plans associated with the Reach 7 impoundments in lieu of preparing separate plan(s) to guide these dam removal activities. Information to be gathered and activities to be performed in support of dam removal will include many of the same activities already being performed in support of sediment remediation in these reaches (e.g., hydraulic modeling, geomorphology evaluations, cultural resources evaluations). In addition, the specific activities relating to the dam removals will include evaluations of land use impacts (e.g., creation of any new floodplain areas resulting from dam removal) and evaluation of compliance with ARARs and any other regulatory requirements pertaining to the dam removals.

4.3.3.4 Final RD/RA Work Plans

Following EPA approval of the Conceptual RD/RA Work Plan for each Remediation Area, GE will submit a Final RD/RA Work Plan for each such area in accordance with a schedule to be proposed by GE in the Conceptual RD/RA Work Plan and approved by EPA. The Final RD/RA Work Plans will include a detailed description of the design and implementation of the proposed remedial activities.

[19] The foregoing description of the CRA process and deliverables constitutes a summary; further details will be included in the various work plans and reports, which will be subject to EPA review and approval.

The Final RD/RA Work Plan for each Remediation Area will include final versions of information listed in Section 4.3.3.1 for the conceptual design (with updates and additional details as appropriate based on further design activities and/or EPA comments), plus the following information:

- Detailed design of the remediation activities;
- Results of any supplemental data collection activities;
- Results of any treatability studies;
- Methods to protect significant cultural resources if identified and/or, if there will be unavoidable adverse effects on such resources, proposed mitigation activities for those effects;
- Description of other implementation details concerning performance of the remedial activities;
- Description of the disposal activities for the dredged/excavated materials from the subject Remediation Area (i.e., the extent to which those materials will be disposed of in the UDF or will be transported to off-site disposal facilities) and, if known, identification of the selected off-site disposal facility(ies) to be used (if any) and the transportation routes to such facility(ies);
- Identification of remediation team, including key personnel, their roles and responsibilities, and lines of authority;
- Process for selection of a remediation contractor, if not already selected;
- Detailed requirements for supplemental plans to be prepared by the remediation contractor as described in Section 4.4;
- Project closeout requirements; and
- A description of the anticipated contents of the Interim Remedial Action Completion Report for the subject area, as described further in Section 5.5.

The Final RD/RA Work Plans will also include a schedule for implementing the remedial activities in the Remediation Area and for submission of supplemental contractor work plans as described in Section 4.4.

4.3.3.5 Restoration Corrective Measures Coordination Plans

Section II.B.1.c.(2)(c) of the Revised Permit requires GE to submit a Restoration Corrective Measures Coordination Plan (Restoration Coordination Plan) to be implemented during remediation activities. The Restoration Coordination Plan is required to address the following:

- Integration of restoration activities with remediation activities (e.g., locations of access roads/staging areas, harvesting of material for subsequent use in restoration construction, habitat layer characteristics, bank stabilization methods, and construction of bed/bank interface);
- Timing and phasing of remediation activities;
- Identification of restoration specialists and their roles and responsibilities;
- Specification of pre-construction preparation requirements (e.g., installation of silt fence or other protective/exclusion measures, propagation of materials, monitoring/relocation/propagation of species, and field delineation of species occurrences/vernal pool boundaries); and
- Specification of protocols to be implemented prior to and during construction to minimize impacts to threatened, endangered, or other state-listed species and their habitats, including elements discussed above as well as other measures such as seed-banking, transplanting, wildlife exclusion barriers, and turtle tracking.

As required by EPA in its May 26, 2021 conditional approval letter, given the area-specific nature of many of these requirements, GE will prepare a Restoration Coordination Plan for each Remediation Area and include it with the Restoration Plan for such area, as discussed in Section 4.3.3.6. The Restoration Coordination Plan for each Remediation Area will include each of the elements required by Section II.B.1.c.(2)(c) of the Revised Permit (listed above), focused on that Remediation Area. This will allow for attention to be directed to the ecological features at the subject Remediation Area, such as unique habitat features that support specific rare species use. It will include, among other items, measures to coordinate the restoration activities with the remediation activities within the Remediation Area, pre-construction preparation requirements, planned methods to minimize impacts on threatened, endangered, or other state-listed species, and restoration features to incorporate into the remedial design to restore impacted ecological functions.

Note also that many of the elements of the Restoration Coordination Plans were included in Section 5 of the RCMS Report and in the Evaluation of Example Areas in GE's February 2010 *Supplement to Response to EPA's Interim Comments on CMS Report: Evaluation of Example Areas* (AECOM 2010), and these will be used as appropriate in the development of the Restoration Coordination Plans.

The Restoration Coordination Plan for each Remediation Area will be submitted concurrently with or as part of the Restoration Plan for that area, which, as noted in Section 4.3.3.6, will be submitted with the Final RD/RA Work Plan for that area.

4.3.3.6 Restoration Plans

For each Remediation Area, GE will develop a Restoration Plan to return all areas disturbed by the remediation activities to pre-remediation conditions (e.g., functions, values, characteristics, vegetation, habitat, species use, and other attributes) to the extent practicable and consistent with the remediation requirements.[20] In accordance with Section II.B.1.c.(2)(d) of the Revised Permit, the Restoration Plan for each Remediation Area will include the following:

- Identification of materials, sources, and specifications;
- Development of restoration construction plans;
- Identification of the restoration specialists who will assist with restoration activities at the Remediation Area, along with their roles and responsibilities; and
- Revised restoration monitoring and maintenance programs.

The Restoration Plan for each Remediation Area will be submitted concurrently with the Final RD/RA Work Plan for that area.

4.4 Remediation Supplemental Implementation Package

Following EPA approval of the Final RD/RA Work Plan and Remediation Plan for a given Remediation Area, GE will implement the remediation and restoration activities described in those plans. Certain information related to the implementation of these activities will require input from the selected remediation contractor(s), specifically related to the means and methods for remedial construction. Accordingly, as with other remedial programs at the Pittsfield/Housatonic River Site, GE will require the selected remediation contractor(s) to prepare plans to describe the means and methods for completing the work in accordance with the approved design.

Relevant plans to be prepared by the remediation contractor(s), along with other remaining implementation details, will be incorporated into a SIP for the Remediation Area, which will be

[20] This plan will include removal of staging area materials and restoration of the staging area within Mass Audubon's Canoe Meadows property consistent with the requirements in Section V.F of the Settlement Agreement.

submitted to EPA. While detailed requirements for the SIP will be described in the Final RD/RA Work Plan, it is anticipated that the SIP will include, but may not be limited to, the following:

- Remediation contractor's Operations Plan, which will provide a detailed description of the contractor's means and methods, control measures, and best management practices to be implemented as part of the remedial construction activities;
- Remediation contractor's Contingency Plan, which will define responses to potential emergencies, standard exceedances, or other contingencies that may arise during the construction work, so as to aid site personnel in responding quickly and effectively and to protect workers and the local community in the instance of such an event;
- Remediation contractor's HASP, which will describe the project-specific safety and health requirements and procedures to be followed during the remediation activities;
- Remediation contractor's Work Schedule, which will incorporate production rates and sequencing of specific equipment and the approach selected by the remediation contractor(s);
- Information on imported backfill and cap material sources, including details related to the material sources, their locations, results of laboratory testing, and transportation routes to the work site; and
- Information on the facilities that will be used for disposal of waste materials, including, for off-site facilities, the facility names, locations, permit/approval status, waste streams, and transportation routes (if not specified in the Final RD/RA Work Plan).

The SIP for each Remediation Area will be submitted in accordance with a schedule in the Final RD/RA Work Plan for that area.

4.5 Other Deliverables

This section presents GE's plans for submitting other required deliverables that are not specifically tied to the performance of the on-site remediation activities described in the preceding sections.

4.5.1 Plan for Implementing Future Projects or Work

Section II.H.20 of the Revised Permit requires GE to prepare an Institutional Controls and Related Requirements Plan. Several plans subject to this requirement were covered by the Initial SOW and were previously submitted. Specifically, GE has submitted the following:

- *Plan for Obtaining Environmental Restrictions and Easements and Inspecting Subject Properties* (revised December 14, 2018), approved by EPA on December 20, 2018;

- *Biota Consumption Advisory Outreach Plan for the Housatonic Rest of River in Massachusetts* (revised July 2019), approved by EPA on July 16, 2019; and
- *Biota Consumption Advisory Outreach Plan for the Housatonic Rest of River in Connecticut* (November 2017), conditionally approved by EPA on June 28, 2021, and subject to revision by August 27, 2021.

What remains is a plan for implementing the various provisions of the Revised Permit relating to Legally Permissible Future Projects or Work (as defined in the Revised Permit). Those provisions, which were also described in Sections 2.2.10 through 2.2.12 and Section 2.6 of this Revised SOW, consist of the following:

- Sections II.B.2.j.(1)(c) and (2)(e), governing such projects or work involving non-GE-owned dams in Massachusetts;[21]
- Sections II.B.2.k, governing such projects or work involving the river sediments, riverbanks, and backwaters in the Massachusetts portion of the ROR;
- Section II.B.2.l, governing such projects or work involving the river sediments, riverbanks, and backwaters in the Connecticut portion of the ROR;
- Sections II.B.6.b(1) and (2)(b) and (c), governing such projects or work in the floodplain EAs (as defined in the Revised Permit) in Massachusetts; and
- Section II.B.6.c, governing such projects or work in other floodplain areas in Massachusetts and Connecticut.

Although there are some differences among them, these provisions can generally be summarized as follows.[22] As a general matter, these provisions require that if a third party plans to implement a Legally Permissible Future Project or Work (as defined in the Revised Permit) in a portion of the river, riverbanks, or floodplain within the ROR, GE must conduct response actions "to be protective" of such project or work and to allow such project or work "to be conducted in a manner that maintains Performance Standards and/or maintains the effectiveness of the ROR Remedial Action." There are certain limitations on the future projects or work that would trigger this requirement. For example, to be covered by these provisions, floodplain projects or work must involve the handling, excavation, or removal of sediment or soil in an area not subject to an ERE or Notice ERE; and projects or work in Connecticut must involve the handling or disturbance of sediment or soil with PCB concentrations greater than 1 mg/kg. In addition, any future response actions required by these provisions will be in

[21] The plans to implement the requirements for GE to ensure inspection, monitoring, and maintenance of these dams are described in Section 4.5.3.

[22] This is a summary of the cited provisions; to the extent that there is any inconsistency or conflict between this summary and the provisions of the Revised Permit, the language of the Revised Permit will control.

accordance with and pursuant to the CD and will be consistent with the response actions selected in the Revised Permit, and GE's responsibility for the costs of those further response actions will be limited to costs that are solely related to the presence of PCBs. Where these Future Project or Work requirements are applicable, the required PCB-related response actions could include materials handling and off-site disposal, engineering controls, and, for floodplain projects, actions to achieve the applicable floodplain Performance Standards for the type of property involved.

These requirements relating to Future Projects or Work are currently in effect under the Revised Permit. However, as required by the Revised Permit, GE will prepare and submit a Plan for Implementing Future Projects or Work. That plan will describe how GE will, going forward, implement the requirements of each of the above-cited provisions of the Revised Permit relating to Future Projects or Work, recognizing the differences among the provisions.

The Plan for Implementing Future Projects or Work will be submitted to EPA within 15 months after EPA approval of this Revised SOW.

4.5.2 Model Reevaluation Plan

Under the terms of the CD, EPA conducted a modeling study of the fate, transport, and bioaccumulation of PCBs within the ROR. The overall objective of this study was to develop a model that could be used to evaluate the relative effectiveness of various remedial alternatives in terms of PCB fate, transport, and bioaccumulation. EPA issued its *Final Model Documentation Report* in November 2006 (EPA 2006), which documents the model's development, calibration, and validation. Under the CD, the EPA model was used by GE as part of the Corrective Measures Study to evaluate the sediment/riverbank remedial alternatives and predict future sediment, surface water, and fish PCB concentrations resulting from those alternatives. This modeling evaluation is documented in the 2010 RCMS Report.

Section II.H.16 of the Revised Permit requires GE to prepare a Model Reevaluation Plan. In accordance with EPA's May 26, 2021 conditional approval letter, GE will, when deemed necessary by EPA after consultation with GE, submit the Model Reevaluation Plan. That plan will be used to support or evaluate the ROR Remedial Action and will incorporate new information such as relevant sampling data collected after completion of the existing model.

4.5.3 Monitoring and Maintenance Plans for Non-GE-Owned Dams

GE has previously submitted and EPA has approved OMM Plans for Woods Pond Dam and Rising Pond Dam under the provisions of the Initial SOW, and GE is currently implementing those plans. Under Section II.H.21 of the Revised Permit, GE is also required to submit monitoring and maintenance plans for other dams on the ROR in Massachusetts for which GE is required to ensure inspection, monitoring, and maintenance under Sections II.B.2.j.(1)(a) and (2)(b) of the Revised

Permit. The former Eagle Mill Dam no longer functions as a dam[23] and will be removed (as discussed in Section 4.3.3.3). Thus, this requirement relates to the remaining ROR dams in Massachusetts—namely, the Columbia Mill Dam (until it is removed, as also discussed in Section 4.3.3.3), Willow Mill Dam, and Glendale Dam.

Section II.B.2.j.(2)(b) of the Revised Permit requires GE to "ensure inspection, monitoring and maintenance" of these non-GE-owned dams. It states that such activities must include:

> "(i) maintaining the integrity of the dam to contain contaminated sediments and (ii) conducting materials handling and off-site disposal and engineering controls related to dam maintenance, repair, upgrades, and enhancement activities (including, but not limited to, addressing sedimentation in sluiceways, conveyances, and other channels that transport water over, through or around the dam); and (iii) and all other related activities."

That section also requires GE to make best efforts to obtain an access agreement with the dam owner to allow GE to perform these inspection, monitoring, and maintenance activities. It further provides that GE may seek EPA approval for another party to implement some or all of these activities. Finally, it establishes certain requirements in the event that GE, despite its best efforts, cannot fulfill these obligations.

If GE decides to seek EPA approval for another party to implement the necessary inspection, monitoring, and maintenance activities at the Columbia Mill Dam, Willow Mill Dam, or Glendale Dam, GE will submit such a request within six months after approval of this Revised SOW. Otherwise, GE will attempt to obtain an access agreement with the owner of each dam to allow GE to perform those inspection, monitoring, and maintenance activities. In the event that, despite GE's best efforts, such an access agreement cannot be reached with the dam owner, GE will so advise EPA and describe how it proposes to meet the requirements of Section II.B.2.j.(2)(b) relating to that eventuality.

If an access agreement can be reached, GE will prepare and submit a separate Monitoring and Maintenance (M&M) Plan for each dam describing how GE proposes to meet the above-quoted requirements of Section II.B.2.j.(2)(b) of the Revised Permit. For the Columbia Mill Dam, which will be removed, the M&M Plan will be more limited than the plans for the other dams. It will describe the inspection, monitoring, and maintenance activities that GE proposes to undertake at that dam during the interim period prior to the dam's removal. For each of the Willow Mill and Glendale Dams, it is anticipated that the M&M Plan will include the following:

- A description of the dam, its hazard classification, and other relevant information;

[23] Its crest was formerly lowered such that it is submerged below the river level under most or all flow conditions.

- Objectives of the inspection, monitoring, and maintenance activities;
- Description of the routine maintenance activities that GE will perform at the dam;
- Description of the inspection and monitoring activities that GE will perform for the dam;
- Description of the process for GE's implementation of maintenance and repairs identified during inspections or other monitoring, if required;
- Description of GE's handling, management, and disposition of any sediments or soils handled or removed from or adjacent to the impoundment during dam maintenance, repair, or response activities;
- Description of GE's record-keeping and reporting requirements; and
- Schedule for performing the dam inspection, monitoring, and maintenance activities.

In addition, the M&M Plans for the Willow Mill and Glendale Dams will describe how GE plans to comply with Section II.B.2.j.(2)(c) of the Revised Permit, which requires that, if there is a catastrophic failure and/or a material breach of the dam that results in a materially greater than normal release of sediment containing PCBs, GE must submit, within 30 days of notification by EPA of such failure or breach, a report to EPA that: (1) proposes repairs to or removal of the dam; (2) proposes a plan to characterize and respond to the released PCBs (if necessary to maintain the Performance Standards or the ROR Remedial Action); and (3) includes a schedule to implement the required response actions.

Finally, the M&M Plans for the Willow Mill and Glendale Dams will note that GE will comply with Section II.B.2.j.(2)(d) of the Revised Permit, which requires GE to determine every five years whether there has been a change in ownership of the dam and, if there has been a change in ownership or after conducting response actions behind a dam, to send a notice to the dam owner with certain specified information, including GE's commitment to meet the requirements of Sections II.B.2.j.(2)(b) and II.B.2.j.(2)(c) of the Revised Permit.[24]

All of these M&M Plans will be submitted to EPA within 12 months after EPA approval of this Revised SOW, contingent on reaching access agreements with the dam owners to perform the necessary activities.

4.5.4 Sustainability and Climate Adaptation Plan

Section II.H.14 of the Revised Permit requires GE to prepare a Sustainability and Climate Adaptation Plan, which must include "measures to ensure that Corrective Measures are designed and

[24] The requirements of Section II.B.2.j.(2)(e) of the Revised Permit relating to actions required in the event that a Legally Permissible Future Project or Work is conducted at any dam in Massachusetts, including dam removal, will be addressed by the Plan for Implementing Future Projects or Work, described in Section 4.5.1.

constructed to be resilient to potential changes due to climate change," and "where practical and appropriate, methods to minimize greenhouse gas emissions." This plan will acknowledge that, while the effects of climate change on the remedy are uncertain, there are several Performance Standards and Corrective Measures in the Revised Permit that could be impacted by climate change and/or have greenhouse gas implications. These include the Performance Standards and Corrective Measures relating to sediment removal, engineered caps, riverbank soil remediation, floodplain and vernal pool soil remediation, restoration of areas disturbed by remediation, dam maintenance and inspections, and the UDF, as described in more detail in Attachment B to EPA's May 26, 2021 conditional approval letter for the June 2020 SOW. As a result, climate change will be factored into remedial design and inspection, monitoring, and maintenance plans. Other plans that could be impacted by climate change include the Adaptive Management and Model Reevaluation Plans.

Various environmental conditions potentially related to climate change may impact remedy effectiveness, such as more frequent and higher-intensity rain events, resulting in more variable and higher average and peak flows in the Housatonic River. Accepted regional climate change projections will be considered, and EPA's technical guidance document entitled *Climate Resilience Technical Fact Sheet: Contaminated Sediment Sites* (EPA 2019) will be used to develop resiliency planning for the ROR. Additional references related to climate change, greenhouse gas emissions, and sustainability (including those listed in Table 1 of Attachment B to EPA's May 26, 2021 conditional approval letter) will be considered and referenced as appropriate in the Sustainability and Climate Adaptation Plan. This plan will also consider sustainability practices as they pertain to items such as construction practices, minimizing emissions, use of materials that minimize waste, and adaptive habitat design solutions that can also provide dynamic ecosystem benefits.

The Sustainability and Climate Adaptation Plan will be submitted to EPA within 12 months after approval of this Revised SOW. GE will update that plan in the future, upon notification by EPA, as guidance evolves (including state and federal guidance documents).

5 Post-Construction Deliverables

This section provides a summary of the anticipated post-construction deliverables to be submitted by GE. These consist of a combination of site-wide and Remediation Area-specific deliverables. including: (1) post-construction inspection, monitoring, and maintenance plans for the river and floodplain remediation work; (2) a post-closure monitoring and maintenance plan for the UDF; (3) a plan for compliance with the general numerical Performance Standards; (4) a plan for further response actions; (5) and Remedial Action Completion Reports.

5.1 Post-Construction Inspection, Monitoring, and Maintenance Plans

Post-Construction Inspection, Monitoring, and Maintenance Plans (IMM Plans) will be developed for the Remediation Areas pursuant to Sections II.C (Operation and Maintenance) and II.H.18. (Inspection, Monitoring, and Maintenance Plan(s)) of the Revised Permit. Upon completion of remediation and restoration activities in a given Remediation Area, the IMM program will be implemented, consisting of appropriate inspection, monitoring, and maintenance activities to maintain the effectiveness of the remediation and restoration measures. An IMM Plan will be developed separately for each Remediation Area so that monitoring can begin upon completion of remediation in that area while work in other areas is ongoing. The IMM Plans will likely include provisions for the following post-construction activities, as applicable:

- Monitoring of PCBs in surface water, sediments, and biota;
- Inspection and maintenance of engineered caps (where installed);
- For Reaches 5A and 5B, inspection and maintenance of the riverbank reconstruction measures;
- Inspection and maintenance of other backfilled and restored areas in the river, on the riverbanks, and in the floodplain;
- Inspection and maintenance of replanted bank and floodplain vegetation, including control of invasive species;
- Inspection and maintenance of other restoration measures installed, if any;
- Inspection of properties not owned by GE, the United States, or the Commonwealth of Massachusetts that are subject to EREs, so as to evaluate compliance with the EREs;
- Inspection of properties subject to Conditional Solutions;
- Implementation, inspection, and maintenance of other institutional controls (e.g., biota consumption advisories); and
- For Woods Pond and Rising Pond, addressing accumulation of PCB-containing sediments (if any) on the surface of the caps.

In addition, an IMM Plan for the MNR reaches described in Section II.B.2.h of the Revised Permit and Section 2.2.8 of this Revised SOW will be prepared to describe the long-term monitoring of PCB concentrations in surface water, sediment, and biota in those reaches to evaluate whether recovery is occurring at the expected rates. This IMM Plan will take into account, as applicable, the Performance Standards Compliance Plan for the general Downstream Transport and Biota Performance Standards, described in Section 5.3.

The IMM Plan for each Remediation Area will be included as part of, or be submitted concurrently with, the Final RD/RA Work Plan for that area. Each such plan will then be updated and resubmitted following the completion of remediation in the subject Remediation Area. The IMM Plan for the MNR reaches will be submitted concurrently with the Performance Standards Compliance Plan discussed in Section 5.3—i.e., no later than one year prior to the anticipated date for completion of all remediation activities in Reach 5. In addition, in accordance with Section II.C of the Revised Permit, all IMM Plans will later be incorporated into the site-wide Final Remedial Action Completion Report (see Section 5.5).

5.2 Upland Disposal Facility Post-Closure Monitoring and Maintenance Plan

GE will develop a Post-Closure Monitoring and Maintenance Plan (Post-Closure Plan) for the UDF to describe activities to be performed following closure of the UDF, or closure of a discrete cell within that facility (if appropriate), to confirm that the UDF is performing as designed. The activities described in the UDF Post-Closure Plan will continue until GE proposes, and EPA approves, a modification of the activities described therein. However, post-closure monitoring will continue in perpetuity. The UDF Post-Closure Plan is anticipated to include, but not be limited to, descriptions of the following elements:

- Groundwater monitoring;
- Air monitoring;
- Routine periodic inspections and maintenance of the final cover system, as well as other components of the UDF (e.g., access roads, leachate and stormwater management systems);
- Inspections and maintenance of ancillary components (e.g., fences, access gates, warning signs);
- Inspections to ensure compliance with the ERE for the UDF;
- Repair or replacement of items exhibiting deficiencies or performance determined to be below designed levels; and
- Documentation and reporting.

The UDF Post-Closure Plan will be submitted approximately one year before anticipated closure of the UDF (or closure of a discrete cell within that facility).

5.3 Performance Standards Compliance Plan

Section II.H.5 of the Revised Permit requires submittal of a Plan for Measuring Compliance with Performance Standards. This plan will provide details regarding measuring and tracking compliance with the general Performance Standards specified in Sections II.B.1.a and II.B.1.b of the Revised Permit that have specific numerical post-construction performance criteria—namely, the PCB Downstream Transport Performance Standard (described in Section 2.1.1) and Biota Performance Standards (described in Section 2.1.2). This plan will include a description of the requirements and procedures for measuring compliance with these performance standards, including the specific data collection and analysis requirements set forth in Sections II.B.1.a.(2)(a) through (g) for measuring compliance with the Downstream Transport Performance Standard, as well as monitoring requirements for biota and procedures for comparing PCB concentrations in the biota to the Short-Term Biota Performance Standard and the long-term biota goals. The plan will also include a proposal for any additional details related to measurement of achievement of these performance standards. This plan will be a site-wide deliverable and will be submitted to EPA for review and approval no later than one year prior to the anticipated date for completion of all remediation activities in Reach 5.

Compliance with the other Performance Standards contained in Section II.B of the Revised Permit will be documented as follows. For Performance Standards relating to active remediation, compliance with the relevant Performance Standards, as well as the pertinent ARARs (other than those waived by EPA), will be documented in the Interim Remedial Action Completion Reports for the subject Remediation Areas, as described in Section 5.5, and summarized again in the Final Remedial Action Completion Report, also described in Section 5.5.[25] These will include the Performance Standards for restoration, engineered capping, and off-site disposal. For the Performance Standards relating to the UDF, compliance will be documented in the UDF Final Cover/Closure Plan described in Section 4.3.2.5 (for construction and operation of the UDF through that time) and in the Final Remedial Action Completion Report described in Section 5.5 (for operation and closure of the UDF). With respect to the Performance Standards contained in Revised Permit Section II.B.2.h (relating to MNR) and those in Revised Permit Sections II.B.2.j, II.B.2.k, II.B.2.l, II.H.B.4, II.H.B.7, and II.B.8, which are not reach-specific, as well as ARARs that are not reach-specific, those are long-term requirements that go beyond active remediation, and compliance with them will be documented in the Final Remedial Action Completion Report described in Section 5.5 through the time of submission of that report.

[25] Note that construction quality control procedures will be included in the CQAP that is part of the POP, as described in Section 4.3.1.2.

Table 5-1 summarizes where compliance with the Performance Standards in the Revised Permit will be documented.

Table 5-1
Documentation of Performance Standard Compliance

Performance Standards in Permit Sections	Documentation of Compliance
Sections II.B.1.a and II.B.1.b	Via procedures in Performance Standards Compliance Plan
Sections II.B.1.c, II.B.2.a through II.B.2.g, II.B.2.i, II.B.3, and II.B.6	In Interim Remedial Action Completion Reports and summarized again in Final Remedial Action Completion Report.
Section II.B.5	In UDF Final Cover/Closure Plan (through that time) and Final Remedial Action Completion Report
Sections II.B.2.h, II.B.2.j, II.B.2.k, II.B.2.l, II.H.B.4, II.H.B.7, and II.B.8	In Final Remedial Action Completion Report.

5.4 Plan for Further Response Actions

Section II.H.23 of the Revised Permit requires GE to submit a "Plan for Further Response Actions, and any implementation of further response actions, in accordance with Section X of the Consent Decree (Review of Response Actions)." Section X of the CD contains several potentially applicable provisions. Paragraph 43 requires GE to "conduct such studies and investigations as requested by EPA to permit EPA to conduct periodic reviews" under Section 121(c) of CERCLA, which requires review of a remedial action at least every five years after initiation to assess its protectiveness. This requirement is also embodied in Section II.D of the Revised Permit. Paragraph 44 of the CD states that if EPA determines that a response action, including the ROR Remedial Action, is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with CERCLA. However, Paragraph 46 provides that, if EPA does select such further response actions for the Site, GE is required to undertake or fund such actions only if the covenant reopener conditions in Paragraph 162 or 163 are satisfied. Those paragraphs reserve EPA's right to institute proceedings against GE, or issue an order to GE, to compel GE to perform or fund further response actions at the Site (beyond the originally required Remedial Action) if new conditions are discovered or new information is received and EPA determines that these previously unknown conditions or information, together with other relevant information, indicate that the originally required and/or implemented Remedial Action is not protective of human health or the environment. Finally, Paragraph 47 provides that if GE is required to perform further response actions pursuant to Paragraph 46, it will submit and implement a plan for such work in accordance with the applicable CD provisions.

To implement these requirements in the context of the ROR Remedial Action, GE will submit a Plan for Further Response Actions. This plan will be a site-wide deliverable. It will present and describe GE's agreement to conduct studies and investigations requested by EPA in connection with EPA's

five-year reviews of the ROR Remedial Action, provided that such studies or investigations are related to those periodic reviews to assess the protectiveness of the Remedial Action. However, a plan for conducting particular studies or investigations cannot be developed until EPA has requested specific studies or investigations.

The Plan for Further Response Actions will also describe generally GE's obligation under the CD to conduct further response actions relating to the ROR, beyond the Remedial Action specified in the Revised Permit, in the event that the covenant reopener conditions in Paragraph 162 or 163 of the CD, as applicable, have been satisfied, and subject to GE's right to invoke dispute resolution under the CD (as provided in Paragraph 46 of the CD) on any of the EPA determinations listed in Paragraph 46. The plan will also describe the process that GE will follow in the event that it is required to implement such further response actions under Paragraph 46 of the CD. However, a plan for implementing specific future response actions cannot be developed unless and until EPA makes a specific request or directive to conduct such actions and, as necessary, invokes the covenant reopeners, and any dispute thereon is resolved.

The Plan for Further Response Actions will be submitted four years after the initiation of remediation in the first Remediation Area (Reach 5A) so that it can be reviewed and approved in advance of the first five-year remedy review.

5.5 Remedial Action Completion Reports

Following completion of all remediation activities required by the Revised Permit, GE will schedule and conduct a pre-certification of inspection of the overall ROR area in accordance with Paragraph 88 of the CD. Thereafter, in accordance with that provision as well as Section II.H.24 of the Revised Permit, GE will prepare a Final Remedial Action Completion Report to describe the activities completed in accordance with the approved RD/RA Work Plans and to summarize the data generated to support completion of those activities. Ultimately, the Final Remedial Action Completion Report will be a site-wide deliverable that will cover all active remediation activities conducted. However, GE will conduct interim pre-certification inspections and will prepare and submit Interim Remedial Action Completion Reports following the completion of discrete components of the Remedial Action—e.g., following the completion of remediation in a given Remediation Area or, if appropriate, combination of Remediation Areas.

The Interim Remedial Action Completion Reports will include, but not be limited to, the following for the subject Remediation Area(s):

- Background information and a description of pre-remediation activities;
- A description of the remediation and restoration activities performed;

- A description of any deviations from the design submittals approved by EPA and any other difficulties and problems encountered;
- A summary of response action quantities (e.g., soil and sediment removal volumes, extent of capped areas, extent of riverbanks reconstructed, and volume of water treated);
- Results of QA/QC testing performed during remediation;
- As-built record construction drawings signed and stamped by a professional engineer, including post-excavation topographic surveys, final post-restoration elevation surveys, drawings showing changes in channel geometry, and drawings showing backfill materials and associated thicknesses;
- A listing of the waste streams and their characterization, quantity of materials disposed of, and where such materials were disposed of, including estimates of the quantity and type of waste material disposed of at the UDF and the quantity and type of waste material transported off-site for disposal, as well as copies of all manifests or other shipping documents for the off-site waste shipments;
- Results of monitoring performed during remediation activities;
- Representative project photographs;
- Compliance with ARARs (except for those ARARs waived by EPA);
- Demonstration of achievement of the applicable remediation Performance Standards and any impact on flood storage capacity;
- Description of EREs executed and Conditional Solutions implemented; and
- Results of the applicable pre-certification inspection.

The Final Remedial Action Completion Report will include a summary of the same information listed above, but on a site-wide basis, as well as a demonstration of compliance with the Performance Standards for operation and closure of the UDF and the Performance Standards that are not reach-specific (as described in Section 5.3), as well as ARARs that are not reach-specific. In addition, in accordance with Section II.C of the Revised Permit, the Final Remedial Action Completion Report will include an overall long-term OMM Plan, which will be based on or include the separate IMM Plans for each Remediation Area (as described in Section 5.1 of this SOW) and the UDF Post-Closure Plan described in Section 5.2.

A draft of each of the Interim and Final Remedial Action Completion Reports will be provided to EPA on a schedule to be discussed with EPA. Following receipt and incorporation of EPA's comments on the draft, a final version of the subject report will be submitted to EPA.

6 Schedule

A summary of the schedule for deliverables described in this Revised SOW is provided in Table 6-1. The time frames presented in this summary are generally in calendar months or years and have been estimated based upon anticipated level of effort at the time of preparation of this Revised SOW. Because there is uncertainty associated with the schedule for several tasks that are out of GE's control, such as seasonal constraints and EPA review periods, many of the key deliverables and design activities have a proposed schedule for submittal that is relative to key prior milestones and other conditions. Also, because of that uncertainty, alternate time frames may be proposed by GE (for review and approval by EPA) if dictated by future conditions. It should be noted that any tasks that are being managed by EPA have not been included in this schedule. A more detailed schedule will be included in the Overall Strategy and Schedule submittal.

Periodic meetings will be scheduled between EPA and GE to discuss the status of ongoing efforts and deliverables, resolve any project issues that may arise, and discuss any proposed modifications to the deliverables and schedule described in this SOW.

Table 6-1
Summary of Schedule for Submittal of Deliverables

Deliverable			Schedule[a]
Overall Strategy and Schedule document			3 months after EPA approval of Revised SOW
Pre-Design	UDF	UDF PDI Work Plan	November 26, 2021
		UDF PDI Summary Report	Per schedule in the UDF PDI Work Plan
	Site-Wide Plans/Reports	Baseline Monitoring Plan (BMP)	Submitted to EPA on June 12, 2017; to be revised and resubmitted within 3 months after conceptual agreement between EPA and GE on scope of the baseline monitoring program
		Rest of River FSP/QAPP	3 months after EPA approval of BMP
		Updated Rest of River HASP	3 months after EPA approval of BMP
		Baseline Restoration Assessment Work Plan	3 months after EPA approval of Revised SOW
		Baseline Restoration Assessment Report	Per schedule in the Baseline Restoration Assessment Work Plan
		Restoration Criteria Report	2 months after EPA approval of Baseline Restoration Assessment Report
		Supplemental Phase IA Cultural Resources Survey Work Plan	4 months after EPA approval of Revised SOW
		Supplemental Phase IA Cultural Resources Survey Report	Per schedule in the Supplemental Phase IA Cultural Resources Work Plan
		Water Withdrawal and Uses Plan	12 months after EPA approval of Revised SOW

Deliverable				Schedule[a]
Pre-Design (cont.)	PDI Plans and Reports Specific to Each Remediation Area	Reach 5A	PDI Work Plan for Reach 5A Floodplain Residential Properties	Submitted to EPA on August 15, 2018, and July 9, 2020, with Addendum on March 31, 2021
			PDI Summary Report for Reach 5A Floodplain Residential Properties	90 days after receipt and validation of data collected under above Work Plan Addendum for Residential Properties
			PDI Work Plan for Reach 5A Floodplain Non-Residential EAs	Submitted to EPA on October 6, 2017; revised on June 25, 2021
			PDI Summary Report for Reach 5A Floodplain Non-Residential EAs	60 days after receipt and validation of data collected under revised PDI Work Plan for Reach 5A Non-Residential EAs
			PDI Work Plan(s) for Reach 5A Sediment and Banks	September 27, 2021
			PDI Summary Report for Reach 5A Sediment and Banks	Per schedule in the Reach 5A PDI Work Plans for Sediment and Banks
		Subsequent Remediation Areas[b]	PDI Work Plan(s)	Per schedule to be provided in the Overall Strategy and Schedule; to be tied to EPA approval of PDI Report(s) for prior Remediation Area
			PDI Summary Report(s)	Per schedule in respective PDI Work Plan for each Area
	Vernal Pool Pilot Study Deliverables	Vernal Pool Selection Proposal		30 days following EPA approval of PDI Summary Report for Reach 5A Non-Residential Floodplain EAs (containing vernal pool soil PCB data)
		Vernal Pool Pilot Study Work Plan		4 months after EPA approval of vernal pool selection proposal
		Vernal Pool Pilot Study Summary Report		Per schedule in the Vernal Pool Pilot Study Work Plan
Design	UDF	Conceptual Design Plan		Per schedule in UDF PDI Summary Report
		Final Design Plan		Per schedule in the Conceptual Design Plan for UDF
		Operation, Monitoring, and Maintenance Plan		Concurrently with submittal of Final Design Plan for UDF
		Supplemental Information Package for UDF		Per schedule in Final Design Plan for UDF
		Final Cover/Closure Plan		At least 1 year before anticipated closure of UDF (or a discrete cell thereof)
	Site-Wide Plans	Off-Site and On-Site Transportation and Disposal (T&D) Plans		Concurrently with Conceptual RD/RA Work Plan for Reach 5A
		Updated POP (including Construction Monitoring Plan)		15 months after EPA approval of Overall Strategy and Schedule
		QOL Compliance Plan		24 months after EPA approval of Revised SOW (but no later than due date for T&D Plans – see above)
		Adaptive Management Plan		18 months after EPA approval of Overall Strategy and Schedule

Deliverable				Schedule[a]
Design (cont.)	Plans/Reports Specific to Each Remediation Area	Reach 5A	Conceptual RD/RA Work Plan	6 months after EPA approval of last PDI Summary Report for Reach 5A
			Phase IB Cultural Resource Survey Work Plan	Concurrently with Conceptual RD/RA Work Plan for Reach 5A
			Phase IB Cultural Resources Survey Report	Per schedule in the Phase IB Cultural Resources Work Plan for Reach 5A
			Phase II Cultural Resource Assessment Work Plan and Report (if necessary)	Per schedule in Phase IB Cultural Resource Survey Report
			Final RD/RA Work Plan	Per schedule in Conceptual RD/RA Work Plan for Reach 5A
			Vernal Pool Addendum to RD/RA Work Plans	Following EPA approval of Vernal Pool Pilot Study Summary Report
			Restoration Coordination Plan	Concurrently with or as part of Restoration Plan for Reach 5A (see next entry)
			Restoration Plan	Concurrently with Final RD/RA Work Plan for Reach 5A
			Remediation Supplemental Information Package	Per schedule in Final RD/RA Work Plan
		Subsequent Remediation Areas[b]	Same deliverables as Reach 5A[c]	Per schedule in the Overall Strategy and Schedule; will generally be tied to EPA approval of prior deliverable for that Remediation Area
			Updates to site-wide design plans (listed above) as necessary for the subject Remediation Area	Concurrently with Conceptual RD/RA Work Plan for the Remediation Area (or as proposed therein)
	Other Deliverables	Plan for Implementing Future Projects or Work		15 months after EPA approval of Revised SOW
		Model Reevaluation Plan		When update to model is deemed necessary by EPA after consultation with GE
		Monitoring and Maintenance Plans for Non-GE-Owned Dams		12 months after EPA approval of Revised SOW (subject to obtaining access agreements)
		Sustainability and Climate Adaptation Plan		12 months after EPA approval of Revised SOW
Post-Construction		Post-Construction IMM Plans for each Remediation Area		Include in Final RD/RA Work Plan for each Remediation Area; to be updated following completion of remediation in that area
		IMM Plan for MNR Reaches		Concurrently with Performance Standards Compliance Plan (see below)
		UDF Post-Closure Plan		1 year before anticipated closure of UDF (or a discrete cell thereof)
		Performance Standards Compliance Plan (Site-Wide – for Downstream Transport and Biota Standards)		1 year prior to anticipated completion of remediation in Reach 5
		Plan for Further Response Actions (Site-Wide)		4 years after initiation of remediation in Reach 5A (to be prepared for first 5-Year Review)
		Interim Remedial Action Completions Reports (for Remediation Areas)		After completion of all remediation activities in a given Remediation Area (or combination of Remediation Areas)
		Final Remedial Action Completion Report (Site-Wide)		After completion of all remediation activities

Notes:

a. All subject to revision or extension upon request and EPA approval.

b. Remediation Areas subsequent to Reach 5A and the schedule for them will be defined in the Overall Strategy and Schedule document. For PDI purposes, Remediation Areas may be combined. The listed steps may be repeated more than once in the event that it is determined that additional data are necessary to complete the steps.

c. Excluding Vernal Pool Addendum to RD/RA Work Plans (not needed for subsequent remediation areas).

BMP: Baseline Monitoring Plan
EPA: U.S. Environmental Protection Agency
FSP/QAPP: Field Sampling Plan/Quality Assurance Project Plan
HASP: Health and Safety Plan
IMM Plan: Inspection, Monitoring, and Maintenance Plan
OMM Plan: Operation, Monitoring, and Maintenance Plan
PDI: Pre-Design Investigation
POP: Project Operations Plan
QOL: Quality of Life
RD/RA: Remedial Design/Remedial Action
SOW: Statement of Work
UDF: Upland Disposal Facility

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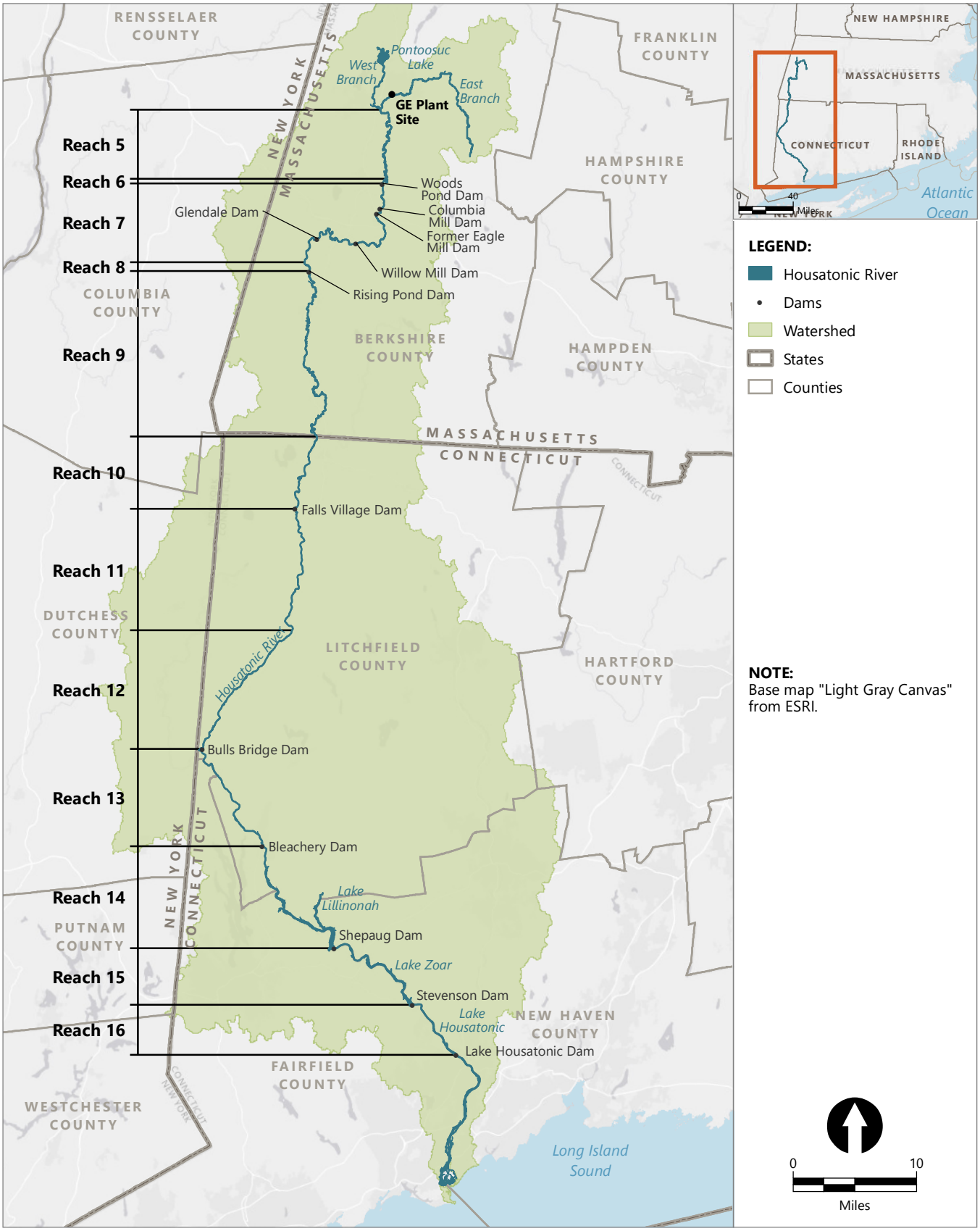

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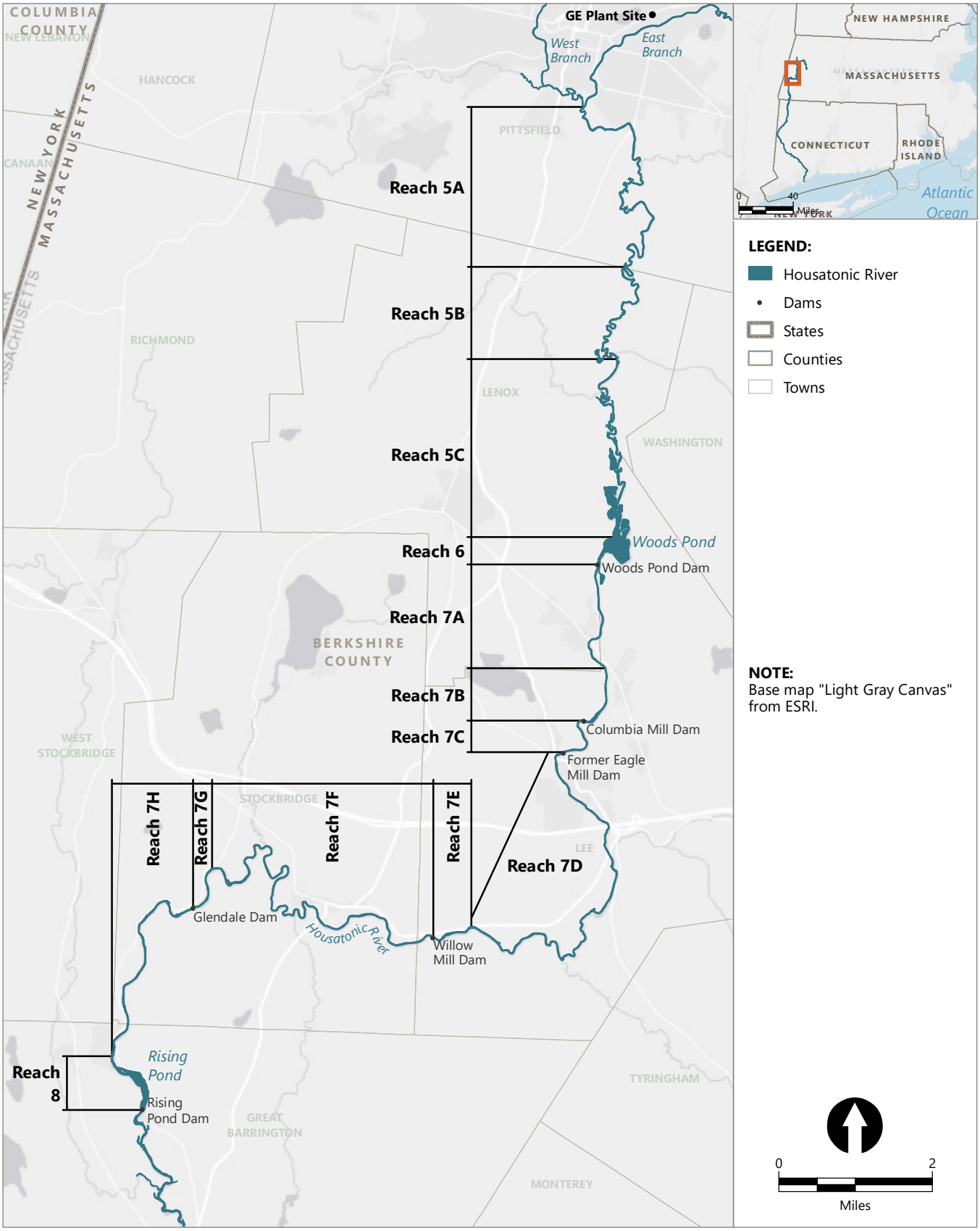
ANCHOR QEA

Figure 1-1
Housatonic River Map
Rest of River Statement of Work
GE-Pittsfield/Housatonic River Site



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ANCHOR QEA

Figure 1-2
Housatonic River Map (Subreaches in Reaches 5 and 7)
Rest of River Statement of Work
GE-Pittsfield/Housatonic River Site

Attachment A
Settlement Agreement (February 2020)

SETTLEMENT AGREEMENT

The undersigned parties ("Parties") hereby jointly agree to resolve their disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site ("the 2016 Permit"), including those issues affirmed or remanded by the EPA Environmental Appeals Board (the "EAB"). This Settlement Agreement ("Settlement Agreement") shall be binding on and inure to the benefit of each Party and each Party's successors.

On October 27, 2000, a Consent Decree for the GE-Pittsfield/Housatonic River Site ("Site") was entered by the U.S. District Court for the District of Massachusetts (the "Decree"). Appendix G to the Decree, as reissued, is a RCRA Corrective Action Permit between EPA and the General Electric Company ("GE"), governing GE's investigation and alternative evaluation responsibilities with respect to the Rest of River ("the 2000 Permit"). Pursuant to the Decree and the 2000 Permit, EPA, in October 2016, issued the 2016 Permit, with concurrence from Massachusetts. Five parties challenged the 2016 Permit before the EAB, including the Berkshire Environmental Action Team, C. Jeffrey Cook, GE, the Housatonic Rest of River Municipal Committee ("Municipal Committee"), and the Housatonic River Initiative. The City of Pittsfield, Massachusetts Audubon Society ("Mass Audubon"), Connecticut and Massachusetts also participated in the EAB process. The EAB issued a decision in January 2018, denying the challengers' review in part and remanding to EPA on two issues challenged by GE.

The Parties have been engaged in mediated discussions concerning the 2016 Permit, pursuant to a mediation agreement executed in March 2019 ("Mediation Agreement"). The Parties entered into the Mediation Agreement with the objective of identifying whether there was one negotiated resolution of the permit dispute before the EAB that would result in a protective cleanup that is more comprehensive and faster, that minimizes the disputes and litigation going forward concerning the cleanup, and that is consistent with the overall Consent Decree for the Site.

The Parties have agreed on the following measures to achieve a cleanup that is protective, faster and more comprehensive, while minimizing disruption to affected parties, addressing community impacts, and promoting economic development. This Settlement Agreement is intended to address all disputes between the Parties regarding the 2016 Permit, including those raised in petitions to the EAB. The Parties recognize that the terms of this Settlement Agreement must be approved by each of the five towns making up the Municipal Committee (Great Barrington, Lee, Lenox, Sheffield and Stockbridge) ("the Towns"). The terms of the Settlement Agreement are not severable or modifiable other than with the consent of the affected Parties.

Agreements in this Settlement Agreement that relate to the provisions of the 2016 Permit will be set forth in EPA's proposed revision of the 2016 Permit ("the Revised Permit" or "Revision to the 2016 Permit"). The Revised Permit will be subject to a regulatory public comment process. This Settlement Agreement will become part of the public file for this matter upon execution by the Parties.

To promote the ability of this Settlement Agreement to expedite the Rest of River cleanup, the Parties agree not to challenge the Revised Permit unless it is inconsistent with the terms of this Settlement Agreement. Except as specified in Sections I, V.A.1, V.B.3, 5 and 6, and VI.D below, any agreements by any Party in the Settlement Agreement are contingent on the final issuance of a Revision to the 2016 Permit containing terms substantially similar to those in the 2016 Permit, revised as specified by the terms in Sections II and III below.

SETTLEMENT TERMS

I. Initiation of Rest of River Response Action Activities

In order to expedite response actions at the "Rest of River" portion of the Site, GE has agreed to commence and perform investigation and design work as contractual obligations effective upon the date on which all of the Parties including EPA have signed this Settlement Agreement. Specifically, GE must submit a schedule for the Rest of River Scope of Work (SOW), develop the SOW, and, subject to approval by EPA, implement the investigation and design components of the SOW and subsequent Work Plans to accelerate the commencement of the Rest of River cleanup. The obligation to perform this investigation and design work shall continue unless and until EPA issues a Revised Permit that does not contain terms substantially similar to those in the 2016 Permit, revised as specified by the terms in Sections II and III below.

II. Cleanup Enhancements

As part of this Settlement Agreement, GE agrees to enhance the cleanup in the following ways, to be required in the forthcoming Revised Permit.

A. GE shall implement all requirements of the 2016 Permit that are not explicitly modified in this Settlement Agreement, and all modifications of the 2016 Permit specified in Sections II and III of this Settlement Agreement.

B. For Reach 5A Floodplains in Pittsfield, GE shall remove soil from twenty-two (22) floodplain properties specified in Attachment A to meet the residential Performance Standards in the 2016 Permit. To the extent the Town of Lenox determines that any of the owners of the six properties identified in Attachment B consent to such removal, GE shall remove additional floodplain soil from any such properties to achieve the residential Performance Standards in the 2016 Permit. Allocation of costs for such additional work in Lenox is governed by Section V.A.4 of this Settlement Agreement.

C. For Reach 5A and 5B banks that do not otherwise require remediation pursuant to the 2016 Permit, GE shall evaluate the PCB data, erosion potential, the adjacent floodplain removal (if any), constructability issues, and the potential impact to PCB downstream transport should such banks erode and, based on these factors, consider supplemental bank removal.

D. For Reach 5C, GE shall excavate sediment to achieve an average PCB concentration of 1 mg/kg or less followed by the placement of six inches of suitable backfill across the Reach. This will eliminate approximately 57 acres of capping otherwise required by the 2016 Permit.

E. GE shall remove the sediments behind the Columbia Mill Dam in Reach 7 to achieve an average PCB level of 1 mg/kg or less, followed by the placement of a minimum of six inches of suitable backfill and additional material as necessary to maintain channel stability, and GE shall remove the Columbia Mill Dam, upon access being obtained to the property. The 2016 Permit will be revised to eliminate the option for any capping behind the dam. This will eliminate up to 10 acres of capping otherwise required by the 2016 Permit.

F. GE shall remove the sediments behind the former Eagle Mill Dam in Reach 7 to achieve an average PCB level of 1 mg/kg or less, followed by the placement of a minimum of six inches of suitable backfill and additional material as necessary to maintain channel stability, and GE shall remove the former Eagle Mill Dam, upon access being obtained to the property. The 2016 Permit will be revised to eliminate the option for any capping behind the dam. This will eliminate up to 8 acres of capping otherwise required by the 2016 Permit.

G. GE shall remove sufficient sediment to allow for a maximum of 3 acres of capping in the Willow Mill impoundment and 6.5 acres of capping in the Glendale impoundment, thus eliminating up to 10.5 acres of capping otherwise required by the 2016 Permit.

H. For Rising Pond (Reach 8), GE shall remove sufficient sediment to allow for a maximum of 31 acres of capping, thus eliminating up to 10 acres of capping otherwise required by the 2016 Permit.

I. All Legally Permissible Future Project or Work provisions in the 2016 Permit will be retained, but the related Corrective Measures provision of the Revised Permit will be modified to require that the specified "further response actions" will be (i) in accordance with and pursuant to the Consent Decree; (ii) consistent with the scope of the response actions selected in the Revised Permit; and (iii) that Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

J. For Vernal Pools, GE shall conduct a pilot study on not more than ten (10) Vernal Pools (none in Core Area 1 habitat) using either traditional excavation and restoration techniques, or amendments such as activated carbon. GE shall collect baseline data

including water and soil chemistry and a range of taxa and shall submit a plan that proposes criteria for success. Following an appropriate monitoring period determined by EPA, GE agrees to implement the appropriate remediation, as determined by EPA, on the remainder of Vernal Pools as necessary to meet the Performance Standards in the 2016 Permit.

K. For the remediation of Reach 5C, Woods Pond and potentially in backwaters adjacent to Reach 5C and Woods Pond, GE shall implement, if feasible, a hydraulic dredging and/or hydraulic pumping approach with material from these areas pumped directly to the Upland Disposal Facility described below and depicted in Figure 1. To the extent that the hydraulic dredging and/or hydraulic pumping approach is not feasible, GE shall transport material from Reach 5C and Woods Pond to the Upland Disposal Facility via trucks while avoiding driving on public roads to the maximum extent practical. See attached Figure 2 for depiction of the potential pipeline location from these remediation areas to the Upland Disposal Facility and of potential truck routes. Although PCBs from Reach 5C, Woods Pond and potentially in backwaters adjacent to Reach 5C and Woods Pond at any concentration may be pumped or trucked to the Upland Disposal Facility (as described in this paragraph) for temporary processing, all material permanently disposed of at the Upland Disposal Facility shall meet the standard described below in Section III.A.

L. Quality of Life Plan: GE is required to submit to EPA, for review and approval, a Quality of Life Compliance Plan, which specifies five separate areas to be addressed during remediation: noise, air, odor, light; recreational activities; road use and transport - related impacts; coordination with impacted residents/landowners; and community health

and safety. EPA will solicit input on this plan from local governments, impacted residents/landowners, neighborhoods in the vicinity of the cleanup, and other interested stakeholders. Section c of the Quality of Life Compliance Plan will include, among other requirements, consideration of methods to reduce residential impacts where practical, including remediation techniques that further restrict transport of waste material through residential areas. Examples of roads that would warrant such further restrictions include: Brunswick, Kenilworth, Warwick, Noblehurst, Chester, and Revilla Terrace; Shetland, Clydesdale, Pinto, and Palomino Drives; and Anita, Lucia, Quirco, Joseph, and Eric Drives. GE agrees to work with the City, the Towns and the landowners to take reasonable steps to minimize the adverse impact of the work activities by, among others, coordinating work activities, scheduling and traffic routing.

M. GE shall work cooperatively with the City of Pittsfield, the Towns of Great Barrington, Lee, Lenox and Stockbridge, and the State of Massachusetts to facilitate their enhancement of recreational activities, such as canoeing and other water activities, hiking, and bike trails in the Rest of River corridor. Such opportunities are possible on properties where remediation will occur and/or where temporary access roads are constructed.

N. GE shall coordinate as soon as practicable with municipal officials and affected landowners regarding work activities, schedules and traffic routes. GE's coordination with officials and landowners shall be described in the relevant work plans submitted to EPA.

O. Remediation of Mass Audubon Canoe Meadows Property:

In addition to the sampling and remediation described in the applicable Performance Standards in the 2016 Permit, GE will:

1. Expand the Exposure Area (EA) 10 boundary to the east so that the EA incorporates the area with PCBs greater than 1 ppm in the top foot of soil. This expansion would also allow evaluation of the trail in this area. The expanded EA is shown in Figure 6.

2. Include an additional subarea, beyond that included in the 2016 Permit, in the attached Figure 6 Mass Audubon Property Revised EA 10 Remediation and remediate additional floodplain soils to meet the applicable floodplain soil Performance Standards.

III. Disposal of Excavated Material in Rest of River Remedial Action

EPA's Revised Permit will include Performance Standards, corrective measures, and requirements for a Statement of Work and Work Plans, including for the disposal of excavated material. GE shall implement a hybrid disposal approach that includes the following;

A. Material disposed of at the Upland Disposal Facility pursuant to characterization and averaging method(s) approved and/or developed by EPA (Attachment C to this Settlement Agreement) shall not exceed the elevation, volume, and footprint limits described below. GE shall dispose of any material not placed in the Upland Disposal Facility in any out-of-state facility that is licensed/permitted to accept such waste and will accept it, including RCRA Subtitle C Landfills, so long as said facility is in compliance with EPA's Off-Site Rule (40 C.F.R. 300.440). Notwithstanding the first sentence of this

paragraph, a minimum of 100,000 cubic yards of PCB-contaminated sediment, riverbank soils, and/or floodplain soils shall be disposed of out of State.

B. Transportation and disposal of other sediment, floodplain soils and other Waste Material (as defined in the Consent Decree) shall occur at a location depicted in Figure 1 and as described in Section III.D-G of this Settlement Agreement ("Upland Disposal Facility"). No material from the Rest of River Remedial Action will be disposed of at any other location in Berkshire County.

C. No one shall take any materials to the Upland Disposal Facility for disposal except those identified for the Upland Disposal Facility as set forth in this Section III and generated in the Rest of River Remedial Action. No materials from previously remediated sites in the Upper 2-Mile Reach of the Housatonic River cleanup nor any other materials associated with the other response actions conducted pursuant to the Site Consent Decree will be disposed of at the Upland Disposal Facility.

D. The Upland Disposal Facility shall have a maximum design capacity of 1.3 million cubic yards. The landfill consolidation area shall have a maximum footprint of 20 acres and a maximum elevation of 1,099 feet above mean sea level. If the seasonally high groundwater elevation determined pursuant to Section III.E is determined to be higher than 950 feet above mean sea level, the maximum elevation of the landfill consolidation area may be increased by the number of feet that is the difference between the seasonally high groundwater elevation and 950 feet above mean sea level in order for the Upland Disposal Facility to have a maximum capacity of 1.3 million cubic yards.

E. GE shall construct the Upland Disposal Facility landfill with a double liner and a leachate collection system and shall cap the Upland Disposal Facility with a low-permeability cap

and vegetation. The liners shall have a permeability equal or less than 1 x 10^{-7} cm/sec, a minimum thickness of 30 mils and be chemically compatible with PCBs. The bottom liner of the landfill will be installed a minimum of 15 feet above a conservative estimate of the seasonally high groundwater elevation. The seasonally high groundwater elevation will be projected using site-specific groundwater elevation data collected in the location of the Upland Disposal Facility, modified by an appropriate technical method that takes into account historic groundwater level fluctuations at similarly-sited off-site long-term monitoring wells in Massachusetts. The estimation of a seasonally high groundwater elevation will be performed pursuant to a methodology reviewed and approved by the EPA. The estimate of seasonally high groundwater elevation shall then be used to support the design of the landfill relative to achieving the required minimum separation distance from the bottom of the liner system to the seasonally high groundwater elevation. The double liner system, separated by a drainage layer, shall incorporate primary and secondary leachate collection systems.

F. GE shall identify all non-community and private water supply wells currently within 500 feet of the Upland Disposal Facility consolidation area. Unless the well owner does not consent, GE shall pay the installation cost of a connection to public water. In the event any new water users (*e.g.*, new construction) move within 500 feet of the Upland Disposal Facility consolidation area during construction or operation and maintenance, GE shall pay the installation cost of a connection to public water.

G. Pursuant to EPA-approved or developed remedial design, remedial action, and operation and maintenance documents, and in accordance with the Consent Decree and the Revised Permit,

1. GE shall install a groundwater monitoring network around the Upland Disposal Facility to monitor for PCBs and other constituents identified in the groundwater monitoring plan as approved or modified by EPA. Groundwater monitoring shall include a sufficient number of monitoring wells to allow detection of groundwater impacts.
2. GE shall perform landfill inspections, maintenance, and groundwater sampling activities.
3. GE shall be responsible for the proper functioning of the Upland Disposal Facility landfill during landfill operations, and shall remain responsible for the proper operation and maintenance of the landfill thereafter. GE shall be responsible for the closure of the landfill including the installation of the impermeable cap and vegetative cover promptly upon EPA's determination that either of the following conditions has occurred: (1) the landfill is full (*e.g.*, when the maximum footprint, elevation and/or volume are reached), or (2) excavation and dredging activities conducted as part of the Rest of River Remedial Action are complete. GE shall be responsible for post-closure activities and monitoring thereafter.
4. Landfill design will include a stormwater management system to control surface runoff, to minimize the potential for surface erosion or stormwater contribution to leachate generation.

H. GE shall include in its landfill design submissions one or more proposals (based on GE's consultations with officials from the Town of Lee) describing how GE will prepare the Upland Disposal Facility for potential re-use once the landfill is capped if the Town of

Lee desires. Any such proposals shall be described in the final remedial design/remedial action work plans.

NON-PERMIT AGREEMENT(S)

IV. Other GE/EPA Agreements

A. GE and EPA's National Pollutant Discharge Elimination System permit program shall engage in good faith discussions regarding a renewal of the NPDES Permit for the former Pittsfield facility based on implementation of Best Management Practices to improve stormwater management, potentially including slip lining of damaged piping, pressure washing of other piping infrastructure, and removal of accumulated sediment from catch basins or other structures, as appropriate.

B. The EPA will facilitate opportunities for research and testing of innovative treatment and other technologies and approaches for reducing PCB toxicity and/or concentrations in excavated soil and/or sediment before, during, or after disposal in a landfill. These opportunities may include: (1) reviewing recent and new research; (2) identifying opportunities to apply existing and potential future research resources to PCB treatment technologies, through EPA and/or other Federal research programs; and (3) encouraging solicitations for research opportunities for research institutions and/or small businesses to target relevant technologies. The research may focus on soil and sediment removed (or to be removed) from the Housatonic River or similar sites to ensure potential applicability to the permit/selected remedy. GE and EPA will continue to explore current and future technology developments and, where appropriate, will collaborate on on-site technology demonstration efforts and pilot studies, and, consistent with the adaptive management

requirements in the Final Permit together, will consider the applicability of promising research at the Housatonic Rest of River site.

V. Economic Development and Other Community Benefits

A. GE shall pay a total of $55 million, which the Towns of Lenox, Lee, Stockbridge, Great Barrington and Sheffield shall distribute among themselves.

1. GE agrees to establish an interest-bearing escrow account and to pay into that escrow account $55 million no later than 30 days after the Agreement is signed by the Parties. GE and the Towns of Lenox, Lee, Sheffield, Stockbridge, and Great Barrington agree to enter into a mutually acceptable escrow agreement regarding said escrow account, including instructions to the escrow agent, specifying the terms on which the $55 million deposited into said escrow account, and the interest, accrued, will be released.
2. GE shall donate the Rising Pond Site (parcel 113/005.0-0000.0008.0 listed as 149 acres) to the Town of Great Barrington or its designee to allow for conservation and/or development contingent on GE retaining necessary easements to conduct response actions at Rising Pond and to maintain the Rising Pond Dam.
3. GE shall release the use limitations currently effective at the adjacent Hazen Paper Mill Site subject to appropriate releases from future liability.
4. After Lenox determines whether any of the owners of the six properties identified in Attachment B seek additional floodplain soil removal to achieve the residential Performance Standards in the 2016 Permit pursuant to Section II.B of this Settlement

Agreement, Lenox and GE will share equally the cost of such additional removal for any such owners who request such additional removal.

B.

1. GE shall pay a total of $8 million to the City of Pittsfield within sixty (60) days of the final issuance of a Revision to the 2016 Permit containing terms substantially similar to those in the 2016 Permit, revised as specified by the terms in Sections II and III of this Settlement Agreement, with the understanding that the $8 million will be put into the Pittsfield Economic Development Fund.

2. Within sixty (60) days of the final issuance of a Revision to the 2016 Permit containing terms substantially similar to those in the 2016 Permit, revised as specified by the terms in Sections II and III of this Settlement Agreement, GE will donate, as is, the land and building that it owns on Woodlawn Avenue (Parcel ID I100005001) to the Pittsfield Economic Development Authority ("PEDA") or another entity agreeable to the City, GE and PEDA. Pittsfield reserves the right to decline the donation. Should Pittsfield elect to decline the donation it shall do so within 12 months of the date of this Settlement Agreement.

3. By December 31, 2020, unless EPA has proposed a Revised Permit that is not substantially similar to the 2016 Permit, revised as specified by the terms in Sections II and III of this Settlement Agreement, GE will remove the pavement, fencing and guard rails on three parking lots on Tyler Street (Parcel IDs J11000701, J110003013, and

J110010001)(the "Parking Lots"). To landscape the Parking Lots, GE shall plant grass, and shall, at a cost not to exceed $50,000, install appropriate shrubbery.

4. GE will also engage in good faith discussions with the City regarding the donation by GE of the Parking Lots to the City or another entity agreeable to the City and GE, which donation would occur within sixty (60) days of the later of the final issuance of a Revision to the 2016 Permit containing terms substantially similar to those in the 2016 Permit, revised as specified by the terms in Sections II and III of this Settlement Agreement, and completion of the landscaping of the Parking Lots.

5. GE will also agree to semi-annual meetings between the City and GE regarding GE's plans for the maintenance, potential repurposing or eventual demolition of the structures located at 55 Merrill Road, Parcel J100009002: Building 12 complex including Buildings 12, 12X, and 12Y, Building 14 Complex including Buildings 14, 14A, 14D, 14E, 14H and any extensions, and the buildings and parcels south of East Street with the first semi-annual meeting to occur within 60 days of execution of the Settlement Agreement unless EPA proposes a Revision to the 2016 Permit that is not substantially similar to the terms of the 2016 Permit, revised as specified by the terms in Sections II and III of the Settlement Agreement.

6. Aesthetic Improvements on GE Owned Property in City of Pittsfield: Within 120 days of the execution of the Settlement Agreement, unless EPA proposes a Revision to the 2016 Permit that is not substantially similar to the terms of the 2016 Permit, revised as specified by the terms of Sections II and III of the Settlement Agreement, GE will commence the specified activities in this Section V.B.6 to aesthetically improve GE

owned property in the City of Pittsfield and will complete said specified activities within 12 months of the commencement of said specified actions.

a. GE Property South of East Street

   i. Remove barbed wire from fencing along East Street and remove former employee turnstile and associated infrastructure (if any) subject to concurrence by GE Corporate Security, to be discussed with the City.

   ii. Plant 24 White pines or equivalent subject to availability. (This is limited to areas east of the Woodlawn Avenue/East Street intersection due to lack of unpaved areas west of Woodlawn Avenue. Additional aesthetic improvement will be suggested by GE which can be installed west of Woodlawn Avenue to improve the appearance of the property running parallel to East St.).

   iii. Improve aesthetics of area currently being used as a storage area by WMECO.

b. GE property bounded by RR tracks/Merrill Road, New York Avenue, Tyler Street and PEDA property.

   i. Remove all barbed wire from fencing along Tyler Street subject to concurrence by GE Corporate Security, to be discussed with the City.

   ii. Remove pipe trestle extending from Building 12Y to the former 20s Complex (timing for removal subject to obtaining access and concurrence from CSX).

   iii. Remove guard rail north of Building 14E/14 Ext along Tyler Street subject to concurrence from the Pittsfield Department of Public Service.

iv. Remove 4 exterior vents/stacks that are on the outside wall of building 14/14-N and face Tyler Street.

c. Building 14 complex

i. North side/facing Tyler Street; Paint rusted "columns" and "horizontal" facade near top of the building (excluding white siding) that faces Tyler Street.

ii. In the high bays on the north, east and south side of 14/14E; replace broken windows, or fill all window panes, and/or paint with consistent solid material if such work can be performed safely.

iii. Eastern side of Building 14/14E that faces south towards the SABIC parking lot; Remove, paint, refurbish or otherwise improve the rusted and/or peeling siding.

d. Building 12, facing west (toward PEDA property): paint perimeter façade of southern most garage door and rusted wall.

e. Building 12 complex

i. Remove, paint, refurbish or otherwise improve the rusted and/or peeling siding that faces south toward East Street. (Siding is currently white.)

ii. Remove, paint, refurbish or otherwise improve the rusted and/or peeling siding that faces southeast toward East Street/Merrill Road and siding on the west, south and east side of the upper building on 12 (Y). Portions of the upper building may be inaccessible and not subject to such aesthetic improvements due to lack of access/safety concerns. (Siding is currently red.)

f. Additional aesthetic improvements identified by the City will be discussed by the City and GE at the semi-annual meetings referenced above in Section V.B.5.

C. GE shall prioritize the use of local labor for the Rest of River Remedial Action to the extent feasible and economical.

D. Upon request, GE will provide any municipality with information relevant to GE's liability to that municipality for taxes on any real or personal property that is related to the Rest of River cleanup.

E. Compensation and Access:

1. Once Mass Audubon and GE execute an Access Agreement, GE agrees to pay Mass Audubon $500,000 for the placement and operation, for a period not to exceed 2 consecutive years, of a staging area of up to 3 acres (with appropriate access roads). Mass Audubon agrees that the staging area can be used to facilitate the remediation of Canoe Meadows Wildlife Sanctuary as well as other floodplain soils and Housatonic River sediments in Reach 5A. GE and Mass Audubon agree to execute an Access Agreement to provide additional details of the access that is consistent with the substance of Appendix R to the Consent Decree.

2. Such Access Agreement will include provisions relating to the restoration of Canoe Meadows Wildlife Sanctuary man-made infrastructure affected by the remediation, including but not limited to the boardwalk, walking trails, and public parking lot.

3. Such Access Agreement will include actions to be taken by GE to ensure continued recreational activities on walking trails and other areas of Canoe Meadows Wildlife Sanctuary that will not be affected by the remediation. This will include the provision of an alternate public parking lot and construction and maintenance of alternate connecting walking trails.

4. Such Access Agreement will not include additional monetary compensation.

F. Restoration of Canoe Meadows Staging Area:

Regarding ecological restoration of the staging area, GE agrees to comply with Section II.B.1.c of the 2016 Permit. Regarding all other restoration activities, GE agrees that when the remediation is complete and the staging area is no longer needed, GE will remove the staging area materials and plant appropriate vegetation based on a pre-construction survey of the area, replace any physical structures, trails, signs, public parking areas, and other improvements that are damaged or removed, and otherwise comply with the restoration provisions of the 2016 Permit.

VI. Coordination and Consultation

A. Coordination and Consultation with Stakeholders

1. EPA, in its 2016 Response to Comments on the Rest of River Permit, committed to soliciting input and working with all stakeholders as the cleanup design progresses. EPA reiterates that commitment in this Settlement Agreement. For example, during Remedial Design, EPA plans to engage with property owners, Native American tribes, local governments, communities and other stakeholders to ensure that their input is included in the design process. EPA will ensure that schedules for submissions and reviews take into account any necessary local government, property owner, and stakeholder reviews. At a

minimum, and not necessarily limited to the following, during remedial design EPA will provide an opportunity for input on key submittals required by the Permit, including the Quality of Life Compliance Plan and the design, construction and operation of the Upland Disposal Facility.

2. If in the course of remedial design, GE determines that it will encounter stormwater conveyances, GE will notify the municipality in which the stormwater conveyances are located. To the extent that said municipality wants to upgrade said conveyances, GE will coordinate with the municipality regarding said upgrade so long as it will not delay remedial action.

3. Prior to transporting any materials required for remediation or starting any work in the City of Pittsfield or in the towns of Great Barrington, Lee, Lenox, or Stockbridge, GE shall document the pre-existing condition of any municipal road to be used during remediation using 360 degree road imaging technology plus 3D road surface imaging technology. GE shall also photographically document the condition of other visible infrastructure associated with such roads, including bridges culverts and other exposed infrastructure that is not captured by the road scanning process and provide that documentation for review by the affected municipality. GE and the affected municipalities will meet and confer in good faith, and in consultation with experts, regarding the need for the use of Ground Penetrating Radar ("GPR") technology to assess subsurface conditions in particular areas where such GPR assessment may be warranted. The required Quality of Life Compliance Plan will include documentation showing how GE will repair any damage to the roads, other than normal wear and tear, caused by GE in order to allow safe public access during remediation activities. At the completion of

any remediation activities affecting a specific road, GE will document the then-existing condition of the road and associated exposed infrastructure using the same technology as set forth above and provide that documentation for review by the municipality; at that time, GE and the affected municipalities will meet and confer in good faith, and in consultation with experts, regarding the need for the use of GPR technology to assess subsurface conditions in particular areas where such GPR assessment may be warranted. GE shall repair or replace any damage caused by GE; any dispute under this Agreement between GE and a municipality regarding GE's responsibility for road and/or infrastructure repair, if the parties cannot resolve the matter through mediation, shall be determined by a single, neutral arbitrator with arbitration to occur in Massachusetts. The arbitration shall (unless the parties to the dispute agree otherwise) be administered by the Boston office of JAMS pursuant to the JAMS Streamlined Arbitration Rules and Procedures, effective July 1, 2014. Such repair or replacement shall meet current State or Federal standards and must be acceptable to the municipality, provided such acceptance is not unreasonably withheld. This provision does not affect any of EPA's authorities pursuant to the Consent Decree or the Revised Permit. GE and the affected municipalities agree to share relevant information regarding the usage of the roads during the remediation process.

4. EPA will coordinate with the affected municipality and interested stakeholders on the Vernal Pools to be remediated pursuant to this Settlement Agreement.

5. EPA also commits to coordinate closely with Connecticut and Massachusetts environmental agencies in implementing the Revised Permit.

B. Consultation with Public and Private Property Owners where Remediation is Required

EPA, in consultation with Connecticut and Massachusetts environmental agencies, commits to working closely with the affected property owner to obtain input prior to finalizing design submittals and other documents specifically related to property owners where remediation is required. These submittals/documents shall include but are not necessarily limited to the following:

- Floodplain Pre-Design Investigation Work Plans, which include:
    - Soil Sampling Plan
    - Potential Vernal Pool Certification Investigation Reports
    - Survey Report on Morphology, Habitat Characterization, and Accessibility
- Riverbed and bank Pre-Design Investigation Work Plans
- Pre-Design Investigation Summary Reports (summarizes investigation activities and sampling data, identifies additional data needs, if any)
- Baseline Restoration Assessment and Restoration Plans
- Cultural Resource Survey(s)
- Conceptual Remedial Design/Remedial Action ("RD/RA") Work Plan (Preliminary identification of excavation footprint and quantities, preliminary restoration activities, and preliminary plans and specifications.)
- Final RD/RA Work Plan (Final excavation footprint, detailed design details, plans and specifications, including potential access roads, staging areas, and restoration activities, long-term inspection, monitoring and maintenance requirements, and a preliminary schedule).

C. Coordination Among EPA, Mass Audubon, GE:

EPA, Mass Audubon, and GE recognize that, as envisioned in the 2016 Permit and this Settlement Agreement, the proposed remediation will affect Mass Audubon's Canoe Meadows property in Pittsfield.

1. Prior to submittal of the Conceptual RD/RA Work Plan relating to actions to be taken by GE at Canoe Meadows Wildlife Sanctuary, GE will meet with EPA and Mass Audubon at a mutually agreeable time to review the Revised Permit terms and discuss how these relate to: the actual areas of remediation on Canoe Meadows Wildlife Sanctuary; other areas on Canoe Meadows Wildlife Sanctuary that may be needed to facilitate the remediation; and applicable requirements of the Access Agreement between GE and Mass Audubon (including restoration requirements and actions to allow for continued recreational activities).
2. After executing an access agreement but prior to mobilization of the remediation at Canoe Meadows Wildlife Sanctuary or mobilization of activities to make a staging area at Canoe Meadows Wildlife Sanctuary, GE will meet with Mass Audubon and EPA to discuss concerns.
3. Prior to submittal of restoration plans for Canoe Meadows Wildlife Sanctuary (which typically are included in the Final RD/RA Work Plan), GE will meet with EPA and Mass Audubon at a mutually agreeable time to discuss restoration plans for the property.

D. Technical Assistance for Local Governments

EPA is providing contractor support to provide technical assistance to the City of

Pittsfield and the Towns of Lenox, Lee, Stockbridge, Great Barrington, and Sheffield.

The contractor is funded by EPA and can provide the following:

- Project planning,
- Communications/coordination with EPA, the States and other stakeholders,
- Technical review of Permit submittals and other documents,
- Preparing and presenting technical presentations to the local governments and the general public,
- Development of Fact Sheets,
- Development of community informational material for dissemination to the public that summarize technical information and technical issues in plain language,
- Technical presentations to community, and
- Provide support responding to questions raised by the public.

EPA has already committed $20,000 for this effort, effective on signature by all Parties to this Settlement Agreement. EPA intends, subject to the availability of funds, to further fund this effort during the design and implementation of the remedy.

VII. Effect of this Agreement

A. This Agreement is not a modification of and shall have no impact upon, the terms and conditions of the Consent Decree.

B. Nothing in this Agreement shall be construed to create any rights in, or grant any cause of action to, any person not a party to this Agreement.

C. This Settlement Agreement may be executed in multiple counterparts. The executed signature page(s) from each actual or electronic copy of a counterpart may be joined together and attached and will constitute one and the same Settlement Agreement.

LIST OF ATTACHMENTS

Attachment A: Reach 5A (Pittsfield) Floodplain Residential Properties Subject to Enhanced Cleanup

Attachment B: Reach 5C (Lenox) Floodplain Residential Properties Subject to Potential Enhanced Cleanup

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Figure 4: Subreaches in Reaches 7/8 (referred to in Attachment C)

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Figure 6: Mass Audubon Property Revised EA 10 Remediation

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the Town of Lenox:

Edward Lane

Name

2/5/2020

Date

Chair - Lenox Board of Selectmen

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the Town of Lee:

Thomas P Wickham — Name

Feb 5, 2020 — Date

Chairman Board of Selectman — Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the Town of Stockbridge:

Terence R. Tyler

Name

2/4/20

Date

Select Board Chair

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the Town of Great Barrington:

Name Stephen Bannon

2/5/2020
Date

Great Barrington Selectboard,
Title Chair

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the Town of Sheffield:

Rene C Wood — Name

Feb 3, 2020 — Date

Chair, Board of Selectmen — Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the City of Pittsfield:

Linda M. Tyer

Name Linda M. Tyer

2/5/2020

Date

Mayor

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the State of Connecticut:

Lori D DiBella

Name Lori D. DiBella

2/5/2020

Date

Assistant Attorney General

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For C. Jeffrey Cook:

C. Jeffrey Cook — 2.6.20

Name — Date

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For Berkshire Environmental Action Team:

Jane Winn — February 6, 2020

Name JANE WINN — Date

EXECUTIVE DIRECTOR

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For the United States Environmental Protection Agency:

[signature]

Name

2/6/2020

Date

REGIONAL ADMINISTRATOR

Title

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For Massachusetts Audubon Society:

Name Kathleen E. Connolly

02/07/2020
Date

Title Attorney

THE UNDERSIGNED PARTY enters into this Settlement Agreement to resolve disputes regarding EPA's October 2016 RCRA Corrective Action Permit Modification for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site

For General Electric Company:

Name BUCHANASTER DEWOLF Date 2/10/20

VP, ENVIRONMENT, HEALTH & SAFETY
Title

Attachment A
Reach 5A Floodplain Residential Properties Subject to Enhancement

Parcel ID
I6-1-42
I6-3-13
J6-2-3
J4-3-7
J4-3-8
J4-3-9
J4-3-10
J4-3-11
J3-1-10
J3-1-9
J3-1-8
J3-1-14
J3-1-13
J3-1-12
J3-1-11
J3-2-2
J3-2-3
J3-2-4
J3-2-5
J3-2-6
K3-1-2
K2-1-10

Attachment B
Reach 5C Floodplain Residential Properties Subject to Potential Enhancement

Parcel ID
24-6
24-5
24-4
24-3
24-2
24-1

Attachment C to Settlement Agreement

Criteria/Methods Applicable to
Disposal of Material Excavated in Rest of River Remedial Action

1. For floodplains in each of the 90 Exposure Areas shown in Figure 5, to the extent that remediation is required in any given Exposure Area, GE will segregate and dispose of off-site (out-of-state) soils containing high concentrations so that the remaining floodplain soil to be disposed of in the Upland Disposal Facility averages less than 50 mg/kg PCBs. The process is further described as follows:
   - After additional data collection required by the 2016 Permit, the horizontal footprint and vertical removal depth (the volume) of soil that needs to be removed in each Exposure Area will be determined.
   - The volume-weighted average PCB concentration of all soil to be removed from each Exposure Area will be calculated (using the same PCB data set used to delineate the soil to be removed).
   - If the volume-weighted average PCB concentration in the soil to be removed exceeds 50 mg/kg in an Exposure Area, the soil with the highest PCB concentrations (e.g., "hot spots") in the Exposure Area will be segregated, or separated out, for out-of-state disposal until the average concentration of the remainder of the soil to be removed in the Exposure Area decreases to less than 50 mg/kg for disposal at the Upland Disposal Facility.
2. For Reach 5A banks, GE will segregate and dispose of off-site (out-of-state) soils containing high concentrations so that the remaining Reach 5A bank soil to be disposed of in the Upland Disposal Facility has a volume-weighted average of less than 50 mg/kg PCBs. In calculating the volume-weighted average concentration of PCBs in Reach 5A riverbank soils for disposal purposes, the only soils that will be considered are soils to be removed from Reach 5A riverbanks.
3. GE will dispose of all riverbank and sediment from Reach 5B off-site (out-of- state), except in the following circumstances: If, pursuant to Section II.C of the agreement, GE removes additional riverbank soil with PCB concentrations less than 50 mg/kg, this material may be disposed of in the Upland Disposal Facility.

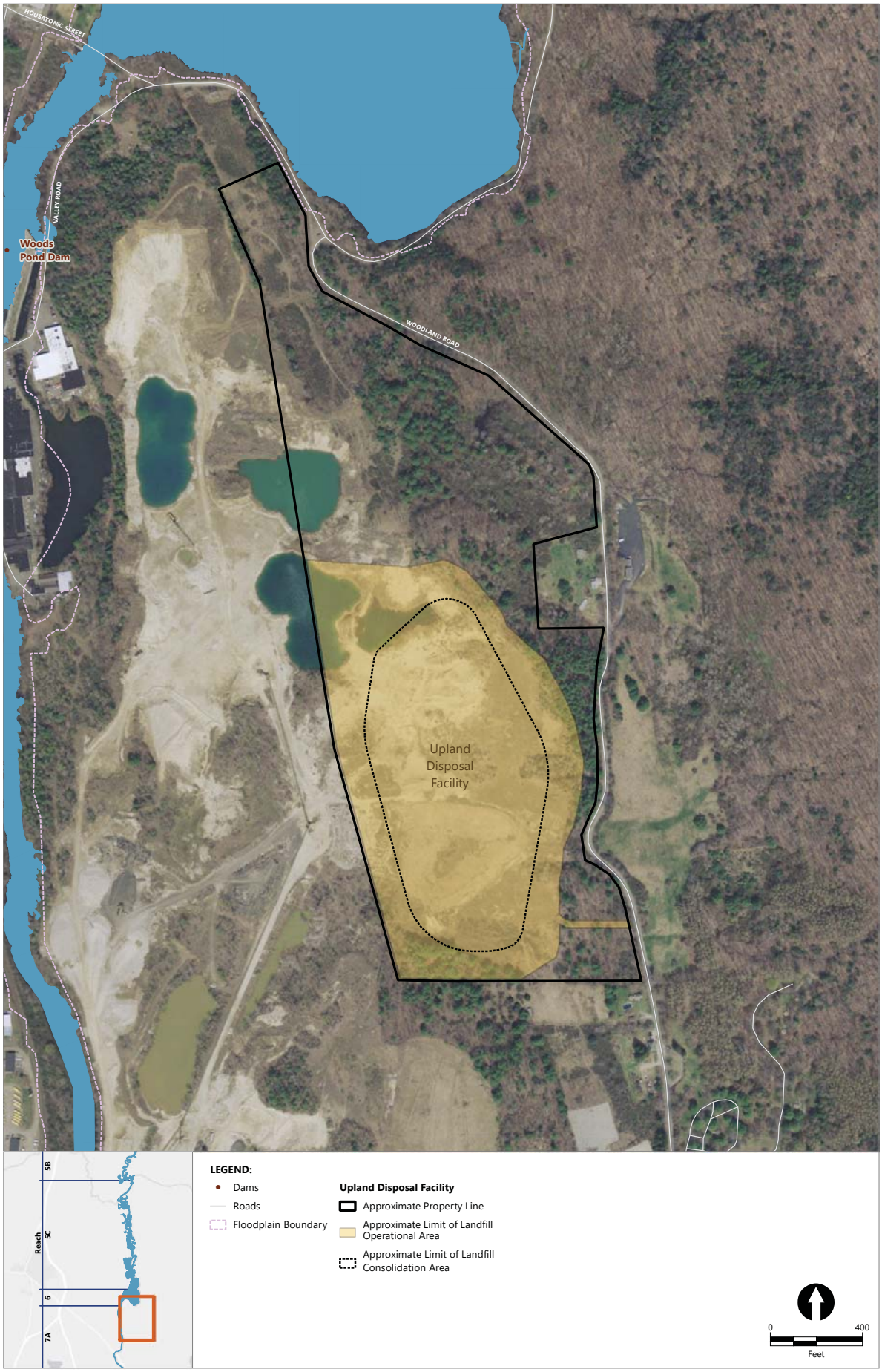
4. For all sediment except for Reach 5B, GE will segregate and dispose of off-site (out- of-state) sediments containing high concentrations so that the remaining sediment to be disposed of in the Upland Disposal Facility averages 25 mg/kg PCBs or less on a Reach or Subreach basis as described below.
   - The 25 mg/kg average applies individually to: Reach 5A, Reach 5C, Woods Pond, Backwaters, Reach 7 Subreaches (Subreach 7B [Columbia Mill Impoundment], Subreach 7C [Eagle Mill Impoundment], Subreach 7E [Willow Mill Impoundment], Subreach 7G [Glendale Impoundment], and Rising Pond. These Reaches/Sub- Reaches are depicted in Figures 3 and 4. The segregation of sediment for Reach 5B is described in item 3 above, which provides that all sediment removed from Reach 5B shall disposed of off-site (out-of-state).

- As described in the 2016 Permit, each Subreach, and in some cases each Reach, has its own Performance Standards to be achieved through sediment removal and capping or backfill. Following additional data collection, the area and amount of sediment to be removed to meet the Performance Standard will be determined. After the horizontal footprint and vertical removal depth are determined, the volume-weighted average PCB concentration of the sediment within that footprint will be calculated.
- If the volume-weighted average PCB concentration within a Reach or Subreach removal footprint exceeds 25 mg/kg, sediment with the highest PCB concentrations (e.g., "hot spots") will be segregated for out-of-state disposal until the average concentration of the remaining sediment to be removed from the Reach or Subreach decreases to 25 mg/kg or less for disposal at the Upland Disposal Facility.
- Relevant data from the RCRA Facility Investigation (RFI) and data collected pursuant to the 2016 Permit or Revised Permit will be used in determining average concentrations for comparison to the 25-mg/kg criterion for placement in the Upland Disposal Facility.
- EPA agrees to work with GE to design an appropriate transition and hybrid disposal averaging area in the Woods Pond Headwaters area between Reach 5C and Woods Pond.

5. In addition, for all sediment in Reaches and Subreaches, including backwaters, except for Reach 5B, GE will segregate and dispose of off-site (out-of-state) sediment that is represented by a 3-dimensional polygon associated with a single vertical core that has an average concentration greater than or equal to 100 mg/kg PCBs, as further described below:
   - GE will compare the 100 mg/kg criterion to the average concentration in each individual vertical core.
   - Vertical core polygons will be generated by a Thiessen polygon method. Thiessen polygon mapping involves the use of computer software to draw perpendicular bisector lines between adjacent sample locations to create two-dimensional polygon areas. The two-dimensional Thiessen polygon will be extended vertically to the depth of sediment removal to create a three-dimensional polygon.
   - The data used in this evaluation will be limited to, and representative of, the depth intervals that correspond to depth of removal associated with the location where the core was collected.
   - If sampling data, at a given vertical core location, consists of data from different depth intervals, the vertical PCB average concentration will be calculated as a depth-weighted average at that location.
   - Vertical sediment cores will be of sufficient depth to characterize sediment PCB concentrations throughout the full vertical interval required to comply with the Performance Standards for each Reach, Subreach and backwater under the 2016 Permit or Revised Permit.
   - If the vertical depth-weighted PCB average in a polygon is equal to or greater than 100 mg/kg, then all sediment associated with the vertical core polygon will be segregated and disposed of off-site (out-of-state).

- For all reaches except Subreach 5A and 5C, relevant data from the RFI and additional data collected by GE pursuant to the 2016 Permit or Revised Permit, as applicable, will be used in determining these vertical depth-weighted core averages.
- Additional vertical core samples will be collected by GE pursuant to the 2016 Permit or Revised Permit, as applicable, in Reach 6 (Woods Pond) to supplement existing data and to fill in data gaps.
- For Reaches 5A and 5C, only data collected pursuant to the 2016 Permit or Revised Permit shall be used in this evaluation. Vertical core samples will be collected in six-inch increments. The sampling will consist of 3 vertical cores per transect (left, center and right of the channel) with transects performed at a linear spacing of 250 linear feet of the river channel.
- Additional vertical sediment cores may be collected to further refine the areas where average sediment concentrations exceed 100 mg/kg and/or to assist in achieving the relevant Performance Standards in all Reaches or sub Reaches.
- GE will submit sediment sampling plans to EPA for review and approval. These plans shall detail, at a minimum, the approach for collection of vertical sediment cores and the data analysis approach to determine compliance with the 100 mg/kg criterion.

6. GE will not dispose of material classified as federal RCRA hazardous waste, or free liquids, free product, or any intact drums, capacitors or containers, into the Upland Disposal Facility. GE can use relevant data from the RFI and apply the 20 times rule (i.e., dividing the concentration in the sample by 20 and comparing the result to certain threshold values described in 40 C.F.R. 261) to determine if there are compounds that could potentially exceed the Toxicity Characteristic Leaching Procedure (TCLP) testing requirements. GE can also use relevant data from EPA's 1.5- Mile Reach Removal Action (e.g., TCLP data and other RCRA Characteristic requirements including ignitability, corrosivity and reactivity). If existing data is not sufficient to demonstrate that material will not contain RCRA hazardous waste, then GE will propose additional sampling in the appropriate Work Plans. In any Subreach where RCRA hazardous waste may be present, GE will collect a reasonable number of composite samples for analysis (for example, TCLP sampling for metals). If any composite sample demonstrates the material is RCRA hazardous waste, then: a) the material can be treated until testing demonstrates that the material is non- hazardous, or b) the material can be disposed of at an off-site facility in compliance with EPA's off-site rule (40 C.F.R. § 300.440).
7. Any other materials to be disposed of not otherwise addressed above will be sampled prior to disposal and disposed of in the Upland Disposal Facility if they have less than 50 mg/kg PCBs. (This could apply to haul road materials, etc. that GE may need to dispose of as part of the overall remedy construction.)
8. GE will dispose of the segregated high concentration sediment, soil and waste materials, and any free liquids, free product, or intact drums, capacitors or containers, in any facility that is licensed/permitted to accept such waste and will accept it, including RCRA Subtitle C Landfills, so long as said facility is in compliance with EPA's off-site rule (40 C.F.R. § 300.440).



ANCHOR QEA

Figure 1
Upland Disposal Facility
Housatonic River – Rest of River

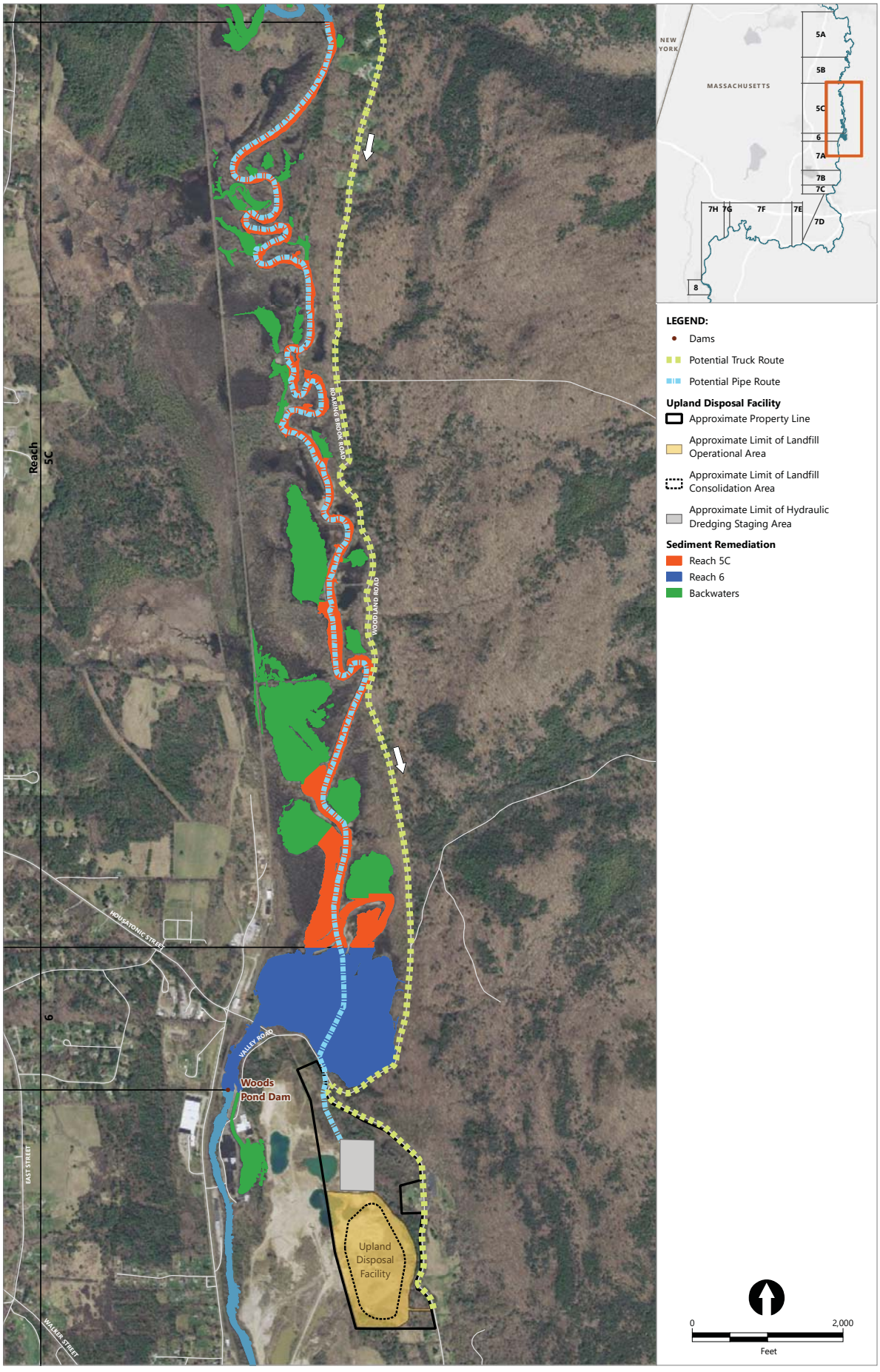


Figure 2
Potential Transport Routes for Reach 5C/Woods Pond Sediment to Upland Disposal Facility
Housatonic River – Rest of River

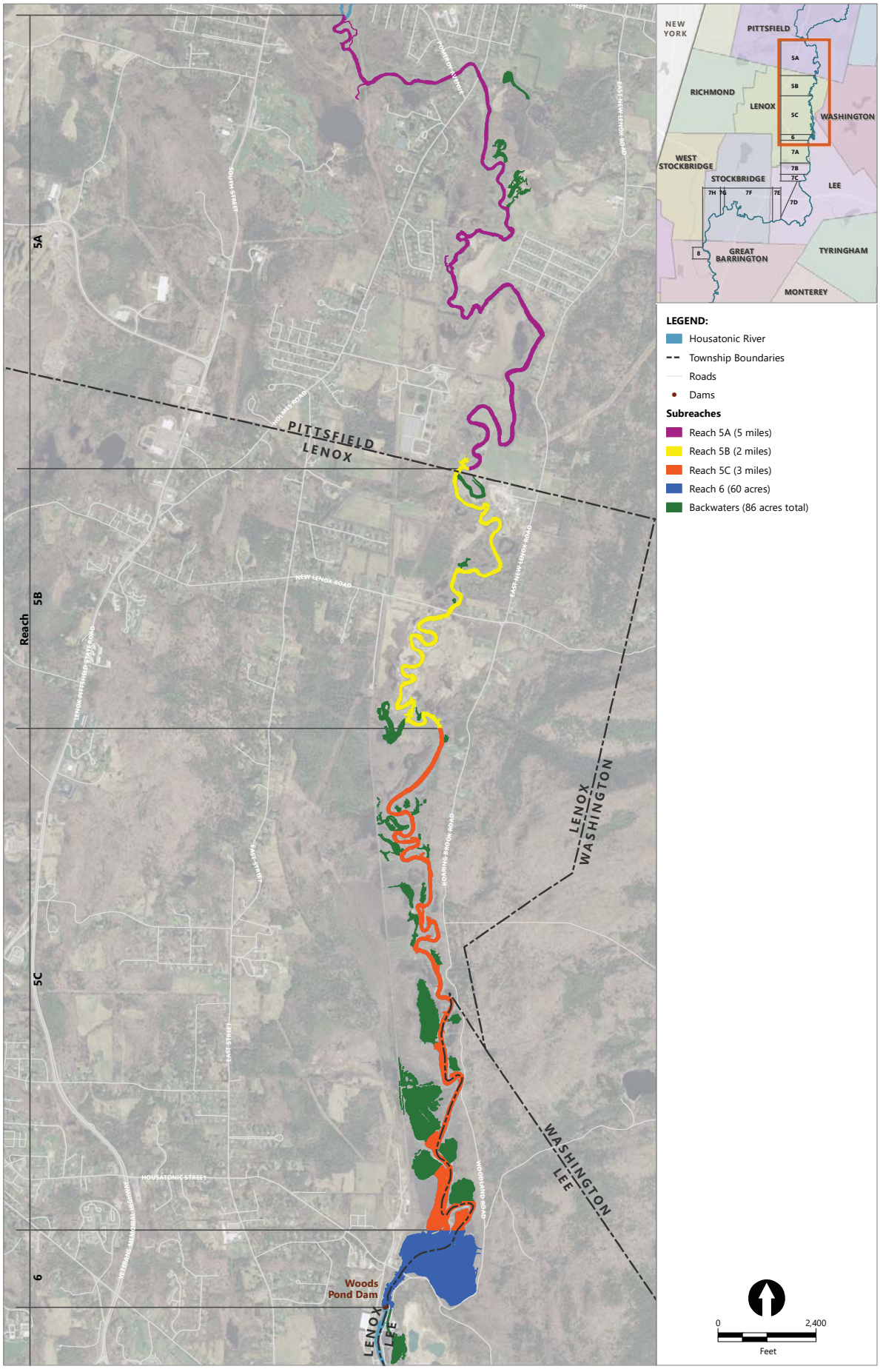


Figure 3
Subreaches in Reaches 5/6
Housatonic River – Rest of River

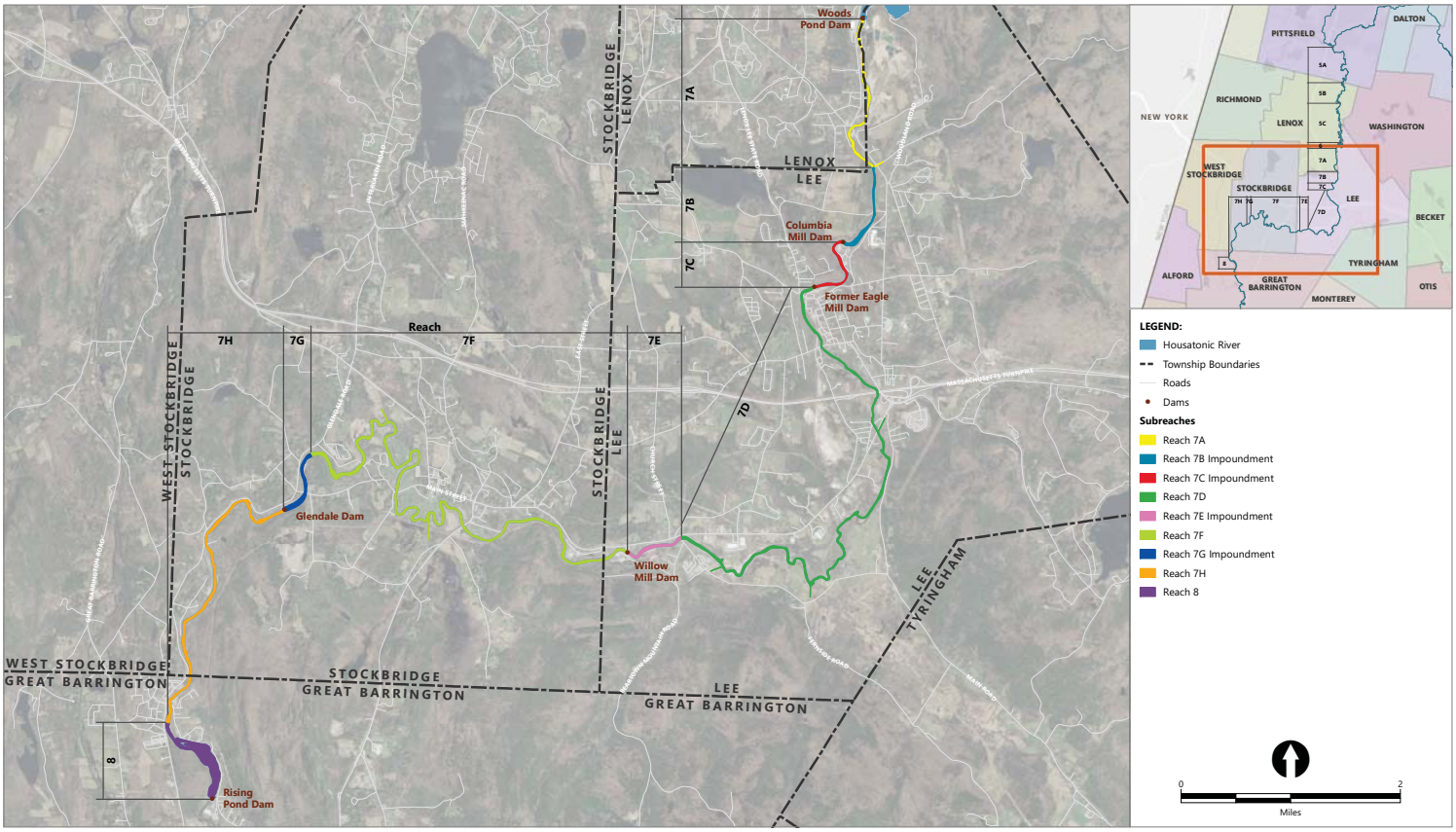


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Figure 4
Subreaches in Reaches 7/8
Housatonic River – Rest of River

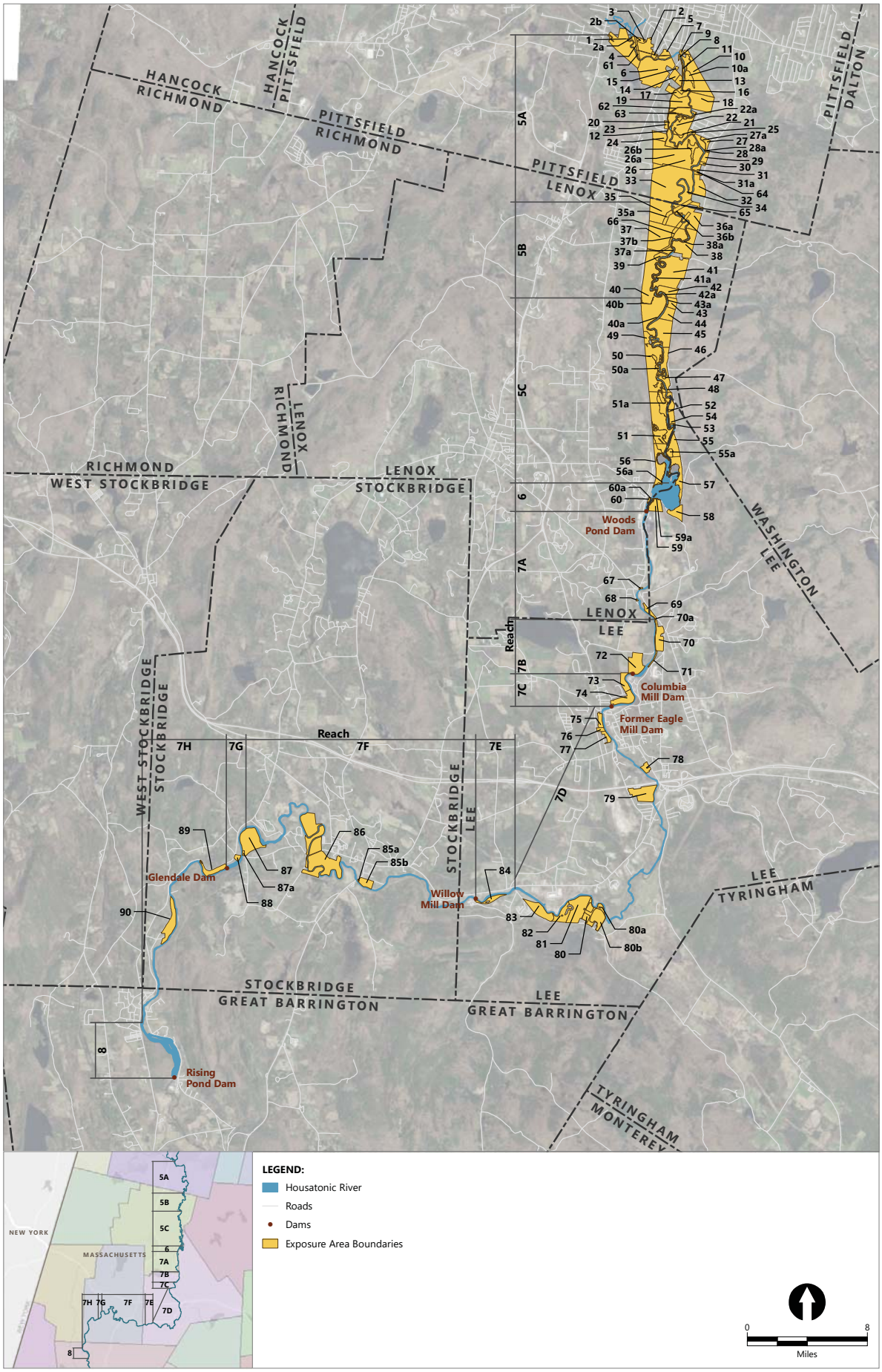

Figure 5
Exposure Areas in Reaches 5 to 8
Housatonic River – Rest of River

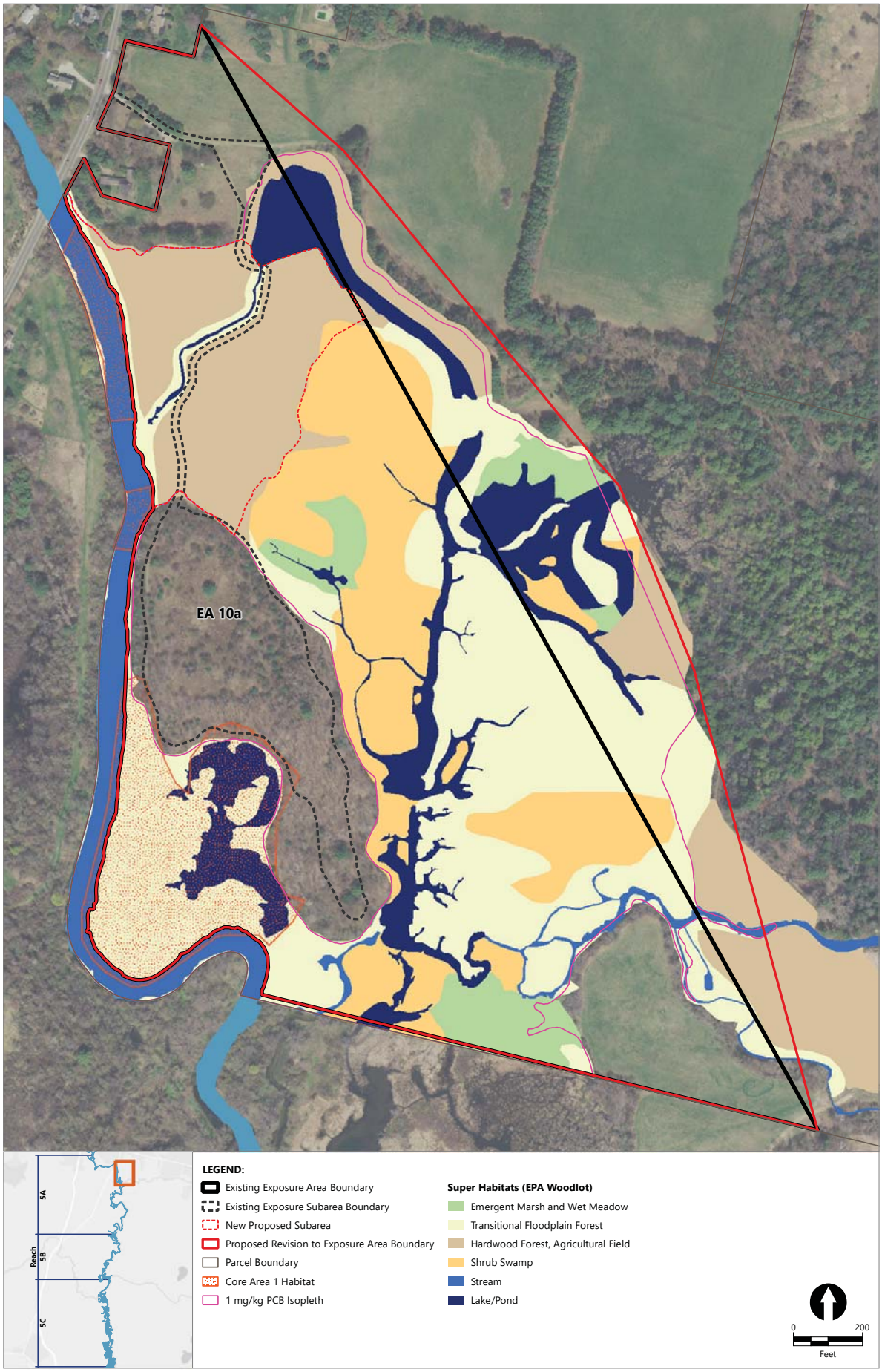

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Figure 6
Mass Audubon Property Revised EA 10 Remediation
Housatonic River – Rest of River

Attachment B
Final Revised RCRA Permit (issued December 16, 2020)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA NEW ENGLAND

PERMIT UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) AS AMENDED (42 U.S.C. SECTION 6901 ET SEQ.)

General Electric Company
1 Plastics Avenue
Pittsfield, Massachusetts 01201
EPA I.D. No. MAD002084093

The Permittee is required to conduct certain activities at areas affected by releases of hazardous waste and/or hazardous constituents from the General Electric Facility located in Pittsfield, Massachusetts, in accordance with Sections 3004(u), 3004(v), and 3005(c) of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), as specified in the conditions set forth herein.

This Revised Final Permit Modification to the 2016 Reissued RCRA Permit (or "Permit") has been prepared for RCRA Corrective Action activities to be performed by General Electric pursuant to a final Consent Decree, United States, et al. v. General Electric Company (D. Mass.) ("Consent Decree"). The Consent Decree memorializes an agreement to address releases of waste materials, including hazardous substances, hazardous waste, and/or hazardous constituents from the General Electric Company's Facility in Pittsfield, Massachusetts, including, but not limited to, the releases of hazardous waste and/or hazardous constituents addressed in this Permit. This Permit, upon the Effective Date, shall replace the HSWA Permit previously issued to the Permittee, initially issued on February 8, 1991, modified effective January 3, 1994, reissued in October 2000 and reissued again, effective December 5, 2007. Upon the Effective Date of this Permit, the previously issued 2007 Permit hereby is revoked, and, pursuant to the Consent Decree, the Remedial Action set forth in this Permit shall be implemented pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Consent Decree.

Dated: 12/16/2020

Signed: _____

Dennis Deziel, Regional Administrator
U.S. Environmental Protection Agency, EPA New England
5 Post Office Square – Suite 100
Boston, Massachusetts 02109-3912

GENERAL ELECTRIC CO. – PITTSFIELD, MA
RCRA CORRECTIVE ACTION PERMIT

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Figure 4 Exposure Areas for Reaches 7 and 8

Figure 5 Frequently Used Subareas

Figure 6 Upland Disposal Facility

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ATTACHMENT C SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

ATTACHMENT D TSCA 40 C.F.R. SECTION 761.61(C) DETERMINATION

ATTACHMENT E CRITERIA/METHODS APPLICABLE TO DISPOSAL OF MATERIAL EXCAVATED IN REST OF RIVER REMEDIAL ACTION

DEFINITIONS

Unless otherwise expressly provided herein, terms used in this Permit (including all tables, figures and attachments), which are defined in the Consent Decree, or in CERCLA, RCRA, or in regulations promulgated under CERCLA or RCRA, shall have the meaning assigned to them in the Consent Decree, CERCLA, RCRA, or in such regulations.

1. "2016 Permit" means the Final Permit Modification to the Reissued RCRA Permit issued by EPA on October 20, 2016 for the Rest of River portion of the GE-Pittsfield/Housatonic River Site.

2. "2020 Settlement Agreement" means the Settlement Agreement entered into in February 2020 by the following parties: EPA, State of Connecticut, City of Pittsfield, the Rest of River Municipal Committee (representing the Towns of Lee, Lenox, Stockbridge, Great Barrington, and Sheffield), Massachusetts Audubon Society, Berkshire Environmental Action Team, C. Jeffrey Cook, and General Electric Company.

3. "Act" or "RCRA" means the Solid Waste Disposal Act, as amended (also known as the Resource Conservation and Recovery Act), 42 United States Code (U.S.C.) §§ 6901 et seq.

4. "Backwaters" means the areas that are typically inundated or open water adjacent to the main channel of the river in Reaches 5, 6, and 7, a preliminary identification of which is generally depicted on Figure 3-17 of GE's October 2010 Revised Corrective Measures Study.

5. "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 et seq.

6. "Consent Decree", "Decree", or "CD" means the Consent Decree among the General Electric Company, the United States, Massachusetts and Connecticut state governmental agencies, the City of Pittsfield, Massachusetts, and the Pittsfield Economic Development Authority, which was entered by the United States District Court for the District of Massachusetts on October 27, 2000, in the case of United States et al. v. General Electric Company, Civil Action No. 99-30225-MAP and consolidated cases.

7. "Core Habitat Areas", "Core Area 1", "Core Area 2", and "Core Area 3" mean the areas above Woods Pond in the Rest of River that Massachusetts Division of Fisheries and Wildlife (DFW) mapped to assist the governments in determining areas for habitat protection and the locations of habitats and state-listed species that might be particularly sensitive to impacts from remediation activities. These Core Habitat Areas are described in a letter transmitted from DFW to EPA on July 31, 2012 and shown in accompanying maps, which are included in Attachment B.

8. "Corrective Measure" means corrective measure under RCRA until the Permit, or any severable portion thereof, is finalized pursuant to Paragraph 22 of the Consent Decree, whereupon the finalized corrective measure converts to and means response action under CERCLA.

9. "Effective Date" shall mean the date upon which any relevant Performance Standard(s), Corrective Measure(s) and/or other requirements in this Permit become(s) finalized pursuant to the process set forth in the Consent Decree, Paragraph 22, including, but not limited to, the regulations at 40 C.F.R. Part 124.

10. "EPA" means the United States Environmental Protection Agency, EPA New England, and any successor department or agency.

11. "Exposure Point Concentration" or "EPC" means the concentration of a contaminant that is used in the calculation of risk to humans or ecological receptors.

12. "Floodplain" means the area located within the floodplain of the Housatonic River to which hazardous waste and/or hazardous constituents originating at the GE Facility are migrating, have migrated, or may have migrated.

13. "Frequently Used Subareas" or "Heavily Used Subareas" means the areas subject to frequent use by humans, including, but not limited to, trails, access points, and known recreational areas that pose a direct contact risk, which generally include the areas shown in Figure 5.

14. "GE Facility" means, for the purposes of this Permit, the General Electric facility in Pittsfield, Massachusetts, as generally depicted on the map attached hereto as Attachment A.

15. "Hazardous Constituents" include those constituents listed in Appendix VIII to 40 C.F.R. Part 261 and Appendix IX to 40 C.F.R. Part 264.

16. "Hazardous Waste" means a solid waste or combination of solid wastes defined as a hazardous waste under 40 C.F.R. Part 261.

17. "HSWA" means the Hazardous and Solid Waste Amendments of 1984.

18. "Impoundment" means any area of sediment, soil, or water subject to the influence of a dam or dam component, including, but not limited to, sediment or soil present in spillways, sluiceways, channels, by-passes, conduits, ponds, settling basins, intake structures, or other structures used for collection, withdrawal, or use of water and any water withdrawn and used as process water, non-contact cooling water, etc.

19. "Legally Permissible Future Project or Work" shall mean when the property owner, the owner's successors and assigns, or any other party with an interest in the property such as a lessee or easement holder: (1) has submitted a plan to the appropriate governmental authority(ies) to authorize any project or work (if such plan or authorization is necessary) and such plan (if required) has been approved by the governmental authority(ies), or, provides documentation that a proposed project or work is legal without additional government approvals (for example, authorized by an easement or existing permit) and (2) provides to EPA and to Permittee (directly or through EPA) other documented evidence of a commitment to such project or work (for example, such evidence may include evidence of financing or other financial assurance for the project or work, other plans for implementing the project or work (such as architectural plans, contracts for performance of the project or work, or other similar plans), or

an affidavit that the owner intends to go forward with the project or work or if the necessary response actions are taken). Legally Permissible Future Projects or Work includes, but is not limited to, construction and repair of structures; utility work; flood management activities; road and infrastructure projects; dam removal, maintenance, repair, upgrades, and enhancement activities; and activities such as the installation of canoe/boat launches and docks.

20. "Legally Permissible Future Use" shall mean A) when the property owner, the owner's successors and assigns, or any other party with an interest in the property such as a lessee or easement holder: (1) has submitted a plan to the appropriate governmental authority(ies) to authorize any use (if such plan or authorization is necessary) and such plan (if required) has been approved by the governmental authority(ies), or, provides documentation that a proposed use is legal without additional government approvals (for example, authorized by an easement or existing permit) and (2) provides to EPA and to Permittee (directly or through EPA) other documented evidence of a commitment to such use (for example, such evidence may include evidence of financing or other financial assurance for the project, other plans for implementing the project (such as architectural plans, contracts for performance of the project, or other similar plans), or an affidavit that the owner intends to go forward with the project or other change in use if the necessary response actions are taken); or B) the use of a property changes from the exposure scenario upon which the initial or subsequent remediation(s) was determined, to a different exposure scenario, including those scenarios identified in Tables 2, 3 and 4.

21. "Monitored Natural Recovery" means a remedy for contaminated sediment that typically uses ongoing, naturally occurring processes to contain, destroy, or reduce the bioavailability or toxicity of contaminants in sediment, and requires monitoring the natural processes and/or concentrations of contaminants in surface water, sediment, or biota to see if recovery is occurring at the expected rate, and the maintenance of institutional controls until the necessary reductions in risk have occurred.

22. "PCBs" means total polychlorinated biphenyls.

23. "Performance Standards" mean cleanup standards, design standards, and other measures and requirements necessary to protect human health and the environment. Such Performance Standards that must be achieved and maintained are identified in the Consent Decree, this Permit, and/or will subsequently be identified in the Rest of River Statement of Work ("Rest of River SOW" or "SOW"), and/or amendments thereto.

24. "Permittee" means the General Electric Company.

25. "Reach" means the designation established by EPA in its 2000 Supplemental Investigation Work Plan for different segments of the East Branch and main stem of the Housatonic River shown in Figures 1 and 2.

26. "Release" includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, or migrating into the environment.

27. "Rest of River or Rest of River area" shall mean, for the purposes of this Permit, all sediments, surface waters, and Floodplain soils of the Housatonic River which are downstream

of the confluence of the East and West branches of the River, including Backwaters in the Floodplain, and to which releases of hazardous wastes and/or hazardous constituents are migrating or have migrated from the GE Facility, but excluding any Actual/Potential Lawns within the Housatonic River Floodplain – Current Residential Properties Downstream of Confluence, within the definition of the Removal Actions Outside the River in the Consent Decree.

28. "Restoration of Areas Disturbed by Remediation" means, for all areas disturbed by remediation activities under this Permit, the implementation of measures to return such areas to pre-remediation conditions (e.g., the functions, values, characteristics, vegetation, habitat, species use, and other attributes), to the extent feasible and consistent with the remediation requirements.

29. "Revised Final Permit Modification to the 2016 Reissued RCRA Permit" or "Permit" or "Revised Final Permit" means this Revised Final Permit Modification to the 2016 Reissued RCRA Permit issued by EPA for the "Rest of River" portion of the GE-Pittsfield/Housatonic River Site.

30. "Solid Waste" means a solid waste as defined in 40 C.F.R. § 261.2.

31. "States", for purposes of this Permit, means the Commonwealth of Massachusetts and the State of Connecticut.

32. "Surface Water" means water occurring immediately adjacent to land as overland flow, open channel flow, closed conduit flow, and waters in lakes, ponds, and reservoirs.

33. "Upland Disposal Facility" means the facility described in Section II.B.5. of this Permit and generally depicted in Figure 6.

34. "Vernal Pools" mean ephemeral fresh-water wetlands that meet the criteria specified in the Commonwealth of Massachusetts Natural Heritage & Endangered Species Program's Guidelines for Certification of Vernal Pool Habitat (March 2009 publication, Sections I, II, and III).

I. GENERAL PERMIT CONDITIONS

A. Background

1. Overview of Permit and Consent Decree

On October 27, 2000, the U.S. District Court for the District of Massachusetts, Western Division, entered a Consent Decree in United States, State of Connecticut, and Commonwealth of Massachusetts v. General Electric Company, Civil Action No. 99-30225, 99-30226, 99-30227 – MAP (consolidated cases) (the "Consent Decree," or "Decree").

The following explanation summarizes and describes certain provisions of the Consent Decree regarding the process for finalizing the modified

Permit and implementing the work selected in the final Permit as a CERCLA remedial action pursuant to the Consent Decree. Nothing in this summary shall modify or otherwise change the meaning of the Consent Decree.

The Consent Decree, at Paragraph 22.p through 22.dd, provides explicit direction on Permittee's opportunities for challenge of the final permit modification, the ability of EPA or Permittee to perform work pursuant to the final permit modification prior to conclusion of all challenges to the final permit modification, the obligations in the event of the final permit modification, or a revised final permit modification is vacated or remanded, and the obligation of Permittee to perform the work, or severable work, in the permit modification decision as a CERCLA remedial action and any required Operation and Maintenance (O&M) at the conclusion of all opportunities for a challenge to the final permit modification, or severable portion(s) of the permit modification. (The process for severing portions of the Permit and work is described in Paragraph 3 below).

2. Final Permit Modification Pursuant to Process Set Forth in Consent Decree

Following issuance of the 2016 Permit, certain provisions of the 2016 Permit were not challenged by any party. Permittee has submitted several design documents for the uncontested portions of the 2016 Permit.

Permittee has agreed, pursuant to the 2020 Settlement Agreement, in order to expedite response actions, to commence and perform investigation and design work as contractual obligations effective February 10, 2020. Specifically, Permittee shall submit a schedule for the Rest of River Scope of Work (SOW), develop the Rest of River SOW, and, subject to approval by EPA, implement the investigation and design components of the Rest of River SOW and subsequent Work Plans to accelerate the commencement of the Rest of River cleanup. Such Rest of River SOW shall include provisions and schedules for the subsequent development by the Permittee of Remedial Design Work Plan(s), Remedial Action Work Plan(s), Quality Assurance Project Plan/Field Sampling Plan, and/or other appropriate associated plans to achieve and maintain the Performance Standards and other requirements set forth in this modification of the Reissued RCRA Permit. Paragraph 22.x. of the Consent Decree explains the process for developing a Rest of River SOW. Following EPA approval, disapproval, or modification of the Rest of River SOW, the Permittee shall develop and submit the necessary Remedial Design and Remedial Action Work Plans and other documents to EPA for review and approval in accordance with the Rest of River SOW and Section XV of the Consent Decree and subject to Paragraph 39 of the Consent Decree.

The obligation to perform this investigation and design work shall continue unless and until EPA issues a revised permit that does not contain terms substantially similar to those in the terms of the 2016 Permit, revised as specified by terms in Sections II and III of the 2020 Settlement Agreement.

Otherwise, this Permit, or severable portion(s) thereof, after the opportunity for challenges to the EPA Environmental Appeals Board as specified in the Decree and described below in this Revised Final Permit, shall be performed by the Permittee as a CERCLA remedial action pursuant to the Consent Decree.

As provided in Paragraph 22.z of the Consent Decree, the Permittee shall design and implement the Rest of River Remedial Action, and any required O&M, as a CERCLA remedial action pursuant to the Consent Decree, in accordance with EPA's final RCRA permit modification decision, or severable portion(s) thereof, the final outcome of any dispute resolution proceedings, the Rest of River SOW, and any approved Work Plans thereunder. For purposes of the Rest of River Remedial Action and O&M, EPA's modification of the Reissued RCRA Permit, or severable portion(s) thereof, to select such Remedial Action and O&M that is effective at the time of initiation of the Rest of River Remedial Design/Remedial Action shall be considered to be the selected remedial action pursuant to Section 121 of CERCLA and Section 300.430 of the National Oil and Hazardous Substances Contingency Plan (NCP). If such modification is changed by appeals and/or remands, the subsequent modification of the Reissued RCRA Permit shall be considered the selected remedial action pursuant to Section 121 of CERCLA and Section 300.430 of the NCP, and any and all performance or actions required of the Permittee under this Reissued RCRA Permit shall be incorporated into, and conducted pursuant to, the Consent Decree.

3. Performance of Severable Work during Remedy Challenges

a. Initial Challenge to Final Permit Modification

In addition to the expedited work commitment by Permittee described above, and the performance of uncontested obligations described above, the Decree provides opportunities for the Rest of River Remedial Action to take place during challenges to this Permit.

b. Second Appeal

Pursuant to the 2020 Settlement Agreement, Permittee has agreed not to challenge the Revised Final Permit unless the Revised Final Permit is inconsistent with the terms of the 2020 Settlement

Agreement. EPA's position is that this Revised Final Permit is not inconsistent with the terms of the 2020 Settlement Agreement, and accordingly the Permittee's obligation to not challenge the Revised Final Permit remains in force.

Paragraph 22.u of the Decree provides that upon EPA's issuance of a revised permit modification decision, Permittee shall perform the selected Rest of the River Remedial Action and O&M set forth in EPA's revised permit modification decision unless Permittee timely files a petition for review with the EPA Environmental Appeals Board ("EAB"). Further, pursuant to Paragraph 22.u.(iii), in that event, Permittee shall perform all severable work which is not subject to the dispute. Permittee shall perform such severable work in accordance with EPA's revised permit modification decision and a Rest of River SOW developed in accordance with that decision and Paragraph 22.x of the Decree.

Paragraph 22.u.(ii), 22.u.(iv), and 22.u.(v) provide for a stay of the disputed portions of the revised permit modification decision in certain circumstances, but pursuant to Paragraphs 22.u.(iv) and 22.u.(v), Permittee is also required to proceed with severable work on the selected Rest of River Remedial Action and O&M in certain circumstances.

c. Subsequent Appeals

Pursuant to the 2020 Settlement Agreement, Permittee has agreed not to challenge the Revised Final Permit unless the Revised Final Permit is inconsistent with the terms of the 2020 Settlement Agreement. Pursuant to Paragraph 22.v of the Decree, if the EAB or the United States Court of Appeals for the First Circuit ("First Circuit Court of Appeals") vacates or remands all or part of EPA's revised permit modification decision, EPA may again revise its permit modification decision. Permittee shall perform such Rest of the River Remedial Action and O&M in accordance with such further revised permit modification unless Permittee timely files a petition for review. Further, Paragraph 22.v provides for a stay of the disputed portions of the revised permit modification decision in certain circumstances, and for Permittee to proceed with severable work on the selected Rest of River Remedial Action and O&M in certain circumstances.

If there are no challenges to the permit modification decision, or no challenges to a severable portion of the permit modification decision, or at the conclusion of all challenges to the permit modification decision, or at the conclusion of all challenges to any severable portion of the permit modification decision, Permittee

shall perform the final selected Rest of River Remedial Action and O&M, as stated in the final permit modification, or final portion thereof, as a CERCLA remedial action pursuant to the Consent Decree.

B. General Obligations and Commitments

1. Duty to Mitigate

In addition to the requirements of the Consent Decree, in the event of any noncompliance with the corrective action requirements of the Permit that results in a new release of hazardous waste and/or hazardous constituents to the environment, the Permittee shall take all reasonable steps to minimize releases of hazardous waste and/or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent its noncompliance from having significant adverse impacts on human health and/or the environment.

2. Property Rights

a. The issuance of this Permit does not convey any property rights of any sort, or any exclusive privilege to the Permittee.

b. The issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights.

3. Duty to Provide Information

a. Within a reasonable time, the Permittee shall furnish to EPA any relevant non-privileged information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. Upon request, the Permittee shall also furnish to EPA copies of records required to be kept or prepared by this Permit and copies of other documents and information within the Permittee's possession or control relating to the implementation of this Permit, in accordance with and subject to Section XXX of the Consent Decree.

b. All information which the Permittee furnishes to EPA, either in the form of a request or a report pursuant to this Permit, shall contain or reference the sources from which the information was obtained.

4. Inspection and Entry

The Permittee shall provide EPA or an authorized representative, upon presentation of credentials and other documents as may be required by law, with access at reasonable times to the GE Facility or other property

owned by the Permittee where any activity under this Permit is located or conducted, for the purpose of conducting, inspecting, or monitoring any activity pursuant to this Permit; inspecting or copying records required to be kept under this Permit; conducting sampling or other investigations related to implementation of this Permit; assessing the Permittee's compliance with this Permit; or conducting other activities described in Paragraph 53 (access obligations) of the Consent Decree insofar as they relate to activities under this Permit. The Permittee's provision of such access to EPA or an authorized representative shall be in accordance with and subject to Paragraph 53 of the Consent Decree.

5. Monitoring and Records

a. Samples and measurements taken for the purpose of waste analysis shall be representative of the waste to be analyzed. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 C.F.R. Part 261 or as provided in the approved and most recent edition of the Project Operations Plan (including the Field Sampling Plan and Quality Assurance Project Plan) and any amendments approved thereto.

b. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

c. The Permittee shall retain the records described in Paragraph 206.a of the Consent Decree, insofar as they relate to implementation of this Permit, for the time period specified in the second sentence of Paragraph 206.b of the Consent Decree.

d. Records of data obtained through monitoring shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) The raw data (e.g., chromatograms) collected and data reduction;

(4) The date(s) analyses were performed;

(5) The individuals(s) who performed the analyses;

(6) The analytical techniques or methods used;

(7) The result of analyses; and

(8) The quality assurance/quality control data.

6. Signatory Requirements

All proposals, reports, and other documents submitted by the Permittee under this Permit shall be signed by an authorized representative of the Permittee, which may include the Permittee's Project Coordinator, designated pursuant to Section II.J.

7. Notice of Anticipated Noncompliance

The Permittee shall give advance notice to EPA and the States of any planned changes in any corrective action activity under this Permit which may result in noncompliance with the requirements of this Permit.

8. Transfer of Permit

This Permit shall not be transferred to a new owner or operator except after notice to and approval of the planned transfer by EPA, which may require that the Permit be modified or revoked and reissued.

9. Twenty-Four-Hour Reporting and Follow-Up

The Permittee shall comply with the reporting requirements set forth in Paragraph 69 of Section XIV of the Consent Decree; provided, however, that the Permittee shall not be subject to multiple enforcement actions or liable for multiple penalties under the Consent Decree, CERCLA, the Emergency Planning and Right-to-Know Act, RCRA, and/or this Permit for the same instance of noncompliance with such requirements.

10. Other Notification and Reporting Requirements

a. The Permittee shall report to EPA all instances of noncompliance with the terms of this Permit in the monthly progress reports to be provided pursuant to Paragraph 67 of the Consent Decree. Copies of such reports shall also be sent to Massachusetts and Connecticut Project Coordinators. For each instance of noncompliance, such report shall contain the following information:

(1) A description of the noncompliance;

(2) The name and quantity of materials released, if any, as a result of such noncompliance;

(3) The extent of injuries, if any, resulting from such noncompliance;

(4) An assessment of actual or potential hazards to human health and/or the environment, where applicable, resulting from such noncompliance;

(5) Any steps taken to mitigate the impact of such noncompliance or otherwise to correct such noncompliance; and

(6) A description of the impact of such noncompliance on the performance and timing of other activities required under this Permit.

b. When the Permittee becomes aware that it failed to submit any relevant facts in a required report, or submitted incorrect information in a required report to EPA, it shall promptly submit the correct facts or information.

11. Computation of Time

a. For the purpose of compliance with this Permit, computation of time periods shall be made by the methodology specified in 40 C.F.R. 124.20.

b. Where this Permit requires the submission of written reports or notification to EPA, the report or notification shall be deemed submitted on the post-marked date.

12. Severability

The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

13. Confidentiality of Information

In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to this Permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words Confidential Business Information on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2.

14. Interpretation of Migration from GE Facility

For purposes of this Permit, the Permittee agrees that, for hazardous waste and/or hazardous constituents in the Rest of River area which are also present both at the GE Facility and at the Former Oxbow Areas (as

defined in the Consent Decree) and which could have migrated to the Rest of River area from either the GE Facility or the Former Oxbow Areas, the Permittee will not contend that such waste and/or constituents did not migrate from the GE Facility.

II. SPECIAL CONDITIONS

A. Introduction

The special conditions in this Permit for Rest of River describe the Rest of River Remedial Action and required O&M, including the Performance Standards, Corrective Measures, and other related requirements necessary to achieve and maintain such Performance Standards that the Permittee shall perform pursuant to the CD and this Permit, as finalized, or finalized portions thereof.

As described in the CD and this Permit, all Permittee activities shall be conducted pursuant to this Permit and the CD under the oversight and approval of EPA. All EPA approvals, disapprovals, or modifications of plans and other submittals under this Permit will be pursuant to Section XV of the CD, including the reasonable opportunity for review and comment by the Commonwealth of Massachusetts (MA) and Connecticut Department of Energy and Environmental Protection (CT DEEP). "Approval" by EPA, as used in this Permit, represents this process.

Additionally, as described in Section VI of the 2020 Settlement Agreement, EPA has made specific commitments to coordinate and consult with stakeholders throughout the design and implementation of the actions described in this Permit.

Any modification by EPA of a Performance Standard (e.g., work in a riverbank that modifies Performance Standards set forth in Section II.B.2.a.(1)) would have to be based on EPA's determination under Paragraphs 162-163 of the CD or based on agreement under Paragraph 217 of the CD.

B. Description of Performance Standards and Corrective Measures.

Section II.J. of the 2007 Permit provides that this modification of the Permit will include Performance Standards, and the appropriate Corrective Measures necessary to meet the Performance Standards. In Section II.B. of this Permit, provided below are such Performance Standards and Corrective Measures.

1. General

a. Downstream Transport

(1) Performance Standard

The Downstream Transport Performance Standard shall be the PCB flux over Woods Pond Dam and Rising Pond Dam as described in the table below.

An exceedance of the Performance Standard occurs when the average PCB flux is greater than the standard (at either Woods Pond or Rising Pond) in any three or more years within any 5-year period following completion of construction-related activities outlined herein.

Woods Pond		**Rising Pond**	
Average Daily Flow at Woods Pond Dam Gage (cubic feet per second (cfs))	**Average PCB Flux (kg/yr)**	**Average Daily Flow at Great Barrington USGS Gage (cfs)**	**Average PCB Flux (kg/yr)**
≤ 325	2.2	≤ 485	1.9
> 325 ≤ 395	2.8	> 485 ≤ 600	2.4
> 395 ≤ 1,450	3.3	> 600 ≤ 2,670	4.0
> 1,450	NA	> 2,670	NA

Note: The average PCB flux values that correspond to the associated flow ranges were determined as follows: The PCB fate and transport model (EFDC) results were used to generate average annual PCB fluxes at both Woods Pond and Rising Pond for the years following construction, which include a range of average annual flows. The model was run based on the sediment/bank remediation requirements, excluding the use of activated carbon in Reach 5B and the Backwaters, as set forth in this Permit. The average annual fluxes were segregated into the flow ranges shown in the table above and the maximum flux for each flow range was determined. To account for uncertainty, the value at the upper flow range for each flow-bin was selected from a 95% prediction interval of the regression of average annual flux versus flow.

In the event that this Downstream Transport Performance Standard is exceeded, the Permittee shall evaluate and identify the potential cause(s) of the exceedance and propose, to EPA for review and approval, additional actions necessary to achieve and maintain the Performance Standard. EPA, upon reasonable opportunity for review and comment by the States, will determine any additional actions necessary to achieve and maintain the Performance Standard in accordance with the CD.

(2) Corrective Measures

To achieve and maintain this Performance Standard, Permittee shall conduct all of the Corrective Measures set forth in this Section II.B. In addition, Permittee shall measure compliance with the Performance Standard in accordance with Sections II.B.1.a.(2)(a) through II.B.1.a.(2)(g) below and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Install, operate and maintain a flow gauge at the outlet of Woods Pond that is similar to the USGS gage downstream of Rising Pond Dam (gage number 01197500).

(b) Conduct sampling at regularly scheduled intervals (each year), regardless of stream flow. On days when the average daily flow exceeds 1,450 cfs at Woods Pond or 2,670 cfs at Rising Pond, sampling does not need to occur.

(c) Calculate the average daily flow for each sampling event using the data from the gage to be installed at Woods Pond outlet for Woods Pond and data from the USGS gage near Great Barrington (gage number 01197500) for Rising Pond.

(d) For each year of sampling, calculate the arithmetic average of the average daily flows on days when samples were collected. This average daily flow determines the flow bin for a given year.

(e) Calculate the PCB flux by multiplying the sample concentration times the daily average flow for the date sampled. The average PCB flux for a given year is the arithmetic average of the flux calculations for each day of sampling.

(f) Compare the average PCB flux to the standard in the table for the corresponding flow bin for Woods Pond and for Rising Pond.

(g) Permittee shall propose further details for EPA approval in a Work Plan submitted pursuant to Section II.H.5.

b. Biota

(1) Performance Standards

(a) The Short-Term Biota Performance Standard shall be an average total PCB concentration of 1.5 milligrams per kilogram (mg/kg) wet weight, skin off, in fish fillet[1] in each entire reach of the river and Backwaters to be achieved within 15 years of completion of construction-related activities for that reach (or if the reach is subject to Monitored Natural Recovery (MNR), upon completion of the

[1] Based on the probabilistic risk assessment central tendency exposure (CTE) adult exposure Hazard Index (HI) = 1.

closest upstream reach subject to active remediation) under this Permit.

In the event that the Short-Term Biota Performance Standard is exceeded in any two consecutive monitoring periods after the 15-year period specified above, the Permittee shall evaluate and identify the potential cause(s) of the exceedance and propose, to EPA for review and approval, additional actions necessary to achieve and maintain the Performance Standard. EPA, upon reasonable opportunity for review and comment by the States, will determine any additional actions necessary to achieve and maintain the Performance Standard in accordance with the CD.

(b) The Long-Term Biota Monitoring Performance Standard shall be the requirement that the Permittee continue to monitor, even after the Short-Term Biota Standard has been attained, the reduction in risk posed by the biota and the progress towards achieving an average total PCB concentration of 0.064 mg/kg, wet weight, skin off, in fish fillet[2] in each entire reach of the river and Backwaters in Massachusetts, 0.00018 mg/kg, wet weight, skin off, in fish fillet[3] in each entire reach of the river in Connecticut, and 0.075 mg/kg in duck breast tissue[4] in all areas along the river.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall conduct all of the Corrective Measures set forth in this Section II.B. Permittee shall propose, pursuant to Section II.H., a methodology to evaluate compliance with the Short-Term Biota Performance Standard and a plan to continue to monitor biota after the Short-Term Biota Performance Standard has been achieved.

[2] Based on the probabilistic risk assessment Reasonable Maximum Exposure (RME) 1 x 10^{-5} cancer risk.

[3] Based on CT DEEP consumption calculation assuming 365 fish meals per year and a 1 x 10^{-6} cancer risk.

[4] Based on the probabilistic risk assessment RME 1 x 10^{-5} cancer risk.

c. Restoration of Areas Disturbed by Remediation Activities

(1) Performance Standards

For all areas disturbed by remediation activities under this Permit, the Permittee shall:

(a) Implement a comprehensive program of restoration measures that addresses the impacts of the Corrective Measures on all affected ecological resources, species and habitats, including but not limited to, riverbanks, riverbed, floodplain, wetland habitat, and the occurrence of threatened, endangered or state listed species and their habitats, and

(b) Return such areas to pre-remediation conditions (e.g., the functions, values, characteristics, vegetation, habitat, species use, and other attributes), to the extent feasible and consistent with the remediation requirements[5].

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall complete the activities in Sections II.B.1.c.(2)(a) through II.B.1.c.(2)(d) below as components of a program that addresses the impacts of the Corrective Measures on all affected ecological resources, species and habitats, including but not limited to: riverbanks, riverbed, floodplain, wetland habitat; the occurrence of threatened, endangered or state-listed species and their habitats; the restoration of all such areas to pre-remediation conditions (to the extent feasible and consistent with the remediation requirements); and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Prepare a Work Plan detailing steps to conduct a Baseline Restoration Assessment (BRA). Perform a baseline assessment of pre-remediation conditions, functions, and values of river bottom, bank, Backwater, Floodplain, Impoundment, and Vernal Pool habitat, and the occurrence of threatened,

[5] The requirements of Section II.B.1.c. do not alter or modify the Permittee's obligation to comply with ARARs including, but not limited to, any activities to satisfy the separate net benefit mitigation standard in the Massachusetts Endangered Species Act (MESA). See Section II.E.

endangered or state-listed species in the areas affected by Corrective Measures. This BRA shall include, but not be limited to:

i. Identification of the presence and location of specific habitat types, including delineation of existing wetlands;

ii. Identification of the presence, location, abundance, and condition of threatened, endangered or state-listed species and their habitats and other representative species;

iii. Identification of the presence, location, abundance, and condition of invasive species;

iv. Evaluation of Vernal Pool locations, hydrology, and species use; and

v. Characterization of physical/biological attributes (e.g., substrate characteristics, water depth, velocity, temperature, elevation/bathymetry, species composition, density, percent cover, structural components).

(b) Develop Restoration Performance Objectives and Evaluation Criteria (RPOEC) to guide the design, remediation, restoration, construction, implementation of Corrective Measures, and evaluation of restoration success. The RPOEC shall include, but not be limited to:

i. Definition of restoration objectives, including without limitation:

A. While achieving the Performance Standards described in this Permit, minimization of the impacts on all ecological resources and habitats, including the riverbanks and Floodplain, resulting from the implementation of the Corrective Measures;

B. Restoration of all ecological resources and habitats, including the riverbanks and Floodplain, impacted as a result of implementing the Corrective Measures;

ii. Identification of measurable evaluation criteria and applicable methods or specifications, including, without limitation, criteria and methods or specifications for evaluating the success in achieving the restoration objectives developed pursuant to Section II.B.1.c.(2)(b)i;

iii. Identification of stakeholder concerns;

iv. Preliminary Monitoring Program;

v. Preliminary Maintenance Program; and

vi. Specification of corrective actions and circumstances.

(c) Develop a Restoration Corrective Measures Coordination Plan (RCMCP) to be performed during the implementation of the Corrective Measures. This RCMCP shall include, but not be limited to:

i. Integration of restoration activities with remediation activities (e.g., locations of access roads/staging areas, harvesting of material for subsequent use in restoration construction, habitat layer characteristics, bank stabilization methods, construction of bed/bank interface);

ii. Timing/phasing of remediation activities;

iii. Identification of restoration specialists, roles, and responsibilities;

iv. Specification of pre-construction preparation requirements (e.g., installation of silt fence or other protective/exclusion measures, propagation of materials, monitoring/relocation/propagation of

species, field delineation of species occurrences/Vernal Pool boundaries); and

v. Specification of protocols to be implemented prior to and during construction to minimize impacts to threatened, endangered or state-listed species and their habitats, including elements discussed above as well as other measures such as seed-banking, transplanting, wildlife exclusion barriers, and turtle tracking.

(d) Design a Restoration Plan (RP) to return all areas disturbed by the remediation activities to pre-remediation conditions (e.g., the functions, values, characteristics, vegetation, habitat, species use, and other attributes), to the extent feasible and consistent with the remediation requirements. This RP shall include, but not be limited to:

i. Identification of materials, sources, and specifications;

ii. Development of restoration construction plans;

iii. Identification of restoration specialists, roles, and responsibilities;

iv. Revised Monitoring Program; and

v. Revised Maintenance Program.

2. River Sediment and Banks

a. Reach 5A

(1) Performance Standards

(a) Throughout Reach 5A, river bed sediment shall be removed and an Engineered Cap (references in this Permit to "Engineered Cap" shall mean an Engineered Cap as described below in Section II.B.2.i.) shall be placed over the entire riverbed.

(b) Contaminated soil from eroding riverbanks in Reach 5A shall be removed.

(c) A bank shall be considered contaminated if it contains ≥ 5 mg/kg total PCBs.

(d) A bank shall be considered to be erodible if the Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS) rating is classified in the BANCS model as "Moderate-High" or greater at the same transect location as the PCB samples.

(e) Excavated riverbanks shall be reconstructed to minimize erosion considering the principles of Natural Channel Design[6] and result in a channel that is in dynamic equilibrium, balances flow and sediment loads, and reduces erosive forces. This will allow the maximum use of bioengineering methods in restoring riverbanks. Riverbank reconstruction shall follow a hierarchy of approaches as follows, with i. being the most preferred.

i. Reconstruct disturbed banks with solely bioengineering restoration techniques;

ii. Reconstruct disturbed banks with an Engineered Cap extending into the riverbank placed under a bioengineering layer; or

iii. Place rip-rap cap or hard armoring on residual surface of banks (e.g., where needed for protection of adjacent infrastructure).

(f) Implementation of remediation activities shall result in no net loss of flood storage capacity (FSC) and no increase in water surface elevation in this Reach.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall remove sediment, install an Engineered Cap in the entire riverbed, remove riverbank soils, reconstruct the riverbanks, and perform all other related activities. Permittee shall perform the foregoing pursuant to the

[6] Natural Channel Design methods are described in Chapter 11, Rosgen Geomorphic Channel Design, of the Stream Restoration Handbook (Part 654) and in the Natural Channel Design Review Checklist Manual.

Performance Standards and the requirements in Sections II.B.2.a.(2)(a) through II.B.2.a.(2)(d) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Sediment and riverbank removal and subsequent capping shall result in a final grade generally consistent with the original grade or with modifications, as approved by EPA, considering the principles of Natural Channel Design. Performance of removal and capping shall generally use engineering methods employed from within the river channel or other methods approved by EPA.

(b) The location of contaminated eroding riverbanks shall be determined using a BANCS model[7] calibrated for the Housatonic River and the collection of additional riverbank soil PCB data. A bank shall be considered contaminated if it contains ≥ 5 mg/kg total PCBs measured in the surficial 0 to 12 inches as the average of three 12-inch cores taken at the toe, midpoint, and top of the bank at a maximum spacing of every 25 feet of linear bank. The Permittee shall complete bank excavation for the Thiessen polygon[8] representing the sample transect that is contaminated and eroding.[9]

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[7] A description of the BANCS or "Bank Assessment for Non-point source Consequences of Sediment" model can be found at http://water.epa.gov/scitech/datait/tools/warsss/pla_box08.cfm and in the River Stability Field Guide, David Rosgen, copyright 2008 by Wildland Hydrology.

[8] Thiessen polygon method is described in Technical Attachment E of Appendix E to the Consent Decree.

[9] EPA's May 2012 status report entitled "Potential Remediation Approaches to the GE-Pittsfield/Housatonic River Site 'Rest of River' PCB Contamination" (the Status Report) highlighted the objectives of addressing the unacceptable risks posed by PCBs and of minimizing the amount of bank excavation to preserve the dynamic character and related biodiversity and habitats of the river. To that end, the Status Report proposed a remedial approach that, based on data collected prior to the issuance of the Permit, would result in an amount of bank excavation in Reach 5A of 3.5 miles, and an amount of bank excavation in Reach 5B of 0.2 miles. The actual remediation amounts will be determined during remedial design pursuant to the process described herein. If the new data to be collected identifies the need for greater bank excavation, then the foregoing amounts of bank excavation will change based on new data. Consistent with the remedial approach identified in the Status Report, the Corrective Measures for the riverbanks will be designed and implemented to achieve the Performance Standards while minimizing impacts on river dynamics and other ecological processes, and on the abundance of state-listed and other wildlife species and the diversity of their habitats that are supported by the existing river ecosystem.

(c) For Reach 5A banks that do not otherwise require remediation pursuant to Sections II.B.2.a.(2)(a) through II.B.2.a.(2)(b) above, the Permittee shall also evaluate the PCB data, erosion potential, adjacent floodplain removal (if any), constructability issues, and likelihood of future downstream transport at such concentrations should such banks erode, and based on these factors, shall consider supplemental riverbank removal, and shall propose any further action consistent with the evaluation above.

(d) The location of soil excavated shall be determined based on the collection, pursuant to this Permit, of bank soil PCB data and bank erosion/shear stress data, and a further evaluation of bank soils pursuant to subsection (c) of this Section.

b. Reach 5B

(1) Performance Standards

(a) The river bed sediment associated with each discrete sample with ≥ 50 mg/kg total PCBs shall be removed and backfilled. The backfill shall consist of material with characteristics similar to existing sediment and placed to original grade.

(b) Subsequent to excavation and backfill, Enhanced Monitored Natural Recovery (Enhanced MNR or EMNR) shall be implemented throughout Reach 5B. Permittee shall place an amendment such as activated carbon and/or other comparable amendments proposed by Permittee and approved by EPA throughout Reach 5B to reduce the bioavailability of the remaining PCBs in the sediment bed.

(c) The riverbank soil with ≥ 50 mg/kg total PCBs shall be removed, and disturbed banks shall be reconstructed using bioengineering methods to minimize erosion and reduce downstream transport of the residual PCBs in bank soil (see footnote 9).

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall remove sediment, install backfill in the riverbed, implement EMNR, including placement of an amendment such as activated carbon and/or other comparable amendments, remove riverbank soils, reconstruct the riverbanks, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.2.b.(2)(a) through II.B.2.b.(2)(d) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Four cores (thalweg, center, left, right) shall be collected from the surficial 0 to 12 inches of the river bed along transects at a spacing of every 25 linear feet of river channel. Sediment shall be removed from the Thiessen polygon associated with each discrete sample with ≥ 50 mg/kg total PCBs.

(b) Riverbank soil shall be removed from Thiessen polygon represented by a concentration ≥ 50 mg/kg total PCBs in any of three samples (bottom, midpoint, or top of the riverbank) collected from the surficial foot of the riverbank at an interval of 25 feet of linear bank.

(c) For Reach 5B banks that do not otherwise require remediation pursuant to Sections II.B.2.b.(2)(a) and II.B.2.b.(2)(b) above, the Permittee shall also evaluate the PCB data, erosion potential, adjacent floodplain removal (if any), constructability issues, and likelihood of future downstream transport at such concentrations should such banks erode, and, based on these factors, shall consider any supplemental riverbank removal, and shall propose further action consistent with the evaluation above.

(d) The location of soil and sediment excavated per this subsection shall be determined based on the collection of the bank soil and sediment PCB data collected pursuant to this Permit and a further evaluation of bank soils pursuant to subsection (c) of this Section.

c. Reach 5C

(1) Performance Standards

(a) Throughout Reach 5C, sediments shall be removed, including any areas with ≥ 50 mg/kg total PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area and depth interval.

(b) Permittee shall backfill as necessary to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations. The backfill shall be a minimum of 6 inches and consist of material with characteristics similar to existing sediment to provide functions and values equivalent to the pre-existing surficial sediment substrate.

(c) Sediment shall be removed with either dredging or wet excavation techniques to be approved by EPA and, if feasible, conveyed hydraulically to the Upland Disposal Facility location for processing.

(d) Implementation of remediation activities shall result in no net loss of FSC and no increase in water surface elevation in this Reach.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall remove sediment and backfill the riverbed and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.2.c.(2)(a) and II.B.2.c.(2)(b) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall propose in Work Plans separate averaging areas within Reach 5C, additional sampling for PCBs, and a method for averaging surface and subsurface PCB concentrations, including proposed depth intervals.

(b) River bed sediment shall be removed, generally using engineering methods employed from within the river channel with dredging or wet excavation techniques to be approved by EPA. Regardless of sediment removal technique, the sediment shall, if feasible, be conveyed hydraulically to the Upland Disposal Facility location for processing. Sediment removal and subsequent backfill shall result in a final grade generally consistent with the original grade or with modifications, as approved by EPA, considering the principles of Natural Channel Design.

d. Backwaters adjacent to Reaches 5, 6, and 7

(1) Performance Standards

(a) For contaminated sediment in the portions of Backwaters located outside of Core Area 1 Priority Habitat (as generally shown in Attachment B):

i. For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas ≥ 50 mg/kg total PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in capped areas.

ii. For subsurface sediment: in areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.2.d.(1)(a)i. above, remove sufficient sediment and replace with a contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in subsurface sediment in each averaging area and depth interval. For areas beneath an Engineered Cap, a total PCB concentration equal to 1% of the existing average surficial concentration shall

be used as the PCB concentration in spatial-weighting calculations.

iii. In lieu of the provisions in Sections II.B.2.d.(1)(a)i. and II.B.2.d.(1)(a)ii. above, Permittee may propose to excavate sediments, including any areas ≥50 mg/kg total PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area and depth interval. The placement of backfill shall not be factored in the spatially-weighted averaging calculations.

iv. All backfilling or capping shall result in a final grade generally consistent with the original grade.

(b) In the portions of Backwater areas located within Core Area 1 habitat with discrete total PCB concentrations ≥ 50 mg/kg in surficial (0- to 12-inch) sediment, the sediment for each sample ≥ 50 mg/kg shall be removed followed by placement of an Engineered Cap to original grade.

(c) The Permittee shall place an amendment such as activated carbon and/or other comparable amendments proposed by Permittee and approved by EPA to reduce the bioavailability of the remaining PCBs in areas defined as Core Area 1 habitat where total PCB concentrations are between 1 mg/kg and 50 mg/kg in the surficial (0 to 12 inches) of sediment.

(d) Sediment shall be removed with either dredging or wet excavation techniques to be approved by EPA and, if feasible, conveyed hydraulically to the Upland Disposal Facility location for processing.

(e) Remediation activities shall result in no net loss of FSC and no increase of water surface elevation in this Reach.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall remove sediment, install an Engineered Cap

or backfill in the Backwaters, and place an amendment such as activated carbon and/or other comparable amendments in the Backwaters, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.2.d.(2)(a) through II.B.2.d.(2)(c) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall propose in a Pre-Design Work Plan (see Section II.H.3. below) additional sampling for PCBs in sediment, and a method for averaging surface and subsurface PCB concentrations using a 50-foot grid, including proposed averaging areas and depth intervals.

(b) The location of sediment excavated or dredged and/or capped per this subsection shall be determined based on the collection of additional PCB data on a 50-foot sample grid. For Section II.B.2.d.(1)(b), sediment shall be removed from the Thiessen polygon associated with each discrete sample with ≥50 mg/kg total PCBs.

(c) Sediment shall be removed with either dredging or wet excavation techniques to be approved by EPA and, if feasible, conveyed hydraulically to the Upland Disposal Facility location for processing.

e. Woods Pond (Reach 6)

(1) Performance Standards

(a) Sediment shall be removed throughout the pond and an Engineered Cap shall be placed over residual PCBs to result in a post-capping minimum water depth of 6 feet measured from the crest of the dam, except in near-shore areas where the slope from the shore to the 6-foot water depth shall be as steep as possible, while also being stable and not subject to erosion or sloughing. In areas deeper than 6 feet prior to remediation, sufficient sediment shall be removed to allow for the placement of an Engineered Cap so that the final grade is equal to or deeper than the original grade.

(b) Permittee shall conduct updated bathymetric surveys before sediment removal, and before and after capping. The post-capping bathymetry survey shall be the baseline used in determining the amount of future sediment deposition on the Engineered Cap.

(c) If during monitoring following construction, EPA determines that significant concentrations and depths of PCB-contaminated sediment have accumulated above the Engineered Cap in Woods Pond, the Permittee shall remove such accumulated sediment while ensuring the integrity of the Engineered Cap.

(d) Remediation activities shall result in no net loss of FSC and no increase of water surface elevation in this Reach.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall conduct sediment removal, capping, bathymetric surveys, and perform all other related activities. Sediment shall be removed with dredging or wet excavation techniques to be approved by EPA and, if feasible, conveyed hydraulically to the Upland Disposal Facility location for processing. Permittee shall perform the foregoing pursuant to the Performance Standards and in accordance with plans submitted pursuant to Section II.H. below.

f. Columbia Mill Impoundment (Reach 7B), Eagle Mill Impoundment (Reach 7C), Willow Mill Impoundment (Reach 7E), and Glendale Impoundment (Reach 7G).

(1) Performance Standards

(a) For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas with ≥ 50 mg/kg total PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in surface sediment in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a total PCB concentration equal to 1% of the existing

average surficial concentration shall be used as the PCB concentration in capped areas.

(b) For subsurface sediment: for areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.2.f.(1)(a) above, remove sufficient sediment and replace with contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in subsurface sediment in each averaging area and depth interval. For areas beneath an Engineered Cap, a total PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in spatial-weighting calculations.

(c) Engineered Capping shall result in a final grade generally consistent with original grade. Engineered Capping pursuant to Sections II.B.2.f.(1)(a) and II.B.2.f.(1)(b) above shall not exceed 3 acres within Reach 7E and 6.5 acres within Reach 7G.

(d) For Reaches 7B and 7C, in lieu of the provisions in Sections II.B.2.f.(1)(a) through II.B.2.f.(1)(c) above, Permittee shall remove sediment and remove the dams in these impoundments (which include the coves/ponds adjacent to Columbia Street in Lee). Materials requiring removal under this paragraph shall include sufficient sediment, including any areas with ≥ 50 mg/kg total PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs, in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area and depth interval. Permittee shall backfill with a minimum of 6 inches of backfill of suitable material and additional material as necessary to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations.

(e) In Reaches 7E and 7G, in lieu of the provisions in Sections II.B.2.f.(1)(a) through II.B.2.f.(1)(c) above, Permittee may propose to excavate sediments, including any areas with ≥ 50 mg/kg total PCBs, to achieve a spatially-weighted average

concentration of 1 mg/kg total PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area and depth interval. Permittee shall backfill with a minimum of 6 inches of backfill of suitable material as necessary to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations. Permittee shall use this approach to ensure that no more than 3 acres within Reach 7E and 6.5 acres within Reach 7G require capping.

(f) For Reaches 7E and/or 7G, in lieu of the provisions in Sections II.B.2.f.(1)(a) through II.B.2.f.(1)(c), Permittee may propose to EPA for review and approval that Permittee coordinate with any entity planning to remove any Reach 7 dam. Such proposal shall include a schedule for reaching an agreement with an entity(s) on the scope and extent of the work to be performed, the entity(s) conducting the work, the allocation of costs, and, if applicable, the prompt payment by Permittee of costs in advance of implementation of the necessary work on the dam removal once necessary approvals have been received. Materials requiring removal under this paragraph shall include soil or sediment that could be mobilized downstream as part of dam removal and sediments greater than 1 mg/kg total PCBs in the river bed. For any Floodplain area created as a result of dam removal (former impounded areas exposed due to removal of a dam), Permittee shall follow the process outlined in Section II.B.7.b.(2)(b)ii.[10] If Permittee cannot secure and implement an agreement pursuant to this Section in a timely manner, the Permittee shall implement the requirements in Sections II.B.2.f.(1)(a) through II.B.2.f.(1)(c) above and/or implement actions in Section II.B.2.f.(1)(e) above.

[10] In addition to the requirements outlined above, at the time that the dam removal work is anticipated, EPA expects that there will be an agreement in place that, among other things, will ensure that the planned dam removal and material removal are conducted in accordance with applicable legal requirements, and that will ensure EPA review and approval of work plans and oversight of the sediment removal work.

(g) Remediation activities shall result in no net loss of FSC and no increase of water surface elevation in each of Reaches 7B, 7C, 7E and 7G.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall remove sediment, install an Engineered Cap or backfill in the Impoundments, remove dams in Reaches 7B and 7C, and/or secure and implement an agreement with entity(s) to remove dam(s) in Reaches 7E and/or 7G, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards, the requirements in this Section, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

Permittee shall propose in Work Plans separate averaging areas within each Impoundment, additional sampling for PCBs, and a method for averaging surface and subsurface PCB concentrations using a 50-foot grid, including proposed depth intervals. This plan shall include characterization for the three approaches in Sections II.B.2.f.(1)(a) through II.B.2.f.(1)(f) above.

g. Rising Pond (Reach 8)

(1) Performance Standards

(a) For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas with ≥ 50 mg/kg total PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in surface sediment in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a total PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in capped areas.

(b) For subsurface sediment: for areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.2.g.(1)(a) above, remove sufficient sediment and replace with contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in subsurface sediment in each

averaging area and depth interval. For areas beneath an Engineered Cap, a total PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in spatial-weighting calculations.

(c) Engineered Capping shall result in a final grade generally consistent with original grade. Engineered Capping pursuant to Sections II.B.2.g.(1)(a) and II.B.2.g.(1)(b) above shall not exceed 31 acres.

(d) In lieu of the provisions in Sections II.B.2.g.(1)(a) through II.B.2.g.(1)(c) above, the Permittee may propose to excavate sediments, including any areas with ≥ 50 mg/kg PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg total PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area and depth interval. Permittee shall backfill with a minimum of 6 inches of backfill of suitable material as necessary to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations. Permittee shall use this approach to ensure that no more than 31 acres within Reach 8 require capping.

(e) Permittee shall conduct updated bathymetric surveys before sediment removal and before and after capping. The post-capping bathymetry survey shall be the baseline used in determining the amount of future sediment deposition.

(f) If during monitoring following construction, EPA determines that significant concentrations and depths of PCB-contaminated sediment have accumulated, the Permittee shall remove such accumulated sediment while ensuring the integrity of the Engineered Cap, where present.

(g) Remediation activities shall result in no net loss of FSC and no increase of water surface elevation in this Reach.

(2) Corrective Measures

To achieve and maintain Performance Standards, Permittee shall remove sediment, install an Engineered Cap or backfill, conduct bathymetric surveys and monitoring

activities, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in this Section, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

Permittee shall propose in a Pre-Design Work Plan (see Section II.H.3. below) separate averaging areas within the pond, additional sampling for PCBs on a 50-foot grid, and a method for averaging surface and subsurface PCB concentrations, including proposed depth intervals. For Section II.B.2.g.(1)(d), sediment shall be removed from the Thiessen polygon associated from each discrete sample with ≥ 50 mg/kg total PCBs.

h. Flowing Subreaches in Reach 7 and Throughout Reaches 9 Through 16, Including Impoundments

(1) Performance Standard

Monitored Natural Recovery (MNR) shall be implemented in these reaches.

(2) Corrective Measure

To achieve and maintain this Performance Standard, Permittee shall conduct monitoring of PCB concentrations in affected media (including surface water, sediment, and biota) in these reaches to see if recovery is occurring at the expected rate, maintain institutional controls, and perform all other related activities. Permittee shall perform the foregoing pursuant the Performance Standard and in accordance with Sections II.B.4., II.B.7., and II.H. of this Permit.

i. Engineered Caps

(1) Performance Standards

(a) All Engineered Caps constructed shall include the following layers or functions:

i. A Mixing Layer to prevent contamination of the chemical isolation layer due to mixing with underlying contaminated sediment during cap placement, taking into account geotechnical considerations, placement techniques, and other factors as appropriate.

ii. Chemical Isolation Layer sufficient to minimize (reduce by 99%) the flux of PCB concentrations through the isolation layer.

iii. Erosion Protection Layer to prevent erosion in accordance with federal and state requirements and consistent with pertinent EPA or U.S. Army Corps of Engineers (USACE) guidance.

iv. Geotechnical Filter Layer, as needed based on the design evaluation, to prevent mixing between other layers.

v. Bioturbation Layer to prevent bioturbation from impacting underlying layers.

vi. Habitat Layer to provide functions and values equivalent to the pre-existing surficial sediment substrate.

(b) Installation of the cap shall not result in a loss of FSC, and there shall be no increase in water surface elevations in any of the reaches where Engineered Caps are installed.

(c) Engineered Caps shall be inspected, monitored, and maintained to ensure long-term protectiveness and to ensure that they continue to function as designed.

(2) Corrective Measures

To achieve and maintain these Performance Standards, the Permittee shall design, construct, inspect, monitor, and maintain Engineered Caps and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Section II.B.2.i.(2), including, but not limited to, Sections II.B.2.i.(2)(a) through II.B.2.i.(2)(g) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

The Permittee shall design and construct all Engineered Caps to physically isolate contaminated sediments from potential ecological and human receptors, and minimize the transport of PCBs from the sediment beneath the caps to the bioavailable surface layer and the water column, consistent with the principles presented in pertinent EPA or

USACE guidance such as EPA's Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (EPA, 2005) and Guidance for In-Situ Subaqueous Capping of Contaminated Sediments (Palermo et al., 1998) and in accordance with federal and state requirements.

Engineered Cap designs generally specify mixing, chemical isolation, erosion protection, filter, bioturbation, and habitat layer(s). They also may specify the inclusion of an amendment such as activated carbon where necessary to minimize the flux of PCBs. Under some circumstances, a single layer of material may serve more than one purpose in achieving the Performance Standards above. Engineered Cap design must also take into account constructability concerns (e.g., placement tolerances, method of construction). The design process shall address the following items:

(a) Mixing Layer

Evaluate the composition and thickness necessary to meet the Performance Standard.

(b) Chemical Isolation Layer

i. Modeling of the isolation layer shall be performed in general accordance with EPA's Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (EPA, 2005) and Guidance for In-Situ Subaqueous Capping of Contaminated Sediments (Palermo et al., 1998).

ii. Modeling shall be conducted using site-specific data collected during the design process, as appropriate.

iii. Modeling shall consider the processes of advection, diffusion, sorption, bioturbation, and exchange with the surface water, and sediment deposition consistent with current state-of-the practice for cap design.

iv. Modeling shall be used to determine the thickness and composition (i.e., the amount of activated carbon/total organic carbon (TOC) or equivalent sorptive amendment) of

the chemical isolation layer sufficient to meet Performance Standards.

(c) Erosion Protection Layer

i. The stable particle sizes necessary to resist the erosive forces in the different reaches of the Housatonic River shall be computed in accordance with federal and state requirements and consistent with pertinent EPA and USACE guidance such as EPA's Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (EPA, 2005) and Guidance for In-Situ Subaqueous Capping of Contaminated Sediments (Palermo et al., 1998).

ii. The design flow event for the erosion protection layer is a flow event up to and including the applicable return interval event (for example, 100 year or 500 year flow event), which shall be calculated using up-to-date flow data. However, consideration shall also be given during the cap design to the potential impact of climate change on cap performance, and to including appropriate measures to mitigate the potential impacts.

iii. Site-specific data and modeling will be used to determine the design velocities and associated bed shear stresses associated with various flow events.

iv. In addition, other potential erosional forces, including, but not limited to, bioturbation, wind-generated waves, debris, motor boat wakes, and ice impacts will be considered.

(d) Geotechnical Filter Layer

The use of a geotechnical filter layer between the chemical isolation layer material and erosion protection layer material shall be evaluated and may be necessary for those areas requiring cobble or larger sized material in the erosion protection layer.

(e) Bioturbation Layer

The assemblage of species, bioturbation depth profile, and abundances of dominant organisms shall be evaluated to determine the need for and thickness of a bioturbation layer to be included.

(f) Habitat Layer

Engineered Caps shall include a habitat layer that provides functions and values equivalent to the pre-existing surficial sediment substrate.

(g) Other Design Considerations

i. The geotechnical stability of the caps (e.g., bearing capacity, slope stability, ebullition) shall be evaluated.

ii. The need for over-placement allowances with additional excavation for each layer shall be considered.

iii. The requirement for periodic removal of contaminated sediment that accumulates on top of the Engineered Caps at Woods Pond and Rising Pond shall be considered in the design of such Engineered Caps.

j. Additional Response Actions and/or Inspection, Monitoring and Maintenance for Dams and Impoundments in Reaches 5 through 9

(1) Performance Standards

(a) The Permittee shall minimize PCB releases related to dams and Impoundments by ensuring inspection, monitoring, and maintenance of such dams and Impoundments, and operating the Woods Pond and Rising Pond Dams.

(b) If there is a catastrophic failure and/or a material breach of any dam or component of the dam that results in a release of PCBs that is materially greater than the PCB transport from that dam under the normal range of flow conditions, the Permittee shall propose and implement a response to maintain the Performance Standards or to maintain the effectiveness of the Rest of River Remedial Action.

(c) The Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work including, but not limited to, dam removal (either before or after completion of any response action conducted pursuant to Sections II.B.2.e. through II.B.2.g. above). Permittee shall conduct such response actions (including material handling and off-site disposal and engineering controls) to allow such Legally Permissible Future Project or Work to be conducted in a manner that maintains Performance Standards and/or maintains the effectiveness of the Rest of River Remedial Action.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall perform the following: ensure the inspection, monitoring, and maintenance of the dams, and/or Impoundments; operate Woods Pond and Rising Pond Dams to minimize releases; conduct response actions to be protective of any Legally Permissible Future Project or Work including, but not limited to dam removal; if there is a catastrophic failure and/or material breach of any dam or dam component, propose and respond to such release to maintain the Performance Standards or to maintain the effectiveness of the Rest of River Remedial Action; and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards, the requirements in Sections II.B.2.j.(2)(a) through II.B.2.j.(2)(e) below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall operate, inspect, monitor, and maintain Woods Pond and Rising Pond Dams, even if the Permittee transfers ownership interest in the dams. Such activities shall include, (i) maintaining the integrity of the dam to contain contaminated sediments and (ii) conducting materials handling and off-site disposal and engineering controls related to dam maintenance, repair, upgrades, and enhancement activities (including, but not limited to, addressing sedimentation in sluiceways, conveyances, and other channels that transport water over, through or around the dam); and (iii) and all other related activities. Upon conveyance of either dam, Permittee may seek EPA

approval for another party to implement some or all of Permittee's operation, inspection, monitoring and maintenance obligations.

(b) For all other dams, except Eagle Mill Dam remnants, and Impoundments in Massachusetts Permittee shall ensure inspection, monitoring and maintenance for such dams. Such activities shall include, (i) maintaining the integrity of the dam to contain contaminated sediments, and (ii) conducting materials handling and off-site disposal, and engineering controls related to dam maintenance, repair, upgrades, and enhancement activities (including, but not limited to, addressing sedimentation in sluiceways, conveyances, and other channels that transport water over, through or around the dam) and (iii) and all other related activities. Permittee shall make best efforts to obtain an access agreement with each owner of a dam to allow Permittee to perform such inspection, monitoring and maintenance activities. Permittee may seek EPA approval for another party to implement some or all of the Permittee's inspection, monitoring and maintenance activities. If Permittee uses best efforts but cannot fulfill these obligations, Permittee may submit to EPA for review and approval a plan that includes, without limitation, the reasons why Permittee cannot fulfill these obligations, any proposed actions Permittee will take to remediate the PCB contamination behind the dams, any further actions to be taken to obtain agreement from the dam owner, and whether the Engineered Caps will maintain effectiveness without Permittee having fulfilled its obligations regarding dam inspection, monitoring and maintenance.

(c) If there is a catastrophic failure and/or a material breach of any dam or dam component that results in a release of PCBs from the dam that is materially greater than the PCB transport from that dam and/or Impoundment under the normal range of flow conditions, Permittee shall, within thirty (30) days of notification by EPA of such failure or breach, submit a Report for EPA approval that (i) proposes repairs to, or removal of, such dam, and (ii) proposes a plan to characterize and respond to the

PCBs released by such failure and/or breach (if necessary to maintain the Performance Standards or to maintain the effectiveness of the Rest of River Remedial Action). The Report shall include a proposed schedule to implement the required response actions. Following receipt of EPA's approval of the Report and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule.

(d) Permittee shall every five years determine whether there has been a change in ownership of any dam. In addition, within 30 days of conducting response actions behind a dam, and at any time there is a change in ownership of such dam, and every five years after any of the foregoing events, Permittee shall provide notice to such dam owner (for the initial notice, notice shall also be sent to any holders of easements), with copies to EPA, MA DEP, CT DEEP, and applicable regulatory agencies, of:

i. A commitment that the Permittee will conduct the requirements set forth in Sections II.B.2.j.(1)(b) and II.B.2.j.(1)(c) above, and will conduct response actions including inspections, monitoring and maintenance (such as dam maintenance, repair, upgrades, and enhancement activities), including, without limitation, engineering controls, restoration of any aspect of the Rest of River Remedial Action disturbed by such work, and materials handling and off-site disposal. For any activities that would involve the removal, disposal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such excavation activities, in accordance with applicable laws and regulations.

ii. Notice of contact persons for Permittee, EPA, MA DEP, and CT DEEP and a request that the property owner notify the contact persons prior to conducting work at the dam, and

iii. A description of the PCB contamination behind the dam, including the presence of an Engineered Cap, if applicable.

(e) If Permittee or another entity implements a Legally Permissible Future Project or Work including, but not limited to, the removal of any dam (either before or after completion of any response actions conducted pursuant to Sections II.B.2.e. through II.B.2.g. above), Permittee shall conduct sufficient response actions (including materials handling and off-site disposal and engineering controls) to allow such Legally Permissible Future Project or Work to be conducted in a manner that maintains the Performance Standards and/or maintains the effectiveness of the Rest of River Remedial Action. Permittee may seek EPA approval for another party to implement some or all of these obligations. Further response actions under this Section II.B.2.j. will be (i) in accordance with and pursuant to the Consent Decree; and (ii) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

k. Additional Response Actions for Sediment, Riverbanks, Backwaters, Impoundments in Reaches 5 through 9

(1) Performance Standard

The Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work. Permittee shall conduct such response actions (including material handling and off-site disposal and engineering controls) to allow such Legally Permissible Future Project or Work to be conducted in a manner that maintains Performance Standards and/or maintains the effectiveness of the Rest of River Remedial Action.

(2) Corrective Measures

To achieve and maintain this Performance Standard, Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work. Such response actions may include, without limitation, material handling and off-site disposal and engineering controls, repairing any aspect of the Rest of River Remedial Action disturbed by such Legally Permissible Future Project or Work, and all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards, the requirements in Sections II.B.2.k.(2)(a) and II.B.2.k.(2)(b) below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work. Within 30 days of Permittee receiving notification from EPA that EPA has determined that an entity has met the criteria for a Legally Permissible Future Project or Work, Permittee shall submit to EPA for approval, a work plan and schedule to respond to such Legally Permissible Future Project or Work. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such excavation activities, in accordance with applicable laws and regulations. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations. Further response actions under this Section II.B.2.k. will be (i) in accordance with and pursuant to the Consent Decree; and (ii) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

(b) Permittee shall annually provide letters to the Conservation Commissions and Departments of Public Works ("DPWs") for the municipalities located along the River, and the Massachusetts Department of Transportation District 1 ("MA DOT") (with copies to EPA, MA DEP, and CT DEEP), that provide notice of the potential for contamination and request that such entities notify Permittee, EPA, MA DEP, CT DEEP prior to approving any application for and prior to implementing any Legally Permissible Future Project or Work in the Reaches 5 through 9 of the River and/or Floodplains.

l. Additional Response Actions for Dams and Impoundments and Sediment, Riverbanks, and Backwaters in Reaches 10 through 16

(1) Performance Standards

(a) The Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work, where documentation is provided that such Legally Permissible Future Project or Work requires the handling or disturbance of sediment or riverbank soils with total PCBs greater than 1 mg/kg. Permittee shall conduct such response actions (including material handling and off-site disposal and engineering controls) to allow such Legally Permissible Future Project or Work to be conducted in a manner that maintains Performance Standards and/or maintains the effectiveness of the Rest of River Remedial Action.

(b) If there is a catastrophic failure and/or a material breach of any dam or dam components that results in a release of PCBs that is materially greater than the PCB transport from that dam under the normal range of flow conditions, the Permittee shall propose and implement a response to maintain the Performance Standards and/or to maintain the effectiveness of the Rest of River Remedial Action.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work including, without limitation,

engineering controls, and materials handling and off-site disposal, and if there is a catastrophic failure and/or material breach of any dam or dam component, propose and respond to such release, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards, the requirements in Sections II.B.2.l.(2)(a) through II.B.2.l.(2)(d) below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall conduct further response actions to be protective of any Legally Permissible Future Project or Work. Within 30 days of Permittee receiving notification from EPA that that EPA has determined a) that an entity has met the criteria for a Legally Permissible Project or Work, and b) that such Legally Permissible Project or Work requires the handling or disturbance of sediment or riverbank soils with total PCBs greater than 1 mg/kg, Permittee shall submit to EPA for approval, a work plan and schedule to respond to such Project or Work, including, without limitation, sampling and analysis, engineering controls, and materials handling and off-site disposal. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such excavation activities, in accordance with applicable laws and regulations. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations.

(b) Permittee shall every five years, determine whether there has been a change in ownership of each dam. In addition, any time there is a change in ownership of such property, and every five years thereafter, Permittee shall provide notice to the dam owner (for the initial notice, notice shall also be sent to any holders of easements), with copies to EPA, CT DEEP and applicable regulatory agencies, of:

i. A commitment that the Permittee will conduct the requirements set forth in Section II.B.2.l.(2)(a) above, and will conduct response actions to be protective of any Legally Permissible Future Project or Work in locations where documentation is provided that such Project or Work requires the handling or disturbance of sediment or riverbank soils with total PCBs greater than 1 mg/kg. Such response actions include, without limitation, sampling and analysis, engineering controls, and materials handling and off-site disposal. For any activities that would involve materials handling or the removal of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper handling, management, and off-site disposal of such materials and the protection of workers and other individuals during such excavation activities, in accordance with applicable laws and regulations.

ii. Notice of contact persons for Permittee, EPA and CT DEEP, and

iii. A description of the PCB contamination behind the dam.

(c) If there is a catastrophic failure and/or a material breach of any dam or dam component that results in a release of PCBs from the dam that is materially greater than the PCB transport from that that dam under the normal range of flow conditions, Permittee, shall within thirty (30) days of notification by EPA of such failure of breach, submit a Report for EPA approval that (i) proposes repairs to such dam and (ii) proposes a plan to characterize and respond to the PCBs released by such failure and/or breach (if necessary to maintain the Performance Standards or to maintain the effectiveness of the Rest of River Remedial Action). The report shall include a proposed schedule to implement the required response actions. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with

EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations.

(d) Further response actions under this Section II.B.2.l. will be (i) in accordance with and pursuant to the Consent Decree; and (ii) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

3. Floodplain and Vernal Pools

a. Floodplain Soil Adjacent to Reaches 5 through 8

(1) Performance Standards

(a) Primary Floodplain Performance Standards and Secondary Floodplain Performance Standards are outlined in Table 1.

(b) For each Exposure Area (see Figures 3, 3A, and 4), excavate and replace the top 12 inches of soil to achieve either the Primary Floodplain Performance Standards or Secondary Floodplain Performance Standards based upon the approach set forth in Section II.B.3.a.(2) below. The excavated areas shall be backfilled to original grade.

(c) In addition, for each Frequently Used Subarea (shown in Figure 5), excavate and replace the top 3 feet of soil to achieve the Performance Standards presented in Table 2. The excavated areas shall be backfilled to original grade.

(d) For Residential Floodplain Parcels adjacent to Reach 5A, as identified in Table 5, Permittee shall excavate and replace soil to achieve the Residential Performance Standards set forth in Table 3. For the residential floodplain properties in Reach 5C that are identified in Table 5, Permittee shall, if the Town of Lenox determines that any of the property owners consent to such removal, excavate and replace soil at such consented-to property(ies) to achieve the Residential Performance Standards set forth in Table 3.

(e) Permittee shall avoid excavation in Core Area 1 habitat (other than Frequently Used Subareas) except in limited areas where necessary to meet Secondary Floodplain Performance Standards in Table 1.

(f) Permittee shall minimize the impacts from remediation on a case-by-case basis[11] for Core Areas 2 and 3 (as shown in Attachment B); however, at a minimum, Secondary Floodplain Performance Standards in Table 1 shall be attained.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall excavate and backfill Floodplain soil and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.3.a.(2)(a) through II.B.3.a.(2)(g) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) The Permittee shall conduct additional sampling of Floodplain soil (as needed) to determine the total PCB exposure point concentration (EPC)[12] for each Exposure Area using a Thiessen polygon approach.

[11] Minimization of impacts from remediation of Floodplain and Vernal Pool soil in Core Area 2 and 3 habitat means the implementation of a range of best construction practices that includes, but is not limited to, minimizing impacts when determining the location and scale of staging areas and access roads, phasing the work, use of time of year restrictions, tracking and/or exclusion of animals from work areas, plant transplantation. Minimization of impacts may also include the avoidance of remediation in certain areas where, e.g., the impact to state-listed species or their habitats of constructing an access road or a staging area to remediate such areas outweighs the benefits of remediation. Permittee may propose areas to avoid excavating based on this concept; however, final approval of any avoidance in Core Area 2 and 3 habitats will be made by EPA, after consultation with the States.

[12] EPCs for properties being cleaned to residential standards shall be calculated using the spatial averaging procedures outlined in Attachment E to Appendix E of the Consent Decree and used to evaluate the actual and potential lawns of floodplain residential properties under the CD. For the remaining exposure areas, the EPCs shall be calculated using the methods described in Appendix D to the GE's Corrective Measures Proposal and subsequent revisions described in Section 4.4 in GE's October 2010 Revised Corrective Measures Study, including the use of an approved 95th Upper Confidence Limit method to estimate the mean concentration of total PCBs, the use of spatially interpolated representation of Floodplain soil PCB data, and factoring in habitat community mapping where applicable.

(b) Where applicable per Section II.B.3.a.(1)(d), the Permittee shall submit to EPA for approval a proposed remediation plan based on meeting the Residential Performance Standards in Table 3.

(c) The Permittee shall submit to EPA for approval a proposed remediation plan based on meeting Primary Floodplain Performance Standards in Table 1 for each Exposure Area and the Performance Standards in Table 2 in each Frequently Used Subarea using the following approach:

i. Remediation in Frequently Used Subareas to attain Floodplain Performance Standards in Table 2;

ii. Remediation in all Exposure Areas to attain Primary Floodplain Performance Standards in Table 1;

iii. A proposal for avoidance of Core Area 1 habitat (other than Frequently Used Subareas) except in limited areas where necessary to meet Secondary Floodplain Performance Standards in Table 1; and

iv. A proposal for minimization on a case-by-case basis for Core Areas 2 and 3 (as shown in Attachment B); however, at a minimum, Secondary Floodplain Performance Standards in Table 1 shall be attained.

(d) Based on the proposal submitted pursuant to Section II.B.3.a.(2)(c) above, EPA shall identify any modification to areas proposed to be avoided, and the Permittee shall recalculate the EPC, to ensure that the resultant excavation plan meets, at a minimum, Secondary Floodplain Performance Standards in Table 1 in each Exposure Area as a whole and the Performance Standards in Table 2 for Frequently Used Subareas.

(e) To the extent that Secondary Floodplain Performance Standards are not met in each Exposure Area as a whole, the Permittee shall propose additional areas to be excavated in order to

meet, at a minimum, Secondary Performance Standards in the Exposure Area as a whole, repeating the steps in Sections II.B.3.a.(2)(c) and II.B.3.a.(2)(d) as needed.

(f) In conjunction with the steps in Sections II.B.3.a.(2)(c) through II.B.3.a.(2)(e), the Permittee shall also evaluate the presence of any areas of remaining PCB concentrations in Floodplain soil for erosion potential and the likelihood of future downstream transport at concentrations that could result in the exceedance of the General Performance Standards specified in Sections II.B.1.a. and II.B.1.b. Based on the erosion potential and likelihood of future downstream transport at such concentrations, the Permittee shall reevaluate, as needed, any area of proposed Floodplain soil remediation, considering the steps in Sections II.B.3.a.(2)(c) through II.B.3.a.(2)(e) above, and shall propose further action as necessary.

(g) The Permittee shall submit the revised evaluation to EPA. Upon approval by EPA, the Permittee shall implement the required actions.

b. Vernal Pools Adjacent to Reaches 5 Through 8

(1) Performance Standards

(a) In addition to any remediation conducted in Vernal Pools in order to meet the Floodplain Performance Standards in Section II.B.3.a.(1) above, the Permittee shall remediate Vernal Pools that exceed a spatially-weighted average concentration of 3.3 mg/kg total PCBs (based upon risk to amphibians).

(b) The Permittee shall evaluate the best approach to remediation of Vernal Pools by first conducting a pilot study on not more than ten (10) vernal pools ("Pilot Vernal Pools"), evaluating the following approaches:

i. On a select number of Pilot Vernal Pools, place an amendment such as activated carbon and/or other comparable amendments in Vernal Pools that exceed a spatially-weighted average concentration of

3.3 mg/kg total PCBs to reduce the bioavailability of PCBs to a level less than or equivalent to the bioavailability of PCBs associated with 3.3 mg/kg total PCBs in sediment.

ii. On a select number of Pilot Vernal Pools, excavate soil and backfill Vernal Pools to pre-excavation elevations to achieve a spatially-weighted average concentration of 3.3 mg/kg total PCBs in each Vernal Pool except for Vernal Pools in Core Area 1, where no excavation shall occur. Permittee shall minimize the impacts from excavation in Vernal Pools in Core Areas 2 and 3 (as shown in Attachment B) on a case by case basis in the manner described in footnote 11.

iii. Based on EPA's evaluation of the initial pilot round of Vernal Pool remediation and restoration and taking into the consideration the Core Area habitat, EPA will determine the preferred method/approach to remediation and restoration of each subsequent Vernal Pool and the Permittee shall implement this approach.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall place an amendment such as activated carbon and/or other comparable amendments, and/or conduct excavation and backfill, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.3.b.(2)(a) through II.B.3.b.(2)(h) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(a) The Permittee shall submit a plan to EPA and, upon approval, conduct one or more site visits to identify potential Vernal Pools. EPA will make the determination as to what constitutes a Vernal Pool. Areas determined not to be Vernal Pools shall be considered Backwaters or Floodplain soil under Sections II.B.2.d or II.B.3.a, respectively, depending on whether or not the area is typically inundated.

(b) The Permittee shall conduct additional sampling and characterization of Vernal Pools, to generate baseline data on the concentrations of total PCBs, the presence and abundance of animal species and a range of taxa, including, but not limited to, threatened, endangered or state-listed species, and water and soil chemistry. The Permittee shall also conduct additional field reconnaissance as needed to evaluate the potential ecological effects of remediation of the Vernal Pools. The Permittee shall conduct the above actions in accordance with a work plan approved by EPA.

(c) The Permittee shall identify Vernal Pools that exceed a spatially-weighted average concentration 3.3 mg/kg total PCBs.

(d) The Permittee shall submit a plan for EPA approval proposing the number of Vernal Pools to be piloted for remediation by both the use of activated carbon or other comparable sediment amendment and for remediation by traditional excavation and restoration methods. For both methods, Permittee shall submit plans describing the methods to be used and the criteria for success for both reduction of bioavailability/concentration of PCBs and impact to ecological receptors and as outlined below.

(e) Permittee shall, in the plan referenced immediately above, describe the type of activated carbon or other comparable sediment amendment, how it would be applied, and a method to measure the effectiveness of activated carbon or sediment amendment to meet the Performance Standard for reduction in PCB bioavailability in Sections II.B.3.b.(1)(a) and II.B.3.b.(1)(b) above. Such methods may include, but are not limited to, measuring the reduction in PCB concentrations in porewater, surface water, benthic invertebrates and/or other biota. The plan shall also identify the criteria for success and how to measure the ecological effects of the placement of activated carbon or sediment amendment in comparison to the pre-remediation conditions documented in Section II.B.3.b.(2)(b) above.

(f) Permittee shall, upon EPA approval of the plan submitted pursuant to Section II.B.3.b.(2)(d) above, implement the placement of activated carbon and/or other comparable sediment amendment in an initial set of Vernal Pools and submit a report describing the following: the effectiveness of placement activities in achieving the Performance Standards in Sections II.B.3.b.(1)(a) and II.B.3.b.(1)(b) and Section II.B.1.c. above; the ecological effects of the activated carbon and/or other comparable sediment amendment on Vernal Pools compared to the criteria for success; any suggested modifications to the procedures; and a proposal for how to address the remaining Vernal Pools such that the Performance Standard in Sections II.B.3.b.(1)(a) or II.B.3.b.(1)(b) will be met.

(g) The Permittee shall submit a plan for remediation by excavation and backfill of an initial number of pools, to achieve a spatially-weighted average concentration of 3.3 mg/kg total PCBs in each Vernal Pool. Permittee shall, upon EPA approval of the plan, implement this method and submit a report describing the following: the effectiveness of excavation and backfill activities in achieving the Performance Standards in Sections II.B.3.b.(1)(a) and II.B.3.b.(1)(b) and Section II.B.1.c. above; the ecological effects of the excavation and backfill on Vernal Pools compared to the criteria for success; and any suggested modifications to the procedures. Permittee shall conduct subsequent remediation activities using excavation and backfill pursuant to EPA approval of this report.

(h) Upon EPA review and approval of the reports submitted pursuant to Sections II.B.3.b.(2)(e) through II.B.3.b.(2)(g) above, after providing an informal opportunity for public input, Permittee shall proceed with remediation of the remaining Vernal Pools with the placement of activated carbon and/or other comparable amendment, or implementation of excavation and backfill (excluding Vernal Pools in Core Area 1), or a combination of the two methods. The excavation and backfill shall be conducted such that the hydrology necessary for a Vernal Pool is not adversely affected.

4. Inspection, Monitoring and Maintenance for All Response Actions Except for Those Related to the Upland Disposal Facility.

a. Performance Standard

Permittee shall implement a baseline and construction monitoring program and an inspection, monitoring and maintenance program.

b. Corrective Measure

To achieve and maintain this Performance Standard, Permittee shall implement baseline and construction monitoring, and inspection, monitoring and maintenance activities, and perform all other related activities. Permittee shall perform the foregoing pursuant to this Performance Standard and the requirements in Sections II.B.4.b.(1) and II.B.4.b.(2) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(1) Baseline and Construction Monitoring Program

A baseline and construction monitoring program shall be implemented, including but not limited to, the following:

(a) Prior to the commencement of construction activities, PCB data in surface water, sediment, and biota (and other data) shall be collected to serve as a baseline for the evaluation of the potential impacts of the Corrective Measures and project operations as well as to inform model parameterization in the model re-evaluation plan.

(b) The Permittee shall propose a program to minimize adverse impacts of construction activities on the environment (e.g., resuspension) including:

i. Measures to assess these impacts (e.g., establishing notification and action levels for PCBs measured in surface water);

ii. A monitoring plan to collect these data; and

iii. Establishing response actions (e.g., slowdown and evaluation of operations, stop work and modification of operations, etc.).

This program shall be designed to be consistent with an adaptive management approach, as outlined in Section II.F. below.

(2) An inspection, monitoring, and maintenance program shall be conducted in phases and be implemented upon completion of each phase of the Rest of River Remedial Action, except for areas subject to MNR. For areas where MNR is the Performance Standard, monitoring shall begin with baseline monitoring and shall continue throughout the Remedial Action and O&M.

The inspection, monitoring, and maintenance program shall be implemented throughout the Remedial Action to evaluate the effectiveness of the Corrective Measures in achieving Performance Standards, to evaluate MNR, to monitor the sediment accumulation above the Engineered Caps at Woods Pond and Rising Pond, and to conduct maintenance, repair, or other response actions necessary to achieve and maintain compliance with Performance Standards. This program shall be designed to be consistent with an adaptive management approach as outlined in Section II.F. below.

5. Upland Disposal Facility

a. Performance Standards

(1) The Permittee shall construct an Upland Disposal Facility to contain certain sediment, floodplain soils and other waste material (as defined in the Consent Decree) generated as part of the Rest of River Remedial Action that meet the Acceptance Criteria in Attachment E to this Permit at the location shown in Figure 6.

(2) The Upland Disposal Facility shall meet the following design Performance Standards:

(a) The Upland Disposal Facility shall have a maximum design capacity of 1.3 million cubic yards.

(b) The landfill consolidation area shall have a maximum footprint of 20 acres and a maximum elevation of 1,099 feet above mean sea level. If the seasonally high groundwater elevation is determined to be higher than 950 feet above mean sea level, the maximum elevation of the landfill

consolidation area may be increased by the number of feet that is the difference between the seasonally high groundwater elevation and 950 feet above mean sea level in order for the Upland Disposal Facility to have a maximum capacity of 1.3 million cubic yards.

(c) The Upland Disposal Facility shall consist of a double bottom liner, separated by a drainage layer, and shall incorporate primary and secondary leachate collection systems.

(d) The bottom liner of the landfill will be installed a minimum of 15 feet above a conservative estimate of the seasonally high groundwater elevation. The seasonally high groundwater elevation will be projected using site-specific groundwater elevation data collected in the location of the Upland Disposal Facility, modified by an appropriate technical method that takes into account historic groundwater level fluctuations at similarly-sited off-site long-term monitoring wells in Massachusetts. The estimation of a seasonally high groundwater elevation will be performed pursuant to a methodology reviewed and approved by EPA. The estimate of seasonally high groundwater elevation shall then be used to support the design of the landfill relative to achieving the required minimum separation distance from the bottom of the liner system to the seasonally high groundwater elevation.

(e) The landfill will be capped with a low-permeability cap to include liner(s) drainage layer(s) and vegetation.

(f) Liners (bottom liners and cap liners) shall have a permeability equal or less than 1×10^{-7} cm/sec, a minimum thickness of 30 mils and be chemically compatible with PCBs.

(g) Landfill design will include a stormwater management system to control surface runoff, to minimize the potential for surface erosion or stormwater contribution to leachate generation.

(h) A groundwater monitoring network shall be designed and installed around the Upland Disposal Facility to monitor for PCBs and other constituents identified in the groundwater monitoring plan as approved or modified by EPA. Groundwater monitoring shall include a sufficient number of monitoring wells to allow detection of groundwater impacts.

(3) Permittee shall identify all non-community and private water supply wells currently within 500 feet of the Upland Disposal Facility consolidation area. Unless the well owner does not consent, Permittee shall pay the installation cost of a connection to public water. In the event that a well owner consents at a later date or any new water users (e.g., new construction) move within 500 feet of the Upland Disposal Facility consolidation area during construction or O&M, Permittee shall pay the installation cost of a connection to public water.

(4) Permittee shall be responsible for the proper functioning of the Upland Disposal Facility landfill during landfill operations and shall remain responsible for the proper O&M of the landfill thereafter. Permittee shall be responsible for the closure of the landfill including the installation of the low-permeability cap and vegetative cover promptly upon EPA's determination that either of the following conditions has occurred: (1) the landfill is full (e.g., when the maximum footprint, elevation and/or design capacity are reached), or (2) excavation and dredging activities conducted as part of the Rest of River Remedial Action are complete. Permittee shall be responsible for post-closure activities and monitoring thereafter.

(5) No material from the Rest of River Remedial Action will be disposed of at any other location in Berkshire County.

(6) No one shall take any materials to the Upland Disposal Facility for disposal except those meeting Acceptance Criteria and generated pursuant to this Permit. No materials from previously remediated sites in the Upper 2-Mile Reach of the Housatonic River cleanup nor any other materials associated with the other response actions conducted pursuant to the Site Consent Decree may be disposed of at the Upland Disposal Facility.

b. Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall construct, operate and maintain an Upland Disposal Facility. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(1) Landfill operations, inspections, maintenance, and air and groundwater sampling activities will be conducted in accordance with approved plans.

(2) Permittee shall include in its landfill design submissions one or more proposals (based on Permittee's consultations with officials from the Town of Lee) describing how Permittee will prepare the Upland Disposal Facility for potential re-use once the landfill is capped if the Town of Lee desires. Any such proposals shall be described in the final Remedial Design/Remedial Action Work Plans.

(3) During the implementation of the Corrective Measures, the Permittee may propose to EPA for approval the use of innovative treatment technologies as part of an adaptive management approach as outlined in Section II.F. below.

6. Off-Site Disposal of Contaminated Sediment and Soil

a. Performance Standards

(1) The Permittee shall dispose of contaminated sediment and soil, as well as other waste material, that do not meet the Acceptance Criteria for the Upland Disposal Facility outlined in Attachment E, and any other waste material that is otherwise not placed in the Upland Disposal Facility, off-site at existing licensed facilities that are approved to receive such waste material and are in compliance with EPA's off-site rule (40 C.F.R. 300.440).

(2) At a minimum, 100,000 cubic yards of PCB-contaminated soil and/or sediment will be disposed of off-site.

b. Corrective Measures

To achieve and maintain this Performance Standard, Permittee shall dispose of certain contaminated sediment and soil, as well as other waste material, at an approved and licensed existing off-site disposal facility and perform all other related activities. Permittee

shall perform the foregoing pursuant to the Performance Standard and the requirements in Sections II.B.6.b.(1) and II.B.6.b.(2) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(1) The Permittee shall propose the methods and locations for off-site disposal to EPA for review and approval. Permittee's proposal shall include measures to maximize the transport of such waste material to off-site facilities via rail, to the extent practicable.

(2) During the implementation of the Corrective Measures, the Permittee may propose to EPA for approval the use of innovative treatment technologies as part of an adaptive management approach as outlined in Section II.F. below.

7. Institutional Controls and Related Requirements

a. Biota Consumption Advisories

(1) Performance Standard

The Permittee shall cooperate with and support EPA and the States regarding all biota consumption advisories issued by EPA and/or the States for the Rest of River area until such time that the advisories are discontinued.

(2) Corrective Measures

To achieve and maintain this Performance Standard, the Permittee shall cooperate with and support EPA and the States to improve public awareness of the advisories by conducting the following: preparing, distributing, inspecting, monitoring and maintaining educational and outreach activities, including the producing and posting of signs; providing to hunting and fishing license distributors appropriate written notices regarding such advisories to be included with licenses; and performing all other related activities. Signs and outreach material shall be produced in languages appropriate for communities that hunt or fish in the Rest of River area. Permittee shall perform the foregoing pursuant to the Performance Standard, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

b. Floodplain soils (inclusive of Vernal Pools and Backwaters) in Exposure Areas in Reaches 5 through 8.

(1) Performance Standards

(a) On all property without a registered or recorded Environmental Restriction and Easement (ERE) or Notice ERE (including Conditional Solution properties as discussed below), and for all non-subordinated property interests on properties with an ERE or a Notice ERE, Permittee shall conduct such response actions (including material handling and off-site disposal, engineering controls, repairing any aspect of the Rest of River Remedial Action) to allow such Legally Permissible Future Project or Work to be conducted in a manner that maintains Performance Standards and/or maintains the effectiveness of the Rest of River Remedial Action.

(b) For all Exposure Areas (see Figures 3 and 4) that do not meet the Performance Standard for Residential Use set forth in Table 3, Permittee shall, for the portion of the property within the Exposure Area, record (hereinafter "record" shall mean record or register as appropriate) an ERE or a notice ERE for the purposes of implementing, ensuring non-interference with and/or ensuring the integrity and protectiveness of the response actions performed; or after a response has been implemented pursuant to Section II.B.3. above, implement a Conditional Solution to achieve and maintain the applicable Performance Standard set forth in Tables 3 and/or 4 for any Legally Permissible Future Use and for the purposes of ensuring the integrity and protectiveness of the response actions performed.

(2) Corrective Measures

To achieve and maintain these Performance Standards, Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work, and shall, for all Exposure Areas (see Figures 3 and 4) that do not meet the Performance Standard for Residential Use set forth in Table 3, for the portion of the property within the Exposure Area, record an ERE, a Notice ERE or after a response has been implemented pursuant to Section II.B.3. above implement a Conditional Solution to achieve and

maintain the applicable Performance Standard in Tables 3 or 4 for any Legally Permissible Future Use, and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards, the requirements in Sections II.B.7.b.(2)(a) through II.B.7.b.(2)(c) below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Environmental Restriction and Easements:

For all Exposure Areas (see Figures 3 and 4) that do not meet the Performance Standard for Residential Use set forth in Table 3, Permittee shall, for the portion of the property within the Exposure Area:

i. Prepare and record EREs for properties owned by Permittee in accordance with Section XIII of the CD.

ii. Prepare and record Notices of Environmental Restriction and Easements (Notice EREs) for properties owned by the Commonwealth. These activities shall be conducted in accordance with Section XIII and the Twelfth Modification of the Consent Decree.

iii. For properties not owned by Permittee or the Commonwealth, make best efforts to obtain and record an ERE with an offer of appropriate compensation in accordance with Section XIII of the CD. Permittee shall make such best efforts in coordination with requesting access from the property owners to implement the response actions to be conducted pursuant to Section II.B.3. above or on a schedule approved by EPA.

iv. Permittee shall, on an annual basis after the recordation or registration of an ERE or Notice ERE, conduct an inspection of any property with an ERE or a Notice ERE that is not owned by Permittee as generally described in Appendix Q to the Consent Decree. For properties not owned by Permittee or the Commonwealth, Permittee

shall also on an annual basis determine if there has been an ownership change in the property. Whenever there is an ownership change, and at a minimum of every two years, Permittee shall send a letter to the property owner notifying them of the presence of the ERE.

(b) Conditional Solutions:

If the owner declines the ERE offer in Section II.B.7.b.(2)(a)iii. above, or an easement holder or an entity with a property interest declines to subordinate its property interest to the ERE, Permittee shall, after a response has been implemented pursuant to Section II.B.3. above, implement a Conditional Solution to be protective of a Legally Permissible Future Project or Work and/or to achieve and maintain the applicable Performance Standards set forth in Table 3 or 4 to be protective of any Legally Permissible Future Use in accordance with the following requirements:

i. Response actions to be protective of a Legally Permissible Future Project or Work:

For any response action to be protective of any Legally Permissible Future Project or Work that would involve handling, excavation, or the removal of sediment or soil, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such sediment or soil, the protection of workers and other individuals during such activities, and restoration of any aspect of the Remedial Action, in accordance with applicable laws and regulations. Further response actions under this Section II.B.7.b. will be (A) in accordance with and pursuant to the Consent Decree; and (B) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

ii. Response Action to achieve and maintain the applicable Performance Standards set forth in Table 3 or 4 to be protective of any Legally Permissible Future Use:

For any change in the exposure scenario basis from Table 1 (or from the exposure scenario basis for subsequent response actions), Permittee shall conduct additional response actions, if necessary, to achieve and maintain the applicable Performance Standards in Tables 3 and/or 4. Permittee shall:

A. Determine the appropriate exposure scenario from Tables 3 and 4.
B. Determine the EPC for the exposure area.
C. Evaluate whether or not the EPC meets the Primary Performance Standard for Table 3 and/or the Performance Standard for Table 4. For non-agricultural future uses, if the EPC exceeds the Primary Performance Standard, follow the procedures outlined in Section II.B.3 of this Permit to determine if additional response actions are required.
D. The Permittee shall submit this evaluation to EPA. Upon approval, by EPA, the Permittee shall implement the required actions.
E. Further response actions under this Section II.B.7.b. will be (I) in accordance with and pursuant to the Consent Decree; and (II) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

iii. Timing Requirements for implementing Sections II.B.7.b.(2)(b)i. and II.B.7.b.(2)(b)ii. above. Permittee shall:

Within 30 days of the date that EPA notifies Permittee in writing that EPA has determined that the criteria for a Legally Permissible Future Use or a Legally Permissible Future Project or Work has been met, Permittee shall submit to EPA for approval, a work plan and schedule for the additional response actions described in Sections II.B.7.b.(2)(b)i. and II.B.7.b.(2)(b)ii above. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations. Further response actions under this Section II.B.7.b. will be (A) in accordance with and pursuant to the Consent Decree; and (B) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

iv. Notifications

Within 30 days of completion of response actions conducted pursuant to Section II.B.3 or Sections II.B.7.b.(2)(b)i. and II.B.7.b.(2)(b)ii above, at any time there is a change in ownership of such property, and no later than every two years after the most recent notification, Permittee shall provide notice to the owner (for the initial notice, notice shall also be sent to any holders of easements), with copies to EPA, MA DEP and applicable regulatory agencies, of:

A. A commitment that the Permittee will conduct the requirements set forth in Sections II.B.7.b.(2)(b)i. through II.B.7.b.(2)(b)iii. above, including the requirements for conducting response actions to be protective of any Legally Permissible Future Project or Work, or any

Legally Permissible Future Use including without limitation, materials handling and off-site disposal, engineering controls, and restoration of any aspect of the Rest of River Remedial Action disturbed by such work. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such activities, in accordance with applicable laws and regulations.

B. A recommendation that the property owner notify EPA or MA DEP prior to conducting soil excavation or disturbance or a change in use. In addition, provide contact persons for Permittee, EPA and MA DEP, and

C. A description of the residual PCB contamination on the property where the Conditional Solution has been implemented.

v. Annual inspections and determinations of property ownership

Following the implementation of any Conditional Solution pursuant to Section II.B.7.b.(2)(b) above, Permittee shall on an annual basis: determine if there is new ownership and conduct an inspection of such property to determine: whether there has been any change in uses that are inconsistent with the exposure scenario basis upon which the Conditional Solution was implemented; identify any activities resulting in the disturbance of 10 or more cubic yards of soil; and identify other items based on additional criteria developed in accordance with the Institutional Controls and Related Requirements Plan submitted pursuant to Section II.H.20. of this Permit. Within 30 days of such inspection,

Permittee shall submit a report to EPA and MA DEP based on an evaluation of the criteria set forth above and in the Institutional Controls and Related Requirements Plan submitted pursuant to Section II.H.20. of this Permit.

(c) Additional Conditional-Solution related requirements:

With respect to the following three scenarios, Permittee shall within 30 days of Permittee receiving notification from EPA that EPA has determined that an entity has met the criteria for a Legally Permissible Future Project or Work, Permittee shall submit to EPA for approval, a work plan and schedule to respond to such use, project, or work, including, without limitation, sampling and analysis, materials handling and off-site disposal, engineering controls, restoration of any aspect of the Rest of River Remedial Action disturbed by such work. Such scenarios are as follows: prior to the recording of ERE or Notice ERE; after recording of an ERE or a Notice ERE for property interests that do not subordinate their property rights, including property interests other than the owner for properties with a recorded Notice ERE; and, prior to implementing the initial response action set forth in Section II.B.3. for a Conditional Solution. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such activities, in accordance with applicable laws and regulations. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to assume some or all of these obligations. Further response actions under this Section II.B.7.b. will be (i) in accordance with and pursuant to the Consent Decree; and (ii) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be

limited to those costs solely related to the presence of PCBs.

Permittee shall also, in accordance with a schedule set forth pursuant to Section II.H., provide notice to the owner (for the initial notice, notice shall also be sent to any holders of easements), with copies to EPA, MA DEP and applicable regulatory agencies, that meets the requirements of Section II.B.7.b.(2)(a)iv. above.

c. Floodplain Soils outside Exposure Areas in Reaches 5-16

(1) Performance Standards

(a) Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work where there is sampling data documenting that total PCBs are greater than 1 mg/kg on the Floodplain portion of the property subject to the Legally Permissible Future Project or Work.

(b) Permittee shall conduct response actions to achieve and maintain the applicable Performance Standards in Tables 3 and 4 for the Floodplain portion of properties where there is sampling data documenting that total PCBs are greater than 1 mg/kg on the Floodplain portion of the property to be protective of any Legally Permissible Future Project or Work or any change in use of the property after the Effective Date of the Permit that constitutes a Legally Permissible Future Use.

(2) Corrective Measure

To achieve and maintain these Performance Standards, Permittee shall: conduct response actions to be protective of any Legally Permissible Future Project or Work where there is sampling data documenting that there are greater than 1 mg/kg total PCBs on the Floodplain portion of the property; conduct response actions to achieve and maintain the applicable Performance Standards in Tables 3 and 4 for the Floodplain portion of properties where there is sampling data documenting that total PCBs are greater 1 mg/kg on the Floodplain portion of the property to be protective of any Legally Permissible Future Project or Work or any change in use of the property after the Effective Date of the Permit that constitutes a Legally Permissible Future Use; and perform all other

related activities. Permittee shall perform the foregoing pursuant to these Performance Standards, the requirements in Sections II.B.7.c.(2)(a) through II.B.7.c.(2)(c) below, and in accordance with the plans submitted and approved pursuant to Section II.H. of this Permit.

(a) Permittee shall conduct response actions to be protective of any Legally Permissible Future Project or Work, including, but not limited to, flood management activities, road and infrastructure projects, and activities such as the installation of canoe and boat launches. Within 30 days of the date that EPA notifies Permittee in writing that EPA has determined: a) that the criteria for a Legally Permissible Project or Work has been met, and b) that there is sampling data documenting that there are greater than 1 mg/kg total PCBs on the Floodplain portion of the property, Permittee shall submit to EPA for approval, a work plan and schedule to respond to such Legally Permissible Future Project, or Work, including, without limitation, sampling and analysis, engineering controls, repairing any aspect of the Rest of River Remedial Action disturbed by such work, and materials handling and off-site disposal. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such activities, in accordance with applicable laws and regulations. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations.

(b) For any property subject to Section II.B.7.c.(2)(a) above, and for any property with a change in use of the property after the Effective Date of the Permit that constitutes a Legally Permissible Future Use where there is sampling data documenting that there are greater than 1 mg/kg total PCBs on the Floodplain portion of the property, Permittee shall implement additional response actions, (including

characterization and evaluation activities) to achieve the applicable Performance Standards in Tables 3 and 4. Permittee shall:

i. Determine the appropriate exposure scenario from Tables 3 and 4.

ii. Determine the EPC for the exposure area.

iii. Evaluate whether or not the EPC meets the Primary Performance Standard for Table 3 and/or the Performance Standard for Table 4. For non-agricultural future uses, if the EPC exceeds the Primary Performance Standard, follow the procedures outlined in Section II.B.3. of this Permit to determine if additional response actions are required, substituting Table 3 for Table 1. For agricultural future uses, if the EPC exceeds the Performance Standard in Table 4, evaluate soil removal necessary to meet the Performance Standard in Table 4.

iv. The Permittee shall submit this evaluation to EPA. Upon approval by EPA, the Permittee shall implement the required actions.

(c) Within 30 days of the date that EPA notifies Permittee that the criteria in this subsection have been met, Permittee shall submit to EPA for approval a work plan and schedule for the additional response actions. Permittee shall submit to EPA for approval such work plan and schedule, including, without limitation, sampling and analysis, engineering controls, repairing any aspect of the Rest of River Remedial Action disturbed by such work, materials handling and off-site disposal. For any activities that would involve the removal, handling or excavation of sediments and/or soils, Permittee shall be required to take response actions to ensure the proper excavation, management, and off-site disposal of such materials and the protection of workers and other individuals during such activities, in accordance with applicable laws and regulations. Following receipt of EPA's approval of the work plan and schedule, Permittee shall implement the additional response actions in accordance with EPA's approval, including the approved schedule. Permittee may seek EPA approval for another party to implement some or all of these obligations.

Further response actions under this Section II.B.7.c. will be (i) in accordance with and pursuant to the Consent Decree; and (ii) consistent with the scope of the response actions selected in this Permit. Permittee's responsibility for the costs of said further response actions will be limited to those costs solely related to the presence of PCBs.

d. Upland Disposal Facility

(1) Performance Standard

Permittee shall record an ERE to restrict future uses of land and groundwater that are inconsistent with the use of the Upland Disposal Facility.

(2) Corrective Measure

To achieve and maintain this Performance Standard, Permittee shall prepare and record an ERE in accordance with Paragraph 54 of the CD to prohibit excavation of the landfill, prohibit extraction, consumption, or utilization of the groundwater located underneath the Upland Disposal Facility, including a 500-foot zone around the consolidation area, and restrict the future use of and access to the Upland Disposal Facility. Permittee shall perform the foregoing pursuant to the Performance Standard above, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

8. Water Withdrawals and Uses

a. Performance Standard

The Permittee shall minimize/mitigate impacts during implementation of Corrective Measures to withdrawals and/or uses of water from the Rest of River by any entity.

b. Corrective Measures

To achieve and maintain this Performance Standard, Permittee shall minimize/mitigate impacts during implementation of Corrective Measures to withdrawals and/or uses of water from the Rest of River by any entity and perform all other related activities. Permittee shall perform the foregoing pursuant to the Performance Standards and the requirements in Sections II.B.8.b.(1) through II.B.8.b.(3) below, and in accordance with plans submitted and approved pursuant to Section II.H. of this Permit.

(1) Identify all industrial, commercial, private, or other withdrawals and/or uses of water from the Rest of River;

(2) Identify requirements associated with these uses (including water quality and quantity) that may be affected by implementation of Corrective Measures; and

(3) Propose methods to minimize/mitigate impacts during implementation of response actions.

C. Operation and Maintenance

Permittee shall implement an O&M program upon completion of the Remedial Action for the Rest of River. The O&M program shall be implemented to maintain the effectiveness of the Corrective Measures, to evaluate MNR, and to conduct inspection, maintenance, repair, or other response actions necessary to achieve and maintain compliance with Performance Standards. This program shall be designed to be consistent with an adaptive management approach, as outlined in Section II.F. below.

The O&M Plan will be a component of the Final Remedial Action Completion Report. Permittee shall submit a draft O&M Plan to EPA for review as a component of the Draft Remedial Action Completion Report. Upon approval or modification of the Final Remedial Action Completion Report, the O&M Plan will take effect. Components of the O&M Plan shall include, but not be limited to:

1. Monitoring of PCBs in groundwater, surface water, air, sediment, and biota.

2. Inspection and maintenance of Engineered Caps.

3. Inspection and maintenance of the Upland Disposal Facility, including collection and management of leachate.

4. Maintenance/implementation of Institutional Controls and Related Requirements in Section II.B.7. and the requirements in Sections II.B.2.j. through II.B.2.l.

5. Inspection and maintenance of restoration activities, including invasive species control.

6. Inspection and maintenance of other Corrective Measures to ensure that Performance Standards are maintained.

D. Review of Response Actions

In accordance with Paragraph 43 of the CD, the Permittee shall conduct studies and investigations as requested by EPA to permit EPA to conduct periodic reviews, consistent with Section 121(c) of CERCLA and any applicable regulations, of whether the Rest of River Remedial Action is protective of human health and the environment. The Permittee shall also comply with any additional requirements pursuant to Section X of the Consent Decree with respect to periodic reviews.

E. Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) Requirements

The federal and state laws and regulations that constitute applicable or relevant and appropriate requirements (ARARs) for the response actions for Rest of River and To Be Considered (TBC) requirements are identified in Attachment C.

The ARAR tables include a description of the listed ARARs and a determination by EPA as to whether the listed ARARs will be met, any ARARs waived and any modified performance requirements based on EPA's waiver determination, and all TBC requirements. EPA may also, in accordance with CERCLA and the National Contingency Plan, 40 C.F.R. 300, waive an ARAR during the implementation of the remedy.

In addition, the technical Remedial Design/Remedial Action (RD/RA) submittals for response actions for the Rest of River shall, consistent with CERCLA, specify additional ARARs (not listed in Attachment C), if any, for such response actions. Additionally, such RD/RA submittals shall contain a proposal as to how the response action will comply with any such additional ARARs, and to the extent that EPA determines a waiver is appropriate, any modified performance requirement. The Permittee shall comply with and attain any such additional ARARs that EPA determines should be met by such response action.

F. Adaptive Management

An adaptive management approach shall be implemented by the Permittee in the conduct of any of the Corrective Measures, whether specifically referenced in the requirements for those Corrective Measures or not, to adapt and optimize project activities to account for "lessons learned," new information, changing conditions, evaluations of the use of innovative technologies, results from pilot studies, if any, and additional opportunities that may present themselves over the duration of the project, including during periodic reviews. The Permittee shall modify the implementation of the Corrective Measures, with EPA approval, after a reasonable opportunity for review and comment by the States, through this process to minimize any adverse impacts of the response action, expedite the response, improve the Corrective Measures, and/or to ensure compliance with, or continued progress towards, achieving Performance Standards. To implement an adaptive management approach effectively, Permittee shall submit deliverables identified in Section II.H. (Rest of River SOW) in phases, where appropriate, and

identify how any lessons learned and any new information will be incorporated into subsequent deliverables and/or other methods to optimize project activities.

The Permittee shall perform the Corrective Measures in accordance with any modifications that are so identified by the Permittee (with EPA's approval), or that are identified and required by EPA, including, but not limited to, applying an adaptive management approach to the Rest of River SOW, or any other plans, specifications, schedules, or other documents. Any requirements identified by EPA pursuant to this provision cannot be inconsistent with the Consent Decree (including, but not limited to, Paragraphs 39, 162 and 163).

G. Coordination of Corrective Measures

Corrective Measures associated with the Rest of River will require a significant level of project scheduling, coordination, and sequencing, which shall be addressed by the Permittee in the Rest of River SOW. As the corrective measures are expected to be implemented in a phased approach, it is expected that the work to be implemented in each phase will have its own set of deliverables, including several of the deliverables identified in Section II.H.

H. Requirements for the Rest of River SOW

As required in Paragraph 22.x of the CD, the Permittee shall submit a Rest of River SOW for the implementation of the Corrective Measures, including pre-design activities and the subsequent performance of Corrective Measures. The SOW shall incorporate the Performance Standards and Corrective Measures from this Permit, or portion thereof, and shall include a description of, and a submittal schedule for, at a minimum, the documents outlined below. In addition, the contents of the documents required in the SOW are subject to modification or adjustment based on specific activities for a given Corrective Measure and any site- or activity-specific considerations, including, but not limited to, resulting from an adaptive management approach. If deviations to such documents are proposed, such proposals shall be presented for EPA approval in the technical deliverables specific to that Corrective Measure.

1. Expedited Deliverables

a. In order to expedite response actions, Permittee shall commence and perform investigation and design work as contractual obligations effective February 10, 2020. Specifically, Permittee shall submit a schedule for the Rest of River SOW, develop the SOW, and, subject to approval by EPA, implement the investigation and design components of the SOW and subsequent Work Plans to accelerate the commencement of the Rest of River cleanup. The obligation to perform this investigation and design work shall continue unless and until EPA issues a revised permit that does not contain terms substantially similar to those in the 2016 Permit, revised as specified by the 2020 Settlement Agreement.

b. Permittee agreed in the 2020 Settlement Agreement to coordinate as soon as practicable with municipal officials and affected landowners regarding work activities, schedules and traffic routes. Permittee's coordination with officials and landowners shall be described in the relevant work plans submitted to EPA.

c. Permittee has already submitted pursuant to the 2016 Permit the following documents:

- Rest of River Initial Statement of Work, including a section meeting the Requirements for the Overall Strategy and Schedule for Implementation of Corrective Measures submittal relating to GE's project organizational structure: roles, responsibilities, and lines of communication among GE, EPA, and state and local entities
- Baseline Monitoring Plan
- Floodplain Pre-Design Investigation Work Plan, Reach 5A (and related documents)
- Health and Safety Plan, a component of the Updated Project Operations Plan
- Components of the Institutional Controls and Related Requirements Plan limited to Biota Consumption Advisory Outreach Plan – Connecticut; Biota Consumption Advisory Outreach Plan – Massachusetts; and Plan for Obtaining Environmental Restrictions and Easements
- Dam Operation, Inspection, Monitoring and Maintenance Plans and related documents for Woods Pond Dam and Rising Pond Dam

2. Overall Strategy and Schedule for Implementation of the Corrective Measures

The Permittee shall present its overall strategy for implementing the Corrective Measures that have been selected by EPA in this Permit, including the preparation of work plans, designs, and reports, completion of pre-design investigations, construction and implementation of the remediation, and inspection, maintenance, and monitoring. In addition, the Permittee shall describe the Permittee's project organizational structure, roles, and responsibilities, and lines of communication among the Permittee, EPA, and state and local entities, as appropriate, and will include the project organization and a project implementation schedule. The overall strategy shall include:

a. Coordination of Floodplain and sediment and bank remediation;

b. Sequence of remediation;

c. Project management structure.

3. Pre-Design Investigation Work Plans, including for the Upland Disposal Facility

4. Pre-Design Investigation Summary Reports

5. Plan for Measuring Compliance with Performance Standards

6. Conceptual Remedial Design/Remedial Action Work Plans, including for the Upland Disposal Facility

7. Final Remedial Design/Remedial Action Work Plans, including for the Upland Disposal Facility

8. Supplemental Implementation Plans (e.g., contractor health and safety plans (HASPs), operations plan)

9. Updated Project Operations Plan and Field Sampling Plan/Quality Assurance Project Plan for Rest of River-specific changes, including a Construction Monitoring Plan

10. On-Site and Off-Site Transportation Plan

11. Quality of Life Compliance Plan:

    a. Noise, air, odor, light standards;

    b. Continued recreational activities during and after the remediation, including that Permittee shall work cooperatively with the City of Pittsfield, the Towns of Great Barrington, Lee, Lenox, and Stockbridge, and the State of Massachusetts to facilitate their enhancement of recreational activities, such as canoeing and other water activities, hiking, and bike trails in the Rest of River corridor, on properties where remediation will occur and/or where temporary access roads are constructed;

    c. Road use, including restrictions on transport of waste material through residential areas and methods to minimize and/or mitigate transportation related impacts to neighborhoods, infrastructure and the general public; consideration of methods to reduce residential impacts where practical, including remediation techniques that further restrict transport of waste material through residential areas. Examples of roads that would warrant such further restrictions include: Brunswick, Kenilworth, Warwick, and Chester Streets; Noblehurst Avenue; Revilla Terrace; Shetland, Clydesdale, Pinto, and Palomino Drives; and Anita, Lucia, Quirico, Joseph, and Eric Drives;

d. Coordination with local governments, affected residents and landowners at or near areas impacted by remediation to take reasonable steps to minimize the adverse impact of work activities by, among others, coordinating work activities, scheduling, and traffic routes; and

e. Community Health and Safety

(1) The Permittee shall maintain a website (similar to http://www.hudsondredging.com/) to provide community access to information such as data, technical reports, work plans, and project fact sheets, as well as updates on current and future project activities; and

(2) The Permittee shall establish and maintain a system to identify and address community complaints and concerns during construction activities.

12. Baseline Restoration Assessment (BRA) Work Plan, Baseline Restoration Assessment, Restoration Performance Objectives and Evaluation Criteria (RPOEC), Restoration Corrective Measures Coordination Plan (RCMCP), and Restoration Plan (RP)

13. Adaptive Management Plan

14. Sustainability and Climate Adaptation Plan, including measures to ensure that Corrective Measures are designed and constructed to be resilient to potential changes due to climate change and incorporate, where practical and appropriate, methods to minimize greenhouse gas emissions.

15. Work Plan for Phase 1B Cultural Resource Survey and Overall Cultural Resource Plan

16. Model Reevaluation Plan

17. Dam Removal-Related Activities Plan(s)

18. Inspection, Monitoring and Maintenance Plan

a. Inspection, Monitoring and Maintenance Plan(s) (including an Invasive Species Control Plan, a plan for the accumulation of contaminated sediment on top of the Woods Pond and Rising Pond Engineered Caps, a plan for Engineered Caps, and a plan to measure the effectiveness of MNR.)

19. Upland Disposal Facility Operation, Maintenance, and Monitoring Plan

20. Institutional Controls and Related Requirements Plan

21. Dam Operation, Inspection, Monitoring and Maintenance Plan

22. Water Withdrawal and Uses Plan

23. Plan for Further Response Actions, and any implementation of further response actions, in accordance with Section X of the Consent Decree (Review of Response Actions).

24. Remedial Action Completion Report, including an O&M Plan.

I. Schedule

As required under Paragraph 22.x of the CD, whenever the Permittee is required to design and implement the Rest of River Remedial Action or a portion thereof as the Permit or portions of the Permit become finalized, the Permittee shall develop and submit within 7 days to EPA for review and approval, a schedule for the subsequent submission of the SOW or relevant portions thereof. The schedule for the submittal for the SOW or relevant portions thereof shall be no sooner than 90 days and no later than 120 days from the Effective Date of this Permit, or relevant portions thereof. The SOW shall contain schedules for the subsequent development of Remedial Action activities.

Implementation of the Corrective Measures shall begin concurrently, if feasible. Permittee shall begin such concurrent implementation in Reach 5A (sediment and Floodplain) and Woods Pond, unless Permittee proposes, and EPA approves an alternate approach.

Unless the Permittee proposes and EPA approves a modified schedule, Corrective Measures shall proceed downstream from Reach 5A and Woods Pond on a parallel track. The final sediment caps in the Impoundments shall not be placed, however, until all remediation in the upstream reaches has been completed. Following the placement of the cap in Reach 7G, sediment removal and subsequent capping shall take place in Rising Pond (Reach 8). This approach shall be subject to review under an adaptive management approach to evaluate the effectiveness of sequencing.

The Corrective Measures in the Floodplain shall be performed by the Permittee while the adjacent sediment cleanup activities are taking place and shall share construction infrastructure to the maximum extent practicable to minimize the Corrective Measures footprint.

J. Project Coordinators

1. Pursuant to the Consent Decree, EPA and the Permittee have each designated a Project Coordinator and an Alternate Project Coordinator.

2. EPA and the Permittee shall provide at least five (5) working days' written notice prior to changing Project Coordinators or Alternate Project Coordinators, unless impracticable but in no event later than the actual day the change is made.

3. The absence of EPA's Project Coordinator shall not be cause for stoppage of work by the Permittee.

4. Unless otherwise specified, reports, notices, or other submissions required under the Permit shall be in writing and shall be sent to:

EPA's Project Coordinator
Dean Tagliaferro
U.S. Environmental Protection Agency
EPA New England
5 Post Office Square Suite 100
Boston, MA 02109-3912

EPA's Alternate Project Coordinator
Alternate Housatonic Rest of River Project Coordinator
U.S. Environmental Protection Agency
EPA New England
5 Post Office Square Suite 100
Boston, MA 02109-3912

Permittee's Project Coordinator
Andrew T. Silfer
General Electric Company
Corporate Environmental Programs
319 Great Oaks Boulevard
Albany, NY 12203

Permittee's Alternate Project Coordinator
Alternate Housatonic Rest of River Project Coordinator
General Electric Company
Corporate Environmental Programs
1 Plastics Avenue
Pittsfield, MA 01201

Massachusetts Project Coordinators
Michael Gorski
Massachusetts Department of Environmental Protection
436 Dwight Street - Fifth Floor
Springfield, MA 01103

Mark Tisa
Massachusetts Department of Fish and Game
Division of Fisheries and Wildlife
Field Headquarters, One Rabbit Hill Road
Westborough, MA 01581

Connecticut Coordinator
Connecticut Housatonic Rest of River Coordinator
Planning and Standards Division
Bureau of Water Protection and Land Reuse
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06103

K. Sampling Requirements

The Permittee shall provide the results of all sampling and/or tests or other data generated by the Permittee or on the Permittee's behalf with respect to the implementation of the Permit to EPA and shall submit these results to EPA, at a minimum, in monthly progress reports. Data and supporting information shall be provided in electronic format and shall include locational information for all samples collected.

At the request of EPA, the Permittee shall allow split or duplicate samples to be taken by EPA and/or its authorized representative, of any samples collected by the Permittee or on the Permittee's behalf pursuant to the implementation of this Permit. The Permittee shall notify EPA not less than seven (7) days in advance of any sample collection activity.

EPA will notify the Permittee not less than seven (7) days in advance of any sample collection activity by EPA in connection with the implementation of this Permit. At the request of the Permittee, EPA shall provide to the Permittee, or allow the Permittee to take split or duplicate samples of any samples collected by EPA or on EPA's behalf in conducting work in the Rest of River area.

L. Reservation of Rights

EPA and the Permittee reserve all rights and defenses that they may have, subject to the provisions of the Consent Decree.

M. Access to or Use of Property

1. To the extent that the work required of the Permittee under this Permit requires access to or use of property currently owned or under the control of persons other than the Permittee, the Permittee shall use its best efforts to obtain access in accordance with the provisions of Paragraph 59.a of the Consent Decree relating to access.

2. Except as otherwise provided in the Consent Decree or this Permit, nothing in this Permit shall be construed to limit EPA's authority to exercise its rights pursuant to Section 3007 of RCRA, 42 U.S.C. 6927, or to affect any rights of entry possessed by EPA pursuant to any applicable laws, regulations, or permits.

N. Dispute Resolution

Resolution of disputes arising from implementation of this Permit shall be resolved consistent with the provisions in the Consent Decree.

TABLES

Table 1 Performance Standards for PCBs for Floodplain Soil by Exposure Area – Current Use

Exposure Areas	Performance Standard (in mg/kg)		Exposure Scenario Basis	
	Primary (RME 10^{-5}/ Hazard Index (HI)=1)	Secondary (RME 10^{-4}/ HI=1)	Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
10a, 10b, 70, 87	4.6	4.6	General Recreation, young child (high use)	90d/yr
10	4.6	6.9	General Recreation, young child (high use)	90d/yr
2b, 25, 78, 85b	27	27	General Recreation, older child (high use)	90d/yr
3, 11, 13-17, 19, 20, 24, 32, 33, 38, 44-46, 48, 54, 58, 67-69, 73-77, 79, 89	14	38	General Recreation, adult (high use)	90d/yr
2, 4, 5, 7, 12, 21, 22, 26a, 26F, 27, 28, 30, 31, 31a, 35, 35a, 37, 37b, 40, 40b, 55, 57, 59, 60, 90	14	27	General Recreation, adult/older child (high use)	90d/yr
1, 56	21	40	General Recreation, adult/older child (medium use)	60d/yr
23, 88	40	40	General Recreation, older child (medium use)	60d/yr
18, 34, 41, 42, 43	21	58	General Recreation, adult (medium use)	60d/yr
6, 49, 50, 51, 80a, 81, 82, 84	43	115	General Recreation, adult (low use)	30d/yr
2a, 9	80	80	General Recreation, older child (low use)	30d/yr
29	43	80	General Recreation, adult/older child (low use)	30d/yr
37a, 38a, 40a, 41a, 42a, 43a, 59a, 70a, 71,72, 87a	26	42	Bank Fishing adult/older child	30d/yr
22a, 27a, 28a	14	14	Dirt Biking/ATVing (older Child)	90 d/yr
8,47, 47F, 52, 53, 60a, 85a	12	28	Recreational Canoeist	Adult 60 d/yr Older child 30 d/yr

Table 1 Performance Standards for PCBs for Floodplain Soil by Exposure Area – Current Use (Continued)

Exposure Areas	Performance Standard (in mg/kg)		Exposure Scenario Basis	
	Primary (RME 10^{-5}/ Hazard Index (HI)=1)	Secondary (RME 10^{-4}/ HI=1)	Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
39	7.8	13	Marathon Canoeist	150d/yr
26b, 36b, 80b	12	43	Agricultural Use (farmer)	40d/yr
36a	89	126	Low-use Commercial (groundskeeper)	30d/yr
83, 86	18	25	High-use Commercial (groundskeeper)	150 d/yr
61-66	169	242	Utility Worker	5 d/yr
50a, 51a, 55a, 56a	90	140	Waterfowl Hunting	14 d/yr

Table 2 Performance Standards for PCBs for Floodplain Soil Frequently Used Subareas – Current Use

Exposure Area	Performance Standard (in mg/kg)	Exposure Scenario Basis	
		Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
4, 12, 26a, 37b, 40, 58, 59	14	General Recreation, adult/older child (high use)	90 d/yr
39	7.8	Marathon Canoeist	150 d/yr
47, 52, 53, 60a	12	Recreational Canoeist	Adult 60 d/yr Older child 30 d/yr

Table 3 Performance Standards for PCBs for Floodplain Soil – Future Use

Type of Area/Exposure Scenario	Receptor	Assumed Frequency of Use	Performance Standards (in mg/kg)	
			Primary (RME 10^{-5}/ HI=1)	Secondary (RME 10^{-4}/ HI=1)
Residential	All	All	2*	2*
General Recreation	Young child	90 d/yr	4.6	4.6
		15 d/yr	27	27
	Older child	90 d/yr	27	27
		60 d/yr	40	40
		30 d/yr	80	80
	Adult	90 d/yr	14	38
		60 d/yr	21	58
		30 d/yr	43	115
Bank fishing	Older child	30 d/yr	42	42
	Adult	30 d/yr	26	56
Dirt biking/ATVing	Older child	90 d/yr	14	14
Marathon canoeist	Adult	150 d/yr	7.8	13
Recreational canoeist	Older child	30 d/yr	42	42
	Adult	60 d/yr	12	28
Waterfowl hunting	Older child	14 d/yr	140	140
	Adult	14 d/yr	90	196
Agricultural use (farmer) (See note)	Adult	40 d/yr	12	43
Commercial (groundskeeper)	Adult	150 d/yr	18	25
		30 d/yr	89	126
Utility worker	Adult	5 d/yr	169	242

*The Performance Standard for residential use is 2 mg/kg at 0-1 foot depth increment, 2 mg/kg at the 1-X depth increment where X equals the depth at which PCBs are detected at 2 mg/kg or greater (up to a maximum depth of 15 feet), and a not-to exceed of 10 mg/kg in the top foot.

Note: Values in this table for agricultural use represent human exposure to soil. For Performance Standards representing future agricultural use (protective of exposure through consumption of dietary items grown in the Floodplain), see Table 4.

Table 4 Performance Standards for PCBs for Agricultural Uses in Floodplain Soil

Because cleanup standards for future agricultural uses were derived as diet, a formula back-calculating from the dietary concentrations to concentration of PCBs in Floodplain soil was necessary. The equation below incorporates a soil concentration (Cea) calculated using the deterministic reasonable maximum exposure (RME) risk equations for each agricultural scenario from the baseline Human Health Risk Assessment. Each Cea is the more stringent of the two soil concentrations corresponding to an excess lifetime cancer risk of 1×10^{-5} and a Hazard Index of 1. The equation below also takes into account the fraction of the use conducted in the Floodplain.

$$C_t = \frac{Cea}{Ft},$$

where:

C_t = Performance Standard in Floodplain soil where agricultural activities will take place (in mg/kg)

C_{ea} = Soil concentration in mg/kg for a given agricultural use assuming 100% of the use is in the Floodplain. See table below for the C_{ea} for specific agricultural uses

F_t = Fraction of agricultural use in the Floodplain

Note: If this formula results in a C_t less than 2 mg/kg total PCBs, the Performance Standard will be 2 mg/kg total PCBs.

Agricultural Scenario	C_{ea} (in mg/kg)
Commercial Farm Family: Dairy Consumption	2.4
Backyard Farm Family: Dairy Consumption	0.059
Commercial Farm Family: Beef Consumption	0.17
Backyard Farm Family: Beef Consumption	0.16
Commercial Farm Family: Poultry Meat Consumption	0.15
Backyard Farm Family: Poultry Meat Consumption	0.27
Commercial Farm Family: Poultry Egg Consumption	0.062
Backyard Farm Family: Poultry Egg Consumption	0.091
Commercial Farm Family: Produce Consumption	4.1
Backyard Farm Family: Produce Consumption	6.5

See July 20, 2012 letter from The Science Collaborative to Weston Solutions, titled *Calculate Performance Standards for Agricultural Production Consumption* for the basis of the Performance Standard.

Table 5 Floodplain Properties Subject to Residential Performance Standards

Reach 5A Floodplain Properties Subject to Residential Performance Standards (Listed by Tax Parcel ID)			
I6-1-42	J4-3-10	J3-1-12	J3-2-5
I6-3-13	J4-3-11	J3-1-13	J3-2-6
J6-2-3	J3-1-8	J3-1-14	K3-1-2
J4-3-7	J3-1-9	J3-2-2	K2-1-10
J4-3-8	J3-1-10	J3-2-3	
J4-3-9	J3-1-11	J3-2-4	

Reach 5C Floodplain Properties Subject to Residential Performance Standards (Listed by Tax Parcel ID) (if the Town of Lenox determines that any of the property owners consent to such soil removal, and with the costs to be shared equally by the Permittee and the Town of Lenox)		
24-1	24-3	24-5
24-2	24-4	24-6

FIGURES

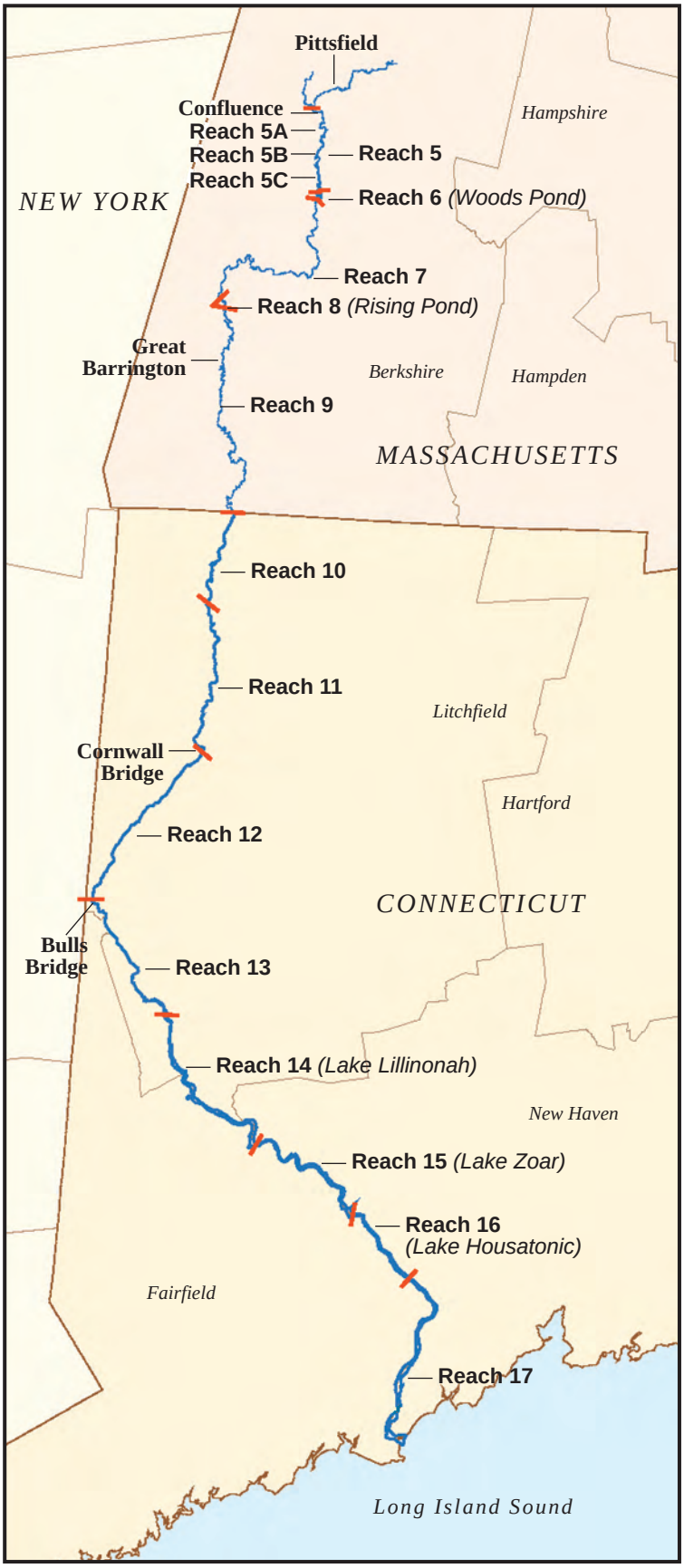
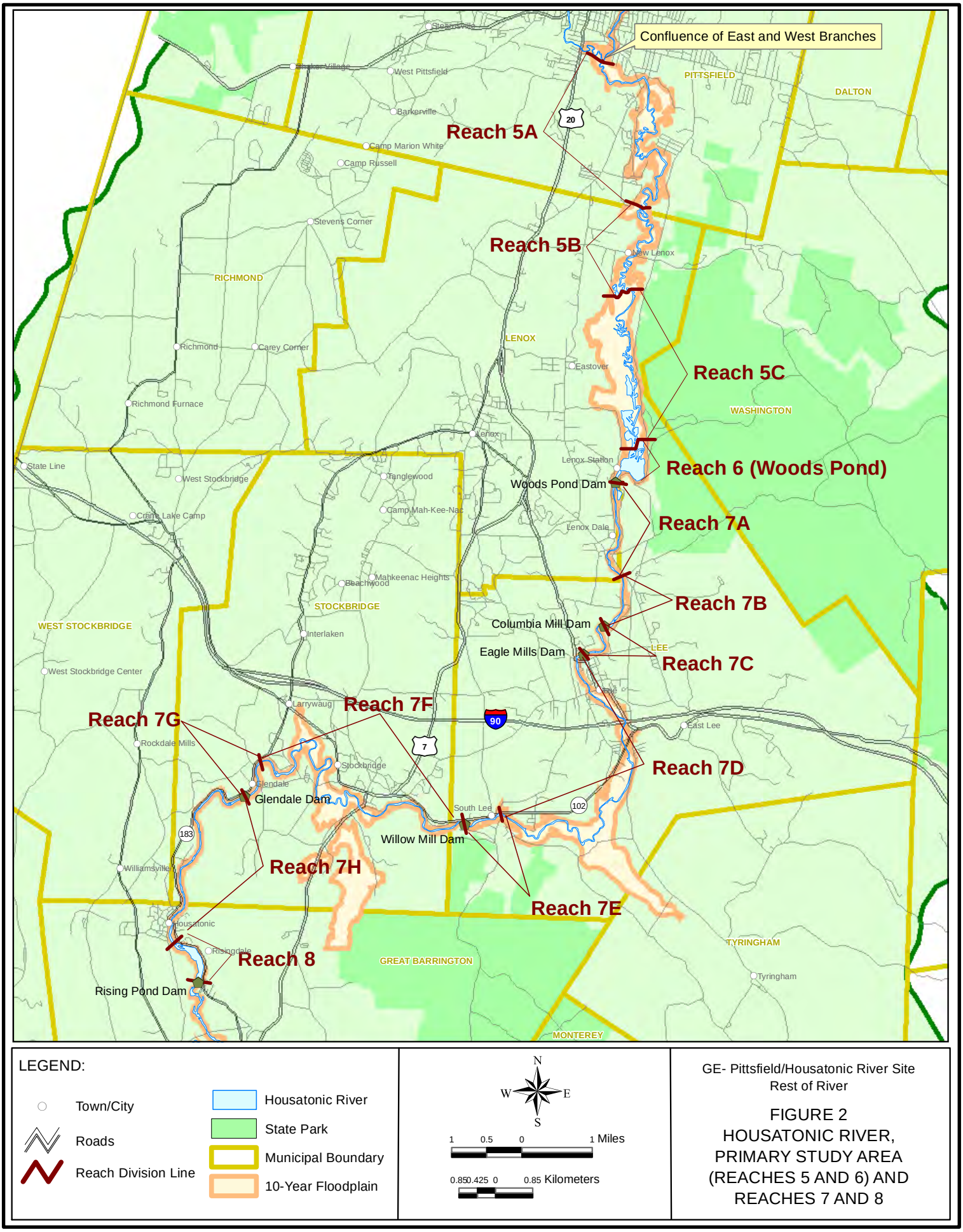


FIGURE 1 HOUSATONIC RIVER, REACHES 5 THROUGH 17



LEGEND:

- Town/City
- Roads
- Reach Division Line
- Housatonic River
- State Park
- Municipal Boundary
- 10-Year Floodplain

N W E S

1 0.5 0 1 Miles

0.85 0.425 0 0.85 Kilometers

GE- Pittsfield/Housatonic River Site
Rest of River

FIGURE 2
HOUSATONIC RIVER,
PRIMARY STUDY AREA
(REACHES 5 AND 6) AND
REACHES 7 AND 8

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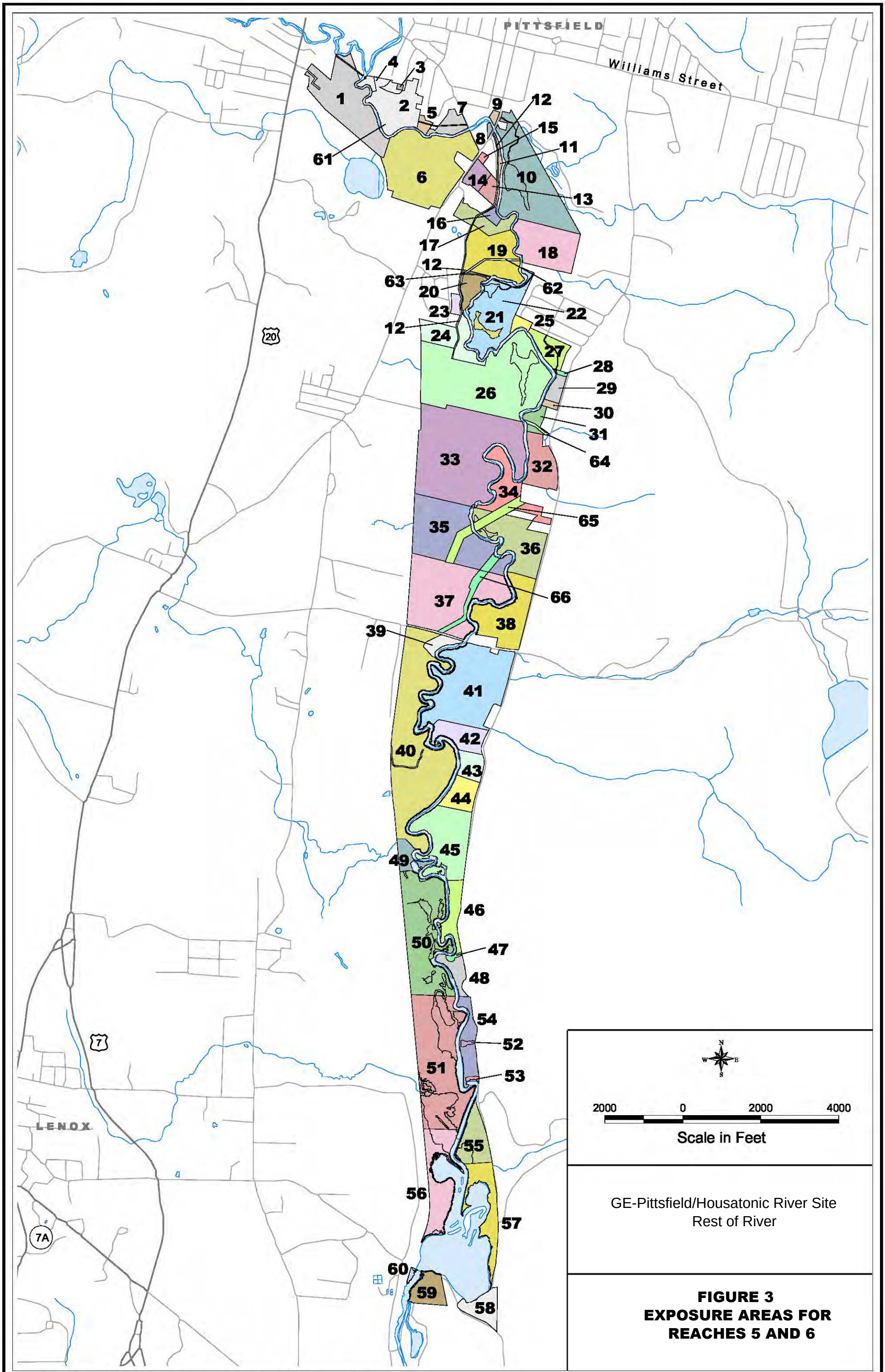
PITTSFIELD
Williams Street
LENOX
20
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7A
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2
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4
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50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
2000
0
2000
4000
Scale in Feet
GE-Pittsfield/Housatonic River Site
Rest of River
FIGURE 3
EXPOSURE AREAS FOR
REACHES 5 AND 6

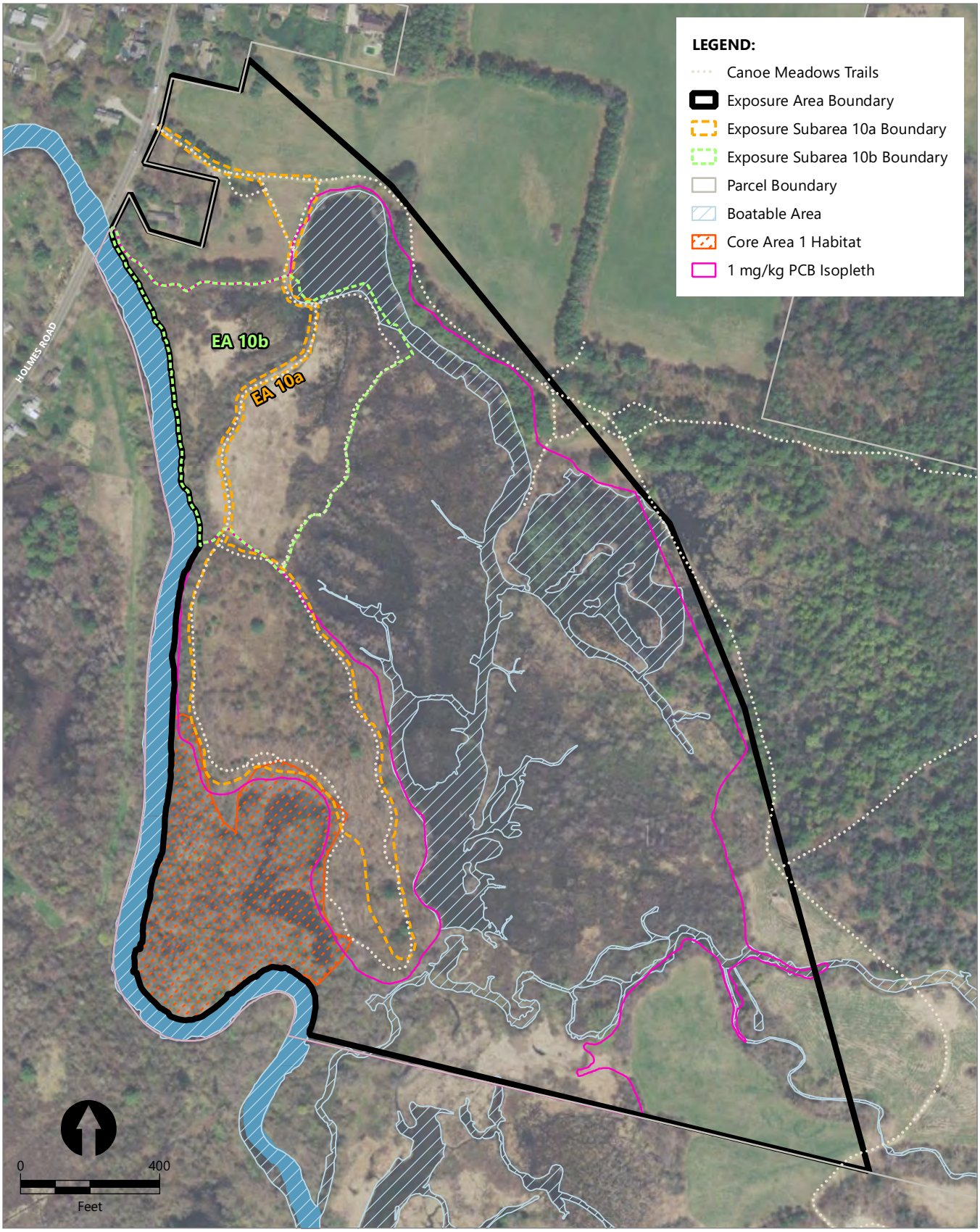
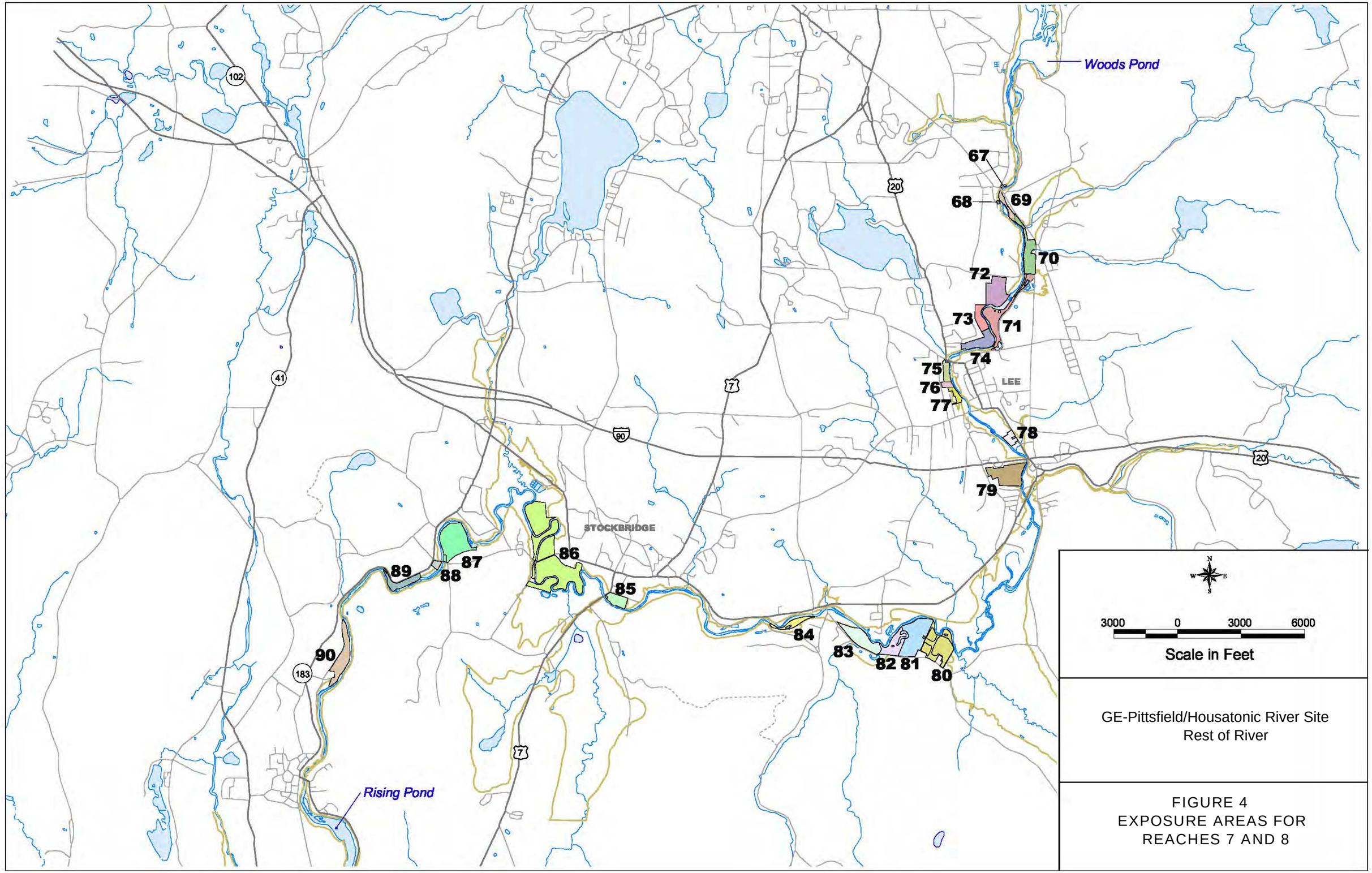


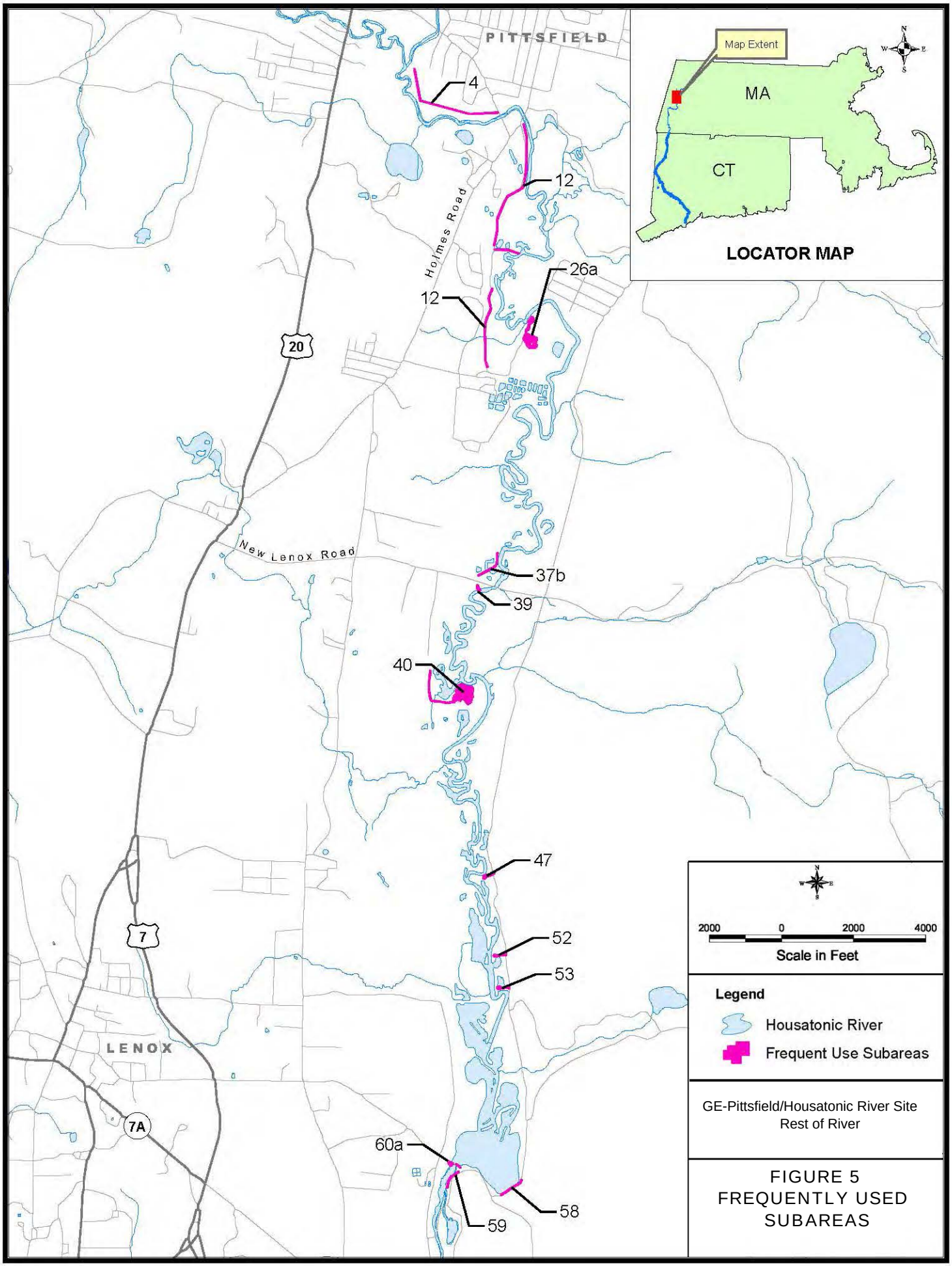
Figure 3A
Exposure Area 10
GE-Pittsfield/Housatonic River
Rest of River



GE-Pittsfield/Housatonic River Site
Rest of River

FIGURE 4
EXPOSURE AREAS FOR
REACHES 7 AND 8

| O:\GEpittfld\hh_ea\aprs_dc_hhra_Sept(_2004\r78_index.apr | index_7-2 | o:\gepittfld\hh_ea\plots_dc_hhra_sept(_2004\lin\fig7-2.eps | 10:07 AM, 2/1/2005 |


PITTSFIELD
LENOX
Holmes Road
New Lenox Road
20
7
7A
4
12
12
26a
37b
39
40
47
52
53
58
59
60a
Map Extent
MA
CT
LOCATOR MAP
2000
0
2000
4000
Scale in Feet
Legend
Housatonic River
Frequent Use Subareas
GE-Pittsfield/Housatonic River Site
Rest of River
FIGURE 5
FREQUENTLY USED
SUBAREAS

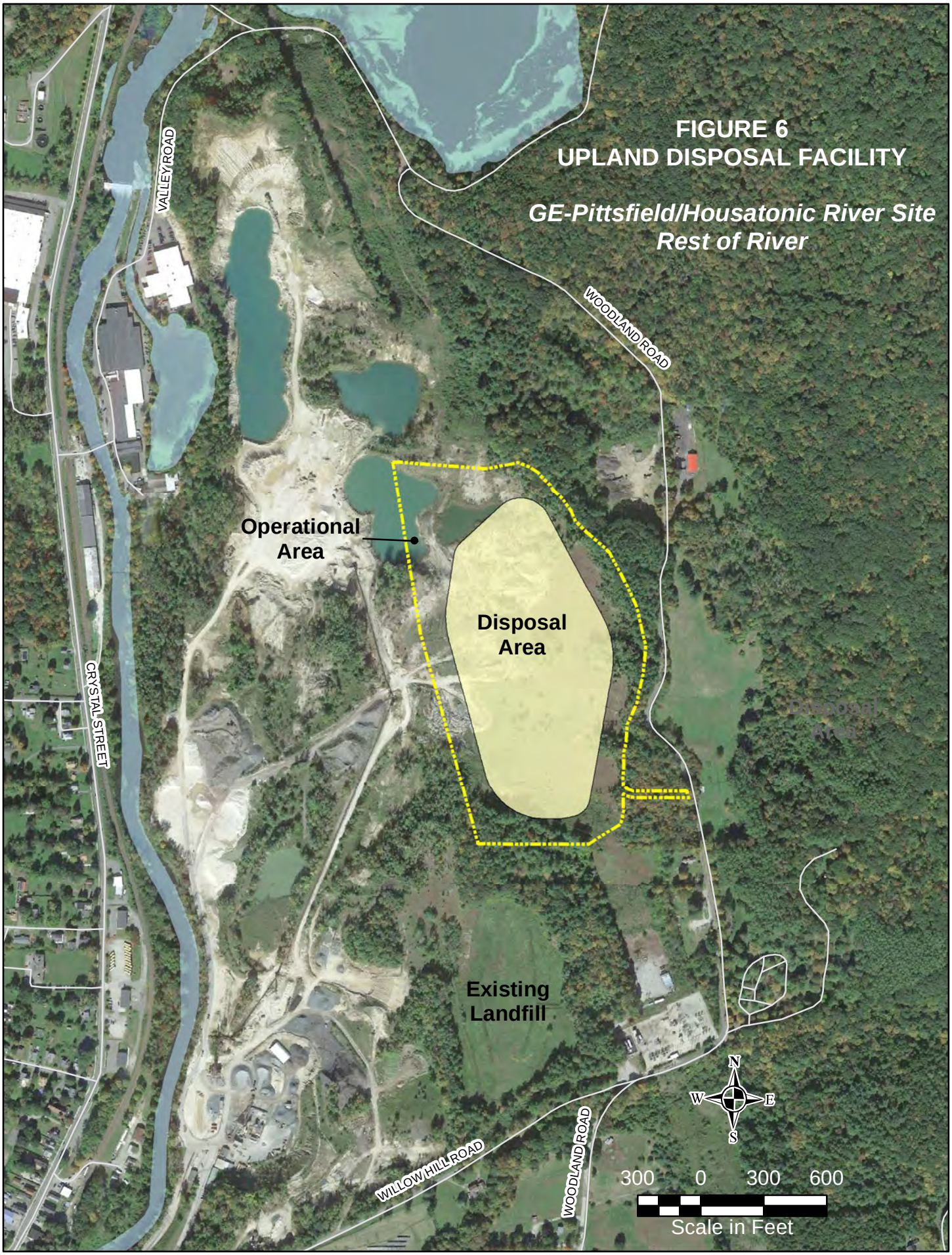


FIGURE 6
UPLAND DISPOSAL FACILITY
GE-Pittsfield/Housatonic River Site
Rest of River
VALLEY ROAD
WOODLAND ROAD
Operational Area
Disposal Area
Disposal Area
CRYSTAL STREET
Existing Landfill
N
W
E
S
WILLOW HILL ROAD
WOODLAND ROAD
300 0 300 600
Scale in Feet

ATTACHMENT A
GE FACILITY MAP

LEGEND

GE FACILITY

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND AND BOUCK ENGINEERS, P.C. P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.

0 500' 1000'
APPROXIMATE SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

GE FACILITY

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

ATTACHMENT A

L: ON=*, OFF=REF, OXBOWS, GEFACILITY2
P: STD-PCP/DL
8/10/99 SYR-54-GMS CBM
20140002/20140SM1.DWG

ATTACHMENT B
MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE CORE HABITAT AREA FIGURES, HOUSATONIC RIVER PRIMARY STUDY AREA (PSA), AND JULY 31, 2012 LETTER FROM MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

July 31, 2012

Robert G. Cianciarulo, Chief
Massachusetts Superfund Section
Office of Site Remediation and Restoration
EPA New England (OSRR-07-01)
5 Post Office Square
Boston, MA 02109-3912

Re: Housatonic River, Core Habitat Areas in the Primary Study Area

Dear Mr. Cianciarulo:

As you are aware, the states of Massachusetts and Connecticut have been working cooperatively for the last several months to discuss potential approaches to clean up the Rest of River portion of the GE Housatonic site. These discussions have focused, in part, on the need to address the risks from polychlorinated biphenyls (PCBs) to humans, fish, and wildlife while avoiding, mitigating or minimizing the impacts of the cleanup on the unique ecological character of the Housatonic River. Minimizing impacts to habitat and, in particular, species listed pursuant to the Massachusetts Endangered Species Act, M.G.L. c. 131A ("MESA"), and 321 CMR 10.00 (the "MESA Regulations") presents unique challenges as almost the entire Primary Study Area (PSA) is mapped as Priority Habitat for state-listed species (for a description of Priority Habitat and its regulatory function please see: http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm. Therefore, in order to help identify the most important areas for habitat protection, as well as habitats and species that might be particularly sensitive to impacts from PCB remediation activities, the Massachusetts Division of Fisheries and Wildlife ("DFW") developed maps of "Core Habitat Areas." The purpose of this letter is to provide an overview of the approach we used to identify the Core Areas.

As part of our Priority Habitat mapping process, taxonomic experts from DFW's Natural Heritage & Endangered Species Program ("NHESP") routinely delineate habitat for each state-listed species, based on actual field-documented records, or "occurrences." There are four types of Housatonic Core Areas. Core Areas 1, 2, and 3 represent subsets of the delineated state-listed species habitat found in the PSA. Core Area 4 represents a subset of the documented and potential vernal pool habitat in the PSA. Please refer to the enclosed maps dated May 21, 2012 which depict the locations of these Core Areas, entitled "Core Habitat Areas, Housatonic River Primary Study Area (PSA)", "Core Habitat Areas (Core Area 2), Housatonic River Primary Study Area (PSA)", and "Part of the Housatonic River Showing Primary Study Area, High Species Richness, and Vernal Pools".

Core Area 1 includes the highest quality habitat for species that are most likely to be adversely impacted by PCB remediation activities (Table 1). As can be seen in Table 1, most of these species are plants that are not mobile, and are very sensitive to the expected effects of soil remediation

Division of Fisheries and Wildlife
Field Headquarters, North Drive, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891
An Agency of the Department of Fish and Game

activities. Core Area 1 also includes habitat for one state-listed moth species that inhabits mature floodplain forest, one habitat area for the Jefferson's Salamander, and Triangle Floater mussel beds. Some of the plant species found in Core Area 1 are located in floodplain forest, which is not readily restorable and would take decades to return to its current state, if ever. Finally, Core 1 includes areas that are excellent examples of two rare natural communities—High Terrace Floodplain Forest and Black Ash Bur Oak Hemlock Swamp.

Core Area 2 includes the highest quality habitat for more mobile species that may be less vulnerable to remediation impacts, species where the habitat is likely to be somewhat more easily restored, and listed species that may be of a somewhat lower conservation concern, given their state-wide distribution (e.g. American Bittern; see Table 2). For example, the Mustard White is a Threatened butterfly species of significant conservation concern that uses a mix of natural areas along the river and old field habitat. It may be possible to remediate its habitat in phases, restoring and replacing host plants as the work is completed.

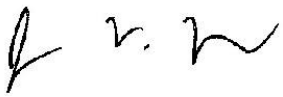
Core Area 3 includes those areas with dense concentrations of state-listed species. Specifically, Core Area 3 includes areas where Division biologists have delineated overlapping habitat for eight (8) or more state-listed species.

Core Area 4 includes all certified vernal pools in the PSA as well as additional potential vernal pool habitat areas which, based on information provided by GE and EPA, are likely to meet the Massachusetts criteria for vernal pool certification based on the presence of "obligate" vernal pool breeding amphibians see:
http://www.mass.gov/dfwele/dfw/nhesp/vernal_pools/vernal_pool_cert.htm.

These Core Areas played an important role during recent discussions between the EPA and the states of Massachusetts and Connecticut regarding potential remediation approaches to Rest of River. Consistent with the requirements of MESA and the MESA Regulations, the Core Areas are helping to guide efforts to avoid, minimize and mitigate impacts to state-listed species. Although a final MESA evaluation will not be completed until the remedy design phase, by focusing on the Core Areas, EPA and the Commonwealth believe that a framework has been established to achieve MESA permitting standards of assessing alternatives to both temporary and permanent impacts to state-listed species, and of limiting the impact to an insignificant portion of the local populations of affected species. See 321 CMR 10.23. For example, the parties focused on avoidance of some of the most important and sensitive rare species habitats in Core Area 1. Similarly, in Core Areas 2 and 3, avoidance of impacts when practical, careful consideration of PCB remediation methods and the sequence and timing of remediation activities, as well as after-the-fact habitat mitigation are all approaches that will assist in achieving the substantive requirements of MESA. Although the Core Areas play an important role in guiding avoidance and minimization of impacts to state-listed species, in some cases the "take" of state-listed species is likely to be unavoidable. In those cases, consistent with MESA's status as a location-specific applicable or relevant and appropriate requirement ("ARAR"), the Commonwealth will work with GE and the EPA to minimize impacts and to ensure that an adequate long-term net-benefit mitigation plan for the affected state-listed species is designed and implemented, as required by 321 CMR 10.23(2)(c).

If you have any questions about this letter, please don't hesitate to contact me.

Sincerely,



Jon Regosin, Ph.D.
Chief of Conservation Science
Natural Heritage & Endangered Species Program

Encl.: Table 1. Species and Natural Communities Included in Core Area 1 Delineation
Table 2. Species and Natural Communities Included in Core Area 2 Delineation

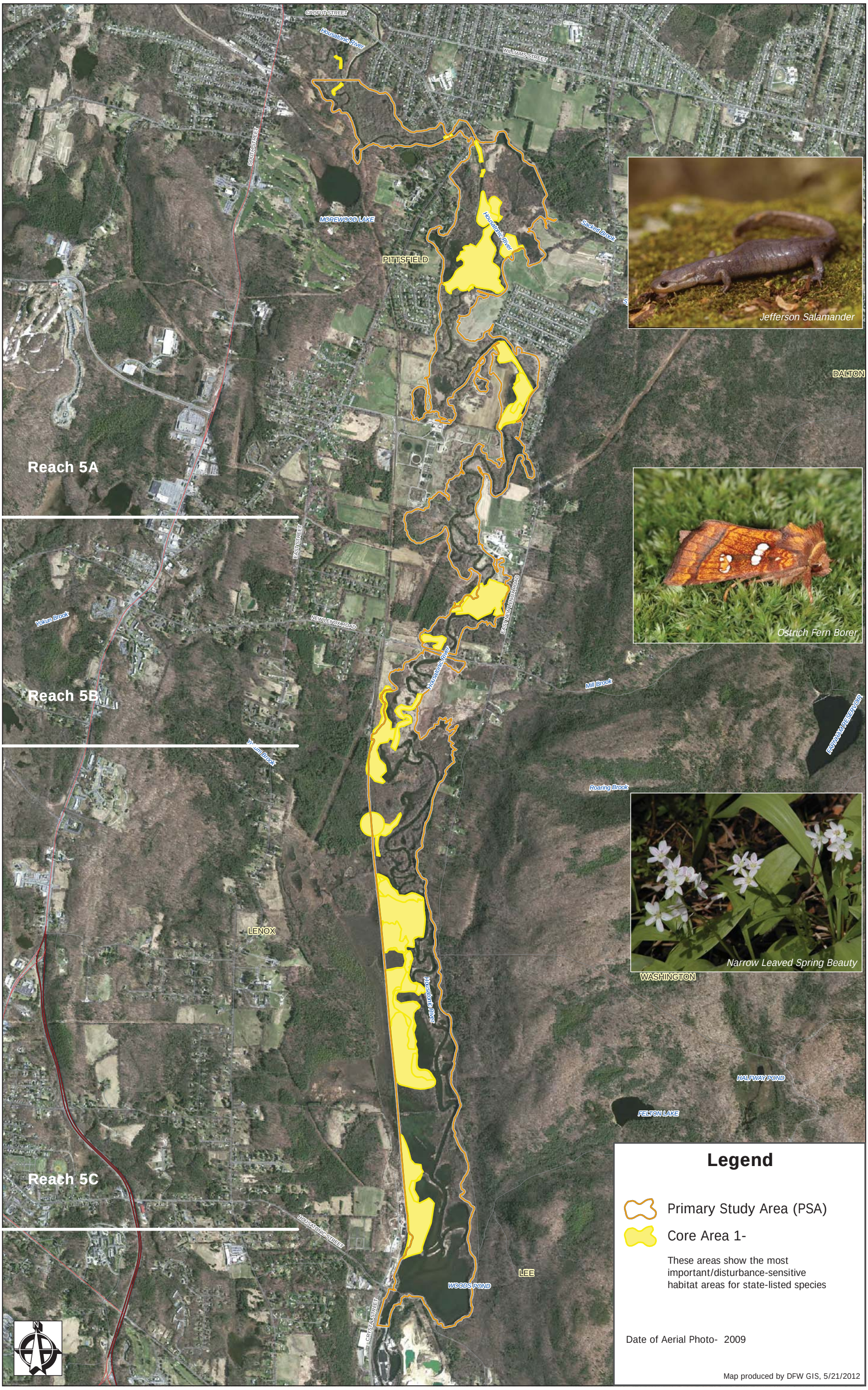
cc: Mark Tisa, MA Division of Fisheries & Wildlife
Richard Lehan, MA Department of Fish & Game
Mike Gorski, MA Dept. of Environmental Protection
Eva Tor, MA Dept. of Environmental Protection
Traci Iott, CT Dept. of Energy & Environmental Protection

TABLE 1. Species and Natural Communities Included in Core Area 1 Delineation

Common Name	Scientific Name	Taxonomic Group	MESA Status
Triangle Floater	*Alasmidonta undulata*	Mussel	No Longer Listed
Crooked-Stem Aster	*Symphyotrichum prenanthoides*	Plant	Special Concern
Wapato	*Sagittaria cuneata*	Plant	Threatened
Bristly Buttercup	*Ranunculus pensylvanicus*	Plant	Special Concern
Bur Oak	*Quercus macrocarpa*	Plant	Special Concern
Ostrich Fern Borer	*Papaipema sp. 2 nr. pterisii*	Butterflies & Moths	Special Concern
High-terrace floodplain forest		Natural Community	
Red Maple - Black Ash - Hemlock - Bur Oak Swamp		Natural Community	
Hairy Wild Rye	*Elymus villosus*	Plant	Endangered
Intermediate Spike Sedge	*Eleocharis intermedia*	Plant	Threatened
Narrow Leaved Spring Beauty	*Claytonia virginica*	Plant	Endangered
Tuckerman's Sedge	*Carex tuckermanii*	Plant	Endangered
Gray's Sedge	*Carex grayi*	Plant	Threatened
Jefferson Salamander	*Ambystoma jeffersonianum*	Amphibian	Special Concern

TABLE 2. Species and Natural Communities Included in Core Area 2 Delineation

Common Name	Scientific Name	Taxonomic Group	MESA Status
American Bittern	*Botaurus lentiginosus*	Bird	Endangered
Mustard White	*Pieris oleracea*	Butterfiles & Moths	Threatened
Wood Turtle	*Glyptemys insculpta*	Turtle	Special Concern
Common Moorhen	*Gallinula chloropus*	Bird	Special Concern



Legend

Primary Study Area (PSA)

Core Area 1-

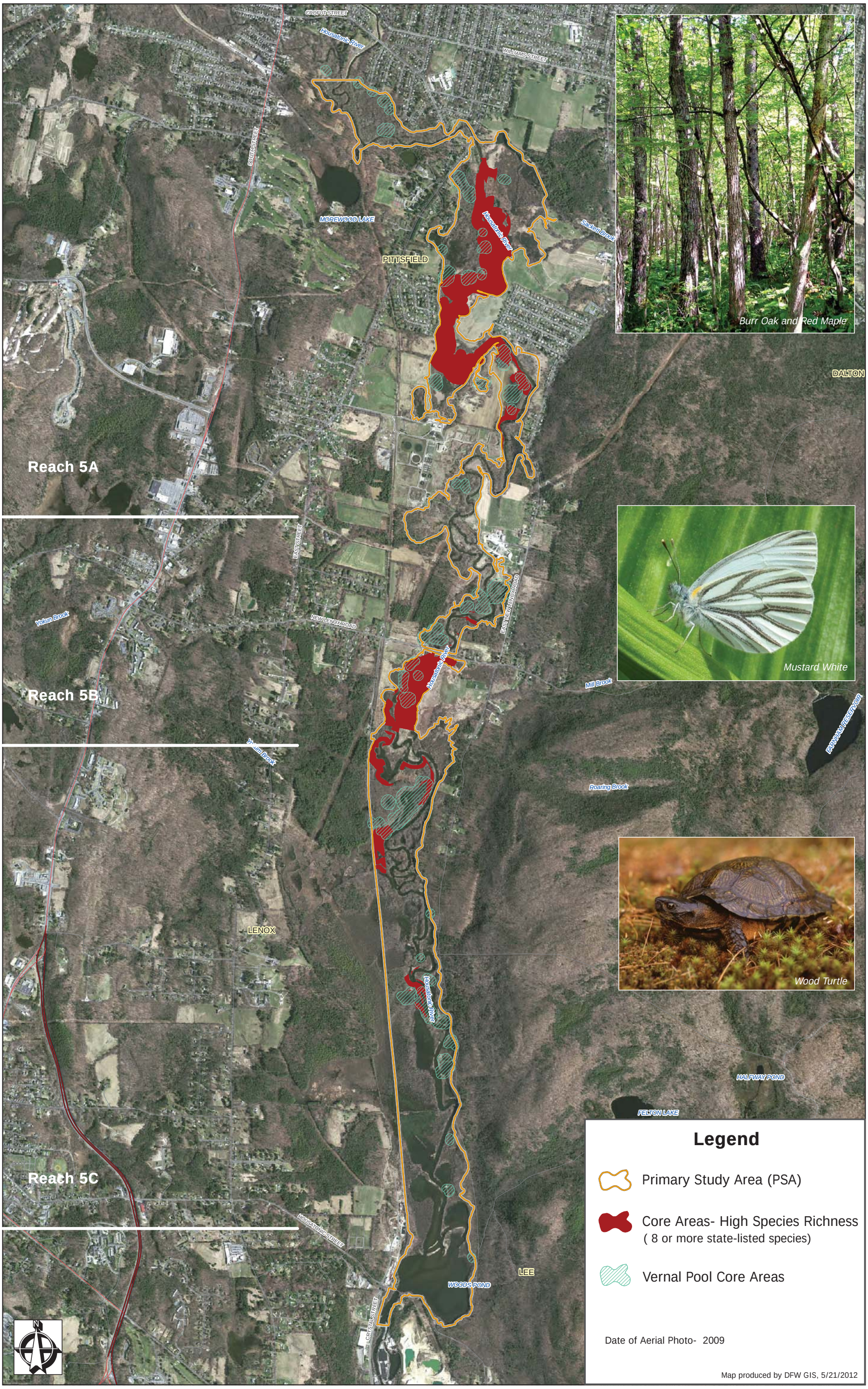
These areas show the most important/disturbance-sensitive habitat areas for state-listed species

Date of Aerial Photo- 2009

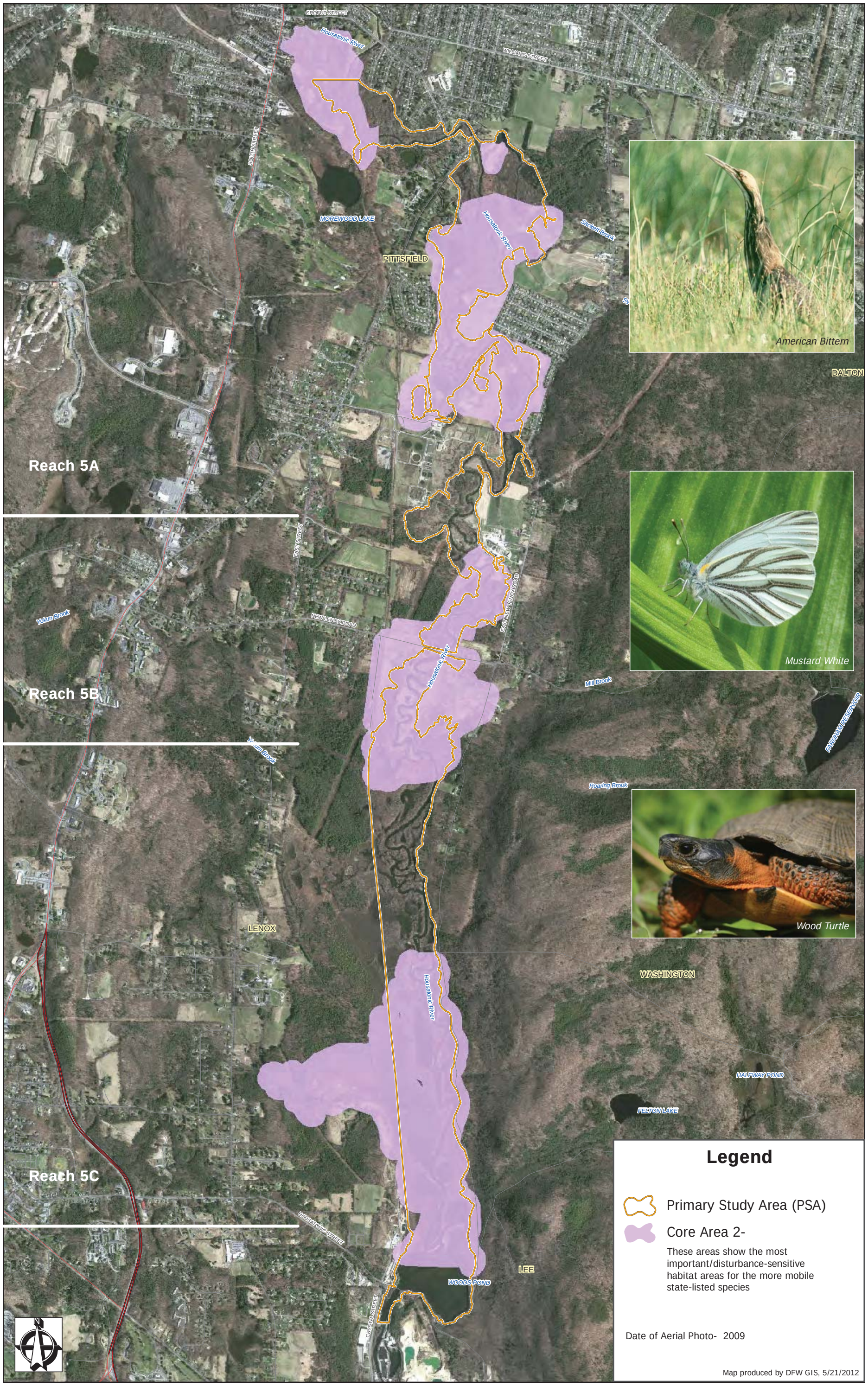
Map produced by DFW GIS, 5/21/2012

Core Habitat Areas
Housatonic River Primary Study Area (PSA)

1 0.5 0 1 Miles



Part of the Housatonic River
Showing Primary Study Area, High Species Richness, and Vernal Pools



Core Habitat Areas (Core Area 2)
Housatonic River Primary Study Area (PSA)

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
CHEMICAL-SPECIFIC ARARs				
Federal ARARs				
None				
State ARARs				
Connecticut Remediation Standards Regulations, Direct Exposure Criteria for Soil	Conn. Gen. Stat. 22a-133k-1 through k-3 Appendix A	Establishes soil cleanup standards, including those for residential use.	Potentially applicable	The Rest of River includes Reaches 10-16 in Connecticut. This Permit provides that under certain circumstances, response actions may be required to address risks posed by PCB-contaminated soil in Connecticut. The remedy[c] includes Performance Standards for residential use in Connecticut that are based upon the Residential Direct Exposure Criteria, including the Alternative Soil Criteria. Based on a site-specific risk evaluation consistent with the CT Remediation Standards Regulations, EPA has established a standard of 2 ppm as the Performance Standard for residential properties in Rest of River, including Connecticut.
To Be Considered				
Cancer Slope Factors (CSFs)	EPA Integrated Risk Information System	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to PCBs.	To be considered	CSFs have been used to compute the individual cancer risk resulting from exposure to carcinogens in site media.
Reference Doses (RfDs)	EPA Integrated Risk Information System	Guidance values used to evaluate the non-cancer hazards associated with exposure to PCBs.	To be considered	RfDs have been used to characterize human health risks due to non-carcinogens in site media.

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Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
PCBs: Cancer Dose Response Assessment and Application in Environmental Mixtures (EPA, 1996).	EPA/600/P-96/001F (National Center for Environmental Assessment, Office of Research and Development, September 1996)	Guidance describing EPA's reassessment regarding the carcinogenicity of PCBs.	To be considered	The guidance has been used in characterization of site risks.
Guidelines for Carcinogenic Risk Assessment (EPA, 2005)	EPA/630/P-03/001F (EPA Risk Assessment Forum, March 2005)	Framework and guidelines for assessing potential cancer risks from exposure to pollutants and other environmental agents.	To be considered	Guidelines have been used in assessing risks.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (EPA Risk Assessment Forum, March 2005)	Guidance on issues related to assessing cancer risks associated with early-life exposures, including an adjustment for carcinogens acting through a mutagenic mode of action.	To be considered	Guidance has been used in assessing risks.
Massachusetts Fish Consumption Advisory	Massachusetts Department of Public Health, Freshwater Fish Consumption Advisory List (2007)	Advises that the public should not consume any fish from the Housatonic River from Dalton to Sheffield due to PCBs; also includes frogs and turtles.	To be considered	This advisory will be considered in reference to biota consumption and actions to reduce fish consumption risks, including institutional controls.
Massachusetts Waterfowl Consumption Advisory	Massachusetts Department of Public Health, Provisional Waterfowl Consumption Advisory (1999)	Advises that the public should avoid eating all mallards and wood ducks from the Housatonic River and its impoundments from Pittsfield to Rising Pond.	To be considered	This advisory will be considered in reference to waterfowl consumption and actions to reduce waterfowl consumption risks, including institutional controls.

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Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Connecticut Fish Consumption Advisory	Connecticut Department of Public Health (CDPH), 2010 Advisory for Eating Fish from Connecticut Water bodies	Establishes advisories on consuming fish from the Housatonic River in Connecticut (above Derby Dam), including Lakes Lillinonah, Zoar and Housatonic, due to PCBs in fish. Advisories vary by species, location and group of consumers, ranging from "do not eat" to "one meal per week."	To be considered	This advisory will be considered in reference to fish consumption and actions to reduce fish consumption risks, including institutional controls.
LOCATION-SPECIFIC ARARs				
Federal ARARs				
Clean Water Act – Section 404 and implementing regulations	33 USC 1344 33 CFR Parts 320-323, 325, 332 (ACOE) 40 CFR Part 230 (EPA)	Under these requirements, no activity that adversely affects a wetland, including vernal pools, shall be permitted if a practicable alternative with less adverse effect on the aquatic ecosystem is available; a discharge cannot cause or contribute, after consideration of disposal site dilution and dispersion, to violation of any applicable water quality standard, violate an applicable toxic effluent standard, jeopardize existence of endangered or threatened species; contribute to significant degradation of waters of the U.S. Discharger must take appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem. Mitigation/restoration required for unavoidable impacts to resources.	Applicable	The remedy is designed to reduce human health and environmental risks posed by PCBs, and includes actions to excavate riverbed sediments, bank soils and Floodplain soils, with backfilling and capping. The remedy will include excavation technology and multiple engineering controls to minimize resuspension of any PCB-contaminated water, including any from wetlands. The remedy will proceed generally from upstream to downstream, with capping to follow in parts of the River. Any remedy activities that will alter wetlands, including excavation of contaminated wetland soils and sediments, backfilling and capping, will be conducted in accordance with these standards. (For purposes of this Attachment C, compliance with ARARs or standards refers to compliance with the substantive requirements, criteria, or limitations of each provision). There is no practicable alternative with lesser effects on the aquatic ecosystem. The remedy will not cause or contribute to violation of any applicable water quality standard, violate an applicable toxic effluent standard, jeopardize existence of endangered or threatened species; or contribute to significant degradation of waters of the U.S.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
				Implementation of the remedy will include appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem. Mitigation/restoration will be conducted consistent with these regulations.
Floodplain Management and Protection of Wetlands	44 CFR Part 9	Regulation sets forth policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Relevant and appropriate	The remedy includes actions, including excavation and capping activities, to reduce human health and environmental risks in wetlands and the floodplain. Executive Orders will be implemented and enforced consistent with the policy, procedure and responsibilities stated in these regulations.
Rivers and Harbors Act of 1899, Section 10	33 USC 403	U.S. Army Corps of Engineers approval is generally required to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of the channel of any navigable water in the U.S.	Applicable	The remedy includes excavation and filling of the Housatonic River, and so may alter or modify navigable waters as provided under the Act. Any remedy activities subject to this Act will comply with any substantive requirements of this provision. Remedy will be coordinated with the U.S. Army Corps of Engineers.
Fish and Wildlife Coordination Act	16 U.S.C. 662 et seq.	Sets forth requirements related to federal actions that may modify a water body.	Applicable	This remedy may modify a water body as provided under the Act. Any remedy activities subject to this Act will comply with any substantive requirements.
Resource Conservation and Recovery Act (RCRA) requirements for hazardous waste facilities in floodplains	40 CFR 264.1(j)(7) 40 CFR 264.18(b)	Remediation waste management sites must be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood, unless procedures are in effect to have waste removed safely before flood waters reach the facility or no adverse effects on human health or the environment will result if washout occurs.	Potentially relevant and appropriate	The remedy does not include disposal pursuant to these regulations, but to the extent that these materials are removed from the Area of Contamination and temporary movement of waste (stockpiling) during remediation occurs, measures will be taken to prevent washout.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
National Historic Preservation Act and regulations	54 USC 300101 et seq. 36 CFR Part 800	A federal agency must take into account the project's effect on properties included or eligible for inclusion in the National Register of Historic Places.	Applicable	If this remedy affects historic properties/structures subject to these requirements, activities will be coordinated with the state, tribal and federal authorities and conducted in accordance with the substantive requirements of these regulations.
Archaeological and Historic Preservation Act	54 U.S.C. 312501 et seq.	When a Federal agency finds, or is notified, that its activities in connection with a Federal construction project may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, such agency shall notify state, tribal or federal authorities. Such agency may request state, tribal or federal authorities to undertake the preservation of such data or it may undertake such activities. If the state, tribal or federal authorities determine that such data is significant and is being or may be irrevocably lost or destroyed, it is to conduct a survey and other investigation of the areas which are or may be affected and recover and preserve such data which are not being, but should be, recovered and preserved in the public interest.	Applicable	If during remedial design or remedial action, it is determined that this remedy may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archaeological data, EPA will notify state, tribal or federal authorities and comply with the substantive requirements in this statute.
Executive Order 11988 (Floodplain Management)	Executive Order	Federal agencies are required to avoid impacts associated with the occupancy and modification of a floodplain and avoid support of a floodplain development whenever there is a practicable alternative.	To be considered	In the remedy, activities will be performed in the floodplain. All activities will be conducted to ensure that they do not result in occupancy and modification of the floodplain. There is no practicable alternative to remedial activities in the floodplain; the remedy is designed to minimize harm to or within the floodplain.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Executive Order 11990 (Protection of Wetlands)	Executive Order	Federal agencies are required to avoid adversely impacting wetlands unless there is no practicable alternative and the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.	To be considered	Activities subject to this Executive Order will be conducted in accordance with the substantive requirements of these standards. There is no practicable alternative to remediation activities in the wetlands; the remedy is designed to minimize harm to wetlands.
Endangered Species Act and Regulations	16 USC 1536(a)-(d) 50 CFR Part 402, Subparts A&B 50 CFR 17.	Must identify whether threatened or endangered (T&E) species or critical habitat is affected by proposed action, or take mitigation measures so that action does not affect species/habitat.	Applicable	These provisions will be complied with in regard to federally-listed threatened or endangered species and their critical habitat.
State ARARs				
Massachusetts Waterways Law and Regulations	MGL Ch. 91 310 CMR 9.00, including 9.40.	Regulates construction, placement, excavation, alteration, removal or use of fill or structures in waterways. Among the requirements is 310 CMR 9.40, Standards for Dredging and Dredged Material Disposal, which includes restrictions on improvement dredging.	Applicable	This remedy includes construction, placement, excavation, alteration, removal and use activities in the Housatonic River. Except as otherwise provided herein, measures undertaken will meet the substantive environmental standards and limit impacts. Portions of the remedy in the River will take place within the ACEC. If the dredging in the ACEC is governed by 310 CMR 9.40, the dredging is permitted as an Ecological Restoration Project. If it is deemed to not be an Ecological Restoration Project, EPA reiterates the waiver in the 2016 Permit in which EPA, in consultation with the Commonwealth, waived pursuant to CERCLA 121(d)(4)(C), the requirements of 310 CMR 9.40 that prohibit dredging in an ACEC.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Clean Water Act – Water Quality Certification Regulations	314 CMR 9.00 et seq., including 9.06-9.07	For discharge of dredged or fill material, criteria at 9.06 include, without limitation, the following: (a) no discharge is permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences; (b) no discharge is permitted unless appropriate and practicable steps have been taken which will avoid and minimize potential adverse impacts to bordering or isolated vegetated wetlands or land under water; (c) no discharge is permitted to Outstanding Resource Waters, except as specified in 9.06(3); (d) discharge to certified Vernal Pools requires a demonstration per 9.08; (e) no discharge is permitted for the impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation; (f) stormwater is to be controlled with best management practices; and (g) no discharge shall be permitted in rare circumstances where the activity will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters.	Applicable	The remedy includes placement of clean fill in the River, riverbank and floodplain, following excavation/dredging, as well as the application of a sediment amendment, such as activated carbon, to Vernal Pools, or in the alternative, excavation of Vernal Pools. All activities will be conducted in accordance with these regulations, in particular, without limitation: There is no practicable alternative to the remedy which would have less adverse impact on the aquatic ecosystem; The remedy includes activities to avoid and minimize potential adverse impacts to bordering or isolated vegetated wetlands or land under water; Any discharge to Outstanding Resource Waters (certified Vernal Pool) would satisfy the substantive requirements of 9.08 because all reasonable measures will be taken to avoid, minimize and mitigate adverse effect on the environment and the remedy is justified by an overriding public interest. Remedial work that may affect specified habitat sites of Rare Species will be carried out in accordance with the MESA ARAR requirement for a Conservation and Management Plan. Therefore, the remedy will not necessitate a waiver from the prohibition of 9.06(2). There will not be any discharge of dredged or fill material for impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation within Waters of the United States or the Commonwealth. The remedy will use best management practices to control stormwater. The remedy will not include activities that result in substantial adverse impacts to the physical, chemical or biological integrity of surface waters.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
		For dredging and dredged material management, criteria at 9.07 include, without limitation, the following: (a) no dredging is allowed if there is a practicable alternative that would have less impact on the aquatic ecosystem, no dredging is permitted unless appropriate and practicable steps have been taken to avoid, minimize or mitigate adverse effects on land under water, and no dredging is allowed which will have adverse effect on specified habitat sites of rare species except under certain conditions; (b) dredging and dredged material management must be conducted to ensure protection of human health, public safety, public welfare and the environment,; (c) dredged material shall not be disposed if a feasible alternative exists that involves the reuse, recycling, or contaminant destruction and/or detoxification; (d) all dredged material management activities must comply with 314 CMR 9.00 and other statutes and regulations; (e) dredged material placed on or in the land at upland locations are subject to release notification requirements and thresholds; (f) dredging not permitted for impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation, or in Outstanding		The remedy includes excavation/dredging of river sediments, and excavation of bank and floodplain soils. The remedy also includes the application of a sediment amendment, such as activated carbon, to Vernal Pools, or in the alternative, excavation of Vernal Pools. All activities will be conducted in accordance with these regulations, in particular, without limitation: There is no practicable alternative to the remedy which would have less adverse impact on the aquatic ecosystem. The remedy includes appropriate and practicable steps to avoid, minimize or mitigate adverse effects on land under water. Remedial work that may affect specified habitat sites of Rare Species will be carried out in accordance with the MESA ARAR requirement for a Conservation and Management Plan. Therefore, the remedy will not necessitate a waiver from the prohibition of 9.07(1)(a). Dredging in the remedy will be conducted in a manner that ensures protection of human health, public safety, public welfare and the environment. There is no feasible alternative to the disposal of dredged material involving reuse, recycling, or contaminant destruction and/or detoxification. All dredged material management activities will comply with 314 CMR 9.00 and other pertinent statutes and regulations. Dredged material placed on the land at upland locations will comply with pertinent thresholds and requirements. Implementation of the remedy will meet the requirements for an Intermediate Facility in 314 CMR 9.07(4) because the

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
		Resource Waters; dredging may be permitted to manage stormwater for flood control purposes if there is no practicable alternative and best management practices are implemented; (g) no dredging is permitted in rare circumstances where the activity will result in substantial adverse impacts to the physical, chemical, or biological integrity of waters; (h) no dredging is permitted in Outstanding Resource Waters.		remedy will be designed and implemented so there are no permanent adverse impacts on the ACEC. Any dredging for stormwater detention or management purposes would be conducted per the requirements. Any dredging in Outstanding Resource Waters (certified Vernal Pool) would satisfy the substantive requirements of 9.08 because all reasonable measures will be taken to avoid, minimize and mitigate adverse effect on the environment and the remedy is justified by an overriding public interest. The remedy does not include dredging where the activity will result in substantial adverse impacts to the physical, chemical, or biological integrity of waters.
Massachusetts Wetlands Protection Act and Regulations	MGL c. 131, section 40 310 CMR 10.00, including 10.53	These requirements govern removal, dredging, filling or altering of banks, riverfront areas, inland wetlands, land subject to flooding and other areas, including provisions on limited projects. Provisions include 10.53(3), which authorizes certain projects as "limited projects", including, in 10.53(3)(q), responses to a release or threat of release of oil and/or hazardous materials in accordance with the Massachusetts Contingency Plan (MCP), where there is no practicable alternative consistent with the MCP and that would be less damaging to resource areas, and which avoids or minimizes impacts to resources, including meeting specific standards to the maximum extent practicable.	Applicable	Any remedy activities that remove, dredge, fill, or alter such areas will be conducted in accordance with these standards. The remedy, to be implemented as a CERCLA response action, is in accordance with the MCP, has no practicable alternative consistent with the MCP that would be less damaging to resource areas, and avoids or minimizes impacts to resource areas, including meeting specific standards to the maximum extent practicable, and thus meets the standards for a "limited project" under 10.53(3)(q). Remedial work that may affect specified habitat sites of Rare Species will be carried out in accordance with the MESA ARAR requirement for a Conservation and Management Plan. Therefore, the remedy will not necessitate a waiver from the prohibition in 10.53(3).

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SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Dam Safety Standards	302 CMR 10.00	Regulations govern design and construction of new and existing dams, and removal of existing dams, and inspection of dams.	Applicable	The remedy includes provisions for inspection, operation and maintenance of dams, removal of dams, and management of materials generated during work on, or removal of, a dam. Additionally, the remedy will comply with these regulations for Massachusetts dams in the area of remedy activity.
Massachusetts Site Suitability Criteria	310 CMR 16.40(3),(4)	Site suitability criteria for solid waste facilities, including facility-specific and general site suitability criteria.	Potentially applicable to the temporary management of excavated materials; potentially applicable or relevant and appropriate for Upland Disposal Facility.	The remedy includes, among other components, the excavation of PCB-contaminated soil and sediment and the off-site disposal of at least 100,000 cubic yards of the PCB-contaminated material, including all PCB material that averages greater than or equal to 50 ppm (as determined by Attachment E to the Permit) at existing licensed facilities approved to receive such material, and the on-site disposal at the Upland Disposal Facility of material averaging less than 50 ppm PCBs. Portions of the remedy will be implemented in the ACEC, or in a Resource Area or Riverfront Area. As provided in Attachment D to the Permit, PCB-contaminated sediments and soils in the Rest of River are regulated for cleanup and disposal as PCB-remediation waste under 40 C.F.R. Part 761. For the portion of the remedy involving sediments and soils with PCB concentrations that average less than 50 ppm (see Attachment E to the Permit), siting standards in 310 CMR 16 are potentially relevant and appropriate. EPA believes that the remedy can comply with all substantive provisions of 310 CMR 16 except for the provisions of 310 CMR 16.40(4)(d). For any provision of 310 CMR 16, to the extent that they are deemed to be an ARAR but cannot be met at the Upland Disposal Facility, EPA determines that compliance would pose a greater risk to human health and the environment and accordingly, EPA waives the provisions pursuant to CERCLA 121(d)(4)(B) (in this Attachment C, references to CERCLA 121(d)(4) include 40 C.F.R. 300.430(f)(1)(ii)(C)).

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
				For each area in which solid waste may be disposed of on-site during remedy implementation, including those within the ACEC or Resource Area or Riverfront Area, the remedy includes provisions for restoration of the disposal facility. To the extent: 1. The materials disposed of on-site during implementation of the remedy constitute solid waste under this regulation; and 2. The locations for disposal of the materials are within the ACEC (or, the locations are outside but adjacent to the ACEC and such locations fail to protect the outstanding resources of the ACEC) or in a Resource Area or Riverfront Area; the requirements are not appropriate for the Upland Disposal Facility because compliance will create greater risk to human health and the environment than implementation of the remedy set forth in this Permit given the already damaged and altered area surrounding the Upland Disposal Facility location, the existing contamination from current industrial uses at or near the Upland Disposal Facility location, the multiple protectiveness safeguards built in to the design of the Upland Disposal Facility, the risks inherent to the disposal alternatives besides the Upland Disposal Facility, and the benefits of the proposed remedy. However, if the provisions of 310 CMR 16.40(4)(d) are deemed to be ARARs, EPA considers as waived, pursuant to CERCLA 121(d)(4)(B), the requirements of 16.40 that prohibit or restrict such disposal locations during implementation of the remedy. For the provisions at 16.40(4)(d), the remedy portions in the ACEC (or, at locations outside but adjacent to the ACEC) or at a Resource Area or Riverfront Area may necessarily include temporary management of material excavated during implementation prior to disposal. Such temporary

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
				management includes, without limitation, temporary stockpiling or storage of materials, and the potential inclusion of locations related to railroad transport of materials excavated during implementation of the remedy. To the extent: 1. the provisions of 16.40 apply to the temporary management of materials during implementation of the remedy after excavation and prior to disposal; 2. the materials temporarily managed on-site during implementation of the remedy constitute solid waste under this regulation; and 3. the locations for management of the materials are within the ACEC (or, the locations are outside but adjacent to the ACEC and such locations fail to protect the outstanding resources of the ACEC) or in a Resource Area or Riverfront Area: EPA, in consultation with the Commonwealth, considers as waived, pursuant to CERCLA 121(d)(4)(C), the requirements of 16.40 that prohibit or restrict such temporary solid waste management locations during implementation of the remedy.
Massachusetts Facility Location Standards	310 CMR 30	Location standards for hazardous waste management facilities, including, but not limited to, Land Subject to Flooding and Areas of Critical Environmental Concern (ACEC). Criteria for proposed projects that name specific sites, including restrictions on projects in an ACEC or in wetlands.	Potentially applicable for the temporary management of excavated materials; not an ARAR for the Upland Disposal Facility.	The remedy does not include disposal of hazardous waste on-site so this provision does not apply to disposal of materials at the Upland Disposal Facility. The remedy includes, among other components, the excavation of PCB-contaminated soil and sediment and the off-site disposal of at least 100,000 cubic yards of the PCB-contaminated material, including all PCB material that averages greater than or equal to 50 ppm (as determined by Attachment E to the Permit) at existing licensed facilities approved to receive such material, and the on-site disposal of material averaging less than 50 ppm PCBs at the Upland Disposal Facility. Both the on-site and off-site disposal of PCBs are addressed pursuant to 40 C.F.R. 761.61(c) and EPA's revised risk-based determination in Attachment D of this Permit.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
				For disposal of material on-site, to the extent any material averaging less than 50 ppm is deemed to be Massachusetts hazardous waste solely because of the presence of PCBs, EPA has determined that the requirements are not appropriate. However, if any provision of 310 CMR 30 is deemed to be an ARAR, EPA waives it pursuant to CERCLA 121(d)(4)(B) because compliance with the prohibition of disposal at the Upland Disposal Facility would pose a greater risk to human health and the environment than the proposed remedy, given the already damaged and altered area surrounding the Upland Disposal Facility location, the existing contamination from current industrial uses at or near the Upland Disposal Facility location, the multiple protectiveness safeguards built in to the design of the Upland Disposal Facility, the risks inherent to the disposal alternatives besides the Upland Disposal Facility, and the benefits of the proposed remedy. The remedy portions in the ACEC may necessarily include temporary management of material excavated during implementation prior to disposal. Such temporary management includes, without limitation, temporary stockpiling or accumulation of materials, and the potential inclusion of locations related to railroad transport of materials excavated during implementation of the remedy. For each area in which hazardous waste is temporarily managed during remedy implementation, including those within the ACEC, the remedy includes provisions for restoration of what is disturbed by the temporary management of materials, and for final disposition of materials through disposal.

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Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
				To the extent: 1. The provisions of 310 CMR 30 apply to the temporary management of materials during implementation of the remedy after excavation and prior to disposal; 2. The materials temporarily managed on-site during implementation of the remedy constitute hazardous waste under this regulation, and are not subject to any regulatory exemption such as 310 CMR 30.104(3)(f) exempting dredged materials; and 3. The locations for temporary management of the materials are within the ACEC (or, the locations are outside but adjacent to or in close proximity to the ACEC and such locations are not protective of the outstanding resources of the ACEC); EPA, in consultation with the Commonwealth, considers as waived, pursuant to CERCLA 121(d)(4)(C), the requirements of 310 CMR 30 that prohibit such temporary hazardous waste management locations during implementation of the remedy.
Massachusetts Historical Commission Act and Regulations	MGL c. 9, section 27C 950 CMR 71.07	If a project has an area of potential impact that could cause a change in the historical, architectural, archaeological, or cultural qualities of a property on the State Register of Historic Places, these provisions establish a process for notification, determination of adverse impact, and evaluation of alternatives to avoid, minimize or mitigate such impacts.	Relevant and appropriate	If such properties are present in the area of remedy activities, the remedy will comply with these requirements.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Endangered Species Act (MESA) and Regulations	MGL c. 131A 321 CMR 10.00, Parts I, II, and V. 321 CMR 10.00, Part IV	A proposed activity in mapped Priority Habitat for a state-listed rare, threatened, endangered species or species of special concern, or other area where such a species has occurred may not result in a "take" of such species, unless it has been authorized for conservation and management purposes that provide a long-term net benefit to the conservation of the affected state-listed species. A conservation and management permit may be issued provided an adequate assessment of alternatives to both temporary and permanent impacts to State-listed species has taken place, an insignificant portion of the local population would be impacted by the project or activity, and an approved conservation and management plan is carried out that provides a long-term Net Benefit to the conservation of the State-listed species. Projects that will alter a designated Significant Habitat must be reviewed to ensure that they will not reduce the viability of the habitat to sustain an endangered or threatened species.	Applicable	The remedy will take place in priority habitat for one or more state-listed species. In implementing the remedy, impacts to state-listed species and their habitats will be avoided or minimized wherever possible. The processes outlined as part of the remedy for work in Core Habitat areas were developed in consultation with the Commonwealth and will satisfy these requirements. To the extent that unavoidable impacts result in a take of state-listed species, EPA would follow the regulatory requirements with respect to implementing a conservation and management plan providing for a long-term net benefit to the affected state-listed species. In a July 31, 2012 letter to EPA, the MA National Heritage and Endangered Species Program identified those state-listed species potentially affected in the project area. Note that since that date, Massachusetts has delisted particular species; in design and implementation of the remedy, EPA, in consultation with MA, will use the then-current listing of State-listed species. There are no designated Significant Habitats in the remedy area. To the extent that a Significant Habitat is designated in the remedy area, this provision will be complied with.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Area of Critical Environmental Concern (ACEC)	301 CMR 12.11(1)(c)	Provides for establishment of Areas of Critical Environmental Concern in the State. ACEC designation affects other state laws and regulations.	Relevant and appropriate	The ACEC regulations pertain to State agency actions, and are not applicable to the federal EPA action. However, the remedy complies with the substantive requirements of 301 CMR 12.11(1)(c), which may be relevant and appropriate, by advancing the values of 301 CMR 12.11(1)(c), while avoiding adverse effects on identified values in section 12.11(1)(c).
Connecticut Dam Safety Regulations	CGS 22a-401 to 22a-411 Conn. Agencies Regs. Section 22a-409-2.	Regulations govern design and construction of new and existing dams, and removal of existing dams, and inspection of dams.	Potentially applicable	The remedy includes provisions for management of materials generated during work on, or removal of, a dam. To the extent that these regulations are applicable to a Connecticut dam in the area of remedy activity, the remedy will comply with these regulations.
Connecticut Inland Wetlands and Watercourses Act and regulations	CGS 22a-36 et seq. Conn. Agencies Regs. Sec. 22a-39-4	Permit required for activities that remove material from inland wetlands or watercourses; Connecticut Department of Energy and Environmental Protection (CT DEEP) is allowed to issue general permit for minor activities with minimal environmental impacts, defined to include monitoring and sampling.	Potentially applicable	To the extent that the remedy includes activity in Connecticut that removes material from inland wetlands or watercourses, the remedy will comply with this provision.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Connecticut Endangered Species Act	Conn. Gen. Stat. 26-303 through 26-316	Requires state agency to: (a) ensure that any action authorized or performed by it does not threaten the continued existence of a listed endangered or threatened species or result in destruction or adverse modification of habitat essential to such species, unless an exemption is granted; and (b) take all reasonable measures to mitigate any adverse impacts of the proposed action on such species or habitat. Prohibits "taking" of endangered or threatened species, except where State determines that a proposed action would not appreciably reduce likelihood of survival or recovery of the species.	Potentially applicable	To the extent that any remedy activity takes place that is subject to this statute, EPA will ensure that the remedy will comply with these regulations.
To Be Considered				
MassDEP Guidance	Dam Removal and the Wetland Regulations, 2007	Provides guidance on permitting issues and review considerations associated with dam removal projects, especially as it relates to the Massachusetts Wetlands Protection Act.	To be considered	The remedy now includes dam removal requirements. To the extent that this guidance is pertinent to a Massachusetts dam that is in the area of remedy activity, the remedy will consider this guidance.
Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Guidance	Dam Removal in Massachusetts: A Basic Guide for Project Proponents, 2007	Provides guidance through the initial conceptualization of a project, the feasibility studies, and the permitting process.	To be considered	The remedy now includes dam removal requirements. To the extent that this guidance is pertinent to a Massachusetts dam that is in the area of remedy activity, the remedy will consider this guidance.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Department of Fish and Game Guidance	Impounded Sediment and Dam Removal in Massachusetts: 2003	Provides guidance on a decision-making framework regarding dam removal and in-stream management options for impounded sediment.	To be considered	The remedy now includes dam removal requirements. To the extent that this guidance is pertinent to a Massachusetts dam in the area of remedy activity, the remedy will consider this guidance.
ACTION-SPECIFIC ARARs				
Federal ARARs				
Toxic Substances Control Act (TSCA) Regulations on Cleanup of PCB Remediation Waste	40 CFR 761.61(c)	Risk-based approval through a TSCA determination issued by EPA is pursuant to 40 CFR 761.61(c) and requires demonstration that cleanup method will not pose an unreasonable risk of injury to health or the environment.	Applicable	This Permit includes a revised TSCA risk-based determination issued by EPA as Attachment D ("TSCA Determination"). Both the on-site and off-site disposal of PCBs are addressed pursuant to the TSCA Determination. The TSCA Determination finds that the remedy will not pose an unreasonable risk of injury to health or the environment as long as the remedy complies with all of the conditions set out in the TSCA Determination.
TSCA Regulations on Storage of PCB Remediation Waste	40 CFR 761.50 40 CFR 761.65 40 CFR 761.61(c)	General and specific requirements for storage of PCB Remediation Waste. Regulations include specific provisions for storage of PCB Remediation Waste in piles at the cleanup site or site of generation for up to 180 days (761.65(c)(9)). Also allows for risk-based approval by EPA of alternate storage method (761.61(c)), based on demonstration that it will not pose an unreasonable risk of injury to health or the environment.	Applicable	The remedy will comply with these provisions.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
TSCA Regulations on Discharge of PCB-containing Water	40 CFR 761.50(a)(3)	Prohibits discharge of water containing PCBs to navigable waters unless PCB concentration is <3 mg/L or discharge is in accordance with NPDES discharge limits.	Applicable	Any discharge to navigable waters will comply with this provision.
TSCA Regulations on Decontamination	40 CFR 761.79	Establishes decontamination standards and procedures for removing PCBs from water, organic liquids, and various types of surfaces.	Applicable	To the extent the remedy involves decontamination activities, this provision will be complied with.
Clean Water Act and National Pollutant Discharge Elimination System (NPDES) Regulations	33 USC 1342 40 CFR 122 including, but not limited to 122.3(d) and 122.44(a) & (e) 40 CFR 125.1-125.3	These standards include that point source discharge must meet technology-based effluent limitations (including those based on best available technology for toxic and non-conventional pollutants and those based on best conventional technology for conventional pollutants) and effluent limitations and conditions necessary to meet state water quality standards.	Applicable	The remedy will include dewatering of sediments excavated from the River and wetland soils. However, at this stage, it has not been determined if water from the remedy, such as from dewatering or other processing of sediment and wetland soils will be then discharged into the River, or if the water will be transported to Permittee's water treatment plant in Pittsfield for treatment, or if another technique will be used. Additionally, under 40 CFR 122.3(d), EPA, consistent with its remediation in the 1.5 Mile Reach of the River, can establish discharge standards. If the remedy includes discharge into the River, the remedy will comply with these standards.
Clean Water Act – NPDES Regulations (stormwater discharges)	40 CFR 122.26(c)(1)(ii)(C) 40 CFR 122.44(k)	Best management practices (BMPs) must be employed to control pollutants in stormwater discharges during construction activities.	Applicable	These standards will be complied with during construction activities.
RCRA regulations on identification of Hazardous Waste	40 CFR 261	Establishes standards for identifying and listing hazardous waste under RCRA.	Potentially applicable	Under the remedy, testing of wastes subject to removal will take place consistent with these requirements during design/implementation of the remedy.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
RCRA regulations for Generators of Hazardous Waste	40 CFR 262.30-33	Pre-transportation requirements for generators of hazardous waste.	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these requirements.
RCRA regulations on less-than-90-day Accumulation of Hazardous Waste	40 CFR 262.34	Provides for on-site accumulation of hazardous waste in certain circumstances, provided compliance with other specified requirements.	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these requirements.
RCRA Hazardous Waste Management Facilities –General requirements.	40 CFR 264.1(j)	General requirements for hazardous waste management facilities (waste analysis, security, precautions regarding ignition or reaction of wastes, preventing washout of units).	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these requirements.
State ARARs				
Massachusetts Clean Waters Act – Water Quality Certification Regulations	314 CMR 9.01 -9.08	See Synopsis of Requirements in the Location-specific entry for this ARAR	Applicable	See Action(s) to be Taken to Achieve ARARs in the Location-specific entry for this ARAR.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Clean Water Act and Wetlands Protection Act – stormwater management standards	310 CMR 10.05(6)(k) 314 CMR 9.06(6)(a)	Projects subject to regulation under the Wetlands Protection Act or that involve discharge of dredged or fill material must incorporate stormwater BMPs to attenuate pollutants in stormwater discharges, as well as to provide a setback from receiving waters and wetlands, in accordance with 10 specified stormwater management standards.	Applicable	The remedy will comply with stormwater requirements.
Numeric Massachusetts Water Quality Criteria for PCBs – Massachusetts Surface Water Quality Standards	314 CMR 4.05(5)(e)	Freshwater chronic aquatic life criterion (based on protection of mink): 0.014 µg/L. Human Health criterion based on human consumption of water and organisms: 0.000064 µg/L.	Relevant and appropriate	The remedy activities to be conducted are designed to reduce human health and environmental risks posed by PCBs including not contributing to any exceedances of the Water Quality Criteria. The remedy includes, among other components, excavation and capping of PCB contamination from the riverbed, riverbanks, Floodplains and Backwaters. The remedy will include excavation technology and multiple engineering controls to minimize resuspension of any PCB-contaminated water. The freshwater chronic aquatic life criterion of 0.014 µg/L will be met by the remedy. Regarding the human health criterion based on human consumption of water and organisms of 0.000064 µg/L: in the 2016 Permit, EPA, in consultation with the Commonwealth, waived this criterion on the grounds that achievement of this ARAR is technically impracticable, given that based on current data, it is not predicted to be met by this or any sediment alternative in Massachusetts. To be protective of human health and the environment, as specified in this Permit, EPA is establishing alternative criteria (that are not ARARs) for this waived criterion.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Massachusetts Hazardous Waste Regulations on Identification and Listing of Hazardous Waste	310 CMR 30.100	Establishes criteria and lists for determining whether a waste is a hazardous waste under state law.	Applicable	Wastes subject to removal will be tested consistent with these requirements during design/implementation of the remedy.
Massachusetts hazardous waste regulations for generators	310 CMR 30.321-324	Pre-transport requirements for generators of hazardous waste	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these pre-transport requirements.
Massachusetts hazardous waste management – general requirements	310 CMR 30.513, 514, 524, 560	General requirements for hazardous waste management facilities	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these general requirements.
Massachusetts Hazardous Waste regulations - technical requirements for storage	310 CMR 602, 640, 580, 660.	Requirements related to storage of hazardous waste.	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and are moved out of the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with the substantive requirements of these regulations.
Massachusetts Air Pollution Control Regulations	310 CMR 7.00	These provisions regulate air emissions, dust, odor, and noise, among other things.	Applicable	Remedy will comply with these provisions.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
Connecticut Water Quality Standards for PCBs	Connecticut Water Quality Standards, Section 22a-426-1 to 22a-426-9	Freshwater chronic aquatic life criterion (based on protection of mink): 0.014 µg/L. Human health criterion based on human consumption of water and organisms: 0.000064 µg/L.	Relevant and appropriate	To the extent that remedy activities take place in a Connecticut waterway, such remedy activities will be conducted so as to not contribute to an exceedance of Water Quality Criteria. Remedy activities will contribute to the achievement of the State Water Quality Standards. Regarding the human health criterion based on human consumption of water and organisms of 0.000064 µg/L: In Connecticut, the remedy is intended to meet the standard. Current modeling shows the remedy will achieve attainment in at least 3 of the 4 impoundments. However, the results from the Connecticut model are very uncertain due to the empirical, semi-quantitative nature of the analyses. As such it is not possible to predict with certainty attainment or lack of attainment of the human health criterion based on human consumption of water and organisms of 0.000064 µg/L in Connecticut (Reaches 10-16). Thus, EPA, in consultation with Connecticut, does not believe that there is a basis to establish alternative standards at this time. In addition, this concentration (0.000064 µg/L) cannot be reliably measured using available analytical techniques. Monitoring, using appropriate analytical techniques and reporting levels, will be conducted to measure progress toward this standard over time throughout the Housatonic River in Connecticut.

ATTACHMENT C
SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Statute/Regulation	Citation[a]	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs[b]
To Be Considered				
TSCA PCB Spill Cleanup Policy	40 CFR Part 761, Subpart G	Policy used to determine adequacy of cleanup of spills resulting from the release of materials containing PCBs at concentration of 50 mg/kg or greater.	To be considered	To the extent that such a spill occurs in the remedy, this policy will be considered in the response.
EPA Contaminated Sediment Remediation Guidance	EPA-540-R-05-012 OSWER 9355.0-85 December 2005	Provides guidance on remediation of contaminated sediment sites.	To be considered	The guidance has been considered in remedy selection and will be considered in remedy implementation and operation and maintenance.
Clean Water Act, National Recommended Water Quality Criteria for PCBs	National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047, USEPA, Office of Water, Office of Science and Technology (Nov. 2002).	Freshwater chronic aquatic life criterion (based on protection of mink): 0.014 µg/L. Human health criterion based on human consumption of water and organisms: 0.000064 µg/L.	To be Considered	To be considered with respect to Action(s) to be Taken to Achieve ARARs in connection with Massachusetts and Connecticut Water Quality Standards.

a. The substantive requirements, including environmental performance standards, contained in the statutes, regulations, and other documents referenced in the column captioned "Citation" shall control to determine the requirements that must be met and the actions to achieve such requirements. Other references in the table that summarize the requirements of or action necessary to achieve ARARs are summary in nature, may not be all-inclusive, and are not controlling.

b. For purposes of this Attachment C, compliance with ARARs or standards refers to compliance with the substantive requirements, criteria, or limitations of each provision.

c. For purposes of this Attachment C, "remedy" includes the corrective measures, remedial design and remedial action activities, and operation and maintenance activities undertaken pursuant to this Permit.

ATTACHMENT D
TSCA 40 C.F.R. SECTION 761.61(C) DETERMINATION

ATTACHMENT D

TSCA 40 C.F.R. SECTION 761.61(C) DETERMINATION

PCB-contaminated sediments and soils in the Rest of River likely meet the definition of PCB remediation waste as defined under 40 C.F.R. Section 761.3 and thus are regulated for cleanup and disposal under 40 C.F.R. Part 761.

EPA's Rest of River administrative record available for public review includes extensive information on the nature of the contamination, location and extent of the contamination, the procedures used relative to sampling, and Human Health and Ecological Risk Assessments. The Rest of River cleanup plan is specified in the Permit. In accordance with the requirements under the Toxic Substances Control Act (TSCA) and 40 C.F.R. Section 761.61(c), and as supported by the Administrative Record for this matter, EPA has made a finding that the manner of sampling, storage, cleanup, and disposal of PCB-contaminated sediment and soil as set out in this Permit, including attainment of the Performance Standards and associated Corrective Measures to meet the Performance Standards, including Tables 1-4, will not result in an unreasonable risk of injury to human health or the environment as long as the following conditions are met:

- A combination of off-site disposal and disposal in an on-site Upland Disposal Facility will be used to manage contaminated sediment and floodplain soil removed as part of the cleanup.

- At least 100,000 cubic yards of contaminated sediment and Floodplain soil that is removed will be disposed of off-site at an existing TSCA-approved disposal facility or RCRA hazardous waste landfill or a landfill permitted by the receiving state to accept PCB remediation wastes, depending on the contaminant levels and waste classifications.

- The average concentrations of PCBs to be placed in the Upland Disposal Facility are estimated to be 20 to 25 milligrams per kilogram (or parts-per-million (ppm)). Segregation of the material will be based on sampling protocols that are also outlined in the Permit, including Attachment E.

- The Upland Disposal Facility design criteria outlined in the Permit include a double bottom liner (at least 15 feet above the seasonal high groundwater elevation), leachate collection and management, a groundwater monitoring network, and a multi-layer low permeability engineered cap/cover. The bottom liners and the cap material shall have a permeability equal or less than 1×10^{-7} cm/sec, a minimum thickness of 30 mils and be chemically compatible with PCBs. The Upland Disposal Facility will only accept materials that are part of the Rest of River cleanup.

- Several components of the Permit require construction of an Engineered Cap following sediment removal. Such Engineered Caps will be constructed in accordance with the Engineered Cap Performance Standards and design protocols identified in the Permit.

- Protocols, developed in accordance with TSCA, will be developed and maintained for the decontamination of all equipment used when handling TSCA-regulated material to ensure proper decontamination of equipment and to avoid mixing of TSCA-regulated material with non-TSCA material.

- The use of activated carbon or another amendment as part of Rest of River remediation will be implemented in accordance with the Permit to reduce the bioavailability of PCBs following remediation.

- Institutional Controls, O&M, and Periodic Reviews will be carried out as a component of the cleanup, both in the areas of sediment and Floodplain removal, in areas subject to Monitored Natural Recovery, and at the Upland Disposal Facility.

- Air monitoring and dust suppression measures for PCBs will be maintained until excavation and transport of PCB-contaminated soil and sediment, and capping and disposal of PCB-contaminated soil and sediment is complete.

- Temporarily stockpiled TSCA-regulated material will be bermed and properly covered to capture runoff in accordance with the requirements of §761.65. Runoff shall be collected and disposed of, as appropriate, in accordance with § 761.60 or § 761.79(b)(1), or as otherwise approved by EPA pursuant to the process outlined in this Permit.

- A financial assurance provision is incorporated into the remedy via the Consent Decree.

ATTACHMENT E
CRITERIA/METHODS APPLICABLE TO DISPOSAL OF MATERIAL EXCAVATED IN REST OF RIVER REMEDIAL ACTION

ATTACHMENT E

Criteria/Methods Applicable to Disposal of Material Excavated in Rest of River Remedial Action

1. For floodplains in each of the 90 Exposure Areas shown in Figure 4, to the extent that remediation is required in any given Exposure Area, GE will segregate and dispose of off-site (out-of-state) soils containing high concentrations so that the remaining floodplain soil to be disposed of in the Upland Disposal Facility averages less than 50 mg/kg PCBs. The process is further described as follows:

    - After additional data collection required by the 2016 Permit, the horizontal footprint and vertical removal depth (the volume) of soil that needs to be removed in each Exposure Area will be determined.

    - The volume-weighted average PCB concentration of all soil to be removed from each Exposure Area will be calculated (using the same PCB data set used to delineate the soil to be removed).

    - If the volume-weighted average PCB concentration in the soil to be removed equals or exceeds 50 mg/kg in an Exposure Area, the soil with the highest PCB concentrations (e.g., "hot spots") in the Exposure Area will be segregated, or separated out, for out-of-state disposal until the average concentration of the remainder of the soil to be removed in the Exposure Area decreases to less than 50 mg/kg for disposal at the Upland Disposal Facility.

2. For Reach 5A banks, GE will segregate and dispose of off-site (out-of-state) soils containing high concentrations so that the remaining Reach 5A bank soil to be disposed of in the Upland Disposal Facility has a volume-weighted average of less than 50 mg/kg PCBs. In calculating the volume-weighted average concentration of PCBs in Reach 5A riverbank soils for disposal purposes, the only soils that will be considered are soils to be removed from Reach 5A riverbanks.

3. GE will dispose of all riverbank and sediment from Reach 5B off-site (out-of-state), except in the following circumstances: If, pursuant to Section II.C. of the agreement, GE removes additional riverbank soil with PCB concentrations less than 50 mg/kg, this material may be disposed of in the Upland Disposal Facility.

4. For all sediment except for Reach 5B, GE will segregate and dispose of off-site (out-of-state) sediments containing high concentrations so that the remaining sediment to be disposed of in the Upland Disposal Facility averages 25 mg/kg PCBs or less on a reach or subreach basis as described below.

    - The 25 mg/kg average applies individually to: Reach 5A, Reach 5C, Woods Pond, Backwaters, Reach 7 Subreaches (Subreach 7B [Columbia Mill Impoundment], Subreach 7C [Eagle Mill Impoundment], Subreach 7E [Willow Mill Impoundment], Subreach 7G [Glendale Impoundment]), and Rising Pond. These reaches/subreaches are depicted in Figures 3 and 4. The segregation of sediment for Reach 5B is

described in item 3 above, which provides that all sediment removed from Reach 5B shall disposed of off-site (out-of-state).

- As described in the 2016 Permit, each subreach, and in some cases each reach, has its own Performance Standards to be achieved through sediment removal and capping or backfill. Following additional data collection, the area and amount of sediment to be removed to meet the Performance Standard will be determined. After the horizontal footprint and vertical removal depth are determined, the volume-weighted average PCB concentration of the sediment within that footprint will be calculated.

- If the volume-weighted average PCB concentration within a reach or subreach removal footprint exceeds 25 mg/kg, sediment with the highest PCB concentrations (e.g., "hot spots") will be segregated for out-of-state disposal until the average concentration of the remaining sediment to be removed from the reach or subreach decreases to 25 mg/kg or less for disposal at the Upland Disposal Facility.

- Relevant data from the RCRA Facility Investigation (RFI) and data collected pursuant to the 2016 Permit or Revised Final Permit will be used in determining average concentrations for comparison to the 25-mg/kg criterion for placement in the Upland Disposal Facility.

- EPA agrees to work with GE to design an appropriate transition and hybrid disposal averaging area in the Woods Pond Headwaters area between Reach 5C and Woods Pond.

5. In addition, for all sediment in reaches and subreaches, including backwaters, except for Reach 5B, GE will segregate and dispose of off-site (out-of-state) sediment that is represented by a 3-dimensional polygon associated with a single vertical core that has an average concentration greater than or equal to 100 mg/kg PCBs, as further described below:

   - GE will compare the 100 mg/kg criterion to the average concentration in each individual vertical core.

   - Vertical core polygons will be generated by a Thiessen polygon method. Thiessen polygon mapping involves the use of computer software to draw perpendicular bisector lines between adjacent sample locations to create two-dimensional polygon areas. The two-dimensional Thiessen polygon will be extended vertically to the depth of sediment removal to create a three-dimensional polygon.

   - The data used in this evaluation will be limited to, and representative of, the depth intervals that correspond to depth of removal associated with the location where the core was collected.

   - If sampling data, at a given vertical core location, consist of data from different depth intervals, the vertical PCB average concentration will be calculated as a depth-weighted average at that location.

- Vertical sediment cores will be of sufficient depth to characterize sediment PCB concentrations throughout the full vertical interval required to comply with the Performance Standards for each reach, subreach and backwater under the 2016 Permit or Revised Final Permit.

- If the vertical depth-weighted PCB average in a polygon is equal to or greater than 100 mg/kg, then all sediment associated with the vertical core polygon will be segregated and disposed of off-site (out-of-state).

- For all reaches except Subreaches 5A and 5C, relevant data from the RFI and additional data collected by GE pursuant to the 2016 Permit or Revised Final Permit, as applicable, will be used in determining these vertical depth-weighted core averages.

- Additional vertical core samples will be collected by GE pursuant to the 2016 Permit or Revised Final Permit, as applicable, in Reach 6 (Woods Pond) to supplement existing data and to fill in data gaps.

- For Reaches 5A and 5C, only data collected pursuant to the 2016 Permit or Revised Final Permit shall be used in this evaluation. Vertical core samples will be collected in 6-inch increments. The sampling will consist of three vertical cores per transect (left, center and right of the channel) with transects performed at a linear spacing of 250 linear feet of the river channel.

- Additional vertical sediment cores may be collected to further refine the areas where average sediment concentrations exceed 100 mg/kg and/or to assist in achieving the relevant Performance Standards in all reaches or subreaches.

- GE will submit sediment sampling plans to EPA for review and approval. These plans shall detail, at a minimum, the approach for collection of vertical sediment cores and the data analysis approach to determine compliance with the 100 mg/kg criterion.

6. GE will not dispose of material classified as federal RCRA hazardous waste, or free liquids, free product, or any intact drums, capacitors or containers, into the Upland Disposal Facility. GE can use relevant data from the RFI and apply the 20 times rule (i.e., dividing the concentration in the sample by 20 and comparing the result to certain threshold values described in 40 C.F.R. 261) to determine if there are compounds that could potentially exceed the Toxicity Characteristic Leaching Procedure (TCLP) testing requirements. GE can also use relevant data from EPA's 1.5-Mile Reach Removal Action (e.g., TCLP data and other RCRA Characteristic requirements, including ignitability, corrosivity and reactivity). If existing data are not sufficient to demonstrate that material will not contain RCRA hazardous waste, then GE will propose additional sampling in the appropriate Work Plans. In any subreach where RCRA hazardous waste may be present, GE will collect a reasonable number of composite samples for analysis (for example, TCLP sampling for metals). If any composite sample demonstrates the

material is RCRA hazardous waste, then: a) the material can be treated until testing demonstrates that the material is non-hazardous, or b) the material can be disposed of at an off-site facility in compliance with EPA's off-site rule (40 C.F.R. § 300.440).

7. Any other materials to be disposed of not otherwise addressed above will be sampled prior to disposal and disposed of in the Upland Disposal Facility if they have less than 50 mg/kg PCBs. (This could apply to haul road materials, etc. that GE may need to dispose of as part of the overall remedy construction.)

8. GE will dispose of the segregated high concentration sediment, soil and waste materials, and any free liquids, free product, or intact drums, capacitors or containers, in any facility that is licensed/permitted to accept such waste and will accept it, including RCRA Subtitle C Landfills, so long as said facility is in compliance with EPA's off-site rule (40 C.F.R. § 300.440).